

# MINNESOTA SOLAR ELECTRIC REBATE

## Instructions for Residential Rebate Applications



### INTRODUCTION

The Minnesota Solar Electric Rebate for Residences provides financial support for the installation of solar electric systems with rated capacities not more than five kilowatts (kW). To be eligible:

- a residence must be in Minnesota;
- a solar electric system must be installed at a primary residence;
- a system must be installed by a licensed contractor that meets program participation criteria ;
- the installation must comply with all applicable federal, state and local requirements; and
- the installation is completed within nine months of approval of the rebate application.

This program is funded by the American Recovery and Reinvestment Act of 2009 (ARRA), Pub. L. 111-5 and authorized by Laws of Minnesota 2009 Chapter 138. Federal and state guidelines require that projects adhere to a number of reporting and project implementation standards as outlined below.

The basic steps to receiving a residential solar electric rebate are outlined below.

1. Employ energy efficiency and conservation measures first: make your home as efficient as possible.
2. Learn about solar energy system options.
3. Find out whether your location can benefit from solar energy by conducting a solar site assessment. A solar site assessor can provide an objective evaluation of your specific location. Office of Energy Security (OES) requires a site assessment prior to applying for state solar rebate incentives. The solar site assessor need not be the solar installer who completes the installation for the purpose of this program.
4. Select a solar installer. See the publication *Hiring a Renewable Energy Contractor* at [www.energy.mn.gov](http://www.energy.mn.gov) > *Renewables* > *Solar* > *Purchase & Installation*. It includes a list of solar installers serving Minnesota. Note that not all installers listed are eligible to participate in the program.
5. Your installer should work with your electric utility on an interconnection application, if applicable, and local building officials on any applicable building codes.
6. Submit an application AFTER assembling all supporting documentation with help from your installer. (See checklist below.) Additional funding may be available through federal tax incentives or your local utility. For a current list of federal, state, and utility energy incentives, visit the Database of State Incentives for Renewable Energy website at [www.dsireusa.org](http://www.dsireusa.org).

Make a copy of the rebate application materials for your files and mail or hand deliver the originals to:

**Solar Electric Rebate Program**  
**Minnesota Office of Energy Security**  
**85 7<sup>th</sup> Place East, Suite 500**  
**Saint Paul, MN 55101-2198**

**IMPORTANT: Do not order, purchase or install any equipment before receiving a Rebate Confirmation Form indicating that the application has been approved. Failure to comply with any requirement at any point in the rebate process may disqualify the applicant from receiving a state rebate.**

7. Within 30 days of receiving a completed application, OES will notify you whether your application has been approved. Your solar installer may be notified as well. If approved, you will also receive a **Rebate Claim Form** that you will need to complete and return after your system is installed.
8. After installation is complete, submit the original **Rebate Claim Form** and supporting materials to the Solar Electric Rebate Program. If the rebate claim package is complete, the check will be issued within 30 days.

**IMPORTANT: System installation must be completed by the expiration date indicated on the Rebate Confirmation Form. Extensions may be made on a case-by-case basis and must be requested at least 5 business days prior to the expiration date.**

### REBATE APPLICATION CHECKLIST

- 1. Rebate Application Form with original signatures
- 2. Evidence of Intent (application for interconnection or evidence of \$500 minimum down payment)
- 3. Site Photos
  - A panoramic photo or series of 5 photos from 90° to 270° through south, labeled
  - A photo of the proposed installation site, labeled
- 4. Solar shading analysis (Pathfinder, Suneye, or similar)
- 5. Solar Site Diagram-Top View
- 6. End User Agreement

### CONTRACTOR QUALIFICATIONS AND REBATE LIMITS

Solar Contractor Qualifications	Applications submitted by March 31, 2010	Applications submitted After March 31, 2010
Licensed electrical contractor with at least two solar PV installations of at least 0.5 kW in previous 12 months	Project completed and claim submitted by Sept 30, 2010: \$1.75 per watt up to \$8,750 maximum rebate	\$1.50 per watt
Licensed general contractor with at least two solar PV installations of at least 0.5 kW in previous 12 months	Claim submitted after Sept 30, 2010: \$1.50 per watt up to \$7,500 maximum rebate	
Above plus NABCEP certified PV installer	Project completed and claim submitted by Sept 30, 2010 \$2.00 per watt up to \$10,000 maximum rebate  Claim submitted after Sept 30, 2010: \$1.75 per watt up to \$8,750 maximum rebate	\$1.75 per watt

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## Instructions for Residential Rebate Applications



### TERMS AND CONDITIONS

**Complete rebate applications are processed on a first-come, first-served basis until all available funds have been reserved. Mailed applications will be time stamped as having been submitted at 4:00 p.m. on the postmark date.**

Applicants have nine months to install a solar electric system and submit a rebate claim with required documentation. Note: a rebate amount may be based on date of rebate claim submission in some cases. (See table above.)

A **Rebate Confirmation Form** and **Rebate Claim Form** will be mailed to the applicant upon application approval. Claim the rebate by completing the installation and submitting the **Rebate Claim Form** with supporting documentation within nine months of receiving the **Rebate Confirmation Form**. **No installation work should be done before receiving the Rebate Confirmation Form. Failure to adhere to this requirement may void the rebate.**

The rebate amount will not exceed the total cost of an installation minus federal, utility or other incentives. See [www.DSIREUSA.ORG](http://www.DSIREUSA.ORG) for a comprehensive list of incentives from federal, state, and utility sources.

The total funding for all state solar rebate programs is up to \$3 million. See [www.energy.mn.gov](http://www.energy.mn.gov) for state solar rebate program information including the Solar Hot Water Rebate Program and the Solar Air Heat Program.

OES reserves the right to adjust these terms and conditions as necessary.

The Office of Energy Security website hosts a solar section with information and web links that may be useful: [www.energy.mn.gov](http://www.energy.mn.gov), then click on *Renewables > Solar*. Questions regarding this application should be directed to the Energy Information Center at (651) 296-5175 or [energy.info@state.mn.us](mailto:energy.info@state.mn.us).

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#### Eligible Equipment

1. All of the major system components including modules and inverters must be new.
2. Photovoltaic modules must come with a 20-year or greater manufacturer's performance warranty and must be certified as meeting the most current edition of Underwriters Laboratory Standard 1703 (UL1703). (As of June 2009 the current edition of UL1703, the Standard for Flat-Plat Photovoltaic Modules and Panels, is Third Edition, Revised April 2009.)
3. All inverters must be certified as meeting the current edition of Underwriters Laboratory Standard 1741 (UL1741), come with a minimum five-year manufacturer's warranty (As of June 2009 the most current edition of UL1741, the Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, is First Edition, Revised November 7, 2005.)

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#### Installation Requirements

1. Installations are subject to the requirements and provisions of Minnesota statute (216B.164), Minnesota rules (Chapter 7835), the currently adopted edition of the National Electrical Code, and electric utility requirements.
2. Installations must comply with all applicable building and zoning codes.
3. Fixed-tilt installations should have a tilt angle between 20 and 60 degrees.
4. Participants must demonstrate that the system will not be shaded by buildings, trees, electricity poles, towers, chimneys, etc. using a shading analysis tool and site photos.
  - a. Installers are responsible for ensuring an accurate representation of the site.

- b. Installations should result in energy production equivalent to a minimum net effect of 90% of an ideally sited system.
  - c. The Program Administrator or its subcontractor reserves the right to reject any application if the installation site is compromised by shading.
  - d. OES or its subcontractor reserves the right to conduct site inspections to verify compliance with program guidelines.
5. Installations must be performed by licensed, professional solar installers in order to qualify for a rebate. All electrical work must be performed by a licensed electrician working for a licensed electrical contractor.
  6. The installer must provide information to the participant about operation and performance considerations relating to shading, snow cover, and maintenance of the system.
  7. The system must include performance monitoring equipment that records the electricity generated by the solar electric system. The applicant must agree to share the energy production data from the solar electric system.

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### **Prevailing Wage Requirements**

Laws of Minnesota 2009 Chapter 138 requires payment of state prevailing wage rates for solar electric installations funded through this program. At present, state residential prevailing wage determinations are being established by the Minnesota Department of Labor and Industry. Until state residential wage determinations are issued, contractors performing work under this program must comply with federal prevailing wage requirements. Federal prevailing wage information can be found at: [www.wdol.gov](http://www.wdol.gov).

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### **Solar Installer/Contractor Requirements**

By signing the Minnesota Solar Electric Rebate Application, a Solar Installer/Contractor agree to:

- Provide the state with accurate information regarding the full scope of the project, including but not limited to: itemized pricing of equipment, labor, work performed, and wages paid.
- Abide by all state and federal guidelines and requirements, including reporting, associated with the Minnesota Solar Electric Rebate Program.
- Require subcontractors to abide by all state and federal guidelines and requirements associated with the Minnesota Solar Electric Rebate Program.

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### **Application Changes**

- Major changes (such as change of purchaser, location, or increases in system size) require reapplication or prior written approval. Decreases in the size of the solar system to be installed do not require prior approval, but must be documented on the **Rebate Claim Form** and supporting materials.
- Requests for extension of the rebate expiration date must be made in writing at least 5 business days prior to expiration.

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### **ARRA Requirements**

#### **National Environmental Policy Act (NEPA)**

OES is required to notify DOE if it determines that an activity categorically excluded from NEPA review appears to present an extraordinary circumstance as defined under 10 CFR § 1021.410(b). Applicants will need to certify to OES that their proposed solar installation activities will NOT:

1. Threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, including requirements of DOE and/or Executive Orders;
2. Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators);
3. Disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; or
4. Adversely affect environmentally sensitive resources. Environmentally sensitive resources include, but are not limited to:
  - (i) Property (e.g., sites, buildings, structures, objects) of historic, archeological, or architectural significance designated by Federal, state, or local governments or property eligible for listing on the National Register of Historic Places;
  - (ii) Federally-listed threatened or endangered species or their habitat (including critical habitat), Federally-proposed or candidate species or their habitat, or state-listed endangered or threatened species or their habitat;
  - (iii) Wetlands regulated under the Clean Water Act (33 U.S.C. 1344) and floodplains;

- (iv) Areas having a special designation such as Federally- and state-designated wilderness areas, national parks, national natural landmarks, wild and scenic rivers, state and Federal wildlife refuges, and marine sanctuaries;
- (v) Prime agricultural lands;
- (vi) Special sources of water (such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region); and
- (vii) Tundra, coral reefs, or rain forests.

### **State Historic Preservation**

Any federally funded, licensed or permitted project requires consideration of historic resources under Section 106 of National Historic Preservation Act of 1966. Projects receiving funds through ARRA are subject to review by a state authorized authority for the identification and preservation of historic resources.

### **Minnesota Data Privacy Act/Tennessee Warning**

The Minnesota Data Privacy Act requires that certain information you provide on this form remain as private data. The information about you that is collected on the Solar Electric Rebate Program application will be classified as either public or private data. Public data will be accessible to the public. Private data about you will be accessible only to you and State personnel and their authorized subcontractors who administer the program and reporting requirements. The data you give us about yourself is needed to:

- Identify you;
- Contact you in case of program or energy use evaluation;
- Comply with certain federal and state reporting requirements;
- Evaluate program effectiveness; and
- Administer the Solar Hot Water Rebate Program.

If you choose to supply all of the requested data, your completed rebate application will be processed on a first-come, first-served basis. If you refuse to supply data requested on the rebate application form, your application will not be processed.

Please note that rebates and rebate applications may be considered public documents and may be subject to disclosure to the public upon request.

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## **Definitions**

**Anti-islanding test** – a utility engineer will test the completed system for safety before an interconnection contract is processed

**Azimuth** – the direction measured in degrees from North that the solar installation is oriented

**Building code** – check with city and/or county to identify permits needed for the solar installation

**DC rating** – solar capacity, measured in watts

**End-User Agreement** – agreement between applicant and the Office of Energy Security to provide data on the electricity produced by the solar energy system

**Evidence of Intent** – evidence that the applicant is serious about participating in the solar rebate program: \$500 down payment to the installer or utility interconnection application is acceptable

**Grid connected** – PV system is interconnected to an electric utility; grid connected systems in Minnesota benefit from net metering if the capacity is not more than 40 kW

**Interconnection contract** – a contract with the electric utility to let a customer sell electricity back to the utility; utilities must use standard state contract (MN Rule 7835.9910 [www.leg.state.mn.us](http://www.leg.state.mn.us))

**Interconnection guidelines** – safety and technical requirements for the solar installation

**Inverter** – converts DC electricity from the solar panels into AC electricity

**Kilowatt (kW)** – 1000 watts (five 200 watt solar modules = 1 kilowatt)

**Maximum Power Point Tracking (MPPT)** – Devices incorporated into the PV system which allow each individual panel to deliver continuously at maximum available power based on total panel illumination, irrespective of

conditions of other panels in the system (such as local shading and soiling, panel matching, other panel or interconnect failures, etc.)

**Minnesota Rules Chapter 7835** – Minnesota’s net metering rules ([www.leg.state.mn.us](http://www.leg.state.mn.us))

**Minnesota Statute 216B.164** – Minnesota’s net metering statute ([www.leg.state.mn.us](http://www.leg.state.mn.us))

**National Environmental Protection Act (NEPA)** – requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions. As a federally funded program, the Minnesota Solar Electric Rebate Program is subject to NEPA provisions. The following solar electric systems are categorically excluded:

- Ground mounted installations sized to serve the site load and not more than 60 kW
- Building mounted installations sized to serve the building load

**National Electrical Code Article 690** – national electrical safety standards for photovoltaic systems established by the National Fire Protection Association ([www.mfpa.org](http://www.mfpa.org))

**Off-grid PV system** – not interconnected to an electric utility; relies on battery storage

**Solar module warranty** – solar modules in the rebate program must have a 20-year or greater performance warranty

**Photovoltaics** – (PV) a semiconductor technology that converts sunlight to direct current electricity

**Renewable Development Fund (RDF)** – an Xcel Energy fund for renewable energy

**Rebate Claim Form** – a form to receive the rebate once the solar installation is complete; the form is mailed to applicant upon application approval (sent with Confirmation Form)

**Rebate Confirmation Form** – the form received once the applicant is approved for a rebate; work must not begin before receiving this form

**Renewable Energy Credit (REC)** – also known as green tags, a REC represents the value of all environmental and social attributes in a Megawatt-hour of renewable energy; RECs can be sold or traded independently from the electricity associated with them

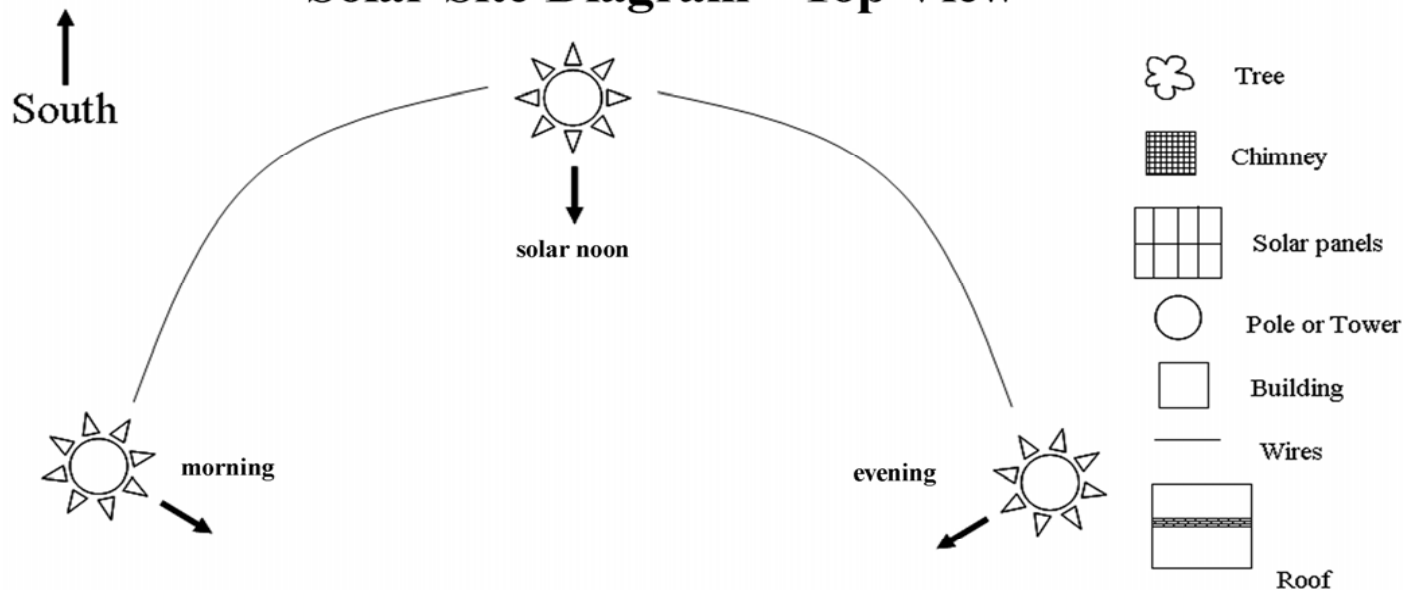
**Site pictures** – a labeled photo of the proposed solar energy system installation location AND labeled panoramic photos of the horizon from East to West through South

**Shading Analysis Tool** – a device used to accurately chart the total shading at a specific location. (Pathfinder, Suneye or comparable tools are acceptable)

**System rating** – the sum of all of the solar modules to be used in the system (# of solar modules x DC rating of solar modules)

**Tilt angle** – the elevation angle from horizontal at which the solar modules are positioned

## Solar Site Diagram - Top View



**This diagram must be completed as part of the MN Solar Electric Rebate Application.**

Using the symbols (at right) sketch the locations and distances between the proposed array and surrounding objects.

Include estimated heights above ground for all objects.

**What angle will the array face? \_\_\_\_\_ (180° = due South)**

1. Draw the proposed location of the solar system using the appropriate symbols.
2. Determine the orientation of the system.
3. Draw any objects that appear in the photos of the horizon. Pay particular attention to those objects which may appear to present a shading obstruction in the horizon photos.
  - a. You do not need to draw objects that are located behind the solar panels unless they reach over the top of the solar panels.
  - b. Estimate the appropriate width at the widest point of each object.
  - c. Measure and make note of the distance from the solar array to each object on the diagram.
  - d. Include heights of objects and the height of the lowest point of the PV array.

This site diagram must accompany the application. The site diagram is a representation of the solar installation's location along with nearby objects that might shade the system. It is designed to help interpret the photos included with the application form and as a cross reference to the shading analysis.

**MINNESOTA SOLAR ELECTRIC REBATE  
RESIDENTIAL APPLICATION**



**APPLICANT INFORMATION**

Name \_\_\_\_\_  
Mailing Address \_\_\_\_\_  
City, State, Zip \_\_\_\_\_  
Phone \_\_\_\_\_  
E-mail \_\_\_\_\_

Site Address if different than mailing address: \_\_\_\_\_  
\_\_\_\_\_  
Electric Utility \_\_\_\_\_  
Utility account # \_\_\_\_\_  
Year subject property built \_\_\_\_\_

Is applicant a past Minnesota Solar Rebate recipient:  Yes  No  
Is this a primary residence for at least 1 occupant:  Yes  No  
Is property located within or adjacent to a historical preservation district?  
Is the property individually listed in the National Register of Historic Places?  
Is the system sized no larger than required to meet the building load?

Yes  No  
 Yes  No  
 Yes  No

**SOLAR INSTALLER/CONTRACTOR INFORMATION**

Business Name \_\_\_\_\_  
Lead Installer Name \_\_\_\_\_  
Mailing Address \_\_\_\_\_  
City, State, Zip \_\_\_\_\_  
Phone \_\_\_\_\_  
E-mail \_\_\_\_\_

The solar installer must meet the following criteria to be eligible to install under this program.  
 A licensed general contractor or licensed electrical contractor  
License # \_\_\_\_\_  
 Does your business have at least two solar PV installations in the previous 12 months? (list dates, addresses, and sizes in kW)  
\_\_\_\_\_  
\_\_\_\_\_

All electrical work must be performed by a licensed electrician working for a licensed electrical contractor:  
Electrician License # \_\_\_\_\_

Is lead installer NABCEP Solar PV certified? (not required for eligibility)

Yes  No If yes, NABCEP Solar PV # \_\_\_\_\_

**INSTALLATION INFORMATION**

Solar Module Manufacturer \_\_\_\_\_  
Solar Module Model # \_\_\_\_\_  
• Thin film:  Yes  No  
• Number of modules \_\_\_\_\_  
• Module rating \_\_\_\_\_ watts  
• System rating (sum of solar panels) \_\_\_\_\_ kW  
• Module performance warranty \_\_\_\_\_ years  
• Tilt of panels (if fixed) \_\_\_\_\_ degrees  
• Battery system:  Yes  No \_\_\_\_\_ # and rating  
• Is Maximum Power Point Tracking (MPPT) performed centrally for all modules or individually for each module? Centrally Individually

Inverter Manufacturer \_\_\_\_\_  
Inverter Model # \_\_\_\_\_  
• Inverter Rating \_\_\_\_\_ kW  
• Warranty \_\_\_\_\_ years  
System type (circle one) Fixed Seasonally adjusted  
Single Axis Dual Axis  
Location (circle one) Roof Ground Pole  
Azimuth angle (orientation) \_\_\_\_\_ degrees  
Interconnection (circle one) Grid-tied Off-Grid

**DECLARATION**

The undersigned warrants, certifies and represents that: (1) the information provided in this form is true and correct to the best of my knowledge; and (2) the installation will meet all Minnesota Solar Electric Rebate Program requirements.

**SIGNATURE**

Included are:  Evidence of Intent  Photos  Solar shading analysis  Solar Site Diagram  End User Agreement

Signature \_\_\_\_\_  
*Applicant (original signature needed)*  
Print Name \_\_\_\_\_  
Date \_\_\_\_\_

Signature \_\_\_\_\_  
*Solar Installer (original signature needed)*  
Print Name \_\_\_\_\_  
Date \_\_\_\_\_

Office Use:



**END-USER AGREEMENT**  
**Minnesota Solar Electric Rebate Program**

- I. I agree to provide the Minnesota Department of Commerce Office of Energy Security (OES) with solar electricity generation data from my solar electric system for a period of four years either through inverter or separate meter readings.
- II. I agree to provide OES, or its contractors, access to the proposed solar installation site for the purpose of conducting a site audit. The results of the audit may be used to verify the data submitted in the Solar Electric Rebate Application and to determine eligibility.
- III. If necessary, I agree to provide OES, or its contractors, with access to any photovoltaic hardware and related components on my property as necessary for the completion of ongoing research related to the Minnesota Solar Electric Rebate Program. Access will be scheduled with the applicant at least seven working days in advance.
- IV. If necessary, I agree to allow OES and its contractors or subcontractors to install electricity data collection devices on my property so that information from my solar electric energy system may be retrieved and included in research being conducted by OES. I understand that data collected from the photovoltaic system on the property may be made available to the public. Access will be scheduled with the applicant at least seven working days in advance.
- V. For grid-connected systems, I authorize my electric utility to release data related to the amount of electricity produced by my solar electric installation.

Applicant name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

If grid-connected:

Electric Utility \_\_\_\_\_

Electric Utility Account # \_\_\_\_\_