



Application Form for Residential Energy Tax Credit Certification  
— Instructions

## Active Solar Space Heating

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### Oregon Department of Energy

The Oregon Residential Energy Tax Credit Program provides a tax credit for solar space heating systems of 60 cents per kilowatt hour (kWh) saved during the first year of operation, up to \$1,500. The Oregon Department of Energy will determine whether your system reduces your heating needs by 15 percent or more based on the description of the solar heating system and the building. The solar space heating system must be located in an Oregon dwelling that is your primary or secondary residence.

To qualify for a tax credit, you must have an Oregon income tax liability. If you are an Oregon resident and do not have an Oregon income tax liability, you may choose to transfer your tax credit to an Oregon resident who does. The Pass-through Option will allow you transfer your tax credit to an individual or business with an Oregon tax liability who will make a lump-sum payment to you equal to 95 percent of the certified tax credit amount. To use this option, complete this application form first. Your application will be reviewed for eligibility. A Pass-through Option Application will be sent to you in return. You and your pass-through partner (the tax credit recipient) will complete and sign the Pass-through Option Application and mail it to the Oregon Department of Energy. You are responsible for finding your own pass-through partner. The Department of Energy will then issue the tax credit certification to the pass-through partner. There may be tax implications for the pass-through partner. We advise you to consult with your tax preparer.

An Oregon Department of Energy tax-credit certified solar technician must verify installation of the system to qualify for the tax credit. A list of companies that employ tax-credit certified technicians can be found on the Oregon Department of Energy's Web site. Homeowners, who install their own active solar heating systems, should contact the Oregon Department of Energy to arrange for Department verification of the system.

Don't wait to apply for the tax credit. The Oregon Department of Energy should receive the application **no later than April 1** of the year following the purchase to get a tax credit Certificate back by the April 15 filing deadline. Take the following steps to receive your tax credit.

- 1) **Submit a completed Application and Verification Form for Tax Credit Certification Active Solar Space Heating.** Your tax credit certified solar technician should complete the technical sections, sun chart, and the technician verification section of the form. Once completed, mail the signed application to the Oregon Department of Energy. Include the sun chart, proof of payment (dated receipts, contracts, or invoices marked paid by your technician). If the paperwork you submit demonstrates that your system qualifies for the tax credit, the Oregon Department of Energy will approve your

application and send you a signed Certification specifying the qualifying tax credit amount.

- 2) **Complete the pass-through option section on the form if you are using this option.** The pass-through option allows an applicant to transfer the tax credit to a pass-through partner in return for 95 percent of the value of the tax credit. If you choose the pass-through option, you transfer your tax credit and may not claim it. The tax credit is issued in the name of the pass-through partner. There may be tax implications for the pass-through partner. We advise you to consult with your tax preparer.
- 3) **Claim the tax credit on your state income tax form.** The credit must be claimed for the tax year in which the alternative energy device was purchased (down payment) if the device is operational by April 1 of the next following tax year. Proof of purchase must be a contract or invoices dated in the year for which the applicant is claiming the credit.
- 4) **Keep your Certification, a copy of your application, and proof of payment with your tax records.** (Do not attach them to your tax return.) If your return is audited, the Oregon Department of Revenue will request copies of the information from you. Tax credits not taken in the first year may be carried forward up to five years.

If you have any questions, please call the Oregon Department of Energy toll-free: 1-800-221-8035. (In Salem, call 503-378-4040.) Or consult the Department of Energy Web site ([www.oregon.gov/energy](http://www.oregon.gov/energy)).

If you have questions concerning claiming the credit on your Oregon tax return, contact the Oregon Department of Revenue at 1-800-356-4222 or 503-378-4988.

# Active Solar Space Heating Information

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## Oregon Department of Energy

Heating a home with solar energy is not difficult in Oregon. If done correctly, the home will use 20 to 50 percent less energy during the heating season and remain cool during the summer months. Two approaches can be used to heat a home with solar energy: an active system or a passive system. Active systems use mechanical equipment such as a pump or fan to move energy from collectors into the house. Passive systems are much more common and simply rely on south-facing windows to allow solar heat and light into the home. Passive systems should also help to keep the house cool during the summer months.

To qualify for an **active** solar space heating tax credit the system must be capable of reducing space heating needs by at least 15 percent. Consult with your solar technician to determine the energy savings generated by an active system design. The Oregon Department of Energy staff will determine if these savings are reasonable.

### Active Solar Space Heating System Design Requirements

- System verification by a solar thermal Oregon Dept. of Energy tax credit certified technician
- System must be capable of reducing space heating needs by at least 15 percent.
- Solar equipment must face within 30 degrees of true south and have a collector slope of not less than 40 degrees.
- At least 50 percent of the energy savings must be from space heating to qualify. Not more than 50 percent of the savings can come from domestic hot water heating.
- Systems must be capable of preventing damage from stagnation and overheating in the summer when loads are small and there is a lot of sunlight. Acceptable methods of overheat protection are: drainback or a controlled dump load, or stagnation of a working fluid that is warranted for continuous operation above 300 °F.
- Systems must be capable of preventing damage from freezing conditions, including the potential for cooler than ambient air temperatures resulting from clear night skies.
- Backup heating equipment must not inject heat into solar storage (e.g. solar preheat tank or convective air slab)
- Pumping or fan energy must not exceed 5 percent of solar energy delivered. Proper pump, fan, pipe and/or duct sizing is essential to the longevity and performance of an active solar space heating system.
- Technicians must have an accurate estimate of the average daily total load for each month. This includes both space heating and domestic water heating (if interconnected).
- Design load calculations must be done for specific climate.





Application Form for Residential Energy Tax Credit Certification

# Active Solar Space Heating

## Oregon Department of Energy

625 Marion St. NE  
Salem, OR 97301-3737  
Toll-free: 1-800-221-8035  
Salem: (503) 378-4040 Fax (503) 373-7806  
Web site: www.oregon.gov/energy

**Don't forget...**  
...to sign your application  
and include your receipt

### 1. APPLICANT INFORMATION (Homeowner completes)

Name:		Social Security No.*:	
Mailing address:		Daytime phone:	
City:	Oregon County:	State:	Zip
Site address (if different):			
City:	Oregon County:	State:	Zip:
If different than mailing address, please explain:			
Name of electric utility company:			
Name of natural gas utility company:			
Purchase Date:		Operational Date:	
		Number of people in household:	
Net cost of system: \$			
The net cost is the applicant's cost for the design, acquisition, construction, installation, and permitting. Net cost does not include service contracts, rebates, or refunds.			

### 2. SYSTEM DESCRIPTION (Technician completes)

**System Type** (check one):

Space Heating Only

Combined Space and Domestic Water Heating

\* The request for your Social Security Number is authorized by Section 405, Title 42, of the United States Code. You must provide this information. It is used to establish your identity for tax purposes only.

**OVER**

FOR OFFICE USE ONLY	
File no.:	
Date received:	
Tax credit amount: \$	
Tax year:	

## 2. SYSTEM DESCRIPTION (Continued)

### House Information

1. Year house was built : \_\_\_\_\_
2. Heated floor area: \_\_\_\_\_ sq.ft.
3. Window area: \_\_\_\_\_ sq.ft. Window U-value: \_\_\_\_\_
4. Wall area: \_\_\_\_\_ sq.ft. Wall insulation R-value: \_\_\_\_\_
5. Floor area: \_\_\_\_\_ sq.ft. Floor insulation R-value: \_\_\_\_\_
6. Roof area: \_\_\_\_\_ sq.ft. Roof insulation R-value: \_\_\_\_\_
7. House Design Heat Loss : \_\_\_\_\_ Btu/h
8. Hot water Usage: \_\_\_\_\_ gallons per day

### Solar Equipment Information

9. Collector manufacturer \_\_\_\_\_
10. Collector model: \_\_\_\_\_
11. Collector area: \_\_\_\_\_ sq.ft.
12. Number of collectors: \_\_\_\_\_
13. Total collector area: \_\_\_\_\_ sq.ft.
14. Pump or fan kWh: \_\_\_\_\_
15. Pipe or duct sizing: \_\_\_\_\_ inches
16. Required supplemental documentation:
  - Detailed system diagram (Label components)
  - Sunchart (Attached)

## 3. SOLAR RESOURCE FRACTION (Technician completes)

### Solar Resource (from sun chart)

17. Solar Collector Orientation (azimuth angle where 180 = south) ..... \_\_\_\_\_ degrees
18. Solar Collector Tilt ..... \_\_\_\_\_ degrees
19. Annual Solar Shade Fraction (from sun chart) ..... \_\_\_\_\_ %

## 4. TAX CREDIT CALCULATION (Technician completes)

Applicant must submit documentation of annual energy savings or the Department of Energy technical staff will determine solar space heating system performance. Active solar space heating systems must provide at least 15% of the estimated annual heating needs. For combination systems (space + DHW) no more than 50% of the savings can come from DHW. Estimated annual savings are multiplied by \$0.60/kWh to determine the tax credit amount. This amount may not exceed \$1,500 or 100% of the cost of the system.

20. Estimated annual space heating energy needed: ..... kWh
21. Estimated annual domestic water heating needs: ..... kWh
22. Total annual energy needs (line 18 + line 19): ..... kWh
23. Estimated annual space heating savings:..... kWh
24. Estimated annual domestic water heating savings..... kWh
25. Total estimated annual energy savings (line 21 + line 22)..... kWh
26. Solar savings fraction (line 23 divided by line 20)..... %
27. Total eligible energy savings (line 21 + 50% of line 22)..... kWh
28. Tax credit (\$0.60 x line 25)..... \$

Note: Tax credit amount cannot exceed \$1,500 and line 22 may not exceed line 21.

## 5. PASS-THROUGH OPTION (Homeowner completes)

Yes - I want to transfer my tax credit to another Oregon resident (see below)

No - I want to keep the full tax credit myself

If you are an Oregon resident, the Pass-through Option will allow you transfer your tax credit to an individual with an Oregon tax liability who will make a lump-sum payment to you equal to 95% of the certified tax credit amount. To use this option, complete this application form first. Your application will be reviewed for eligibility. A Pass-through Option Application will be sent to you in return. You and your pass-through partner (the tax credit recipient) will complete and sign the Pass-through Option Application and mail it to the Oregon Department of Energy. The Department of Energy will then issue the tax credit certification to the pass-through partner. **Important: There may be tax implications for the pass-through partner. We advise you to consult with your tax preparer.**

## 6. TECHNICIAN SIGNATURE (Technician completes)

Please have your technician read and complete this section. If homeowner installed the system, he/she must complete.

***I certify that the system(s) described in this application is (are) installed and that the information contained herein is accurate and true.*** Complete and **initial** each item and sign below:

\_\_\_\_\_ The owner has received proper instruction for the operation and maintenance of the system.

\_\_\_\_\_ The owner has received a system manual and an estimate of the annual energy savings. (applies to active systems only)

\_\_\_\_\_ The owner has received a written \_\_\_\_\_ month full warranty for the system. The Tax Credit Certified Technicians certified by the Oregon Department of Energy are required to provide a minimum 24-month full warranty (all parts and labor).

\_\_\_\_\_ The system **has been properly permitted and inspected** by the local jurisdiction and has been installed in accordance with the manufacturer's approved specifications.

Local Jurisdiction: \_\_\_\_\_ Permit number: \_\_\_\_\_

***I declare that this system meets all the requirements of ORS 469.160 through 469.180 and complies with all local building code requirements. Should the Oregon Department of Energy require changes in the system to make it conform to ORS 469.160 through 469.180 and OAR 330-70-010 through 330-70-097, the installer/technician agrees to make such changes. By signing below, I certify that the system described in this application is installed and that the information contained herein is accurate and true.***

Tax Credit Technician's name (please print): \_\_\_\_\_

Tax Credit Certified Technicians company: \_\_\_\_\_

Tax Credit Technician's phone number \_\_\_\_\_ Date: \_\_\_\_\_

Tax Credit Technician's signature: \_\_\_\_\_

**7. DECLARATION, VERIFICATION AND APPLICATION SIGNATURES**  
**(Homeowner completes)**

***I understand that the Oregon Department of Energy does not make any warranty concerning the performance, operation, installation, or any other characteristic or feature of this system. The Oregon Department of Energy approval is only for purposes of obtaining the Oregon Residential Energy Tax Credit. System owner must initial each item and sign below. By signing below, I (we) certify that the system(s) described in this application is (are) installed and that the information contained herein is accurate and true.***

\_\_\_\_\_ I give the Oregon Department of Energy permission to inspect this installation upon agency request.  
Note: Refusing access for inspection may result in denial of this application.

\_\_\_\_\_ The installer has provided me with an owner's manual, a written 24-month warranty and instructed me of its proper operation.

\_\_\_\_\_ I have completed the attached sun chart for the site where this system is installed, and supplemental documentation.

\_\_\_\_\_ I have attached proof of payment for this installation that includes an itemized parts list, listing out the main components to the system. (e.g. receipt of payment or a copy of the contract for the system marked "paid" and dated; or, for do-it-yourself systems, an itemized receipt of payment for materials).

We do not sell information from this application as a mailing list. However, the Oregon Department of Energy may be required to disclose the name, address and phone number from your application under the Oregon Public Records law ORS 192.410 et seq. We can withhold the address and phone number following a written request explaining personal safety concerns, such as a temporary restraining order. The Oregon Department of Energy does not endorse any company that requests the information.

Signature of Purchaser: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Joint Purchaser: \_\_\_\_\_ Date: \_\_\_\_\_

Complete the following if two or more persons are purchasing this system and file separate tax returns.

Name: \_\_\_\_\_ Address: \_\_\_\_\_ % ownership: \_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_ % ownership: \_\_\_\_\_

Name: \_\_\_\_\_ Address: \_\_\_\_\_ % ownership: \_\_\_\_\_

**Note:** The Oregon Department of Energy certifies the energy efficiency of systems and equipment for the Oregon Residential Energy Tax Credit program. It is the applicant's responsibility to ensure compliance with all other eligibility requirements. If you have questions concerning claiming the credit on your Oregon tax return, contact the Oregon Department of Revenue at 1-800-356-4222 or 503-378-4988.

# Solar Space Heating Sun Chart

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## Oregon Department of Energy

Using the sun's energy to heat a home requires being able to collect energy during the time of year when heating is needed. The following sun chart lets you estimate the energy loss from external shading for space heating loads. This sun chart approximates the coincident value of both availability solar energy and the months when space heating is most needed. It is valid for collectors that are facing within 30 degrees of true south. Remember that true south is about 17 degrees east of magnetic south. The following steps will help determine what fraction of solar resource your site has for space heating. If a combination space-DHW system is used, you may alternatively submit the sunchart for solar domestic water heating systems.

**Step 1** - From the midpoint of the collection area (solar collectors) draw the skyline on the graph below. Use the elevation angles and solar azimuth angles to determine the location of the obstructions. Draw deciduous trees with a dotted outline and fill with light shading. Year-round (solid) obstructions like buildings, or conifer trees should be drawn with solid outlines and filled with heavy shading.

**Step 2** - Add up the solar fraction numbers in the sections that have shading. You can use fractional values if the obstruction only covers a part of a section. In addition, any deciduous tree shading below the Sept 22/March 20 line can be counted at half value to account for the fact that some light will get through these obstructions when the trees lose their leaves. This "ANNUAL SOLAR SHADE FRACTION" is the percentage of energy lost to external shading for space heating systems.

Annual Solar Shade Fraction = sum of all shaded areas = \_\_\_\_\_ %