



Application Form for Residential Energy Tax Credit Certification
— Instructions

Solar Space Heating

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 20 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.

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. Complete a sun chart for your location.** On the attached sun chart, draw the south-facing skyline (horizon, trees and other objects) your solar equipment will be exposed to. The percentage reduction in system yield is determined by adding the numbers in the blocks that contain obstructions.
- 2. Submit a completed Application and Verification Form for Tax Credit Certification Solar Space Heating System.** The form may be filled out on your computer. Please print it, sign it and mail it with your receipt to the Oregon Department of Energy. The forms can NOT be filed on-line. Include the sun chart, proof of payments (receipts, contracts, or invoices dated and marked paid by your contractor). 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.

- 3. 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.

- 4. Claim the tax credit on your state income tax form.** 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).

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 Information

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.

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 contractor to determine the energy savings generated by an active system design. The Oregon Department of Energy staff will verify that these savings are reasonable.

To qualify for a **passive** solar tax credit, the passive solar features must be capable of reducing space heating needs by at least 20 percent and not increase the need for cooling. Passive solar savings are harder to estimate, but by meeting the following guidelines you can ensure your home's eligibility. The term "solar windows" refers only to those windows that face within 30 degrees of *true* south, have a Solar Heat Gain Coefficient (SHGC) of not less than 0.60, and are located in a room that has some form of thermal storage (brick, stone, water, etc.).

Passive Solar Guidelines

1. The building layout maximizes passive solar gain and good daylighting.
2. At least half the windows are solar windows (for new construction).
3. There is sufficient solar window area. West of the Cascades this is equal to 9 percent of the total floor area. East of the Cascade this is equal to 8 percent of the total floor area.
4. South windows have a SHGC not less than 0.60.
5. The area-weighted average window heat loss rate (U-factor) is not greater than 0.35.
6. There is adequate thermal storage to prevent overheating. For each square foot of solar window there should be about 13 square feet of hardwood or 3 square feet of unheated stone/concrete.
7. Window overhangs are sufficient to shade most of the window during the summer, but allow 100 percent solar gain in the late fall.
8. The space heating sun chart shows less than 10 percent shading loss from trees or buildings.
9. North windows less are less than 2 percent of the total floor area.
10. Skylights are less than 1 percent of the floor area and have an SHGC of no more than 0.30.
11. West facing windows have a SHGC of 0.35 or less.
12. Passive cooling is possible with an operable window or skylight is located near the highest point.

Other notes:

- Choose solar windows wisely and keep the window "stickers" that verify their SHGC and U-values. Although, solar windows must have an SHGC value of not less than 0.60, other

windows should be selected for their low U-value (0.30 or less is very good) not their SHGC value.

- Have the home tested for air tightness. A good airtight home will have less than two air changes per hour when pressurized to 50 Pascals. With a home this tight, however, it is important to include an energy or heat recovery ventilator so that fresh air can be delivered into the house without a substantial energy penalty. Tax credits are available for some ventilators as well.
- Radiant heating systems generally do not work well with passive solar heating. This is because they tend to pre-heat all the storage that your passive solar energy is trying to heat. This lack of available thermal storage can result in a home that is comfortable in the morning, but seriously overheated in the afternoon

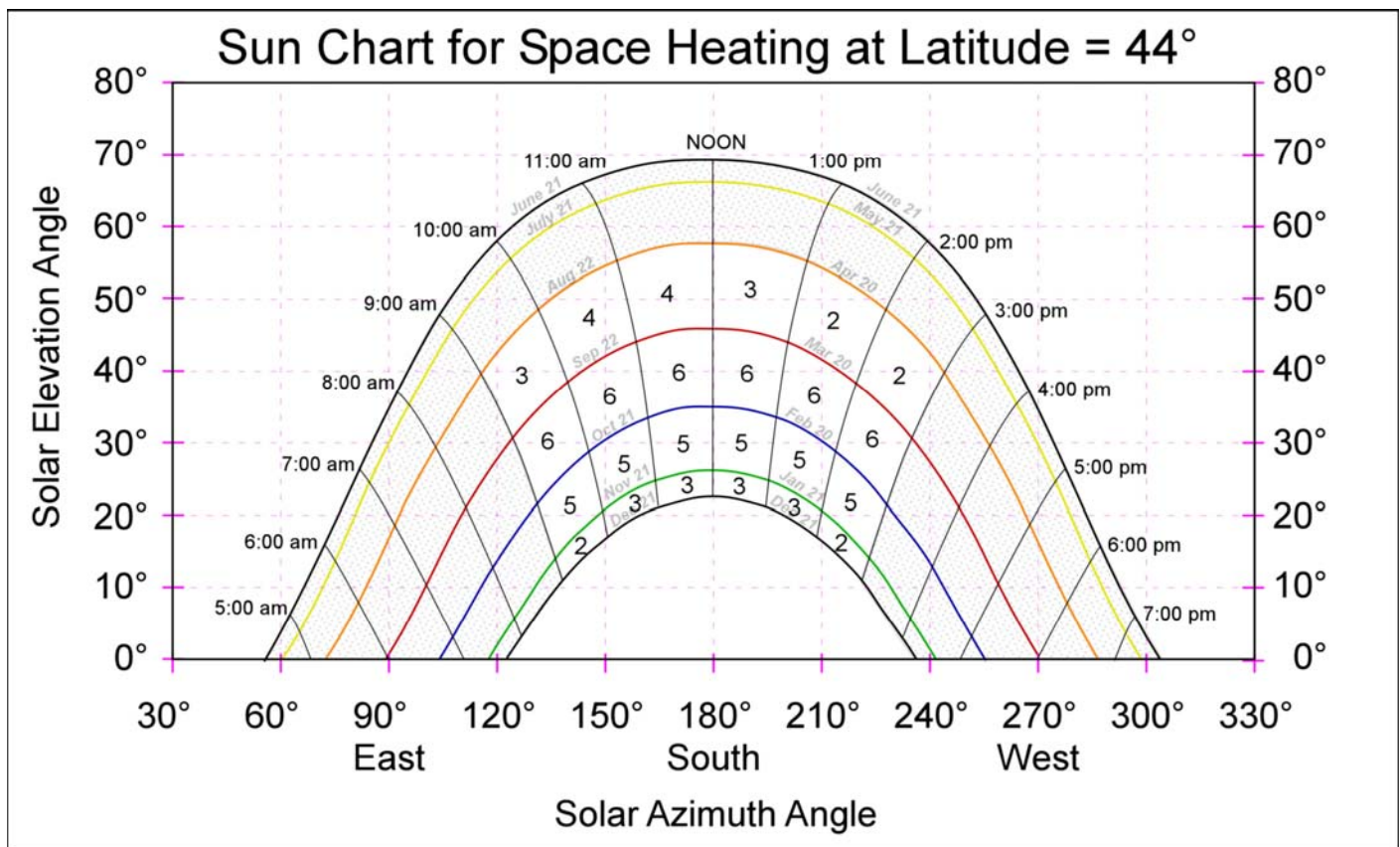


Solar Space Heating Sun Chart

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 20 degrees east of magnetic south. The following steps will help determine what fraction of solar resource your site has for space heating.

Step 1 - From the midpoint of the collection area (windows or 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 sum is called the "shading fraction" and represents the fraction of energy lost to external shading for space heating systems.



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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

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:			
Installation date:		Number of people in household:	
Cost of system: \$			

2. SYSTEM DESCRIPTION

System Type (check one):

Passive Solar – Direct Gain

Passive Solar - Sunspace

Passive Solar – Trombe Wall

Active Solar – Water

Active Solar – Air

*OAR 330-070-0025 authorizes the Oregon Department of Energy to request that you voluntarily provide your social security number for use as an identification number in maintaining internal records and may be shared with the Department of Revenue to establish the identity of an individual in order to administer state tax law. If you provide your social security number and consent to its use, it will be used only for the purpose(s) stated above.

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

OVER

2. SYSTEM DESCRIPTION (Continued)

General Information

1. House floor area: _____ sq.ft. Number of Floors: _____
2. Year house was built : _____
3. Total window area _____ sq.ft.
4. Window type: _____ Window U-value: _____
5. Wall construction: _____ Wall insulation R-value: _____
6. Floor construction: _____ Floor insulation R-value: _____
7. Roof construction: _____ Roof insulation R-value: _____
8. Describe conventional back-up heating system: _____

Required supplemental documentation:

- Floor plan drawing(s)
- Elevation drawings (N, S, E, W)

Passive Solar – Direct Gain and Sunspace Systems (only)

9. Solar glazing area: _____ sq.ft.
(solar glazing must face within 30 degrees of true South)
10. Solar window U-value: _____ SHGC: _____
(Note - applicant must provide proof of both window U-value and SHGC values.)
11. Thermal storage:
- | <u>Type</u> | <u>Direct/Passive</u> | <u>Location</u> | <u>Thickness</u> | <u>Area (sq. ft)</u> |
|-------------|-----------------------|-----------------|------------------|----------------------|
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |

Required supplemental documentation:

- Proof of both window U-value and window SHGC values

Active Solar – Water or Air Based Systems

12. Collector manufacturer _____
13. Collector model No.: _____ Collector area _____ sq.ft
14. Number of collectors: _____ Total area _____ sq.ft
15. Describe system: _____

Required supplemental documentation:

- System diagram
- Parts list (manufacturer, model)

3. SOLAR RESOURCES

16. Solar Glazing Azimuth (Orientation Angle) °
17. Solar Grazing Tilt (Vertical windows=90°) °
18. Shading Fraction (From Sunchart) %

4. TAX CREDIT CALCULATION

Applicant may submit documentation of annual energy savings or the Department of Energy technical staff will determine solar space heating system performance. Passive solar space heating systems must provide not less than 20% of the estimated annual heating needs. Active solar space heating systems must provide not less than 15% of the estimated annual heating needs. 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.

19. Estimated annual heating energy needed: kWh
20. Estimated annual energy savings: kWh
21. Solar savings fraction %
22. Tax credit \$

5. PASS-THROUGH OPTION

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. INSTALLER/CONTRACTOR SIGNATURE

Please have installer 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 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. Department of Energy Tax Credit Certified Contractors are required to provide at minimum a 12-month full warranty. The Oregon Department of Energy recommends a minimum 24-month full warranty on all parts and labor.

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

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/contractor 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.

Installation company: _____

Installation company address: _____

City: _____ State: _____ Zip: _____ Phone: _____

6. INSTALLER/CONTRACTOR SIGNATURE (continued)

Installer name (please print): _____

CCB no.: _____ Oregon Department of Energy Tax Credit Certified? Yes No

Installer's signature: _____ Date: _____

7. DECLARATION, VERIFICATION AND APPLICATION SIGNATURES

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. Department of Energy approval is only for purposes of obtaining the Oregon Residential Energy Tax Credit. 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. System owner must initial each item below:

_____ 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 warranty and instructed me in 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 (an **itemized** receipt of payment from your contractor, marked "paid" and dated; a copy of the contract with your utility for the system; or, for do-it-yourself systems, an itemized receipt of payment for materials).

Have you received a prior tax credit through the Oregon Residential Energy Tax Credit Program in this tax year? Yes No If yes, for what type of system(s)? _____

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.