

**Site Location**

Address:

City:

Zip Code:

County:



**Oregon Business Energy Tax Credit**

**Solar Thermal**

**Appendix No. 4 to Preliminary Certification Application**

This appendix is for facilities using or producing renewable energy resources and is for solar thermal (water heating) systems only. If the facility contains additional conservation measures, apply separately using the appropriate application. For a solar thermal facility to be eligible to receive a BETC, all qualifying installations must meet the minimum facility specifications described in OAR 330-090-0110(26)(f) and all other applicable rules.

**1. System Description**

▶ Must attach the following additional information:

- OG-100 report for solar collector
- System plumbing diagram (show all components)
- Annual energy savings calculations
- ODOE MEC spreadsheet
- Site plan
- System description
- Site assessment

**System Type**

- Swimming Pool
- Closed Loop Glycol
- Drainback (water only)
- Closed Loop Thermosyphon
- Open Loop Thermosyphon
- Other: \_\_\_\_\_

**What is heat used for (check all that apply)**

- Domestic hot water
- Pool heating
- Process heating
- Space heating

**Array of Collectors**

a. Number of Collectors: \_\_\_\_\_

b. Total Area: \_\_\_\_\_ ft<sup>2</sup>

**Solar Storage**

Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_

Volume: \_\_\_\_\_ Tank R Value: \_\_\_\_\_

Volume/per Collector Area\*: \_\_\_\_\_ gal/ft<sup>2</sup>

\*(1.25 gal/sq ft minimum. May be reduced for daily loads coincident with solar collection period.)

**Heat Exchanger (if used)**

Type (e.g. flat plate, emersion, etc): \_\_\_\_\_ Surface area: \_\_\_\_\_ ft<sup>2</sup>

**Backup Heat Equipment (if used)**

Fuel Source: \_\_\_\_\_ Backup temperature: \_\_\_\_\_ °F

**System Details**

Completely describe how each of the following functions will be provided by the system.

Controls sequence:

Freeze protection:

Overheat protection:

**2. Solar Resource – Solar Thermal Sun Chart & Site Plan**

▶ Attach the following additional information:

- Sun charts and Tilt and Orientation Factor (TOF) chart used to determine Total Solar Resource Fraction (TSRF) of solar collectors or the report from site assessment tool. (i.e. solar pathfinder, solmetric suneye or other industry accepted tools)

Attach sun chart(s) and calculate the annual effective TSRF. Sun charts must be taken from a location on the array which best characterizes the annual shading impact. Facilities must have a TSRF greater than 75% to be eligible for a tax credit.

a. TSRF =

**3. Estimated Annual Energy savings**

▶ Attach the following additional information:

- calculations, notes, software printout and billing data used

a. Describe method used to determine annual energy savings:

- F Chart
- Ret Screen
- TSOL
- Other : \_\_\_\_\_





7. Estimated Facility Cost	
<b>Materials:</b> <u>Collectors</u> <u>Tank(s)</u> <u>Balance of System</u>	Estimated cost:
<b>Labor:</b> <u>Collectors</u> <u>Tank(s)</u> <u>Balance of System</u>	Estimated cost:
<b>Engineering:</b>	Estimated cost:
<b>Other:</b> (Do not include Business Energy Tax Credit review charges)	Estimated cost:
<b>Total of Estimated Costs from above:</b>	7a. \$
<b>Deduct any federal grants:</b> <b>Note: OAR 330-090-0110(20)(I)</b> The sum of any rebates or cash payments under ORS 469.631 to 469.645, 469.649 to 469.659, 469.673 to 469.683, or 757.612(5)(a), or from a public purpose organization and the Business Energy Tax Credit may not exceed eligible costs.	7b. \$
<b>Estimated Facility Cost</b> Take 7a and subtract 7b to get the Total Estimated Project Cost	7c. \$
<b>8. Eligible Facility Cost</b> The eligible facility cost is the lesser of either the maximum eligible cost or the estimated facility cost. The maximum eligible cost is calculated using a spreadsheet that can be downloaded from the Oregon Department of Energy website. The maximum eligible cost will decline as more systems are granted preliminary certifications. Applicants should use the spreadsheet on line to ensure they are using the most recent version.	
<b>8a.</b> Is this going to be placed on or serve a publicly owned facility)? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>8b.</b> Maximum Eligible Cost (from ODOE spreadsheet):	\$
<b>8c.</b> Eligible Facility Cost (lesser of 7c and 8b):	\$

9. Facility Incentives			
	Amount	Secured: Yes or No	
<b>Federal Business Energy Investment Tax Credit (ITC)</b> Indicate how you are taking this incentive, if not checked ODOE will assume you are taking it as a grant and deduct it from your costs	\$		<input type="checkbox"/> Taking as a Tax Credit (do not deduct from estimated cost) <input type="checkbox"/> Taking as a Grant (deduct from estimated costs 7b) <input type="checkbox"/> Not Applicable
Other Federal Grants	\$		<u>Deduct</u> all federal grants from estimated costs 7b
Other Federal Tax Credits	\$		Do <u>not</u> deduct from estimated costs 7b
Energy Trust of Oregon	\$		Do <u>not</u> deduct from estimated costs 7b
Utility Incentives	\$		Do <u>not</u> deduct from estimated costs 7b
Other Incentives	\$		Do <u>not</u> deduct from estimated costs 7b
a. Sub-total Incentives	9a. \$	The sum of any rebates or cash payments under ORS 469.631 to 469.645, 469.649 to 469.659, 469.673 to 469.683, or 757.612(5)(a), or from a public purpose organization or federal grants or credits and the business energy tax credit may not exceed eligible project costs OAR 330-090-0110(20)(l).	
b. Business Energy Tax Credit (BETC) Calculated (8c x 50%)	9b. \$		
c. Total Incentives (9a + 9b)	9c. \$		
10. Oregon Business Energy Tax Credit Requested			
a. Do your Total Incentives (9c) exceed your Estimated Facility Cost (7a)?			<input type="checkbox"/> Yes, go to 10b <input type="checkbox"/> No, go to 10d
If YES, you need to reduce your Business Energy Tax Credit, calculate:			
b. Amount Exceeded: Total Incentives – Estimated Facility Cost (9c – 7a)			10b \$
c. Reduce your BETC by the Amount Exceeded (9b – 10b)			10c \$
d. Maximum Eligible Business Energy Tax Credit (9b or if reduced 10c)			10d \$
<b>e. Oregon Business Energy Tax Credit Requested</b> 10d or a lower amount chosen by applicant. An applicant may request less than their maximum eligible tax credit. If reduced, the lowered tax credit amount will be used when calculating other program priority scores and the applicant will receive points based on the lowered tax credit amount. The applicant shall not receive more than their requested amount. Please note that OAR 330-090-0350(3)(e) allows applicants to apply for less than the maximum eligible tax credit for their project, but this does not change the tier within which the application is reviewed.			10e \$

### 11. Facility Leveraging

Leveraged = the facility owner will be responsible for the initial or later payment of these funds

Non-Leveraged = the facility owner will not be responsible for paying these funds back

	Amount	Secured: Yes or No	Type of Funds
Owner's funds	\$		Leveraged
Loans (including SELP Loan)	\$		Leveraged
Other funds (Leveraged) _____	\$		Leveraged
Sub-Total Incentives (9a) Includes grants, tax credits, incentives	\$		Non-Leveraged
Business Energy Tax Credit (10e)	\$		Non-Leveraged
Other funds (Non-Leveraged) _____	\$		Non-Leveraged
<b>a. Total project cost</b>	\$	<b>The total should equal Section 7a</b>	

### 12. Simple payback period—Calculate how long the facility will take to pay for itself.

a. Total estimated facility cost (7a)	12a. \$
b. Facility value. (Enter zero for any item below that does not apply to your facility.)	
1. Cost savings per year (5d) \$	
2. Total first <b>full</b> year fuel savings revenue, no escalation (6b) \$	12b. \$
c. Simple payback: total eligible facility cost (12a) ÷ total facility cost savings (12b)	years