



# **Business Energy Tax Credits Technical Requirements**

Effective January 1, 2006

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The following technical specifications are required to be met, in addition to meeting all of the requirements of OAR 330-090-0105 through 150 (e.g. substantial savings, appropriate simple payback, application prior to start date, etc.).

**HVAC Equipment**

Combustion equipment (furnaces, boilers, water heaters, and burners) must have a minimum combustion efficiency of 86 percent Annual Fuel Use Efficiency (AFUE) rating. An exception may be granted if the system efficiency is proven to be higher due to application of a different distribution system (e.g.: radiant systems in high infiltration spaces), control strategies (e.g.: pony boilers), or reduced stand-by losses (e.g.: low-mass boilers).

Heat pumps must have an energy input that is entirely electric and be rated with a Heating Season Performance Factor (HSPF) or Coefficient of Performance (COP) as follows or higher:

Air source heat pumps .....	8.5 HSPF
Water source heat pumps .....	4.2 COP or 10 % greater than COP listed in 13-M of OR code
Air Conditioning	10 % greater than COP listed in 13-L of OR code

**Building Automation Controls**

**For existing systems within service life:** The baseline will be based on the existing system’s capabilities in fully functional and operating condition (savings and costs associated with maintenance and repair activities are not eligible). Eligible costs will be based on the incremental cost and energy savings of the proposed system as compared to a fully functioning baseline system.

**For systems beyond service life or new buildings:** The minimum standard or baseline system will have the following features, plus any additional features required by code:

- Start/Stop Program
- Night Setback Program
- Enthalpy Control Program (Economizer)
- Lighting Control Program (Sweep>5,000 sq.ft.)
- Variable Flow (10 hp and above)

The baseline system must incorporate similar technologies to the proposed system (e.g. do not compare a new DDC-based system with a new pneumatic-based system).

Eligible costs and energy savings will be based on the incremental cost and energy savings between the proposed system and the baseline system.

Only the components of the project that achieve energy savings will be considered eligible. For example, many control-based projects include additional scope that may be infrastructure upgrades or features that add convenience to the owner/operator but do not achieve energy savings. If the component does not achieve energy savings it will not be considered an eligible cost.

### **Residential Energy Tax Credit Qualifying Equipment**

Equipment that qualifies for the Residential Energy Tax Credit (RETC) is eligible for the Business Energy Tax Credit (BETC) in either of the two following methods:

A project that consists solely of equipment that is on the qualifying equipment list at the time of the application submittal may apply as outlined in the Oregon Administrative Rules 330-90-105 through 150 using operating schedules, capacity, efficiency and cost information to prove qualification, or

That project, made up of qualifying equipment may also choose to effectively take the RETC through the BETC Program by using the following formula.

Residential Tax Credit Amount  $\div$  0.35 = BETC Eligible Cost  
(from qualifying appliance list)      (amount from which the 35% credit is calculated)

For example the AMANA Model NAV8005 clothes washer qualifies for a \$115 RETC. Therefore, the eligible cost for the BETC would be \$328.57 (\$115 divided by 0.35)

## **Envelope Measures**

Replacement windows must have a U-value of 0.35 or less for residences. U-values must be 10% better (lower) than code requirements for commercial.

Insulation that exceeds code requirements or when not required by code is an eligible measure if substantial savings and economic criteria required in the OARs are met.

## **Rental Weatherization**

For purposes of meeting the requirements of ORS 469.207 when a utility audit is not available, a vendor-provided audit demonstrating substantial savings and approved by the Department of Energy will suffice. Another option would be a self-audit based upon the following list when accompanied by U-values, areas, and other appropriate general information regarding the measures.

Caulking, weather-stripping and other prescriptive actions to seal the heated space and ducts in a dwelling;

Insulation of ceilings or attics to R-38 if achievable in areas with R-19 or less, including insulation installed on flat roofs and associated ventilation;

Insulation of outside walls to a nominal R-13 if achievable in areas where no insulation is present, of unfinished walls adjacent to unheated areas to R-21 if achievable in areas where no insulation is present, and of finished walls adjacent to unheated areas to R-11 if achievable in areas where no insulation is present;

Insulation of floors over unheated spaces to at least R-25 if achievable in areas where no insulation is present, and materials to support the insulation and needed ground cover and ventilation;

Insulation and sealing of supply and return air ducts in unheated spaces to at least R-8 if achievable and no insulation is present and the ducts are in unheated areas;

Insulation of water heaters, water pipes, or steam pipes in unheated spaces and for at least 10 feet from the water heater in unheated areas to at least R-3 if achievable and no insulation is present;

Double-glazed windows (including sliding doors) with a U-value of 0.35 or lower, when replacing single-glazed windows.

Insulated exterior doors with a U-value of 0.20 or lower (R-5 or higher).

Programmable thermostats;

Blower door tests and blower door assisted whole house air sealing or duct sealing performed by a contractor certified by the Department of Energy's Residential Energy Tax Credit contractor certification program;

**Hybrid Electric Vehicles**

The following table includes vehicles that qualify for the Business Energy Tax Credit as hybrid electric vehicles. Other vehicles may also qualify. These vehicles qualify based on meeting the criteria of the definition in OAR 330-090-0110 (22). The eligible cost is the lower of either the incremental cost or the simple payback limit.

Hybrid Vehicle	Comparative vehicle	Incremental MSRP	Simple Payback Limited	Net Eligible Cost
Honda Civic™ Hybrid	Honda Civic™ (4-door)	\$6,240	\$4,785	\$4,785
Honda Insight™	Honda Civic DX™ (2-door)	\$6,640	\$6,693	\$6,640
Toyota Prius™	Toyota Corolla™	\$6,395	\$5,399	\$5,399
Ford Escape™	Ford Escape™	\$6,975	\$7,428	\$6,975
Honda Accord™	Honda Accord™ EX (4-door)	\$7,090	\$2,826	\$2,826
Toyota Highlander™	Toyota Highlander™	\$7,690	\$7,993	\$7,690
Mercury Mariner™	Mercury Mariner™	\$ 6,095	\$7,176	\$6,095
Lexus RX 400h™	Lexus RX™ 330	\$11,110	\$8,380	\$8,380

Notes:

Most recent available model year

MSRP based on information from [www.edmunds.com](http://www.edmunds.com)

Simple payback based on mileage obtained from [www.fueleconomy.gov](http://www.fueleconomy.gov)

**Cogeneration**

Gas-fired co-gen equipment must be 10 percent more efficient than standard electricity generation as determined by the Department of Energy. Therefore, using fuel chargeable to power heat rate calculations\*, a project would need a heat rate of 6,120 Btu/kWh (10 percent better than the 6,800 Btu/kWh current standard generation). Projects that do not meet this requirement may still qualify in part for a credit relating to the heat recovery portion of the project.

\* **FCP = (FI - FD)/ P, where:**

FCP = Fuel chargeable to power heat rate.

FI = Annual fuel input applicable to the co-generation process in Btu (higher heating value).

FD = Annual fuel displaced in any industrial or commercial process, heating, or cooling application by supplying useful thermal energy from a co-generation facility

P = Annual net electric output of the co-generation facility in kilowatt-hours.

**Sustainable Building Projects**

(1) To be eligible for a tax credit, sustainable building projects must achieve a minimum rating of "Silver" using the U.S. Green Building Council's LEED-NC™, LEED-CS™, or LEED-CI™ rating system in affect as of the project registration date. Projects receiving a "Gold" or "Platinum" rating will be awarded proportionally larger tax credits, as calculated by the Energy Office.

In addition a project must:

(a) In achieving its LEED™ rating, the project must earn at least two points under Energy & Atmosphere Credit 1 (Optimize Energy Performance).

(b) In achieving its LEED™ rating, the project must earn at least one point under Energy & Atmosphere Credit 3 (Additional Commissioning).

(c) Each LEED-NC™ or LEED-CS™ project must calculate and report the building's annual solar income in Btu (not the site income). The calculation must account for the contribution from each face (orientation with surfaces exposed to direct sunlight) and must take into account any existing or reasonably expected shading (by other buildings or vegetation, e.g.) of these surfaces. Calculations may ignore such things as rooftop or wall-mounted mechanical system components.

(3) Eligible cost will be calculated in accordance with the following table:

<b>Building Area</b>	<b>Silver</b>	<b>Gold</b>	<b>Platinum</b>
<b>LEED-NC™</b>			
First 10,000 sq. ft.	\$10.00/sq. ft.	\$13.57/sq. ft.	\$17.86/sq. ft.
Next 40,000 sq. ft.	\$5.00/sq. ft.	\$5.71/sq. ft.	\$9.29/sq. ft.
>50,000 sq. ft.	\$2.00/sq. ft.	\$2.86/sq. ft.	\$5.71/sq. ft.
<b>LEED-CS™</b>			
First 10,000 sq. ft.	\$7.00/sq. ft.	\$9.50/sq. ft.	\$12.50/sq. ft.
Next 40,000 sq. ft.	\$3.50/sq. ft.	\$4.00/sq. ft.	\$6.50/sq. ft.
>50,000 sq. ft.	\$1.40/sq. ft.	\$2.00/sq. ft.	\$4.00/sq. ft.
<b>LEED-CI™</b>			
First 10,000 sq. ft.	\$3.00/sq. ft.	\$4.07/sq. ft.	\$5.36/sq. ft.
Next 40,000 sq. ft.	\$1.50/sq. ft.	\$1.71/sq. ft.	\$2.79/sq. ft.
>50,000 sq. ft.	\$0.60/sq. ft.	\$0.86/sq. ft.	\$1.71/sq. ft.

(4) Projects using on-site renewable energy production technologies such as photovoltaic or wind technologies may treat these elements as a separate project for tax credit purposes, provided that any points earned for such features in the LEED™ rating are not required to achieve the rating on which the Sustainable Building Project credit is to be based. In cases where subtracting such points would result in a lowering of the LEED™ rating (e.g. from Gold to Silver), the tax credit will be awarded on the basis of the lower rating. The rating point total, net of renewable generation credits, can never be less than that required for a Silver rating.