

PCEF SINGLE FAMILY ELIGIBLE MEASURES



Up to 30% of the PCEF funds for clean energy projects may be applied to life/health/safety measures required to enable energy efficiency or renewable energy upgrades. **The 30% life/health/safety allowance** is intended to first cover items required to enable energy-saving measures. Once those have been satisfied, the 30% may be applied to other life/health/safety measures needed in the home.

The 70% energy efficiency measures must appear on the eligible measures list or be pre-approved by PCEF or your quality assurance provider.

When additional non-PCEF, energy-saving funds are added to a clean energy project, the life/health/safety allowance may increase to up to 50% of PCEF funds, IF the overall clean energy project budget remains 30% life/health/safety and 70% clean energy.

<p>Calculation: The maximum available from PCEF for life/health/safety measures at a single site is the lessor of A or B:</p>	<p>A. 30% of the total project funds (PCEF funds & other clean energy funds) = (Cost of Project EE Measures / 70%) x 30%</p> <p>B. 50% of the PCEF project funds included in A above. = Cost of Project EE Measures - Other EE Incentives or Rebates</p>
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Example: A clean energy project includes a total of \$41,000 in energy-saving measures and will receive other energy incentives of \$10,000 from the ODOE HEER and \$4,000 from ETO.

A. 30% of total project funds = (\$41,000 EE Measure costs / 70%) x 30% = **\$17,571**

B. 50% of PCEF funds = EE Measure costs - \$14,000 other energy incentives = \$27,000

Result: \$17,571 may be applied to Life/health/safety measures.

Project scopes of work shall prioritize the highest energy-saving measures, as determined by energy modeling with PCEF-approved modeling software. All projects must increase energy efficiency by at least 10% over existing conditions.

PCEF will not fund any non-electric appliances. Windows, doors, lighting, and appliances may not be included unless installed in combination with other energy-saving measures.

Exceptions: If a project needs a solution that differs from our specifications or requirements, please reach out to us to discuss possible exceptions.

PCEF Home Energy Retrofit Quality Assurance (QA) Process

A PCEF-assigned QA Provider will partner with you from project initiation through completion and will guide your project through the PCEF eligibility process. It is crucial to include your QA Provider early and often in your project design and development. A site assessment and project scope of work that aligns with Building Performance Institute or equivalent standards shall be submitted for approval before beginning each project. The initial assessment will include energy modeling with a PCEF-approved modeling program.

The scope of work shall include:

- All work to be completed on a project, even if not paid for by PCEF or will be completed at a later date.
- Costs and full details of each measure, including equipment manufacturer and model numbers.

The project will align with PCEF requirements that include the following:

- PCEF Home Energy Retrofit Process
- PCEF Installation Checklists
- PCEF Eligible Measures

QA Provider will conduct site or remote inspections as required to ensure that all installation meets PCEF requirements. Any corrections required after inspections shall be completed within 30 days of inspection. For questions, please contact your QA provider or your PCEF project manager.

CONSERVATION MEASURES	MINIMUM REQUIREMENTS	Included in Energy Saving Measures (Min 70% of construction budget)	Enabling & Life/Health/Safety (Max 30% of construction budget. This list is not exhaustive).
Whole Home Air Sealing	Pre and post blower door test. Combustion safety testing, as applicable.	Floor register sealing where there are penetrations to unconditioned spaces.	Asbestos-containing insulation removal.
	Ensure ventilation equipment is capable of meeting ASHREA 62.2 post air sealing upgrade or include upgrade in scope.	Carpentry required for air leakage reduction, such as building stem walls between a basement & crawlspace, attic/ crawl hatch doors, etc.	
	Air sealing at all mechanical, electrical, and plumbing penetrations that are accessible, going from conditioned areas of the home to unconditioned (attic, crawlspaces) spaces.	Radon test provided to occupant at end of project.	Radon mitigation system when radon level equals 4 pCi/L or more.
Insulation and Air Sealing - Basement Rim Joist	Seal basement perimeter rim joist and sill plate with caulk, mastic, spray foam or other approved air barrier product.	Include elements needed to meet code (e.g. install ignition barriers over foam insulation).	
	Minimum R-15 insulation.		
Underfloor Insulation	Insulation must fill cavity.	Additional vent installation in crawlspace.	Water mitigation for wet crawlspace.
	Air seal all penetrations from crawlspace to any conditioned living space.	Insulation removal due to vermin or mold.	
	All exposed soil to be covered with 6 ml black vapor barrier.	Dryer or exhaust fan venting (including permit fees).	
	All water pipes in unconditioned space to be insulated.		
	Insulate and weatherstrip crawlspace access.		
	Support insulation that is sagging and not in contact with the floor.		
Exterior Wall Insulation	Insulation must fill cavity.	Lead paint testing/Lead safe practices as required for Lead RRP License.	Mitigating water leaks and water intrusion.
		Siding removal for traditional wall insulation installation.	Dry rot repair.

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Exterior Wall Insulation, cont.		Re-installation of siding/new siding if removed siding breaks. Leave primed & paint ready.	Knob and tube decommissioning.
		Drywall hole patching/texturing/painting if wall installation is not feasible from exterior.	Siding replacement.
Flat Attic Insulation (includes knee wall rake areas)	Final insulation R-value must meet or exceed state code.		Roof replacement.
	Air sealing at all mechanical, electrical, and plumbing penetrations that are accessible, going from conditioned areas of the home to unconditioned attic spaces.	Insulation removal due to mold or vermin as required for installation of attic insulation.	Sealing roof leaks as needed to address attic water intrusion.
	Exhaust devices shall be ducted to dedicated roof vents and sealed with no gaps to prevent moisture from entering attic.	Access door rebuilding or drop-down stair cover.	Storage platform - (raised to accommodate insulation installed to code r-value).
	Insulate and weatherstrip attic access, insulation must be attached and secured to attic access.		Asbestos mitigation.
	Build dam around attic access.		
	Contractor to perform minimum NFA calculation for roof venting. If high and low venting is present, a 1:300 ratio shall be used. If only high venting is present, a 1:150 ration shall be used. If existing venting is not adequate, install vents to meet minimum ratios.		Knob and tube wiring decommissioning as required for installation of attic insulation.
	Insulate exhaust fan venting.		
	Install soffit vent baffles.		
	Non-IC rated fixtures shall be baffled with non-flammable material and maintain a minimum 3 inches of spacing around it.		
Knee wall Insulation	Insulation must fill cavity.		
	Install house wrap or other permeable material on attic side of batt insulation to prevent wind washing.	Carpentry needed for hatch door air selaing.	Knob and tube wiring decommissioning as required for installation of attic insulation.

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Knee wall Insulation, cont.	Air sealing at all mechanical, electrical, and plumbing penetrations that are accessible, going from conditioned areas of the home to unconditioned attic spaces.	Insulation removal.	
	If no blocking exists at kneewall floor transition, then seal beneath each accessible kneewall cavity with the installation of a rigid air barrier caulk or spray foam product.		
	Weatherstrip and insulate knee wall access.		
	Final insulation R-value must meet or exceed state code.		
	All duct insulation is to be secured with twine.		
	Vinyl faced wrap to be used in human contact areas.		
Duct Sealing & Repair	Post duct blaster test shows improvement over pre duct blaster test.	Seal interior register penetrations to unconditioned spaces.	
	Fasten loose or separated metal ducting with sheet metal screws.	Replacing panned returns in unconditioned crawlspaces or attics to modern ducting in unconditioned space.	Asbestos tape mitigation on ductwork (unconditioned space) as required for duct sealing.
	Seal all ducts outside conditioned space with UL 181 approved mastic paste.		
	All horizontal ductwork shall be supported every 4' and all vertical ductwork supported every 6'.		
	Flexible ductwork should be pulled tight and cut to an appropriate length.		
	If duct is in contact with ground, install closed cell rigid foam insulation under the ducts to prevent contact.		
	Panduit strap of inner liner and outside insulation on flexible ducting.		
HVAC	Minimum 10 year equipment warranty.	Removal of oil from unused oil tank.	Oil tank decommissioning.
	Electric equipment only which shall be sized with an approved heat load calculation.	Chimney liners, as needed when venting decoupled from HVAC venting.	Electrical, including Panel/Service upgrades as required for installation of system selected when fuel switching.

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HVAC, cont.	Choose inverter-driven, variable-speed heat pumps that are sized with a heat load calculation for the area to be served.		Asbestos removal as required for HVAC replacement (for example material that is attached to components being replaced)
	All heat pumps installed with backup heat require a balance point sizing calculation to determine the lock-out temperature setting that minimizes use of back-up heat and maximizes use of the heat pump. The system capacity shall match the heat load calc requirements as close as possible.	HVAC Sizing Tool: Login (betterbuiltnw.com)	Asbestos removal, in areas <u>not</u> critical for HVAC replacement.
	Commissioning: During start-up of a heat pump system the installer will: (1) Perform Pressure and Evacuation Tests per manufacturers' requirements. (2) Set auxiliary heat-lock out to 25 degrees or lower if electric resistance backup heat is installed. (3) Run system on each mode for no less than five minutes or per manufacturer's installation instruction to ensure the system produces desired results.		
	Pre-paid maintenance plans are encouraged for HVAC installaitons.		
HVAC Controls	Must be compatible with installed equipment and not impact functionality or efficiency.	Smart thermostats, including Nest & Ecobee. Cannot be a stand alone measure.	
HRV/ERV	Pre-approval required. Installation possible when Possible for multi-family when replacing a less efficient ventilation system. Obtain approval from PCEF project manager.		
Doors and Windows	Replacement windows and doors must meet Energy Star Northern Climate Zone requiments.	https://www.energystar.gov/products/building_products/residential_windows_doors_and_skylights/climate_zone/search	Installing new windows or doors larger than the original size.
	Air seal accessible cavities during window replacement.	Dry rot repair as required for door or window replacement.	Changing door to one that is less efficient (ex. Replacing solid door with a full-lite door).

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Doors and Windows, cont.		Energy Star low-e storm windows.	
Water Heater Replacement	If replacing water heater, choose an electric heat pump water heater. Exception may be allowed for locations in conditioned spaces where noise, cool air exhaust or intake air limitations exist.	Electrical outlets or circuits, as needed for water heater installation.	Electrical Panel/Service replacement.
	Existing condition is non-electric or less efficient	Heat pump water heater cold exhaust ducting in conditioned space.	
		Condensate pump.	
Lighting	Replace existing light fixture with LEDs.		New, non-replacemet light fixtures.
Appliances	Must be Energy Star fridge, dishwasher, washer induction cooktop or dryer.		
Exhaust fans	New exhaust fans must be Energy Star rated.	Electrical to the exhaust fan.	
	Exhaust fans should be ducted to the nearest feasible location without any sagging and minimal bends. Flexible ducting should be cut to length and fastened with panduit straps. Hard pipes should be fastened with screws and sealed with mastic paste.	Radon test provided at end of project.	
	Exhaust fan ducting shall be ducted to a dedicated roof vent with no gaps to prevent moisture from entering the attic.	Mechanical permit fee (required for new fans)	
	Exhaust fan ducting must be insulated to a minimum of R-4.	Timers and humidistats.	
	Exhaust fan flow rate should be tested upon completion of install. Airflow must be within 15 CFM or 15% of manufacture's specifications.		
	Automated controls such as timers, and humidistats shall be installed with the fan.		

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Solar	Must complete total solar resource analysis including shading analysis; installed system must be consistent with analysis findings.		Electrical, including Panel/Service upgrades as required for installation of system selected.
Solar, cont.	Panel placement must be consistent with area defined for maximum output.		Structural upgrades as needed for a solar installation.
			Roof replacement.
Water Fixtures	Fixtures supplying hot water will be EPA WaterSense approved.	WaterSense US EPA	
EV Charging			
Maintenance Plans			
OTHER			
Asbestos	Project scopes which would disturb existing asbestos or vermiculite. Qualified third-party asbestos testing as required by Oregon statute. https://www.oregon.gov/deq/FilterDocs/asb-SurveyFS.pdf		Asbestos mitigation as required to perform EE measures for walls and other larger asbestos jobs (see exceptions above). If asbestos is present, follow all DEQ/EPA rules and procedures. https://www.oregon.gov/deq/FilterDocs/asb-2018rules.pdf
Radon	In projects including air sealing or exhaust ventilation, radon testing will be conducted as a component of the project		Mitigation when 'end of project' test results are 4 pCi/L (picocuries per liter) or more.
Mold Mitigation			Mold and moisture mitigation.
Pest Mitigation	Insulation which has evidence of vermin intrusion.	One-time extermination and mitigation.	Pest mitigation (year contract).
Smoke & CO Detectors	Smoke and carbon monoxide detectors shall be installed according to code when any combustion equipment or an attached garage is present.		