

# PCEF CLEAN ENERGY MULTIFAMILY RETROFIT ELIGIBLE MEASURES for COMMUNITY RESPONSIVE GRANTS



## Clean Energy (Energy Efficiency or Renewable Energy) Measure Requirements

1. Grantee's entire energy efficiency or renewable energy (EE/RE) construction budget or annual EE/RE construction budget, if a multi-year grant, will achieve a 70/30 split of energy and non-energy measures. Individual projects may reach, but not exceed a 60/40 split.
2. The 30% non-energy allowance is intended to first cover required upgrades that enable or improve EE/RE measures. Once that has been satisfied, funds remaining in the 30% may be used for other life/health/safety measures needed in the home.
3. The 70% EE/RE measures must appear on the eligible measures list or be program approved.
4. At a minimum, any EE/RE measure not specifically identified here must increase energy efficiency by at least 10% over the replaced equipment or existing conditions.
5. Installations must comply with PCEF Installation Checklists. PCEF Eligible Measures are intended for use as one part of the PCEF quality assurance process, by PCEF grantees and contractors, and with scope approval from QA Provider.
6. Program approval is required for the installation of non-electric equipment or for switching from a ducted to a non-ducted heating system.
7. The following measures will not be funded unless installed in combination with other measures: windows, doors, lighting and appliances.

## Quality Assurance Process

1. PCEF Eligible Measures are intended for use as one part of the PCEF quality assurance process, by PCEF grantees and contractors.
2. PCEF assigned QA Provider will work as a partner from your project initiation through completion to help guide your project through the PCEF eligibility process. It is crucial to include your QA Provider early and often in your design and development.
3. Installations must comply with the PCEF Installation Checklists listed here.
4. For each project site, grantee and contractor will be required to submit a scope of work for PCEF-funded measures that demonstrate the proposed project will meet the requirements as outlined in the PCEF Installation Checklists. Scope of work may include (but is not limited to) the following:
  - a. Building description, including number of floors, units, configuration and use.
  - b. Bid or contractor proposal for planned clean energy upgrades including weatherization, HVAC upgrades, plumbing, venting, and electrification.
  - c. Material specifications including quantity, manufacturer, model numbers, etc.
  - d. Additional documentation as requested.
5. QA Provider will work closely with the grantee and contractor to ensure the scope will meet PCEF requirements prior to installation. Grantees and contractors should not install clean energy measures prior to written approval of the scope of work by PCEF or the QA Provider.
6. QA Provider will conduct site inspections or visual or virtual inspections as required to ensure installation meets PCEF requirements.
7. QA Provider will provide grantee and PCEF a final Quality Assurance report of the installation.

For questions, please contact your PCEF QA provider or PCEF grant manager

EE/RE Measures	Considerations & Qualifiers	Minimum Installation Requirements	Included in EE/RE (70% Cost for Retrofit)	Included in 30% Health/Life/Safety Costs for Retrofit (Not Exhaustive)
<b>Weatherization Measures</b>	All available opportunities for weatherization upgrades should be evaluated and pursued prior to proposing HVAC upgrades to ensure proper HVAC equipment sizing.			
<b>Attic Insulation &amp; Air Sealing</b>		See Vented Attic Checklist	Carpentry required for air leakage reduction, such as building stem walls between attic/ crawl hatch doors, etc.	Roof replacement.
		See Unvented Attic Checklist	Insulation removal due to mold or vermin as required for installation of attic insulation.	Sealing roof leaks as needed to address attic water intrusion. (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain 70/30 split).
		R-49 or greater or fill the cavity.	Access door rebuilding or drop-down stair cover.	Storage platform – (raised to accommodate insulation installed to code R-value).
		Includes prescriptive air sealing of all gaps, cracks, seams, and penetrations between conditioned and unconditioned space.		Asbestos mitigation.
		Exhaust fan requirements can be bypassed if installing ERV system.		Knob and tube wiring decommissioning as required for installation of attic insulation. (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain 70/30 split).
<b>Floor Insulation &amp; Air Sealing</b>		See Vented Crawlspace Checklist	Floor register sealing where there are penetrations to unconditioned spaces.	Asbestos-containing insulation removal.
		See Unvented Crawlspace Checklist	Carpentry required for air leakage reduction, such as building stem walls between a basement & crawlspace, etc.	Radon mitigation system when radon level equals 4 pCi/L or more. (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain a 70/30 split).
		R-30 or greater or fill the cavity.	Include elements needed to meet code (e.g. install ignition barriers over foam insulation).	Water mitigation for wet crawlspace.
		Includes prescriptive air sealing of all gaps, cracks, seams, and penetrations between conditioned and unconditioned space.	Additional vent installation in crawlspace.	

			Insulation removal due to vermin or mold.	
			Dryer or exhaust fan venting (including permit fees).	
			Radon test provided to occupant at end of project.	
<b>Wall Insulation</b> (includes exterior, knee wall, and rim joist)	Homes or buildings with vinyl, aluminum, asbestos or stucco siding/exterior, wall insulation should be installed from the interior.	See Framed Wall Insulation Checklist	Lead paint testing/Lead safe practices as required for Lead RRP License.	Mitigating water leaks and water intrusion.
		See Masonry Wall Insulation Checklist	Siding removal for traditional wall insulation installation.	Dry rot repair.
		See Basement Wall Insulation Checklist		Knob and tube decommissioning.
		For Exterior Wall: R-11 or fill cavity All heated exterior walls must be insulated	Re-installation of siding/new siding if removed siding breaks. Leave primed & paint ready.	Siding replacement.
		For Knee Wall: R-15 for 2x4 cavities R-21 for 2x6 cavities	Drywall hole patching/texturing/painting if wall installation is not feasible from exterior.	Knob and tube wiring decommissioning as required for installation of attic insulation. (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain 70/30 split).
		For Rim Joist: R-15	Carpentry needed for hatch door air sealing.	
			Insulation removal.	
<b>Windows</b>	Replace single-pane or double-pane windows.	See Windows Checklist	Dry rot repair as required for door or window replacement.	Installing new windows that are larger than the original size.
		Replacement window must be Northern Climate Energy Star .26 U-value or better.  <a href="https://www.energystar.gov/products/residential_windows_doors_and_skylights/key_product_criteria">https://www.energystar.gov/products/residential_windows_doors_and_skylights/key_product_criteria</a>		
<b>Low E Storm Windows</b>	For historic buildings or buildings with unchangeable facades, interior Energy Star Low-E Storm Windows are acceptable to meet the minimum efficiency U-value requirement.	Energy Star certified Low-E		
		Storm windows must be permanently installed and in the same opening type as existing prime windows. Exterior storm windows must be oriented with the low-e coating facing interior of site.		
		Frames must not make direct contact with metal-framed prime windows.		
<b>HVAC Upgrades</b>  Duct Sealing, Repair & Insulation	Duct Sealing must be included in all proposed HVAC upgrades. PCEF will prioritize funding for Duct Sealing and repair above HVAC upgrades.			
		See Duct Sealing Checklist	Seal interior register penetrations to unconditioned spaces.	Asbestos tape mitigation on ductwork (unconditioned space) as required for duct sealing. (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain 70/30 split).
	The entire length of the duct system (e.g., in the attic, basement, or crawlspace) shall be inspected and damaged ducts shall be repaired or replaced. Flexible ducts with excessive length shall be cut to proper length and sharp bends shall be corrected so bends are greater than or equal to one duct diameter radius.		Replacing panned returns in unconditioned crawlspaces or attics to modern ducting in unconditioned space.	

		All ducts in the unconditioned space should be properly sealed and insulated.		
Ductless Heat Pump				
	At least one indoor unit must replace electric resistance heat in the primary living space.	See PCEF Heat Pump Standards		
		See Ductless Heat Pump Checklist		
		Choose inverter-driven, variable-speed heat pumps that are sized with a heat load calculation for the area to be served.		
		Perform and document a load calculation. Match the system capacity to the calculation as closely as possible.		
Ducted Heat Pump				
	Where possible decommission existing electric resistance or gas heating system when replacing with efficient heat pump.	See PCEF Heat Pump Standards	Electrical, including Panel/Service upgrades as required for installation of system selected when fuel switching. (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain 70/30 split).	Asbestos removal as required for HVAC replacement (for example material that is attached to components being replaced). (This work is an eligible exception for exceeding 30% with approval and when portfolio is balanced to maintain 70/30 split).
	If adding heat pump coil to an existing gas furnace – contact PCEF administrator or QA provider.	See Ducted Heat Pump Checklist		
		Choose inverter-driven, variable-speed heat pumps that are sized with a heat load calculation for the area to be served.		
		Perform and document a load calculation. Match the system capacity to the calculation as closely as possible.		
		Controls must be set with an auxiliary heat lockout setting when available.		
ERV/HRV				
	Commissioning required	See ERV/HRV Checklist		
		Minimum SRE of 80%		
HVAC Controls or Smart Thermostat				
		Use heat pump proprietary control system where appropriate.		
<b>Lighting &amp; Appliances</b>				
Lighting (Common Area or Exterior Only)				
	Existing HID lighting	Replace existing light fixtures with LEDs.		
		Must include occupancy sensors or control system.		
Heat Pump Water Heater				
	Electric resistance or natural gas water heater	See Heat Pump Water Heater Checklist	Electrical outlets or circuits, as needed for water heater installation.	
		Heat pump water heater should be Energy Star certified	Heat pump water heater cold exhaust ducting in conditioned space.	
			Condensate pump.	

			Electrical Panel/Service replacement if replacing gas water heating.	
Low flow fixtures				
	Replace/install hot water fixtures (faucets, showerheads, etc.) that meet WaterSense standards. <a href="https://www.epa.gov/watersense">https://www.epa.gov/watersense</a>			
Commercial Clothes Washer				
	Replace existing common area washers.	Must have an MEF of 2.2 or greater and IWF of 4.0 or less; must be front-loading and used in common area only.		
Clothes Washers & Dryers				
	Replace existing in-unit clothes washers or dryers	Energy Star certified in-unit clothes washers		
Refrigerators				
	Replace existing in-unit refrigerator	Must be on the Energy Star 5.0 certified list		
<b>Electrification</b>				
Rooftop 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.	Structural upgrades as needed for a solar installation.
				Roof replacement.
Battery Backup				
	Existing solar only			