



Sonoma County Energy Independence Program APPENDIX A – ELIGIBLE IMPROVEMENTS

The Sonoma County Energy Independence Program offers SCEIP funds for a number of equipment types, including water conservation measures, energy efficiency measures, solar systems, and other innovative, energy-saving and energy generation custom measures. In each case, if a rebate is available to the property owner to be applied to the purchase price, that amount must be deducted from the amount of financing requested.

I. WATER CONSERVATION MEASURE

A. Residential Indoor Water Conservation Measures.

- (1) High efficiency toilets (average flush volume of 1.28 gallons or less)
- (2) Showerheads (1.5 gpm)
- (3) Bathroom aerators (1.5 gpm)
- (4) Hot water delivery options, as defined by the Energy Star [“Volumetric Hot Water Savings Guidelines”](#)
 - (a) Hot water recirculation systems use a hot water circulating pump to pump hot water from the water heater, through the hot water piping, and on back to the water heater through an additional length of pipe that runs from the furthest fixture back to the water heater.
 - (b) Demand initiated hot water systems use a recirculation pump to rapidly pull hot water from a water heater while simultaneously sending cooled-off water from the hot water lines back to the water heater to be reheated.
 - (c) Whole house manifold systems consist of a manifold (trunk line) connected to the water heater from which individual pipes (twigs) are connected to each water fixture.
 - (d) Core plumbing systems are hot water distribution systems where water volumes in the pipes are reduced by a combination of smaller pipe diameters and shorter pipe runs due to a centrally located water heater.
- (5) Demand initiated water softeners, Energy Star rated
- (6) Demand initiated or instantaneous hot water heaters

- (7) Hot water pipe insulation (minimum of R4)

B. Residential and Commercial Outdoor Water Conservation Measures.

- (1) A weather-based irrigation controller, or Smart irrigation controller with a rain shut off device, uses weather data and site information such as plant type and sprinkler system output to adjust watering times and frequency. This provides more efficient watering, reduces water run-off and improves the health of your landscape.
- (2) Permanently installed rainwater cisterns.
- (3) Drip irrigation systems in gardens, planters and beds. Drip irrigation can save up to 70% in water usage due to more efficient delivery.
- (4) Matched precipitation sprinklers so that all spray patterns and radius deliver water evenly over the landscape area.
- (5) Some local jurisdictions permit graywater systems. Please check with your local jurisdiction before applying. Your application would then be reviewed by Program staff to insure that it met other Program criteria (i.e., saves water).

C. Commercial Water Conservation Measures.

- (1) All applicable water conservation measures listed for “residential”
- (2) Pre-rinse spray valves (1.2gpm)
- (3) Urinals (pint)
- (4) Waterless urinals
- (5) Bathroom aerators (0.5 gpm)

D. Commercial Custom Measures.

- (1) Industrial process water use reduction
- (2) Recycled water source
- (3) Deionization
- (4) Filter upgrades

- (5) Cooling condensate reuse
- (6) Foundation drain water
- (7) Cooling tower conductivity controllers

E. Residential and Commercial Recycled Water Use (Custom Track Measures).

- (1) Outdoor irrigation

II. ENERGY EFFICIENCY MEASURES

The Sonoma County Energy Independence Program provides services and funding for a wide range of Energy Star-rated efficiency measures, including many Energy Efficiency measures for which property owners can get rebates as well as SCEIP funding. Excepting the HVAC equipment as noted below, efficiency measures must meet the performance criteria stated in the list of Eligible Improvements or the Energy Star minimum efficiency levels.

For all packaged and central air conditioning systems funded in this Program, the minimum efficiency levels shall be as required by the current minimum requirements set forth in List of Eligible Improvements.

All other proposed efficiency measures will be considered in the Custom Measure Track.

The County of Sonoma anticipates that Energy Star requirements will “ratchet up” to greater efficiency levels over time. Energy Star will also become more inclusive of technologies over time. Thus, the SCEIP will evolve with Energy Star and the market for energy-efficient technologies.

The following Energy Star measures – among others – are eligible in the Efficiency Track.

A. Residential Energy Efficiency Measures.

- (1) Geothermal exchange heat pumps
 - (a) Minimum efficiencies
 - (i) Ground source exchange open loop system 17.8 EER or higher
 - (ii) Ground source exchange closed loop system 15.5 EER or higher
- (2) Home EV charging installations

(3) HVAC Systems

- (a) Minimum efficiencies
 - (i) Split systems with 14 SEER and 12 EER or higher rating
 - (ii) Natural gas furnaces of 90 AFUE or higher
 - (iii) Package systems with 14 SEER and 11 EER or higher rating
- (b) Home energy management control systems
- (c) Whole house fan systems
- (d) Duct insulation, meeting Energy Star guideline
- (e) Duct sealing
- (f) Combined hydronic systems with a coefficient of performance (COP) meeting and or exceeding Title 24 requirements
- (g) Hydronic radiant heating systems – in combination with energy efficient water heating
- (h) High Efficiency HVAC Air Filter / Air Cleaner
 - (i.) Electronic Air Cleaner /Filter – Whole House
 - (ii.) Input Power: 24Volts AC
 - (iii.) Output Power: 24KV DC Nominal
 - (iv.) Rated Static Pressure: 0.25" initial @ 500FPM
 - (v.) Minimum Depth Thickness: 2.0" Nominal
 - (vi.) Recommended media changes per year: 1-2 per year
 - (vii.) Ozone production: 0 PPB detectable

NOTE: reference Manual D Residential Duct System and Manual J Residential Load Calculations and other relevant guides

(4) Evaporative Coolers

(a) Cooler must have a separate ducting system from air conditioning and heating ducting system

(b) Maximum 5 gallons/ton-hour cooling

(5) Natural gas storage water heater, EF of 0.67 or higher and Energy Star listed

(6) Tankless water heater, EF of 0.82 or higher and Energy Star listed

(7) Solar water heater systems, rated by Solar Rating Certification Council

(8) Cool roof system as defined by the 2005 California Building Energy Efficiency Standards (also called the California Energy Code). Roofing replacement eligible under this program shall be:

(a) Tested and rated through the Cool Roof Rating Council (CRRC);

(b) Be labeled for its initial reflectance and initial emittance as determined in the CRRC tests and be labeled that the product meets Title 24, Section 118(i);

(c) Achieve at least a 0.75 initial emittance and 0.70 initial reflectance or, if the initial emittance is less than 0.75, have an initial reflectance of at least $[0.70 + \{0.34 \times (0.75 - \text{initial emittance})\}]$; **and**, if applied as a liquid coating in the field, be applied at a minimum dry mil thickness of 20 mils* across the entire roof surface and meet performance requirements listed in the table shown immediately below:

Physical Property	ASTM*** Test Procedure	Requirement
Initial percent elongation (break)	D 2370	Minimum 60% 0 °F (-18 °C) Minimum 200% 73 °F (23 °C)
Initial tensile strength (maximum stress)	D 2370	Minimum 100 psi (1.38 Mpa) 73 °F (23 °C) Minimum 200 psi (2.76 Mpa) 0 °F (-18 °C)
Final percent elongation (break) after accelerated weathering 1000 h	D 2370	Minimum 40% 0 °F (-18 °C) Minimum 100% 73 °F (23 °C)
Permeance	D 1653	Maximum 50 perms
Accelerated weathering 1000 h	D 4798	No cracking or checking Any cracking or checking visible to the eye fails the test procedure
<p><i>NOTE: Aluminum-pigmented asphalt roof coatings and cement-based roof coatings are not required to meet this table. The former must meet ASTM D2824, D6848, and D3805 and the latter must meet greater dry mil thicknesses (depending on the substrate) and meet ASTM D822. Details are found in Standards Section 118(i)3.</i></p>		

(9) Reflective roof and cool wall coatings

(a) Tested and rated through the Cool Roof Rating Council (CRRC);

(b) Be labeled for its minimum reflectance of 0.39 and minimum emittance of 0.88 as determined in the CRRC tests

(c) Labeled that the product is California Title 24 compliant

(d) Energy Star guidelines

- (10) Insulation:
- (i.) Attic insulation minimum combined R value of 30
 - (ii.) Wall insulation minimum combined R value of 13
 - (iii.) Crawlspace/floor insulation, minimum combined R value of 19
 - (iv.) Hot water system and pipe insulation

Meet Energy Star guidelines

NOTE: Envelop air sealing before insulating is strongly recommended.

(11) Insulated exterior siding – following Energy Star guidelines of the of the Home Sealing effort, using Energy Star qualified products

(12) Reflective insulation or radiant barriers

(13) Attic fans

(14) Windows and glass doors, U value of 0.40 or less and solar heat gain coefficient of 0.40 or less

(15) Window film, in compliance with the NFRC glazing attachment ratings for solar heat a gain and visible transmittance

(16) Weather-stripping, following Energy Star guidelines

- (16) Home sealing, following Energy Star guidelines. Techniques include:
- sealing leaks with caulk, spray foam, and weather stripping;
 - replacement of fixtures perforating ceiling drywall with insulation contact, air tight fixtures (i.e. IC AT can lights)

NOTE: mechanical ventilation may be required to achieve a minimum of 0.35 air changes per hour (0.35 ACH)

(18) Skylights, U Value of 0.60 or less and solar heat gain coefficient of 0.40 or less

(19) Solar tubes

(20) Additional building openings to provide addition natural light, windows and doors must meet the Energy Star rating U value of 0.40 or less

(21) Lighting, Energy Star listed (no bulb only retrofits)

(22) Pool equipment

(a) Pool circulating pumps (must be variable flow and/or multi-speed with controllers)

(22) Energy use monitoring systems (fixed/permanent installation)

B. Residential Energy Efficiency Custom Measures.

(1) Passive solar (heating/cooling)

C. Commercial Energy Efficiency Measures.

(1) Heating, ventilating and air conditioning systems (“HVAC”)

(a) Minimum efficiencies

(i) Split systems with 14 SEER or 12 EER

(ii) Package systems with 13 SEER or 11 EER

(2) Geothermal exchange heat pumps

(a) Minimum efficiencies

(i) Ground source exchange open loop system 17.8 EER or higher

(ii) Ground source exchange closed loop system 15.5 EER or higher

(3) High efficiency electric hand dryer

(4) All applicable energy efficiency measures listed in “Residential” section

D. Commercial Energy Efficiency Custom Measures.

(1) Building energy management systems,

(2) Lighting control systems, which shall include occupancy sensors and other energy saving measures

(3) HVAC duct zoning control systems

(4) Motors and controls (processing or manufacturing equipment)

(5) Customer electric vehicle plug-in station

III. SOLAR EQUIPMENT

Solar track funding is available for a wide range of solar equipment. SCEIP funding will be available for photovoltaic equipment and installers listed by the California Energy Commission. Solar thermal equipment must be rated by the Solar Rating Certification Council (SRCC). As with efficiency measures, if a rebate is available to the property owner to be applied to the purchase price, that amount must be deducted from the amount of financing requested. Eligible solar equipment for both residential and commercial properties include:

- (1) Solar thermal systems (hot water)
- (2) Solar thermal systems for pool heating
- (3) Photovoltaic systems (electricity)
 - (a) Battery back-up systems will be allowed
 - (b) Funding for off-grid systems will be allowed
 - (c) PV systems can be sized to accommodate plug-in electric vehicles
 - (d) Plug in stations
- (4) Emerging technologies – following the Custom Measures Track
 - (a) Nano/thin film photovoltaic
 - (b) High intensity (parabolic solar panels)

IV. CUSTOM MEASURES

The Custom Measures Track is a process by which SCEIP Staff can evaluate and fund projects that are not “off the shelf” improvements listed in the eligible Water Conservation, Energy Efficiency or Solar Measures. These custom projects may involve large scale industrial or commercial energy efficiency improvement projects, such as process or industrial mechanical systems, renewable energy sources and energy generation, other than the solar system (photovoltaic), such as geothermal, and potentially fuel cells, as well as more complex and cutting edge energy management solutions and emerging technologies. The Custom Measure Track will evaluate and provide funding, if appropriate, for these innovative projects.

Applicants for the Custom Measure Track should consult with SCEIP Staff to determine eligibility and will be required in most cases to submit engineering plans and

specifications. An SCEIP Custom Measure's Track review/technical panel will meet to review the engineering documents and data for custom and emerging technology projects. SCEIP may require an additional administrative fee for project evaluation by the technical review. In all cases, the County reserves the right to decline funding of a custom measure.

The following types of measures – among others – will be considered for SCEIP funding through the Custom Measure Track:

A. Energy Efficiency Custom Measures.

- (1) Alternative energy generation (other than photovoltaic)
- (2) Building energy management controls
- (3) HVAC duct zoning control systems
- (4) Irrigation pumps and controls
- (5) Lighting controls
- (6) Industrial and process equipment motors and controls

As these "Custom Measures" become Energy Star rated they will be included in the List of Eligible Improvements.

B. Energy Generation Custom Measures.

- (1) Fuel Cells
- (2) Natural gas
- (3) Hydrogen fuel
- (4) Other fuel sources (emerging technologies)
- (5) Co-generation (heat and energy)