

## **Residential Eligible Improvements**

The improvements listed below—subject to specified requirements where noted—are eligible for financing for qualified borrowers under the Home Energy Loan Program. This list is subject to change. Measures that are not included on this list may also qualify for financing if they are recommended through a home energy assessment conducted by a certified professional. See the Michigan Saves list of <u>authorized contractors</u> to find a certified energy auditor near you if you are interested in receiving a home energy assessment.

Measure	Minimum Efficiency Rating	Additional Requirements
Air sealing		Michigan Saves requires pre- and postinstallation blower door test for air sealing work
Air-source heat pump	SEER ≥ 14.5, EER ≥ 12.0	
Asbestos abatement		Michigan Saves financing can be used for asbestos remediation when coupled with a qualifying boiler, furnace, or water heater
Boiler (space heating or hot water)	AFUE ≥ 85%	
Boiler (steam)	AFUE ≥ 82%	
Boiler (wood gasification)	AFUE/TE ≥ 75%	Wood gasification boiler must also be UL rated and EPA phase-two qualified
Central air conditioning (package system)	SEER ≥ 14.0, EER ≥ 11.0	
Central air conditioning (split system)	SEER ≥ 14.5, EER ≥ 12.0	
Clothes washer	ENERGY STAR®	Appliances can only be financed when there are \$1,000 or more in other qualifying measures
Combined heat and power (micro CHP)		
Dishwasher	ENERGY STAR®	Appliances can only be financed when there are \$1,000 or more in other qualifying measures
Doors (exterior)	ENERGY STAR®	

Measure	Minimum Efficiency Rating	Additional Requirements
Electric vehicle charging station	Level 2	
Electrical service		Michigan Saves financing can be used for an electrical service upgrade when required by building code or when necessary for installing a qualifying air conditioning unit
Freezer (chest or upright)	ENERGY STAR®	Appliances can only be financed when there are \$1,000 or more in other qualifying measures
Furnace (gas)	AFUE ≥ 90%	
Furnace (oil)	AFUE ≥ 85%	
Geothermal system (direct geoexchange)	EER ≥ 16.0, COP ≥ 3.6	
Geothermal system (water-to- air, closed loop)	EER ≥ 17.1, COP ≥ 3.6	
Geothermal system (water-to- air, open loop)	EER ≥ 21.1, COP ≥ 4.1	
Geothermal system (water-to- water, closed loop)	EER ≥ 16.1, COP ≥ 3.1	
Geothermal system (water-to- water, open loop)	EER ≥ 20.1, COP ≥ 3.5	
Green roofing (living roof)		
Insulated mobile home skirting		
Insulated vinyl siding	R-3	Insulation and siding should be a single, integrated unit
Insulation (attic, crawlspace, floor, joist, wall)		Michigan Saves requires pre- and postinstallation blower door test for insulation work
Lead abatement		See <u>Michigansaves.org/leadfund</u> for information about our Lead Poisoning Prevention Fund
LED lights		
Low-flow bathroom faucet	GPM < 1.5	
Low-flow kitchen faucet	GPM < 1.8	
Low-flow showerhead	GPM < 2.0	
Low-flow toilet	GPF < 1.28	
Mini-split heat pump (ductless)	SEER ≥ 14.5, EER ≥ 12.0	
Mold and mildew removal		Michigan Saves financing can be used for lead abatement when coupled with a qualifying building shell improvement

Measure	Minimum Efficiency Rating	Additional Requirements
Oil tank removal		Michigan Saves financing can be used for oil tank removal when coupled with a qualifying boiler, furnace, or water heater
Radon abatement		Michigan Saves financing can be used for radon abatement when coupled with a qualifying building shell improvement
Refrigerator	ENERGY STAR®	Appliances can only be financed when there are \$1,000 or more in other qualifying measures
Roofing (asphalt, metal, or membrane)	ENERGY STAR® or comparable	
Skylights	ENERGY STAR®	
Solar photovoltaic (PV)		The panels, inverter, and meter should be approved by the local utility
Thermostat (programmable or Wi-Fi enabled)		
Upgrade of knob-and-tube wiring		Michigan Saves financing can be used for rewiring a home to meet building code when it prevents the installation of insulation
Water heater (electric heat pump)	EF ≥ 2.0	
Water heater (electric)	EF ≥ 0.93	
Water heater (gas condensing)	EF ≥ 0.80	
Water heater (gas storage)	EF ≥ 0.67	
Water heater (gas tankless)	EF ≥ 0.82	
Water heater (solar thermal)	SF ≥ 0.50, SRCC certified	
Whole-home battery storage		A battery storage system can only be financed when coupled with a qualifying solar PV system
Whole-home generator		A generator can only be financed when there are \$1,000 or more in other qualifying measures
Wind turbine		
Windows	ENERGY STAR®	

## Legend

**AFUE:** The annual fuel utilization efficiency is a thermal efficiency measure of space-heating furnaces and boilers. Furnaces are rated by the AFUE ratio, which is the percentage of heat produced for every dollar of fuel consumed. The higher the AFUE rating, the lower the fuel costs. Any furnace with an efficiency of 90 percent or higher is considered high efficiency and carries the ENERGY STAR® label.

**BTU:** The British thermal unit is a traditional unit of heat, which is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

**CEE:** The Consortium for Energy Efficiency creates product specifications for advanced levels of energy performance. A CEE tier-one label is the equivalent of the ENERGY STAR® label. Products with CEE tier-two, -three, or -four labels would represent products that achieve energy savings above and beyond the ENERGY STAR® label.

**COP:** The coefficient of performance of a heat pump, refrigerator, or air conditioning system is a ratio of useful heating or cooling provided to work required. Higher COPs equate to lower operating costs.

**EER:** The energy efficiency ratio is a metric used to measure how much cooling a system puts out for each unit of energy it consumes. EER is calculated by dividing an air conditioning unit's BTU rating by its wattage. The higher the EER rating, the more efficiently the air conditioner operates. Any air conditioning unit with an efficiency of 12 EER or higher is considered a high-efficiency unit and carries the ENERGY STAR® label.

**EF:** The energy factor indicates a water heater's overall energy efficiency based on the amount of hot water produced per unit of fuel consumed over a typical day. The higher the energy factor, the more efficient the water heater.

**ENERGY STAR®:** ENERGY STAR® is a government program that promotes energy-saving improvements by providing consumers with objective information about products. The ENERGY STAR® label indicates that a product uses less energy than other products in that category.

**GPF:** Gallons per flush is the measure of flow from a toilet. The lower the GPF of a toilet, the greater the savings of water.

**GPM:** Gallons per minute is the measure of flow from a showerhead or faucet. The lower the GPM of a faucet or showerhead, the greater the savings of water.

**Induction:** Induction lighting uses a high-frequency generator with a power coupler. The generator produces a radio frequency magnetic field to excite the gas fill. This differs from fluorescent lamps, which use internal electrodes.

**LED:** Light-emitting diodes are up to 80 percent more efficient than traditional lighting, such as fluorescent and incandescent lights. Of the energy in LEDs, 95 percent is converted into light and only 5 percent is wasted as heat.

**Level two:** Level-two charging refers to the voltage that the electric vehicle charger uses (240 volts). Level-two chargers come in a variety of amperages typically ranging from 16 amps to 40 amps. The two most common level-two chargers are 16 and 30 amps, which also may be referred to as 3.3 kilowatt (kW) and 7.2 kW, respectively. These two amperages are the most common because they match the onboard charger on many current electric vehicles.

**LPW:** Lumens per watt measures the efficacy of an LED bulb. Higher LPW values indicate more efficient LED bulbs.

**R-value:** An insulating material's resistance to conductive heat flow is measured or rated in terms of its thermal resistance or R-value. The higher the R-value, the greater the insulating effectiveness.

**SEER:** The seasonal energy efficiency ratio is a metric used to measure how much cooling a system puts out for each unit of energy it consumes. The higher the SEER rating, the more efficiently the air conditioner operates. Any air conditioning unit with an efficiency of 15 SEER or higher is considered a high-efficiency unit and carries the ENERGY STAR® label.

**SF:** The solar factor measures the percentage of heat that passes through a solar panel's glass. The higher the solar factor, the greater the solar gain for solar-thermal water heating units.

**SHGC:** The solar heat gain coefficient is the fraction of incident solar radiation admitted through a window, both directly transmitted and absorbed and subsequently released inward. SHGC is expressed as a number between zero and one. The lower a window's solar heat gain coefficient, the less solar heat it transmits.

**TE:** Thermal efficiency is an efficiency measure for space-heating boilers, in lieu of the AFUE rating, that exceed 300,000 BTUs per hour. TE is also used to measure the efficiency of gas-fired water heaters that exceed 75,000 BTUs per hour.

**U-factor:** The rate of heat loss is indicated in terms of the U-factor (U-value) of a window assembly. The lower the U-factor, the greater a window's resistance to heat flow and the better its insulating properties.