



Capital at the point of impact.

TRF Energy

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High-Performance Building Energy Measures Eligible for Favorable Financing from TRF: Lighting

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which lighting measures are eligible. There are other fact-sheets that cover heating systems, cooling systems, building air sealing and insulation, windows and doors, roofing, plumbing systems, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

TRF Energy has access to several different sources of capital that have different geographical requirements, borrower requirements and interest rates, so please contact TRF Energy staff for information about the lending specifics for your individual situation.

Lamps, Ballasts and Fixtures

- LED lamps and fixtures.
- Lighting fixtures that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=fixtures.pr_light_fixtures).
- T-8 fluorescent lamps and ballasts that are approved by the Consortium for Energy Efficiency
(see <http://www.cee1.org/com/com-lt/lamps-ballasts.xls> and <http://www.cee1.org/com/com-lt/RW-lamps-ballasts.xls>).
- T-5 fluorescent lamps, ballasts and fixtures.
- Compact fluorescent lamps that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=cfls.pr_cfls).
- Tungsten halogen flood lamps when replacing incandescent flood lamps.

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- High pressure sodium or metal halide lamps when replacing mercury vapor lamps.
- Exit signs that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=exit_signs.pr_exit_signs).

Controls

- Motion sensor controls in offices, conference rooms, kitchens, bathrooms and other public areas with intermittent use.
- Ambient daylight-sensing controls for use near windows and day-lit areas.
- Spring-wound or switch timers in areas that are used infrequently such as mechanical rooms, unoccupied basements, and bathrooms.

Other

- Components of daylighting systems such as light shelves, light tubes and other strategies.



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Heating Measures

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which heating system measures are eligible. There are other fact-sheets that cover lighting, cooling systems, building air sealing and insulation, windows and doors, roofing, plumbing systems, appliances, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Heating Systems

- Gas or oil-fired boilers with an Annual Fuel Utilization Energy rating of 82% or more.
- Gas or oil-fired boilers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=boilers.pr_boilers).
- Natural gas furnaces with an Annual Fuel Utilization Energy rating of 90% or more.
- Oil-fired furnaces with an Annual Fuel Utilization Energy rating of 85% or more.
- Gas or oil-fired furnaces that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=furnaces.pr_furnaces).
- Split and Packaged Heat Pump Systems that meet the Tier 1 or better standards of the Consortium for Energy Efficiency (see <http://www.cee1.org/com/hecac/hecac-tiers.pdf> - second page).
- Gas-fired combined heat-and-power systems.

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- Geothermal heat pumps that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=geo_heat.pr_geo_heat_pumps).
- Air source heat pumps that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=airsrc_heat.pr_as_heat_pumps).
- Solar space heating systems.
- Biomass-fired space heating systems.

Distribution Systems

- Pipe insulation.
- Duct sealing (with mastic).
- Duct insulation.
- Ventilating fans that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=vent_fans.pr_vent_fans).
- Motors that meets the NEMA Premium motor efficiency standards
(see <http://www.cce1.org/ind/motrs/Cee-nema.pdf>).

Controls

- Programmable thermostats that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=thermostats.pr_thermostats).
- Digital energy management systems.



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Cooling Measures

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which cooling system measures are eligible. There are other fact-sheets that cover lighting, heating systems, building air sealing and insulation, windows and doors, roofing, plumbing systems, appliances, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Cooling Systems

- Split and Packaged Air Conditioning Systems that meet the Tier 1 or better standards of the Consortium for Energy Efficiency
(see <http://www.cce1.org/com/hecac/hecac-tiers.pdf> - first page).
- Split and Packaged Heat Pump Systems that meet the Tier 1 or better standards of the Consortium for Energy Efficiency
(see <http://www.cce1.org/com/hecac/hecac-tiers.pdf> - second page).
- Central air conditioners that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=cac.pr_central_ac).
- Central air conditioning systems that are CEE Residential Tier 1 or 2 or Small Commercial Tier 1 or 2
(see <http://www.ccehvadirectory.org/ac.php>).
- Geothermal heat pumps that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=geo_heat.pr_geo_heat_pumps).

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- Room air conditioners that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=roomac.pr_room_ac).
- Ceiling fans that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=ceiling_fans.pr_ceiling_fans).
- Dehumidifiers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=dehumid.pr_dehumidifiers).

Distribution Systems

- Pipe insulation.
- Duct sealing (with mastic).
- Duct insulation.
- Ventilating fans that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=vent_fans.pr_vent_fans).
- Motors that meets the NEMA Premium motor efficiency standards
(see <http://www.cee1.org/ind/motrs/Cee-nema.pdf>).

Controls

- Programmable thermostats that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=thermostats.pr_thermostats).
- Digital energy management systems.



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Building Air Sealing and Insulation

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which building air sealing and insulation measures are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, windows and doors, roofing, plumbing systems, appliances, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Air Sealing

- Blower door testing and other techniques to identify sources of air infiltration in buildings.
- Air sealing measures to reduce air infiltration
(see http://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing).

Insulation

- Infrared camera and other techniques to identify thermal gaps in the building.
- Insulation of the exterior surfaces of the building (roof, exterior walls, basement walls, crawl spaces, etc.)
(see http://www.energystar.gov/index.cfm?c=home_sealing.hm_improvement_sealing).



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Windows and Doors

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which window and door measures are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, building air sealing and insulation, roofing, plumbing systems, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Windows and Other Glazing

- Windows, skylights and other glazing with low-e glass and an overall whole-window U value of 0.40 or less and a maximum solar heat gain coefficient of 0.55.
- Windows that are ENERGY STAR[®] labeled (see http://www.energystar.gov/index.cfm?c=windows_doors.pr_windows).
- Exterior window shading devices.
- Light shelves – interior and/or exterior.

Exterior Doors

- Exterior doors with a minimum U value of 0.2 or less.



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Roofing

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which roofing measures are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, building air sealing and insulation, windows and doors, plumbing systems, appliances, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Roofing

- Roof products that are ENERGY STAR[®] labeled (see http://www.energystar.gov/index.cfm?c=roof_prods.pr_roof_products).
- Vegetative or green roofs.



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Appliances

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which appliances are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, building insulation, windows and doors, roofing, plumbing systems, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Appliances

- Refrigerators and freezers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=refrig.pr_refrigerators).
- Clothes washers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=clotheswash.pr_clothes_washers).
- Commercial clothes washers that are CEE Tier 1 or Tier 2
(see <http://www.cce1.org/com/cwsh/cwshspec.pdf>).
- Dishwashers that are ENERGY STAR[®] labeled
(see <http://www.energystar.gov/products/dishwashers/>).
- Water coolers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=water_coolers.pr_water_coolers).
- Dehumidifiers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=dehumid.pr_dehumidifiers).



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Plumbing Systems

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which plumbing system measures are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, building insulation, windows and doors, roofing, appliances, commercial food equipment, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Water Heating Equipment

- Gas-fired tank-type water heaters with an Energy Factor of 0.62 or more.
- Electric tank-type water heaters with an Energy Factor of 0.93 or more.
- Oil-fired tank-type water heaters with an Energy Factor of 0.60 or more.
- Gas-fired instantaneous water heaters.
- Water source heat pumps with an Energy Efficiency Ratio of 12 or more.
- Solar systems for heating domestic hot water.

Water Using Equipment

- Dishwashers that are ENERGY STAR[®] labeled
(see <http://www.energystar.gov/products/dishwashers/>).
- Water coolers that are ENERGY STAR[®] labeled
(see http://www.energystar.gov/index.cfm?c=water_coolers.pr_water_coolers).
- Showerheads that are EPA WaterSense[®] labeled (flow restrictors are not sufficient)
(see <http://www.epa.gov/WaterSense/pp/showerheads.htm>).
- Bathroom sink faucets that are EPA WaterSense[®] labeled (low-flow aerators are not sufficient)
(see http://www.epa.gov/WaterSense/pp/bathroom_faucets.htm).
- Toilets that are EPA WaterSense[®] labeled
(see <http://www.epa.gov/WaterSense/pp/het.htm>).
- Urinals that are EPA WaterSense[®] labeled
(see <http://www.epa.gov/WaterSense/pp/urinals.htm>).



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Commercial Food Equipment

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which commercial food equipment measures are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, building air sealing and insulation, windows and doors, plumbing systems, appliances, roofing, renewable energy systems and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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Commercial Refrigeration - Stand Alone Units

- Solid door reach-in refrigerators and freezers that are approved either by ENERGY STAR[®] (http://www.energystar.gov/index.cfm?c=commer_refrig.pr_commercial_refrigerators) or by the Consortium for Energy Efficiency (see <http://www.cee1.org/com/com-ref/com-ref-main.php3>).
- Glass door reach-in refrigerators that are approved by the Consortium for Energy Efficiency (see <http://www.cee1.org/com/com-ref/com-ref-main.php3>).
- Commercial ice makers that are approved either by ENERGY STAR[®] (http://www.energystar.gov/index.cfm?c=comm_ice_machines.pr_comm_ice_machines) or by the Consortium for Energy Efficiency (see <http://www.cee1.org/com/com-ref/im-prod.pdf>).

Commercial Refrigeration - Central Refrigeration Systems

Engineered systems with centralized compressors serving multiple boxes are evaluated on a case-by-case basis. Equipment must be new, not reconditioned. We would need to receive information from the refrigeration engineer showing that the proposed system is at the upper end of energy efficiency and performance.

Commercial Cooking Equipment

- Commercial fryers that are approved by ENERGY STAR[®] (http://www.energystar.gov/index.cfm?c=fryers.pr_fryers) or by the Consortium for Energy Efficiency (see http://energystar.gov/ia/products/prod_lists/Fryers_prod_list.pdf).
- Commercial steam cookers (compartment cookers) that are approved either by ENERGY STAR (http://www.energystar.gov/index.cfm?c=steamcookers.pr_steamcookers) or by the Consortium for Energy Efficiency (see http://energystar.gov/ia/products/prod_lists/Steamers_prod_list.pdf).
- Commercial hot food holding cabinets that are approved either by ENERGY STAR[®] (http://www.energystar.gov/index.cfm?c=hfhc.pr_hfhc) or by the Consortium for Energy Efficiency (see <http://www.cce1.org/com/com-kit/sc-hc-specs.pdf>).

Commercial Dishwashers

- Commercial dishwashers that are approved by ENERGY STAR[®] (http://www.energystar.gov/index.cfm?c=comm_dishwashers.pr_comm_dishwashers).



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Renewable Energy Systems

The mission of TRF Energy is to help clients reduce their energy costs through energy efficiency improvements to their new or existing buildings and through energy conservation practices. Lower-cost financing is available from TRF Energy for a variety of high-performance building energy measures.

This fact-sheet describes which building design, commissioning and certification measures are eligible. There are other fact-sheets that cover lighting, heating systems, cooling systems, building air sealing and insulation, windows and doors, plumbing systems, appliances, commercial food equipment and building design/commissioning/certification. For copies of the other fact-sheets, please visit the TRF Energy website at www.trfund.com/financing/energy/energy.html. For more information about the issues addressed in this document, please contact Roger E. Clark at roger.clark@trfund.com or 215.574.5814.

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- Solar photovoltaic systems.
- Solar domestic hot water systems.
- Solar space heating systems.
- Solar desiccant dehumidification systems.
- Wind turbines.
- Biomass-fired space heating systems.
- Biomass-fired water heating systems.
- Micro and small hydroelectric generation systems.
- Natural gas-fired combined heat-and-power (CHP) systems.



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High-Performance Building Measures Eligible for Favorable Financing from TRF: Building Design, Commissioning and Certification

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Building Design

- Building energy simulation modeling using DOE-2, EnergyPlus, Energy-10 and similar building, daylighting and building component modeling (see http://www.eere.energy.gov/buildings/tools_directory/alpha_list.cfm).

Building Commissioning

- Building commission by independent experts certified by the Building Commission Association (see <http://www.bcxa.org/index.htm>) or comparable group.

Building Certification

- Work needed to obtain certification by Leadership in Energy and Environmental Design (<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=51>), ENERGY STAR (<http://www.energystar.gov/>), Home Energy Rating System (<http://www.natresnet.org/>) or comparable national or state standards.