



**LOAN PROGRAM
COMMERCIAL ELIGIBLE MEASURES LIST**

| ENERGY EFFICIENCY MEASURES | | | |
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| Category | Measure | Minimum Efficiency /Certification Requirements | Local & Federal Rebates & Incentives |
| Commissioning/ Monitoring | Recommissioning | | Xcel Energy, Platte River (pilot), City of Boulder (pilot) |
| | Energy Use Monitoring | Recommend pairing with at least one funded improvement. 12 months min. of data from before the improvement, for ongoing comparison during loan lifetime. Data may be tracked in EnergyStar Portfolio Manager in addition to County database | Governor's Energy Office |
| | Sub metering | Recommend pairing with other funded improvements. Allows individual tenants to monitor energy use and pay only for what they use. | |
| Energy Management | Energy Management Systems | Computer-based Building Automation System with preventative maintenance program or contract. Third-party verification required. | Xcel Energy |
| | System Level Metering | Third-party verification required, with energy management data required after 1 year. | |
| | Direct Digital Control (DDC) | Custom evaluation of performance proposal comparing system cost with potential energy savings. Third-party verification required. | |
| | Automated Controls | Occupancy and CO2 sensors, lighting and day lighting controls, and automatic shading devices. See Lighting, Ventilation. | Xcel Energy; Platte River Power Authority |
| | Manufacturing Process Efficiency | Custom evaluation of performance proposal. Third-party verification required | Xcel Energy |
| Walls and Roof | Wall Insulation | Fill cavity to capacity and/or add min. R-5 rigid insulation to interior or exterior | Governor's Energy Office, Xcel Energy, Platte River Power Authority |
| | Roof Insulation | Fill cavity to capacity or min. R38 total, and/or add min. R-13 batt to lower side or R-10 rigid insulation to upper side (or combination totaling min. R-15) | Governor's Energy Office, Xcel Energy, Platte River Power Authority |
| | Air Sealing | Air sealing with expanding compound and mastic shall prioritize joints/seams, trims where accessible, windows/doors, mechanical and electrical penetrations, weather-stripping. Third-party verification required. | Governor's Energy Office, Platte River Power Authority |
| | Cool Roofs | Energy Star-qualified or white TPO and metal roofs, maintaining reflectance of at least 50% after 3 years, with 10-year material and labor warranty | Xcel Energy, Platte River Power Authority |
| | Green Roofs | Custom evaluation of performance proposal; recommended that new waterproofing be installed in conjunction with green roof. | |

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| Windows and Doors | Insulating Windows | Assembly U max 0.45 metal / 0.35 nonmetal; SHGC max 0.46 (passive solar applications custom evaluation for higher SHGC's) Metal windows must include thermal break. Window replacement must be accompanied by air sealing around windows at minimum. | Xcel Energy, Platte River Power Authority |
| | Storefront Systems | Assembly U max 0.35; SHGC max 0.35 (passive solar applications custom evaluation for higher SHGC's) Metal windows thermally broken. Window replacement must be accompanied by air sealing around windows at minimum. | Xcel Energy, Platte River Power Authority |
| | Insulating Doors | Assembly U max. 0.5 opaque / 0.7 metal; Door replacement must be accompanied by air sealing around doors at minimum | Xcel Energy, Platte River Power Authority |
| | Loading Dock Curtains | Custom fitted and permanent | |
| | Low-E Films and Permanent Automated Blinds | Custom evaluation of performance proposal. 10-yr manufacturer warranty on film, removal, and replacement. | Xcel Energy |
| Combined Heating, Ventilation and Air-Conditioning | Gas/Electric Package Units | Min. 14 SEER. Must contain automatic economizer capable of introducing 100% outside air when appropriate for cooling. Maintenance schedule required. Programmable thermostat required. Backup systems not eligible. | Xcel Energy, Platte River Power Authority |
| Cooling, Heat Pumps, Ventilation | Data Center Zone Cooling | Time-of-Day programmable air handler control required. | |
| | Rooftop AC Units | 13 SEER (0-65 kBtuh); 11 EER (65-135 kBtuh); 10.8 EER (135-340 kBtuh); 10 EER (240kBtuh) Programmable thermostat required. Backup systems not eligible. | Xcel Energy, Platte River Power Authority |
| | Condensing Units | Combine with HVAC system to reach qualifying (S)EER for that equipment. | Xcel Energy |
| | Central Split Systems | 13.0 EER/7.7 HSPF (0-65 kBtuh); 10.6 EER/3.2 COP (65-135 kBtuh); 10.1 EER/3.1 COP (135+ kBtuh). Programmable thermostat required. Resistance electric heat may not be primary heat source in cold weather. Backup systems not eligible. | Xcel Energy, Platte River Power Authority |
| | Central Air Source Single Package System | 14 SEER / 12 EER. Programmable thermostat required. Resistance electric heat may not be primary heat source in cold weather. Backup systems not eligible. | Xcel Energy, Platte River Power Authority |
| | Ground Source and Water Source Heat Pumps | Custom evaluation of performance proposal based on ASHRAE 189.1P Table C-2 criteria. Resistance electric heat may not be primary heat source in cold weather. | Xcel Energy, Platte River Power Authority |
| | Cooling Towers | Custom evaluation of performance proposal based on ASHRAE 189.1P Table C-8 criteria. Must include VFD fans. | Xcel Energy, Platte River Power Authority |
| | Chillers | Custom evaluation of performance proposal based on ASHRAE 189.1P Table C-8 criteria. Backup systems not eligible. Large chiller may be replaced with 2 smaller chillers. | Xcel Energy, Platte River Power Authority |
| | Economizers | Cooling Capacity > 54 kBtuh | Xcel Energy, Platte River Power Authority |
| | Evaporative Coolers | Min. 14 EER. Programmable thermostat required. | Xcel Energy, Platte River Power Authority |
| | Evaporative Condensers | Combine with HVAC system to reach qualifying (S)EER for that equipment. | Xcel Energy, Platte River Power Authority |
| Demand-Controlled Ventilation | Carbon Dioxide sensors required. Third-party verification of installation and programming required. | | |

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| Boiler and Furnace | Boiler System Tune-ups | Programmable thermostat installation required. Includes steam trap replacements. | Xcel Energy |
| | Non-Condensing hot-water Boilers | Min. 85% efficient. Programmable thermostat required. | Governor's Energy Office, Xcel Energy |
| | Condensing Hot-Water Boilers | Min. 92% efficient. Programmable thermostat required. | Governor's Energy Office, Xcel Energy |
| | Modular Burner Controls | Third-party verification of installation and programming required. | Xcel Energy |
| | O2 Trim Controls, Outdoor Air Reset Controls, Stack Dampers | Third-party verification of installation and programming required. | Xcel Energy |
| | High-Efficiency Natural Gas Furnaces | 80% AFUE min (0-225 kBtuh - SP); 90% AFUE min (0-225 split) Programmable thermostat required. | Governor's Energy Office, Xcel Energy |
| Energy Recovery, Redistribution, HVAC insulation | Air Destratifiers | Custom evaluation of performance proposal | |
| | Radiant Heating and Cooling | Non-electric only. Boiler must meet program qualifications. Programmable thermostat required. | |
| | Waste Heat Redistribution | Custom evaluation of performance proposal | |
| | Combined Heat and Power | Custom evaluation of performance proposal | Xcel Energy |
| | Energy (Heat)-Recovery Ventilation (ERV/HRV) | Min. SRE - 60%; no more than 500 cfm; no resistance heating | Xcel Energy |
| | VAV Boxes | Upgrade constant air volume | Xcel Energy |
| | Pipe Insulation | In exterior, unconditioned or semi-conditioned space: R-8 or maximum possible as explained in bid | |
| | Duct Sealing | In exterior, unconditioned or semi-conditioned space: R-6 or maximum possible as explained in bid | Governor's Energy Office, Xcel Energy |
| Water Heaters | Efficient Gas Water Heaters | over 75 kBtuh; 90% Et | Governor's Energy Office, Xcel Energy |
| | Efficient Electric Water Heaters | under 12 kW and greater than 20 gal. EF > 0.99-0.0012xVolume | Xcel Energy, Platte River Power Authority |
| | Tankless Water Heaters | 0.81 EF or 81% Et | Governor's Energy Office, Xcel Energy |
| Lighting | Incandescent, T-12 Fixture upgrade to T-5, T-8 | high-efficiency ballasts with low ballast factor (<= 0.85) required for T-series fixtures | Xcel Energy, Platte River Power Authority, Lyons Power |
| | Electronic Ballasts | high-efficiency ballasts with low ballast factor (<= 0.85) required | Xcel Energy, Platte River Power Authority |
| | Hardwired LED Lighting | Hard-wired; no edison base (screw-in) | Xcel Energy, Platte River Power Authority |
| | LED Exit Signs | Replace incandescent or fluorescent | Xcel Energy, Platte River Power Authority |
| | Ceramic Metal Halide | Replace incandescent, halogen, mercury vapor, high-pressure sodium | Xcel Energy, Platte River Power Authority |
| | Pulse-start Metal Halide | Replace incandescent, halogen, mercury vapor, high-pressure sodium | Xcel Energy, Platte River Power Authority |
| | Delamping and Re-switching | Delamping must permanently remove lamps, ballasts and sockets from fixture. Adding reflectors for remaining lamps is encouraged. Re-switching must make it possible to turn on fewer lights at a time, or just one area of a room at a time. Recommended target max. lighting power density 0.9 W/sq. ft. | Xcel Energy (delamping only) |

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| | Day lighting | Replacement insulating skylights (max. U 0.69/SHGC 0.39) or new specular solar tubes, to max. 3% of roof area. Must include controls to turn off lighting when adequately day lit. | |
| | Automatic controls | Occupancy sensors for unoccupied rooms, not to be used with CFL's. Dimming controls for lights near walls with window-wall ratio of 25% or more: dim fixture within 12' of N/S window wall or within 8' of skylight edge. | Xcel Energy, Platte River Power Authority |
| | Parking Lot and Parking Garage Lighting and Re-Switching | Garage exterior must be switched separately from interior; Zoned switching of garage interior encouraged. Parking lot lighting maximum intensity <= 250 W pulse-start metal halide at 25' or equivalent. | Xcel Energy, Platte River Power Authority |
| | Exterior Lighting | Façade and signage lighting max. 0.2 W/sq. ft. Photocell or astronomical time switch required on all exterior lighting, except where preempted by code. | Xcel Energy, Platte River Power Authority |
| Motors and Drives | Variable-Frequency Drives / Adjustable-Speed Drives | For fans and pumps, to replace old or constant-speed drives. Must meet NEMA Premium Efficiency Standards. | Xcel Energy, Platte River Power Authority |
| | Efficient Motors | Must meet NEMA Premium Efficiency Standards | Xcel Energy, Platte River Power Authority |
| | Elevators | Custom evaluation of performance proposal | Xcel Energy |
| | Compressed Air | Performance test required to identify leaks. Test and repairs eligible (provided that min. 50% of leaks found are repaired) | Xcel Energy, Platte River Power Authority |
| Refrigeration and Food Service <i>** Only owner occupied buildings are eligible</i> | Refrigeration Recommissioning | Built-in equipment only | Xcel Energy |
| | Refrigeration Component Repair, Upgrade and Replacement | Built-in equipment only; replacement only except for energy upgrades. Product coolers; Evaporative Coolers; Anti-Sweat Heater Controls; ECM Evaporative Fan Motor for Walk-in Cooler, Reach-in Cooler or Freezer; Motion Sensors for Lighting in Walk-ins; Outside Economizer for Walk-in Coolers; Walk-in Cooler Curtains | Xcel Energy, Platte River Power Authority |
| | Vent Hood Controls | Built-in equipment only | Xcel Energy, Platte River Power Authority |
| RENEWABLE ENERGY MEASURES | | | |
| Solar Hot Water | Solar Thermal Water Heating | SRCC rated | Federal, Colorado; City of Boulder |
| | Solar Thermal Space Heating | SRCC rated | Federal, Colorado; City of Boulder |
| Solar Photovoltaics | PV Systems | grid-tied, net-metered | Federal, Colorado, City of Boulder, Xcel Energy |
| Other Renewables | Small Wind | Custom evaluation of performance proposal | Federal |
| | Biomass | Custom evaluation of performance proposal | Federal |
| | Geothermal Electric, Fuel Cells | Custom evaluation of performance proposal | Federal |
| AEDG (Advanced Energy Design Guidelines "30% Guides") | | | |
| ASHRAE (American Society of Heating, Refrigeration and Air-Conditioning Engineers) | | | |