

Golden Urban Renewal Authority
Local and Federal Incentives for Renewable Energy and Energy Efficiency
April 18, 2006

Colorado Amendment 37 and the 2005 Energy Policy Act have produced incentives equal to 60-70% of the installed cost of solar photovoltaic systems and up to \$1.80 per square foot for buildings meeting a 50% energy reduction compared to ASHRAE 90.1 – 2001 energy standard.

SUMMARY OF INCENTIVES

Solar (PV) Installations

Colorado Rebates and Renewable Energy Credits

- \$2.00 per DC Watt cash rebate
- \$2.50 per DC Watt one-time payment for the system's Renewable Energy Credits (RECs)

Federal Tax Credits

- Equal to 30% of out-of-pocket costs after deducting any state and local incentives
- Capped at \$2,000 for residential systems
- No cap for commercial systems

A typical installed PV system will cost \$8-\$10 per Watt. After state/local incentives, the cost is reduced to \$3.50-\$5.50 per Watt. After the Federal incentive, the total cost is reduced to \$2.45-\$3.85 per Watt. This represents a 60-70% cost savings on an installed PV system.

In addition, the owner of the system can depreciate the full retail cost of the system, minus half of the tax credit amount, over 5 years. A typical life expectancy of a PV system is over 30 years.

A sample calculation for a 10 kW PV system is as follows:

Installed System Cost	\$80,000
Xcel Rebates (\$4.50/Watt)	(\$45,000)
Federal Tax Credits (30% x \$35,000)	<u>(\$10,500)</u>
Net Out-of-Pocket Cost	\$24,500
 Annual Tax Savings (5 year depreciation)	 ~\$4,000
Estimated Annual Energy Savings (\$0.10/kWh)*	\$1,500
* Value dependant upon applicable tariff	

Energy Efficiency Incentives

Federal Tax Credits (Title XIII – Energy Policy Tax Incentives, Subtitle C)

A tax deduction of up to \$1.80 per square foot is available to owners or designers of new or existing commercial buildings that save at least 50% of the heating and cooling energy of a building that meets ASHRAE Standard 90.1-2001. Partial deductions of up to \$.60 per square foot can be taken for measures affecting any one of three building systems: the building envelope, lighting, or heating and cooling systems – that meets goals consistent with achieving the 50% savings for the entire building. These deductions are available for buildings or systems placed in service from January 1, 2006, through December 31, 2007.

The person or organization that makes the expenditures for construction is generally the recipient of the allowed tax deductions. This is usually the building owner, but for some HVAC or lighting efficiency projects, it could be the tenant. For government-owned buildings, the deduction may be taken by the building or system designer.

APPLICATION

To take full advantage of either of the incentives, developers and owners need to be educated at the beginning of a project.

Solar (PV) Installations

The rebates are available for any type of PV installation. However, an energy professional should be consulted to best integrate a system into the building design. Properly integrated systems will increase the value of the PV system and reduce overall project costs.

The application of the incentives for solar systems is fairly straight forward. There are solar system installers that will coordinate the Xcel rebates with the owner and will front the balance of the system cost until the rebates are available. Documents from the IRS regarding the tax credits are not yet available, but will define the application process.

Energy Efficiency Incentives

To receive the tax credits for energy efficiency improvements, an energy professional will need to be involved. Improvements need to be certified using approved energy simulation software (to be defined by the IRS).

The \$1.80 per square foot tax credit is applied equally across the following categories:

- Interior lighting system (\$0.60)

- Heating, cooling, ventilation, and hot water systems (\$0.60)
- Building envelope (\$0.60)

The 50% reduction is ambitious, but achievable. Some of the technologies that are credited include:

- More efficient cooling and water heating equipment
- Better controls than required by code
- Reductions in losses from ducts and fans
- Better insulation and windows
- Reducing or eliminating simultaneous heating and cooling
- More efficient luminaires, ballasts, and lamps, and selection of more efficient light sources
- Daylighting
- Commissioning
- Combined Heat and Power
- Renewables
- Semi-Conditioned Spaces
- Low-Pressure Duct Systems

HVAC and envelope improvements need to be modeled and certified using an energy simulation program such as DOE-2. Lighting system improvements will be based on a more prescriptive method.

For lighting systems, unless and until the IRS issues a different final rule, the law specifies that a deduction of \$0.30 per square foot can be taken if the lighting system employs dual switching (ability to switch roughly half the lights off and still have fairly uniform light distribution) and reduces installed lighting power by at least 25% from values specified in specific cited tables in ASHRAE Standard 90.1-2001. As lighting power reductions climb from 25% to 40%, the deduction is increased proportionally, up to \$0.60 for a 40% power reduction (plus the dual switching). This prorated credit does not apply to warehouse lighting.

Efficient buildings typically pay back in 4 years or less – good economics even without incentives – but the presence of these incentives will make it easier to procure efficient equipment and design services.