

# Energy Saving Report on the Energy Savings from EcoSmart Insulating Shades™

## Cut 30% from Energy Bills Using Energy Efficient Products Such As EcoSmart Insulating Shades™

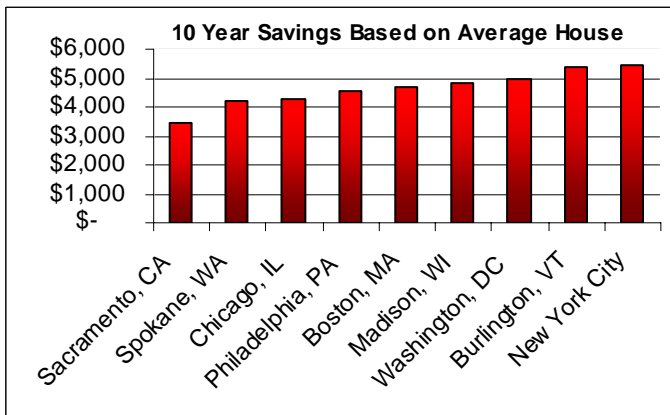
Heating costs have are projected to increase for all fuel types compared to year-ago levels, according to forecasts by the Energy Information Administration. By using energy efficient products, the average homeowner can **cut energy costs by 30 percent**. Improving home insulation is one of the fastest and most cost efficient ways to reduce energy waste.

**In the end, homeowners pay an average from 10% to 25% of their energy bill for air that is escaping out their windows.** With the exception of replacing windows, the installation of energy efficient window treatments are one of the best ways to conserve energy and reduce utility bills when it comes to insulating windows.

A good insulating system protects a home from outside temperatures and protects it against air leaks. **Windows are one of the greatest sources of wasted energy in the home.** The smallest gap or leak can equal as much airflow as an open window. Heat always moves from warm to cold areas. In the winter, warm air from inside the home is trying to escape through windows. In summer, the sun conducts heat through your windows, contributing as much as 53% heat in the home.

To be effective, window treatments must trap air between the shade or blind and the window glass. EcoSmart Insulating Cellular Shades act as a barrier to heat flow, trapping air between the shade and window and helping you to save money on energy costs. Adding the Energy Saving Side Track System can provide an additional barrier to seal the edges of drafty areas around windows.

## EcoSmart Insulating Shades™ These shades will pay for themselves!



City	10 yr Saving/ house
New York City	\$ 5,414
Burlington, VT	\$ 5,403
Washington, DC	\$ 4,956
Madison, WI	\$ 4,855
Boston, MA	\$ 4,674
Philadelphia, PA	\$ 4,544
Chicago, IL	\$ 4,259
Spokane, WA	\$ 4,221
Sacramento, CA	\$ 3,467

## How much can EcoSmart Insulating Shades really save?



Based on calculations using the prestigious Lawrence Berkeley National Laboratory computer software, the savings per window can be substantial.

**Burlington, VT** \$26.50\* per window  
\$432.21 based on 10 years per window

\* These numbers are based on a Light Filtering Shade with Energy Saving Sidetrack. Without the side track savings are reduced by 17%. Overtime, these numbers add up, proving that window coverings are worthwhile investment and solid solution to improve a home's energy efficiency.

### What's U got to do with it? A glossary of energy efficiency terminology

To understand how we achieved our saving numbers, you need to understand the terminology.

The **U-Factor** is a measure of window glass' ability to inhibit the flow of heat through it. The lower the U-factor, the more energy-efficient the window, door, or skylight. The larger the heating bill, the more important a low U-factor becomes.

**Solar Heat Gain Coefficient (SHGC)** refers to the amount of heat from the sun that passes through the window. SHGC is expressed as a number between 0 and 1.

In winter, by keeping shades raised on sunny days, this solar heat gain can offset the amount of heat necessary to keep your home warm. A product with a high SHGC rating is more effective at collecting solar heat gain during the winter. A product with a low SHGC rating is more effective at reducing cooling loads during the summer or in southern climates. The lower the SHGC, the less solar heat it transmits and the greater it's shading ability.

**Air leakage** is measured in terms of the amount of air (cubic feet per minute) that passes through a unit area of a window, door, or skylight (square foot) under given pressure conditions. Air leakage is expressed in units of cubic feet per minute per square foot of frame area (cfm/ft<sup>2</sup>). A product with a low air leakage rating is tighter than one with a high air leakage rating. Why is air leakage so important? The uncontrolled movement of air into or out of the house is a cost to the homeowner. For example, any cold outdoor air that leaks into (air infiltration) the home must be heated to room temperature to maintain the comfort of the occupants, so air infiltration is a heating cost. The same problem occurs in air-conditioned homes in summer, when warm outdoor air infiltrates, resulting in an additional cooling load. When interior-conditioned air (either heated for winter or cooled for summer) leaks to the outside, the homeowner also pays the energy costs associated with the air leakage.

### Methodology

The data provided in this report was prepared using RESFEN5 modeling software. RESFEN is a software program created by the Windows and Daylighting Group at the Lawrence Berkeley National Laboratory located in Berkeley, California. It calculates energy use associated with the heating and cooling energy of residential windows. The software compares window factors such as U-factors, Solar Heat Gain Coefficients (SHGC) and air leakage (infiltration) rates. Additional information was provided by the New York State Energy Development Authority located in Albany, New York.

The model factors in variables such as heating and cooling equipment, common building types, costs for gas and electricity, and weather conditions. The net result shows the difference between a bare window and one covered with a window treatment with properties similar to EcoSmarts's Cellular Shades alone and when paired with the Side Track System.

**Assumptions used to make the calculations to provide saving amounts include:**

**Window Size:** The standard double pane window size used is 54" x 64" (24 square feet) with a U-Factor of 0.54; SHGC of 0.90 with air infiltration rate of 0.42 Cfm/ft<sup>2</sup>.

**House Size:** The home size used in the model is a 2,000 square feet with a high performance gas furnace and high performance electric air conditioner.

**Cooling efficiencies:** U-Factor of 0.29; SHGC of 0.38; and air infiltration rate of 0.33.

**Heating efficiencies:** U-Factor of 0.29; SHGC of 0.90; and air infiltration rate of 0.33.

**Energy Prices:** Current energy prices are supplied to RESFEN through the United States Energy Information Administration (EIA).

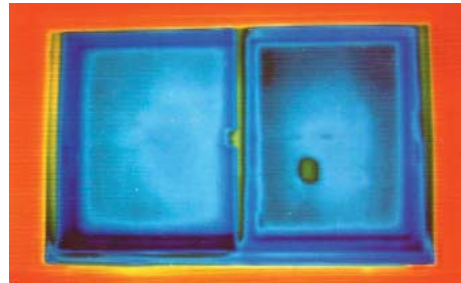
**Energy Price Increase Assumptions:** Forty percent increase on supplied natural gas price and an eleven percent increase has been placed on the electric utility cost for the first year - winter 2005-2006. These numbers are based on published reports from regarding energy price increases expected during winter 2005-2006. A further assumption is placed on the 10 year savings number that energy prices will rise in years 2-10. Fifteen percent increase on supplied natural gas price per year with a ten percent increase has been placed on the electric utility cost.

Actual energy savings may vary for individual homes, based upon house orientation, quality and size of the windows, heating ventilation air conditioning systems, shading of landscape trees and usage of the shades (i.e. shades are lowered in the summer to block heat, etc.).

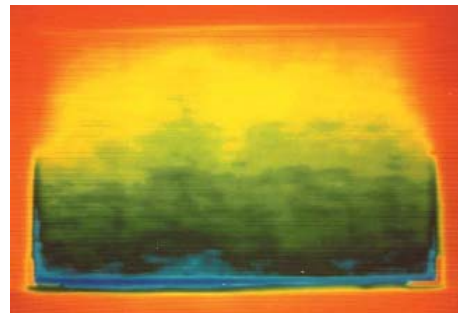
## What this all means for you

You can see what an expected reduction of energy costs may be yearly by covering a window with EcoSmart Insulating Shades with Side Tracks . You are also can determine how long it will take to pay back their investment in cellular shades based on their energy savings.

### Winter or Summer you'll notice a difference!



**Uncovered Window**



**Window with EcoSmart Shade**

The blue color in the first photo indicates cold air being conducted through the glass on a winter day.

In the second photo, EcoSmart Double Cellular Shade with Side Tracks has been added to cover the window. The coldest blue areas have been eliminated with the cold air (blue) trapped at the bottom between the shade and window.

## Energy Savings using EcoSmart Insulating Cellular Shades with Energy Saving Sidetrack System

City	Annual Saving per	10 Average Saving per House
Flagstaff, AZ	\$ 285	\$ 4,763
Sacramento, CA	\$ 225	\$ 3,467
Hartford, CT	\$ 334	\$ 5,386
Washington, DC	\$ 306	\$ 4,956
Wilmington, DE	\$ 271	\$ 4,359
Tallahassee, FL	\$ 246	\$ 3,792
Honolulu, HI	\$ 511	\$ 7,396
Mason City, IA	\$ 332	\$ 5,423
Boise, ID	\$ 202	\$ 3,280
Chicago, IL	\$ 263	\$ 4,259
Fort Wayne, IN	\$ 194	\$ 3,136
Sioux City, IA	\$ 299	\$ 4,837
Lexington, KY	\$ 225	\$ 3,629
Boston, MA	\$ 288	\$ 4,674
Portland, ME	\$ 377	\$ 6,204
Baltimore, MD	\$ 258	\$ 4,171
Flint, MI	\$ 229	\$ 3,723
Duluth, MN	\$ 325	\$ 5,394
Kansas City, MO	\$ 254	\$ 4,077
Greensboro, NC	\$ 229	\$ 3,615
Fargo, ND	\$ 286	\$ 4,693
Norfolk, NE	\$ 254	\$ 4,121
Concord, NH	\$ 360	\$ 5,852
Newark, NJ	\$ 254	\$ 4,033
Reno, NV	\$ 230	\$ 3,704
Buffalo, NY	\$ 366	\$ 5,936
New York, NY	\$ 340	\$ 5,414
Toledo, OH	\$ 275	\$ 4,472
Redmond, OR	\$ 264	\$ 4,327
Salem, OR	\$ 202	\$ 3,289
Wilkes-Barre, PA	\$ 308	\$ 5,031
Providence, RI	\$ 340	\$ 4,967
Greenville, SC	\$ 236	\$ 3,728
Fort Worth, TX	\$ 220	\$ 3,369
Wichita Falls, TX	\$ 241	\$ 3,738
Lynchburg, VA	\$ 253	\$ 4,063
Burlington, VT	\$ 331	\$ 5,403
Spokane, WA	\$ 257	\$ 4,221
Wilwaukee, WI	\$ 309	\$ 5,041



Thermography/Photography provided by Seiki Living Design. Testing conducted and photos taken by the Laboratory for Construction Materials in Tokyo, Japan.

10 year full house calculations based on average of 24 windows per house.

Report performed October 2005 using Energy Data as of Week beginning October 10, 2005

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**EcoSmart**  
**Insulating Shades™**



Quality Vermont Craftsmanship