

# Your Guide to Selecting ENERGY STAR®



## *WINDOWS and DOORS*



*Presented by:*  **Thermal Industries, Inc.**  
A Division of Alrium

# What is ENERGY STAR?



**ENERGY STAR is a government-backed program to help consumers identify energy efficient products, like windows and doors.**



- Energy savings to avoid greenhouse gas emissions equal to 29 million cars!



- \$19 Billion in **savings** on utility bills

# ENERGY STAR Qualification Criteria



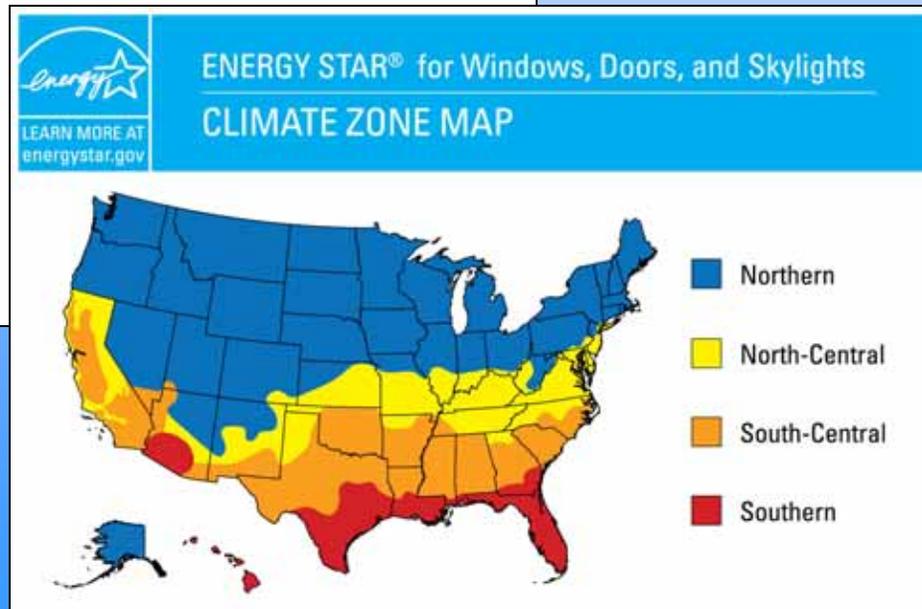
## ENERGY STAR® Qualification Criteria for Residential Windows, Doors, and Skylights

Windows			
Climate Zone	U-Factor <sup>1</sup>	SHGC <sup>2</sup>	
Northern	≤ 0.30	Any	Prescriptive
	≥ 0.31	≥ 0.35	Equivalent Energy Performance
	≥ 0.32	≥ 0.40	
North-Central	≤ 0.32	≤ 0.40	
South-Central	≤ 0.35	≤ 0.30	
Southern	≤ 0.60	≤ 0.27	

Doors		
Glazing Level	U-Factor <sup>1</sup>	SHGC <sup>2</sup>
Opaque	≤ 0.21	No Rating
≤ ½-Lite	≤ 0.27	≤ 0.30
> ½-Lite	≤ 0.32	≤ 0.30

<sup>1</sup> Btu/h·ft<sup>2</sup>·F

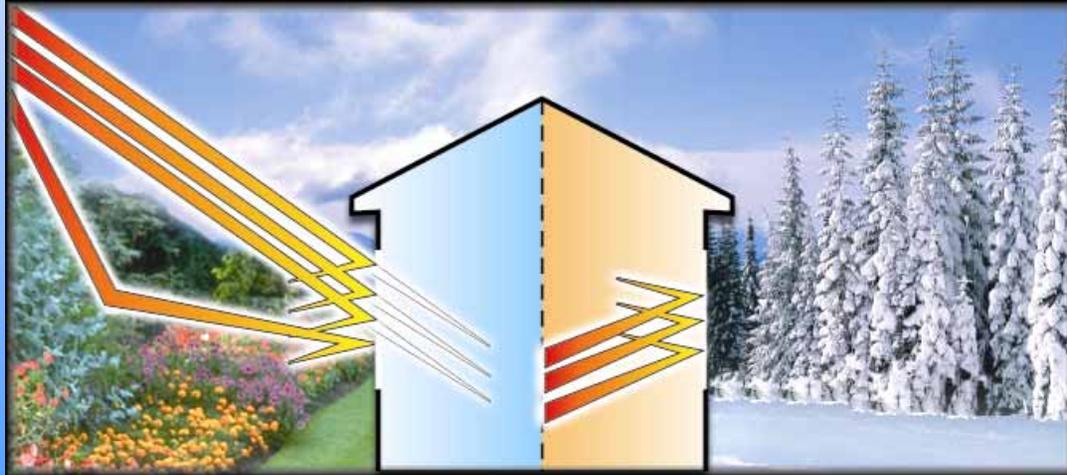
<sup>2</sup> Fraction of incident solar radiation



# Performance Measures for ENERGY STAR Windows and Doors



- U-Factor:
  - Measures heat transfer through the window
  - Tells you how well window insulates
  - The lower the U-Factor, the better the window insulates

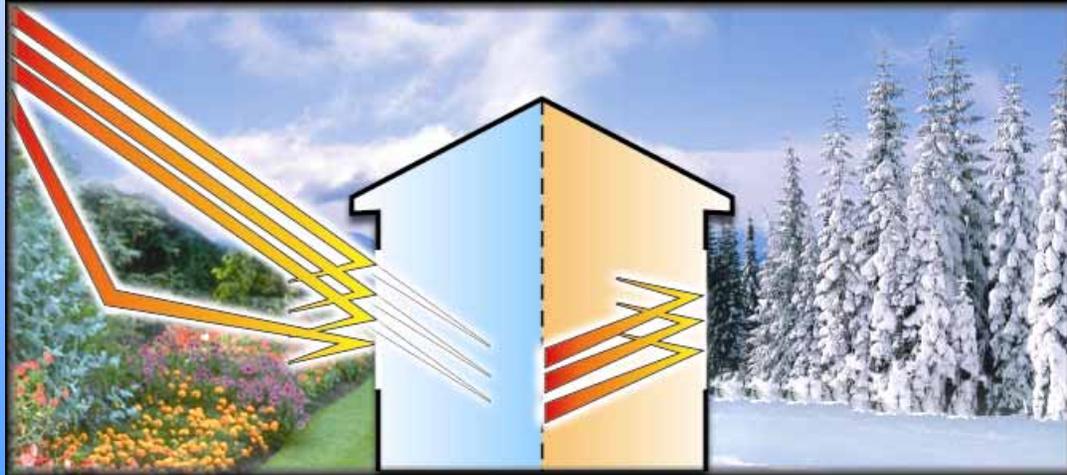


*U-Factor demonstrated on right side of home*

# Performance Measures for ENERGY STAR Windows and Doors

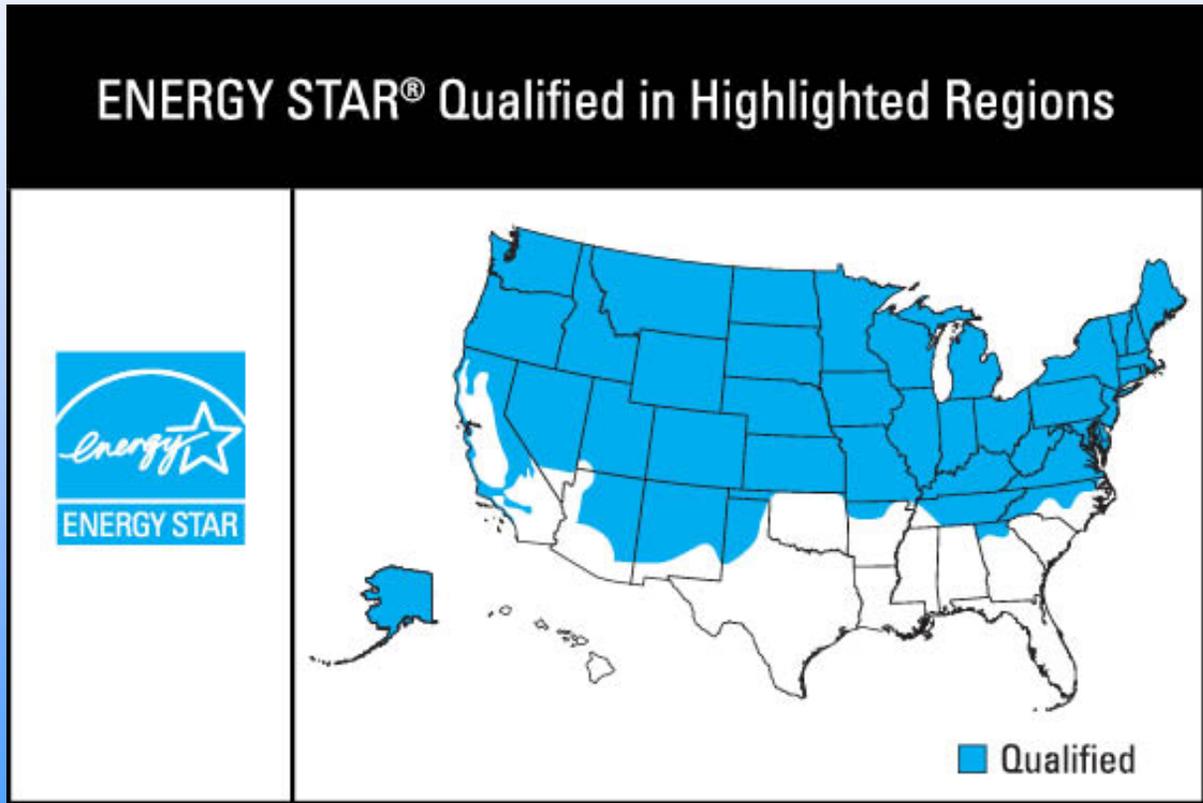


- SHGC (Solar Heat Gain Coefficient):
  - Measures the solar heat admitted
  - Tells you how well the product blocks heat caused by sunlight
  - The lower the SHGC, the better the window blocks heat



*SHGC demonstrated on left side of home*

# ENERGY STAR Label



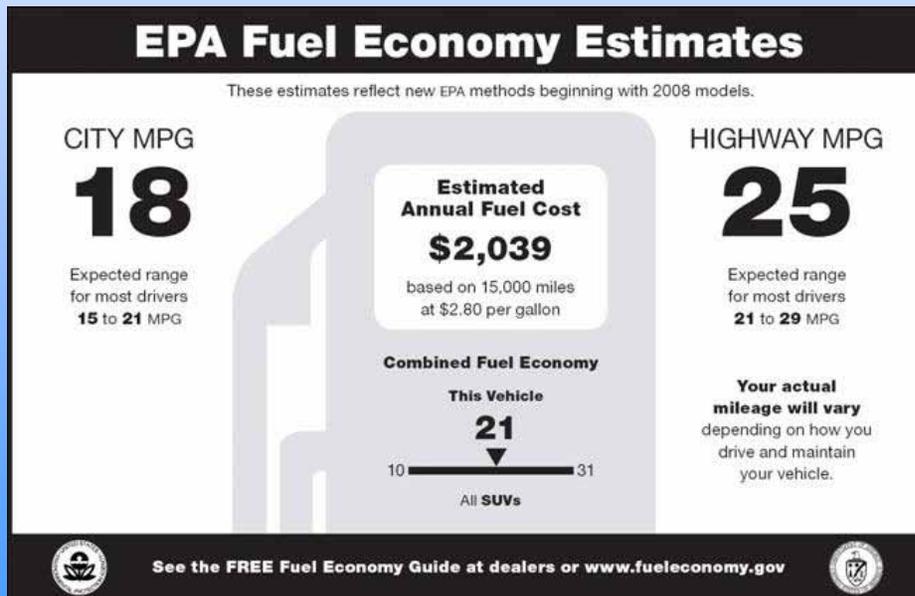
# ENERGY STAR Label



# NFRC Label



- Similar to EPA sticker on a new car that gives it's fuel economy



 National Fenestration Rating Council® <b>CERTIFIED</b>	<b>Thermal Industries, Inc.</b> CHLR Vinyl Frame Double Glazing Argon Enhanced Low-E Casement TRI-K-52-00044
<b>ENERGY PERFORMANCE RATINGS</b>	
U-Factor (U.S./I-P) <b>0.28</b>	Solar Heat Gain Coefficient <b>0.24</b>
<b>ADDITIONAL PERFORMANCE RATINGS</b>	
Visible Transmittance <b>0.46</b>	Condensation Resistance <b>60</b>
Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. <a href="http://www.nfrc.org">www.nfrc.org</a>	

# What makes ENERGY STAR qualified windows energy efficient?



## WHAT MAKES A WINDOW ENERGY EFFICIENT?

Today, manufacturers use an array of **advanced technologies** to make ENERGY STAR-qualified windows.

**IMPROVED FRAME MATERIALS**  
Wood composites, vinyl, and fiberglass frames reduce heat transfer and help insulate better.

**LOW-E GLASS**  
Special coatings reflect infrared light, keeping heat inside in winter and outside in summer. They also reflect damaging ultraviolet light, which helps protect interior furnishings from fading.

**GAS FILLS**  
Some energy-efficient windows have argon, krypton, or other gases between the panes. These odorless, colorless, non-toxic gases insulate better than regular air.

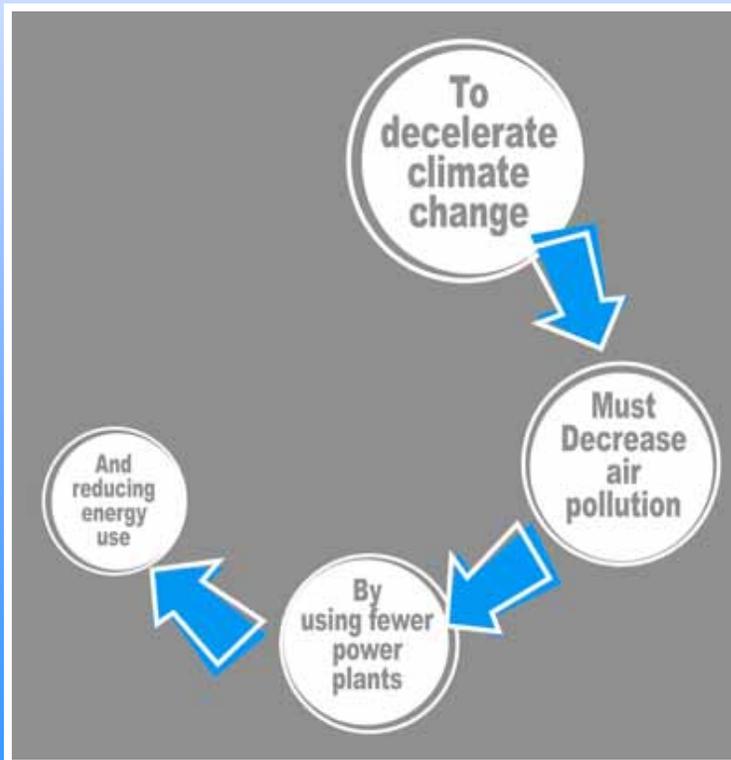
**WARM EDGE SPACERS**  
A spacer keeps a window's glass panes the correct distance apart. Today's warm edge spacers—made of steel, foam, fiberglass, or vinyl—reduce heat flow and prevent condensation.

**MULTIPLE PANES**  
Two panes of glass, with an air or gas-filled space in the middle, insulate much better than a single pane of glass. Some ENERGY STAR-qualified windows include three or more panes for even greater energy efficiency, increased impact resistance, and sound insulation.

# SAVING ENERGY EQUALS SAVING MONEY



- Save **7-15%** per year when replacing single-pane windows with ENERGY STAR qualified windows.

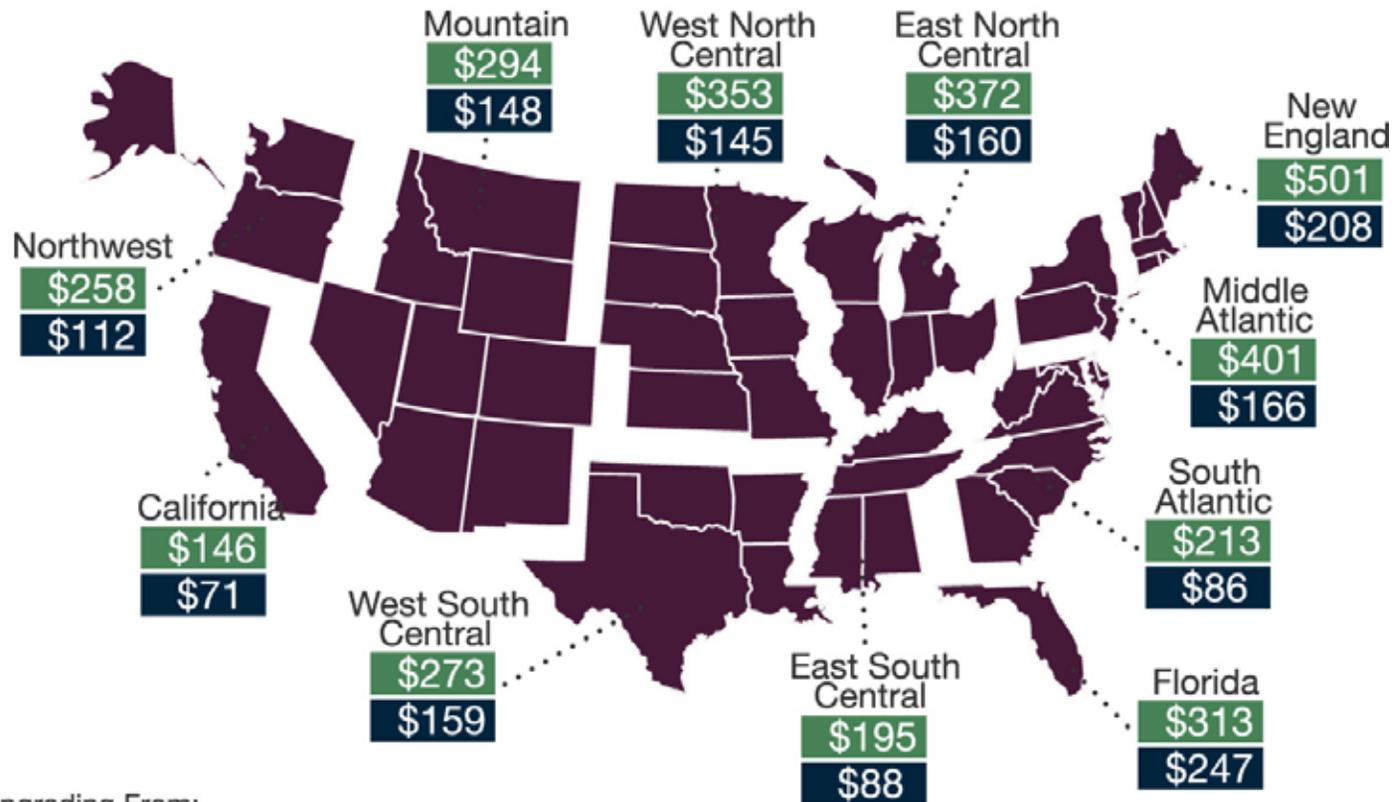


- Reduces greenhouse gas emissions from power plants and shrinks carbon footprint.

# Savings When Replacing



How much could you save with ENERGY STAR?



Upgrading From:

- = Single-pane window
- = Double-pane window, clear glass

# Increased Comfort

- Help keep your home's temperature consistently comfortable.



# Prevent Fading of Interior Furnishings



- ENERGY STAR qualified windows have special coating that act like a sunscreen for your house
- Let light in while blocking damaging UV rays



# Proud Partner



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[Energystar.gov](http://energystar.gov)

[Thermalindustries.com](http://Thermalindustries.com)

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