



U.S. DEPARTMENT OF  
**ENERGY**

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U.S. DEPARTMENT OF ENERGY  
**ENERGY STAR® QUALIFIED WINDOWS**  
2010 PARTNER RESOURCE GUIDE



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## CONTENTS

This Partner Resource Guide is designed to help you promote ENERGY STAR qualified windows. Partners are free to use any of the text, charts, or images to promote these products on their Web sites and in print advertisements, in-store promotional materials, and other marketing materials. The Guide is divided into four sections:

Section I CONSUMER INFORMATION includes the latest consumer messaging on ENERGY STAR benefits, purchase incentives, tips for maximizing savings, and fun facts.

Section II MARKET INFORMATION summarizes the most recent data on ENERGY STAR market share and the windows market.

Section III ENERGY STAR CRITERIA summarizes the efficiency requirements of ENERGY STAR qualified windows and the resulting payback for consumers.

Section IV ADDITIONAL PARTNER RESOURCES explains the marketing support available to partners for promoting ENERGY STAR qualified windows.

## INTRODUCTION

Thanks to advances in technology, today's ENERGY STAR qualified windows offer greater savings than ever before. Improved frame materials reduce heat transfer and insulate better. Two or more panes of glass, filled with gases like argon, insulate better than a single pane of glass. Special glass coatings keep heat inside in winter and outside in summer, while filtering damaging ultraviolet light that causes floors and home furnishings to fade. Spacers keep the window panes an even distance apart and are now warm-edge, meaning they reduce heat flow and help prevent condensation.

ENERGY STAR qualified windows meet the strictest energy requirements to date, and the 2009-2010 federal tax credit supports some of the highest-performing products among them. Replacing old windows with new ENERGY STAR qualified models yields between 7 and 15 percent annual savings on household energy bills, which pays for the price premium in one to six years. For the average U.S. homeowner, that can mean between \$71 and \$501 in annual savings, depending on the location.

## SECTION I: CONSUMER INFORMATION—ENERGY STAR BENEFITS

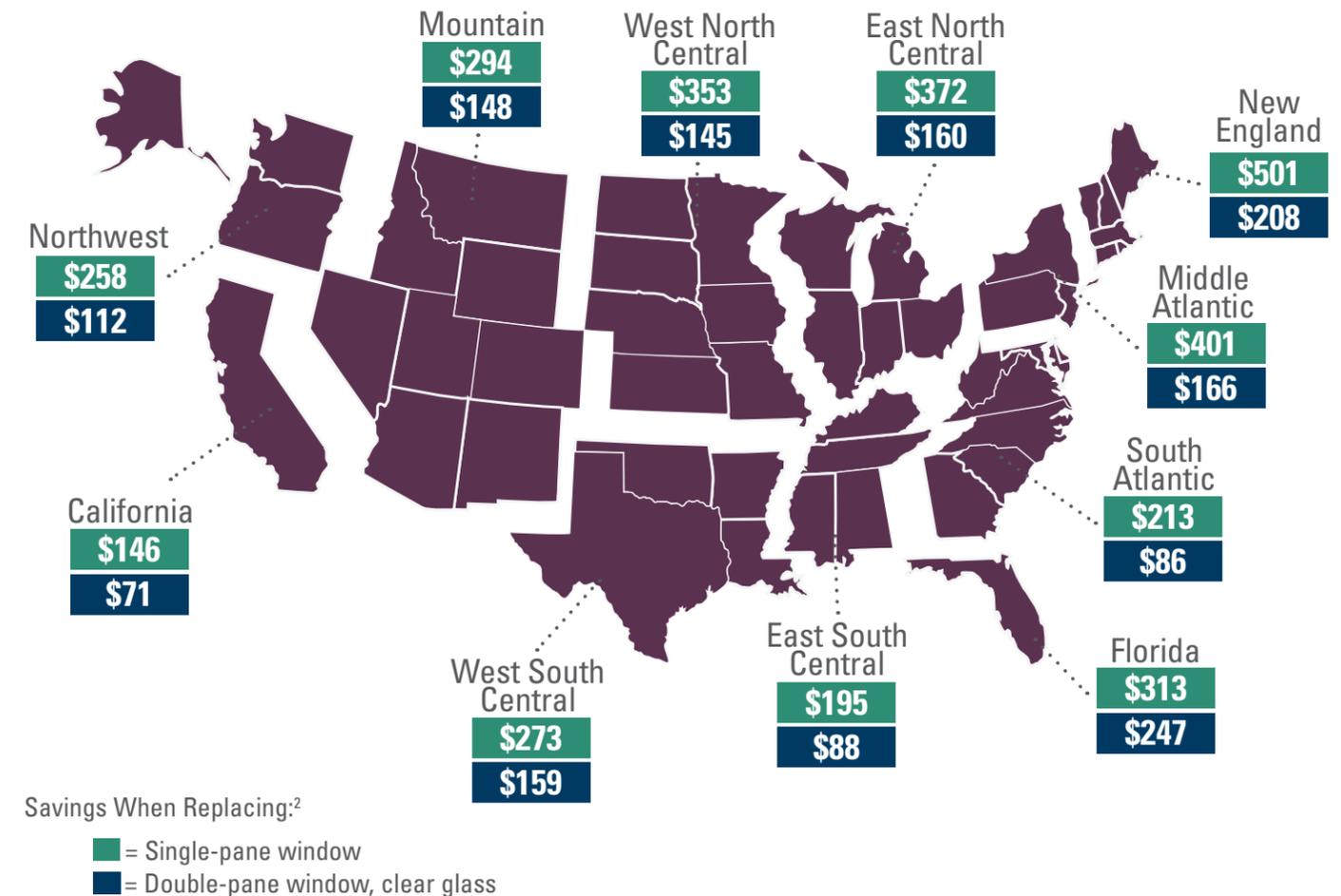
Homeowners may replace their windows only once in a lifetime, so education is the key to helping them choose ENERGY STAR. With the 2009-2010 tax credit and the new ENERGY STAR criteria, education is more important than ever.

Windows can account for almost one-quarter of household energy use,<sup>1</sup> and numerous studies have shown that homeowners' number one priority in replacing windows is energy savings. Translate ENERGY STAR performance into benefits for consumers:

- **SAVE ENERGY AND MONEY.** Replacing old windows with ENERGY STAR qualified windows lowers household energy bills by 7-15 percent. Lower energy consumption also reduces greenhouse gas emissions from power plants and shrinks a house's carbon footprint.



ENERGY STAR is a government-backed program that helps consumers identify the most energy-efficient products.



SECTION I: CONSUMER INFORMATION—ENERGY STAR BENEFITS

- **GET COMFORTABLE.** In winter, the cold, inside surface of an inefficient window pulls heat away from your body, so you can feel chilly in a sweater with the thermostat at 70 degrees. With ENERGY STAR qualified windows, the interior glass stays warmer, so you can enjoy your window seat even when the temperature outside dips well below freezing. In summer, a standard double-pane window allows about 75 percent of the sun’s heat into your home.<sup>3</sup> ENERGY STAR qualified windows are designed to reduce this uncomfortable “heat gain” without reducing the visible light.
- **PROTECT VALUABLE INTERIORS.** Drapes, wood floors, or a favorite photograph can fade or discolor after repeated exposure to direct sunlight. Many ENERGY STAR qualified windows have a special coating on the glass that acts like sunscreen for your house. These special coatings reduce fading by as much as 75 percent without noticeably reducing the visible light.<sup>4</sup>

CITY SAVINGS ESTIMATES

The following tables show the annual savings resulting from replacing single-and double-pane windows in 94 U.S. cities. The savings from windows qualified under the new ENERGY STAR criteria are compared with those from windows eligible for the federal tax credit. In more than half the cities, credit-eligible windows do not outperform ENERGY STAR qualified windows.<sup>5</sup> Partners can use this information to show consumers that the best window for them is not necessarily a credit-eligible window.

CALIFORNIA ANNUAL SAVINGS					
	CITY	ENERGY STAR REPLACES		TAX CREDIT WINDOW REPLACES	
		SINGLE	DOUBLE	SINGLE	DOUBLE
		Arcata	\$163	\$49	\$143
Bakersfield	\$288	\$171	\$316	\$200	
Daggett	\$359	\$213	\$389	\$243	
Fresno	\$296	\$167	\$330	\$201	
Los Angeles	\$77	\$36	\$91	\$50	
Sacramento	\$228	\$119	\$260	\$152	
San Diego	\$79	\$46	\$86	\$53	
San Francisco	\$124	\$37	\$109	\$22	

For a customized city savings graphic for your state(s), please send an e-mail with “State Graphic Request” in the subject line to [windows@energystar.gov](mailto:windows@energystar.gov).

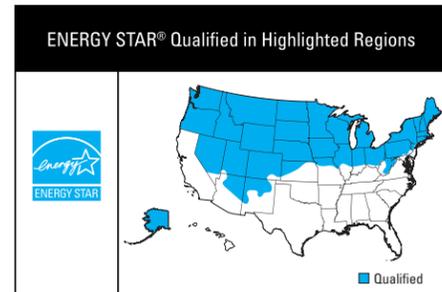
SECTION I: CONSUMER INFORMATION—ENERGY STAR BENEFITS

ANNUAL SAVINGS				
CITY	ENERGY STAR REPLACES		TAX CREDIT WINDOW REPLACES	
	SINGLE	DOUBLE	SINGLE	DOUBLE
AK Anchorage	\$283	\$122	Same	Same
AK Fairbanks	\$388	\$181	Same	Same
AL Birmingham	\$175	\$81	\$204	\$110
AL Mobile	\$195	\$114	\$223	\$142
AR Little Rock	\$195	\$85	\$227	\$118
AZ Flagstaff	\$343	\$111	Same	Same
AZ Phoenix	\$346	\$227	\$369	\$250
AZ Prescott	\$268	\$105	\$276	\$113
AZ Tucson	\$266	\$154	\$312	\$199
CA Arcata	\$163	\$49	\$143	\$29
CA Bakersfield	\$288	\$171	\$316	\$200
CA Daggett	\$359	\$213	\$389	\$243
CA Fresno	\$296	\$167	\$330	\$201
CA Los Angeles	\$77	\$36	\$91	\$50
CA Sacramento	\$228	\$119	\$260	\$152
CA San Diego	\$79	\$46	\$86	\$53
CA San Francisco	\$124	\$37	\$109	\$22
CO Denver	\$266	\$115	Same	Same
CO Grand Junction	\$262	\$123	Same	Same
CT Hartford	\$531	\$238	Same	Same
DC Washington	\$278	\$117	\$300	\$139
DE Wilmington	\$316	\$130	\$341	\$155
FL Daytona Beach	\$274	\$216	\$245	\$188
FL Jacksonville	\$270	\$195	\$263	\$188
FL Miami	\$366	\$306	\$303	\$244
FL Tallahassee	\$318	\$251	\$282	\$215
FL Tampa	\$318	\$251	\$282	\$215
GA Atlanta	\$176	\$71	\$209	\$104
GA Savannah	\$197	\$110	\$231	\$145
IA Des Moines	\$378	\$161	Same	Same
ID Boise	\$261	\$108	Same	Same
IL Chicago	\$352	\$155	Same	Same
IL Springfield	\$349	\$158	Same	Same
IN Indianapolis	\$332	\$142	Same	Same
KS Wichita	\$298	\$119	\$316	\$137
KY Lexington	\$222	\$91	\$241	\$109
KY Louisville	\$205	\$86	\$225	\$106
LA New Orleans	\$233	\$148	\$251	\$166
LA Shreveport	\$186	\$97	\$209	\$121
MA Boston	\$493	\$198	Same	Same
MD Baltimore	\$261	\$106	\$280	\$124
ME Portland	\$502	\$194	Same	Same
MI Detroit	\$370	\$156	Same	Same
MI Grand Rapids	\$395	\$171	Same	Same
MI Houghton	\$440	\$182	Same	Same
MN Duluth	\$506	\$195	Same	Same
MN Intl Falls	\$507	\$205	Same	Same
MN Minneapolis	\$419	\$175	Same	Same

ANNUAL SAVINGS				
CITY	ENERGY STAR REPLACES		TAX CREDIT WINDOW REPLACES	
	SINGLE	DOUBLE	SINGLE	DOUBLE
MO Kansas City	\$303	\$120	\$321	\$139
MO St Louis	\$305	\$121	\$323	\$139
MS Jackson	\$179	\$92	\$202	\$115
MT Billings	\$362	\$147	Same	Same
MT Great Falls	\$382	\$154	Same	Same
NC Charlotte	\$169	\$65	\$206	\$102
NC Raleigh	\$204	\$88	\$227	\$111
ND Bismarck	\$396	\$162	Same	Same
NE Omaha	\$310	\$132	Same	Same
NH Concord	\$501	\$221	Same	Same
NJ Atlantic City	\$336	\$134	\$355	\$152
NM Albuquerque	\$222	\$89	\$235	\$101
NV Las Vegas	\$299	\$157	\$336	\$195
NV Reno	\$315	\$141	Same	Same
NY Albany	\$504	\$225	Same	Same
NY Buffalo	\$518	\$225	Same	Same
NY New York	\$335	\$134	\$357	\$156
OH Cleveland	\$395	\$169	Same	Same
OH Dayton	\$379	\$161	Same	Same
OK Oklahoma City	\$200	\$71	\$238	\$109
OR Medford	\$240	\$120	Same	Same
OR Portland	\$215	\$93	Same	Same
PA Philadelphia	\$355	\$139	\$374	\$158
PA Pittsburgh	\$430	\$188	Same	Same
PA Williamsport	\$417	\$181	Same	Same
RI Providence	\$453	\$179	Same	Same
SC Charleston	\$165	\$78	\$191	\$104
SC Greenville	\$170	\$64	\$208	\$102
SD Pierre	\$368	\$152	Same	Same
TN Memphis	\$169	\$73	\$199	\$103
TN Nashville	\$216	\$95	\$240	\$119
TX Amarillo	\$324	\$134	\$349	\$159
TX El Paso	\$255	\$143	\$283	\$171
TX Fort Worth	\$261	\$145	\$287	\$171
TX Houston	\$328	\$230	\$327	\$229
TX Lubbock	\$251	\$106	\$291	\$146
TX San Antonio	\$348	\$238	\$353	\$244
UT Cedar City	\$237	\$100	Same	Same
UT Salt Lake	\$260	\$118	Same	Same
VA Richmond	\$200	\$84	\$216	\$100
VT Burlington	\$493	\$208	Same	Same
WA Seattle	\$196	\$81	Same	Same
WA Spokane	\$287	\$119	Same	Same
WI Madison	\$410	\$174	Same	Same
WV Charleston	\$191	\$81	\$205	\$96
WY Cheyenne	\$334	\$117	Same	Same

## SECTION I: CONSUMER INFORMATION—FUN FACTS

### LOOK FOR THE LABEL



Selecting windows is a complicated process. How do homeowners know which window is best for their region? The ENERGY STAR label makes it easy: the highlighted climate zone indicates that a product performs well in that region.

### LOOK FOR UPDATES

ENERGY STAR will send you quarterly e-mail additions to these fun facts starting in 2010.

If you replace your old, single-pane windows with ENERGY STAR qualified windows, you will:

### SAVE ENERGY

Save 2,660 kWh annually.<sup>6</sup> That's enough energy to:

- Power an entire home for three months<sup>7</sup>
- Power 187 compact fluorescent lamps for one year<sup>8</sup>
- Watch three straight years of TV<sup>9</sup>

### SAVE MONEY

Save an average of \$295 in heating and cooling costs each year. That's enough money to buy:

- A bicycle for commuting to work<sup>10</sup>
- Three loads of groceries<sup>11</sup>
- A digital camera or an iPod<sup>12</sup>

### SAVE THE ENVIRONMENT

Each year save as much in greenhouse gas emissions as:

- Leaving your car at home for 70 days<sup>13</sup>
- Planting 29 trees<sup>14</sup>
- Is produced by burning 1,157 pounds of coal—that's over half a ton!<sup>15</sup>

## SECTION I: CONSUMER INFORMATION—PURCHASE INCENTIVES

In 2009 and 2010, two incentives can help consumers choose ENERGY STAR: a federal tax credit and local utility incentives.

### FEDERAL TAX CREDIT

A federal tax credit is now available for certain windows installed in 2009 and 2010. As of June 1, 2009, only products with both a U-factor and SHGC of less than or equal to 0.30 qualify for a tax credit of up to 30 percent of the product price, up to \$1500.

In most climate zones, these products are also ENERGY STAR qualified. To make it easy to recognize ENERGY STAR qualified products eligible for the tax credit, partners can add an optional tax credit label, which is available on the partner resources CD or through My ENERGY STAR Account ([www.energystar.gov/mesa](http://www.energystar.gov/mesa)). The label is available in black or the distinctive ENERGY STAR blue.

### LOCAL UTILITY INCENTIVES

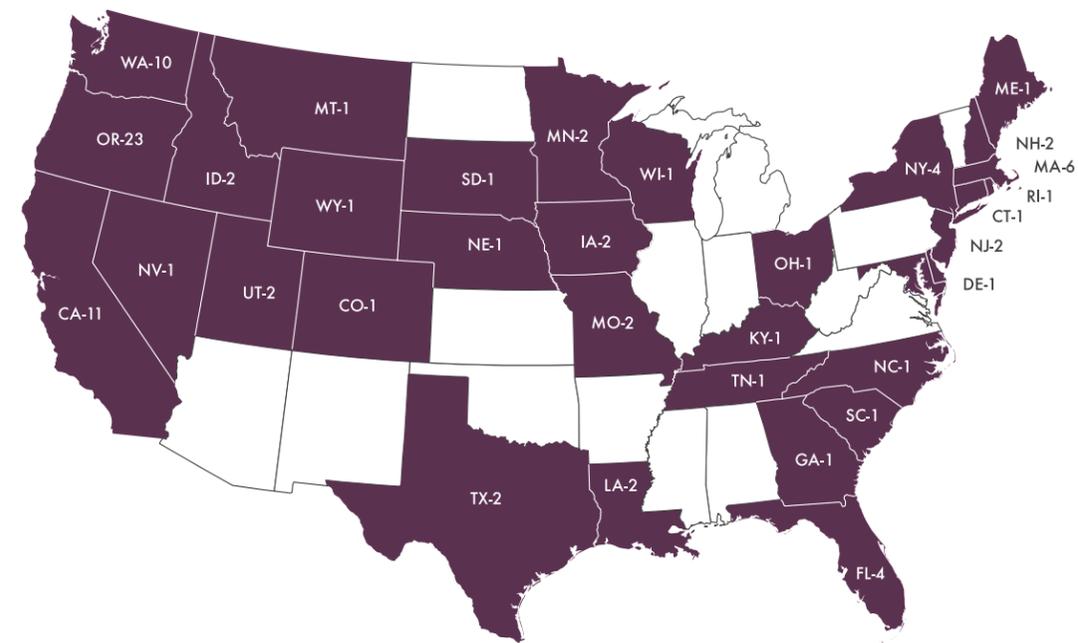
Many local utilities also provide financial incentives for purchasing ENERGY STAR qualified windows. Typically offered as rebates or low-cost loans, these incentives can make efficient products more attractive to consumers. DOE collects information on these incentives and updates the list annually. Partners can provide utility incentive information directly to their customers or direct customers to the Rebate Finder on the ENERGY STAR Web site at [www.energystar.gov/rebatefinder](http://www.energystar.gov/rebatefinder).



Consumers can find out which ENERGY STAR labels identify products eligible for the federal tax credit and tips on the climate zones for which these products are appropriate at [www.energystar.gov/windows](http://www.energystar.gov/windows).

### DID YOU KNOW?

As of May 2009, utilities and electric cooperatives were offering 93 incentive or financing programs in 32 states, with the majority concentrated on the West Coast. The number of programs has more than doubled in the last year (see map below).



■ States with utility incentive programs

VALUE-ADDED SERVICES

- When it comes to enhancing home energy efficiency, replacement windows are only one option of many. Help your customers maximize energy savings by passing along valuable tips about how air sealing and shading can lower energy bills even further: [www.energystar.gov/windows](http://www.energystar.gov/windows).
- Most homes built before 1978 contain lead paint, which can be a serious health hazard during home renovation, especially for children. Advise your customers to follow lead-safe practices when replacing windows by learning about the new EPA “Renovate Right” campaign: [www.epa.gov/lead](http://www.epa.gov/lead).

WINDOW ORIENTATION

Consumers can enhance ENERGY STAR savings by selecting specific windows for different sides of the house.

In colder climates, the ideal window for a South-facing wall that is shaded in summertime has a higher solar heat gain coefficient (SHGC) and a low U-factor to reduce heat loss. South-facing windows without shading should have a lower SHGC. Windows that face East and West should have a low SHGC or be shaded. This is especially true for West-facing windows, since they get hit by summer sun at the warmest part of the day. North-facing windows don’t get much direct sun, so SHGC is less important. Instead, consumers should buy the lowest U-factor they can afford to minimize heat loss through North-facing windows.<sup>16</sup>

In warmer climates, consumers should select windows that block extra heat from the sun, so a low SHGC is important for windows facing South, East, and West. In hot climates, it is particularly effective to shade South-facing windows generously. As in colder climates, SHGC is less important in North-facing windows since they don’t get much direct sun. It is important to choose a low U-factor for all windows in warmer climates: in addition to minimizing heat loss, low U-factors also reduce the need for air conditioning.<sup>17</sup>

INSTALLATION

Even the best windows can be drafty if they are poorly installed.

Homeowners may not know how to choose an installer or how to install the windows properly themselves. Here are a few tips on getting the most out of ENERGY STAR qualified windows:

FOR DO-IT-YOURSELFERS:

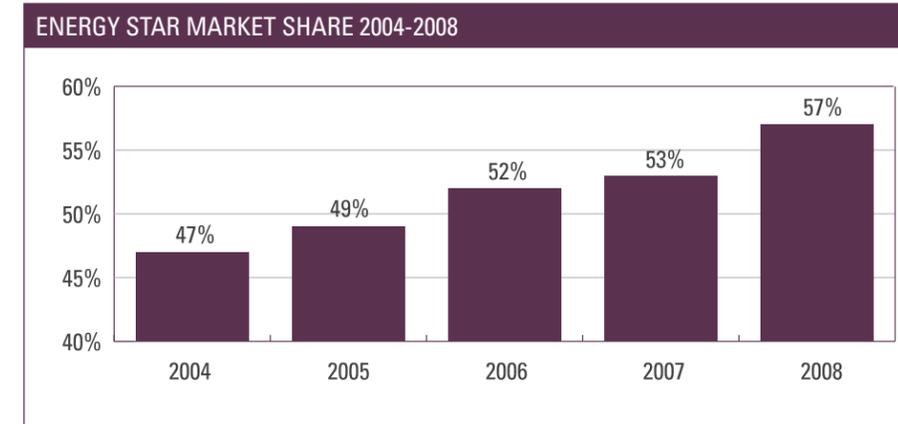
- Stick to manufacturer instructions. Some manufacturers will void the warranty if windows are installed without following manufacturer installation instructions.

FOR OTHERS:

- Seek out trained professionals. Common industry training programs include InstallationMasters and the American Window & Door Institute. Many window manufacturers have their own proprietary and rigorous training and certification programs. Some product warranties require an installer certified by the manufacturer.
- Evaluate installers. When hiring a contractor, interview candidates and ask for references. The Federal Trade Commission’s Consumer Protection Web site ([www.ftc.gov/consumer](http://www.ftc.gov/consumer)) offers home improvement advice under Consumer Information; just click “Shopping for Products & Services.”

ENERGY STAR MARKET SHARE

Market share for ENERGY STAR qualified windows has continued to climb since the program’s inception in 1998.<sup>18</sup> Since that time, almost 270 million windows have been replaced in the United States, representing about 13% of U.S. homes. The savings represent 26 billion kilowatt hours, for a total of \$5.2 billion.<sup>19</sup>



Homeowners can recoup approximately 78 percent of their window replacement costs when they sell their homes.<sup>25</sup>

MARKET DATA

ENERGY STAR has created conditions to support the sale of qualified windows. Partners can use data about consumer preferences and behavior to continue increasing sales:

- In 2008, 3 out of 5 homeowners chose ENERGY STAR qualified windows for their remodeling projects.<sup>20</sup>
- A 2007 U.S. Environmental Protection Agency analysis found that 74 percent of U.S. households recognize the ENERGY STAR label when shown the label.<sup>21</sup>
- Seventy-two percent of respondents who had purchased ENERGY STAR qualified products said the label had influenced their purchasing decision “very much” or “somewhat.”<sup>22</sup>
- Multiple studies have identified energy performance as the key motivator for more than half of homeowners who buy replacement windows.<sup>23</sup>
- Long-term homeowners include window replacement high in their home improvement priorities, while new home buyers have it lower on the list.<sup>24</sup>

## SECTION III: ENERGY STAR CRITERIA

### EXPLAINING THE DIFFERENCE BETWEEN NFRC AND ENERGY STAR

The National Fenestration Rating Council (NFRC) is a third-party non-profit organization that sponsors certified rating and labeling to help consumers compare the performance of windows, doors, and skylights. NFRC does not distinguish between “good” and “bad” windows, set minimum performance standards, or mandate performance levels. This is where ENERGY STAR comes in. ENERGY STAR enables consumers to easily identify NFRC-certified products with superior energy performance.

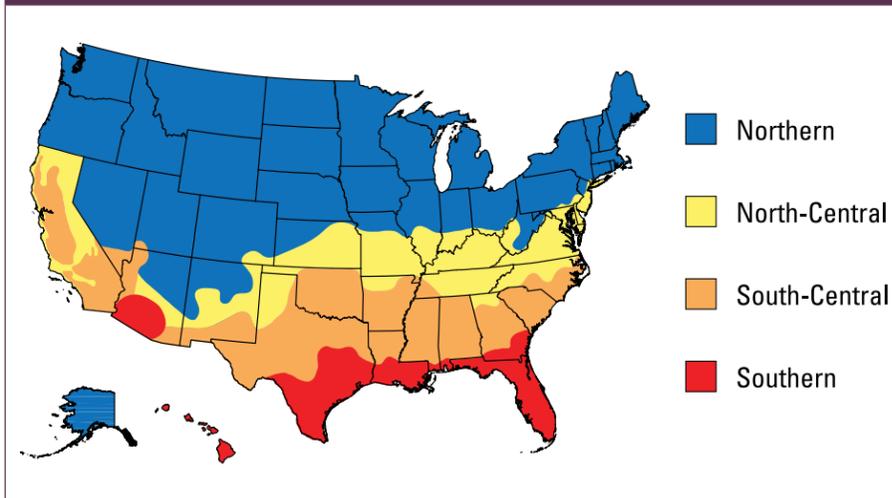
### ENERGY STAR QUALIFICATION CRITERIA FOR RESIDENTIAL WINDOWS

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	

<sup>1</sup> Btu/h·ft<sup>2</sup>·°F

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

### ENERGY STAR CLIMATE ZONE MAP FOR WINDOWS



## SECTION III: ENERGY STAR CRITERIA



### DID YOU KNOW?

The new ENERGY STAR criteria for windows, effective January 4, 2010, will save homeowners \$138 - \$295 annually.<sup>26</sup>

### COST-EFFECTIVENESS

Based on life expectancy and price premium, the purchase of windows that qualify under these new ENERGY STAR criteria is cost-effective:

- Average life expectancy of ENERGY STAR qualified windows = 20 years
- ENERGY STAR price premium = 15%
- Time to recover initial upgrade investment = 1-6 years

### PAYBACK PERIOD (YEARS)

ANNUAL ENERGY SAVINGS	16 WINDOWS PER HOUSE	25 WINDOWS PER HOUSE
\$100	6	9
\$200	3	5
\$300	2	3
\$400	1.5	2
\$500	1	2

### WINDOWS ELIGIBLE FOR THE TAX CREDIT

In 2009 and 2010, consumers get an extra boost in buying the best of the best. Windows qualifying for the federal tax credit are expected to yield annual household savings of \$149-\$304. ENERGY STAR’s research indicates that the price premium for purchasing a credit-eligible window should be offset by the tax credit. Therefore, with the support of the tax credit, homeowners can afford performance that might yield greater savings depending on their climatic conditions.



Easily manage your company's contact information to make sure you get timely updates from ENERGY STAR.

ENERGY STAR offers marketing support to help partners increase sales of ENERGY STAR qualified products through:

#### 1. THE WEB

ENERGY STAR offers Web linking, or reciprocal hyperlinks, to partners. To take advantage of this opportunity, visit [www.energystar.gov/weblinking](http://www.energystar.gov/weblinking) and design a Web page that meets the specifications. When you have designed your page, send the Web address or the mock-up to [windows@energystar.gov](mailto:windows@energystar.gov). Once your page has been approved, your company's name will appear as a hyperlink in the partner list and product search feature at [www.energystar.gov/windows](http://www.energystar.gov/windows).

#### 2. SALES TRAINING

Sales staff can increase sales of ENERGY STAR qualified windows by using these key selling points:

- Cost and energy savings
- Increased home comfort
- Protection from fading and sun damage

ENERGY STAR can provide slides or data that reinforce these points for use in your sales training presentations. Send requests to [windows@energystar.gov](mailto:windows@energystar.gov).

#### 3. PRINT, BROADCAST, AND POINT-OF-PURCHASE MATERIALS

ENERGY STAR provides text and graphics for use in print, broadcast, and point-of-purchase materials. Graphics are available at [www.energystar.gov/logos](http://www.energystar.gov/logos). Examples of available information include a list of incentives available across the United States and marketing facts that highlight the benefits of qualified products for consumers that are found in this Partner Resource Guide. Additionally, partners are free to use anything from the ENERGY STAR Web site ([www.energystar.gov/windows](http://www.energystar.gov/windows)) to inform consumers of product features and offer tips to maximize savings.

While using ENERGY STAR messaging is optional, partners must follow the Identity Guidelines at [www.energystar.gov/logos](http://www.energystar.gov/logos). Any changes to language or graphics provided by ENERGY STAR must be approved before printing or distribution; send modified materials to [windows@energystar.gov](mailto:windows@energystar.gov). Partners creating their own content can take advantage of ENERGY STAR's marketing review service. E-mail materials to [adasek@drintl.com](mailto:adasek@drintl.com) with "Request for Marketing Review" in the subject line.

#### SAMPLE ENERGY STAR MESSAGING

1. ENERGY STAR is a government-backed program sponsored by the U.S. Department of Energy and U.S. Environmental Protection Agency to help consumers identify products that save energy.
2. Every ENERGY STAR qualified window is independently certified to perform at levels that meet or exceed strict energy efficiency guidelines set by the U.S. Department of Energy.
3. ENERGY STAR requirements for windows vary by climate zone. A window that is energy efficient in Miami, Florida will not be the best choice in Anchorage, Alaska.
4. All Series 100 windows with the low-e glass package meet ENERGY STAR requirements for the Southern and South-Central climate zones.

#### IMPORTANT PARTNER LINKS

Easily manage your ENERGY STAR partnership with these online resources:

- Update your My ENERGY STAR Account (MESA) [www.energystar.gov/ mesa](http://www.energystar.gov/ mesa)
- Download the ENERGY STAR logo [www.energystar.gov/ logos](http://www.energystar.gov/ logos)
- Update your Qualified Product Information form and access other Partner Resources [http://www.energystar.gov/ index.cfm?fuseaction=products\\_for\\_partners.showWindows](http://www.energystar.gov/ index.cfm?fuseaction=products_for_partners.showWindows)
- Check your NFRC Certified Products Directory (CPD) listing <http://search.nfrc.org>

## ENDNOTES

- <sup>1</sup> Arasteh, Dariush; Selkowitz, Steve; Apte, Josh; and Marc LaFrance. *Zero Energy Windows*. Report presented and published in the Proceedings of the 2006 ACEEE Summer Study on Energy Efficiency in Buildings. Pacific Grove, CA. August 13-18, 2006.
- <sup>2</sup> U.S. Department of Energy. Savings estimates based on an even mix of one- and two-story detached homes of 1700 or 2600 sq. ft. respectively, with 15% of their floor space in windows that are equally distributed across compass directions. Heating and cooling systems are modeled as either natural gas heat with electric air conditioning or electric heat pump, according to the regional breakdown reported in the Energy Information Administration's (EIA) 2005 Residential Energy Consumption Survey. Estimates use the EIA's 2006 average natural gas prices and 2007 electricity prices. Actual savings will vary by local climatic conditions, utility rates, and individual home characteristics. Hawaii was excluded from this analysis, as the assumptions in the standard software program used for calculating the impact of windows on heating and cooling costs for the residential sector diverge significantly from the norm in Hawaii.
- <sup>3</sup> Carmody, Selkowitz, Arasteh, and Heschong. *Residential Windows*. 2007.
- <sup>4</sup> Carmody, Selkowitz, Arasteh, and Heschong. *Residential Windows*. 2007.
- <sup>5</sup> Based on prescriptive ENERGY STAR windows criteria.
- <sup>6</sup> Energy calculations all assume the average national savings of \$295 for replacing single-pane windows, converted to kWh based on 11.09 cents per kWh.
- <sup>7</sup> 2005 *Residential Energy Consumption Survey*. An average household consumes 11,400 kWh per year.
- <sup>8</sup> Assumes 13 W CFLs running 3 hours a day.
- <sup>9</sup> Assumes 113 W nameplate capacity for a 27-inch TV running continuously.
- <sup>10</sup> Assumes the cost of one bicycle to be \$295.
- <sup>11</sup> Assumes the cost of one load of groceries to be \$100.
- <sup>12</sup> Assumes the cost of a digital camera or iPod to be \$295.
- <sup>13</sup> The population-weighted CO<sub>2</sub> savings are 2,475 lbs. Divided by the average vehicle production of 1.038 lbs. of CO<sub>2</sub> per mile traveled, this equals 2,385 miles. The Federal Highway Administration gives the average mileage per year for a passenger vehicle as 12,427 miles.
- <sup>14</sup> The average sequestration for sapling trees over ten years is 85 lbs. of CO<sub>2</sub>.
- <sup>15</sup> Assumes one pound of coal burned emits 2.14 lbs. of CO<sub>2</sub>.
- <sup>16</sup> U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. *A Consumer's Guide to Energy Efficiency and Renewable Energy*. 2005.
- <sup>17</sup> U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. *A Consumer's Guide to Energy Efficiency and Renewable Energy*. 2005.
- <sup>18</sup> Market share data for ENERGY STAR qualified windows based on biannual reports in 2003, 2005, and 2007 prepared by Ducker Research and published by AAMA/WDMA. Data for 2004 and 2006 calculated by the U.S. Department of Energy using data from Ducker Research.
- <sup>19</sup> U.S. Department of Energy estimate based on data from Ducker Research.
- <sup>20</sup> Based on current estimates of 2008 ENERGY STAR market share of nearly 60%.
- <sup>21</sup> Environmental Protection Agency. "National Awareness of ENERGY STAR® for 2007: Analysis of CEE Household Survey." 2007.
- <sup>22</sup> Environmental Protection Agency. "National Awareness of ENERGY STAR® for 2007: Analysis of CEE Household Survey." 2007.
- <sup>23</sup> Refers to several studies, including the NFRC Homeowner Survey.
- <sup>24</sup> Joint Center for Housing Studies of Harvard University. *The Remodeling Market in Transition*. 2009.
- <sup>25</sup> "Remodeling Cost vs. Value Report 2008-2009." *Remodeling Magazine*. November 2008.
- <sup>26</sup> U.S. Department of Energy. Average National Savings estimates based on an even mix of one- and two-story detached homes of 1700 or 2600 sq. ft. respectively, with 15% of their floor space in windows that are equally distributed across compass directions. Heating and cooling systems are modeled as either natural gas heat with electric air conditioning or electric heat pump, according to the regional breakdown reported in the Energy Information Administration's (EIA) 2005 Residential Energy Consumption Survey. Estimates use the EIA's 2006 average natural gas prices and 2007 electricity prices. Actual savings will vary by local climatic conditions, utility rates, and individual home characteristics.