Market Progress Evaluation Report Executive Summary

ENERGY STAR® Windows, No. 2

prepared by

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report #E99-037

August 1999

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Market Progress Evaluation Report for ENERGY STAR® Windows

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Program Description

The Northwest Energy Efficiency Alliance's Evaluation of the ENERGY STAR® Residential Fenestration Program (the Program) uses the marketing potential of ENERGY STAR labeling and certification to aid in transforming the Northwest window energy efficiency market.[1] The program's goal is to build an infrastructure to increase market share by working in partnership with window product manufacturers, wholesaler/distributors, retail suppliers, and builders. The primary target is residential new construction, including single-family, multi-family, and manufactured housing. The program, which began in 1998, also targets remodelers.

Key partners and allies include window product manufacturers, regional utilities, building code officials, builders, retailers, wholesalers, and other government agencies. Plans are underway to leverage co-op advertising with key partners and allies with target cities identified for market testing of the Strategic Marketing Plan. The Plan was developed to reach diverse actors with a wide variety of approaches in order to increase the brand awareness and value of ENERGY STAR windows, and to positively influence purchasing decisions of ENERGY STAR windows.

Under this approach, Manufacturer Partners sign a Memorandum of Understanding (MOU) to use the ENERGY STAR logo in advertising, educational and other promotional materials designed to reach two key markets – residential new construction and remodelers. Under the MOU, participating window product manufacturers are given monetary incentives to aid in leveraging marketing of ENERGY STAR window products. Energy efficient, or high efficiency window products, surpass code requirements. They are windows and doors with a U factor ≤ 0.35 and skylights with a U factor of ≤ 0.45.

[1] ENERGY STAR® is a trademark of the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency's (EPA) program to increase energy efficiency in a number of products including appliances, computers, windows, etc.

The ENERGY STAR Program was created to achieve the following goals in the Northwest:

- ➔ Decrease at least two market barriers – lack of awareness and initial cost premiums – that limit sales of high-efficiency fenestration products.
- ➔ Increase market share for high-efficiency fenestration products in the residential new construction and remodel market to 54% by the year 2001.

Summary of Research Activities

Research specifically conducted for this Market Progress Report (Report) includes the following:

- ➔ A telephone survey of 239 new homebuyers
- ➔ A telephone survey of 93 remodelers
- ➔ In-depth interviews with 11 of the largest window product manufacturers in the region
- ➔ In-depth interviews with 68 new home builders

Summary of Key Findings and Highlights

Product Market Share

Overall Northwest market share penetrations for energy-efficient windows were estimated in the range of 10%-15% in 1997. Market share of ENERGY STAR windows has sharply increased by the end of 1998 and is estimated to be in the range of 41%-44% of residential window sales in the Northwest. The Program appears well on its way to the target goal of 54% by 2001.

The following market drivers are identified in the transformation of the Northwest windows market:

- ➔ Windows manufacturers' partnerships and participation in the Program (and other national and regional energy efficiency market transformation efforts)
- ➔ Cumulative effects of building codes across the region
- ➔ Increased awareness of energy efficiency in general (but not ENERGY STAR windows) by consumers

- ➔ The naturally competitive nature of the fenestration industry
- ➔ Material and technology breakthroughs and service trends (e.g., more after-sale service) in windows manufacturing and related drops in the costs to produce energy-efficient windows
- ➔ A trend by manufacturers to position energy-efficient products in all or most of their product lines (with "energy efficient" being defined as anything with $U \leq 0.45$)

Market Barriers: Lack of Awareness and Initial Cost

Although relatively early in the program, initial results indicate that manufacturers in particular are extremely aware and active in the Program, due in large part to the efforts of program implementors, as well as to the effects of other regional and national window energy efficiency transformation efforts. Consumers, on the other hand, appear to be aware of and value energy efficiency in general but are almost completely unaware of the Program. New homebuyers are less aware than are remodelers. Builders have an intermediate level of awareness between consumers and manufacturers. They respond to the demand of custom buyers but appear to either not recognize the marketing value of ENERGY STAR windows for the spec market, or they are unwilling to shoulder perceived related financial risks of installing energy-efficient windows. Clearly, future efforts in the program must continue the good work with manufacturers but must also address lack of information and communication issues for consumers and builders.

Customers, based on their responses, appear to be willing to pay more for energy-efficient windows. Manufacturers and builders, on the other hand, still appear to judge first cost as a substantial barrier to increasing market share of ENERGY STAR windows in the region. This may be alleviated by use of materials and spacer technology by certain manufacturers, allowing ENERGY STAR windows to be constructed without argon gas fill, or additional market transformation support may be needed to successfully decrease this barrier. Following are specific findings concerning the level of awareness and market barriers perceived by consumers, builders, and manufacturers.

Perceptions of Consumers

- ➔ Although energy efficiency was important to new homebuyers and remodel customers, both were generally unaware of ENERGY STAR windows. The most important factors that homebuyers considered were floor plan (86% rated this as “somewhat” or “extremely” important), overall price (82%), size of home (79%), and energy-saving features (78%). Only 16.7% of the new homebuyer respondents are aware of ENERGY STAR in general Only 2.9% of all respondents are aware of ENERGY STAR windows/skylights.

- ➔ Only 16% of the remodel respondents were aware of the ENERGY STAR Program. And only about half of these (7.5%) could identify an ENERGY STAR product, with only 4.3% able to identify ENERGY STAR window products.
- ➔ New homebuyers think they already have energy-efficient windows. Over half (53%) of the homebuyer respondents reported that they already had high-efficiency windows in their homes, despite the fact that manufacturers’ and builders’ data show that this percentage did not exceed 35%-36% for new single-family homes.
- ➔ New homebuyers are interested in the benefits of energy efficiency and are willing to pay for them. More than half of the new homebuyer survey respondents were willing to pay the higher incremental price ($2.15/square foot) to have energy-efficient windows. Only 19% of the respondents were not interested in paying *any* incremental cost to have energy-efficient windows that went beyond what was required by code.
- ➔ Remodel customers were very interested in the features of energy-efficient window products. Approximately 50% or more rated them as “somewhat” or “extremely” important.

Perceptions of Builders

- ➔ Only 20% of homebuilders have heard of ENERGY STAR windows. The overwhelming majority of those that were familiar with ENERGY STAR windows have learned about them from an advertisement in a magazine.
- ➔ The majority of builders believe that energy-efficient windows are high cost and said that customers had expressed no or little interest in them.
- ➔ Energy-efficient products appear to be valued by custom-home builders, by users of electric heat, and by builders familiar with ENERGY STAR windows.

- ➔ Energy efficiency appears to rank lower in importance than the other salient attributes that homebuilders consider important in marketing a home, based on the results of the Analytic Hierarchical Process (AHP) analysis. This should not be interpreted to mean that energy efficiency is not an important attribute; it simply means that other attributes, such as price and location, ranked higher.

Perceptions of Manufacturers

- ➔ Manufacturers reported that first costs and lack of awareness and information, particularly on the part of builders and consumers were major market barriers. Based on the results of the AHP analysis, cost is still perceived as the highest market barrier to marketing energy-efficient windows by manufacturers.
- ➔ Lack of demand – manufacturers said that customers must express more demand for energy efficiency before the market will be transformed but that customers must be made aware and be given essential information before they can express that demand. In the AHP analysis, manufacturers ranked lack of information second in importance only to cost as a market barrier.
- ➔ Manufacturers believed that lack of communication and/or communication breakdowns exist in the transmission of information on the benefits of energy-efficient window products in the supply chain between manufacturers and final customers.
- ➔ Manufacturers said that there are significant differences in who makes decisions in residential new construction (builders) versus homebuyers who see the effects on their heating and cooling bills of energy-efficiency choices.

Conclusions

Our research indicates a very substantial growth of energy-efficient windows market share in the Northwest, from 10%-15% in 1997 to 41%-44% by the end of 1998. However, it also shows that market barriers, including substantial lack of awareness on the part of consumers and lack of understanding of the value of energy efficient windows as a marketing tool by builders, continue to inhibit market transformation. Initial cost is still perceived by both manufacturers and builders to be a market barrier to increasing market share of ENERGY STAR windows in the Northwest.

Market Drivers

Despite the general lack of awareness on the part of and a fairly low awareness level on the part of builders consumers of ENERGY STAR windows, a number of possible reasons were identified in the rapid increase in market share for ENERGY STAR windows in 1998. It appears the market transformation is primarily being driven by manufacturers rapidly changing the energy efficiency of their product lines. Manufacturers attribute this to several factors: (1) participation in the ENERGY STAR Windows program (and other national and regional energy efficiency market transformation efforts), (2) expectations that current trends in state building code increases in energy efficiency will continue, (3) the competitive nature of the fenestration industry in general, (4) material and technology breakthroughs (resulting in cost reductions for energy efficient windows) and (5) service trends towards higher levels of post-installation customer care. A rising level of awareness of energy efficiency on the part of consumers in general, although a powerful potential driver of the market, has not been yet linked to ENERGY STAR windows.

Market Barriers

Specific market barriers identified by consumers, builders, and manufacturers include:

- ➔ A distinct lack of awareness and information about ENERGY STAR among new homebuyers and remodelers. Homebuyers and remodel customers, however, are interested in the features and benefits of energy-efficient window products.
- ➔ Builders, in general, also have a fairly low awareness of ENERGY STAR, although custom homebuilders tend to value energy-efficient products. Builders tend to believe that energy-efficient windows cost more and that customers have little interest in them compared to other house features.
- ➔ Manufacturers report that first costs of energy-efficient windows are a barrier to builders and consumers and that builders make decisions on energy efficiency for different reasons, mainly first cost, than do consumers, who tend to take long-term energy savings more into account. They also believe that lack of awareness and information, particularly for builders and consumers, is a major market barrier resulting in a lack of customer demand for energy-efficient windows.

- End use consumers, builders, retail suppliers, wholesaler/distributors are all considered customers by manufacturers, and each, in turn, influences downstream window purchasers. Information concerning the benefits of energy-efficient window products, although understood by some actors, is not being effectively transmitted to other key actors, for example, by builders to new homebuyers.

Recommendations

- **Continue to build customer demand for ENERGY STAR products at every level**. Manufacturers want customer demand for ENERGY STAR level efficient window products to develop so that they can respond to it. They know that higher demand will eventually lead to cost reduction. Demand can be built in various ways, by more stringent codes or by increasing the awareness at the end-use level resulting in customers requesting ENERGY STAR products from builders (for custom homes) and from retailers.
- **Continue to provide extended marketing and training support within specific chains of market actors** to recognize the interdependence of communication between specific market actors (e.g., manufacturers, wholesalers/retailers, and builders/developers/ contractors). In particular, strengthen the focus on increasing builders' level of awareness regarding the benefits to them and homebuyers of increased energy efficiency. Builders, particularly builders of "spec" homes, are seen by other market actors as a key point in the decision process concerning energy-efficient window products, significantly slowing the speed of the movement to ENERGY STAR window products. Since about 40% of the builders surveyed indicated that they purchased their windows from distributors, another key group to target is window distributors.

  There appears to be a disconnect between what the builders think the homeowners value and what the homeowners say they value. Homebuyers appear to place a higher value on energy efficiency than their builders think they do. ***We recommend that consumers' interest in window energy efficiency be communicated to builders via information and advertising so that they recognize its value as a marketing tool.*** Homebuilder association meetings are a good place to start.

- **Target additional market actors as necessary in order to educate them about the advantages of using ENERGY STAR window products**. These include model home sales agents, builders, manufactured home dealers, retail outlets, remodel contractors, and real estate agents. These market actors should be targeted in terms of cost-effectiveness, so the emphasis on selection of targeting strategies should be on the greatest leverage of program dollars.
- **Consider providing support to manufacturers using glazing and framing technologies crucial to energy-efficient windows market transformation**. This support could include leveraging existing technologies and/or diffusing cutting edge glazing and framing technologies via dispersal of information, advertising, and marketing, or even the more direct support of manufacturers' efforts to incorporate ENERGY STAR supportive technologies and materials in manufacturing processes.