Selling Energy Efficiency: The Rules of the Game are Stacked Against You.... So Break Them!

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ABSTRACT
Energy efficient technologies and buildings bring an impressive array of value-added benefits and "real" cost savings to the market place. We all know that. Yet it's is striking how little these benefits and cost advantages are capitalized at the point of sale because traditional market transactions rules do not allow them to come into play. The old ways of selling energy efficiency do not work! Rather than seeking new market-based solutions, frustrated energy efficiency entrepreneurs have often blamed the government for lack of incentives and financial support. In many cases, government and utilities have actually done a considerable disservice to the energy efficiency industry where poorly configured tax credits and rebates have embedded a perception that efficiency is not worth a higher "first" cost and should only be considered when heavily incentivized. This is no longer the case. ENERGY STAR® programs are demonstrating that a critical key is changing the rules of selling. This paper will examine five rules of selling that have undermined energy efficiency and how they can be effectively broken for new homes with the ENERGY STAR Homes Program. True market transformation is within our reach because the energy efficiency industry has a better mouse trap, and now a better way to sell it.

Background

The low market penetration for so many cost-effective, tried-and-true energy efficiency technologies makes its evident that the historic rules for selling and marketing energy efficiency have generally not worked very well. This and other observations in this paper are experience-based. In this case, the experience is with an U.S. Environmental Protection Agency (EPA) national program promoting energy efficient housing called ENERGY STAR Homes. This program is part of a family of ENERGY STAR programs within EPA's Atmospheric Pollution Prevention Division (APPD) that work voluntarily with industry partners to profitably save energy in the residential, commercial, industrial, agricultural and utility sectors. The EPA has implemented these programs to prevent pollution and avoid risks associated with global climate change.

The ENERGY STAR Home Program works with builders to construct homes 30 percent more efficient than the national Model Energy Code (MEC). No subsidies are provided, just market-based support that helps builder partners differentiate and sell energy efficient homes. The recommendations presented in this paper are derived from APPD's "learning by doing" culture that aggressively initiates market-based activities, builds on successes, and discards unproductive efforts. Confidence in selling strategies is based on impressive real world results (billions of dollars in annual energy savings by ENERGY STAR partners), positive industry feedback, and exponential program growth. For instance, the ENERGY STAR Homes Program has quadrupled the number of

ENERGY STAR Home builder partners over the past two years and projects the number of ENERGY STAR Homes scheduled to be built this calendar year to increase by an order of magnitude.

There is probably little argument that energy efficiency works; the hidden secret is that it can be sold on its merits. The ENERGY STAR Homes program seeks to expose this secret by providing builders, Realtors and product vendors with the tools and knowledge needed to sell energy efficiency. However, the answers to selling energy efficiency were not to be found in common reference sources, extensive literature searches, and detailed market analyses. This traditional research revealed the extensive experience with anachronistic approaches to selling efficiency that have proven too costly or ineffective: rebates, "payback" analyses and an over-emphasis on the technical performance. Instead, this paper will highlight the selling strategies that the ENERGY STAR Homes Program has employed to break the market barriers. It's time to bring the better "mouse trap" to mainstream building industry in terms they understand and consistent with the market realities they face every day; it's time to start breaking the rules.

Breaking the Rules for Selling Energy Efficiency

Rule No. 1: Retail price equals cost

Energy efficient home and product sales continue to be dominated by the first cost rule: a product's cost is its retail price. If you're selling energy efficient products, they typically cost more. So if you play by this rule, ***you lose!*** And what's truly tragic is that energy efficiency costs less if you look at a concept we call "real cost". The real cost concept recognizes that every product has three "sticker prices": first cost, operation cost, and maintenance cost.

Applying this concept to a product as simple as a light bulb produces the results shown in Table 1. The basic assumptions are: a bulb is needed for a light fixture operated 1,000 hours per year (almost 3 hours a day); a 60-watt incandescent lamp option costing $.50 produces the same amount of light as a 15-watt compact flourescent light (CFL) costing $12; and the incandescent lamp lasts about 1,200 hours compared to 10,000 hours for the CFL. Using just the first cost information consumers typically use to make their purchase decision, the choice appears to be a "no-brainer"; the CFL costs more than twenty times as much as the incandescent light. With first cost, the CFL will always lose! But if all of the information available is considered, a ***true*** comparison can be made based on real cost yielding a completely different result.

Based on a 1,000 hour use per year, the CFL will last 10 years, so real cost is based on this lifetime. The incandescent lamp will consume 1,000 hours times 60 watts of power annually equal to 60,000 watt-hours, or 60 kWh. Assuming a $.10/kWh electricity cost the annual operation cost is $6, or $60 for 10 years. In contrast, the CFL will consume 1,000 hours times 15 watts of power annually equal to 15,000 watt-hours, or 15 kWh. At the same electricity rate, this amounts to an annual operation cost of $1.50, or $15 cost over its 10-year life. Since the incandescent lamp only lasts 1,200 hours, 7 bulb replacements are required over the 10-year period for an additional incandescent bulb maintenance cost of $3.50. The added "nuisance" cost associated with having to replace burned out incandescent bulbs is not considered. No replacement costs are incurred for

the CFL over this 10 year period. Adding up all three components of real cost reveals impressive cost advantages for the energy efficient option. The $67 real cost of the incandescent lamp is $37 higher than the $27 real cost of the CFL, or more than double the cost. If incandescent light bulbs were free, it would only save $4 of first cost and maintenance cost leaving consumers still spending $33 too much by not buying CFL's for $12. Where consumers make their light bulb purchase decisions based on first cost, they have considered less than 1% of its real cost($.50 vs. $64). This is clearly a poor basis for consumer decision-making.

Table 1: Real Cost Example - Incandescent vs. Compact Fluorescent Light

	Incandescent	Compact Fluorescent
1st Cost	$ .50	$12.00
10-Year Operation Cost	$60.00	$15.00
10-Year Maintenance Cost	$ 3.50	$ .00
Total Cost	**$64.00**	**$27.00**

Unfortunately, selling strategies for energy efficient CFL's still do not effectively apply these "real cost" advantages, but remain too dependent on either giving them away or heavily subsidizing their cost. We're selling energy efficient light bulbs the wrong way if the "real cost" advantage is not made obvious to consumers. Retailers, manufacturers or utilities motivated to sell energy efficient light bulbs would serve long-term market transformation by providing comparative incandescent and CFL first cost in small letters and comparative "real cost" in BIG letters on all consumer information material and directly on the product packaging.

ENERGY STAR Homes brings the same "real cost" concept to three key audiences to increase the sales of energy efficient new homes. The first audience, builders, are introduced to this concept from our initial contact during the program recruiting process. Experience continues to show that, before training, most mainstream builders still feel buyer resistance to additional first cost is a significant barrier. Realtors and in-house sales professionals comprise the second audience. They are primarily targeted with the "real cost" concept as part of a ENERGY STAR Home sales training course. The last audience, consumers, are educated about "real cost" through a broad range of educational outreach activities. Although the message may vary for each audience, the content stays the same: look for ENERGY STAR Homes to provide the lowest ownership cost.

An example of how real cost applies to ENERGY STAR Homes is shown in Table 2. The assumptions for the ENERGY STAR Home are based on average values from over 100 home energy ratings performed for ENERGY STAR builders. They include an additional first cost of $2,500, 5% down payment and $35 dollar a month utility savings. The higher first cost of the ENERGY STAR Home in this example results in a $21 higher monthly mortgage. However, if the monthly utility bills and tax benefits (the additional mortgage interest is tax deductible) are included, the ENERGY STAR Home costs $17 less per month than a standard home to own! Over a 30-year mortgage, the

invested savings could add up to over $37,000. With first cost, energy efficient homes lose; with "real costs", energy efficient homes are the best deal.

Table 2: Real Cost Example - Standard vs. ENERGY STAR Homes

	Standard Home	ENERGY STAR Home
First Cost	$160,000	$162,500
Monthly Mortgage	$1,323	$1,344
Monthly Utility Bill	$150	$115
Additional Tax Benefit	$0	($3)
Total Monthly Cost	**$1,473**	**$1,456**
Positive Cash-Flow	**$0**	**$17**
30-Year Accrued Savings	**$0**	**$37,000**

Rule No. 2: The way to justify extra first cost is with payback

It's hard to imagine a more ineffective concept for selling energy efficiency than "payback". Yet, it remains the most widely used justification when energy experts respond to the extra cost of energy efficient technologies. One recent National Association of Home Builder (NAHB) Survey shows that consumers want energy efficiency, but over two-thirds won't accept a payback as low as 3 years, and half won't accept even a one year payback! Why fight this losing battle? There is no context for payback to be an effective tool. Whether it's televisions, food, cars or sporting goods, consumers do not buy any products or services based on payback; they cannot relate to this concept. Consumers are reluctant to engage in any purchase that requires them to wait for extra costs to be paid back. ***You cannot sell mainstream consumers "payback", so eliminate this word from your vocabulary and break this rule!***

In contrast, consumers do have a context for investments. Virtually all home buyers have bank accounts and a good portion apply savings or pension contributions to traditional investments such as stocks, bonds and certificates of deposits. If the same consumers surveyed by NAHB were asked about their willingness to pay extra for energy efficiency upgrades that provided assured high rates-of-return, many fold better than low yielding savings accounts or more risky traditional investments, the results might have been dramatically different.

The same example from Table 2 is expanded in Table 3 to look at the return-on-investment (ROI). Since home buyers almost always expect to get their money back at resale, including some appreciation, the only additional investment for the ENERGY STAR Home is the additional down payment. The return is the positive cash-flow where monthly utility savings exceed the increase in monthly mortgage. In this example, the $125 additional down payment produces the $17 monthly

cash-flow calculated in Table 2 for a "too good to be true"165% ***after-tax*** rate-of-return. In particular, compare this return with other investment returns such as 5.4% for 5-year certificates of deposit (average annual percentage yield for 1994-1997); 7.5% for 1991-1996 Lippe Taxable bond Fund average; 14.5% for 1991-1996 Stock Fund average; and 15.7% for 1991-1996 S&P 500. And in cases where ENERGY STAR Home builders back up the energy savings claims with warrantied low heating and cooling bills, this represents a ***guaranteed*** rate of return. Even for the light bulb example in Table 1, the small cash investment in the high efficiency CFL yields over a 50% after tax rate-of-return. Break the rules; instead of selling based on payback, show how energy efficiency can deliver a compelling investment opportunity!

Table 3: Investment Return for Standard vs. ENERGY STAR Homes

	Standard Home	ENERGY STAR Home
1st Cost	$160,000	$162,500
Additional 5% Down Payment	$0	$125
Positive Cash-Flow	**$0**	**$17**
After-Tax ROI	**0%**	**165%**

Rule No. 3: The only benefit that sells is lower utility bills

Most consumers appreciate the fact that more efficient products and homes result in lower utility bills. However, energy efficiency brings many other impressive benefits that have been undersold for too long. Better insulated and sealed building envelopes along with high-performance windows blanket a home in outstanding thermal ***comfort*** and ***quiet***. Tightly sealed heating and cooling ducts and construction framing ***improve indoor air quality*** by effectively blocking the penetration of pollutants from outdoors, attics, garages, basements and crawl spaces. These pollutants include moisture that can create molds and mildew, pollens, dust, pests, radon, car exhaust and solvent fumes. Right-sized, energy efficient mechanical systems are ***more durable*** with longer warranties; are more effective removing humidity in summer for improved comfort and air quality; and operate more quietly. And third-party field inspections and testing provide buyers important ***peace-of-mind*** by shifting the incentive behind the installation of critical building components from "speed" to "quality". This is because building subcontractors often pay their crews a flat piece rate or by the number of jobs completed per day. In particular, insulation, mechanical duct and air sealing trades face critical pressures to get "in and out" rather than do a good job. This all changes with field verification. The cost of going back and fixing problems and the stigma of failed testing provide an incentive for quality that is too often missing.

The ENERGY STAR Homes sales training course works directly with builders' Realtors and in-house sales professionals to include this value in their sales approach. This includes transferring effective sales techniques for communicating value that have been gleaned from profitable energy efficient builders around the country. These techniques include owner manuals highlighting

benefits, simple consumer checklists, tricks for developing and displaying testimonials, on-site technology displays showcasing tangible improvements and advanced technology, and simple on-site signage calling out features and benefits. In addition, EPA provides an ***ENERGY STAR Homes Builder Guide*** to all builder partners. Rather than educate builders and their sales agents about how energy efficiency technologies work and should be installed (there are plenty of great guides on this topic already), this guide provides detailed information on the benefits ENERGY STAR Homes offer prospective buyers and how these features can be used to increase sales.

In addition to enhancing product positioning options during the sales process, the extra value of energy efficiency increases long-term customer satisfaction. History has shown that home owners' tastes change frequently in response to new design trends, with old ones becoming quickly out-of-date. Today's white enamel cabinets, monolithic counter surfaces and high flat ceilings have replaced white-washed cabinets, tile counters and low flat ceilings, but are sure to be replaced with other new trends. However, energy efficiency benefits represent timeless value: comfort, quiet, durability and good indoor air quality never go out of style. Moreover, ENERGY STAR Homes are positioned to provide higher resale value where home owners can take advantage of years of low energy bills, less risk that their homes' technologies and construction features become sub-standard, and an increasingly prominent "brand name" label distinguishing quality performance from a highly respected government agency. Energy efficiency sales professionals should not ignore all this added value!

Rule No. 4: You need more down payment and higher incomes for energy efficient homes

If energy efficiency delivers more value for less cost, the only rational objection builders could have to constructing ENERGY STAR Homes is that they will lose buyers who cannot come up with additional down payment or qualify for the higher mortgages. Energy efficient mortgages (EEMs) that can break this rule are becoming more widely available and well known. Moreover, the ENERGY STAR Homes Program has formed partnerships with national lenders to provide ENERGY STAR Mortgages that improve on existing EEMs. ENERGY STAR Mortgages offer a variety of preferred terms including reduced closing costs, increased debt-to-income ratios, and assured appraised values for the cost of additional energy features. One national product available in all 50 states offers ENERGY STAR Home buyers a flat $500 discount off of closing costs and an increased stretch ratio from 2% to 4%. Table 4 continues expanding on the home example from Table 2 to show how these preferred terms work. The result is that the ENERGY STAR Home requires $375 ***less*** up-front cash and $2,500 less home buyer income compared to the lower "sticker price" standard efficiency home. In other words, ENERGY STAR Home builders can put hundreds of dollars back in their customers pocket at closing and qualify more buyers than their competitors building standard-efficiency, lower first cost homes! In fact, EPA calculations indicate that close to 3 million more home buyers would qualify for ENERGY STAR Homes with this mortgage stretch.

Table 4: Real Cost Example - Standard vs. ENERGY STAR Homes

	Standard Home	ENERGY STAR Home
Additional First Cost	$0	$2,500
Additional 5% Down Payment	$0	$125
Cash Back at Closing	$0	$500*
Net Extra Up-Front Cost	**$0**	**($375)**
Debt-to-Income Stretch Ratio	2%	4%*
Qualifying Income	**$53,000**	**$50,500**

* Preferred terms available with ENERGY STAR Mortgage

Rule No. 5: All new homes are energy efficient

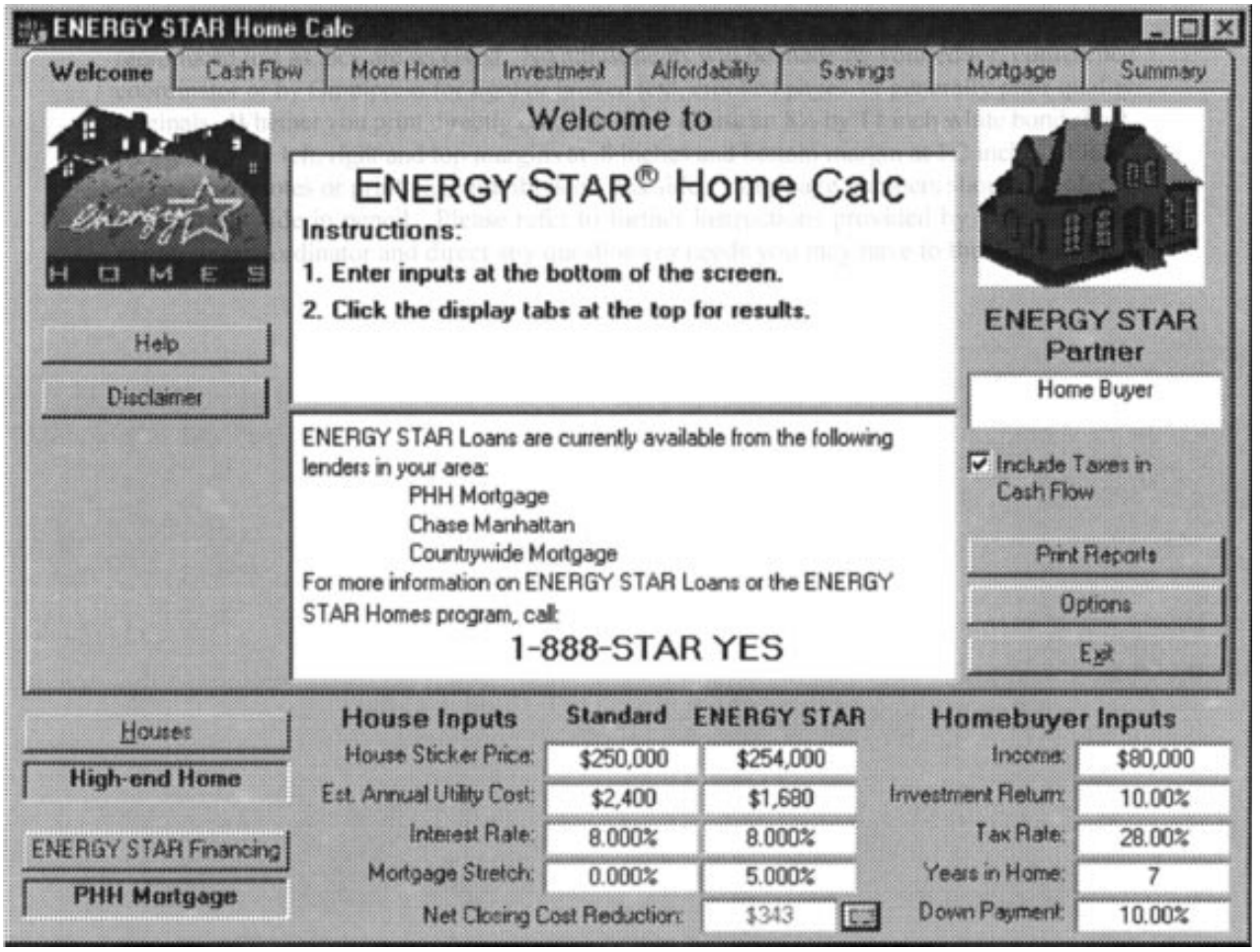
If you asked every one of the 100,000+ builders in the country if they build energy efficient homes, you would likely get 100,000+ "yes" answers. And in fact, builders have made significant improvements in the efficiency of their homes over recent years. However, today's "on-the-shelf" technologies can cost-effectively reduce energy consumption 30 to 70 percent above today's "standards". Consumers don't have the expertise, skills, motivation nor time required to scrutinize builders' claims and energy efficiency for homes under consideration. It is easy for buyers to be overwhelmed just trying to find the best location, schools, architectural design, layout, storage, and numerous other home features they easily recognize and know they want. Even if the "more value for less cost" energy efficiency message is effectively communicated, it is critical that consumers can easily identify, find and believe it with a simple differentiation tool.

ENERGY STAR Homes provides a national "brand name" label consumers can use to identify energy efficient homes. This label means a home has been third-party field verified to meet exemplary performance guidelines set by a highly respected government agency. There are no complicated gradations (i.e., gold, silver, bronze). There are no regional variations; ENERGY STAR always means 30 percent above the MEC whether in Alaska or Florida. There is no potentially complicated information to interpret (i.e., Federal Trade Commission energy labels for appliances). By design, ENERGY STAR is a simple "yes/no" decision; if home buyers believe in the merits promoted, they simply have to find the label for a smart consumer decision. In the opinion of the author, too many energy efficiency programs in the past have failed to meet expectations because they did not address this "real-world" constraint for consumer decision-making. ENERGY STAR is a simple check-off item that consumers can use to break the rule all new homes are energy efficient.

Breaking the rules with ENERGY STAR Home Calc software

Knowing the rules that must be broken is a great start, but effective sales tools are badly needed that are easy for non-experts to use and can address a broad range of consumer decision criteria. The ENERGY STAR Homes Program has addressed this need by developing a new home sales software program called ENERGY STAR Home Calc (Home Calc). Home Calc was used to calculate the results shown in Tables 2 through 4 in this paper. The software is given to all ENERGY STAR Homes builder and ally partners and is an important component of the ENERGY STAR Homes sales training course. Home Calc is a simple, user-friendly tool that quickly produces results demonstrating the advantages of ENERGY STAR Homes: lower "real cost", impressive investment rates-of-return, and reduced cash and qualification requirements possible with ENERGY STAR Mortgage financing (see Figure 1). It also prominently displays the "more value for less cost" message and EPA ENERGY STAR logo directly on-screen and on print-outs. Whether used behind the scenes or directly with prospective home buyers, Home Calc produces customized sales information that breaks the old rules for selling energy efficiency.

Figure 1: Sample ENERGY STAR Home Calc Screen



Conclusion

The ENERGY STAR Homes program is implementing new selling strategies that work to meet its long-term market transformation goal. The program's recent exponential growth has it well on track to achieving this objective. EPA expects that by the year 2002, over 100,000 homes will be built that meet ENERGY STAR Home guidelines. A complete market transformation is expected by the year 2012. ENERGY STAR Homes is fueling this growth with an effective set of tools and services that builders around the country can use to sell the strong advantages of energy-efficient homes. By successfully establishing the linkage between greater energy efficiency and increased profitability, EPA expects the market's natural forces to continue driving the industry to even higher performance levels. This is analogous to proliferation of safety improvements in the car industry. Since the mid-1980's when one European car manufacturer proved it was highly profitable to sell safer cars, the deployment of safety innovations has been extensive and continuous. Just like the proliferation of safety improvements in cars, EPA expects energy efficiency can step up as a new platform for change in new housing. However, to realize this market transformation, ***never*** compete based on first cost; ***never*** rely on payback to justify higher first costs; ***don't*** ignore the tremendous value efficiency brings to consumers; ***don't*** let builders object to losing buyers due to financing constraints; and ***don't*** allow pervasive claims for energy efficiency to go unchecked against the ENERGY STAR label. Break the rules!