

Big House on the Prairie: A Study of ENERGY STAR® Homes in Texas

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ABSTRACT

The Houston, Texas market is experiencing a residential construction boom. More than 25,000 new homes are being built every year. This annual increase of new homes is placing a substantial demand on the publicly owned utilities to supply more energy while under major constraints imposed by the Texas legislature. This paper examines how Reliant Energy HL&P is using the ENERGY STAR labeled homes program to transform the residential construction market to more energy efficient designs that will reduce the annual energy growth demand placed on the utility by the growing residential housing market.

The paper will introduce the constraints imposed on publicly owned utilities by the Texas legislature through Senate Bill 7 and the Public Utility Commission of Texas (PUCT). The provisions include a cost effectiveness formula for all market transformation programs and measurable peak kW demand reductions.

The paper also will discuss significant lessons that were learned in 2001 about promoting energy efficient homes and stimulating a paradigm shift in home construction practices in a tough market for energy efficiency. The lessons include developing messages for target audiences based on awareness of the ENERGY STAR brand and attitudes towards energy efficiency. Other lessons include facilitating increased interactions and leveraging relationships between market actors such as builders, real estate agents, builder sales staffs, lenders, HERS raters, and utility officials. An additional focus was increasing the awareness and demand in the market place through an expanded ad campaign funded through cooperative advertising partnerships, and developing effective incentive-based strategies that influence key market actors to achieve desired market transformation goals.

Introduction

In June 1999 Senate Bill 7 was passed by the Texas legislature. This bill requires utilities to achieve at least ten percent of their growth in peak demand through energy efficiency. Utilities may accomplish these savings by administering standard offer programs¹ and/or targeted market transformation programs.

Under the provisions for Senate Bill 7 that were set forth by the Public Utility Commission of Texas (PUCT), utilities are obligated to demonstrate that three objectives are met:

¹ Standard offer programs are one time incentives paid for installation of an energy efficiency measure or feature such as lights, energy efficient HVAC equipment, programmable thermostats, etc.

- 1) The program must achieve peak load (kW) savings;
- 2) The program must achieve the energy savings cost-effectively; and
- 3) The program must have the effect of transforming the targeted market.

The programs administered by a utility ultimately must result in a reduction in energy consumption and energy costs for consumers.

Reliant HL&P adapted and implemented the ENERGY STAR Homes program in 2001 as a means of reaching their energy efficiency savings as mandated by the PUCT. The Reliant ENERGY STAR Homes Program (RESH) applies strategies proven by the national ENERGY STAR Homes program to the Houston market and was designed around local influencing factors that motivate residential construction industry players and home buyers to take action.

Defining Program Messages and Strategies

Baseline Study

Market transformation programs are designed to change the way markets function through voluntary and profitable participation of the market actors. In 2001, Reliant Energy HL&P conducted a baseline study in order to establish a benchmark against which to measure the success of their market transformation program and to characterize the residential new construction market. This baseline was performed while the program had been up and running for four months. The baseline looked at the energy performance of existing homes in the market to determine a baseline HERS score. The HERS baseline is used to determine the demand savings achieved by the program. The baseline also looked at the market demographics of builders and consumers in the Houston area to determine the level of awareness of the ENERGY STAR logo, understanding of energy efficiency, how consumers locate and purchase homes, what consumers look for in homes, builder profiles, factors that influence construction practices, and builders' receptiveness to energy efficiency programs. Lastly, the baseline identified potential barriers indigenous to the Houston market that were critical to adapting national ENERGY STAR Home strategies to meet local conditions. Some of the key findings from the baseline study are summarized below

HERS baseline. The Reliant Energy Star Homes Program conducted 50 site visits to newly constructed nonparticipating homes in Reliant Energy HL&P service area to determine a baseline HERS rating in Southeast Texas. The site visits included plan reviews, construction inspection, blower door analysis, and site inspections of each of the 50 homes. The purpose of the site inspections was to visually inspect the quality of construction.

Of the 50 homes that were inspected, the HERS ratings ranged from 75.0 to 89.1. The baseline HERS rating is a weighted average of 83. For this study, the baseline rating was weighted based on the number of homes each builder constructs per year.

The 50 inspected homes were built by 20 different builders. Of these 20 builders; eight construct between 450 and 500 homes per year, one constructs 1800 homes per year, and eleven construct between 10 and 65 homes per year.

From this information a standard was established from which Reliant Energy HL&P would gauge total kW reduction and program successes as well as pinpoint areas where

either opportunities lay or significant work existed. The PUCT provided deemed savings estimates for several representative home types in multiple climate zones for the state for the purposes of determining kW reductions.

Baseline of new builders². The baseline survey focused on builder practices and current levels of awareness for eight products and building practices. These products and practices include: insulation, air infiltration, space heating systems, air conditioning, water heating systems, windows, major household appliances, and lighting.

Surveys were conducted for 50 of the 484 builders who construct single-family homes in the Greater Houston area³. The survey population included builders from both the Reliant HL&P and Entergy service territories. Most of those surveyed build homes in both territories. All builders in the sample have been in business for at least one year.

The sample (50 builders) included 39 (78 percent) –low-production builders, who build less than 20 homes each year, and eight (16 percent) medium-production builders, who build between 20 and 99 homes each year. Collectively, these 47 low- and medium-production builders construct a range of custom, semi-custom, spec and production homes.

The remaining three respondents were high-production builders who range in size: one builds approximately 200 semi-custom homes per year; one builds 500 spec homes per year; and one builds approximately 1,000 production homes per year.

Overall, 44 percent of the builders in the total sample population (50 builders) construct custom homes, 22 percent construct semi-custom homes, 26 percent construct spec homes, and 8 percent construct production homes.

The majority of the builders interviewed (74 percent) have between zero and five employees in the Southeast Texas region. As expected, builders who construct more homes each year tend to have more employees in the region.

Baseline Finding of New Home-Builders

- Builders are moderately receptive to new energy efficiency programs.
- Overall, builders believe that efficiency plays an important role in their decisions. On a scale of 1 (not important) to 5 (very important) 80percent of 50 builders surveyed ranked energy efficiency as a 4 or 5.
- The importance of energy efficiency, however, depends on the new construction practice. Energy efficiency is the most important factor for the choice of insulation, building seals, and heating systems, but is less important for air conditioning, water heating systems, and windows. For the latter three products and practices, cost is the most influencing factor, closely followed behind by energy efficiency. For major household appliances and lighting, energy efficiency is the primary consideration
- For many products and practices, cost is a larger factor than energy efficiency and remains the largest barrier to implementing energy saving practices. Eighty-six percent of respondents mentioned up-front costs and the competitive nature of the industry as the main barriers to implementing energy-efficient measures.
- Aesthetics are also a major influence on those decisions concerning lighting, major appliances, and to some degree, windows.
- Views on where educational efforts should be targeted are mixed. Several builders feel that *customers* should learn about the potential savings from energy-efficient

practices. Other respondents, however, mention that *builders* are in need of education about energy-efficient measures. Since most Houston area homes are built quickly (e.g., less than eight months), targeting builders or other market actors may be much more effective than longer-term educational programs for homebuyers.

- Builders may not be the best targets for all energy-efficient products and practices since they are not always involved in the decision making process in areas such as major appliances, lighting, water heating systems, and space heating systems. HVAC specialists, electricians and plumbers often play a more important role in selecting these new home systems and products. For this reason, it may be best to focus educational efforts and incentives on manufacturers and distributors of the products, rather than builders, for these areas.
- For most products, builders have existing relationships with the manufacturers of the equipment. Major manufacturers for some key products used in new home construction include: Owens-Corning for insulation; Champion, Pella and Fisher for windows; Trane and Carrier for air conditioning and space heating; and State and Rheem for water heating.

Baseline of New Homebuyers

The homebuyers market profiled for this baseline survey consisted of a total of 532 homeowners, who moved into newly constructed homes in Southeast Texas over the past two years. Of the 532 homeowners, 266 were Reliant Energy-HL&P customers and 266 were Entergy-Texas customers. The survey results are listed in the tables below. Table 1 highlight consumer information sources for new homes about new homes and Table 2 highlights the perceived meaning of the Energy Star label to consumers.

Top sources of information that respondents used in shopping for homes, include:

Table 1. Information Sources

Driving Around	36%
Using Real Estate agents	25%
Reading Newspapers	16%
Hearing Through Word of Mouth	10%
Using the Internet	10%
Looking for Builder Signs	7%
Building the Home Themselves/None	7%

When asked about the meaning of the ENERGY STAR label on a newly constructed home, respondents said it meant:

Table 2. Meaning of ENERGY STAR Label

More Energy-Efficient Home	64%
Lower Utility Bills	10%
Better Insulation	6%
Quality or Standards	4%

From the baseline study key areas of development were identified: Real Estate Agents. Real Estate agents are one of the top sources for homebuyers that the RESH program can tap into to help market ENERGY STAR.

- Financial Lending Institutions. Many homebuyers are not aware of preferential mortgages. Use of EEMs has been spotty at best. The RESH program can work with financial lending institutions to promote and market ENERGY STAR to homebuyers. Two overlapping, but different issues here – EEMs and working with lending institutions to promote E* - clarify point being made here.
- Home Builders/ Real Estate Agents Other Stakeholders. All of these groups can be motivated to help market the benefits of ENERGY STAR labeled homes.
- ENERGY STAR. Work with the national ENERGY STAR program to promote the label and to educate consumers on the benefits of the label. Also, leverage advertisements that EPA is already conducting to make an emotional appeal to the consumer.

The information gathered from the baseline study was incorporated into the program strategy and used to develop customized messages to motivate individuals to take action, addressing target audience needs, and alleviating concerns among the market actors. The following primary strategies surfaced as a result of the baseline study findings:

- Increase builders' awareness of the market advantages of building ENERGY STAR Homes; how ENERGY STAR can help them comply with the new Texas building code, and building homes as a system;
- Build relationships with key builder staff members through meetings, trainings, and program support;
- Increase the HERS rater infrastructure and motivate them to recruit builders for the RESH program;
- Implement a highly visible ad campaign to increase brand awareness and provide added value for builders participating in the program;
- Provide realtors and sales staff with the tools and strategies they need to successfully sell ENERGY STAR homes; and
- Use targeted media to increase brand awareness among all market actors including realtors, consumers and lenders.

Formulation of Program Strategies and Messages

The primary goal of the program during the 2001 year was to develop an strong and competitive infrastructure of HERS rating providers in the Houston market. This was viewed a critical aspect of the program as HERS rating providers are seen as the ultimate program implementers; responsible for recruiting and training builders and providing third party verification for ENERGY STAR labeled homes. Other goals during the first year of the program included recruiting builders into the program, training builders' staff on ENERGY STAR building requirements and successfully selling ENERGY STAR homes, increasing market actors' (HVAC, window distributors, insulation contractors, etc.) awareness of the program so they would be able to fulfill the new requirements specified by builders, and increasing recognition and understanding of the ENERGY STAR logo.

Based on these goals, a comprehensive strategy was developed for the RESH program. The strategy was based on previous experience implementing the ENERGY STAR homes program, information gathered from the baseline study, relationships with key market players, and Reliant HL&P's familiarity with administering other energy efficiency programs. The strategic approach was to establish a network of market players (builder, real estate agents, builder sales staffs, lenders, and HERS raters), increase builders' ownership and investment in the program, increase brand awareness and demand for ENERGY STAR Homes, and verify energy savings captured through the program as mandated by Senate Bill 7.

Program Challenges

The RESH program faces many barriers that obstruct market transformation in Houston's new residential construction market. The barriers identified during the first year include general market barriers, production barriers, and barriers to creating an adequate rater service to support builders in the program.

General Market Barriers

The following market barriers were identified through the baseline study conducted in 2001. These include:

- There's an inadequate HERS rater infrastructure to support an ENERGY STAR homes program;
- Most builders and industry professionals [insulators, HVAC installers, realtors] don't recognize the benefits of ENERGY STAR homes;
- Builders do not view homes as a system and therefore do not consider how products, techniques, and equipment work together to yield energy efficiency; and
- A majority of consumers don't recognize the ENERGY STAR logo and are not aware of it's meaning – leading to low demand for ENERGY STAR homes. [only 23% of consumers interviewed recognized the ENERGY STAR logo.]

To overcome these market barriers the RESH program conducted an aggressive recruiting and HERS certification training effort to bring additional raters into the market, organized seminars to increase builders' awareness of the benefits of building ENERGY STAR homes, and planned comprehensive training programs on how to build to higher energy efficiency standards. In addition, the RESH program implemented a cooperative advertising campaign to further raise consumer awareness and ultimately increase market demand for ENERGY STAR homes. These strategies are further discussed in the Program Structure and Delivery section of this paper.

Production Barriers

- Barriers were identified that can directly affect the delivery of ENERGY STAR homes to the RESH program and ultimately its success. ENERGY STAR labeled home production delays can occur for a number of reasons, especially with builders new to

the program. These delays can result in the potential loss of a program partner to an ENERGY STAR homes program. The barriers identified include: Builder's "cold feet" to become a partner and implement new processes;

- Program startup delays;
- Shortage of trained labor;
- HERS rater's inability to provide timely inspections; and
- Diagnosis of problems encountered through the initial rating process.

To overcome these barriers the RESH program conducts plan reviews for builders and organizes training programs to improve the working relationship between builders and raters. When necessary the RESH program reviews home plans to help builders determine exactly what it will take to build an ENERGY STAR home. The plan reviews serve an important function by removing uncertainties and helping to alleviate builders' fears and concerns about joining the program and changing their production process. The training programs assist builders in making the necessary production process changes required to meet the higher performance levels of ENERGY STAR labeled homes, provide raters with an understanding of their builder's production schedule, assist raters in providing timely and thorough rating services, and ensures raters are adequately staffed and knowledgeable of ENERGY STAR and the RESH program. The training programs help builders and raters avoid start up delays, facilitate a positive working relationship between raters and builders, leverage rater activities to recruit additional builders into the program, and increase the percentage of ENERGY STAR homes actually delivered to the program.

Barriers to Creating a Rater Infrastructure

An adequate, stable, and competitive rater infrastructure is needed to support builders and deliver ENERGY STAR homes to the RESH program. However, like any other business, HERS rating providers face barriers that can be prohibitive to entering a market. These include:

1. Business start up costs (HERS training, certification, and equipment costs)
2. Prospecting costs (selling home energy ratings and ENERGY STAR to builders).

To address these barriers, the RESH team conducted independent analyses of home plans [discussed in Production Barriers above] and provided supplemental training for HERS raters. The supplemental training discussed the benefits that raters and ENERGY STAR bring to the builder including the ENERGY STAR certification and label and opportunities to differentiate themselves in the market. The training also discussed the benefits of participating in the RESH program for builders including third-party verification, training opportunities, and the cooperative advertising campaign. These supplemental training programs help to rapidly build critical infrastructure and accelerate program growth that is needed to attain the RESH program market transformation goals. These strategies are discussed in further detail in the Program Structure and Delivery section of this paper.

Program Structure and Delivery

An adequate network of market players that complement and support each other's activities is essential for successful market transformation. Suppliers need to provide builders with energy efficient materials and equipment, builders need to build ENERGY STAR homes, HERS raters need to certify the homes, consumers need to demand ENERGY STAR homes, builders' sales staff and real estate agents need to effectively sell energy efficient homes, and lenders need to adequately explain how a consumer can afford "more" home. Effectively recruiting these players, motivating them to participate, giving them the tools they need to succeed, and providing them with ownership generates an equal "push" and "pull" in the market place. This leads to the growth of the program and ultimately market transformation.

These approaches were woven into a program structure that included establishing an HERS rater infrastructure, recruiting builders, training building industry professionals, increasing consumer awareness, organizing a builder co-op for an advertising campaign, and conducting a verification testing.

Establishing an HERS Rater Infrastructure

For HERS rating providers to successfully recruit builders, and for building industry professionals to accurately see the value of selling energy efficiency, a proficient HERS infrastructure must be developed. Additional raters were required to support participating builders and sustain the RESH program growth. Potential targets for new HERS raters included insulation installers, window distributors, HVAC contractors, real estate inspectors, and home inspectors. Potential new raters were recruited based on selection criteria that seek to determine the best candidates to serve builders and increase competition in the HERS rating industry. The selection criteria included working for a successful inspection company, demonstrating existing relationships with builders, preparing to expand business offerings and provide HERS rating services, and a plan to proactively recruit builders and grow business.

HERS Rater Certification Trainings were organized to provide an adequate supply of qualified raters to meet participating builder needs. In 2001, there were two trainings conducted. These trainings pumped an additional twenty raters and two new ratings providers into the market. The addition of the rating providers brought the total number of providers in the Houston area to five.

In addition to the HERS Certification training, the RESH program offered Supplemental Training Workshops for qualified raters. These workshops were geared to existing HERS raters and focused on providing information about the RESH program incentives, leveraging the program activities and coop advertising campaign, and running a successful rating business using ENERGY STAR.

A rater incentive was offered in 2001 to encourage established raters to certify their contracted builder's homes immediately while simultaneously allowing new raters the opportunity to be innovative with their pricing schemes, thus creating additional competition in the marketplace. This incentive was later shifted to builders as discussed below in the section titled "Program Evolution."

Builder Recruitment and Support

Builders represent a unique player in the residential market transformation program as they maintain contact with all program participants. Therefore, since builders work with homebuyers, HERS raters, lenders, subcontractors, etc., there is an increased necessity to impart a clear understanding of the ENERGY STAR message, its sales, marketing and technical ‘value’ through both direct builder outreach, and indirectly through building industry education. Builder recruitment in the RESH program focused on enhancing assistance to those builders currently building to ENERGY STAR standards, and to provide the correct mix of support and training to those builders interested in energy efficiency and the ENERGY STAR advantage.

The builder recruitment campaign targeted production, custom, and affordable home builders, as well as builders who have existing contracts with active HERS raters. Builders were identified through interaction with HERS raters, “new utility service requests,” local builder associations, and from information gathered from the baseline study.

Through previous ENERGY STAR implementation experience, it was learned that builders are often hesitant to commit to program participation if they don’t understand what production changes are required to participate. To assist builders through this aspect of the recruiting process, the RESH program performed complimentary analyses of home plans to assist builders in achieving ENERGY STAR performance levels. Plan analyses provide builders with specific answers to their cost and design concerns, motivating builders who may be “on the fence” to join the RESH program.

Under the design assistance, builders submit plans for their largest square footage and highest window-to-wall ratio (worst case) plans, to ensure the upgrade recommendations will be effective at achieving ENERGY STAR performance for all the builder’s plans. Each plan analysis yields an individual prescriptive approach for a builder to qualify those homes for the ENERGY STAR label. The RESH program staff and participating raters promote the plan analysis service to potential ENERGY STAR builders.

In addition, seminars were offered to provide builders with information about the RESH program, how to construct ENERGY STAR homes, address their questions and concerns, and recruit new builders into the program. In 2002, training sessions will be offered to the builders in the area. Topics will include the new Texas building code, avoiding mold problems in new construction, basics of building science and energy efficient construction techniques, and sales and marketing techniques that will help increase builder profits.

Training building industry professionals. Training industry professionals is essential to the program’s success. The ability for building industry professionals to truly ‘understand’ the value of energy efficiency and in turn know how to sell ENERGY STAR homes is a critical aspect of the self-sustaining nature of a successful market transformation program. The training aspect of the program initially focused on HERS raters and builders. In 2002, as homes are being prepared to be delivered to the market, training will shift to lenders, realtors, and trade organizations in order to build awareness of the ENERGY STAR logo and the benefits of owning ENERGY STAR homes. Future training will coincide with cooperative advertising campaigns [as described below] to prepare the building industry professionals to answer consumer questions about ENERGY STAR homes.

Consumer Outreach

Lack of consumer awareness of the benefits associated with an ENERGY STAR labeled home is one of the greatest barriers to market transformation. Homebuyer seminars were to be developed and presented to targeted public audiences. It is important to note that consumer seminars represent only one avenue for exposing homebuyers to the ENERGY STAR *value proposition*. In fact, the RESH strategy was designed to expose consumers to ENERGY STAR messages through interactions with real estate agents, builders' sales staff, and mortgage lenders who have participated in the sales training and through the co-op activities outlined.

The consumer seminars were to be funded through the builder advertising partnership. Unfortunately, the builders did not see the value of increasing consumer awareness and decided not to fund the activity.

Advertising Partnership Campaign

Implementing an effective marketing strategy can be cost-prohibitive for many builders trying to build brand awareness and differentiate themselves in the market. To overcome this barrier, the RESH program brought together partner builders to participate in an advertising partnership to leverage resources and benefit from an aggressive media campaign.

Between May and December, 2001, Reliant HL&P partnered with EPA's ENERGY STAR Homes Program, Guaranteed Watt Savers, and five regional builders in a co-operative ad campaign that resulted in 22 placements in the Houston Chronicle. The total cost of this co-operative campaign was \$244,000. The RESH program was also the subject of articles in Texas Builder Magazine and several editorials in local newspapers highlighting the features and consumer benefits of ENERGY STAR homes. These outreach activities, along with effective training of real estate agents and lenders, created a market pull that has enabled builders to easily sell all of their ENERGY STAR labeled homes during 2001.

Verification Process

Reliant is responsible to verify energy savings from the RESH program as part of the PUC requirements. As a result, 10% of the homes delivered to the program are verified by Reliant HL&P staff. This quality control measure insures compliance with the Senate Bill 7 mandate and provides an additional benefit to the builders⁴. While many builders can say they are building ENERGY STAR homes, only the builders in the RESH program can prove it with a third-party verification. This is very important in a market where there are already many builders participating in the national ENERGY STAR program. It allows the RESH program builders to further differentiate themselves from the competition.

The performance verification process reviews all pertinent aspects of a home that qualifies it for the ENERGY STAR label. Data collected during the verification process includes location, square footage, HERS score, A/C system SEER rating, A/C coil and

⁴ Based on the Public Utility Commission of Texas, 2001, "PUC Substantive Rule 25.181 – 25.183," Austin, TX: Public Utility Commission of Texas.

condenser numbers, and blower door and duct leakage numbers. The inspector produces documentation of his/her observations, presents a copy of the report to the HERS rater, and provides a copy to the program management. From this information, the RESH program can determine kW and kWh savings estimates for PUCT reporting requirements.

Program Successes

Overall, the Program has been quite successful in developing partnerships, educating and training industry professionals, increasing community awareness, and implementing an administrative structure for tracking and evaluating progress. During the calendar year ending in 2001, the RESH program rated and labeled 1,409 homes.

The Program has been spurred on thus far by incentives that were paid to the rating providers for each ENERGY STAR home they rated. These incentives ranged from \$150-\$300 per home, and almost \$304,200 of incentives has been authorized. The program also has developed partnerships with six builder companies (four production builders) that have built ENERGY STAR homes, trained an additional twenty HERS raters, and increased the number of rating providers in the market from three to five. In 2002, the RESH program is expected to grow by 4,500 homes, the number of builder partners will increase to 15 (10 production builders), the number HERS raters will increase by a additional 30, and rating providers will increase to seven.

Program Evolution – From 2001 into 2002

In 2002, the RESH program faces a substantial challenge of delivering 4,400 ENERGY STAR labeled homes in the Houston area. The RESH team recognized that to meet the aggressive goal set forth for 2002 [and for subsequent years] modifications to the program strategy were needed to increase builders' ownership of the program and generate greater market demand for ENERGY STAR homes. After evaluating 2001 successes, failures, and continued challenges, the RESH team made the following program modifications:

- Transferring the incentive payment from the rater to the builder;
- Expanding and modifying the co-op advertising campaign; and
- Targeting additional market actors including realtors and mortgage lenders.

Transferring the Incentives to Builders

In 2001, incentives were distributed to raters for delivering ENERGY STAR labeled homes to the RESH program. This approach was not effective as the program experienced difficulties in receiving ENERGY STAR homes from the raters in a timely manner.

After working closely with builders and raters it was determined that the builders essentially control the process and that the incentives would be more effective if delivered directly to them. It was also determined that the dispersal of incentives could be structured in such a manner to enhance the program exposure for less than the 2001 incentive level. As a result, a competitive bid process was created and implemented during the 2002 program to deliver the incentives directly to the builders.

During the competitive bid process builders respond to a request for proposals (RFP) and submit proposals to the RESH program to be considered for incentives. Each proposal is then scored according to a set of criteria established by the RESH team. The criteria includes:

- The number of homes built during the previous year;
- The builder's history of ENERGY STAR construction;
- The builder's commitment to deliver ENERGY STAR labeled homes to the RESH program, provide sales staff training on ENERGY STAR homes, actively use the ENERGY STAR logo in advertising, and work with other building industry professionals to further increase awareness of ENERGY STAR homes; and
- The builder's commitment to contribute a percentage of the incentive awarded to the cooperative advertising campaign.

The RESH team evaluates each proposal received against the selection criteria. The result is a score that determines the number of home incentives each builder will be awarded. Each section of the bid proposal represents a priority of the overall market transformation process. With this approach, builders become financially vested in each aspect of the market transformation process, including building, marketing, and selling ENERGY STAR labeled homes.

Many important results came from transferring the incentives to builders and through the competitive bid process:

- The rater continued to submit the paperwork even without the incentive because they were still paid and directed by the builder to provide the service.
- Builders took greater ownership of the market transformation process by committing to place advertisements with the ENERGY STAR logo, train sales staff and real estate agents on how to explain the benefits of ENERGY STAR homes to consumers, and work with preferred lenders to encourage them to offer energy efficient mortgages. Builders increased the percentage of ENERGY STAR homes they constructed and committed to delivering a larger number of ENERGY STAR homes to the program.
- The program expanded its outreach as a result of leveraging resources and coordinating activities with all builders.
- The RESH program was able to identify builders who construct homes with higher HERS scores and therefore provide greater energy savings that can be counted towards achieving the goals mandated by the PUCT.
- Builders took greater ownership and responsibility in all aspects of the formulating the advertising strategy by directing how to spend the funds and leverage activities

In addition to the aforementioned results, the competitive bid process generated more than 6,000 incentive requests for the 2002 program. At that time, however, the program only had 3,000 incentives allotted for 2002. This represents a 46% increase from the number of incentives initially projected. After such a flood of incentive requests the RESH program incentives were raised from 3,000 to 4,400. The significance here is that the RESH program was able to contribute to greater energy savings for the overall MW reductions mandated by

the PUCT as part of Senate Bill 7. As a result, the other Reliant energy efficiency programs were able to scale back their kW goals.

Expanding the Co-op Advertising Campaign

One criteria scored during the competitive bid process is the percentage of the incentives received that the builder commits to the cooperative advertising campaign. The greater the percentage of the incentive committed by the builder; the higher their score and chances of being awarded any incentives. Through this scoring criteria funding for the cooperative advertising campaign grew from \$240,000 in 2001 to \$550,000 in 2002 as a result of builders committing a portion of their incentives to the effort. With more money available for the co-op, the RESH program was able to expand the reach of cooperative advertising campaign and hire a professional ad firm to create more effective marketing strategies and secure discounted ad placements.

Targeting Additional Market Actors

Training and education of key market actors is essential for transforming the market to ENERGY STAR labeled homes. These market actors must understand the ENERGY STAR value proposition before they can contribute to ENERGY STAR labeled home sales and improve their bottom lines. Builders' sales staff and real estate agents must understand the home's features and benefits to effectively sell ENERGY STAR labeled homes. ENERGY STAR Mortgage Lenders need to understand the benefits of energy efficient mortgages to their customers. For any of these actors to benefit from ENERGY STAR they must help homebuyers become aware of the added value of ENERGY STAR. The RESH program discovered this during 2001 and made modifications for the 2002 program to reach these vital market players.

In 2002, the RESH program will conduct training for builders' sales staff and community realtors. These training seminars will increase their awareness of ENERGY STAR home, discuss the benefits of owning an ENERGY STAR home, and provide the tools needed to effectively sell energy efficiency and ENERGY STAR homes to potential homebuyers. Sales trainings will be targeted in regions of Houston where ENERGY STAR homes are being built and the media campaign activities are occurring. This target approach will reach real estate agents who will most likely be approached by consumers who have been exposed to the ENERGY STAR logo and ask questions such as, "What's an ENERGY STAR home?" and "Where can I find an ENERGY STAR home?"

The RESH program also plans to work with partner builders to identify preferred mortgage lenders in the Houston area. These lenders will be approached with information regarding ENERGY STAR homes and energy efficiency mortgages including cash flow comparisons between energy efficient homes and homes built to code, how to qualify consumers for a larger mortgage amount, and how to use the "stretch" to qualify more consumers and generate more business.

Conclusion

The RESH program has accomplished the goals established for the 2001 year and is on its way to achieving the goals set forth for 2002 of 4,400 homes. However, many challenges will still need to overcome in order deliver the increasing number of homes needed to achieve energy savings as mandated by the PUC during the next few years. The greatest challenges the program will face during subsequent years are:

- Creating a sustainable rating infrastructure
- Encouraging other interest groups (allies, code compliance groups, other utility programs, etc) to become more integrated into the program
- Raising the HERS scores to achieve even greater kW savings and then differentiating between new energy savings tiers.
- Developing strategies to continuously stimulate market supply and demand for ENERGY STAR homes beyond the life of the program
- Transforming ownership of program components to market players

Accomplishing program goals will take continuous feedback loops and improvement processes, flexibility to quickly adapt to changes in the market, facilitating relationships and building trust with all market players, and convincing market players that ENERGY STAR makes good business sense.