Residential New Construction Attitude and Awareness Baseline Study

Participating and Nonparticipating Homebuyer Surveys

Report on Findings

Prepared for the New Jersey Residential New Construction Working Group

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Executive Summary

This Report presents the findings from the Nonparticipating and Participating Homebuyers Surveys for the New Jersey Residential New Construction Awareness and Attitudinal Baseline Study (RNC study). A summary report entitled *Residential New Construction Attitude and Awareness Baseline Study-Integrated Summary: Report on Findings*, consolidates information from this and other research tasks conducted for the RNC Study.

A. Background

The New Jersey Residential New Construction Working Group (Working Group), which consists of Public Service Electric &Gas Company, GPU Energy, Conectiv Power Delivery, NUI Elizabethtown Gas Company, South Jersey Gas, Rockland Electric Company, and New Jersey Natural Gas Company, is charged with developing and implementing a coordinated, statewide utility residential new construction program that will increase the energy efficiency of new homes constructed in New Jersey. In support of that effort, the Working Group has commissioned a comprehensive study of New Jersey's residential new construction market with the following goals.

- *Baseline Measurement*: The primary objective of the study is to establish a baseline that documents the current market for ENERGY STAR homes.

- *Program Design and Implementation*: The secondary objective of the study is to enhance the Working Group's understanding of the residential new construction market.

- *Customer Sited Clean Generation*: In addition, this study will support the work of the Customer Sited Clean Generation Working Group (CSCG Working Group).

The Working Group contracted with Roper Starch Worldwide Inc. and XENERGY Inc. to conduct the RNC study. The purpose of this survey is to obtain information on homebuyer awareness of and attitudes toward the purchase of energy efficient homes. As part of

this study, we conducted a survey of 200 homebuyers who bought their home in 1998, 1999 or 2000 and whose home did not participate in any of the three existing utility residential new construction programs. We also conducted a survey of 166 homebuyers who bought their home in 1998, 1999 or 2000 and whose home participated in one of the three existing utility residential new construction programs.

B. Awareness of and Attitudes Toward the ENERGY STAR Label

The Homebuyer Surveys collected information on awareness of and attitudes toward the ENERGY STAR Label.

1. Awareness of the ENERGY STAR Label

Awareness of the ENERGY STAR label was measured by asking survey respondents whether they "have ever seen or heard of the ENERGY STAR logo that is on some new appliances, electronic equipment, and homes." About half (46%) of Nonparticipating Homebuyers report that they have seen the ENERGY STAR label. Awareness varies somewhat among different subgroups of homebuyers. However, there is no consistent pattern of awareness that would suggest that one market segment is more aware of the program.

Among Participating Homebuyers, more than half (58%) report that they have seen the ENERGY STAR label. The difference between Nonparticipating and Participating Homebuyers is statistically significant. It appears that the difference in awareness of the ENERGY STAR label between Participating and Nonparticipating Homebuyers results from participation in utility RNC programs that use the ENERGY STAR label.

2. Sources of Homebuyer Information about the ENERGY STAR Label

The majority (58%) of Nonparticipating Homebuyers saw the ENERGY STAR label on appliances or electronic equipment, while 27% saw it in print advertisements, TV commercials, or store displays. No respondent in this group reported seeing the label on utility company mailings.

About one-third (37%) of Participating Homebuyers saw the ENERGY STAR label on appliances or electronic equipment, while 17% saw it in print advertisements, TV commercials, or store displays. About one-third of Participating Homebuyers (31%) learned about ENERGY STAR through builders, real estate agents, or the utility company.

3. Meaning of the ENERGY STAR Label

When asked the open-ended question "What does the ENERGY STAR label mean?" most Nonparticipating Homebuyers (73%) respond that the ENERGY STAR label means that the product saves energy or is energy efficient. Only 21% of respondents volunteer that it means that the product "saves money." One interpretation of these data is that homebuyers fail to understand that energy savings translate directly into cost savings.

Most Participating Homebuyers (61%) said that ENERGY STAR products save energy or are energy efficient. A little over a fourth (27%) said that the ENERGY STAR label means cost savings. Three respondents reported that the ENERGY STAR label means that the product was built to a specific standard.

Table 1: Meaning of the ENERGY STAR Label

The ENERGY STAR Label Means. . .	Nonparticipating Homebuyers	Participating Homebuyers
The product saves energy	73%	61%
The product saves money	21%	27%
The product is built to standard	0%	3%
It is on the appliance	8%	3%
Nothing	3%	7%

4. Purchase of ENERGY STAR Products

Many survey respondents have purchased ENERGY STAR products. About one-third of both Participating Homebuyers (29%) and Nonparticipating Homebuyers (32%) report that they have purchased at least one product with the ENERGY STAR label. Table 2 shows the percentage of each group that has purchased ENERGY STAR products of different types. The

table also shows the share of product purchasers who report that they were influenced in their selection of the product by the ENERGY STAR label. For most products, the ENERGY STAR label influenced at least half of those purchases.

Table 2: ENERGY STAR Product Purchase and Influence

	Nonparticipating		Participating	
Product	Purchased ENERGY STAR Product	Share Influenced by Label	Purchased ENERGY STAR Product	Share Influenced by Label
Central Air	10%	52%	15%	60%
Furnace / Boiler	10%	53%	11%	67%
Heat Pump	2%	50%	6%	78%
Room Air	5%	50%	3%	50%
Computer Equip.	22%	33%	13%	29%
Lighting fixtures	6%	64%	3%	60%
Dishwasher	13%	73%	15%	44%
Refrigerator	19%	63%	17%	59%
Clothes Washer	15%	60%	15%	67%
Thermostat	6%	77%	14%	64%
Home	5%	50%	19%	52%

5. ENERGY STAR Influence on Appliance and Equipment Purchases

Homebuyers were asked to project how much influence an ENERGY STAR label would have on their decision to purchase a particular energy-using product. One in four (24%) Nonparticipating Homebuyers reports that the label would have a lot of influence, and more than half (56%) report that it would have at least some influence. More than a third (36%) of Participating Homebuyers report that the label would have a lot of influence, and almost 80% report that it would have at least some influence. The difference between these two groups of homebuyers is statistically significant.

C. Awareness of and Attitudes Toward Existing Utility RNC Programs

Three New Jersey electric utilities have had residential new construction programs; GPU Energy's Good Cents program, Conectiv Power Delivery's ENERGY STAR Homes program, and PSE&G's EEH Five Star Program. In the baseline survey, we measured awareness of and attitudes toward the existing programs.

1. Awareness of Existing RNC Programs

The Participating Homebuyer and Nonparticipating Homebuyer Surveys directly measured awareness of the existing RNC programs. Table 3 summarizes awareness of each utility program, awareness of the EPA ENERGY STAR Homes program, and awareness of any of the four programs.

Table 3: RNC Program Awareness for Nonparticipating and Participating Homebuyers

Aware of Program	Program Sponsor				
	Conectiv	GPUE	PSE&G	EPA	Any Program
Nonparticipating	9%	25%	22%	15%	51%
Participating	87%	85%	66%	25%	81%

Among Nonparticipating Homebuyers, the GPU Energy and PSE&G programs are apparently better known than the Conectiv Power Delivery program. However, Conectiv Power Delivery has the smallest service territory among the three utilities. After adjusting for regional difference, it appears that the programs have similar awareness levels. About half of the Nonparticipating Homebuyers are aware of at least one of the existing utility RNC programs or of the EPA ENERGY STAR Homes program.

One might expect that all Participating Homebuyers would be aware of the existing RNC programs. However, unless the homebuyer is the general contractor, the RNC program relationship is between the builder and the utility. The homeowner will know that the home meets program standards only if it is marketed as an RNC program home. Awareness is

lowest among PSE&G participants. Since many homes constructed under PSE&G's program are Affordable Housing Program homes, it is likely that buyers of the Affordable Housing Program homes focus much more on the affordability aspect of the home purchase, than on the EEH 5 Star designation.

2. Sources of Information About RNC Programs

For Nonparticipating Homebuyers, the primary sources of information about existing RNC programs are print advertisements (28%), utility company mailings (40%), and friends or relatives (10%). Among Participating Homebuyers, the primary sources of information about existing RNC programs are print advertisements (14%), utility mailings (24%), and builders or contractors (24%).

3. Influence of ENERGY STAR on Home Purchase Decision

Homebuyers were asked to project how much influence the ENERGY STAR label would have on their decision to purchase a particular home. Table 4 shows the responses for the two groups of homebuyers. Only 15% of Nonparticipating Homebuyers report that the ENERGY STAR label would have a lot of influence, but more than half report that it would have at least some influence. More than a third of Participating Homebuyers report that the name would have a lot of influence, and almost 70% report that it would have at least some influence.

Table 4: Projected Influence of ENERGY STAR Label on Home Purchases

Response	Nonparticipating Homebuyers	Participating Homebuyers
A lot of influence	15%	34%
Some influence	36%	35%
Very little influence	20%	12%
No influence at all	26%	12%
Don't know	6%	7%

D. Home Purchase Decision Process

Homebuyers consider a number of different factors as they search for a home, including community attributes, neighborhood attributes, and house attributes. The Homebuyer surveys document the factors that appear to be of the greatest importance to homebuyers and identify ways that an RNC program could increase homebuyers' consideration of energy efficiency in the purchase decision.

1. Reasons for Buying a New Home

Homebuyers were asked the open-ended question "What were your reasons for deciding to purchase a new home?" Homebuyers reported a range of reasons for home purchase; reasons given by Nonparticipating Homebuyers were similar to those given by Participating Homebuyers. Many of the reasons given were clearly relate to "life stage" variables (e.g., new or growing families needed a larger home or retiring couples needed a smaller home). In marketing ENERGY STAR homes, it is appropriate to consider how ways to relate ENERGY STAR to those "life stage" factors.

2. Home Search Process

For most homebuyers the search process was extensive. On average, Nonparticipating Homebuyers spent five months searching for a suitable home, while Participating Homebuyers spent six months. Most homebuyers reported that they looked at several homes before deciding on the one that they purchased. About half of homebuyers reported that they visited both previously owned and new homes. It is clear that most homebuyers shop for the home that they purchase and give marketers an opportunity to influence the home purchase decision in some meaningful way.

3. Neighborhood Selection

Homebuyers gave us information on how they found the neighborhood that they selected and what factors contributed to neighborhood selection.

a) Locating Neighborhoods

Many homebuyers located neighborhoods through personal sources, though were introduced to their neighborhoods by advertisements or agents. Table 5 shows the most common sources of information about neighborhoods. It is clear that informal sources of information are influential.

Table 5: Most Common Sources of Information about Neighborhoods

Source of Information	Nonparticipating Homebuyers	Participating Homebuyers
Friends/relatives	22%	25%
Newspaper/magazine ads	22%	10%
Driving around	22%	27%
Real Estate Agent	10%	4%
Already familiar with area	13%	27%

b) Selecting Neighborhoods

Homebuyers select what they perceive to be "good" neighborhoods. Homebuyers in both groups focused on safety, good schools, and proximity to work. Few reported that low taxes, convenient transportation, or closeness to shopping were important. Table 6 identifies the most common reasons reported by Participating and Nonparticipating Homebuyers for selecting a neighborhood.

Table 6: Reasons for Selecting a Neighborhood

Main Reason	Nonparticipating Homebuyers	Participating Homebuyers
Better neighborhood/safer	20%	23%
Proximity to work	12%	9%
Better schools	12%	6%
Affordability	10%	9%

It is not clear that there are any attributes in neighborhood selection that would suggest ways of more effectively marketing ENERGY STAR. Rather, it appears that ENERGY STAR homes need be made available in those neighborhoods that homebuyers seek.

4. Home Selection

Homebuyers gave us information on how they found the home that they selected and what factors contributed to home selection.

a) Locating Homes

The survey asked homeowners to indicate whether ". . . any of the following information sources helped give you ideas for the home that you wanted to buy." The most common sources identified by Participating Homebuyers were builder open houses (56%), print advertisements (49%), real estate agents (44%), and friends or relatives (37%). Fewer than 10% of homebuyers report getting ideas from radio or television broadcasts, lenders, or utilities. A small, but probably growing percentage (15%) uses the Internet. The patterns are similar for Participating Homebuyers. Our subgroup analysis did not demonstrate any systematic patterns for different market segments. It appears that homebuyers use their own personal network to find the neighborhoods in which they live. However, they use information from builders and real estate agents to decide which home to select within a neighborhood.

b) Selecting Homes

Market actors that influence the homebuyer's decision to purchase a specific home include builders, real estate agents, and lending institutions. Some Participating Homebuyers report that the utility company influenced their purchase decision. This highlights the need to reach out to those professionals in ENERGY STAR marketing.

Table 7: Influence of Market Actors on Home Purchase Decision

Agent has "a lot" or "some influence	Nonparticipating Homebuyers	Participating Homebuyers
Builder	62%	69%
Real estate	21%	22%
Lender	14%	21%
Utility company	5%	17%
Homebuyer education class	4%	13%

Homebuyers most often select a specific home because of the location, style, price, and size. Energy efficiency was not mention as a primary reason for purchasing a home, but a significant number of homebuyers reported that energy efficiency had a lot of influence on their decision to purchase. However, energy efficiency was the least important of the listed factors.

Table 8: "A Lot" of Influence on Home Purchase

Factor	Nonparticipating Homebuyers	Participating Homebuyers
Location	83%	73%
Appearance	70%	75%
Price	70%	62%
Size	65%	69%
Quality of Construction	74%	78%
Comfort	52%	71%
Availability of Upgrades	40%	45%
Mortgage Financing	32%	36%
Energy Efficiency	28%	39%

5. Projected Influence of Program Incentives on Purchase

Homebuyers indicate that the availability of a reduced interest rate would have "a lot of influence" on their selection of a particular home, while only about one-fourth of homebuyers projected that energy efficiency certification would have a lot of influence. It is possible that these responses are actually a proxy for the perceived financial value of the listed incentives. Homebuyers perceive there interest rate reductions have a larger financial value than reduced mortgage costs and utility rebates.

Table 9: Projected Influence of RNC Incentives

Response	Nonparticipating Homebuyers	Participating Homebuyers
Reduced mortgage rates	61%	36%
Reduced mortgage costs	48%	42%
Utility rebates	40%	4%
Energy efficiency certification	28%	8%

E. Energy Efficiency in Home Purchase

Energy efficiency does not dominate the home selection process. (See Table 8) However, homebuyers do consider energy efficiency when they purchase homes. In the Participating and Nonparticipating Homebuyer surveys, we found that many homebuyers chose to increase the energy efficiency of their home through the purchase of upgrades to standard items. We also learned that most Nonparticipating Homebuyers perceive their home to be energy efficient.

1. Selecting Energy Efficient Homes

Neither Nonparticipating or Participating Homebuyers appeared to seek out "energy efficient" homes. Most Nonparticipating Homebuyers (88%) purchased production homes and were limited to energy efficiency options offered by the builder. Only 15% of Participating Homebuyers actively sought out a builder who would build them a home that met the utility RNC program standards.

2. Energy Efficiency as an Upgrade

Most Nonparticipating Homebuyers (70%) and many Participating Homebuyers (41%) report purchase of upgrades. About one-third of Nonparticipating Homebuyers say that they purchased an upgrade that increased the energy efficiency of their home. This suggests that many homebuyers are willing to invest in energy efficiency to save on energy costs in the future.

3. Types of Energy Efficiency Upgrades Purchased

Of Nonparticipating Homebuyers who purchased an energy efficiency upgrade package, about one third (30%) bought an improved heating and cooling system, while one fifth (18%) bought improved insulation for their new home.

4. Reasons for Purchasing Energy Efficiency Upgrade Packages

We asked Nonparticipating Homebuyers who bought energy efficiency upgrades to explain the reasons that led them to this purchase. Savings on energy bills emerges as the most important reason among Nonparticipating Homebuyers, but significant percentages report that their reason for the purchase was to improve the home's comfort or its indoor air quality.

Table 11: Reasons for Purchasing Efficiency Upgrades

Reasons for Purchase of Energy Efficiency Upgrade	Nonparticipating Homebuyers
Save on energy bills/cost of energy too high	55%
More comfortable	26%
Better indoor air quality	11%
Better quality equipment/last longer/lower maintenance costs	5%
Higher resale value	3%
Environmentally conscious	1%
Other	9%

5. Concerns About Energy Use

Most homebuyers show some concern about how much energy their home uses and the patterns are similar across the two homebuyer groups. Over two-thirds of Nonparticipating Homebuyers (71%) report that they worry "a lot" or "some" about the energy use of their home. Most Nonparticipating Homebuyers (84%) worry about the home's energy use because they want to save on energy bills or energy costs are too high.

Table 12: Reasons to Worry about Energy Use

Reason for worry	Nonparticipating Homebuyers	Participating Homebuyers
Lower energy bills/costs too high	84%	83%
Better environment	6%	6%
Energy crisis/shortage/dependence	4%	3%
Better quality equipment	1%	0%
Better indoor air quality	0%	1%
More comfortable home	2%	3%

6. Energy Efficiency of the Home

In the surveys, we asked homebuyers to rate their homes compared to the "typical home." In general, we found that homebuyers perceived that their homes are "energy efficient." 78% of Nonparticipating Homebuyers and 92% of Participating Homebuyers consider their homes to be "energy efficient."

Among Nonparticipating Homebuyers who think of their home as energy efficient, the median estimate of the cost of making their home energy efficient is $1,600. Nonparticipating Homebuyers who think that their home is not energy efficient had a much higher estimate of the cost of energy efficiency. The median estimate of the cost of making it energy efficient is $2,700

Table 13: Cost of Energy Efficiency

Because of energy efficiency, the home's purchase price is increased by. . . .	"Think Home is Energy Efficient"	"Think Home is not Energy Efficient"
Did not increase at all	15%	4%
Less than $500	7%	0%
$500-$2,500	21%	32%
$2,500-$5,000	17%	25%
More than $5,000	13%	14%
Don't know	25%	25%

F. Homebuyer Relationship with Lenders

The relationship between homebuyers and lenders is important. Homebuyers identify lenders as a significant source of information about the housing market. Lenders are in a position to inform and educate homebuyers about specialized mortgage products such as energy efficient mortgages (EEM).

Most Nonparticipating Homebuyers (91%) reported that took out a mortgage to purchase their home. Most Nonparticipating Homebuyers (83%) were "somewhat satisfied" or "very satisfied" with their lenders. These statistics suggest that Homebuyers use lenders and find the experience of working with them satisfactory.

A very small percentage of both Participating and Non Participating Homebuyers have heard of EEMs. Among Participating Homebuyers, 7% report some knowledge of energy efficient mortgages, while among Nonparticipating Homebuyers the percentage is even lower, around three percent.

G. Satisfaction with Home Purchase

We asked homebuyers to tell us their satisfaction with various aspects of their home. Participating Homebuyers are more satisfied the Nonparticipating Homebuyers on every attribute except for the neighborhood. They perceive that their homes are well built, comfortable, quiet, have good indoor air quality, and have low energy

bills. In particular, significantly more households are very satisfied with the quality of construction, the indoor air quality, the noise level, the overall energy efficiency, and annual energy costs.

Table 14: Percentage Very Satisfied With. . .

Response	Nonparticipating Homebuyers	Participating Homebuyers
Neighborhood	84%	78%
Appearance of home	85%	88%
Quality of construction	53%	75%
Comfort level	68%	77%
Indoor air quality	64%	75%
Noise level	61%	74%
Overall energy efficiency	48%	74%
Annual energy costs	38%	53%
Overall	76%	85%

Participating Homebuyers are more likely then Nonparticipating Homebuyers to say that their energy bills are lower than what they had expected them to be. Ninety one percent of Participating Homebuyers report that, in the future, if they need to buy a new home they will look for another program certified home.

H. Recommendations for RNC Programs

Based on the findings from the Homebuyer Surveys, we recommend a number of RNC program strategies.

1. Using the ENERGY STAR Label

The surveys demonstrated that about homebuyers are aware of and influence by the ENERGY STAR label. These findings demonstrate the value of using the ENERGY STAR label for the utility RNC programs. However, since the existing RNC program names have some statewide recognition, it will be important for any marketing efforts to help consumers understand the transition from the existing program names to the new program name.

2. Marketing ENERGY STAR Homes

While the energy efficiency of the a home can affect the purchase, it is clearly subordinate to a number of other concerns. Given the choice of two equivalent homes, the ENERGY STAR label may influence the home selection. However, it appears unlikely that the ENERGY STAR label would be enough to compensate for a home that was inadequate in other ways. Many homebuyers report purchasing energy efficiency upgrades. By offering ENERGY STAR as an upgrade, builders would allow homebuyers to tailor a home to their own specifications and may increase the marketability of the products.

3. Documenting the Benefits of ENERGY STAR Homes

A significant number of new homebuyers purchased energy efficiency upgrades with their new homes. Most of the households (84%) reported that they purchased the upgrades to reduce energy costs. To the extent that the utility RNC programs can document the benefits of purchasing an ENERGY STAR home, particularly the cost savings compared to other production homes, it can be expected to assist builders in marketing ENERGY STAR homes.

I. Introduction

This Report presents the findings from the Nonparticipating and Participating Homebuyers Surveys for the New Jersey Residential New Construction Awareness and Attitudinal Baseline Study (RNC study). The Report furnishes background information on the surveys, an overview of the survey methodology, and baseline statistics on ENERGY STAR awareness and attitudes. A separate report presents detailed information on the survey methodology.

A summary report entitled *Residential New Construction Attitude and Awareness Baseline Study: Integrated Summary* consolidates information from this and other research tasks conducted for the RNC Study.

A. Background

The New Jersey Residential New Construction Working Group (Working Group), which consists of Public Service Electric & Gas Company, GPU Energy, Conectiv Power Delivery, NUI Elizabethtown Gas Company, South Jersey Gas, Rockland Electric Company, and New Jersey Natural Gas Company, is charged with developing and implementing a coordinated, statewide utility residential new construction program that will increase the energy efficiency of new homes constructed in New Jersey. In support of that effort, the Working Group has commissioned a comprehensive study of New Jersey's residential new construction market with the following goals.

- *Baseline Measurement*: The primary objective of the study is to establish a baseline that documents the current market for ENERGY STAR homes.

- *Program Design and Implementation*: The secondary objective of the study is to enhance the Working Group's understanding of the residential new construction market.

- *Customer Sited Clean Generation*: In addition, this study will support the work of the Customer Sited Clean Generation Working Group (CSCG Working Group).

The working group contracted with Roper Starch Worldwide Inc. and XENERGY Inc. to conduct the RNC study. The study consists of 13 research components:

- Nonparticipating Homebuyer Study
- Participating Homebuyer Study
- Nonparticipating Homebuilder Study
- Participating Homebuilder Study
- Lender Study
- Residential Real Estate Appraiser Study
- Residential Real Estate Agent Study
- Building Inspector Study
- Trade Ally Study
- CSCG Analysis
- Residential New Construction Statistics
- Affordable Housing Organizations
- CSCG Industry Statistics

The 13 research tasks were conducted independently, since each required research and interviews with different market actors. However, all of the studies used common language and definitions so that the results are comparable across all studied market sectors.

B. Study Goals and Objectives

The purpose of this study is document the awareness existing utility RNC programs among new homebuyers, develop an understanding of the purchase decisions made by new homebuyers, and identify ways that new RNC programs can influence the home purchase decision. The primary instruments used to develop this information are the surveys among Nonparticipating Homebuyers (homebuyers whose homes did not receive utility RNC program incentives) and

Participating Homebuyers (homebuyers whose homes did receive utility RNC program incentives). The survey collected the following information.

- *Baseline Attitudes and Awareness*: The surveys asked homebuyers about their awareness of and experience with the ENERGY STAR label and the existing utility-sponsored RNC programs.

- *Homebuyer Decision-Making Process*: The surveys collected information from homebuyers regarding their home purchase decision to identify the factors that had the greatest influence on their purchase decision.

- *Homebuyer Satisfaction*: The surveys collected information on homebuyers' satisfaction with their homes to assess the performance differential between participating and nonparticipating homes.

C. Target Population

Influencing the decision-making process of homebuyers requires an in-depth understanding of the socioeconomic and behavioral characteristics homebuyers, including those who bought homes that did not receive any existing RNC program incentives and those who bought homes that did receive such incentives. As part of this study, we conducted two individual and independent surveys.

- The Nonparticipating Homebuyer Study surveyed 200 homebuyers who purchased newly constructed homes in 1999 or 2000 and whose home did not participate in any of the three existing utility RNC programs.

- The Participating Homebuyer Study surveyed 166 homebuyers who purchased newly constructed homes in 1998, 1999 or 2000 and whose home participated in one of the three existing utility RNC programs.

This Report combines information and findings from both surveys.

D. Study Methodology

The study consisted of 200 telephone interviews with Nonparticipating Homebuyers and 166 interviews with Participating Homebuyers who bought a newly constructed home in New Jersey. In designing and conducting this study, we attempted to establish an appropriate balance among data quality, timeliness, and cost. We are confident that the procedures we used will furnish reliable information to the Working Group. However, it is important for data users to understand the procedures employed and any limitations resulting from the procedures that were selected. Moreover, since this is a baseline study, any subsequent study that attempts to measure a change in the residential new construction market must use similar procedures to ensure that measured changes are defensible.

The *Nonparticipating Homebuyers Methodology Report* and the *Participating Homebuyers Methodology Report* furnish detailed information on the survey procedures. The following are the most important aspects of the design and implementation of the survey.

- *Sample Frame*: The sample frame for the Nonparticipating Homebuyers Survey was a list of 6,797 recently sold homes supplied by First American Real Estate Solutions. First American maintains a database with information on home sales provided by county assessor offices. The sample frame for the Participating Homebuyer survey were lists of participating homebuyers provided by PSE&G, GPU Energy and Conectiv Power Delivery.

- *Sample Selection*: For the Nonparticipating Homebuyers Survey, we requested records from the First American Real Estate Solutions database based on specific criteria. These criteria are: 1)homes with only one transaction record in the database; 2) homes sold since January 1, 1999, and 3) homes defined as one of a number of listed residential housing types. The sample was selected within each of New Jersey's 21 counties proportionate to the amount of new construction reported in each county in 1999. For the Participating Homebuyers Survey, we included all the cases provided by the utility companies.

- *Respondent Contact*: We sent an advance letter to sampled homes describing the purpose of the survey. We contacted the homebuyer by telephone and conducted the interview.

- *Interview*: The interview was administered by a Computer-Assisted Telephone Interviewing (CATI) system. The average length of the interview for Nonparticipating Homebuyers was 22 minutes, and for Participating Homebuyers it was 21 minutes.

- *Incentive*: For the Nonparticipating Homebuyer Survey, each respondent was sent a $5 check for participation in the interview. For the Participating Homebuyer Survey, each respondent was sent a $2 for participation in the interview.

The Nonparticipating Homebuyers Survey attained a 50% response rate. The Participating Homebuyers Survey attained a 58% response rate.

E. Sampling Tolerances of Survey Estimates

Surveys that use a sample drawn from a population are subject to tolerances, or margins of error, based on sampling variability. The probably limits of such sampling tolerances vary with the size of the sample and the magnitude of the percentage of any survey finding.

The sample size for the Nonparticipating Homebuyers Survey was 200 cases. For most survey statistics based on all respondents, the sampling tolerances are +/- 7% at the 95% confidence level. Sampling tolerances for survey statistics based on three-fourths, one-half, and one-fourth of the respondents are +/- 8%, +/- 10%, and +/- 14% respectively.

The sample size for the Participating Homebuyers Survey was 166 cases. For most survey statistics that are based on all respondents, the sampling tolerances are +/- 8%. Sampling tolerances for survey statistics based on three-fourths, one-half, and one-fourth of the respondents are +/- 9%, +/- 12%, and +/- 16% respectively.

The sampling tolerances for comparing percentages for the Nonparticipating Homebuyers to the Participating Homebuyers are approximately +/- 10% at the 95% confidence level.

II. Awareness of and Attitudes Toward the ENERGY STAR Label

The primary goal of the Homebuyer Surveys is to establish a baseline against which market changes resulting from the utilities' residential new construction programs can be measured. To meet this goal, the Homebuyer Surveys collected information on awareness of and attitudes toward the ENERGY STAR Label, the ENERGY STAR Homes program and the existing utility residential new construction programs. In this section of the report, we identify the key awareness and attitude measures for the ENERGY STAR Label, and furnish baseline statistics.

A. Awareness of the ENERGY STAR Label

Awareness of the ENERGY STAR label was measured by asking survey respondents whether they "have ever seen or heard of the ENERGY STAR logo that is on some new appliances, electronic equipment, and homes." There are important limitations to this measurement technique. First, many major appliances are displayed in the showroom with a Yellow FTC Energy Guide label. Some survey respondents may have reported awareness of the ENERGY STAR label, even though they have only seen the FTC Energy Guide label. Second, since the interview was conducted by telephone, we were unable to display the ENERGY STAR label. Some survey respondents may have seen the label previously, but in the context of the survey administration, were unable to report awareness without a visual prompt. The awareness estimates reported in this survey furnish a baseline estimate of awareness. To measure a change in awareness, the same question and survey mode should be employed.

About half (46%) of Nonparticipating Homebuyers report that they have seen the ENERGY STAR label. Awareness varies somewhat among different subgroups of homebuyers. However, there is no consistent pattern of awareness that would suggest that one market segment is more aware of the program. The strongest patterns appear to relate to age of homebuyer. Awareness was much lower for younger (18-29) homebuyers (24%) and slightly lower for older (60+) homebuyers (40%), while it was over 50% for other households. There are weaker trends in levels of awareness of ENERGY STAR by

education, income and cost of home, with better-educated, higher income households, and buyers of higher priced homes more aware of ENERGY STAR. However, the increase in awareness is comparatively small (10-15 percentage points) and in most cases it is not statistically significant.

Among Participating Homebuyers, more than half (58%) report that they have seen the ENERGY STAR label. The difference between Nonparticipating and Participating Homebuyers is statistically significant. It appears that the difference in awareness of the ENERGY STAR label between Participating and Nonparticipating Homebuyers results from participation in utility RNC programs that use the ENERGY STAR label.

B. Sources of Homebuyer Information about the ENERGY STAR Label

Table 2.1 provides details about the sources from which homebuyers learned about the ENERGY STAR label.

Table 2.1: Sources of Homebuyer Information about ENERGY STAR Label

Homebuyer Source of Information	Nonparticipating Homebuyers	Participating Homebuyers
Appliances/equipment labels	58%	37%
Print advertisements	13%	10%
Newspaper/magazine articles	4%	1%
TV commercials	7%	4%
TV feature story	1%	1%
Store displays/sales people	7%	3%
Builders/contractors	3%	12%
Real Estate Agent	0%	5%
Friends/Relatives	0%	5%
Utility company	0%	14%
On the Home	0%	3%

The majority (58%) of Nonparticipating Homebuyers saw the label on appliances or electronic equipment, while 27% saw it in print advertisements, TV commercials, or store displays. No respondent in this group reported seeing the label on utility company mailings.

About one-third (37%) of Participating Homebuyers saw the ENERGY STAR label on appliances or electronic equipment, while 17% saw it in print advertisements, TV commercials, or store displays. About one-third of Participating Homebuyers (31%) learned about ENERGY STAR through builders, real estate agents, or the utility company.

C. Meaning of the ENERGY STAR Label

Table 2.2 shows the different meanings that homebuyers ascribe to the ENERGY STAR Label.

When asked the open-ended question "What does the ENERGY STAR label mean?" most Nonparticipating Homebuyers (73%) respond that the ENERGY STAR label means that the product saves energy or is energy efficient. Only 21% of respondents volunteer that it means that the product "saves money." One interpretation of these data is that the majority of homebuyers fail to make the connection that energy savings translate directly into money savings.

Table 2.2: Meaning of the ENERGY STAR Label

The ENERGY STAR Label Means. . .	Nonparticipating Homebuyers	Participating Homebuyers
The product saves energy	73%	61%
The product saves money	21%	27%
The product is built to standard	0%	3%
It is on the appliance	8%	3%
Nothing	3%	7%

Similarly, most Participating Homebuyers (61%) respond that the ENERGY STAR label means that the product saves energy or is

energy efficient. A little over a fourth (27%) of Participating Homebuyers say that the ENERGY STAR label means energy savings for the consumer. Three of the Participating Homebuyers were able to report that the ENERGY STAR label means that the product was built to a specific standard.

D. Purchase of ENERGY STAR Products

Many survey respondents have purchased ENERGY STAR products. About one-third of both Participating Homebuyers (29%) and Nonparticipating Homebuyers (32%) report that they have purchased at least one product with the ENERGY STAR label. Table 2.3 shows the percentage of each group that has purchased ENERGY STAR products of different types. The table also shows the share of product purchasers who report that they were influenced in their selection of the product by the ENERGY STAR label. For most products, the ENERGY STAR label influenced at least half of those purchases. With the exception of the purchase of ENERGY STAR homes, there do not appear to be significant differences between the two groups of homebuyers.

Table 2.3: Previous ENERGY STAR Product Purchase and Influence

	Nonparticipating Homebuyers		Participating Homebuyers	
Product	Purchased ENERGY STAR Product	Purchase Influenced by Label	Purchased ENERGY STAR Product	Purchase Influenced by Label
Central Air	10%	52%	15%	60%
Furnace / Boiler	10%	53%	11%	67%
Heat Pump	2%	50%	6%	78%
Room Air	5%	50%	3%	50%
Computer Equip.	22%	33%	13%	29%
Lighting fixtures	6%	64%	3%	60%
Dishwasher	13%	73%	15%	44%
Refrigerator	19%	63%	17%	59%
Clothes Washer	15%	60%	15%	67%
Thermostat	6%	77%	14%	64%
Home	5%	50%	19%	52%

E. ENERGY STAR Influence on Appliance and Equipment Purchases

Homebuyers were asked to project how much influence an ENERGY STAR label would have on their decision to purchase a particular energy-using product. Table 2.4 shows the responses for the two groups of homebuyers. One in four (24%) Nonparticipating Homebuyers reports that the label would have a lot of influence, and more than half (56%) report that it would have at least some influence. More than a third (36%) of Participating Homebuyers report that the label would have a lot of influence, and almost 80% report that it would have at least some influence. The difference between these two groups of homebuyers is statistically significant. It is unclear whether the higher level of influence for Participating Homebuyers relates to their positive experience with ENERGY STAR homes, or to some other factor. The differences between Nonparticipating and Participating Homebuyers are statistically significant.

Table 2.4: Projected Influence of ENERGY STAR on Product Purchases

Response	Nonparticipating Homebuyers	Participating Homebuyers
A lot of influence	24%	36%
Some influence	32%	42%
Very little influence	15%	4%
No influence at all	17%	8%
Don't know	13%	10%

III. Awareness of and Attitudes Toward Existing RNC Programs

Three New Jersey electric utilities have had residential new construction programs; GPU Energy's Good Cents program, Conectiv Power Delivery's ENERGY STAR Homes program, and PSE&G's EEH Five Star Program. Each program had different goals, objectives, and procedures. As a result of restructuring legislation, all of New Jersey's electric and gas utilities are participating in a coordinated, statewide residential new construction program. The new program will have a common set of goals, objectives, and procedures. In the baseline survey, we measure awareness of and attitudes toward the existing programs. In any follow-up research, one would measure the change in awareness and attitudes resulting from the implementation of the statewide program. In the surveys, we measured the awareness of and attitude toward the four existing utility RNC programs among both Participating and Nonparticipating Homebuyers.

A. Awareness of Existing RNC Programs

The Participating Homebuyer and Nonparticipating Homebuyer Surveys directly measure awareness of the existing RNC programs. Table 3.1 summarizes awareness of each utility program, awareness of the EPA ENERGY STAR Homes program, and awareness of any of the four programs.

Table 3.1: RNC Program Awareness for Nonparticipating and Participating Homebuyers

	Program Sponsor				
Aware of Program	**Conectiv**	**GPUE**	**PSE&G**	**EPA**	**Any Program**
Nonparticipating	9%	25%	22%	15%	51%
Participating	87%	85%	66%	25%	81%

Among Nonparticipating Homebuyers, the GPU Energy and PSE&G programs are apparently better known than the Conectiv Power

Delivery program. However, since Conectiv Power Delivery has the smallest service territory among the three utilities, the lower level of awareness is expected. Thirty two percent of Nonparticipating Homebuyers from the South Region are aware of Conectiv Power Delivery's program. About half of the Nonparticipating Homebuyers are aware of at least one of the existing utility RNC programs or of the EPA ENERGY STAR Homes program. These patterns are consistent for the subgroups that we examined.

One might expect that all Participating Homebuyers would be aware of the existing RNC programs. However, unless the homebuyer is the general contractor, the RNC program relationship is between the builder and the utility. The homeowner will know that the home meets program standards only if it is marketed as an RNC program home. In Table 3.1, the percentage presented for each program represents the share of Participating Homebuyers aware of the RNC program in which their home participated. Under the column for any program, the percentage represents the awareness among all Participating Homebuyers. Awareness is lowest among PSE&G participants. Since, a significant fraction of the homes constructed under PSE&G's program are Affordable Housing Program homes, it is likely that buyers of the Affordable Housing Program homes focus much more on the affordability aspect of the home purchase, than on the EEH 5 Star designation.

B. Awareness of RNC Program Certification

Participating Homebuyers were asked whether they were aware that their home was certified by a utility RNC program. When the awareness questions was asked that way, 100% of Conectiv customers and 94% of GPU Energy Participating Homebuyers are aware of the status of their home, but only 60% of PSE&G Participating Homebuyers are aware of the participation of their home in the RNC program. Over all programs, 40% of Participating Homebuyers who are in an Affordable Housing Program are aware of the home's participation in the utility RNC program.

C. Sources of Information About RNC Programs

For Nonparticipating Homebuyers, the primary sources of information about existing RNC programs are print advertisements

(28%), utility company mailings (40%), and friends or relatives (10%). For the ENERGY STAR Homes and Conectiv Power Delivery programs, print advertisements are the most common source of information. For the PSE&G and GPU Energy programs, utility mailings are the most common source of information.

Among Participating Homebuyers, the primary sources of information about existing RNC programs are print advertisements (14%), utility mailings (24%), and builders or contractors (24%). For the GPU Energy and the PSE&G programs, about one fifth of Participating Homebuyers mention builders or contractors as their primary source of information. Other sources of information about existing RNC programs are TV commercials (9%), friends or relatives (9%), and newspaper or magazine articles (7%).

These patterns are consistent across all subgroups that we examined. Table 3.3 presents the sources of information about existing RNC programs that Nonparticipating Homebuyers discuss in the survey.

Table 3.3: Primary Sources of Information about Existing RNC Programs (Nonparticipating Homebuyers)

Source of Information about Program	Conectiv	GPUE	PSE&G	EPA	Any
Utility company/came in the mail	18%	42%	47%	20%	40%
Newspaper/magazine advertisements	41%	20%	26%	40%	28%
Newspaper/magazine articles	12%	6%	2%	10%	8%
Builder/constructor	0%	2%	2%	3%	2%
Friends/Relatives	6%	10%	12%	10%	10%
Internet	0%	0%	0%	3%	1%
Radio Commercial	0%	0%	2%	3%	2%
TV commercial	6%	4%	2%	10%	5%
Store displays/sales person	6%	0%	0%	0%	1%
Billboard	12%	2%	0%	0%	3%
Other	0%	2%	5%	3%	4%

D. Influence of ENERGY STAR on Home Purchase Decision

Homebuyers were asked to project how much influence the ENERGY STAR label would have on their decision to purchase a particular home. Table 3.4 shows the responses for the two groups of homebuyers. Only 15% of Nonparticipating Homebuyers report that the name would have a lot of influence, but more than half report that it would have at least some influence. More than a third of Participating Homebuyers report that the name would have a lot of influence, and almost 70% report that it would have at least some influence. These differences are statistically significant.

Table 3.4: Projected Influence of ENERGY STAR Label on Home Purchases

Response	Nonparticipating Homebuyers	Participating Homebuyers
A lot of influence	15%	34%
Some influence	36%	35%
Very little influence	20%	12%
No influence at all	26%	12%
Don't know	6%	7%

E. Other Benefits of Energy Star Homes

Survey respondents were asked the open-ended question "Other than energy efficiency, do you think there are any other benefits that might come from owning an ENERGY STAR home?" About one-third (30%) of Nonparticipating Homebuyers and almost half of Participating Homebuyers (46%) thought that there were other benefits. (The difference between the two groups is statistically significant at the 95% level.)

When specific home attributes were listed (See Table 3.5), many respondents agreed that each was likely to be a benefit of ENERGY STAR homes. Among the attributes, comfort enhancements were expected by the greatest percentage of respondents (90%), while indoor air quality improvements were expected by the lowest

percentage of respondents (71%). In general, the Participating Homebuyers were more likely to expect ENERGY STAR Homes to deliver benefits than were Nonparticipating Homebuyers.

Table 3.5: Perceived Benefits of an ENERGY STAR Home

Response	Nonparticipating Homebuyers	Participating Homebuyers
Comfort	95%	99%
Resale value	90%	91%
Construction quality	81%	86%
Indoor air quality	71%	84%
Noise level	71%	80%
Other	15%	36%

IV. Home Purchase Decision Process

Anyone who has purchased a home and/or has known someone who has purchased a home understands that the home purchase decision is a complex process for most homebuyers. Homebuyers consider a number of different factors as they search for a home, including community attributes, neighborhood attributes, and house attributes. The purpose of this survey is to document the factors that appear to be of the greatest importance to homebuyers and to identify ways that an RNC program could increase homebuyers' consideration of energy efficiency in the purchase decision.

To develop a better understanding of the home purchase decision process, the Homebuyer surveys asked questions regarding the search process, neighborhood selection factors, and home selection factors. In this section of the report we review the home purchase decision findings.

A. Reasons for Buying a New Home

Homebuyers were asked the open-ended question "What were your reasons for deciding to purchase a new home?" Nonparticipating Homebuyers reported many reasons for home purchase, including wanting a larger home (24%), wanting to own a home (10%), or having a change in family status such as marriage, widowhood or the birth of a child (7%), a job transfer (9%) and retirement (6%). Similarly, for Participating Homebuyers, the most important reasons for the purchase of a new home are the need for a larger home (33%), the desire to own a home (22%), and retirement (6%).

The reasons for home purchase are varied. However, they seem a little more predictable when we look at subgroups. For example, 20% of older homebuyers (60+) wanted a smaller home, while that was rarely mentioned by other homebuyers. On the other hand, 40% of those with children under 13 cited the need for a larger home and 24% of young homebuyers (18-29) cited marriage as a motivator for home purchase. It seems reasonable to suggest, then, that life stage factors are likely to have a strong influence on the decision to purchase a new home.

Table 4.1 provides a summary of all the reasons mentioned by each group, as well as the main reason that led to the purchase decision.

Table 4.1: Homebuyers' Reasons for Purchasing a New Home

Reasons for decision to buy a new home	Nonparticipating Homebuyers		Participating Homebuyers	
	Reason Mentioned	Main Reason	Reason Mentioned	Main Reason
Job transfer	9%	9%	4%	3%
New Job	3%	3%	0%	0%
Needed larger home	24%	20%	33%	31%
Wanted smaller home	7%	7%	5%	5%
Wanted to own home	10%	9%	22%	19%
Wanted change	13%	11%	11%	10%
Change in family status	7%	6%	3%	3%
Retired	6%	6%	6%	5%
Better schools	2%	1%	4%	3%
Better neighborhood	3%	2%	0%	0%
Financial incentives	3%	2%	5%	4%
Lower taxes	3%	2%	0%	0%
Liked New Jersey	1%	0%	0%	0%
Other	22%	21%	15%	14%

B. Home Search Process

For most homebuyers the search process has been extensive. On average, Nonparticipating Homebuyers spend five months searching for a suitable home, while Participating Homebuyers spent six months (Table 4.2). Also, most homebuyers from both groups report that they looked at several homes before deciding on the one that they purchased (Table 4.3). It is clear that most homebuyers shop for the home that they purchase and give marketers an opportunity to influence the home purchase decision in some meaningful way.

Table 4.2: Months Spent Looking for House

Response	Nonparticipating Homebuyers	Participating Homebuyers
0-3	38%	32%
4-6	31%	19%
7-12	24%	28%
13+	9%	10%
Median	5	6

Table 4.3: Number of Homes Visited

Response	Nonparticipating Homebuyers	Participating Homebuyers
0	8%	14%
2-5	27%	31%
6-10	20%	13%
11+	41%	22%
Median	9	5

The survey asked homebuyers to identify the types of houses they looked at during their search for a suitable home. Participating Homebuyers are almost evenly split, with 43% reporting that they visited both previously owned and new homes, and 42% saying that they only visited newly constructed homes. Among Nonparticipating Homebuyers, about 60% look exclusively at new homes and about 40% look at both new and previously owned homes. Table 4.3 summarizes this information.

Table 4.3: Types of Homes Visited

Types of Homes Visited	Nonparticipating Homebuyers	Participating Homebuyers
Both previously owned and new homes	59%	43%
New homes only	40%	42%

C. Neighborhood Selection

In the surveys, we asked Homebuyers to give us information on how they found the neighborhood that they selected and what factors contributed to neighborhood selection.

1. Locating Neighborhoods

About one fourth of Nonparticipating Homebuyers learn about different neighborhoods by driving around (22%), through friends and relatives (22%), and through print advertisements (22%). About one tenth report that they learned about their current neighborhood from a realtor (10%), and a similar percentage (13%) report that they were familiar with the area before buying their new house. The results are similar for Participating Homebuyers. Table 4.4 presents the sources of information that homebuyers use to learn about neighborhoods.

Table 4.4: Sources of Information about Neighborhoods

Source of Information	Nonparticipating Homebuyers	Participating Homebuyers
Friends/relatives	22%	25%
Newspaper/magazine ads	22%	10%
Driving around	22%	27%
Newspaper/magazine articles	3%	4%
Real Estate Agent	10%	4%
Builder/contractor	2%	1%
Internet	3%	1%
Billboard	2%	2%
Utility company	0%	1%
Already familiar with area	13%	27%
Other	3%	2%

These patterns are consistent for our analysis subgroups. Regardless of age, income, or education, homebuyers tend to rely on the same sources of information.

2. Selecting Neighborhoods

Homebuyers select what they perceive to be "good" neighborhoods. Homebuyers in both groups focused on safety, good schools, and proximity to work. Very few homebuyers reported that low taxes, convenient transportation, or closeness to shopping were important. Table 4.5 identifies the main reasons offered by both Participating and Nonparticipating Homebuyers for selecting a neighborhood.

Table 4.5: Main Reason for Selecting a Neighborhood

Main Reason	Nonparticipating Homebuyers	Participating Homebuyers
Better neighborhood/safer	20%	23%
Proximity to work	12%	9%
Better schools	12%	6%
Affordability	10%	9%
Proximity to relatives	4%	5%
Convenient transportation	4%	1%
Close to shopping	2%	1%
Low tax rates	0%	2%
Other	34%	41%

D. Home Selection

In the surveys, we asked Homebuyers to give us information on how they found the home that they selected and what factors contributed to home selection.

1. Locating Homes

The survey asked homeowners to indicate whether ". . . any of the following information sources helped give you ideas for the home that you wanted to buy." The most common sources identified by Participating Homebuyers were builder open houses (56%), print advertisements (49%), real estate agents (44%), and friends or relatives (37%). Fewer than 10% of homebuyers report getting ideas from radio or television broadcasts, lenders, or utilities. A small, but probably growing percentage (15%) uses the Internet. The patterns are similar for Participating Homebuyers. Our subgroup analysis did not demonstrate any systematic patterns for different market segments.

Table 4.6: Information Sources for Home Purchase

Information Sources	Nonparticipating Homebuyers	Participating Homebuyers
Friends/Relatives	37%	41%
Newspaper/magazine	49%	44%
Radio show	2%	5%
TV show	7%	11%
Internet site	15%	14%
Home showing	30%	32%
Builder open house	56%	47%
Realtor	44%	32%
Lender/mortgage broker	8%	6%
Utility company	3%	6%
Other	13%	11%

It appears that homebuyers use their own personal network to find the neighborhoods in which they live (See Table 4.4). However, they use information from builders and real estate agents to decide which home to select within a neighborhood.

2. Selecting Homes

The surveys asked homebuyers which market actors influenced their selection of a specific home.

A number of market agents have influence on the homebuyer's decision to purchase a specific home. Almost two thirds (62%) of Nonparticipating Homebuyers report that builders have a lot or some influence on the decision to purchase a given home. About one fifth (21%) of Nonparticipating Homebuyers identify real estate agents as having a lot or some influence, and 14% say the same about lending institutions.

Among Participating Homebuyers, over two thirds (69%) say that the builder had a lot or some influence on their decision to purchase their new home. A little more than a fifth identify real estate agents (22%) and lending institutions (21%) as having a lot or some influence in the decision to purchase a home. Also, 17% of Participating Homebuyers say that the utility company had a lot or some influence in their decision to buy a home.

The statistics on the influence of different market actors are reported in Table 4.7.

Table 4.7: Influence of Market Actors on Home Purchase Decision

Agent has "a lot" or "some influence	Nonparticipating Homebuyers	Participating Homebuyers
Builder	62%	69%
Real estate	21%	22%
Lender	14%	21%
Utility company	5%	17%
Homebuyer education class	4%	13%

Based on the survey results, it appears that homebuyers most often select a specific home because of the location, style, price, and size. Energy efficiency was not mention as a primary reason for purchasing a home, but a significant number of homebuyers reported that energy efficiency had a lot of influence on their

decision to purchase. Table 4.8 summarizes the primary reasons that lead homebuyers to purchase a particular home.

Table 4.8: Factor Had "A Lot" of Influence on Home Purchase

Factor	Nonparticipating Homebuyers	Participating Homebuyers
Location	83%	73%
Appearance	70%	75%
Price	70%	62%
Size	65%	69%
Quality of Construction	74%	78%
Comfort	52%	71%
Availability of Upgrades	40%	45%
Mortgage Financing	32%	36%
Energy Efficiency	28%	39%

E. Projected Influence of RNC Program Incentives on Home Purchase

Homebuyers were asked to project how much influence specific incentives would have on "your decision to purchase a particular home." The incentives included "reduced mortgage interest rates," "reduced mortgage closing costs or fees," "utility rebates," and "utility company or EPA energy efficiency certification."

Almost two-thirds of homebuyers indicate that the availability of a reduced interest rate would have a lot of influence on their selection of a particular home, while only about one-fourth of homebuyers projected that energy efficiency certification would have a lot of influence. It is possible that these responses are actually a proxy for the perceived financial value of the listed incentives. Homebuyers perceive there interest rate reductions have a larger financial value than reduced mortgage costs and utility rebates.

Table 4.9: Percent of Homebuyers Projecting "A Lot" of Influence from Listed Incentives

Response	Nonparticipating Homebuyers	Participating Homebuyers
Reduced mortgage rates	61%	36%
Reduced mortgage costs	48%	42%
Utility rebates	40%	4%
Energy efficiency certification	28%	8%

V. Energy Efficiency In Home Purchase

It is clear from the surveys that energy efficiency does not dominate the home selection process. (See Table 4.8) However, that does not mean that homebuyers do not consider energy efficiency when they purchase homes. In the Participating and Nonparticipating Homebuyer surveys, we found that many homebuyers chose to increase the energy efficiency of their home through the purchase of upgrades to standard items. We also learned that most Nonparticipating Homebuyers perceive their home to be energy efficient.

A. Selecting Energy Efficient Homes

88% of Nonparticipating Homebuyers reported that they purchased a production home. This implies that most homebuyers were restricted to the energy efficiency standards and options offered by the builder.

Participating Homebuyers purchased a home that met the energy efficiency standards of the existing RNC program. However, only 15% of Participating Homebuyers actively sought out a builder who would build them a home that met the utility RNC program standards. About 10% of Participating Homebuyers purchased RNC certification as an upgrade to their home.

These survey results suggest that very few homebuyers currently seek an energy efficient home or have the ability to specify that their home is built to higher energy efficiency standards. However, at the same time, it appears that homebuyers can be sold energy efficient homes.

B. Energy Efficiency as an Upgrade

Since 88% of Nonparticipating Homebuyers purchased a production home, their options for increasing energy efficiency are limited to the choices offered by the Homebuilder. However, purchase of upgrades appears to be fairly common; 70% of Nonparticipating Homebuyers and 41% of Participating Homebuyers report that they purchase upgrades.

Among Nonparticipating Homebuyers, the home's appearance and its resale value emerge as major concerns, but a significant percentage of this group is also concerned with energy efficiency. About one-third of Nonparticipating Homebuyers say that they purchased an upgrade that increased the energy efficiency of their home. This suggests that many homebuyers are willing to invest in energy efficiency to save on energy costs in the future.

Among Nonparticipating Homebuyers, only 27% of first-time homebuyers purchase energy efficiency upgrades, while 42% of repeat buyers bought energy efficiency upgrade packages. Buyers of more expensive homes (55%) and higher income buyers (44%) are also more likely to purchase energy efficiency upgrades.

Table 5.1 presents the percentage of homebuyers from each group purchasing each type of upgrade.

Table 5.1: Percentage Purchasing Upgrades by Type

Type of upgrade purchased	Nonparticipating Homebuyers	Participating Homebuyers
External appearance	28%	19%
Internal appearance	62%	27%
Square footage	25%	19%
Construction quality	25%	17%
Comfort	38%	20%
Resale value	55%	27%
Energy efficiency	33%	N/A
HVAC efficiency	30%	19%
Non-standard appliances	40%	22%

1. Types of Energy Efficiency Upgrades Purchased

Of Nonparticipating Homebuyers who purchased an energy efficiency upgrade package, about one third (30%) bought an improved heating and cooling system, while one fifth (18%) bought improved insulation for their new home. Table 5.2 summarized the different types of energy efficiency upgrades that Nonparticipating Homebuyers buy for their new homes.

Table 5.2: Types of Energy Efficiency Upgrades (Nonparticipating Homebuyers)

Energy Efficiency Upgrades	Nonparticipating Homebuyers
Insulation	18%
Better doors/windows	5%
Heating & cooling equipment	30%
Bought energy efficiency package from builder/ENERGY STAR package	3%
Ceiling fans/attic fans	5%
Gas fireplace	4%
Two-zone hating	5%
Other	24%

2. Reasons for Purchasing Energy Efficiency Upgrade Packages

We asked Nonparticipating Homebuyers who bought energy efficiency upgrades to explain the reasons that led them to this purchase. Savings on energy bills emerges as the most important reason among Nonparticipating Homebuyers, but significant percentages report that their reason for the purchase was to improve the home's comfort or its indoor air quality.

Table 5.3: Reasons for Purchasing Energy Efficiency Upgrade Packages (Nonparticipating Homebuyers)

Reasons for Purchase of Energy Efficiency Upgrade	Nonparticipating Homebuyers
Save on energy bills/cost of energy too high	55%
More comfortable	26%
Better indoor air quality	11%
Better quality equipment/last longer/lower maintenance costs	5%
Higher resale value	3%
Environmentally conscious	1%
Other	9%

C. Concerns About Energy Use

Most homebuyers show some concern about how much energy their home uses and the patterns are similar across the two homebuyer groups. Over two-thirds of Nonparticipating Homebuyers (71%) report that they worry "a lot" or "some" about the energy use of their home. Most Nonparticipating Homebuyers (84%) worry about the home's energy use because they want to save on energy bills or because they believe energy costs are too high. A few respondents report that they worry about the home's energy use for environmental reasons, because they want a more comfortable home, or because they fear an energy crisis. The patterns for Participating Homebuyers are similar.

Table 5.4: Reasons to Worry about Energy Use

Reason for worry	Nonparticipating Homebuyers	Participating Homebuyers
Lower energy bills/costs too high	84%	83%
Better environment	6%	6%
Energy crisis/shortage/dependence	4%	3%
Better quality equipment	1%	0%
Better indoor air quality	0%	1%
More comfortable home	2%	3%
Other	3%	4%

D. Energy Efficiency of the Home

In the surveys, we asked homebuyers to rate their homes compared to the "typical home." In general, we found that homebuyers perceived that their homes are "energy efficient."

1. Beliefs about Energy Consumption

Among Nonparticipating Homebuyers, 78% consider their home to be "energy efficient." More than half of those who consider their home to be energy efficient believe that it consumes at least 10% less energy than the typical home, and one-fourth believe that their home consumes at least 25% less energy than the typical home. These patterns hold across the various subgroups that we examined.

Among Participating Homebuyers, 92% consider their home to be energy efficient. Over half (58%) believe that their home consumes at least 10% less than the typical home, and another third says that their home consumes at least 25% less than the typical home. Table 5.5 summarizes these findings.

Table 5.5: Homebuyer Beliefs about the Home's Energy Efficiency

Energy efficient home reduces bills by: (compared to typical home)	Nonparticipating Homebuyers	Participating Homebuyers
0-5%	7%	6%
6-10%	21%	15%
11-25%	26%	21%
More than 25%	25%	37%
Don't know	20%	22%

2. Cost of Implementing Energy Efficiency Measures

Nonparticipating Homebuyer survey respondents who thought that their homes were energy efficient had a range of opinions on the costs of energy efficiency. (Table 5.6) Twenty-two percent thought that measures to make the home energy efficient cost less than $500, while 13% thought that those measures would cost over $5,000. One-fourth (25%) of the survey respondents did not know the cost of implementing energy efficiency measures.

Nonparticipating Homebuyer survey respondents who thought that their homes were not energy efficient perceived that it would have cost a considerable amount to make them energy efficient. (Table 5.6) Only 4% thought that it would cost less than $500, while 14% thought it would have cost over $5,000.

Among Nonparticipating Homebuyers who think of their home as energy efficient, the median estimate of the cost of making their home energy efficient is $1,600. Nonparticipating Homebuyers who think that their home is not energy efficient had a much higher estimate of the cost of energy efficiency. The median estimate of the cost of making it energy efficient is $2,700

Table 5.6: Cost of Energy Efficiency

Because of energy efficiency, the home's purchase price is increased by. . . .	"Think Home is Energy Efficient"	"Think Home is not Energy Efficient"
Did not increase at all	15%	4%
Less than $500	7%	0%
$500-$2,500	21%	32%
$2,500-$5,000	17%	25%
More than $5,000	13%	14%
Don't know	25%	25%

VI. Homebuyer Relationship with Lenders

The relationship between homebuyers and lenders is important. Homebuyers identify lenders as a significant source of information about the housing market. Lenders are in a position to inform and educate homebuyers about specialized mortgage products such as energy efficient mortgages (EEM).

A. Sources of Information about Lenders

More than nine out of ten (91%) of the Nonparticipating Homebuyers borrowed funds from lending institutions to purchase a home. Almost one fourth (22%) learn about their lender from friends and family, about one fifth (17%) find out about their lender from a builder or contractor, and 11% find out from a real estate agent. As shown in table 6.1, other sources of information include other lenders (8%), newspaper and magazine advertisements (6%), store displays (1%), the internet (1%), and billboards (1%). The findings are similar for Participating Homebuyers.

Table 6.1: Sources of Information about Lenders

Source of Information	Nonparticipating Homebuyers	Participating Homebuyers
Friends/family	22%	28%
Builders/contractors	17%	10%
Real estate agents	11%	6%
Newspaper/magazine ads	6%	3%
Newspaper/magazine articles	1%	1%
Another lender	8%	4%
Utility company	0%	1%
Billboards	1%	2%
Store displays	1%	1%
Internet	2%	1%
Driving around	1%	1%

B. Satisfaction with the Lender

Table 6.2 shows that among Nonparticipating Homebuyers, over half (54%) say that they are very satisfied and over a fourth (29%) say that they somewhat satisfied with their lender. Only 2% of Nonparticipating Homebuyers report being very dissatisfied with their lender. These patterns hold across the various subgroups that we examined for the study.

Homebuyer satisfaction with lending institutions is generally high. About two thirds (61%) of Participating Homebuyers are very satisfied with their lender and an additional 27% are somewhat satisfied. None of the Participating Homebuyers report being very dissatisfied with their lender.

Table 6.2: Satisfaction with Lender

Level of Satisfaction	Nonparticipating Homebuyers	Participating Homebuyers
Very satisfied	54%	61%
Somewhat satisfied	29%	27%
Somewhat dissatisfied	4%	5%
Very dissatisfied	2%	0%
Don't know	8%	5%

C. Awareness of Energy Efficient Mortgages (EEMs)

A very small percentage of both Participating and Non Participating Homebuyers have heard of EEMs. Among Participating Homebuyers, 7% report some knowledge of energy efficient mortgages, while among Nonparticipating Homebuyers the percentage is even lower, around three percent. One Participating Homebuyer reports having an EEM.

Homebuyers from both groups report similar sources of information about EEMs. Participating Homebuyers identify friends and relatives (18%), store displays (18%), utility companies (18%), builders (9%) and the Internet (9%) as their main sources of information about EEMs. Nonparticipating Homebuyers find out about EEMs from newspaper and magazine advertisements (40%), friends and family (20%), and from the Internet (20%).

VII. Satisfaction with Home Purchase

We asked homebuyers to tell us their satisfaction with various aspects of their home. Of particular interest is the difference between satisfaction for Nonparticipating Homebuyers compared to Participating Homebuyers.

A. Satisfaction with Home Attributes

About half to two thirds Nonparticipating Homebuyers are very satisfied with each attribute of their home, except the neighborhood. Most Nonparticipating Homebuyers report being very satisfied with their neighborhood (84%) and the appearance of the home (85%). About half to two thirds are very satisfied with the home's quality of construction (53%), it's comfort level (68%), the indoor air quality (64%), and the home's noise level (61%). Only 48% of Nonparticipating Homebuyers report being very satisfied with the home's overall energy efficiency, and only 38% are very satisfied with the home's annual energy costs.

Participating Homebuyers are more satisfied the Nonparticipating Homebuyers on every attribute except for the neighborhood. They perceive that their homes are well built, comfortable, quiet, have good indoor air quality, and have low energy bills. In particular, significantly more households are very satisfied with the quality of construction, the indoor air quality, the noise level, the overall energy efficiency, and annual energy costs.

Table 7.1: Percentage Very Satisfied With. . .

Response	Nonparticipating Homebuyers	Participating Homebuyers
Neighborhood	84%	78%
Appearance of home	85%	88%
Quality of construction	53%	75%
Comfort level	68%	77%
Indoor air quality	64%	75%
Noise level	61%	74%
Overall energy efficiency	48%	74%
Annual energy costs	38%	53%
Overall	76%	85%

B. Satisfaction with Energy Attributes

We asked homebuyers if their energy bills at their new home were what they had expected them to be. Among Nonparticipating Homebuyers, one fourth (25%) view their bills as lower than expected and another fourth (25%) as higher than expected. Almost half (48%) of Nonparticipating Homebuyers have energy bills that are about the same as they had expected. Significantly more Participating Homebuyers (39%) say that their energy bills are lower than what they had expected them to be, while another third (37%) report that their bills fall within what they had expected. Less than one fifth (18%) of Participating Homebuyers believe that their bills are higher than what they had expected them to be.

When comparing the energy costs of their new home to those of similar homes owned by friend or family, only a fourth (29%) of Nonparticipating Homebuyers believe that their energy bills are lower than those of similar homes. Almost half (49%) say that their energy bills are about the same as those of similar homes, and 15% report that they pay more for energy than owners of similar homes. Two-thirds (66%) of Participating Homebuyers report that their energy bills are lower. Sixteen percent say that their energy bills are about the same as those of other similar homes, and only 7% believe that they are paying more for energy than their friends and family.

Both Participating and Nonparticipating Homebuyers report high levels of satisfaction with their new homes. Eighty five percent of Participating Homebuyers and more than three fourths (76%) of Nonparticipating Homebuyers state that they are very satisfied with their new homes. Ninety one percent of Participating Homebuyers report that, in the future, if they need to buy a new home they will look for another program certified home.

VIII. Recommendations for RNC Programs

The Homebuyer Surveys document the baseline status of the ENERGY STAR label and the existing utility RNC programs, offer insights into the factors that influence the purchase of a new home, and demonstrate the "energy awareness" of homebuyers. In this Section, we review the survey findings and suggest RNC program strategies that would build upon these findings.

A. Using the ENERGY STAR Label

The surveys demonstrated that about half of homebuyers are aware of the ENERGY STAR label. Homebuyers associate the ENERGY STAR label with energy-saving appliances. About one-third of homebuyers had purchased an ENERGY STAR appliance. About half of those who purchased an ENERGY STAR appliance were influenced to purchase it because of the ENERGY STAR label.

These findings demonstrate the value of using the ENERGY STAR label. It appears that there is significant, and probably growing awareness of the ENERGY STAR label. The utility RNC programs can take advantage of this name recognition to market their programs. However, since the existing RNC program names have some statewide recognition (25% for the Good Cents program and 22% for the EEH Five Star Program), it will be important for any marketing efforts to help consumers understand the transition from the existing program names to the new program name.

Homebuyers who are aware of the ENERGY STAR label associate it with saving energy. However, homebuyers appear to buy energy efficiency upgrades to save money. It may be important for marketing efforts to emphasize the money saving aspect of ENERGY STAR homes.

B. Marketing ENERGY STAR Homes

Many homebuyers are attempting to satisfy a specific need when they purchase a new home (e.g., a bigger home, a home in a better neighborhood, a smaller home). In their extensive search for a new home, they attempt to find a home with the right combination of

features in the right neighborhood. While the energy efficiency of the a home can affect the purchase, it is clearly subordinate to a number of other concerns. Given the choice of two equivalent homes, the ENERGY STAR label may influence the home selection. However, it appears unlikely that the ENERGY STAR label would be enough to compensate for a home that was inadequate in other ways.

However, 70% of homebuyers reported that they purchased upgrades offered by builders and about 20% of homebuyers purchased an upgrade that increased the energy efficiency of their new home. It is clear that homebuyers want options that allow them to improve the quality of their homes and that they are willing to invest in energy efficiency at the time of purchase to save money on energy bills over the long run. By offering ENERGY STAR as an upgrade, builders would allow homebuyers to tailor a home to their own specifications and may increase the marketability of the products.

C. Documenting the Benefits of ENERGY STAR Homes

A significant number of new homebuyers purchased energy efficiency upgrades with their new homes. Most of the households (84%) reported that they purchased the upgrades to reduce energy costs. To the extent that the utility RNC programs can document the benefits of purchasing an ENERGY STAR home, particularly the cost savings compared to other production homes, it can be expected to assist builders in marketing ENERGY STAR homes.