

# **Pickup Trucks and Broken Hearts: Analysis of a Texas Upstream A/C Incentive Program**

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## **ABSTRACT**

This abstract will present the lessons learned of Reliant Energy HL&P's A/C Distributor program in Houston, Texas. This program was the first market transformation program offered for A/C in Texas and the program experienced numerous twists and turns in 2001.

The paper will present the unique upstream bidding structure that Reliant used to promote higher SEER among program participants; which exceeded 14 SEER in 2001. This paper will describe how controversial issues were ultimately resolved such as:

- independent condenser coils;
- limiting the program to select dealers;
- how distributors failed to utilize sales training; and
- why load calculations weren't performed

which will benefit other A/C programs. This paper will also share the results of a baseline study completed without the benefit of ARI data. A/C Distributors have resisted past participation due to ARI restrictions and we will show how we gained their participation through a partnership to pool data so distributors could know their market position.

This paper will present an innovative bidding structure. Bidders developed a marketing plan for the 2002 program. The marketing plan promoted a "pull" method where distributors outlined their role in promoting market transformation activities such as training, education, sizing and finance options, as opposed to program designs that "push" these activities.

The prime areas of discussion will be the market penetration of high efficiency, the impact on dealer's and contractor's sales practices and consumer knowledge of high efficiency A/C.

It also outlines the design, implementation and ongoing evolution of this program, which is based on requirements outlined in a program template issued by the Public Utility Commission of Texas (PUCT).

## **Introduction**

In early 2000, the Public Utility Commission of Texas adopted an Energy Efficiency Rule, implementing Texas Senate Bill 7. This rule requires each investor-owned electric utility in Texas to meet 10% of its annual projected growth in summer peak demand through an approved list of energy efficiency programs. The PUCT required utilities to achieve this goal by January 2004 by providing incentives through either approved standard offer

programs or limited, targeted market transformation programs. These programs were defined as templates, with specific guidelines and parameters. As with all Texas energy efficiency programs, peak load reduction is a key factor and the selection of an A/C program was a logical choice for Texas utilities given the geography and climate region which is heavily dependent on air-conditioning in the peak summer months.

With the significant load represented by residential air conditioning in the Houston area, Reliant Energy HL&P selected the Distributor Air Conditioning Market Transformation Program (one of the approved market transformation programs) to help raise the efficiency levels of residential central air conditioning equipment. Since Texas is a heavy air-conditioning market and a heavy failure-induced replacement market, improving the stocking and sales practices of replacement units was a heavy focus towards helping consumers lower their energy use. This met the PUCT requirement that market transformation programs could not directly incent consumers. This program was initially offered in 2001 and will be renewed for up to three additional years.

## **Program Design Parameters**

Reliant Energy HL&P began the Air Conditioning Distributor Program in 2001 with an established goal of approximately 7,500 tons of residential cooling equipment. This goal was established by calculating the average home in Southeast Texas would require an approximately 3-ton unit and that unit would provide 1kw in peak demand savings. This goal was set to increase significantly in the three remaining years of the program, with the 2002 goal established at 19,940 tons (roughly the equivalent of 6,600 3 ton air conditioning units). The overall program goal was to encourage A/C Distributors to stock and sell units of 14 SEER and higher.

As the name implies, the program allows the direct participation of eligible heating, ventilation and air conditioning (HVAC) distributors only, rather than individual dealers or consumers. This was consistent with the program template provided by the PUC-T. Participating distributors are paid an incentive of \$80 per ton on the sale and installation of qualifying split system air conditioning equipment up to 5.4 tons. A Manual J or equivalent sizing calculation must accompany the application for funds in order to ensure that the units are properly sized. This discourages over-sizing. The installation must include both a matched condensing unit and a blower coil with an overall 13 SEER efficiency rating. To qualify, the installation must not be incented under any concurrent utility programs.

Although the program primarily focuses on single-family housing retrofit applications, sales within the single-family new construction market are allowed if the distributor submits documentation to show that the 13+ SEER system is an upgrade that was offered to and selected by the home buyer, and if the builder is not a participant in Reliant's ENERGY STAR<sup>®</sup> Homes program.

In accordance with PUCT requirements, each claim must include:

- a load calculation (Manual J or equivalent) to address proper sizing,
- information on the installed system (SEER rating, model and serial numbers), and information on the individual customer (name, address and phone).

Using information from the Air Conditioning and Refrigeration Institute (ARI), Reliant verifies the SEER rating of each claim submitted. Reliant is also required by the PUC-T to verify 10% of submitted installations for accuracy through a combination of random telephone calls to the customer and follow-up site visits to the residence to verify the model number on the outdoor unit. The PUC-T does not require the Manual J calculation to be checked for accuracy and the Reliant program is not providing a re-check at this time. This may be revised in future years.

## **Distributor Recruitment and Selection**

For the 2001 program, interested distributors were required to submit a bid that identified the number of qualifying tons of 13 SEER, 14 SEER, etc. that they proposed to sell. Preference was given to the bids that included the most efficient equipment. Under this SEER Distribution approach, a bid of 100 tons of 13 SEER equipment and 400 tons of 14 SEER equipment would be chosen over a bid of 400 tons of 13 SEER and 100 tons of 14 SEER. PUC-T requirements prohibit any program participant from receiving more than 20% of the program funds. The bids represented the distributor's commitment to the program, and were designed to serve as the basis for all incentive payments. As previously mentioned, the overall program goal was to encourage A/C Distributors to stock and sell units of 14 SEER and higher. In mid- 2001, this approach was abandoned. Some of the distributors who had bid in a higher mix of 14 SEER product and had not scheduled training for their dealers and contractors on "How to Sell High Efficiency", encountered difficulties in meeting their product mix goals. Five distributors participated of the 14 air-conditioning distributors in the Houston market.

In retrospect, the SEER distribution bid approach encouraged distributors to commit to sales of higher SEER units, but ultimately made it more difficult for them to meet these program commitments. This approach was modified for the 2002 proposal process in favor of more qualitative selection criteria. In order to leverage successful Market Transformation strategies from the market actors, applicants were required to submit a marketing and implementation plan that outlined their specific strategies for engaging their dealers in the program. These strategies included an applicant agreeing to have their sales staff trained, to promote the Energy Star label and to follow a "systems approach" to HVAC.

## **Baseline and Market Dynamics**

In 2001, Reliant Energy HL&P, in conjunction with Entergy-Texas (a neighboring utility in Beaumont, TX), undertook and completed a comprehensive baseline study to ascertain the average SEER level of air conditioning products recently sold within their respective territories. The baseline study also provided an opportunity to gather relevant qualitative information from the major actors in the replacement air conditioning market (dealers and consumers).

The study was designed to accomplish four objectives:

- To establish the baseline average SEER level for current sales of residential air conditioning systems to single-family dwellings within the Reliant Energy HL&P and Entergy service areas. This baseline was expected to serve as a platform for incentive

levels for the program and as a benchmark for monitoring the progress of the program.

- To determine the average SEER level of residential air conditioning systems within existing homes in the Reliant Energy HL&P and Entergy service areas.
- To identify the major perceptions, attitudes and behaviors of the two groups of market actors involved in the retail sale of high-efficiency air conditioning systems (residential dealers and consumers). It was recognized that this increased understanding would assist in fine-tuning the program strategies.
- To document the consumer recognition level and knowledge of the ENERGY Star label

To establish the baseline, historical sales data from area distributors was collected to document the average efficiency level of central air conditioning units recently sold in the Southeast Texas market. Due to the seasonal nature of the HVAC industry, this data was collected for a rolling 12-month period (July 2000 through June 2001).

Obviously, this type of study involved the collection of extremely sensitive sales data from area distributors. ARI, the American Refrigeration Institute (a professional and lobbying organization for A/C manufacturers,) publishes sales data for its member organizations. This information is not available to outside parties and all ARI information is considered to be confidential and proprietary. This made accessing data through ARI impossible, since the baseline report would ultimately be filed with the PUC-T. This forced ICF to go directly to the area distributors for the information. Although relationships were well established with the distributors who were already in the program, the study required cooperation from all major distributors in the area. The baseline project produced many ancillary benefits for the A/C program implementers. Many of the distributors had no idea the utility was incenting sales of high efficiency systems. Some distributors had unrealistic expectations of the sales mix of models used by their dealers and contractors. They relied less on actual shipment data and more on anecdotal information supplied by their dealers and contractors. By refocusing the request for information to be solely based on shipment data, more realistic projections resulted. The baseline project required significant outreach to these additional distributors, ultimately leading three of them to develop sufficient interest to submit successful proposals for inclusion in the 2002 Program. This increased the participation of market participants to more than 80% of the represented market. This was a significant increase over the existing 50% of the market represented by distributors.

The distributor sales information revealed the baseline for recently sold air conditioning units to be an average of approximately 11.1 SEER, with the SEER distribution shown in Table 1.

**Table 1. SEER Distribution of Air Conditioning Units Sold**

<b>SEER</b>	<b>Total %</b>
<b>10</b>	<b>51%</b>
<b>11</b>	<b>1%</b>
<b>12</b>	<b>39%</b>
<b>13</b>	<b>4%</b>
<b>14</b>	<b>5%</b>
<b>15</b>	<b>0%</b>
<b>16</b>	<b>0%</b>
<b>Total</b>	<b>100%</b>

(July 2000 though June 2001)

Consumer information was obtained by conducting in-depth interviews with a random sample of consumers in the area. These interviews provided the basis for estimating the average SEER level in existing homes within the area (also found to be 11.1 SEER). The information gathered from respondents also provided valuable insight into consumer awareness, attitudes, opinion, knowledge, and behavior regarding the purchase of air conditioning systems. Reliant made the decision to promote 13 SEER equipment based on a study performed by Frontier and Associates that showed the peak demand flattens out at 13.5 SEER in the Houston, TX market. This impacts the level of incentive eligible under the PUCT funding formula.

The key findings from the consumer survey were:

- 35% of consumers in the survey cited energy efficiency as a major influence on purchase.
- 50% of homeowners cited a willingness to be told about energy-saving options.
- 44% of homeowners indicated that they would like to be shown financing options.
- Of the consumers who had replaced their system:
  - Only 50% were told about different efficiency levels.
  - Only 26% were told about the importance of repairing ductwork.

Supplemental in-depth interviews were also conducted with a sample of area air conditioning dealers. These interviews provided information and insights from the dealers' perspective on current stocking and purchasing behaviors as well as on the key drivers in the residential air conditioning market.

The key findings from these dealers were:

- 35% of dealers surveyed considered 10 SEER to be energy efficient.
- When dealers were asked about influences on the customer:
  - 30% chose purchase price.
  - 25% chose operating cost.
  - 45% stated that both were equally important.

The baseline study also produced several other findings:

- There is ample opportunity to raise the average efficiency level of new air conditioning systems sold within the Reliant Energy HL&P and Entergy service territories.
- Many dealers are unclear regarding the true meaning of a “high-efficiency” system.
- Many dealers think they are doing an excellent job of selling high-efficiency, but the sales data and homeowner feedback indicate there is a distinct disconnect between dealers assumptions and customer attitudes that they are not.
- Dealers clearly value their relationships with distributors, but they perceive room for improvement and valuable opportunities for distributors to increase the value of their dealer’s businesses
- Consumer awareness and recognition of ENERGY STAR is extremely low, at 21%, in the Southeast Texas market. With prompting, 30% associate the label with energy efficiency.
- Approximately one-third of residential customers have an air conditioning system that is seven or more years old. That means that the average efficiency of those models is approximately 7-8 SEER.

The baseline study yielded the following recommendations:

- The educational aspect of market transformation, specifically in the area of dealer training, should be emphasized as a critical step in moving the market to higher efficiency.
- The Air Conditioning Distributor Market Transformation Program should assist distributors in their role as a key information source to dealers.
- Distributors must be encouraged to use utility-sponsored incentive programs to truly transform the market by generating new, incremental sales of high-efficiency systems.
- The program administrators should create a customer education campaign to raise awareness of the ENERGY STAR label and the associated energy savings and benefits.

## **Initial and Ongoing Challenges**

From its inception, the program has faced the same challenges as any HVAC market transformation initiative, primarily the task of changing the mindset and behaviors of the major market actors. However, there were also specific challenges that were unique to the market and the timing of the program implementation.

- **Distributors have consistently indicated that the majority of residential air conditioning sales in Houston are made by dealers’ service technicians rather than by commissioned salespeople.** Given the shortage of qualified service technicians and the time pressures on technicians during the busy summer season, dealers have more reasons to resist spending the time on paperwork than would be the case when sales are driven by dedicated salespeople.

- **The initial program implementation coincided with the advent of deregulation in Texas, which was not clearly understood by most dealers.** Like other Texas electric utilities, Reliant was split into separate companies, with the regulated utility no longer having organizational ties with the newly established retail electric provider that also bears the Reliant name. As a result, many HVAC dealers were confused as to “which Reliant” was sponsoring this program. Some were even suspicious of Reliant’s motives, fearing that the retail company planned to move into the HVAC service business and would use the required customer information to directly market to their customers.

## **Training Development and Delivery**

Dealer training was recognized as one of the most critical intervention strategies available within the Program. The training modules were developed and delivered by the Program Marketer, ICF Consulting. The training design process relied heavily on ICF’s experience in the development and delivery of HVAC sales training for ENERGY STAR as well as for other utility clients such as Pacific Gas and Electric and Southern California Edison.

### **High-Efficiency Sales Training**

ICF’s prior national HVAC sales training experience, most notably within the ENERGY STAR HVAC training, has consistently shown that the majority of HVAC dealers face two primary barriers to selling high-efficiency products and systems:

- **Information barrier.** Most dealers do not have the information or tools needed to determine the value of high-efficiency products. Even if they understand the long-term benefits of high-efficiency equipment, they generally do not have the sales tools to effectively demonstrate how the high-efficiency equipment provides value to the customer.
- **First-cost barrier.** Most consumers depend on HVAC dealers for advice regarding which equipment to purchase. Although dealers readily provide information about initial installation cost, consumers typically receive no information or conflicting and sometimes confusing information about the benefits of purchasing high-efficiency equipment. This lack of information naturally drives the customer to shop on the basis of initial installation cost, without considering total lifetime operating costs, creating a “first-cost paradigm.”

A highly focused one-day training session was developed to address these barriers and to provide dealers with specific selling principles, practices and tools that are proven to enable them to demonstrate the true value of high-efficiency equipment to their residential customers.

The training design included the ENERGY STAR HVAC Investor software, which allows a dealer to quickly perform a highly objective analysis of the relative operating costs of both a standard HVAC system and a high-efficiency system. It also addressed the effective use of consumer financing, which is a key element in effectively selling high-

efficiency comfort systems. The availability of financing can often address the first-cost barrier by making the higher-priced systems more affordable to customers. Sponsoring distributors also provided information about their specific manufacturer-sponsored consumer financing programs.

To date, over 200 dealers have participated in the sales training program, along with key distributor personnel. Distributor sales personnel are encouraged to follow up with their dealers on the practices and tools presented in the training sessions.

As the program moves forward into 2003 and 2004, the training content will continue to be modified and enhanced in an effort to raise the skill levels of participants.

### **Load Calculation Training**

It is widely recognized that the majority of HVAC dealers do not regularly perform load calculations in residential replacement applications. There are several reasons why many dealers resist the use load calculations and choose instead to use square footage or some other rule of thumb:

- **The time required performing the load calculation.** This issue becomes even more critical when the potential replacement sale is being made by a service technician during the busy cooling season, as is typically the case in Houston. The service technician's time is extremely valuable, and there is tremendous pressure to move on to the next customer.
- **The knowledge required to perform the load calculation.** While in some cases the principal of the dealership may understand the procedure, technicians and salespeople rarely have this knowledge.
- **A lack of confidence in the results of the load calculation procedure.** Many dealers question the accuracy of methods such as Manual J. For example, some dealers scoff at the Manual J recommendation of sizing equipment in Houston on the basis of a 20-degree temperature difference.
- **A lack of customer knowledge about proper sizing issues and procedures.** In reality, customers don't ask for load calculations and may place little or no value on them. This lack of awareness reinforces the dealer perception that they are a waste of time.

A load calculation training module was developed to specifically address these barriers by providing a somewhat simplified procedure for performing a whole-house load calculation. Manufacturers have often used this approach by providing load calculation short forms to their dealers.

In its document entitled "Specification of Energy-Efficient Installation and Maintenance for Residential HVAC Systems," the Consortium for Energy Efficiency (CEE) noted the often-cited observation that load calculations such as ACCA's Manual J are somewhat complex and time-consuming, and continue to become even more so.

The CEE document continues with the recommendation that "perhaps the best hope" rests in the "development of regional simplified procedures with acceptable accuracy." The

authors conclude that “further exploration of this simplification is important” to the goal of energy efficiency.<sup>1</sup>

This regional, simplified approach was incorporated into the load calculation training module, which was based on an existing one-page load calculation short form that had previously been customized for use in the Houston market. It was designed for those dealers who are currently not performing load calculations or who wanted a simpler, more streamlined method.

Although not as comprehensive as a room-by-room load calculation, this short form was based on Houston-specific factors from Manual J from the Air Conditioning Contractors of America (ACCA). These factors were updated, using the latest information from the 7th edition of Manual J.

The goals of the training were:

- To provide instruction on the use of this relatively simple method of performing a whole-house load calculation.
- To provide training materials for dealership attendees (primarily company principals) to take back to their companies for use in training their own salespeople and service technicians.
- To emphasize the importance of the load calculation primarily as a tool for proper equipment sizing, but also as a way to build additional credibility with the customer (an aspect that is frequently overlooked in load calculation discussions).
- To encourage dealers to “step up” to more sophisticated room-by-room load calculation methods or programs in the future.

To date, over 100 dealers have participated in the load calculation training. In some cases this training was co-presented with a distributor’s technical training representative in an effort to position the distributor as a follow-up resource for questions about the load calculation process.

Results from participant evaluations indicate that the training was well received. These evaluations also suggest that the training content had a positive impact on some of the key attitudinal and behavioral components associated with market transformation. Anecdotal feedback from distributors, a steady increase in class size, and a surprising number of dealers who have attended the training more than once all support the positive feedback from the evaluations. This is consistent with the sales of high efficiency units as sales training attendance increased. Training among program participants also increased when the training was offered to program non-participants.

## **Additional Outreach Initiatives**

In keeping with the intended focus on the distributor as the sole paid program sponsor, the distributors have been the conduit for all outreach efforts associated with the program. Representatives for the Reliant Energy HL&P program have availed themselves of

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<sup>1</sup> “White Paper for the Specification of Energy-Efficient Installation and Maintenance Practices for Residential HVAC Systems”, pp. 10 – 11.

every opportunity to participate in distributor-hosted dealer meetings, and have even become involved in the Houston chapter of the Air Conditioning Contractors of America (ACCA).

The dealer meetings were especially important in the early stages of the 2001 program. These meetings provided an opportunity to explain the deregulation process and reassure dealers that Reliant Energy HL&P had no motive in requiring customer contact information other than meeting the requirements of the PUCT template.

The program has also provided quantities of two consumer brochures for dealers to utilize in their high-efficiency sales efforts. One piece provides consumer tips for choosing a quality contractor, while the other educates consumers on the importance of properly sizing air conditioning equipment.

As the program progresses into 2003 and 2004, additional outreach activities are likely, especially in the area of consumer education. The implementation of these activities will be dependent upon their compatibility with the requirements of the PUCT template and on Reliant's budgetary considerations.

## **Results from 2001**

Although the total program goal was not fully realized in 2001, the program was extremely successful as a new market transformation initiative. The average efficiency level for all claims submitted was 13.8 SEER, which significantly exceeded the 13 SEER minimum requirement.

Distributors in the 2001 program submitted claims totaling 5904 tons, resulting in the achievement of 79% of the program goal of 7,500 tons. The program will increase the number of distributors in 2002 to meet the aggressive goals and will offer an advertising partnership component to increase brand awareness and to compliment the new Energy Star HVAC specification. In 2001, only two distributors met their goals, although interestingly these were not the distributors who offered the highest financial incentives to their dealers. Many Distributors believed that matching the incentives offered by the utility would allow deeper market penetration. *However, It can be concluded that there was no direct correlation between the amount of the distributor's dealer incentive and the distributor's success in meeting the goal.* The Distributors who set expectations, managed those expectations, communicated regularly with their dealers and participated in the sales training enjoyed much greater success.

All distributors indicated that they sold more than enough qualifying equipment to meet their 1,500-ton program goal. However, distributors reported that many dealers were not willing to meet the paperwork requirements involved in the claim submittal process. These requirements stem from the PUCT template and as such were not in any way negotiable by Reliant Energy HL&P.

## **Observations from 2001**

The initial 2001 program was a learning experience for all parties involved. The primary observations are discussed below.

- **Financial incentives alone will not always motivate dealers to meet certain program paperwork requirements.** Distributors may initially underestimate dealer resistance to these requirements, believing that the incentives will overcome it.
  - A load calculation requirement will be an obstacle for many dealers. The development of a localized short form, coupled with related training, may be the most viable strategy for motivating dealers to perform load calculations.
  - Many dealers will also be sensitive to releasing customer information, particularly to a utility organization.
- **Participating distributors must go beyond their initial dealer recruitment activities to plan and execute an ongoing, sustained effort to keep their dealers engaged in the program.** As the primary point of contact with dealers, distributor sales personnel must be directly involved in this effort.
- **The initial program design should clearly define all non-negotiable requirements for distributor participation.** The 2001 design did not require distributors to sponsor either the sales training or load calculation training, based on a logical assumption that every distributor would choose to take advantage of these resources as part of their overall dealer development initiatives. Surprisingly, two distributors chose not to sponsor either type of training session in 2001. The 2002 program required distributors to host one or more training sessions. However, by 2002 the distributors' trust in program personnel and the reputation of the training among dealers had both developed to the point that all distributors were excited about the training opportunities.
- **The SEER distribution bid approach used in 2001 encouraged the distributors to bid a greater number of higher SEER units, perhaps in some cases unrealistically so.** When it became clear that several distributors were having difficulty meeting their SEER commitments, Reliant dropped this requirement. Distributors were then allowed to submit claims for all qualifying units in 2001 that met or exceeded the 13 SEER minimum level. Based on this experience, participation in the 2002 program was primarily based on qualitative factors. Distributors were required to develop and submit an implementation and marketing plan that addressed such key issues as their proposed dealer incentive program and their plan for involving their own salespeople in the dealer recruitment and outreach process.

## **Further Program Evaluation Is Necessary**

The work to establish the brand recognition for ENERGY STAR and to raise the average SEER level will need further monitoring and evaluation in 2003 to document the heightened awareness level of ENERGY STAR and to further improve program design.

It should also be noted that each of the individual distributors also learned several valuable lessons from their participation in the 2001 program. Their program design and implementation strategies have been modified accordingly in 2002.

## **Conclusions**

A distributor-based design can be a highly efficient approach for a utility-sponsored HVAC market transformation program because it leverages the distributors channel of distribution. However, direct contact with area dealers is also critical to further educate, build interest, and in some cases, trust. Program representatives should attend distributors' dealer meetings whenever possible. Local ACCA chapter meetings can also offer significant opportunities for interaction with dealers.

Participation requirements, particularly dealer paperwork requirements, must be carefully considered in program design. Program administrators must base these requirements on the trade-off between their true value and extent to which they will present a major obstacle to the participation of the key market actors targeted by the program. Although easier said than done, non-negotiable items must be defined on a "need-to-have" versus a "nice-to-have" basis.

## **References**

Consortium for Energy Efficiency (CEE), 2000. White Paper for the Specification of Energy-Efficient Installation and Maintenance Practices for Residential HVAC Systems.

ICF Consulting and Opinion Dynamics Corporation, 2001. Residential Air Conditioning Baseline Study.