

Transition Strategies for Market Transformation Programs: Recent Experience at KeySpan Energy Delivery

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INTRODUCTION

The main objective of this paper is to present a process for developing transition strategies for market transformation (MT) programs appropriate for the progress achieved to date. The paper will define the transition strategy concept, discuss its role in the measurement of market progress of a program, and then present examples of transition strategies that have been developed for two KeySpan Energy Delivery (KeySpan) programs. The paper will also discuss the lessons learned during the development of transition strategies at KeySpan.

KeySpan Energy Delivery began implementation of a comprehensive energy efficiency and market transformation plan in its Massachusetts service area in May 1997. The Company's plan was developed through a collaborative process and called for the Company to spend \$42 million over five years on a number of innovative gas energy efficiency and market transformation programs.¹ The Company has designed and implemented several market transformation programs. KeySpan can earn monetary incentives if it is successful in removing or reducing market barriers through its MT program offerings. The Company is now implementing Year 5 of the Plan and has completed baseline measurements of indicators of market transformation as well as follow-up measurements at the end of Year 2 for four market transformation programs.² The Company earned an incentive of \$227,500 out of a maximum possible \$300,000 after Year 2 based on the market progress achieved at that time.

A transition strategy for a market transformation program can serve multiple purposes:

1. it can be a plan of action for the gradual withdrawal of program support (training, marketing, incentive, communication and other initiatives) from a particular market once sustainability has been achieved.³

¹ KeySpan Energy Delivery, March 19, 1997, Demand-Side Management Market Transformation Plan, 1997-2001. Boston, Massachusetts.

² In 1998, KeySpan undertook MT market assessment and baseline studies for four markets where they were beginning MT efforts: the residential gas heating equipment market, the commercial/industrial gas heating equipment market, the residential new construction market, and the clothes washer market. These studies included measuring indicators and developing market indicator tables in collaboration with several non-utility parties. The original list of indicators developed in 1998 for measuring progress in these markets totaled 270: 38 for the residential gas heating equipment market, 72 for the commercial and industrial gas heating equipment market, 125 for the residential new construction market and 35 for the clothes washer market.

In late 1999, a second set of measurements (on all 270 indicators) was undertaken as the first to track progress of the Company's MT efforts. Findings from this research, lessons learned from measuring indicators of market transformation, and use of the binomial test to assess program progress are presented in a paper titled "Measuring Market Transformation Progress & the Binomial Test: Recent Experience at Boston Gas Company", presented at the ACEEE 2000 Summer Study on Building Energy Efficiency, August 2000.

³ As noted in a report prepared for Pacific Gas & Electric in 2000 titled "New Methods for Assessing the Effects of Market Transformation Programs," program "interventions designed to promote a particular technology, practice or service

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2. it can be a plan for modifying an existing intervention strategy to move the market more in the direction of a self-sustaining market, in the event that a market is not ready for the withdrawal of program support.

There are several criteria that can be used to determine if a product or service has achieved a sustainable market position.⁴ Listed below are some of these criteria that have been cited in energy efficiency and program evaluation literature:

- Cost – Is the incremental cost for a high efficiency unit as compared to a standard efficiency unit at or close to zero?
- Number of manufacturers - Are there many manufacturers or just a few?
- Consumer awareness – Is there a significant percentage of consumers aware of high efficiency equipment or building practices, and aware of the benefits of high efficiency equipment
- Promotion – Do distributors and installers promote high efficiency products/equipment?
- Availability – Is the high efficiency product widely available in the market?
- Performance – Does the high efficiency product perform as well as the standard efficiency product?
- Training – Do distributors and installation contractors have sufficient training and knowledge to install and service high efficiency equipment?
- Market share – What is the market penetration of the high efficiency product or service?

A good example of a market that has become sustainable is the commercial lighting market for T-8 lamps. Prices have dropped significantly for T-8 lamps and ballasts, and market penetration has increased dramatically.⁵

Transition strategies are important for locking in the savings of a transformed market or for enhancing the effectiveness of an existing market transformation program. As program support is withdrawn for a sustainable market, a transition strategy can make use of tools such as building codes, appliance standards, support from existing trade associations or code inspections to ensure that the market penetration and other energy efficiency-related gains achieved by a program are not eroded over time.

WHAT IS A TRANSITION STRATEGY?

A transition strategy for a market transformation program can be either (1) a plan for withdrawing program support from a market that has become sustainable or (2) a plan for modifying an existing program to move the market more in the direction of a self-sustaining market, where a market has achieved progress but is not sustainable yet. The development of a transition strategy is tied closely to the assessment of the movement of indicators of market transformation (i.e., consumer awareness, product availability, product promotion, product performance, product incremental cost, and product penetration) over time. A transition strategy can only be properly developed after a tracking procedure has been developed to monitor program progress. A transition strategy should address when it is

may be phased out as adoptions of that technology, practice or service reach a targeted and self-sustaining level in that market.”

⁴ For more information on such criteria, see Northeast Energy Efficiency Partnerships, “Sustainability Scorecard for NEEP Regional Initiatives,” presented at a NEEP Conference on November 14, 2000 titled “Defining Success for Energy Efficiency in the Marketplace.”

⁵ Hewitt, David, “The Elements of Sustainability”, paper presented at ACEEE Summer Study on Energy Efficiency, August 2000.

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appropriate to withdraw (on a gradual basis) program support or to make program changes to move the market the next step towards self-sustainability.

The analysis of market indicator movements will generally involve two elements as a transition strategy is being considered. These are: (1) An examination of when targets for such indicators as market penetration, product availability, product incremental cost, product promotion, awareness, and product performance have been attained. Thus compiling and analyzing data on the change in indicators of market transformation over time is essential before any transition strategy can be implemented; (2) An examination of supply-side and demand-side market operation and decision-making and whether they are in balance to provide continuing support for a self-sustaining market (e.g., customer demand, and supply promotion of high efficiency).

The transition strategy should then be developed in light of these two elements to identify the steps that will be taken to ensure that the market penetration and other efficiency-related gains achieved by a program are maintained and not eroded over time. The strategy should also address how the transition will be communicated to the market.

Table 1 – Elements of a Transition Strategy

EXAMPLES OF TRANSITION STRATEGIES FOR TWO KEYSpan PROGRAMS

Several utilities and government organizations are conducting market assessment and baseline studies to track the progress of energy efficiency and market transformation programs. Many of these studies, however, are still at the baseline measurement stage. This paper will describe the process KeySpan has used to develop transition strategies for two market transformation programs based on a review of indicator measurements over two time periods of the KeySpan energy efficiency plan.

Four general categories of indicators of market transformation were examined in KeySpan’s studies and are listed below. These categories were developed in conjunction with several non-utility parties.

- Product awareness and promotional activity, including attitudes and purchase intentions towards energy efficiency products and services among end-users
- Product knowledge, level of training and expertise among trade allies (for example, the relevant market actors for the residential high efficiency heating equipment program include HVAC contractors, plumbers, design engineering firms, and distributors of gas heating equipment)
- Product performance and reliability
- Product availability and penetration

Table 2 lists the research approaches used by KeySpan to measure the indicators of market transformation for residential and commercial gas heating equipment programs.

Table 2 - Research Approaches Used To Collect Indicator Measurements

Market Actor or Issue	Research Approach
Customers with gas heat	Mail survey
Equipment installers and distributors	Depth interviews
Quality of equipment installation	On site surveys of gas heating equipment

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Product promotion and advertising	Content analyses of newspapers and business to business publications
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RESIDENTIAL HIGH EFFICIENCY HEATING EQUIPMENT MARKET

An April 2001 Transition Strategy Report for the KeySpan Residential High Efficiency Heating Equipment Program concluded that this program is not ready to be scaled down or transitioned after four years of operation. While market progress has been made, many market barriers to energy efficiency still remain. While 18 of 29 indicators moved in a direction consistent with market transformation, the market is still not sustainable. Based on an analysis of these indicators, KeySpan has decided to make modifications to the program so that it will be ready to transition at some time in the future. KeySpan has concluded that more work is needed to bring the demand-side and supply-side of the high efficiency gas heating equipment market into balance in order to achieve a sustainable market.

Listed below in Table 3 is a summary of the most important indicator findings and resulting program modifications underway for the Residential High Efficiency Heating Equipment Program to enhance the sustainability of this market. The tracking of indicators has provided critical information needed to fine-tune program incentives, program marketing, and the content of training courses.

Table 3 – Indicator Findings and Program Modifications – Residential High Efficiency Heating Equipment Program

#	Indicator Finding/Program Modification
1	<p>Contractor awareness of high efficiency heating equipment and contractor awareness of the equipment efficiency levels that qualify for the KeySpan rebates is still low. Only 31 percent of the contractors and plumbers interviewed in 1998 and 1999 define high efficiency equipment consistent with the KeySpan program. Promotion of high efficiency equipment by contractors still has much room for improvement. All marketing methods and events for contractors and plumbers should be re-assessed to ensure that energy efficiency information and efficiency thresholds (and information on the ENERGY STAR® Program) are communicated effectively. Consideration should be given to redesigning the marketing efforts targeted to contractors and plumbers to increase their awareness and understanding of high efficiency furnaces and boilers and the threshold levels for high efficiency equipment required by the KeySpan program.⁶</p> <p>Response: KeySpan has worked with other gas utilities in Massachusetts to expand information available on the program on the GasNetworks web site and to provide training to contractors relating to equipment installation and repair. KeySpan has expanded use of e-mail to provide contractors with up-to-date information about the program.</p>
2	<p>Consumer awareness of the ENERGY STAR® Brand, the ENERGY STAR® logo, and high efficiency gas heating equipment is still low.⁷ Additional marketing efforts should be designed to increase ENERGY STAR® brand awareness and awareness of high efficiency gas heating</p>

⁶ A critical problem appears to be that plumbers and contractors who install gas heating equipment do not differentiate correctly between standard efficiency equipment and high efficiency equipment. To sell high efficiency equipment effectively, they need to understand the difference, be trained as to how to communicate this to customers, and see the value to themselves and their customers in doing so.

⁷ Only 13% of recent market participants surveyed in 1999 were very familiar or extremely familiar with the Energy Star® brand. Only about one-third of recent market participants (consumers in the market for gas heating equipment) report that information sources for heating equipment explain efficiency levels well.

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	<p>equipment among consumers. These efforts should be coordinated with efforts of other GasNetworks utilities and those of the US EPA and other purveyors of ENERGY STAR® products.</p> <p>Response: Marketing efforts are underway to increase awareness of high efficiency gas heating equipment and the ENERGY STAR® logo.</p>
3	<p>The penetration⁸ rate for high efficiency gas furnaces (88% AFUE or greater) in Massachusetts for the year 2000 is over 60%, whereas the penetration rate was 47% in 1998 and 57% in 1999. Given that the penetration rate for high efficiency gas furnaces has increased steadily over the past three years – since the inception of the KeySpan market transformation program – it appears that the trade allies are specifying high efficiency equipment more often and there is increasing consumer demand. The incremental cost of a high efficiency gas furnace, however, is still several hundred dollars⁹ and it remains a barrier. Because KeySpan is steadily moving in the right direction toward transforming the market for high efficiency gas furnaces, consideration should be given to lowering the furnace rebate over the course of the next year in conjunction with upcoming KeySpan regulatory filings. The rebate should eventually be discontinued when this incremental cost barrier no longer exists and the penetration rate continues to increase. At that time, any change to the rebate level should be done with proper notice¹⁰ to customers and other market actors.¹¹ Also, any program change should be coordinated with introduction/expansion of other efforts to help the market actors, whether through training, cooperative promotions, or other methods.</p> <p>Response: KeySpan and other participating gas utilities lowered the gas furnace rebate from \$400 to \$300. KeySpan is also considering a separate rebate for furnaces that are very high efficiency (significantly above 90% AFUE).</p>
4	<p>Given the lower penetration of high efficiency boilers¹² (at most 35% in 1999), the rebate should be continued at this time and the level of the rebate re-examined. The number of high</p>

⁸ Penetration is defined as the percent of new gas heating units installed in Massachusetts that are high efficiency units. In this study, the source of the data used to calculate the penetration rate for high efficiency furnaces in Massachusetts was data on gas furnace shipments in Massachusetts obtained from the Gas Appliance Manufacturers Association (GAMA). The GAMA definition is 88% AFUE while the program definition is 90% AFUE, but the GAMA data is used as a proxy indicator for movement in the penetration of high efficiency furnaces.

⁹ As of the first quarter of 2001, KeySpan staff estimate that the incremental cost for a high efficiency gas furnace is approximately \$400.

¹⁰ Program changes can be communicated via the Company’s web site, company newsletters to customers, bill inserts, KeySpan customer service staff, and other marketing methods normally used by KeySpan.

¹¹ There is much experience in New England and other regions with programs where rebate levels and other types of program incentives have been changed or reduced over the course of an energy efficiency program. A main lesson learned from past experience is that it is critical to notify customers, trade allies, energy service companies and other key program allies well in advance of changes to program incentives or eligibility requirements in order to maintain their involvement in the program and their on-going support for program objectives. If customers, program allies and trade allies are not informed well in advance of such changes, the utility or government agency operating an energy efficiency program risks losing their support as well as creating a significant public relations problem. This experience is documented in evaluation literature as well as through recent discussions with veteran energy efficiency program administrators in New England and elsewhere.

¹² The source for the penetration of high efficiency boilers is depth interviews conducted with contractors and plumbers in Eastern Massachusetts in 1998 and 1999.

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	<p>efficiency gas furnace rebates is about two times the number of rebates for high efficiency gas steam and hot water boilers.¹³ Separate rebate levels should be considered for hot water boilers versus steam boilers due to significant differences in incremental costs. Because the incremental cost¹⁴ for purchasing and installing a high efficiency gas hot water boiler is significantly higher than \$400, KeySpan should consider increasing the rebate for this equipment. It is important to consider other incentive mechanisms here as well for both steam and hot water boilers to supplement the rebates.</p> <p>Response: The rebate for gas boilers has been continued at the same level, \$400.</p>
5	<p>A formal evaluation effort should be undertaken to measure the effectiveness of the training programs for contractors and plumbers. This evaluation could include a survey conducted before and after the training to assess the initial effectiveness and acceptance of the training itself with regard to HE (awareness, sales issues, installation, repair issues, etc.).¹⁵</p> <p>Response: KeySpan is examining methods to evaluate these training programs.</p>
6	<p>The content of future training courses for contractors and plumbers needs to provide information on areas where gas heating equipment installation procedures need to be improved. While most installations were performed correctly (according to manufacturer specifications), the equipment installation site surveys indicate that there is room for improvement in a few specific areas.</p> <p>Response: This recommendation has been implemented.</p>
7	<p>KeySpan energy efficiency program staff should check with all manufacturers of gas heating equipment to see if high efficiency gas furnaces and boilers are now being labeled (on a routine basis) with Energy Star® labels.¹⁶ KeySpan staff report that the major manufacturers are placing the ENERGY STAR® logo on high efficiency furnaces and boilers. KeySpan staff can help improve the efficiency labeling of high efficiency gas furnaces and boilers by combining with other gas utilities and as a group lobbying all manufacturers of gas heating equipment to provide, on a consistent basis, Energy Star® labels on high efficiency gas furnaces and boilers (as well as other gas appliances where labels are applicable).</p>

¹³ “Report For GasNetworks On Benefit/Cost Screening Results for Regional Energy Efficiency Programs, January 2001, Final Report”, Appendix B. This report projected that, in Massachusetts, high efficiency gas furnace rebates and high efficiency gas boiler rebates would total 5,483 and 2,812 in the year 2001, respectively. KeySpan staff estimate that about 80 percent of gas heating equipment installed in new homes is high efficiency furnace equipment. One factor that may explain why there are more furnace rebates than boiler rebates is that KeySpan staff have been targeting new housing developments for participation in the rebate program for high efficiency heating equipment. KeySpan staff have made special marketing efforts to get as many new homes as possible to participate in the program.

¹⁴ The incremental cost referred to here includes the incremental equipment cost and the incremental installation cost. The source for the incremental costs for high efficiency gas furnaces and boilers is the GasNetworks report titled “Report For GasNetworks On Benefit/Cost Screening Results for Regional Energy Efficiency Programs, January 2001, Final Report.”

¹⁵ The survey questions should be related to the tracking indicators for contractors, plumbers and distributors and should be designed to assess whether the training is helping to move these indicators in the correct direction. This evaluation effort should also include collecting information from training recipients at the training sites, before and after the training session, specifically on their beliefs, the perceived value of the training, additional content desired, etc.

¹⁶ KeySpan staff report that most major manufacturers of gas heating equipment belong to the ENERGY STAR® program and that they pay a membership fee. KeySpan staff also report that it is possible that the smaller manufacturers may not have joined the ENERGY STAR® program. Manufacturers that have not joined the ENERGY STAR® program cannot use the ENERGY STAR® logo on their products.

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	Response: KeySpan staff report that most manufacturers now provide the ENERGY STAR® logo on high efficiency gas furnaces and boilers. KeySpan continues to work with CEE to support appliance labeling.
8	As part of the transition strategy for this program, KeySpan should support the role of State building codes ¹⁷ to set higher minimum efficiency standards for residential heating equipment in new construction and retrofit installations in Massachusetts. Response: KeySpan continues to work with the Massachusetts Board of Building Regulations and Standards on residential and commercial building code issues relating to energy efficiency. KeySpan also supports the training of code officials and building inspectors.

COMMERCIAL HIGH EFFICIENCY HEATING EQUIPMENT MARKET

An August 2001 Transition Strategy Report for the KeySpan Commercial High Efficiency Heating Equipment Program concluded that this program is also not ready to be scaled down or transitioned after four years of operation. While market progress has been made, many market barriers to energy efficiency still remain. While 32 of 56 indicators moved in a direction consistent with market transformation, the market is still not sustainable. Based on an analysis of these indicators, KeySpan has decided to make modifications to the program so that it will be ready to transition at some time in the future.

Listed below in Table 4 is a summary of the most important indicator findings and resulting program modifications underway for the Commercial High Efficiency Heating Equipment Program to enhance the sustainability of this market.

¹⁷ The approach here is to support a revision to the State Building Code so that it eventually becomes a State requirement that only high efficiency heating equipment can be sold and installed in Massachusetts.

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Table 4 – Indicator Findings and Program Modifications – Commercial High Efficiency Heating Equipment Program

#	Indicator Finding/Program Modification
1	<p>Contractor and Plumber awareness of high efficiency equipment (gas furnaces and boilers) and contractor and plumber awareness of the equipment efficiency levels that qualify for the KeySpan Energy Delivery rebates are still both at low levels. Only 26 percent of the commercial contractors and plumbers interviewed in 1998 and 1999 define high efficiency equipment consistent with the KeySpan program. Promotion of high efficiency gas heating equipment by contractors and plumbers still has some room for improvement. Recommendations by contractors and plumbers to customers for a high efficiency heating unit or an ENERGY STAR® labeled furnace or boiler were made 70% and 65% of the time in 1998 and 1999, respectively, for replacement and new construction units. Having contractors and plumbers promote high efficiency heating equipment is only a good thing if they are truly promoting high efficiency, i.e., they must know the threshold for high efficiency heating equipment.</p> <p>All marketing methods and events for contractors and plumbers should be re-assessed to ensure that energy efficiency information and efficiency thresholds (and information on the ENERGY STAR® Program) are communicated effectively. Consideration should be given to redesigning the marketing efforts targeted to contractors and plumbers to increase their awareness and understanding of high efficiency gas furnaces and boilers (including the lifecycle benefits of high efficiency equipment) and the threshold levels for high efficiency equipment required by the KeySpan program.¹⁸</p> <p>Response: KeySpan has worked with other gas utilities in Massachusetts to expand information available on the program on the GasNetworks web site and to provide training to contractors relating to equipment installation and repair. KeySpan has expanded use of e-mail to provide contractors with up-to-date information about the program. For large systems, KeySpan works one-on-one with customers and design engineering firms to provide technical assistance.</p>
2	<p>Commercial/industrial customer awareness of the ENERGY STAR® brand, the ENERGY STAR® logo, and high efficiency gas heating equipment is still low.¹⁹ Additional marketing efforts should be designed to increase ENERGY STAR® brand awareness and awareness of high efficiency gas heating equipment among commercial/industrial customers. These efforts should be coordinated with the efforts of the US EPA and other purveyors of ENERGY STAR® products. Mail survey results indicated that a larger percentage of multi-location RMPs (Recent Market Participants) were aware of the ENERGY STAR® name than single-location RMPs.</p> <p>Response: Marketing efforts are underway to increase awareness of high efficiency equipment and the ENERGY STAR® logo.</p>

¹⁸ A critical problem appears to be that plumbers and contractors who install gas heating equipment do not differentiate correctly between standard efficiency equipment and high efficiency equipment. To sell high efficiency equipment effectively, they need to understand the difference, be trained as to how to communicate this to customers, and see the value to themselves and their customers in doing so.

¹⁹ Only 39% of both single and multi-location recent market participants, that responded by mail in 1999, were “somewhat familiar”, “very familiar”, or “extremely familiar” with the ENERGY STAR® name. Only about one fifth of recent market participants (customers in the market for gas heating equipment) report that information sources for heating equipment explain efficiency levels well.

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3	<p>Design engineer, developer, builder and property owner awareness of the ENERGY STAR® Brand, the ENERGY STAR® logo, and high efficiency gas heating equipment is still low. From the depth interview results from 1998 and 1999 with contractors and plumbers, we note that their perception of design engineer, developer, builder, facility manager and property owner requests for HE or ENERGY STAR® is still low. Interviews with design engineers in 1998 and 1999 indicate that their awareness of high efficiency heating units or those displaying the ENERGY STAR® logo averages 38% for the replacement market and 39% for the new construction market.</p> <p>Response: KeySpan has developed and sent a new direct-mail piece to commercial customers to help boost awareness of high efficiency equipment. The Company is also providing updated information to key market actors in a newsletter to trade allies.</p>
4	<p>Training, Attitudes and Performance of Market Actors</p> <ul style="list-style-type: none"> • The content of future training courses for contractors, plumbers, and design engineers needs to provide information on areas where gas heating equipment installation procedures need to be improved. While most installations were performed correctly (according to manufacturer specifications), the equipment installation site surveys indicate that there is room for improvement in a few specific areas. • Opportunities for additional training of design engineers should be created, with consideration given by KeySpan staff to incentive payments or tuition reimbursement. The content of future training opportunities for design engineers should include the lifecycle benefits and comparable reliability of high efficiency furnaces and boilers over standard efficiency units. <p>Response: The recommendation relating to training courses for contractors, plumbers and design engineers has been implemented. Additional information for design engineers is being communicated through a newsletter to trade allies.</p>
5	<p>Perceived Product Performance and Reliability - Distributors</p> <ul style="list-style-type: none"> • The depth interview results with distributors from 1998 and 1999 indicate a substantial improvement in perceived reliability, which still ranks very high as a key factor in the decision to purchase. • KeySpan needs to confirm the reliability of high efficiency heating equipment with distributors and promote the ENERGY STAR® label and the lifecycle cost savings for this equipment. • KeySpan should encourage distributors and manufacturers to include information on the performance and reliability of HE furnaces and boilers in the training they offer to equipment installers. <p>Response: Action on these recommendations is being undertaken through regular communication with distributors and manufacturers.</p>
6	<p>The penetration²⁰ rate for high efficiency gas furnaces (88% AFUE or greater) in Massachusetts</p>

²⁰ Penetration is defined as the percent of new gas heating units installed in Massachusetts that are high efficiency units. In this study, the source of the data used to calculate the penetration rate for high efficiency furnaces in Massachusetts was data on gas furnace shipments in Massachusetts obtained from the Gas Appliance Manufacturers Association (GAMA). The GAMA definition is 88% AFUE while the program definition is 90% AFUE, but the GAMA data is used as a proxy indicator for movement in the penetration of high efficiency furnaces.

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	<p>was 28% in 1998 and 48% in 1999; while that of gas boilers increased from 44% in 1998 to 59% in 1999. Given that the penetration rate for high efficiency gas furnaces has increased steadily over the past three years – since the inception of the KeySpan market transformation program – it appears that the trade allies are specifying high efficiency gas furnace equipment more often and there is increasing customer demand. The incremental cost of a high efficiency gas furnace over that of standard efficiency is still several hundred dollars²¹ and it remains a barrier. The rebate on furnaces should eventually be discontinued when this incremental cost no longer exists and the penetration rate continues to increase. At that time, any change to the rebate level should be done with proper notice²² to customers and other market actors.²³ Also, any program change should be coordinated with introduction/expansion of other efforts to help the market actors, whether through training, cooperative promotions, or other methods.</p> <p>Response: KeySpan and other participating GasNetworks utilities lowered the rebate for small (similar to residential equipment) gas furnaces from \$400 to \$300.</p>
7	<p>Given similar penetration of high efficiency boilers²⁴ (59% in 1999), the rebate should be continued at this time and the level of the rebate re-examined.</p> <p>Response: The rebate for high efficiency gas boilers has not been changed at this time.</p>
8	<p>A more formal evaluation effort should be undertaken to measure the effectiveness of the training programs for contractors and plumbers. This evaluation could include a survey conducted before and after the training to assess the initial effectiveness and acceptance of the training itself with regard to HE (awareness, sales issues, installation, repair issues, etc.).²⁵ Since design engineers also play an important role in promoting HE gas heating equipment, a similar survey could be used for any existing training with that group. In the event that formal training of design engineers is not being performed, then a KeySpan mail survey process could be initiated to reach this group.</p> <p>Response: KeySpan is examining methods to evaluate these training programs.</p>
9	<p>To achieve a sustainable market, it is important for KeySpan staff to identify the benefits of high efficiency gas heating equipment to contractors, plumbers, distributors and design engineers. KeySpan should consider documenting whether high efficiency gas heating equipment</p>

²¹ As of the first quarter of 2001, KeySpan staff estimate that the incremental cost for a high efficiency gas furnace is approximately \$500.

²² Program changes can be communicated via the Company’s web site, company newsletters to customers, bill inserts, KeySpan customer service staff, and other marketing methods normally used by KeySpan.

²³ There is much experience in New England and other regions with programs where rebate levels and other types of program incentives have been changed or reduced over the course of an energy efficiency program. A main lesson learned from past experience is that it is critical to notify customers, trade allies, energy service companies and other key program allies well in advance of changes to program incentives or eligibility requirements in order to maintain their involvement in the program and their on-going support for program objectives. If customers, program allies and trade allies are not informed well in advance of such changes, the utility or government agency operating an energy efficiency program risks losing their support as well as creating a significant public relations problem. This experience is documented in evaluation literature as well as through discussions with veteran energy efficiency program administrators in New England and elsewhere.

²⁴ The source for the penetration of high efficiency boilers is depth interviews conducted with contractors and plumbers in Eastern Massachusetts in 1998 and 1999.

²⁵ The survey questions should be related to the tracking indicators for contractors, plumbers and distributors and should be designed to assess whether the training is helping to move these indicators in the correct direction. This evaluation effort should also include collecting information from training recipients at the training sites, before and after the training session, specifically on their beliefs, the perceived value of the training, additional content desired, etc.

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	<p>installations have fewer “call-backs” than standard efficiency equipment installations.</p> <p>Response: Communication of the benefits of high efficiency equipment is currently being done through contractor training programs and through the one-on-one technical assistance provided by KeySpan staff to customers installing large heating systems. KeySpan is considering additional research on this topic.</p>
10	<p>As part of the transition strategy for this program, KeySpan staff should support the role of the State Commercial Building Codes²⁶ to set higher minimum efficiency standards for Commercial heating equipment in new construction and retrofit installations in Massachusetts.</p> <p>Response: KeySpan continues to work with the Massachusetts Board of Building Regulations and Standards (BBRS) on residential and commercial building code issues relating to energy efficiency. KeySpan also supports the training of code officials and building inspectors.</p>
11	<p>New means of education should be considered to encourage design engineers to specify HE heating equipment for both new building construction and retrofits. A possible incentive might be reimbursement for training in the areas of equipment reliability, new technologies, and lifecycle benefits.</p> <p>Response: KeySpan is having meetings with design engineering firms to address this issue.</p>

LESSONS LEARNED

SUSTAINABILITY

Sustainability has not been achieved to date for either the residential or commercial high efficiency gas heating equipment markets in Massachusetts. Once a large proportion of the contractors and plumbers decide to promote high efficiency equipment and use its offering as a sales/competitive tool, and once consumers understand and accept the benefits of high efficiency gas heating equipment and start to demand it, then these actions by contractors and plumbers have a better chance of continuing (no need for large training effort interventions to train many new market entrants). This process will be assisted as all manufacturers of gas heating equipment place ENERGY STAR® labels on furnaces and boilers. As more contractors and plumbers influence more consumers, and with other ENERGY STAR® education efforts taking place, consumers will be more likely to demand high efficiency heating equipment. As awareness builds among consumers and installers, a sustainable market may be possible in the future. Once support for high efficiency is built among installers and consumers, then the opportunity is ripe to press for codes to achieve the ultimate goal of 100% penetration.

PROCESS FOR DEVELOPING TRANSITION STRATEGIES

It is clear that a systematic process is needed to design, launch, and evaluate a market transformation initiative. Similarly, a systematic process is needed to develop a transition strategy for markets that have become sustainable or are well on the way to sustainability. Based on KeySpan’s experience, the authors support program logic models for market transformation programs, careful tracking of key indicators of market transformation over time, and assessment of market progress at regular intervals. KeySpan’s

²⁶ The approach here is to support a revision to the State Commercial Building Code so that it eventually becomes a State requirement that only high efficiency heating equipment can be sold and installed in Massachusetts.

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experience is that market progress can be obtained in 12 to 18 months, and that achievement of sustainable markets is likely to be a longer-term process.