

A Market Transformation Strategy for Gas-Fired Domestic Hot Water Heaters

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ABSTRACT

The market for high-efficiency domestic water heaters is at a turning point, and this paper will explore developments in the market for gas-fired storage and tankless domestic hot water heaters. Natural gas energy efficiency programs are ramping up, and the trend towards decoupling makes addressing water heating more attractive and financially viable. Consumers are showing increased awareness of energy efficiency; the ENERGY STAR label is gaining prominence in the household appliance market. The recent successes of tankless water heaters indicate the market is ready for efficient water heating options both storage and tankless.

This paper will present a case study exploration of the market for gas-fired domestic hot water heaters. The authors of this paper will draw on existing market studies to summarize the state of the market. They will then apply marketing theories and concepts to attempt a deeper understanding of the barriers to the adoption for high-efficiency products. Using the insights gained from this exercise, the authors will articulate a strategy through which energy efficiency programs can permanently transform the market. This can be achieved by providing coordination for specification levels, educating installers, promoting efficiency to channel partners, coordinating messaging to consumers, and promoting consumer adoption through appropriately applied rebates and incentives. This strategy will enable energy efficiency programs to build an infrastructure to support a permanent increase in efficiency for this critical end use.

Introduction

Natural gas energy efficiency programs are interested in water heating because it offers significant opportunities for efficiency gains. These efficiency programs are looking for greater savings from all users as their budgets grow. In 2007, US budgets increased 68 percent from \$248 million in 2006 to \$416 million in 2007. Gas budgets reached \$56 million in Canada (CEE 2008a). Domestic hot water heating is one area that programs are looking to offer additional savings.

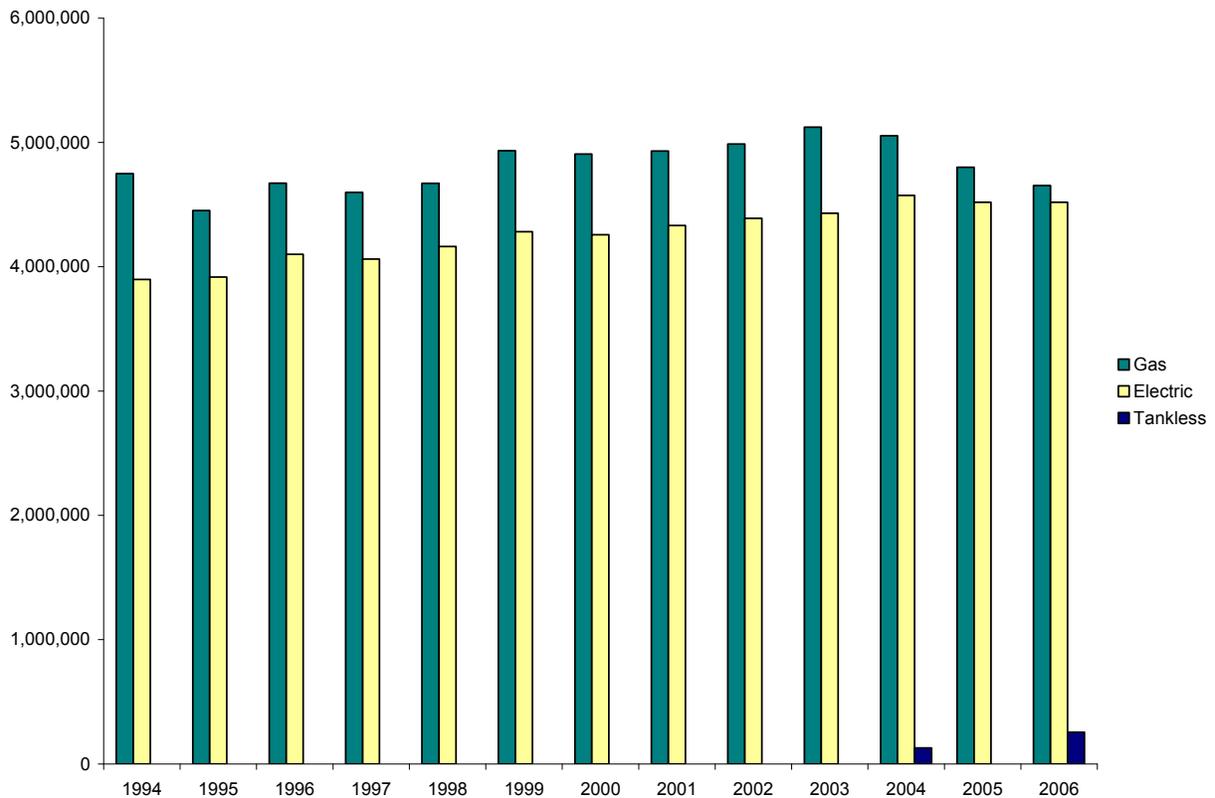
This paper will explore the current market for domestic water heaters in the U.S. and Canada and will apply marketing concepts in an attempt to better understand manufacturers' actions. The researchers are unable to categorically state that these insights are correct, but they may help voluntary efficiency programs effectively transform the market for gas-fired domestic hot water heaters. These insights have led to a strategy currently being supported by CEE's High-Efficiency Residential Gas Water Heating Initiative (CEE 2008b).

State of the Water Heater Market

Water Heating is a Major Residential Energy End-Use

Water heating represents a major use of energy in North American homes with the potential for significant natural gas savings. In the U.S., water heating accounts for approximately 15 percent of residential energy consumption, making it the third largest energy end-use in homes behind space heating (47 percent) and lighting and appliances (24 percent). It is estimated that 54 percent of U.S. water heaters are heated with natural gas, 38 percent are heated with electricity, 4 percent are heated with oil and less than 3 percent are heated with LPG (EIA 2001). Gas tank-type water heaters are installed in approximately 58.2 million homes in North America (VEEC 2006). In Canada, water heating is estimated to be the second largest residential energy end-use behind space heating, accounting for nearly 22 percent of household energy consumption. It is estimated that 35 percent of Canadian water heaters are fueled by electricity and 59 percent are fueled by natural gas, with oil and propane accounting for the remaining 6 percent (Aguilar et. al. 2005).

Figure 1. U.S. Water Heater Shipments



Source: GAMA (2006); Department of Energy (2007); Davis Energy Group (2007)

Storage units dominate both the gas-fired and electric water heater markets, with shipments of over 9.1 million units for gas and electric units combined in the U.S in 2006. Storage water heaters account for over 95 percent of the market share for water heaters in North America (GAMA 2007). Tankless water heaters accounted for approximately 1 to 2 percent of the market in 2004 (Davis Energy Group 2007). Solar and heat pump water heaters account for a small minority of annual sales (DOE 2008). Figure 1 above displays U.S. residential water heater shipment data for storage water heaters. In 2006, the percentage of gas-fired and electric resistance storage water heater shipments was nearly equal in the U.S., with shipments of gas-fired units slightly greater than electric resistance units (4.6 million units and 4.5 million units, respectively)(GAMA 2006). These figures do not include tankless water heater shipments, but there is indication that the percentage may be growing quickly. Unit sales of gas tankless water heaters are reported to be 254,600 in 2006 (DOE 2008). This is equal to 2 percent of sales for gas storage water heaters.

Storage Water Heater Manufacturers

Storage water heaters, also known as tank-type water heaters, are the most common type of water heater manufactured in the U.S. Most gas-fired storage units currently sold are at the federal minimum standard for efficiency. Models with higher Energy Factors are produced by all of the major manufacturers but in smaller quantities than the models meeting the federal minimum standard for efficiency. Only roughly 100,000 storage water heaters with Energy Factors of 0.65 and above were sold in 2006 (DOE 2008).

The three largest manufacturers in Canada are also the three largest in the U.S., accounting for nearly 99 percent of the market. These manufacturers include A.O. Smith with 42 percent of the market, Rheem/Ruud with 40 percent, and Bradford White with 17 percent. All other manufacturers account only for 1 percent of the market, including manufacturers such as Lochinvar and Giant (A.O. Smith 2006; KEMA 2006). In 2006, A.O. Smith bought American Water Heater's parent company, GSW Inc., a Canadian water heating and building products manufacturer. Up to that point, American Water Heater had accounted for 17 percent of the water heating market share (A.O. Smith 2006). Manufacturers sell their storage water heaters under a wide variety of brands. For example, Maytag, State, Reliance, and American are A.O. Smith brands, and Richmond and GE are Rheem/Ruud brands (CEE 2008b).

Table 1. Estimated Market Share of Storage Water Heaters

Manufacturer	Estimated Market Share	Brands
Rheem/Ruud	40%	Rheem, Ruud, GE, Richmond
A.O. Smith	42%	A.O. Smith, American, Apollo, GSW, Maytag, Reliance, State, Kenmore, U.S. Craftsmaster
Bradford White	17%	Bradford White, Bradford White Canada, Laars, NST
Other Manufactures	1%	

Source: A.O. Smith 2006; KEMA 2006

Tankless Water Heater Manufacturers

In 2004, 129,000 tankless water heaters were sold: a growth of 57 percent over the prior year (Davis Energy Group 2007). This figure rose to 254,600 in 2006 (DOE 2008). Some of the tankless manufacturers selling in North America include Rinnai, Takagi, Noritz, CEC/Bosch and Rheem/Ruud, a subsidiary of Paloma Industries. Most of the tankless water heaters available on the market today are produced outside of the U.S (Davis Energy Group 2007).

Water Heater Distribution Channels

Water heaters are sold to consumers either by contractors who purchase from wholesale distributors or through retail outlets. Sales are split relatively equally between wholesalers and large retailers, with most manufacturers selling to both channels. Wholesalers sell water heaters to plumbing contractors, builders and developers, local hardware stores or homeowners.

Large retailers typically sell water heaters to homeowners, but plumbers are also known to purchase from them. Bradford White distributes exclusively through wholesalers, while some manufacturers reserve their flagship brands for wholesalers but sell other brands directly to consumers through retailers. For example, A.O Smith markets its A.O. Smith brand through wholesalers but sells its other brands through a variety of market channels, including large retailers (CEE 2008b). KEMA (2006) estimates that approximately 49 to 59 percent of water heaters are shipped to wholesalers and 41 and 51 percent to retailers. Approximately 20 percent of total production flows into new construction while 80 percent flows to retrofit.

Insights from Marketing Concepts

A Five Forces Analysis of the Water Heating Industry

A deeper analysis of the industry can help one to understand the motivations of the manufacturers and predict how the market will move. One classic way to achieve this understanding is to conduct a structural analysis of the industry using the Five Forces of Competition identified by Michael Porter (Porter, 1980). These “Five Forces” are threat of new entrants, threat of substitute products, bargaining power of suppliers, bargaining power of buyers, and intensity of rivalry among existing firms; they can give observers insights into the potential profitability of the industry as a whole. The authors believe that an examination of the pressures facing U.S. and Canadian storage water heater manufacturers can yield insights into how manufacturers are approaching product attributes such as energy efficiency.

Threat of entry. The concentration of the industry into three major players indicates that large scale producers have an advantage creating inherent barriers to entry. One possible explanation for this concentration would be that economies of scale in production exist. That is, on a per unit basis, it is cheaper to manufacture a large number of water heaters than a smaller number. Scale likely gives each firm more buyer power with key suppliers such as steel companies. Also, looking more closely at individual firms, all of them manufacture products in addition to water heaters. A.O. Smith manufactures motors, which may give it an advantage when it comes to power vented models and in electrical controls. Bradford White manufactures boilers under the Laars name, and so may have special advantages when it comes to burner technologies and in

relationships with plumbing contractors who install both water heaters and boilers. Rheem is a subsidiary of Paloma, which also makes residential air conditioners, heat pumps, gas furnaces, air handlers and commercial HVAC products. This broad array of product offering might give Rheem an advantage with distributors looking to handle a wider range of products. Despite the differences in product mix, each company has achieved a scale that would require significant capital to emulate.

Distribution also plays an important role in the dynamics of this industry due to the high cost of shipping bulky storage water heaters. Each manufacturer seems to have developed exclusive relationships among distribution channels. Rheem has developed a relationship with The Home Depot through private label manufacture of GE Brand water heaters, while A.O. Smith works exclusively with Lowes. Bradford White in contrast has invested time and money developing relationships with wholesale distributors. Such relationships would also be hard for a new entrant to replicate. On the other hand, lack of differentiation between firms at the product or brand level will not keep new entrants out of this market.

While giving advantages, the investment in large scale production may also leave these manufacturers vulnerable to technological changes given the dedication of their production to a particular type of model.

Intensity of rivalry. Rivalry appears to be intense in this market. With three large firms dividing the majority of the market, we would expect swift response to each price cut, improved warranty, or enhanced product or service. The lack of differentiation between products and slow rate of growth in the industry would indicate that each firm competes primarily on price. With such bulky items, it's likely that storage costs are high for finished products, giving manufacturers further incentive to cut prices during periods of overcapacity in order to avoid a build up of inventory. Ownership form provides some diversity in the market that may intensify competition through inability to interpret each other's actions. For example, a publicly held company such as A.O. Smith may have different motivations and profit requirements than Bradford White, an employee stock ownership trust, which would have motivation to keep employment high rather than cut costs.

For the same reason Bradford White is likely to persist in the market far longer than other firms would deem profitable. In general however, exit barriers appear to be low in that no firm has assets that are impossible to liquidate or likely faces extraordinary environmental remediation costs upon exiting the market. Porter's analysis (1980) indicates that this situation of high entry barriers and low exit barriers is a situation where firms can expect high, stable profits.

Buyer power. In this industry, buyer power will vary depending on the type of buyer. Consumers, at the end of the chain, have the least buyer power primarily due to the emergency nature of most water heater purchases. When consumers are unwilling to do without hot water for any length of time, they will take the most readily available models. In such cases, the primary factor they use to differentiate is price(CEE 2008b); therefore retailers offer what they perceive to be what consumers most want: lowest price models. Retailers and plumbers exercise power over consumers and with manufacturers, but the driving motivator for all actors seems to be low price. Builders also presumably wield more power given their sizeable purchases. They however are also likely to differentiate among products on price in order to maximize their profits and because they also do not perceive quality of water heater to matter to consumers.

Supplier power. The primary components used to produce storage water heaters seem to be steel, glass, electronics, and in some cases, motors. Each of these seems to be relatively undifferentiated products, which indicates little supplier power, though this may be less true of motor technologies. On the other hand, water heater manufacturers are unlikely to be major customers within these industries when compared to other industries such as automotive manufacturing, so they're competing with other producers for these products and commodities. Presuming that there are no special relationships between each firm and their suppliers, water heater manufacturers are likely to be price takers.

Threat of substitution. Traditionally, water heater manufacturers have been protected from foreign competitors due to the high cost of transporting storage water heaters. Tankless water heaters manufactured in Europe and Asia began to enter the U.S. and Canadian market about 20 years ago, but it was not until recently that they began to see an increase in market acceptance (Builders WebSource 2008). Currently, tankless water heaters are priced higher than storage water heaters (Davis Energy Group 2007), so they are not undercutting the price of storage water heaters. On the other hand, they are selling to those customers with the highest willingness to pay, leaving the storage water heater market to the most price sensitive purchasers. Price of tankless water heaters is likely to come down as they gain share. If tankless water heaters become fundamentally undifferentiated from storage water heaters, the relative price of the two technologies will likely depend on relative component commodity costs, and the cost of labor versus the cost of transport. However, it appears that tankless water heaters may be changing the dynamics of the entire market for water heating appliances by bringing to consumers' attention other benefits.

Strategies for a Mature Market

Leaving aside how tankless water heaters may be changing the market dynamics for now, the current market for water heaters appears to be very mature. Mature markets are characterized by almost constant sales volume year to year, concentrated competitors, differentiation through branding, and a shift of power into the distribution channels. The market for storage water heaters exhibits all but one of these characteristics. Sales volume for the past ten years has been relatively constant. Using data from GAMA (2006), the compound annual growth for shipments of gas and electric water heaters was been slightly less than 1 percent between 1995 and 2005. This is consistent with the overall growth of the number of housing units in the U.S. of just over 1 percent over the same period (American Housing Survey 2008). The correlation of the two growth rates supports an assumption that there are likely few homes in the U.S. that don't yet have a water heater, and that the future market will be tied to new home construction and replacement of existing water heaters. A.O. Smith (2008) supports this assumption in their annual report by listing a decline in new residential construction as a risk to which they are exposed.

As shown above, the storage water heating market displays two other major characteristics of a mature market: production has concentrated into three major producers and retailers and plumbers wield a great deal of power in helping consumers make choices. The one way in which the market for storage water heaters does not conform to the classic definition of a mature market is its lack of powerful brands. There are a wide number of brands produced by the various major manufacturers, but there seems little differentiation between them at the consumer

level. The authors speculate that this may be due to the relative infrequency with which consumers purchase water heaters (the average life span is 9 years (DOE 2008)) and the fact that consumers typically do not see their water heaters on a daily basis.

Conventional marketing wisdom offers some approaches for increasing sales in a mature market. These include increasing the frequency of use, increasing the quantity of use, creating new applications, creating new usage situations, or associating the use with other relevant goals. Most of these approaches are more evident in consumer packaged goods where serving sizes or the size of a bottle opening may be made larger to increase quantity of use, or more convenient packaging may create “to-go” opportunities that increase frequency of use. An example of creation of new applications is Arm and Hammer Baking Soda which goes beyond use as an ingredient in baking to use in a variety of cleaning applications. Many marketers associate food products with healthfulness to increase consumption. At first glance, these strategies may not appear relevant to a durable good like a water heater, but it is possible that water heater manufacturers are taking advantage of societal trends to boost sales.

The most likely opportunities for water heater manufacturers are increasing the frequency of replacement, increasing the quantity of use or associating the water heater with other relevant goals. Water heater manufacturers may have the opportunity to boost the quantity of use. According to the National Association of Homebuilders the average home size in the United States has grown to 2,330 square feet, 60 percent larger than in 1970 (NAHB 2007). This presumably means longer pipes, more bathrooms with more and bigger fixtures that use more hot water. This growth may require more or bigger water heaters to meet the distribution demands. Conversely, water heater manufacturers have the opportunity to associate their water heaters with relevant goals. In this case, financial savings, energy efficiency, greenhouse gas reductions, and the general increase in “green” claims for products. Energy efficiency programs are of course, more interested in supporting the latter goal.

The authors cannot prove the motivations and intentions of manufacturers, but their advertising seems to indicate that they are acting on these goals. Table 2 provides a summary of the marketing claims made by a number of water heater manufacturers, both storage and tankless, regarding their high performance water heaters.

The two most common themes center on “endless hot water” and money savings. By repeatedly emphasizing “endless hot water” claims manufacturers could be raising consumer expectations of how much hot water it is reasonable to use. Raising these expectations could create dissatisfaction with formerly adequate but now “small” water heaters and accelerate the schedule on which consumers replace their water heaters or cause them to install multiple water heaters, in other words, increasing the frequency of replacement or quantity of use of the water heater. The claims around money savings tie new water heaters to a relevant goal, particularly in times of increasing energy costs.

Other manufacturers also tout the emissions and other environmental benefits of saving natural gas with their water heaters. Navien ties the environmental benefits directly to emissions reductions of CO₂ and NO_x, while Noritz ties it more broadly to global warming and makes other claims about corporate manufacturing practices. A tankless wholesaler makes the case on its website that “Less Fuel + Lower Emissions = Less Greenhouse Effect” and ties it to monetary savings by including dollar bills in the graphics. This wholesaler may be trying to tie its products to the goal of many consumers to reduce their carbon footprint (Monterio 2008)

Again, it cannot be proven that manufacturers have these motivations, but these marketing campaigns represent investments by each manufacturer, and these investments can give a hint of their intentions.

Tankless Water Heaters as a Disruptive Technology

Advertising like this may not only increase the prominence of tankless water heaters in the market, but it may also change the market's structure. Better understanding this change could aid energy efficiency programs in taking advantage of this change. Applying further marketing concepts to this technological change can aid that understanding.

Table 2 Manufacturer Marketing Claims

Firm	Endless Hot Water Claims	Money Savings Claims	Green Benefits
A.O. Smith	Continuous Hot Water means Homeowners will always get “One More Hot Shower”	Money-Saving 90% Thermal Efficiency	
Navien	<p>Endless Supply of Hot Water</p> <ul style="list-style-type: none"> Navien Condensing Tankless Water Heaters supply unlimited hot water at a steady temperature when ever you need it for as long as you need it. Navien water heaters create a more comfortable living environment 	<p>Ultra Condensing Efficiency</p> <ul style="list-style-type: none"> The Industry's Highest energy efficiency at 98% means the lowest annual operating costs and the best payback compared with conventional tankless or tank-type water heaters Saves, on average, more that \$160 per year over conventional tank-type gas water heaters and \$40 per year over conventional tankless gas water heaters Shortest payback of any tankless water heater on the market Best gallons per minute performance when comparing input BTU 	<p>Eco-Navien Technology</p> <ul style="list-style-type: none"> Ultra efficient burner uses less gas resulting in substantial CO2 and NOx emissions reductions Less NOx and CO₂ means less acid rain and less green house gasses minimizing ozone layer depletion
Noritz	<p>Endless Hot Water</p> <ul style="list-style-type: none"> enjoy taking [sic] hot bath without worrying of [sic] others taking a cold shower 	<p>Savings</p> <ul style="list-style-type: none"> Tankless water heaters heat water only when you need it, saving you on energy costs. So when no one is using hot water, the heater uses zero gas 	<p>Eco Friendly Approach</p> <ul style="list-style-type: none"> Noritz makes every effort towards global environment conservation in all aspects of its corporate activities <p>More Green – for the environment for the greener future</p> <ul style="list-style-type: none"> use less energy reduce global warming reduce less [sic] waste
Rinnai	<ul style="list-style-type: none"> Produce and supply endless streams of hot water to multiple outlets simultaneously without any fluctuation in temperature 	<ul style="list-style-type: none"> Are up to 50 percent more energy efficient than a traditional natural gas water heater and up to 70 percent more efficient than an electric water heater Shut-off automatically when the water supply is closed, providing users with significant energy savings - in turn saving money on their utility bills 	
Takagi	<p>Endless Hot Water</p> <ul style="list-style-type: none"> Takagi tankless water heaters provide endless hot water plus a whole lot more. Properly sized for the job at hand, a Takagi will supply a steady flow of hot water at the designated temperature for as long as it’s needed, wherever it’s needed. 	<p>Up to 50% energy savings</p> <ul style="list-style-type: none"> Not only does Takagi provide you with continuous endless hot water...it does it in the most energy-efficient way possible. Traditional tank-type water heaters constantly burn gas in order to maintain the set water temperature in the tank, even when water is not being used. With a Takagi tankless water heater, it only heats water when you need it. So when you’re at work or on vacation and no one is at home, it’s not wasting gas. Takagi tankless heaters can pay for themselves in energy savings alone. As of January 1st, 2006, homeowners are also eligible for a \$300 federal income tax credit if they install one of Takagi’s highly energy-efficient water-heating units. 	

Source: A.O. Smith (2008b); Navien (2008); Noritz (2008); Rinnai (2008); Takagi (2008)

Technological changes can be characterized as sustaining or disruptive. Sustaining technologies improve performance of technologies along the dimensions that consumers have historically valued. That is, these technologies are unquestionably better in whatever area the majority of consumers have valued. Disruptive technologies change the game. Companies that pursue strategies that employ disruptive technologies are looking to serve the needs of a customer segment that is under served by the current dominant technology. By meeting these needs, occasionally aspects of performance valued by the majority of users are not as well met by the new technology. That is, the disruptive technologies improve product performance in new ways but may harm it in others. Sometimes, the performance on new aspects gains enough traction in the market that the disruptive technology begins to surpass the dominant technology in sales. As this happens, disruptive technologies may eventually also improve performance in those areas valued by the majority of users.

Tankless water heaters may be a disruptive technology in the water heating market. As shown above, they are sold on two particular aspects of performance: endless hot water and energy savings with the contingent benefits of money savings and environmental improvement. Their impressive rate of growth, averaging 40 percent per year between 2004 and 2006 (Davis Energy Group 2007; DOE 2008), indicates that these benefits appeal to a growing number of consumers. On the other hand, many users find their performance worse on some aspects traditionally met very well by storage water heaters.

The first noticeable difference between storage and tankless is that the flow rate is slower. This means that high volume applications can take longer, especially if the unit has not been properly sized for the household (Squire 2008). Other differences are the increased lag time between turning on the tap and the arrival of the hot water, and the presence of a “cold water sandwich.” This occurs when the tap is turned on then off and then on again, and the water runs hot-cold-hot. This happens because fact tankless units only begin to fire when the hot water tap is turned on. It can take a moment for the tankless water heater to reach the desired temperature, but the water must be flowing to do so. Both of these problems are ameliorated by storage water heaters because hot water is stored until it’s needed.

If tankless water heaters are a true disruptive technology, they have the potential to change the market by altering consumer expectations of water heater performance. Storage water heater manufacturers may be concerned that their business model could be undermined and so may be more willing to form partnerships with energy efficiency programs in order to protect their profits. By the same token, tankless water heater manufacturers may be interested in partnering as well to promote the efficiency benefits of their products. It is likely to benefit of energy efficiency programs to partner with both in order to combat the tendency to promote increased consumption of hot water.

Market Transformational Opportunities for Energy Efficiency Programs

The current changes in the water heating market give programs an opportunity to effect shift it towards energy efficient water heaters. The goal of energy efficiency programs is to increase the market share and availability of high-efficiency water heaters. By observing these market dynamics, efficiency programs can take advantage of areas of common interest with water heating manufacturers to transform the market towards energy efficiency, while also potentially serving as a counterweight to the tendencies of these manufacturers to want to increase hot water consumption and therefore use of their products.

If the rapid increase in sales of tankless water heaters is tied to the opportunity to save money and reduce environmental impact, then this can be considered a demonstration that there are consumers out there willing to pay more for these benefits. The fear of losing share in a mature market should motivate storage water heater manufacturers to offer products that also offer these benefits to consumers who value them. In addition, if these storage water heaters could be priced less than the high-priced tankless water heaters and made easier to retrofit, storage water heater manufacturers could have an advantage in the retrofit market.

Energy efficiency programs can not only help support these new introductions to give consumers a wide range of efficient options, but they can also help accelerate market transformation and potentially guide consumers to reduce their overall consumption through education. Support for new introductions and existing more efficient models (both storage and tankless) can be achieved through common efficiency specifications across the U.S. and Canada. Efficiency programs can also reduce consumer and installer confusion about efficiency claims by serving as an objective third party in the process. Confusion will only be reduced by consistent messaging however, as inconsistencies may only serve to amplify consumer and installer confusion.

A two pronged approach will likely have the most impact. First, supporting efficient water heaters through consumer rebate and incentive programs and seeking to educate consumers about the efficient options can amplify manufacturers' promotions if programs and manufacturers act together where their interests are aligned. Second, distribution channels must be addressed because they have power in this market. This is a case where influencing the influencers is vital.

The Consortium for Energy Efficiency has recently introduced a High-Efficiency Residential Water Heating Initiative that attempts to take this two pronged approach by addressing both consumers and the distribution channel. This Initiative provides consensus efficiency specifications which participants agree to support through incentive programs. These programs can be aimed at consumers, installers, wholesalers, or retailers, depending on the needs of each participating program. Each participant also agrees to incorporate awareness building aspects into their programs targeting consumers, installers and the distribution channels. By working together during this time of market change, energy efficiency programs have the opportunity to rapidly transform the market (CEE 2008b). This effort when combined with the ENERGY STAR label to be launched in January 2009 (DOE 2008) could prove to be beneficial.

Conclusions and Next Steps

This paper has sought to explain the market dynamics of gas-fired domestic water heaters and has outlined a strategy for how efficiency programs can address this critical end use. The case was made that the gas-fired residential water heating market is at a turning point. The paper provided insight into the motivations of the major water heater manufacturers. Efficiency programs can take advantage of these changes by supporting common high-efficiency specifications, using the ENERGY STAR label for water heating, and coordinating messaging with the key water heating industry partners. It should be noted that these next steps are intended only as suggestions to inform the strategies that efficiency programs develop. These actions are currently being supported by CEE's High-Efficiency Residential Gas Water Heating Initiative.

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