

Are We There Yet? Upstream 2.0: The Future of Upstream Energy Efficiency Programs.

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ABSTRACT

In recent years, several utilities and program administrators have experimented with upstream delivery models as a tool to meet aggressive energy savings goals in the face of modest adoption of energy efficient technologies. This new approach is elegant: incentive dollars are channeled towards market players who have a high degree of influence on purchasing decisions eliminating the need for customers to fill out rebate forms. Customers purchase efficient products at the usual sales outlets and receive an instant discount. No hassle of paperwork and no wait to get rebates. Often, these programs are touted as a “silver bullet” for Program Administrators to address ever increasing savings targets. Although upstream programs have achieved impressive levels of participation by customers and trade allies there is room for improvement. The simplicity of the upstream model has its own drawbacks. Since customers do not receive a rebate check they may not even be aware that they received a benefit from a Program Administrator backed program. Is there a way to improve customer experience without diminishing customer awareness? Moreover, there is potential for channel conflict with existing, downstream offerings that can lead to market confusion. How can Program Administrators achieve scale, streamline internal workflows and deliver a consistent message to stakeholders? How can PAs apply this approach thoughtfully to get the desired outcomes without disrupting the marketplace? This paper will discuss strategies to overcome these barriers, lessons learned, and recommendations for a meaningful upstream program design.

Introduction

In 2011 Massachusetts began exploring alternatives to the traditional “mail-in rebate” incentive program for its C&I customers. The model of buying down a piece of equipment at the point of sale has been commonly applied to consumer electronics. Instead of a manufacturer marketing a product using mail-in rebates, the manufacturer provides an instant, point of sale rebate to a customer; lowering the first cost and immediately steering the customer’s purchasing decision. This model, known as “upstream,” shifts the incentive from the end user to the point of sale transaction. Though it is not a new concept, upstream is a newly adopted concept by utilities and program administrators. Transitioning to this incentive model removes the burden of lengthy and sometimes confusing paperwork for the customer and helps transform the market by pricing the efficient equipment more competitively against the standard-efficiency option. Using a consistent upstream approach required a statewide commitment and alignment between all the Program Administrators in Massachusetts. By aligning efforts, channel and customer confusion has been avoided. To help implement and maintain the program, a third-party program manager is used to provide outreach to the channel and supply each Program Administrator with a

monthly report containing processed sales data and incentive reimbursement details. Monthly savings data is then logged by the Program Administrator and incentive payments are processed for the distribution partners.

The upstream model is not a “fix-all” option; it is just an additional opportunity in a Program Administrators’ portfolio of energy efficiency program delivery models. There are many challenges and lessons to be learned from this method. With four years of experience in Massachusetts to reference, this paper discusses how the Massachusetts Program Administrators have been able to streamline workflows, maintain a consistent message to stakeholders, and scale up the program to the current level.

Streamlining Work Flows

One of the biggest benefits of implementing an upstream program is the reduction of complexity and the streamlining of internal workflows. Historically, downstream applications have come in one project at a time for a Program Administrator to review. Although there are benefits to getting a singular, comprehensive, data-filled application form, the review and processing of this information can tie up valuable resources. In the upstream delivery model, data is typically received as a structured, bulk upload – comprehensive sales data and the associated deemed savings values for each measure – versus an individual form with singular project which then needs to be processed line by line.

It has been argued that with the upstream approach, simplifying data requirements as compared to a traditional downstream application, PAs lose some granularity in the data and are further removed from gaining insight into the end customer; however, if managed properly, the data can maintain a reasonable level of granularity if specific data points, such as customer and install address specifics, building type, install type (e.g. new construction or replacement), and purchasing entity (e.g. contractor versus end customer), are collected at the point of sale.

It can be a delicate balance to design an upstream delivery model that captures all of the critical customer information that is desired for internal tracking, analysis, and program design. For example, if specific segment data, such as building type – a field often tied back to technical reference manual calculations for hours of use and other aspects – is desired, then one has to be cognizant that this critical field can be designed into the program requirements for channel partners to manage. Another critical point of upstream program design and workflow mapping is the potential conflict with existing downstream programs, such as a turnkey, vendor-based program or a new construction program. Careful thought has to be given to how a point-of-sale incentive can impact other program offerings. It takes meticulous planning to address these types of conflicts and ensure there are no double booking of savings and/or no double payment of incentives on the same piece of equipment. This is another area where workflow mapping is critical, as most of these conflicts can be identified and resolutions can be created prior to implementing an upstream program.

Directly associated with upstream program design and implementation, the streamlining of workflows allows the organization to reflect on the workflow of other programs, determine what customers really value, and which organizational or process bottlenecks should be addressed, setting the stage for greater growth and savings capture. (Rigby 2015)

Articulating Value Proposition to Stakeholders

One of the most difficult aspects of an upstream program design and delivery is maintaining a consistent message to internal and external stakeholders. At a utility, there may be different opinions regarding the merit of upstream models with the thought of upstream mechanisms devaluing downstream programs (that may have been running for several years), losing touch with the end customer and directing incentive monies to channel partners who could benefit financially from the model. Externally, end customers and contractors can lose sight of the specifics of the upstream incentives; channel partners may need education to understand the benefits of the delivery model and how to adapt their business models.

The upstream delivery model is not meant to replace existing delivery models, but rather provide a complementary option for customers to participate in energy efficiency programs. By collecting data at the point of sale, upstream provides Program Administrators the opportunity to capture the scale of the day-to-day marketplace and gather insight into customer activity that may otherwise not be captured in the bounds of traditional program delivery methods. If designed properly, the volume of data captured via an upstream approach can provide Program Administrators insight into customers that may allow for further program innovation and refinement.

One of the key goals of implementing an upstream program is to transform the marketplace; however, this transformation takes time and ultimately occurs when manufacturers are building and selling a higher volume of high-efficiency products to their distribution channel. The distribution channel is in turn stocking and selling more high-efficiency equipment to contractors and end users. To drive market transformation, the incentive is directed to the point(s) of influence that can impact product availability and buying decisions. The end customer ultimately benefits from the high-efficiency product being purchased and installed at a lower total cost to them.

A critical piece of the upstream program implementation is to work with the various points in the channel to ensure an understanding of how the economics of the program can benefit their business and how important it is for them to carry that value forward, articulating the program benefits to the end customer. By using the incentive monies as a tool to sell high efficiency projects more effectively, the channel partner may indeed benefit financially by improving their ability to capture market share in a given product area.

To demonstrate the value and impact of an upstream delivery model, the following example illustrates how applying an upstream incentive can affect a customer's buying decision and how the related channel partners can benefit.

A manufacturer sells a piece of standard efficiency equipment to a distributor at a cost of \$350/unit. The high-efficiency option is over double the cost, at \$800/unit.

Table 1: Price Impacts of High-Efficiency vs. Standard Efficiency Products on Manufacturers

	High-Efficiency Option	Standard Efficiency Option
Manufacturer Cost	\$550	\$200
Price to Distribution	\$800	\$350
Manufacturer Gross Margin	\$250	\$150

It is clear to see that high efficiency option is a better product for the manufacturer to sell from a profit standpoint; \$100 greater than the standard efficiency version. The distributor then stacks on their mark-up and prices to the equipment to move to a contractor or end user.

Table 2: Price Impacts of High-Efficiency vs. Standard Efficiency Products on Distributors

	High-Efficiency Option	Standard Efficiency Option
Distributor Cost	\$800	\$350
Price to Market	\$900	\$400
Distributor Gross Margin	\$100	\$50

When buying the high-efficiency unit, the distributor feels the effect on their cash flow, paying over 100% higher cost for this option. This financial pinch point alone may steer them to buy the standard efficiency option, where they can buy two units of standard efficiency versus one of a high efficiency for roughly the same cash outlay. On a positive note, however, the profit from a high efficiency unit is 100% greater than the standard unit. By selling one high efficiency unit, the profit margin is the same as selling two standard units.

As the equipment is presented to a contractor or end user, the cost issue gets compounded. The impact on the contractor's cash flow and profit and the cost impact on the end user can be seen in the table below.

Table 3: Financial Impact on Contractors and End Users *without* Upstream Incentive

	High-Efficiency Option	Standard Efficiency Option
Distributor Cost	\$800	\$350
Price to Contractor	\$900	\$400
Contractor Price to End User	\$1,080	\$480
Contractor Gross Margin	\$180	\$80

As illustrated, the cash flow impact to the distributor and contractor leans heavily in the favor of the standard efficiency option, and the first-cost comparison leads the end customer to lean heavily on the standard efficiency option. This is not a positive scenario for energy efficiency. However, when an upstream incentive is applied at the distributor level, the impact on the high efficiency economics can be significant. In this example, we assume an incentive covering 50% of the product cost at the point of sale.

Table 4: Financial Impact on Contractors and End Users *with* Upstream Incentive

	High-Efficiency Option	Standard Efficiency Option
Price to Market	\$900	\$400
Incentive Applied (50%)	(\$450)	\$0
Upstream Price to Market	\$450	\$400

When the incentive is applied, the distributor can more easily present the high efficiency option to their customer. In this example, we have moved the delta between the product cost of a high-efficiency option and standard efficiency option from a \$500 difference to \$50.

How might this same offering look to a contractor and end customer now?

Table 5: Improvement of Cash Flow Due to Upstream Incentive

	High-Efficiency Option	Standard Efficiency Option
Price to Contractor	\$450	\$400
Contractor Price to End User	\$630	\$480
Contractor Gross Margin	\$180	\$80

With the upstream incentive applied, the distributor and contractor cash flow improves, manufacturers, distributors, and contractors margins stay intact, and the end customer is able to immediately access the high-efficiency option at a cost that is nearly 50% less than without the upstream incentive. The economic impact of the incentive, buying the first-cost of equipment down, has a positive influence on the decision making that occurs in the manufacturing, distribution, and installation of high-efficiency equipment. This is a key message that needs to be communicated, frequently and consistently, throughout the stakeholders of an upstream program.

Relevance and Impact

The first C&I upstream program in Massachusetts was launched in late 2011, targeting the replacement lamp market. Since then, upstream programs have grown and matured into mainstream statewide offerings, providing significant savings along the way. Over 25% of the C&I program savings in Massachusetts are expected to come from upstream programs during the 2016-2018 plan.

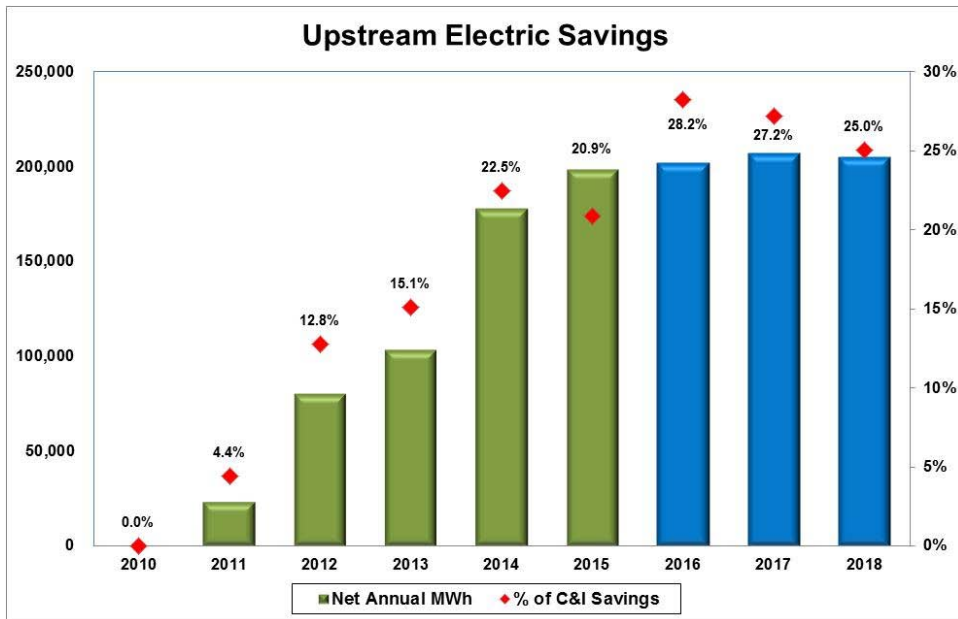


Figure 1. Impact of Upstream Programs on Massachusetts C&I Goals. Source: MA file2016-2018 plan. <http://www.masssavedata.com/Public/PerformanceDetails>

Strategic Approach

The early upstream programs were more transactional in nature, focusing on capturing point of sale and install data, and then processing rebate checks. This approach limited the scope and total potential of the savings opportunity. In order to capture the total available opportunity, upstream programs are best viewed in the context of a channel strategy. This includes conducting a value/supply chain mapping for each market to establish the different points of influence (market players) and degree of influence of each actor.

Upstream efforts are an important part of the Massachusetts Program Administrators' channel strategy. The Massachusetts PAs have developed close relationships with the leading manufacturers and their distributors. A key component of this strategy is to have informal or formal agreements with the manufacturers to support and promote upstream programs. This enables program administrators to collect sales and incremental cost data, both of which are critical for a meaningful program design. Additionally, strong relationships with distributors provide local market intelligence and data on customer preferences and technology trends. Program Administrators can then develop savings and budget estimates using these data points and trends.

Inventory Impact (Beyond Transaction Capture)

Perhaps the best indicator of upstream program success is when the program starts changing inventory management practices at distributors and retailers. In many markets, what is stocked is what gets installed. This is especially true in emergency-replacement scenarios, such as water heaters, but also true for lighting sales at a distributor counter.

A successful example of impacting market behavior was a promotion within the Massachusetts upstream program in which incentives were provided for LED fixtures that had

previously been offered only in a downstream application. Due to the expected impact of the upstream incentive, participating distributors made a significant investment to switch inventory from Linear Fluorescent technology to LED technology (Figure 2).

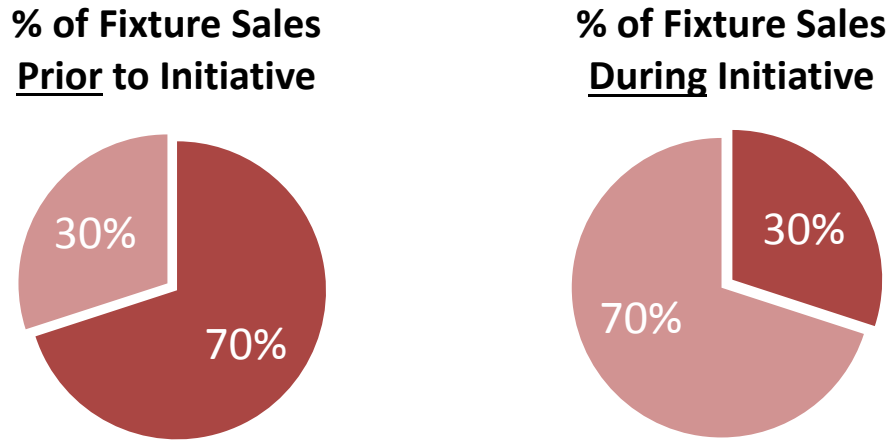


Figure 2. Distributor Inventory Impact due to LED Fixture promotion in 2015. Source: Eversource 2015

More Products and More Markets

Enhancement opportunities include adding new product types to the existing programs, tuning incentive levels to meet market conditions, improving distributor outreach and communication, and strengthening relationships with the manufacturers engaged in the program.

Care should be taken in selecting products that meet pre-specified criteria for an upstream program (Sondhi, Strong, and Arnold 2014). It is very important that the equipment lends itself to this approach and there is alignment with the appropriate sales channel. For example, a technology may have a significant energy savings potential and may fit the replacement-on-failure scenario, but if key market actors, such as manufacturers and distributors, are not aligned to support the upstream model, this approach will not be successful.

In addition to LED lamps and fixtures, the Massachusetts Program Administrators have expanded upstream offerings to C&I HVAC and water heating equipment. Program Administrators are reviewing space heating equipment as a potential future addition. The equipment types under review include high-efficiency boilers, furnaces, and pumps.

Geographic Footprint Expansion

There is also opportunity to leverage individual state efforts to create regional programs. Creating geographical alignment can be achieved by Program Administrators or facilitated by a third party organization. This effort can bring manufacturers and distributors together to support multi-state marketing outreach. By leveraging geographic scale, more contractors and consumers should become aware of the program(s). This will create an end-user “pull” in the marketplace. Another potential benefit would be more closely aligning program designs and incentives at a regional level, creating a truly consistent message across the customers within a given multi-state

geography. This may also help with any spillover issues that can arise due to the attractiveness of upstream incentives at the state borders.

Eversource has taken this approach in scaling its upstream programs in Massachusetts and Connecticut. Other examples include National Grid expanding its program in Massachusetts to Rhode Island.

Conclusion

The upstream approach has already proven to be a game-changer for some utilities and program administrators in achieving aggressive energy savings goals. It also has the potential to change market behavior at an accelerated rate by overcoming barriers associated with traditional delivery models. Additionally, the upstream approach can be a win-win proposition for all stakeholders involved.

The upstream delivery model does not replace all traditional incentive delivery methods, however. It is an additional tool for Program Administrators to complement existing programs and requires careful planning and execution to avoid channel conflict and overlap with existing downstream offerings. A thoughtful program design can achieve scale, streamline internal workflows, and deliver a consistent message to stakeholders. This allows the upstream model to be a significant contributor to the overall portfolio while improving the end customer's experience with energy efficiency programs.

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