How Wisconsin's Focus on Energy Program Used the Power of Promotions to Accelerate the Adoption and Energy Savings of Commercial Lighting Products—and Obtain Manufacturer Sales Data to Help Document Savings and Attribution

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ABSTRACT

The use of promotional tactics to encourage the purchase and installation of commercial lighting technologies has proven a successful strategy for Wisconsin's Focus on Energy Program. In 2008 and 2009, Focus on Energy implemented a comprehensive commercial lighting promotion designed to increase the number of installed high-bay fluorescent fixtures, occupancy sensors, and high-performance T8 lamps and ballasts (replacing T12 lamps and ballasts). This initiative saw a significant increase in claimed savings, as well as an increase of between 75 and 149 percent in the number of sensors, lamps, and fixtures rewarded.

Focus on Energy worked closely with participating manufacturers and received actual sales data for high-bay fluorescent fixtures in Wisconsin and surrounding states. Preliminary analysis of this data shows that unit sales in Wisconsin are significantly higher than surrounding states, suggesting that the Focus on Energy Program is having a positive effect on this market.

This presentation summarizes the planning, implementation, and marketing strategies employed by Focus for this promotion, as well as the methods by which Focus was able to obtain the unit sales data of high-bay fluorescent fixtures from participating manufacturers and an analysis of the data.

Introduction

Focus on Energy is Wisconsin's Statewide Energy Efficiency and Renewable Energy Program, created in 1999 with the goal of increasing Wisconsin's energy independence by helping residents and businesses implement efficiency and renewable energy projects that otherwise would not occur. Focus serves both residential customers and businesses (commercial, industrial, agricultural, schools and government facilities). Focus delivers energy-efficiency programs and services directly to end users as well as through market channels (manufacturers, distributors, and contractors). Since the program's inception, more than 56,000 businesses and 1 million residents have participated, resulting in energy savings of 1,958,770,550 kilowatt-hours (kWh) of electricity and 97,260,374 therms of natural gas.

The following pages provide an overview of how innovative promotions that engaged the market and helped accelerate the adoption of commercial lighting products in Wisconsin helped Focus on Energy Business Programs to achieve aggressive energy savings goals. In addition, this paper describes how Focus worked with participating manufacturers to obtain high-bay fluorescent fixture sales data that helps validate and potentially increase attribution.

Background

Focus on Energy, which usually operates on a 12-month program year, operated on an 18-month program period from July 2007 through December 2008. Focus on Energy Business Programs was charged with aggressive savings goals for this period. In addition, the program needed to significantly ramp up efforts in preparation for savings goals that were expected to be even more aggressive for the next program year starting January 2009. However, in March 2008, midway through the 18-month program period, Focus on Energy Business Programs estimated net energy savings were approximately 20% below program-to-date targets.

This projected shortage of claimed energy savings made it clear to Focus staff that the program needed to make adjustments. Strategy meetings were held to discuss possible program design changes that would enable Focus to meet the aggressive savings goals.

Through these meetings, Focus Business Programs staff identified opportunities to generate additional savings and, more importantly, strategies to ensure that those savings would be captured within the next nine months. Staff recognized that it was in the program's best interest to allocate additional program resources to promoting technologies that had significant energy savings potential and would have broad market appeal (i.e., the potential to impact commercial, industrial, government, and agricultural facilities).

Lighting quickly became one of the best choices. While some technologies have very specific applications, lighting has broad market appeal and is found in all commercial and industrial facilities. According to a November 2006 ENERGY STAR[®] building manual, lighting accounts for close to 35% of the electricity consumed in commercial facilities.

Focus had already established a commercial lighting program that was effectively engaging market providers (manufacturers, distributors, and contractors) and end users, and delivering cost-effective savings for the program. Focus staff felt that some additional promotional efforts focused on a few key lighting technologies would boost the program, help overcome the projected savings shortage, and further accelerate the market adoption of efficient lighting technologies. Two technologies that stood out were high-performance T8 (HPT8) lighting systems that replace T12 lamps, and high-bay fluorescent light fixtures that replace 250 to 400-watt high-intensity discharge (HID) fixtures. These two technologies offered sizeable savings and significant market potential for additional installations in Wisconsin.

Conversations with the representatives of various lamp manufacturers indicated that T12 lamps still accounted for approximately 25% to 30% of total lamp sales in Wisconsin. These statements seemed to confirm Focus staff opinions that T12 lamp installations were still prevalent in Wisconsin. Along with T12 lamps, Focus staff also noted the popularity and widespread use of HID fixtures in warehouses, factories, school gymnasiums, and other non-residential facilities with elevated ceilings. HID fixture installations were prevalent throughout the late 80s and 90s¹ and the market potential to replace those fixtures with more efficient high-bay florescent fixtures was (and still is) significant.

HPT8 lighting and high-bay fluorescent lighting are technologies with assigned ("deemed") savings values. Figure 1 shows the Focus-deemed savings amounts for both HPT8s and high-bays in agricultural, commercial, industrial, and school and government facilities.

¹ Liesel Whitney-Schulte, personal communication, 2/23/10

	Ag Facilities		Commercial Facilities		Industrial Facilities		Schools and Government Facilities	
Technology	gy kW kWh		kW	kWh	kW	kWh	kW	kWh
HPT8 1L replacing T12	0.011	81	0.013	64	0.013	81	0.011	56
HPT8 2L replacing T12	0.017	119	0.019	94	0.019	120	0.016	82
HPT8 3L replacing T12	0.030	213	0.035	168	0.035	215	0.029	146
HPT8 4L replacing T12	0.035	247	0.040	196	0.040	249	0.034	170
T8 6-lamp or T5HO 4-lamp replacing 400–999W HID	0.1648	1157	0.1886	919	0.1898	1169	0.1586	798
T8 8-lamp or T5HO 6-lamp replacing 400–999W HID	0.0693	486	0.793	386	0.798	491	0.666	335

Figure 1. Focus-Deemed Savings for Lighting Technologies

Promotion Design

Having an accepted product with great market potential and a generous incentive are all key components to a successful market-based promotion. HPT8 and high-bay fluorescent lighting met the first two criteria, so staff developed a new incentive structure for these products by adding a limited-term bonus on top of the current Focus on Energy incentives. Staff reasoned that a limited-term bonus would motivate market providers to actively push this initiative, and end users to proceed with implementing lighting upgrades at their facilities. Figure 2 lists the standard and bonus incentive amounts for each of the technologies.

Figure 2. Incentive Amounts

Technolog	Standard Incentive			Promotion Incentive			TRC B/C	
HPT8 1I	replacing	\$4.00	per	fixture	\$6.00	per	fixture	2.1
T12		installed			installed			
HPT8 2I	replacing	\$6.00	per	fixture	\$10.00	per	fixture	2.6
T12		installed			installed			
HPT8 3I	L replacing	\$8.00	per	fixture	\$14.00	per	fixture	4.2
T12		installed	-		installed	_		
HPT8 4I	replacing	\$10.00	per	fixture	\$18.00	per	fixture	4.0
T12		installed			installed			
T8 6-lamp	or T5HO 4-	\$60.00	per	fixture	\$90.00	per	fixture	5.9
lamp repl	lacing 400–	installed			installed			
999W HID)							
T8 8-lamp	or T5HO 6-	\$40.00	per	fixture	\$60.00	per	fixture	2.2
lamp repl	lacing 400–	installed			installed			
999W HID)							

Next, Focus staff created a comprehensive outreach/communications strategy to promote the replacement of these T12 lamps and HID fixtures. The limited-term bonus promotion was scheduled to launch on July 1, 2008 and run through December 15, 2008. Marketing materials were created that promoted a "T12 bounty" with Focus offering a \$2.00 bonus "reward" for the

removal and replacement of each T12 lamp with a HPT8 lamp and ballast (see Figure 3). A flyer for high-bay fluorescent fixtures announced a bonus incentive of \$20.00 to \$30.00 per HID fixture removed and replaced with a fluorescent high-bay (see Figure 4). Each marketing piece highlighted promotion dates, the benefits of upgrading to more efficient technologies, and the bonus incentive amount.

To create a sense of urgency in the marketplace, these materials emphasized the limited duration of this initiative by stressing that in order to receive bonus funding, projects must be completed by December 15, 2008. In addition, the "T12 bounty" marketing materials indicated that funds were limited and would be distributed on a first-come, first-served basis. Focus required end users and market providers to call in and register their project to reserve their bonus funding and to receive a reservation number. This registration and reservation requirement served two purposes. First, it gave program staff insight into the number and size of the projects, and secondly, it offered Focus staff the opportunity to inform/remind end users and market providers of the Focus program.



Promotion Launch

Focus staff used a push/pull strategy for this promotion. The program's energy advisors were responsible for the "pull" component. Energy advisors work directly with commercial, industrial, agricultural, schools and government facilities to help these facilities identify and implement energy savings initiatives. For this promotion, energy advisors made direct contact with those facilities that employed T12 and HID lighting systems.

Focus on Energy Market Channels staff were primarily responsible for the "push" component of this promotion strategy. Focus Channels staff work directly with market providers—manufacturers, contractors, and distributors—in an effort to make these stakeholders aware of the Focus on Energy educational and financial incentive programs and to encourage these market providers to utilize the Focus incentives to sell more energy-efficient equipment and services. For the launch of this promotion, Focus Channels staff implemented a comprehensive outreach initiative that included direct mail, an email blast, a phone blitz, and in-person sales type calls. (See Figure 5.)

Outreach Tactic	Description	Start Date				
Direct contact with end-	Focus on Energy advisors make direct contact with	July 1				
user facilities	end-use facilities that have T12 and HID lighting					
	systems					
Direct mail campaign to	Market Channels staff send out an announcement	July 1				
market providers	letter, flyer, and incentive form to 450 lighting					
	market providers					
Email blast to market	Market Channels staff send out an email	July 1				
providers	announcement containing the promotion flyer to	-				
	approximately 200 active lighting market providers					
Market provider phone blitz	Market Channels staff call approximately 150 active	July 1				
	market providers to make them aware of this	through				
	initiative and direct them to the Focus website for	July 3				
	program materials	-				
In-person sales type calls	Market Channels field staff make multiple in-person	July 1				
	sales type calls to approximately 400 lighting market	through				
	providers	Dec. 15				

Figure 5. Prom	otion Launch	Schedule
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Within a few weeks of announcing this initiative, Focus saw a significant increase in program activity. This surge in activity remained strong for the duration of the promotion and especially escalated in late fall as end users and market providers scrambled to complete projects by the promotion expiration date. Throughout the promotion, Focus staff received numerous comments from market providers stating that this promotion had definitely helped their sales staff close sales on small and large projects. This promotion resulted in Focus providing incentives on 228,882 HTP8 lamps and 102,682 high bay fixtures and played a significant role in ensuring that Focus met its energy savings goals.

2009 Lighting Promotion Efforts

During the first quarter of 2009, the economy continued to be the big story as the country struggled through a financial crisis caused in part by the collapse of the credit markets. This financial instability hurt consumer and investor confidence and had a paralyzing effect on the local and world economies. Focus staff were concerned that the state of the economy was having a negative impact on meeting 2009 energy savings goals. Due to the success of the 2008 lighting promotion, Focus staff decided to put together a wide portfolio of bonus-type promotions in 2009 to help mitigate the poor economic conditions and ensure that program goals were met. These promotional plans included a lighting campaign similar to 2008, with the following modifications:

- The start date of the promotion was moved up to April and slated to run through September. This change was important because it better allowed schools to take advantage of the program and implement projects during the summer months when students were on summer break. Also, ending the promotion in September gave the administrative team a larger window of time to process the large volume of incentive applications.
- The 2009 promotion included occupancy sensors, and Focus offered a \$10 bonus in addition to the standard \$30 reward on high-bay occupancy controls.
- Focus required that all projects (not just T12 conversions) be registered and receive a reservation code.

The promotion launched on April 6, 2009, and was similar to the 2008 promotion in that Market Channels staff implemented a direct mail campaign and emailed and phoned select manufacturers, contractors, and distributors. But whereas in 2008 it took a couple of weeks for program activity to ramp up as Focus staff announced and distributed promotion materials to the market actors, in 2009, Focus staff saw a significant increase in program activity within hours of announcing the promotion. By the end of the first day of the promotion launch, Focus staff had registered 13 projects and fielded approximately 75 calls. These 75 calls amount to a 162 percent increase over the previous day's call volume. The immediate traction that the 2009 promotion achieved was due to a number of factors:

- Program staff was more efficient and effective in announcing and distributing promotion information. The 2008 lighting promotion opened some doors for the Focus Market Channels staff and gave staff much better insight into who the key market actors were. All staff had to do was send out a targeted email blast and make a handful of phone calls to key manufacturers and distributors, and word of this promotion spread throughout Wisconsin.
- The economy played a huge role. The difficult situations in the financial and credit markets posed significant challenges. At the time, lighting distributors and contractors in Wisconsin were consistently commenting on the lack of projects and the noticeable reduction in requests for quotes. The Focus announcement of bonus incentives acted as a shot in the arm for the lighting market in Wisconsin.

By the end of September, Focus staff had provided reservation codes for more than 2,540 projects amounting to 271,490 HPT8 lamps, 22,803 occupancy sensors, and 63,736 high-bay fluorescent fixtures.

Manufacturer Sales Data

An important consideration for utilities and energy-efficiency program implementers is to truly understand the impact that their programs are (or are not) having in the marketplace. Focus felt that its lighting promotions were having impactful supply-side effects. To confirm this, Focus formulated a plan to obtain actual unit sales data for Wisconsin and surrounding states. If Focus efforts were having a positive effect on the market, the manufacturer data would show a spike in unit sales corresponding to Focus promotion dates, and unit sales in Wisconsin would be higher than surrounding states where there were no substantial energy-efficiency programs.

Unfortunately, there are no central repositories of manufacturer sales data from which utilities can draw. This sales data needs to be obtained from each manufacturer individually. Since this was a new type of effort for program staff, the initial outreach focused only on highbay fluorescent fixtures. In June 2009, Focus initiated this process by creating a list of the prominent high-bay fluorescent fixture manufacturers that supply product in Wisconsin and the Midwest. Focus staff assembled this list through conversations with area lighting distributors and Focus Market Channels staff. Focus staff reached out to these manufacturers and spoke with them about their participation in the Wisconsin Focus on Energy Program, as well as the type of impact it had on their sales. In most cases, manufacturers claimed that programs like those in Wisconsin have a measureable impact on sales, and, in many cases, these manufacturers will put additional staff resources in geographic areas where there are strong utility incentive programs. Focus staff explained the importance of obtaining unit-level sales data in Wisconsin and comparable states in order to document the true impact of the programs.

Focus staff successfully received monthly sales data from five prominent high-bay lighting manufacturers in the states of Illinois, Michigan, and Wisconsin. Due to the assurances made to manufacturers and the non-disclosure agreements that Focus entered into, Focus cannot divulge the names of the manufacturers and we can only present the data in an aggregate format.

Program Results

Occupancy Sensors and High-Performance T8s

Reward activity across both promotional periods and all three technologies indicate large increases in installations due to the promotions. Figure 6 summarizes program activity for occupancy sensors, HPT8 lamps replacing T12 lamps, and high-bay fixtures (discussed below). For each technology, we computed a baseline level of installations based on pre-promotion reward activity. This can be thought of as the number of fixtures we expect would have been rewarded in the absence of the special promotion. Comparing this baseline to the actual number of fixtures rewarded results in the number of fixtures that can be wholly attributable to the special promotion. This approach, detailed in Figure 6, shows that the occupancy sensor promotion and the T8 promotion were quite successful, with each resulting in installations of nearly 150% more than we expect would have occurred without the special promotion.

Two possible objections to this analysis are the choice of baseline and the possibility that these promotions merely accelerated installations that would have happened anyway. While the choice of a baseline may be open to some debate², the baselines chosen for occupancy sensors and T8 lamps seem reasonable³. For both technologies, there is some variation from month to month during the pre-promotion periods, and during the post-promotion months of October through December 2009, reward activity returns to levels comparable to (slightly above) the pre-promotion period. (See Figures 7 and 8.) We will continue to monitor these trends in 2010.

		T8 Lamps	
	Occupancy	Replacing T12	High-Bay Fluorescent
Technology	Sensors	Lamps	Fixtures
		Jan.–Sept. 2008 &	
a) Baseline date range	Jan.–March 2009	JanMarch 2009	JanSept. 2009
b) Baseline period monthly			
average	1,555.8	16,722.9	7455.6
		July-Dec. 2008 &	Oct.–Dec. 2008* &
c) Promotional period	April-Sept. 2009	April–Sept. 2009	April–Sept. 2009
(Number of months)	(6 months)	(12 months total)	(9 months total)
d) Expected # of rewards			
during promotional period if			
no promotion (b*c)	9,335	200,674	67,100
			140,976 total
e) Actual # of rewards during			-31,671 accelerated
promotional period	22,803	500,372	=117,775
f) # of rewards due to the			
program (e–d)	13,468	299,697	50,675
g) % increase over baseline			
due to program (f/d)	144%	149%	75%

Figure	6. Occu	ipancy Sen	sor. HPT8.	and High-	Bav Promotion	Program	Results

*The promotion started in July, but for the purposes of measuring impact, we are using October.

 $^{^{2}}$ For example, one could argue that due to the economy, activity in 2009 would have been even lower than activity in 2008 without the special promotion.

³ For HPT8s, we used the monthly average of both the 2008 and 2009 pre-promotion periods as the baseline for both promotional periods. This seemed more reasonable than using only the three-month period between promotions as the baseline for 2009.





High-Bay Fluorescent Fixtures

Through the diligence of program staff, we were able to analyze both manufacturer data and reward activity for high-bay fluorescent fixtures. Figure 9 shows manufacturer sales activity for January 2008 through December 2009. Sales in Wisconsin clearly jump during the high-bay promotional periods and then fall back down following the promotion. Sales in Michigan stayed somewhat flat with a slight downward trend across the two-year period, while sales in Illinois follow the Wisconsin trend. Notably, Commonwealth Edison in Illinois implemented a program from June through November in both 2008 and 2009.⁴

⁴ Erinn Monroe, email message to author, February 2, 2010.



These data clearly corroborate manufacturer feedback on the impact of the promotion. They also show that sales of high-bay fixtures following the promotions drop down to levels below pre-program sales, raising the concern that some of the additional sales during the promotion are simply accelerated sales.

Figure 10 shows reward activity for high-bay fluorescent fixtures over the two-year period covering the promotions. Due to lags in the time when sales are made compared to when a fixture is installed, the patterns of peaks and valleys are similar to the manufacturer data, but the timing is slightly different. The reward activity data show fairly flat activity through September 2008 and then a large spike in activity in the last quarter of the year. Activity drops off dramatically in the first two quarters of 2009 and then spikes again in the third quarter. The drop in activity that we see in both the manufacturer data and the reward activity indicates that some of the spikes in activity are merely accelerated installations.

However, not all of these rewards in the spikes are due to accelerated installations; a sizeable portion is due to the promotional bonus. Figure 11 illustrates how we arrive at this conclusion.

First, we selected a conservative baseline: average monthly rewards from January through September 2009. This baseline period includes part of the promotional period (note boxed month numbers on x-axis), but is before activity started to ramp up. The baseline represents how much monthly activity (7,756 fixtures per month) we expected to have in the absence of the promotional program.⁵

Next, we compared actual reward activity for each month to this baseline. Starting with October 2009, reward activity up to the baseline (7,756 fixtures) is shaded black. In February, March, October, November, and December, the empty space between the black bars and the horizontal baseline represents the fixtures that are missing from those months. That is, the fixtures we would have expected to reward during those months if activity was on par with the

⁵ Again, the choice of baseline can be debated. The declining manufacturer activity in Michigan (a state without programs) and the economy suggest that the real baseline could be lower. On the other hand, the fixtures rewarded in September 2009 also probably include some accelerated fixtures that would have been sold in early 2010. The selected baseline seems a reasonable compromise.

baseline. We assume that those fixtures were instead rewarded during the promotional periods, making them accelerated fixtures.

Finally, we totaled the number of "missing" rewards (31,671) and removed these from the rewards issued during the promotional periods. The grey hashed sections of the bar during the promotional periods represent these accelerated fixtures. The remaining solid gray bars represent the 50,675 high-bay fluorescent fixtures over and above regular program activity that can be attributed to the promotion.



Figure 10. High-Bay Fluorescent Monthly Reward Activity





Lessons Learned

As a result of these promotions, Focus has learned a number of lessons that can be applied to future promotions and that other utilities and energy-efficiency programs can use if considering similar programs.

- Creating a sense of urgency is key. All of the Focus marketing materials highlighted the limited duration of this campaign by emphasizing the first-come, first-served, while-funding-lasts nature of the bonus incentives and the firm expiration dates of the promotion. This sense of urgency worked as designed to motivate market providers and end users to implement lighting projects within the promotion time frames.
- It is important to communicate the parameters of a promotion to all internal stakeholders and share with them expected results. The lighting promotions caused a significant increase in program activity that resulted in increased claimed energy savings for the Focus program and a large increase in the number of incentive application forms that the Focus administrative team had to process. When designing a promotion to generate a large volume of additional energy savings, internal administrative staff that process incentive application forms need to make preparations to handle the additional incentive application volume.
- The start date, finish dates, and the length of the promotion need to be carefully considered. In 2008, Focus launched the promotion on July 1. This start date left a very small window of opportunity for schools to implement lighting projects when the schools were vacant due to summer break. In 2009, the Focus lighting promotion was moved up to April, in part to increase school facilities participation. The duration of a promotion is also an important consideration. If the promotion timeframe is too short, it will not allow enough time for projects to be completed, hampering participation and leading to complaints.
- These lighting promotions generated some extremely large projects. One of the safeguards built into the Focus program is that any project proposal with an incentive amount that exceeds \$25,000 is required to be sent to Focus for formal review and pre-approval. In 2008, Focus realized a 600% increase in the number of large projects requiring formal review and pre-approval. Similar results were seen in 2009.
- The process of contacting individual manufacturers and requesting and ultimately receiving unit sales data in a useable format is long and laborious. It takes a great deal of salesmanship and patience as manufacturers are not used to sharing this type of information. Focus staff has found that some manufacturers need to be presented with a strong value proposition and sold on the idea of why they should provide this data, how it will be used, and given reassurances that the data will be kept confidential and only used for evaluation purposes.
- Carefully analyzing both monthly reward activity and manufacturer data (when available) is important to understanding the program impact on the market and on claimed savings. Careful analysis can also assuage fears that promotions are merely accelerating activity. However, program managers do need to continue to monitor activity levels even after a promotion is completed to ensure the promotion has had an effect over and above the baseline.