

# **Experiences and Lessons from the Wisconsin Industrial Focus On Energy Program: Transformation in Industrial Energy Efficiency Markets**

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## **ABSTRACT**

Wisconsin established a pilot program leading into a statewide public benefits program for the development, testing, and delivery of energy efficiency market transformation programs. Under sponsorship of the Department of Administration, a multi-contractor team was selected to design and deliver program service to the large commercial and industrial sectors. Specific programs were established for Wisconsin industries in 23 counties, largely comprised of the Wisconsin Public Service Corporation's electric service territory. The pilot work focused on preparing the market for transformation in consideration of the relatively short implementation period. The primary objective was to develop and test the beginning frameworks of a market infrastructure that delivers energy efficiency on an ongoing and sustainable basis through private, non-utility organizations.

This paper discusses the experiences of the first two years of the industrial program operations, from planning through delivery through upgrades and modifications to the lessons learned in starting and continuing industrial sector market transformation activities. The Industrial program was designed to overcome barriers to the adoption of energy-efficient projects and practices in industries. The program provided information, support and services to industries so that they could more readily advance energy- and environmentally-efficient projects within their facilities and practices. Market barriers, from those initially estimated to those discovered through the program operations, are presented along with the development and modification of specific strategies to overcome the barriers. The paper presents a summary of what worked, and what did not work in relation to the program and the industrial end-users.

## **Introduction**

Wisconsin established a pilot program leading into a statewide public benefits program for the development, testing, and delivery of energy efficiency market transformation programs. Under sponsorship of the Department of Administration, a multi-contractor team was selected to design and deliver program service to the large commercial and industrial sectors. Specific programs were established for Wisconsin industries in a 23-county area, largely comprised of the Wisconsin Public Service Corporation's electric service territory.

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barriers, from those initially estimated to those discovered through the program operations, are presented along with the development and modification of specific strategies to overcome the barriers.

## **Background**

In late 1998, the Wisconsin Department of Administration issued a Request for Proposal (RFP) for the Pilot of a Market Transformation Program for the Commercial and Industrial sectors. The RFP specified detailed performance objectives and goals to be pursued over a two-year period. However, due to several external factors, the contracts were not completed and the work did not start until April of 1999. Between April and June detailed program designs and work plans were developed. They were approved in June 1999 and program activities were initiated. Over the summer of 1999, coordination with other organizations, development of marketing, and education and training activities were advanced. However, little progress was possible with the industrial end-users due to the summer slow downs and vacations. As such, the in-the-field activities did not fully begin until September 1999. A reduction from a 2-year period of performance to 1.5 years resulted. Given the short time period, the pilot work focused on *preparing* the market for transformation. The primary objective was to develop and test the beginning frameworks of a market infrastructure that delivers energy efficiency on an ongoing and sustainable basis through private, non-utility organizations.

## **Overview of the Industrial Program**

The Industrial Program is administered by Delta Technologies Group and run by Science Applications International Corporation (SAIC). The Industrial Program was designed around the EPA's Climate Wise® (now Energy Star for Industries) program to industrial firms in the pilot area. The program marketing includes a variety of traditional approaches, supplemented by intensive one-on-one marketing. The centerpiece of the recruiting effort is a signed Memorandum of Understanding (MOU) whereby the participant agrees to a specific set of actions through an Action Plan.

The program theory aims to help participants adopt the energy management process whereby the industrial end-user adopts an Action Plan leading to the implementation of energy efficiency improvements. The Wisconsin Focus on Energy approach expands upon this through developing relationships between the industrial Partners, Trade Allies, and other support programs. The program is designed to provide participants with technical assistance for improving those internal processes that will enable them to implement energy efficiency projects as an ongoing activity. The program was also designed to foster relationships between Trade Allies and participants to build a market infrastructure that is able to carry energy efficiency projects forward and result in the marketing of new projects. Further enhancements also include marketing programs, and education and training support. In addition, it is noted that the participation in the program is voluntary and there are no direct monetary incentives for participation; the program design is based on the theme that energy efficiency is a profitable business practice.

## Getting Out of the Gate – “Selling” the Program

Recruiting of industrial partners into the program was one of the primary goals and initial activities. Specifically, a major goal to enroll 40 industrial customers was established as a performance objective.

Beginning in August 1999, full-scale recruiting began. First direct information mailings with bounce-back cards were sent to selected industries in targeted areas. For some areas no follow-up was done to measure the natural response from the bounce-back card approach. This approach resulted in very few leads being generated, having an overall response rate of around 1%. In other areas, a follow-up telephone call was made to the industrial customer and an introductory meeting was arranged. This approach had a much greater response rate; approximately 30% of those receiving the telephone solicitation accepted the introductory meeting.

The initial approach with the prospective industrial participants during the introductory meeting was to present a minimal package of support to test what was needed to move market participation forward. The basics of the Climate Wise® program were presented explaining that it was a means to tap into a broad range of technical examples and to gain recognition for their company. The program was noted to be completely voluntary, and that completion of the Action Plan was the responsibility of the participating industry. The Focus on Energy support provided access to specialty training and education events, and to some special recognition in Wisconsin; however, the early presentations offered very little additional support.

The results of this initial “selling” approach were disappointing. In simple terms, the prospective industrial partners were not motivated to participate because the burden of participation was initially placed on them. They saw little added value in their participation in the program, and largely viewed it as additional work added to an already heavy work load. This approach resulted in only a 1 in 10 participation rate, an aggregated response rate that was not much better than from the bounce-back cards. Furthermore, even those who did sign on to the program, had limited enthusiasm.

## Adding Value to the Program

In response to this poor participation rate, an informal polling of the refusing parties was made to inquire what features could be offered to entice them to participate. It was found that most of the industrial parties were generally aware that energy efficiency was a good practice; however, they either believed that they had already implemented energy efficiency or simply did not have the time or knowledge to pursue special projects in this area. In fact, one response that was given by the refusing industries is that they had already done a rebate program with the utilities. These industries did not perceive that they needed to do any more energy efficiency actions. Furthermore, it was found that energy was considered simply as a cost of doing business: little could be done about it, or it was outweighed by the need to maintain production as the economic driver of the company. It is interesting to note that these results are further confirmed by other studies.<sup>1</sup> The program approaches and support mechanisms were changed in direct response to these findings.

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<sup>1</sup> The Energy Center of Wisconsin and NYSEERDA sponsored a market assessment of the ESCO industry in 1998, entitled *Energy Services Companies, A Market Research Study, April 1999*. This study

First, a special business case study was developed entitled, "*This Could Be Your Best Investment*," to illustrate how energy cost savings flow directly to the bottom-line profit, and that many times returns on investment can exceed 35%. This theme was then accentuated in the initial telephone solicitations and in-person presentations. Second, technical assistance components were added to the program offering that included a screening assessment of energy opportunities in the facility and processes, development of a draft Action Plan for review by the participating industrial partner, and specialty technical advisory support. Finally, it was emphasized that program participation was voluntary and there was no risk; a partner could elect to discontinue participation at anytime. In return for these added values, the industrial partner was asked to commit to a planned schedule of implementation for the energy efficiency upgrades and to continually look for further energy efficiency improvement opportunities.

These changes had a significant effect on the participation in the program. With these value-added services and revised approaches, the acceptance rate rose from 10% to greater than 60%, once a prospective partner reached the in-person presentation.

### **Continuous Enhancements**

The Industrial Program staff continued to use a number of techniques to make contact with potential participants which included telemarketing activities to follow-up on the direct-mail campaigns and setting up appointments for face-to-face meetings with key decision-makers for potential program partners. Program recruiting efforts continued on an ongoing basis through direct calls, breakfast meetings, and one-on-one visits. Direct-mail solicitation was the primary means to initially introduce the Industrial Program to prospective partners. Future mailings were done as needed, and often targeted to specific geographic areas.

Enhancements to the recruiting and reward approaches continued in several different ways in the program operations. For example, a special mail solicitation was sent in December 1999 to invite potential participants to join the program and to receive up to three free registrations for the January 2000 Compressed Air Training sessions. Targets for this direct mailing included 60 pending participants and 32 other "cold contacts" in the Wausau area. Follow-up telephone calls were made in January 2000. Initially, only one Climate Wise® customer took advantage of this offer of free tuition. However, the free tuition offer for further training opportunities was continued, and the number of Climate Wise® Partners taking advantage of this offer greatly increased over the remainder of the Phase I work. In total, representatives from over 20 different partners took advantage of the free tuition for different programs. Also, the Industrial Program sponsored a Mill Tour at the Louisiana-Pacific Mill located in Tomahawk on March 3, 2000 to showcase energy-efficient practices in an industrial plant. The keynote speaker at this event was Mark Suwyn, CEO of Louisiana Pacific. The Louisiana-Pacific Mill Tour received detailed coverage in the local press.

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concluded that the three most critical market barriers facing potential commercial and industrial organizations as ESCO customers were: performance uncertainty with high efficiency technologies; hassle and transaction costs; and high information and search costs. Furthermore, another report (*Industrial Process Efficiency Program Design, A Program Study*, July 1997. Energy Center of Wisconsin) found that "generally, energy-efficiency is not a high priority for most industries. Process improvements are generally driven by other priorities, such as improved productivity, product quality, or environmental compliance. Industrial customers are especially risk-adverse to changes to core processes within their operation because of perceptions that such changes could disrupt or adversely affect production and product output."

## Development of Program Alliances

Wisconsin has a rather long history of supporting both industry and energy-efficiency, thus there are numerous existing organizations and governmental agencies that service the industrial sector. A strategy of the industrial program was to coordinate and develop relations with this existing infrastructure of programs so the Focus on Energy program would be leveraged in the marketplace.

Early in this program development, special efforts were conducted to begin coordination with the many other programs and organizations that all work with Wisconsin industry. Meetings were held with representatives of each program or organization where the Focus on Energy Program was presented and opportunities for cooperation were discussed. A host of specific opportunities were identified and planned, such as cross-referencing programs in each program's outreach activities and placing articles in the newsletters. However, one of the most successful elements of the entire industrial efforts arose rather unexpectedly from these initiatives.

In dealing with these various programs, and simultaneously talking with industrial end-users, it became apparent that while many of the agencies and programs knew of each other's work, the industrial end-user did not realize the full scale of support that was available. In response, we then determined that an appropriate role for the Focus on Energy Program was to facilitate connections between industry and these support programs, and a special seminar was developed for the Pilot program.

In January 2000, the *"Making Sense of Energy and Environmental Programs for Wisconsin Industry"* seminar was held. This training and education forum was presented in collaboration with several organizations that provide support for energy or environmental service to industries in Wisconsin. These allied groups included the Department of Commerce, the Department of Natural Resources, Wisconsin Public Service, Solid and Hazardous Waste Education Center (SHWEC), the Energy Efficient Performance (EEP) Program, and the Wisconsin Manufacturers' Extension Partnership. As an indication of the interest in the topic, over 60 of 85 registered participants attended this early morning session even though a 14-inch snowstorm had fallen that morning.

As a result of the program, SHWEC reported that they received two industrial requests for service from the meeting. Also, a program partner received a plant safety review from the Department of Commerce, a detailed energy audit was completed by the Industrial Assessment Center, and to date there have been four industrial partners participating in the EEP Program. Finally, the Department of Administration obtained additional funding to conduct this "Making Sense" program at four other locations across the state.

## Development of Trade Allies

One of the original program strategies was to involve Trade Allies in promoting the program. The Industrial Program Administrator, working with the Commercial Program Administrator, identified and recruited various suppliers and contractors as Trade Allies to the program. In the fall of 1999, recruiting for Trade Allies was done via a direct-mail campaign. An internet-based Trade Ally database was installed on the Wisconsin Focus on Energy Web site ([www.wifocusonenergy.com](http://www.wifocusonenergy.com)) and was operational on January 31, 2000. To date there are 167 Trade Allies in the database.

However, one of the over-arching impediments to the development of an active Trade Ally involvement was whether the Trade Allies could use the Program to support their development and sales needs, or whether the Program would bring Partners to them as potential customers. It was found that while many Trade Allies could see the benefits of the Focus on Energy Program to support their products and services, they were far too busy to undertake any special sales or development to promote the Program. Also, at the early stages of the Focus on Energy Program, Trade Allies were a bit hesitant to fully subscribe without knowing if there would be any return through increase business opportunities with participating industries. As the Focus on Energy Program continues to expand and grow, more activity is being seen with the Trade Allies due to the very active economy.

One special example is that a successful Trade Ally breakfast was held in May 2000 to describe the role of the Focus on Energy Program in supporting Trade Allies, and to promote their support for the program. More than 75 Trade Allies and partners participated in this event. The Industrial Program Manager provided detailed contact and project information for 12 Partners who were actively seeking Trade Allies to implement efficiency improvements at their facilities. As a result, the Trade Allies proceeded to call industrial partners to inquire about project opportunities. While the exact number of contacts that were made through this information exchange are not known, it is believed that a great number of contacts were made by the Trade Allies because within five days one partner asked to be removed from the list as he was getting too many telephone calls. This breakfast meeting was again conducted in October 2000, where more Partner projects were presented.

## **Education and Training**

In conjunction with the Education and Training program administered by the Energy Center of Wisconsin (ECW), the Industrial Program coordinated several technical and informational training programs including:

- Making Sense of Energy and Environmental Programs
- Compressed Air Fundamentals
- Advanced Compressed Air
- Steam Challenge

Free tuition to many training sessions was offered as an incentive to join the Program for new Partners and as a reward for existing Partners.

A special area of support was to re-focus the Governor's Business Roundtable. This annual event was in its 4<sup>th</sup> year when the Pilot Program was initiated. As part of the Focus on Energy marketing and education initiatives, this ongoing program was used to present the business case for energy efficiency to Wisconsin businesses and industries. In October 1999, the 4<sup>th</sup> Annual Governor's Business Roundtable presented the success stories and the technical details of how several Wisconsin industries benefited from energy efficiency and improvements. The technical nature of the topics lent the program to be presented to plant engineers and operators. In October 2000, the 5<sup>th</sup> Annual Governor's Business Roundtable focused on management decision-making thus affecting energy efficiency and the benefits to the business operations. This focus lent the program to be promoted to industry managers and directors.

## What Has Been Achieved?

All of the major goals for Phase 1 of this pilot program were achieved, including the enrollment of 40 Industrial Partners by March 2000, three months ahead of schedule.

The estimated energy savings identified through the Industrial Program for 71 of the 108 participants signed up through March 2001 are shown in Table 1 below. These estimated energy savings represent the technical potential of annual energy savings that would occur if all recommended energy efficiency measures were installed.

**Table 1. Estimated Industrial Sector Energy Savings**

	Estimated Annual kWh Savings	Estimated Annual therm <sup>2</sup> Savings	Total Program Payback in Years
Industrial Program	26,200,000 kWh	3,330,000 therms	1.4

The corresponding estimated annual environmental benefits attributable to the energy savings identified from the Industrial program through 2000 are shown in Table 2.

**Table 2. Estimated Annual Environmental Benefits<sup>3</sup>**

	Total SO <sub>2</sub> (lbs.)	Total NO <sub>x</sub> (lbs.)	Total CO <sub>2</sub> Eliminated (lbs.)
Industrial Program	594,500	288,000	99,400,000

The Wisconsin Focus on Energy Program for Industry as of March 30, 2001 has 108 industrial Partners. In total, 71 of these Partners have identified at least \$2.7 million in energy cost savings with an estimated capital cost of \$3.9 million for a simple payback period of about 1.4 years. In total, Wisconsin now has 90 Partners in the U.S. EPA's Energy Star Industries program and is fast on its way to becoming the national leader as the state with most industries in the program.

But far beyond the energy and environmental impacts, the most important achievement is that the Program has established a framework for delivering energy efficiency to the industrial sector by supporting, using and transforming market forces.

## Indicators of Market Movement

The ultimate question may be, "Is the program causing any change with industrial Partners and in the market?"

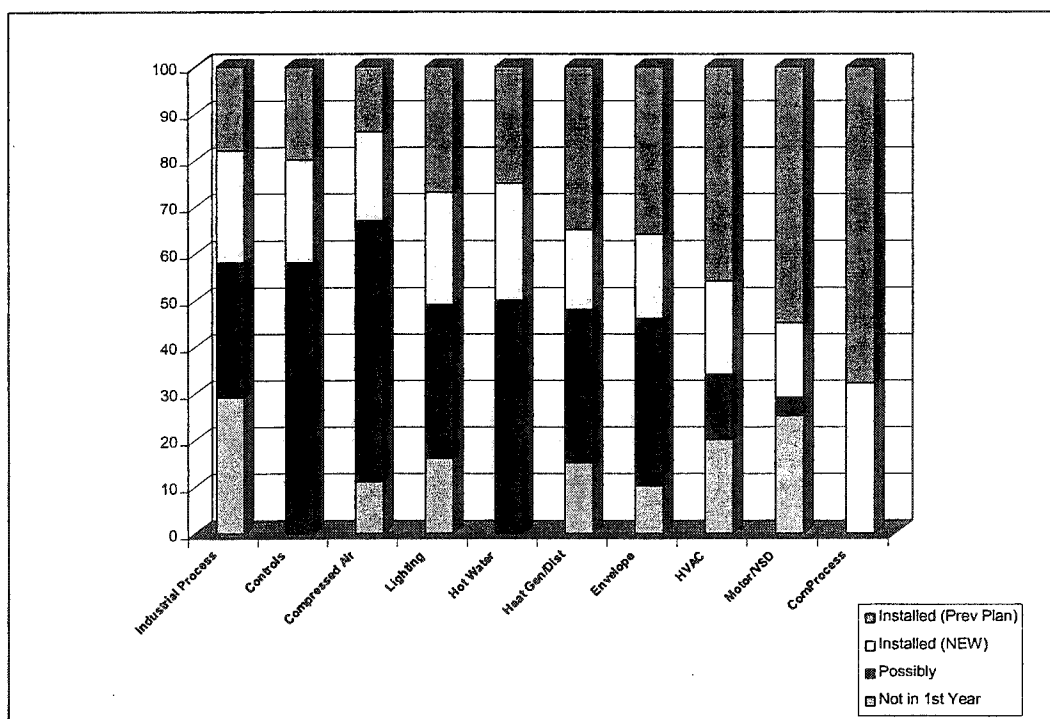
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<sup>2</sup> One "therm" is equal to 100,000 Btu's. This unit of measurement is commonly used for natural gas consumption. However, in this report it also includes savings from other non-electric energy sources such as oil, wood, steam, etc.

<sup>3</sup> Estimates of "greenhouse gas" reductions derived from anticipated kWh and therm savings for the Wisconsin Energy Efficiency Pilot Program (Appendix A of the DOA's RFP for the Focus on Energy Program in 1998). Assumed factors are 483 lbs. (NO<sub>x</sub>), 997 lbs. (SO<sub>2</sub>), 222,600 lbs. (CO<sub>2</sub>) per 100,000 kWh savings; 924 lbs. (NO<sub>x</sub>), 1909 lbs. (SO<sub>2</sub>), 235,136 lbs. (CO<sub>2</sub>) per 20,000 therms savings.

In March 2001, early findings from the independent evaluators begin to give indicators of change in the market and with the partner.<sup>4</sup> The following is a brief summary of key findings:

1. *Industrial business practices are changing.* Over 50% of the industrial partners report that energy management is a regular part of their business practice, up from about 25% who reported this before being involved with the Program.
2. *Businesses are installing new energy-efficient equipment.* Figure 1 shows very high rates of installation and the possibility of further installation.



**Figure 1. Resource Acquisition: Businesses are Installing New Equipment**

3. Industrial energy efficiency measures installed were diverse as seen in Table 3.

<sup>4</sup> "Commercial & Industrial Program Findings to Date," presented March 27 & 28, 2001 at the Focus on Energy Pilot Administrator's Meeting.



**Table 3. Installed Energy Efficiency Measures**

Type of Measure	Installation Percent	Percent of Savings
Compressed Air	23%	17%
Lighting	22%	11%
Industrial Process	13%	50%
Control Systems	11%	1%
Motors/VSDs	10%	21%

4. The Program is affecting industrial customer attitudes.
  - 95% responded that the Program provided the follow-up needed by the organization.
  - 94% said that the Program provided services that are important.
  - 43% responded that the Program support has influenced how their organization considers energy efficiency.
5. Trade Ally satisfaction is related to program involvement. Only 40% of Trade Allies who are simple participants express satisfaction with the Program actions, but this climbs to over 60% of the Trade Allies being satisfied if they participate in training programs and over 70% if they have received business from the Program.

Overall, the Program efforts in Wisconsin have made measurable progress, and is affecting positive change in the adoption of energy-efficient practices and development of the marketplace.