

A Comprehensive Examination of the Market Effects of a Public Benefits-Sponsored Pilot Program: Lessons Learned from Wisconsin's Focus on Energy

*David Sumi, PA Consulting Group, Madison, WI
Ralph Prah, Prah & Associates, Madison, WI*

ABSTRACT

This paper presents a summary of the interim evaluation results for the Wisconsin Focus on Energy Pilot, a two-year effort sponsored by the Wisconsin Department of Administration's (DOA) Division of Energy. We believe this is the *first comprehensive evaluation* of a set of state-sponsored programs by one evaluation team. A key advantage of this more global approach is the ability to provide *overall* findings and recommendations in addition to program-specific results. In particular, the evaluation – and this paper – provides current findings and recommendations for: (1) each of the Focus on Energy pilot programs; and (2) the overall pattern of findings *across* nine individual programs. The evaluation team's recommendations, both program-specific and across the programs, provide a concrete example of evaluation feedback used in a state policy-making arena. In addition, several cross-cutting evaluation activities are summarized, again demonstrating some advantages of a comprehensive evaluation approach. Our recommendations regarding implementation of FOE programs on a statewide basis are discussed at greater length in the *Second Interim Report* which can be accessed electronically at the FOE web site (<http://www.wifocusonenergy.com>). This report provides extensive documentation of evaluation results beyond the high-level market effects results provided in this paper.

Background on the Focus on Energy Pilot

In January 1998 the Wisconsin Public Service Corporation (WPSC) asked the Wisconsin Department of Administration (DOA) if it would, as a two-year experiment, implement the energy efficiency portion of its demand-side management programs. DOA developed a plan that outlined a number of programs and objectives. Requests for proposals were developed for each program and a wide range of potential contractors were invited to submit detailed plans. Together, these programs and the selected contractors have resulted in the Wisconsin Focus on Energy (FOE) pilot effort sponsored by DOA's Division of Energy and Public Benefits.

The purpose of the pilot is to test the delivery of energy efficiency programs by private, non-utility firms and individuals under DOA oversight. The pilot has been funded with \$16.75 million provided by the ratepayers of WPSC. It is being implemented in the 23-county area that comprises WPSC's service territory.

The initial plan and funding for the pilot specified a program termination date of June 30, 2000. However, a new contract between DOA and WPSC now extends the original two-year Focus on Energy (referred to as Focus I) programming period through December 2002 (now referred to as Focus II).

Goals and Program Structure

In cooperation with WPSC and the Public Service Commission of Wisconsin (PSCW), the DOA has identified the main goal of the pilot as the *preparation* of markets for a time when energy efficiency products and services are no longer mandated by state governments. The fundamental challenge of the pilot is to achieve public and private sector cooperation in the delivery of these products and services.

The FOE pilot is implementing nine residential, commercial, and industrial programs, as well as a research and development effort, to assess which activities are most likely to promote future, self-sustaining energy benefits to Wisconsin residents. A Renewable Energy Efficiency program has also been included. An overall marketing campaign augments the pilot and also supports individual programs. Thus, this comprehensive pilot is a key element in Wisconsin's strategy for preparing, transforming, and developing a self-sustaining, competitive energy efficiency services market.

The evaluation of the pilot was originally conceived as a way to inform the program design process as well as the selection process for possible statewide expansion of the pilot within a public benefits format. As a result of DOA's newly legislated responsibilities for overseeing the implementation of an energy efficiency public benefits mechanism in Wisconsin, the feedback from the evaluation of the pilot program must be useful and timely.

Table 1, below, summarizes the programs being offered under the FOE pilot, the entities who are responsible for administering and implementing each program, and the members of the evaluation team with lead responsibility for evaluating each program.

Table 1. The Focus on Energy Programs

| Program(s) | Administrator(s) | Primary Evaluator |
|--|--|---|
| Commercial and Industrial | Delta Technologies Group | PA Consulting Group (with EDR Group, SBW Consulting, Michaels Engineering, and Xenergy, Inc.) |
| Energy Efficiency Performance | Schiller Associates and Franklin Energy | PA Consulting Group |
| Residential Water Heater Conversion | Wisconsin Energy Conservation Corporation and Global Energy Options | PA Consulting Group |
| WISCONSIN ENERGY STAR [®] Homes | Wisconsin Energy Conservation Corporation | Opinion Dynamics Corporation |
| ENERGY STAR [®] Products | The Wisconsin Energy Conservation Corporation | Shel Feldman Management Consulting |
| Multifamily Asset Management | Center for Energy and Environment; Wisconsin Energy Conservation Corporation | Opinion Dynamics Corporation |
| Education and Training | The Energy Center of Wisconsin | PA Consulting Group |
| Demand-side Applications of Renewable Energy | Department of Administration | Opinion Dynamics Corp. |
| Marketing | Knupp & Watson | Shel Feldman Consulting |

Evaluation Framework

Evaluation activities for each program have been organized around five key functions: (1) tracking and database management, (2) measurement and verification, (3) measurement of energy and demand savings, (4) process evaluation, and (5) assessment of market effects. The relative level of emphasis devoted to each of these functions has varied across programs based on program characteristics, in a manner established through the initial evaluation planning process. Data sources for

the evaluation include baseline and follow-up surveys of participating and non-participating customers and vendors; on-site visits; interviews with program administration staff; and reviews of program-specific documents. A wide range of methods are being used to analyze the data, including qualitative data analysis, statistical analysis, engineering review, quasi-experimental research design, and econometric techniques.

Though M&V and impact measurement approaches are being employed by the evaluation, the focus of this paper is market effect impacts. In view of this emphasis, two issues regarding the framework being used for the evaluation merit extra discussion: the methods being used to assess market effects, and the use of a theory-based evaluation approach.

Assessment of Market Effects

To assess the market effects of programs offered under the FOE, the evaluation team is using the Market Barriers framework—a conceptual framework first developed by Joe Eto, Ralph Prah, and Jeff Schlegel in the 1996 report titled *A Scoping Study on Energy Efficiency Market Transformation by California Utility DSM Programs*. This approach revolves around working with program administrators to develop hypotheses regarding the specific mechanisms through which a program might generate lasting reductions in those market barriers that are limiting the adoption of cost-effective measures. These hypotheses are then tested using data collected from end-users and other market actors on their knowledge, attitudes, and behavior.

Theory-Based Evaluation

Our review of the initial program plans for FOE led us to conclude that, with a few exceptions, most of these programs would not be large enough or operated long enough to plausibly hypothesize changes in the overall structure and functioning of the markets being targeted within the limited time frame of the pilot. We did not regard this as an indictment of the programs, for given the limited funds available, the large number of markets over which these must be spread, and the relatively short implementation period, it would be asking too much to expect them to reach the stage of generating significant changes in the overall structure and functioning of markets. Nonetheless, we were left with the quandary of how to evaluate the potential market effects of programs that would not be operating on a large enough scale to fully realize their market transforming potential.

Our solution to this quandary was to adopt a theory-based evaluation (TBE) approach. TBE is an evaluation approach that is rapidly gaining currency in the evaluation of social programs in fields other than energy efficiency. It involves specifying up front a relatively detailed *program theory* regarding the specific sequence of events a program is intended to cause, along with the precise causal mechanisms leading to these events. Evaluation then focuses on testing the consistency of the earliest observed events with the overall program theory.

We believe that TBE offers a number of potential advantages in the evaluation of energy efficiency programs. However, in the context of the FOE pilot, one particularly compelling benefit is that TBE does not require that a program be implemented until all of its ultimate market effects are known in order to assess its fundamental viability. Because every chain of events must include some initial events, most program theories should include *some* hypothesized program effects operating within *some* sector of the market that can plausibly be hypothesized as occurring within the time frame of the pilot. Our strategy has been to work with program administrators to identify these initial effects and to use the evaluation to test whether they occur as predicted. Usually, what we have been looking for are relatively lasting, program-induced behavioral changes on the part of the market actors being directly targeted. When these initial behavioral changes are observed to occur in a manner that is consistent with

the overall program theory, this is regarded as evidence in support of the overall program theory. When they are not observed to occur, this is viewed as calling the overall program theory into question.

This strategy has had a significant effect on the specific research methods we planned and implemented for each program. One key implication is that for most programs, we have *not* used the standard methodological approach that is often used to evaluate the market effects of full-scale market transformation initiatives. Under the standard approach, hypotheses are developed regarding program-induced changes in certain overall indicators of market structure and functioning. These market indicators are measured before the program gets underway and again during and/or after program implementation, often accompanied by the collection of comparison data. Because we did not expect most programs to generate measurable market-level effects within the time frame of the pilot, the standard approach was not thought to be useful for the majority of FOE programs. Instead, we have concentrated largely on conducting surveys and interviews with those market actors most immediately targeted by the programs.¹ The goal of this data collection was to assess whether the hypothesized behavioral changes had occurred, and if so whether they were going to last.

We have, however, collected some baseline data on overall market characteristics for purposes other than identifying market effects, including: (1) helping program administrators to characterize the market to assist in refining program design; and (2) developing empirical evidence as to the accuracy of the initial program theory regarding what are the most important market barriers operating in the market of interest.

Initial Market Effects Results for the FOE Pilot Programs

Commercial and Industrial Programs

The Commercial Program recruits commercial building owners to participate in a Wisconsin program, WEI-2, and two federal programs, ENERGY STAR[®] Buildings and ENERGY STAR[®] Small Business. The Commercial Program also provides free additional technical services designed to guide some participants through the implementation process. 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 the state or federal program involved.

The Industrial program markets the EPA Climate Wise program to industrial firms in the pilot area. The program marketing includes a variety of traditional approaches, supplemented by intensive one-on-one marketing. Like the Commercial Program, the centerpiece of the recruiting effort is a signed Memorandum of Understanding (MOU) whereby the participant agrees to a specific set of actions through the program.

The program is showing positive results with respect to its goal of achieving resource acquisition. Among the Focus on Energy pilot programs, the C&I program is one that is clearly providing identifiable and quantifiable results in terms of energy savings (see *Second Interim Report*, Chapters 2 & 3). While the pilot program has already achieved some results, there are remaining needs for follow-up attention to help customers implement the harder and potentially “bigger-payoff”

¹ There are some exceptions to this rule. In one case, the Energy Star Products program, the activities funded by FOE are sufficiently interwoven with other ongoing activities that it was deemed realistic to anticipate market effects. In another case the Demand-Side Applications of Renewable Energy program, the activities being funded by FOE are so diverse that only an overall snapshot of the status of the market before and after the program’s intervention seemed likely to accurately capture the program’s effects. Our evaluation approaches for these programs are discussed in more detail in the appropriate program chapters. However, for a majority of programs, we used the approach described above.

measures. This attention to follow-up can involve program staff and/or trade allies in the pilot program area. Without it, the program payoff in the pilot area will be more limited.

With respect to the program objective of movement towards market change, many participants do say they are changing their policies. One of the most important mechanisms the program uses to attempt to change the market is to help participants develop internal policies or procedures that will increase the chances that energy efficiency will be considered. The program appears to be having some success with that, based on self-reports of participants.

Also, An important part of the pilot program design was to engage trade allies and help them to become more involved in selling and supporting energy efficiency products and services. This element ramped up later in the pilot period. There is some evidence that the program is making inroads but it has not yet produced significant involvement by most trade allies.

Energy Efficiency Performance Program

The EEP program is designed to encourage energy service providers (vendors) to expand their electric and gas energy-efficiency offerings and market share by pursuing performance-based relationships with new and existing customers. One requirement for projects within the EEP program is that participating sponsors must offer customers an energy savings performance guarantee. In return, the EEP program helps reduce sponsors' downside risk in fulfilling these guarantees by providing a risk-sharing benefit. If a host customer's guaranteed cost savings are not fully realized, the EEP program covers 50% of any performance penalty owed to, or withheld by, the host customer for the first three years of the contract.

Key evaluation conclusions for the program are: (1) The program appears to be resulting in limited expansion of the energy efficiency market. (2) Performance contracting may be best suited for a specialized niche market. (3) The program has had difficulty reaching the appropriate level of measurement and verification that protects the customer while not deterring market effects for measures other than lighting and HVAC.

- While EEP was intended primarily as a market transformation initiative, it was hoped that secondary resource acquisition benefits would also accrue. However, EEP I seems to not have been particularly effective from a resource acquisition perspective.
- There is evidence that program efforts with vendors should continue. Sponsors report that the program administrators have helped them identify customers, sell projects, negotiate contracts and design M&V plans. They report a high level of satisfaction with the support they have received through the program thus far.
- There may be evidence of gradual program momentum.

The evaluation findings for the EEP program provides support for continued vendor-oriented programs in Wisconsin both in the pilot territory and statewide. There is evidence from both vendor and customers interviews of the secondary supply-side barriers hypothesized in the program theory as limiting the implementation of energy efficiency projects.

Early evaluation findings suggest that a vendor-oriented program could be more effective if performance contracting was one of a menu of business strategies nurtured by the program for the commercial and industrial sector instead of the primary business model supported. Customer and vendor interviews indicate that performance uncertainty is not one of the main market barriers to energy efficiency projects except for certain customer segments, largely institutional. Furthermore, the types of projects being implemented in EEP are largely lighting and HVAC measures for which performance uncertainty is even less of an issue.

Residential Water Heater Conversion Program

The program is designed to increase the conversion (or commitment to convert upon failure) of electric water heaters to fossil fuel water heaters in the FOE area, and thus had important resource acquisition goals. The initial goal for this program was 1,300 conversions or commitments to convert by the end of June 2000, for a total of 6,500,000 kWh in committed electric savings. The actual number of commitments to convert by the end of June 2000 was 710, with 16 actual conversions (a 56% goal attainment rate).

However, another primary goal of the program plan was to begin to develop a market infrastructure that delivered ongoing benefits from water heater conversion. During the short time of the pilot, the program did not have an impact on the business strategies of contractors that will result in lasting market effects.

For a variety of reasons, the program was not successful in recruiting a large number of partners. Furthermore, only a handful of the partners were productive in terms of generating commitments or conversions. In addition, partnering contractors said they did not change their business practices as a result of their participation. These partners (as well as the non-partnering contractors we talked with) said they have always encouraged conversions if the situation is appropriate. Participating ESCOs and a neighboring utility, on the other hand, did change their practices by incorporating the water heater conversion education into their home visit and marketing materials, respectively. Now that the program has ended, however, these efforts are not being continued.

The evaluation results suggest that a water heater conversion program that relies on the basic strategy of getting into peoples' homes to sticker the unit (with information about how to convert to gas) can not succeed as a stand-alone program. Given the energy savings potential and the environmental benefits, however, we believe that some method of encouraging water heater conversions should be continued. A number of recommendations for modifications to the program design have been included in the evaluation team's Second Interim Report.

Wisconsin ENERGY STAR[®] Homes Program

Developed by the Program Administrator as a voluntary participation program, the program is designed to help new home builders construct healthful, safe, and more durable energy efficient (EE) homes through a process of education, training, technical assistance, and performance testing. The program theory is as follows: (1) the fundamental market barrier to energy efficient new home construction is that new home buyers either cannot or will not identify newly constructed homes with EE characteristics which are superior to Uniform Dwelling Code, and this inability removes any incentive to sellers to build or promote such homes; (2) this barrier can be addressed by developing a new, widely recognized, standard level of efficiency that is higher than code, which will make it easy for customers to identify EE houses; (3) to develop such a standard it is necessary to intervene at all market levels, simultaneously increasing customer recognition of it via education and promotion, creating a business strategy to develop building science experts who make their services available to new home builders (i.e., specialized training for HERS raters), and providing HERS ratings when construction is finished.

The primary program goal is market development and preparation. The pilot program focuses on increasing the awareness, knowledge, and acceptance of energy efficient new home design among key market players.

In summary, the interim evaluation findings not only lend considerable support to the overall program theory but also demonstrate that significant market preparation progress has been made. We conclude that the very significant infrastructure issues (i.e., lack of EE building science expertise and

lack of an EE commitment among builders and subcontractors) were effectively addressed through the formation of linkages between Home Performance Raters and contractors—and that behavioral changes are taking place among these key market actors. This ability to bring about change among key market actors (the central market preparation goal of this pilot effort) demonstrates that the Wisconsin ES Homes Pilot Program has considerable promise.

The evaluation findings are considerably less clear with regard to the program's ability to achieve meaningful, short-term, quantifiable kWh and therm savings. And, highly related to this point, the program's long-term ability to develop a "widely recognized, standard level of efficiency that is higher than code." It is the judgment of the evaluation team that the per home kWh and therm savings achieved to date are modest and, unless defensible research to the contrary exists or can be completed in a timely manner, program EE standards must be increased in the near future. While the evaluation team considers this to be an important issue, we do not believe the modest savings to date detrimentally impacts our ability to test the initial steps in the program theory—which, as previously stated, show considerable promise.

ENERGY STAR® Products Program

The Program Administrator has set forth a program theory adapted from a national effort by the U.S. Environmental Protection Agency and the U.S. Department of Energy to address information and dealer support barriers to increased market penetration of energy-efficient appliances and lighting. In the near term, the program is promoting the stocking and sales of appliances and lighting that have qualified for designation as ENERGY STAR® products. The long-term objective is to make customers aware of the brand and induce them to use the brand as a proxy for detailed energy-efficiency information. The theory proposes that, by increasing awareness and understanding of the ENERGY STAR® brand (thus reducing or eliminating the information barrier), the program will make customers more likely to examine and purchase energy-efficient appliances and lighting. Relevant program activities include advertising and promotion of qualifying products as well as financial incentives.

This program differs from others sponsored as part of the Focus on Energy effort in that it has been part of a broader statewide effort from its inception because of sponsorship by some large utilities. As such, its ability to get into the field quickly and to draw upon design elements and implementation activities that have been tested elsewhere appear to demonstrate the value of statewide programs. Indeed, many of the process difficulties that have been seen in the program have derived from constraints that were imposed on its statewide character (e.g., funding levels and advertising strategies). The evaluation team has recommended to DOA that this program be implemented statewide.

Multifamily Facility Management Program

The program is designed as a new concept for delivery of energy efficiency to the multifamily housing sector. The strategy is to bundle a comprehensive set of services, including energy efficiency, that building owners and building management companies are willing to purchase. The underlying program theory is the finding (from previous multifamily endeavors) that programs targeting multifamily buildings have found energy efficiency to be a hard sell—even for projects that are cost effective—without incentives. In short, energy costs have a low profile relative to other multifamily operating issues. However, the program implementers express a belief that people responsible for the physical assets of the buildings (asset managers) do respond to services that deal directly with installed capital investments, maintenance staff, and tenant complaints.

The primary program goal is to develop a self-sustaining energy efficiency program and transform the way in which energy efficiency is marketed and delivered in the multifamily housing

sector. Despite the program's success in meeting the program goal of serving 3700 multifamily units, the evaluation team—based on conversations with program staff, extensive in-depth interviews with program participants and nonparticipants, and an engineering review—found that many of the program services (with market preparation and market transformation potential) were modified, either in substance or spirit, or canceled. Additionally, many of the services were not offered in the “coordinated” or “comprehensive” manner that one could have reasonably anticipated when reviewing the original plan documents. While 3700 multifamily units were served, they were typically served at a lower level, and with fewer services than initially planned. Furthermore, and most importantly, some of the more innovative services (such as on-going asset and energy tracking) were not formally offered, nor were attempts made to foster the privatization of these services.

The evaluation team's recommendation to DOA is to not implement the program statewide. Instead, we suggest modifying the Focus II implementation to see if there are specific program components that can be incorporated into statewide program targeting the multifamily sector. Also recommended is to carefully consider the extent to which programming efforts in this sector should focus on resource acquisition vs. market preparation/transformation. Finally, we suggest conducting a comprehensive review of what has (and has not) worked in this sector elsewhere in the country, and consider holding an open solicitation for new, innovative ideas on how to approach the multifamily sector.

Education and Training Program

The program serves the overall FOE pilot by developing and coordinating training and consumer education events that measurably improve the market demand for energy efficiency products and services and the channels through which they flow. The program administrator's role is to provide education and training that in turn supports other activities in the Focus pilot. The three broad areas addressed by training and education are (1) building science training in support of the Wisconsin ENERGY STAR[®] Homes Program; (2) training in support of the activities of the Industrial and large Commercial Programs; and (3) general consumer awareness.

The evaluation results indicate that education and training are a successful component of the Focus pilot. The education and training administrator's recruiting efforts have resulted in well-attended events receiving positive ratings from attendees (rated using the program administrator's forms). The evaluation team's pre/post training questionnaires find that the training events are resulting in sustainable market effects by positively impacting energy efficiency knowledge and behavior. We strongly recommend, based on the success of Focus training events, that education and training events be a strong component of any statewide expansion of conservation programs and a required part of program plans.

An additional recommendation directly affecting the effectiveness of education and training is the number of entities involved in administering conservation programs. The difficulty of coordinating education and training events across several different entities became apparent during Focus I. At times significant coordination problems resulted including over-saturating target markets and holding events on the same day. Because education and training events already require considerable coordination across events and market, more effective events could result from having a fewer number of entities involved.

Demand-side Applications of Renewable Energy (DSARE) Program

The DSARE Program includes 17 discrete activities. For the purposes of this evaluation, we view these activities as comprising four groups of related activities:

- *Cost-Sharing Grants:* a total of \$490,000 was awarded for 33 grants to provide business marketing support, technical assistance / engineering, and demonstration projects.
- *Training, Information, Education, and Research:* the budget of \$125,000 funded three main items: renewable training, a videotape program on renewable energy, and grants for renewables education.
- *Ombudsmen:* the \$90,000 budget was split evenly for professional services providing financing assistance, and project facilitation.
- *Daylighting:* the \$250,000 budget funded expanded services from the statewide Daylighting Collaborative for the 23 Focus counties.

The evaluation team's recommendation to DOA is to implement statewide, but employ a more targeted marketing approach, based on detailed market data and using a more systematic program planning process. Also, we suggest DOA consider concentrating support on project facilitation assistance, demonstrations, and financing assistance. Improved coordination with other statewide energy efficiency programs is also needed. To be effective, program plans should: (1) be based upon quantitative market characterization information; (2) state specific, measurable, actionable, realistic, time-constrained goals; and (3) focus their efforts on carefully selected targets within promising markets. We suspect that the Daylighting component may be a good model for future programming efforts.

Marketing Program

Every energy efficiency program struggles with the need to promote awareness and understanding of the needs it is intended to serve, the nature of its offerings, and the benefits they can provide. An umbrella program such as the Focus on Energy must also grapple with issues of centralization or dispersion of marketing efforts among individual programs and the relative emphasis placed on program support relative to broad public information and education activities.

DOA determined that, for this pilot effort, it would centralize the marketing function in a single administrator, and a marketing firm was selected. Initially, DOA further opted for an overall "branding" strategy along with support for individual programs and a general public information and education (PI&E) effort. More recently, DOA has emphasized the importance of the Marketing Administrator providing direct support to individual program administrators. Given this direction and the limited budget available (both because of the total allocation for marketing and the front loading of those activities), little PI&E activity was possible in recent months.

The evaluation team recommends that the marketing assignment from DOA be thoroughly reviewed prior to any statewide rollout of the program. In particular, we recommend that DOA review the advertising objectives for the Focus on Energy program. The evidence gathered in both interim reports shows enormous difficulty in engaging customers on issues that relate to energy efficiency and stimulating additional consideration or information-seeking on the issue. Certainly these results cannot be achieved without substantial, continuing public information and education activities founded on a solid research basis, supported by ongoing testing and assessment, and targeted to the needs and interests of particular customer groups. If broad changes in beliefs and attitudes are to be achieved, the appropriate resources and direction will not come from administrators of individual programs. It is more likely that DOA must provide it.

Implications of the Pattern of Findings for Individual Programs

We believe the pattern of findings for individual programs presented in the preceding section suggests the following overall conclusions regarding the Focus on Energy pilot to date.

Some tensions continue to be evident between the market transformation and resource acquisition goals initially laid out for FOE programs – and more broadly, between shorter-term and longer-term program objectives. In our first interim report, we observed what we interpreted as signs of tensions between the twin objectives of resource acquisition, or the achievement of timely and reliable energy savings, and market transformation, or the achievement of lasting improvements in the structure and functioning of energy efficiency markets. Specifically, we noted that some implementers appeared to be responding to the relatively short timeline of the pilot by focusing on shorter-term objectives at the expense of longer term ones.

We believe these tensions continue to make themselves evident. For example, the initial program designs for the Commercial, Industrial, and EEP programs all called for significant one-on-one customer assistance and education of trade allies as significant program components aimed at facilitating market transformation. While all three of these programs are now providing such one-on-one assistance as originally planned, in all three cases implementation of these services was delayed as the program administrator focused first on acquiring the number of participants it had promised. In a fourth case, the Multifamily program, we believe some of the key longer-range components of the program that were initially envisioned have yet to be implemented. As discussed in our first interim report, we believe these outcomes highlight the importance of explicitly balancing and reconciling the sometimes competing, sometimes complementary policy objectives of resource acquisition and market transformation. Our understanding is that DOA is already attempting to do this moving forward, but we believed the issue was worth highlighting nonetheless.

The results to date bear out our expectation that market transformation takes years to accomplish, and that these programs should not be expected to cause immediate improvements to the structure and functioning of energy efficiency markets. As we argued in our initial evaluation plan for FOE as well as in our first interim report, market transformation is a policy objective that usually takes years to accomplish, and thus the FOE pilot programs for the most part should not be expected to achieve measurable overall changes in the structure and functioning of energy efficiency markets within the pilot period. We believe the evaluation findings to date generally bear out this expectation. While many of the programs appear to be generating initial market responses that are quite consistent with what was called for under the initial program theory, few have generated overall market changes thus far. We do not regard this as an indictment of the programs. Instead, we regard it as confirmation that market transformation is a long-term process. We continue to believe that, due to this fact, what is most important in evaluating market transformation initiatives is that: (1) program designers have a specific theory about the causal mechanisms by which it is hoped that the program will ultimately generate beneficial market effects, and (2) evaluation efforts focus on providing timely feedback on whether early program results appear to be consistent with this theory.

Some FOE programs that were initially framed primarily as market transformation initiatives appear thus far to be functioning primarily as resource acquisition efforts. Time will tell whether these programs will ultimately be able to also accomplish their market transformation-related objectives. For example, in the case of the Commercial and Industrial programs, early results suggest that while participating customers are adopting many of the measures recommended by the program administrator, for the most part they are not as of yet changing their behavior in any more lasting fashion. (As noted above, however, some elements of these programs that were intended to play a central role in generating such longer-term changes, notably working intensively with participants on a one-on-one basis following the initial audit and attempting to connect trade allies with participants, have only recently begun to be implemented.)

In general, we are in a better position at this point to assess the viability of the original program concepts for the residential and cross-cutting programs than the non-residential ones. For a majority of the FOE pilot programs, we believe we have enough evidence at this point to reach at least some tentative conclusions about the viability of the underlying program concepts. However, the Commercial, Industrial, and Energy Efficiency Performance programs are important exceptions. This is due in large part to the long decision-making cycles of non-residential customers, which makes it difficult at this relatively early date to reliably assess the behavioral effects of the non-residential programs on participating customers and trade allies. It is also due, to some extent, to the delays in implementing some program components that are discussed above.

The interim evaluation results appear to confirm the wisdom of trying to build on existing programming activities where appropriate. Many of the programs and program elements that appear to be showing the strongest signs of early success are those for which DOA was able to build on pre-existing programming activities. Examples include the ENERGY STAR® Products Program, the Daylighting component of the Demand-Side Applications of Renewable Energy Program, and the Education and Training Program. We do not regard this as surprising, for, as we argued in our first interim report:

The history of public interventions into energy efficiency markets over the past 25 years suggests that developing successful new energy efficiency programs – not just market transformation programs, but *any* programs – generally takes at least several years, and a significant amount of trial and error. This was true of the programs developed in response to the oil crisis in the early 1970s. It was also true of the large-scale rebate programs developed in the heyday of Demand-Side Management in the 1980s and early 1990s. Early results from other states adopting market transformation as a key policy objective suggest that it will also hold true for market transformation initiatives.

We suspect that, to a large extent, the tendency of programs building on pre-existing programming activities to stand out may simply reflect the fact that it is these programs for which the underlying strategies and concepts have received the benefit of the most trial and error.²

Some programs appear to be functioning in a manner that is quite consistent with the initial program theory, but not yet saving appreciable amounts of energy. We believe this is appropriate and to be expected given the long-term nature of market transformation as a policy objective. For example, while the Energy Star Homes program appears to be making good progress toward its market transformation objectives, because both the number of participants to date and the average savings per house are relatively small, this program has resulted in little energy savings to date. We believe one important corollary of the fact that market transformation is a long-term process is that market transformation initiatives generally should not be expected to yield substantial energy savings immediately.

Interestingly, there are some early indications that a few programs may be accomplishing what they were intended to accomplish, but through somewhat different mechanisms than originally envisioned. This suggests that some revisions to program theories might be called for. For example, while the current program theory for the Energy Star Products program focuses primarily on making it easier for appliance purchasers to identify efficient units, there are some early indications

² It is worth noting that the same line of reasoning suggests that it is also valuable to run some programs that are entirely new and do not build on existing programming activities – for if only programs building on existing approaches are implemented, the process of trial and error, which we have argued is a critical element of success, is likely to slow or even stop. In short, a balance is needed.

that this program may achieve beneficial market effects through behavioral changes on the part of manufacturers and distributors who are taking the program's promotions and incentives as a cue to change their behavior. Similarly, in the case of the Energy Star Homes program, there are some early indications that promotional efforts targeted at homebuyers may directly affect the behavior of builders. Generally, the current theories for these programs do not anticipate these kinds of direct supply-side responses to marketing efforts targeted primarily at consumers.

A Summary of Cross-Cutting Evaluation Activities

Not all of the key evaluation functions are program-specific in nature. Some, such as process evaluation of the pilot as a whole, are fundamentally cross-cutting in nature. Others, such as quantification of environmental benefits, draw upon the impacts estimated from several programs and use a single integrated analysis method to perform this function for all of the programs affected (as part of this conference see "Quantification of Environmental Benefits for Wisconsin's Focus on Energy Pilot Program," in Session 1C). This section highlights several of these cross-cutting evaluation activities.

Database tracking and management for Focus on Energy

We are currently cataloging all programs and evaluation data sets using a spreadsheet that lists data type, source, software, location, and key contact, among other attributes. We are collecting information on all evaluation data sets including survey samples, survey data files, and interview transcripts. We are also cataloging all relevant program-created databases, primarily consisting of program tracking data (the who, what, when of participation). The catalog will be a dynamic document since program and evaluation data sources continue to change. The process of identifying data sets, collecting descriptive information about them, and ultimately archiving in a central location is providing lessons that can be applied to the statewide effort.

Overall Focus on Energy pilot process evaluation

Several reports have been prepared for DOA as part of an overall (i.e., not program-specific) process evaluation. These include:

- Process interviews with DOA (Division of Energy) staff
- Review of market assessments conducted by Focus on Energy pilot Program Administrators
- Process evaluation findings for the Focus on Energy R&D program
- A Comparative Evaluation of Public Benefits Programs: An Examination of Structure, Operations and Program Delivery Systems for NYSERDA and the Northwest Energy Efficiency Alliance (NEEA)

Conclusion

All in all, we believe that DOA's experience in administering the FOE pilot to date has provided many valuable results to inform implementation of the statewide public benefits mechanism. These results take the form both of general policy, administrative and program design implications, and of some specific programs that can be expanded to go statewide. While in a few cases we considered it too early for us to make informed recommendations on statewide implementation, in a majority of cases we felt comfortable making such recommendations. Our recommendations regarding implementation of FOE programs on a statewide basis are discussed at greater length in the *Second Interim Report*.