

Working With Program Designers and Implementers To Design a Cost-Effective Evaluation: The Design of a Monitoring and Evaluation Framework for FIDE's Market Development Program

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ABSTRACT

Mexico is currently implementing its first energy efficiency program targeting commercial and industrial customers. This nationwide program has three main program intervention strategies: a rebate program for certain energy efficient technologies, a financing component for energy efficient projects, and a strategy for developing energy service companies.

The program has both market transformation and resource acquisition goals. In addition, because this is the first project of its kind ever undertaken in Mexico, process information regarding the program is very important to design the most efficient and effective commercial and industrial energy efficiency programs for the Mexican market place. To assist FIDE, the quasi-governmental agency overseeing the program, an independent consulting firm was hired to establish a monitoring and evaluation framework for the program. This paper highlights this evaluation design work and how the authors used a theory-based evaluation approach to strengthen the evaluation design.

Introduction

We all know the need for evaluations to, “collect data.” But how do we do this in a cohesive, meaningful manner? How do we respond to desires for so much data to answer so many questions that the evaluation could cost more than the program itself? As program designers, implementers and decision-makers are increasingly turning to program evaluation to provide feedback on a variety of issues and assess program outcomes; evaluators must work closely with program staff in order to manage evaluation expectations and design cost-effective, efficient evaluations. This paper highlights the authors' evaluation design work with the quasi-governmental agency overseeing energy efficiency initiatives in Mexico, FIDE, as a case study of working with program staff to design a cost-effective evaluation.

The authors drew on a theory-based evaluation framework to work with program designers and managers to design an evaluation framework. This approach involved the designers working with staff to develop very concrete program theories, which outlined expected outcomes from program interventions. This approach has been used in the evaluation of several U.S. utility and government approaches. It began as a response to the need to more rigorously ascertain how programs will change the market. (Hastie, Prahl, Mostenthal and Clark, 2000; Rufo, Prahl and Landry, 1999).

Program Description

With a \$23.4 million dollar loan from the Inter-American Development Bank, FIDE is implementing the first nation-wide energy efficiency program targeting commercial and industrial customers in Mexico over a period of five years, the Market Development Program. The program has three main components – increasing the penetration of energy efficient equipment by providing rebates,

developing a favorable marketplace for financing energy efficiency projects by working and developing a local infrastructure of energy service providers by providing support services for engineering firms.

Objectives of Evaluation Design Work

The evaluation design team began work in late fall 2000 to develop a comprehensive evaluation plan for the three different components of the Market Development Program. The plan is to be used to provide continual monitoring and evaluation of the program's activities starting in the fall of 2001. Not too difficult, right? Maybe not in the old days, but we are all increasingly working in an arena where energy programs have multiple goals. The evaluation isn't just to provide process information, which is very important for this program since it is the first nationwide energy efficiency program for commercial and industrial clients ever undertaken in Mexico. The evaluation must also provide guidance and measure the success of the program in achieving resource acquisition and market transformation goals. On top of that, the evaluation is to provide a cost-benefit framework for energy, environmental and economic savings! Does anyone have a loan for another \$24 million dollars? By working with stakeholders, carefully laying out program theory, linking objectives to indicators, coordinating data collection activities, and managing expectations, a loan won't be necessary. The final evaluation plan outlines a budget to evaluate all components ranging from approximately US \$500,000 to \$1,000,000, or 2 to 4% of the total program budget, including the initial design work.

Research Design and Methodology

The program's numerous program intervention activities and dual market transformation and resource acquisition objectives necessitated working closely with program staff to set evaluation prerogatives. The evaluation design team used a theory-based evaluation approach to help program staff think through and prioritize data needs. Through an iterative process, a program theory framework linking program interventions with expected outcomes was developed. Indicators and appropriate data sources were then identified to measure the expected program outcomes. Using the above described framework, evaluators and program staff ranked indicators and data collection activities in order to design a cost-effective evaluation plan that included measurement of market effects, program design objectives, and energy and demand savings goals.

Results

Program theory and market effects indicators were established for each of the three main program intervention venues - equipment rebates, financing, and ESCO development. We held brainstorming sessions with program designers and implementers. These sessions included filling out the program theory and market effects tables presented below together as a group. We then presented a first draft of program theory and indicators to stakeholders. Then a second, then a final. This section presents the results of the evaluation design for one of the overall program's components, the equipment rebate program. Table 1 below shows the program theory for the equipment rebate program. Table 2 then ties the program theory to specific market indicators for the equipment rebate program.

Organization of Program Theory Table and Market Effects Table

Each column in the Program Theory Table represents a group of important actors in the energy efficiency market place. The program is designed to change the behavior of these actors. The first row

presents the program interventions targeted at each actor. The next row defines special sub-segments that early intervention efforts are focused on. The following four rows list the expected effects from the interventions and the time period in which these effects should occur (less than one year up to five years). Furthermore, we know effects do not happen in a vacuum, but are inter-related. Numbers next to the different effects indicate the expected chain of effects. For example, in order to increase the adoption of high efficiency equipment, end-users have to be aware of and knowledgeable about high efficiency equipment and distributors have to make these types of equipment available in Mexico.

Columns 1 – 3 in the Market Effects Table tie the Program Theory Table to the Market Effects Table. The first column of the Market Effects table again has the same important market actors. The second and third columns represent the effects expected for each actor and the time period in which the expected effect should occur. The fourth column identifies indicators to measure if the expected effects are occurring. The last column identifies methods to collect data for these indicators.

Organizational Indicators

As mentioned earlier, because this program is the first of its kind ever undertaken in Mexico, it is very important to collect process information about the program. Within the equipment rebate program, there are different strategies for the three different technologies the program includes. Therefore, organizational indicators were developed for the different strategies utilized for the different program technologies. Table 3 shows examples of organizational indicators for end-users targeted by the program to increase energy efficient lighting. Process information is obtained from the same market actors as market transformation information. Interview guides will solicit the process and market transformation information during the same data collection efforts.

Table 1: Program Theory for Equipment Rebate Program

Market Actors Influenced	End-Users	Distributors	Manufacturers	Original Equipment Manufacturers
<p>Program Stimulus</p> <ul style="list-style-type: none"> Provision of multi-prong promotional and marketing activities for the program and program's energy efficient equipment. Activities include relationship building with important customers, presentations, newsletters, articles in trade magazines, a 1-800 information line, a program website, and training workshops. Activities increase end-user awareness and understanding of the program and energy efficient equipment. Provision of financial incentives eliminates most or all of the incremental cost of high efficiency program technologies. <p>Market Actor Subsegments Targeted by Program Stimulus</p> <ul style="list-style-type: none"> Commercial and Industrial customers, specifically and initially targeted to: Identified high visibility and large energy consumer end-users Users of program technologies – motors, lighting and air compressors. 	<ul style="list-style-type: none"> Use of financial incentives, increased awareness of benefits of energy efficient equipment, assistance with marketing tools and provision of expert technical assistance increases market demand for high efficiency equipment in turn encouraging vendors to stock and promote high efficiency program equipment. 	<ul style="list-style-type: none"> Use of financial incentives, increased awareness of benefits of energy efficient equipment, assistance with marketing tools and provision of expert technical assistance increases market demand for high efficiency equipment in turn encouraging manufacturers to alter production, marketing and distribution strategy toward high efficiency equipment. 	<ul style="list-style-type: none"> Use of financial incentives, increased awareness of benefits of energy efficient equipment, assistance with marketing tools and provision of expert technical assistance increases market demand for high efficiency equipment in turn encouraging OEMs to increase their use of efficient equipment. Provision of financial incentives eliminates most or all of the incremental cost of efficient equipment. <p>All OEMs active in Mexico that utilize program technologies</p>	
<p>Market Effects < 1 year</p> <ul style="list-style-type: none"> Increase awareness of benefits of high efficiency equipment including decreased life cycle costs Increase adoption of high efficiency equipment among key targeted market subsegments. 	<ul style="list-style-type: none"> Increase in the level of availability and promotion of high efficiency equipment among distributors participating in the program. 	<ul style="list-style-type: none"> Increase interest of participating manufacturers in selling and promoting high efficiency products in the Mexican market. 	<ul style="list-style-type: none"> Increase adoption of program equipment among OEMs participating in the program 	
<p>Market Effects 1-3 years</p> <ul style="list-style-type: none"> Associate energy efficiency with positive non-energy benefits: high value, quality, improved production, improved aesthetics, reliability, environmental sensitivity. Increase awareness of energy efficiency as an important consideration when purchasing equipment. Increase understanding of, and demand for, efficient equipment 	<ul style="list-style-type: none"> Increase stocking and promotion of high efficiency equipment across a range of equipment dealers. 	<ul style="list-style-type: none"> Increase in supply and marketing of high efficiency products to distributors in Mexico. 	<ul style="list-style-type: none"> Increase adoption of energy efficient equipment among range of OEMs. 	
<p>Market Effects 3-5 years</p> <ul style="list-style-type: none"> Increase adoption of high efficiency equipment among a range of commercial and industrial customers. Institutionalize specification of energy efficient equipment among leading 	<ul style="list-style-type: none"> Increase stocking and promotion of high efficiency equipment across a range of equipment dealers to the level that high efficiency equipment is the default offering from some 	<ul style="list-style-type: none"> Sustainable increase in stocking and availability of high efficiency technologies. Some shifting of product lines to meet growing consumer 	<ul style="list-style-type: none"> Promote energy efficient equipment as a symbol of quality and low operating costs to customers. High efficiency equipment sets OEMs apart from competitors. 	

Market Actors Influenced	End-Users	Distributors	Manufacturers	Original Equipment Manufacturers
	<ul style="list-style-type: none"> customers. 17) Begin to establish a market acceptance of labeling techniques as markers of efficient and "better" equipment. 	<p>specifying dealers.</p>	<p>demand for higher efficiency products.</p>	
<p>Market Effects 5-10 years</p>	<ul style="list-style-type: none"> 20) Sustainably increase the level of equipment efficiency specified by a range of end-users 23) Sustainably create demand for, and willingness to pay for, energy efficient technologies. 	<ul style="list-style-type: none"> 21) Increase availability and promotion of energy efficient equipment as a value-added product among a range of vendors. 24) Contribute to the elimination of the stocking and availability of the lowest efficiency equipment 	<ul style="list-style-type: none"> 19) Decrease incremental cost of energy efficient equipment through increased demand for and supply of high efficiency equipment and lowered demand for and supply of lower efficiency equipment. 	<ul style="list-style-type: none"> 22) Institutionalization of high efficiency equipment by leading OEMs.
<p>Market Barriers Overcome</p>	<ul style="list-style-type: none"> Lack of awareness of the multiple economic and non-economic benefits of energy efficient equipment. Lack of information to identify and purchase energy efficient equipment. First cost bias. High efficiency equipment is less desirable because of lack of availability and selection and longer delivery times. 	<ul style="list-style-type: none"> Limited inventory of high efficiency equipment because volume of sales is low, and inventory is expensive. Customers do not demand high efficiency equipment. 	<ul style="list-style-type: none"> Manufacturers face risk in promoting and producing high efficiency products unless in response to market demand for it. 	<ul style="list-style-type: none"> High efficiency equipment is less desirable because of lack of availability and selection and longer delivery times. Customers do not demand high efficiency equipment. First cost bias.

Table 2: Market Effects Table for Equipment Rebate Program

Market Actor	Time Period	Expected Market Effects	Market Indicators	Measurement Method
End-users	Market Effects < 1 year	<ul style="list-style-type: none"> Increase awareness of benefits of high efficiency equipment including decreased life cycle costs Increase adoption of high efficiency equipment among key targeted market subsegments. 	<ul style="list-style-type: none"> Awareness of rebate program including the incentives available and support services such as training Awareness of high efficiency equipment and its benefits How the program has affected purchasing decisions 	<ul style="list-style-type: none"> Telephone surveys with end-users
	Market Effects 1-3 years	<ul style="list-style-type: none"> Associate energy efficiency with positive non-energy benefits: high value, quality, improved production, improved aesthetics, reliability, and environmental sensitivity. Increase awareness of energy efficiency as an important consideration when purchasing equipment. Increase understanding of, and demand for, efficient equipment 	<ul style="list-style-type: none"> Awareness of non-energy benefits of high efficiency equipment How the program has influenced purchasing decisions including how likely they are to buy the equipment without a rebate 	<ul style="list-style-type: none"> Telephone surveys and personal interviews with end-users baseline information
	Market Effects 3-5 years	<ul style="list-style-type: none"> Increase adoption of high efficiency equipment among a range of commercial and industrial customers. Institutionalize specification of energy efficient equipment among leading customers. Begin to establish a market acceptance of labeling techniques as markers of efficient and “better” equipment. 	<ul style="list-style-type: none"> Changes in the use of high efficiency equipment in comparison with baseline information Level of institutionalization of high efficiency equipment in comparison with baseline information Comprehension of high efficiency equipment as ‘better’ and “SELLO FIDE” as an indicators of this. 	<ul style="list-style-type: none"> Telephone surveys and personal interviews with end-users Interviews with targeted clients identified through the program baseline information
Distributors	Market Effects 5-10 years	<ul style="list-style-type: none"> Sustainably increase the level of equipment efficiency specified by a range of end-users Sustainably create demand for, and willingness to pay for, energy efficient technologies. 	<ul style="list-style-type: none"> Changes in the use of high efficiency equipment in comparison with baseline information Demand for high efficiency equipment and willingness to pay for this type of equipment. 	<ul style="list-style-type: none"> Telephone surveys and personal interviews with end-users baseline information
	Market Effects < 1 year	<ul style="list-style-type: none"> Increase in the level of availability and promotion of high efficiency equipment among distributors participating in the program. 	<ul style="list-style-type: none"> Stocking and promotion practices of high efficiency equipment amongst participating distributors 	<ul style="list-style-type: none"> Interviews with distributors participants Observation of stocking and promotion activities
	Market Effects 1-3 years	<ul style="list-style-type: none"> Increase stocking and promotion of high efficiency equipment across a range of equipment dealers. 	<ul style="list-style-type: none"> Stocking and promotion practices of high efficiency equipment amongst a representative sample of all distributors in Mexico. 	<ul style="list-style-type: none"> Telephone surveys and personal interviews with distributors Observation of stocking and promotion activities baseline information
	Market Effects 3-5 years	<ul style="list-style-type: none"> Increase stocking and promotion of high efficiency equipment across a range of equipment dealers to the level that high efficiency equipment is the default offering from some specifying dealers. 	<ul style="list-style-type: none"> Stocking and promotion practices of high efficiency equipment amongst a representative sample of all distributors in Mexico. 	<ul style="list-style-type: none"> Telephone surveys and personal interviews with distributors Observation of stocking and promotion activities baseline information

Market Actor	Time Period	Expected Market Effects	Market Indicators	Measurement Method
Original Equipment Manufacturers (OEMs)	Market Effects 5-10 years	<ul style="list-style-type: none"> • Increase availability and promotion of energy efficient equipment as a value-added product among a range of vendors. • Contribute to the elimination of the stocking and availability of the lowest efficiency equipment 	<ul style="list-style-type: none"> ▪ Stocking and promotion practices of high efficiency equipment amongst a representative sample of all distributors in Mexico. 	<ul style="list-style-type: none"> ▪ Telephone surveys and personal interviews with distributors ▪ Observation of stocking and promotion activities and baseline information
	Market Effects < 1 year	<ul style="list-style-type: none"> • Increase interest of participating manufacturers in selling and promoting high efficiency products in the Mexican market. 	<ul style="list-style-type: none"> ▪ How the program has influenced sales practices of high efficiency equipment in Mexico among participating manufacturers. 	<ul style="list-style-type: none"> ▪ Interviews with participating manufacturers ▪ Sales reports
	Market Effects 1-3 years	<ul style="list-style-type: none"> • Increase in supply and marketing of high efficiency products to distributors in Mexico. 	<ul style="list-style-type: none"> ▪ Flow of high efficiency equipment through distribution channels in comparison to baseline conditions 	<ul style="list-style-type: none"> ▪ Interviews with manufacturers and distributors ▪ Sales reports ▪ de manufacturers ▪ baseline information
	Market Effects 3-5 years	<ul style="list-style-type: none"> • Sustainable increase in stocking and availability of high efficiency technologies. • Some shifting of product lines to meet growing consumer demand for higher efficiency products. 	<ul style="list-style-type: none"> ▪ Stock and availability of high efficiency equipment in comparison to baseline conditions. ▪ Changes in product line 	<ul style="list-style-type: none"> ▪ Interviews with manufacturers and distributors ▪ Observation of stocking and promotion activities and baseline information
	Market Effects 5-10 years	<ul style="list-style-type: none"> • Decrease incremental cost of energy efficient equipment through increased demand for and supply of high efficiency equipment and lowered demand for and supply of lower efficiency equipment. 	<ul style="list-style-type: none"> ▪ Incremental cost of high efficiency equipment in comparison to baseline conditions. 	<ul style="list-style-type: none"> ▪ Interviews with manufacturers ▪ Observation of stocking and promotion activities and baseline information
	Market Effects < 1 year	<ul style="list-style-type: none"> • Increased adoption of program equipment among OEMs participating in the program 	<ul style="list-style-type: none"> ▪ Awareness of benefits of high efficiency equipment ▪ Adoption of high efficiency equipment among participating OEMs 	<ul style="list-style-type: none"> ▪ Interviews with participating OEMs ▪ Sales reports ▪ participating OEMs
	Market Effects 1-3 years	<ul style="list-style-type: none"> • Increased adoption of energy efficient equipment among range of OEMs. 	<ul style="list-style-type: none"> ▪ Adoption of high efficiency equipment among sample of OEMs compared to baseline 	<ul style="list-style-type: none"> ▪ Surveys with OEMs ▪ Review of promotional materials
	Market Effects 3-5 years	<ul style="list-style-type: none"> • Promote energy efficient equipment as a symbol of quality and low operating costs to customers. High efficiency equipment sets OEMs apart from competitors. 	<ul style="list-style-type: none"> ▪ Promotion of high efficiency equipment as distinctive part of equipment that differentiates the product from competitors/ 	
	Market Effects 5-10 years	<ul style="list-style-type: none"> • Institutionalization of high efficiency equipment by leading OEMs. 	<ul style="list-style-type: none"> ▪ Degree of institutionalization of high efficiency equipment among range of OEMs, specifically those participating in the program. 	<ul style="list-style-type: none"> ▪ Surveys with OEMs ▪ Inventory study ▪ baseline information

Table 3: Organizational Indicators for Equipment Rebate Program (Technology: Lighting)

Market Actors	Program barriers	Intervention Activity	Expected Effect	Organizational Indicator	Measurement method
End-users	Limited participation because of lack of awareness of program and eligible equipment	1. Direct mailings to important end-users that identifies their energy and demand savings and use of program technologies	Greater awareness of the program and available incentives Greater participation in the program	Number of important end-users FIDE has established relationship with Satisfaction with support services of FIDE Number of agreements end-users sign to commit to high efficiency equipment	Program reports Surveys and personal interviews with end-users
		2. Direct promotional activities including presentations and special events		Number of presentations given to end-users Numbers and participation in special events Satisfaction with promotional activities	
		3. 1-800 telephone and Internet assistance		Number of 'Internet hits' Use of 1-800 line Satisfaction with Internet and 1-800 line	
		4. Training		Number of training sessions and attendees at each Satisfaction with training sessions	
	Insufficient incentive to convince end-users to purchase program technologies	5. Incentive for energy efficiency lighting	Increase purchase of program technologies	Amount of incentive money awarded Changes in the purchase of program technologies Delivery of incentive to end-users Satisfaction of the end-users with the incentive and with program technologies	
	Lack of participation in the program because of effort involved in participating	4. Incentive for participating in the program and selling energy efficient equipment	Increase in the number of participants	Incentives given to OEMs and distributors Participation level Satisfaction with the program in general	Program reports Surveys and personal interviews with participants and non-participants

Results Indicators

Finally, the program has resource acquisition goals. Policy makers had pre-determined energy and demand savings goals for the program. The evaluation design's role was then one of identifying the best ways to measure the program's success in meeting these goals. Again, goals and methods of measuring vary by technology targeted in the equipment rebate program. Table 4 presents the identified methods of measuring energy and demand savings for lighting, which will again be coordinated with other data collection efforts.

Table 4: Results Indicators for the Equipment Rebate Program

Program Technology	Program Goals	Expected Effect	Results Indicators	Measurement Method
Lighting	<ul style="list-style-type: none"> • Electric energy savings of 78 kW • Annual Demand savings of 331 kWh • 3,755,118 units of energy efficient lighting sold to commercial and industrial clients 	<p>Increase sales of energy efficient lighting</p> <p>Increase in manufacturing and stocking of energy efficient lighting</p> <p>Decrease in manufacturing and stocking of standard lighting</p>	<p>Energy and demand sales resulting from energy efficient lighting sold through program</p> <p>Amount of energy efficient lighting sold under program</p> <p>Relative percent of equipment sold with incentive FIDE</p> <p>Relative percent of manufacturers and distributors participating in the program</p>	<p>Sales reports and technical information about high efficiency equipment.</p> <p>FIDE research determining the typical substitution by usage (eg. T12 for 39W, T8 for 32W, etc.)</p> <p>Survey questions to determine common substitution by end-user</p> <p>Telephone surveys and personal interviews with end-users to determine annual hours of operation, spillover and snapback factors</p> <p>Signed agreements with manufacturers and distributors</p>

Evaluation Workplan

The key is to now take the plethora of indicators illustrated in the above tables and co-ordinate and combine them into a cost-effective evaluation plan. This was done for each of the three programs. Below is a condensed outline of the evaluation workplan for the equipment rebate program.

Task 1: Review of the Program Database. The evaluation team will continue to review program information and the program database throughout the evaluation contract period to analyze updated information, as it becomes available. The analysis of the database will feed several of the indicators as identified in the preceding indicator tables.

Task 2: Interviews with program staff. In-depth, confidential interviews will be conducted with FIDE program staff involved with program design and delivery. The main purpose of these interviews will be to obtain updated information on process related issues as identified in the organizational indicator table in the preceding section.

Task 3: Interviews with participating manufacturers. The evaluation will conduct interviews from a census of participating manufacturers. The interviews will be conducted in three waves. Depending on funding availability, we also recommend a fourth wave of interviews approximately a year after the program end to assess the sustainability of changes attributable to the program. The interviews will in general focus on two main objectives. First, to assess the effect of the program on the business practices and strategies of manufacturers regarding high efficiency equipment and the likelihood that any changes in these induced by the program will persist. Specifically, we will focus on their understanding of, receptiveness to, integration of, and promotion of high efficiency technologies. Second, the evaluation will also elicit perspectives on the specific strengths and weaknesses of the program to provide process-related feedback.

Task 4: Interviews with non-participating manufacturers. We propose the evaluation do these interviews in two waves. The first wave will take place toward the beginning of the program. This wave will focus on why they chose not to participate in the program, paying special attention to the effectiveness of program outreach and possible barriers in the program design. The evaluation will also look closely at the characteristics of non-participating manufacturers to draw comparisons between participating and non-participating manufacturers that may be useful in further diversifying the range of participating manufacturers in future program efforts. The second wave of interviews will take place toward the end of the project and assess the extent to which the program has impacted the business practices regarding high-efficiency equipment of non-participating manufacturers. Depending on funding availability, we also recommend a third wave of interviews approximately a year after the program end to assess the sustainability of changes attributable to the program.

Task 5: Interviews with participating distributors. The evaluation will conduct interviews from a broad sample of participating distributors across the three program technologies. The interviews will be conducted in three waves. The first wave will be conducted at the beginning of the project evaluation to obtain feedback on process-related issues and to collect information that can be used to develop a baseline of existing business practices and characteristics. The second wave of interviews will take place approximately a year and a half after the first interviews and will include re-interviewing previous interviewees. This should allow sufficient time for the majority of distributors to become involved enough in the program to have constructive feedback. The third wave of interviews will take place toward the end of the five-year project. This will allow a fuller assessment of changes and the sustainability of such changes. Depending on funding availability, we also recommend a fourth wave of interviews approximately a year after the program end to assess the sustainability of changes attributable to the program. The interviews will in general focus on two main objectives. First, to assess the effect of the program on the business practices and strategies of distributors regarding high efficiency equipment and the likelihood that any changes in these induced by the program will persist. Specifically, we will focus on their understanding of, receptiveness to, integration of, and promotion of high efficiency technologies. Second, the evaluation will also elicit perspectives on the specific strengths and weaknesses of the program to provide process-related feedback.

Task 6: Interviews with non-participating distributors. We propose the evaluation conduct two wave of interviews. The first wave will take place toward the beginning of the program. This wave will focus on why they chose not to participate in the program, paying special attention to the effectiveness of program outreach and possible barriers in the program design. We will also look closely at the characteristics of non-participating distributors to draw comparisons between participating and non-participating vendors that may be useful in further diversifying the range of participating vendors in future program efforts. The second wave of interviews will take place toward the end of the project and assess the extent to which the program has impacted the business practices regarding high-efficiency equipment of non-participating distributors. Depending on funding availability, we also recommend a third wave of interviews approximately a year after the program end to assess the sustainability of changes attributable to the program.

Task 7: Surveys with participating end-users. Telephone surveys are to be conducted with a range of customers purchasing project technologies. The surveys will be conducted in two waves. The first wave will be conducted toward the beginning of the program to provide timely feedback on issues such as characteristics of participants for use in program re-design and to collect baseline information on customers before the program has had time to influence them. The second wave of interviews will take place at the end of the program, allowing time for customers to ‘experience’ the program’s technologies.

The second wave of surveys will also collect important use and free ridership information to be used in energy and demand savings calculations. Depending on funding availability, we also recommend a third wave of surveys approximately a year after the program end to assess the sustainability of changes attributable to the program.

Task 8: Surveys with non-participating end-users. The evaluation will conduct two waves of surveys with non-participating customers. The first wave of surveys of non-participating customers will assess major market barriers to high-efficiency equipment and what can mitigate these barriers. The surveys will also assess customer awareness of the program and program technologies. The second wave of surveys will assess changes in customer awareness of high efficiency equipment, the likelihood that they will purchase high efficiency equipment in the future, and the appropriateness of the manufacturers' and distributors' marketing methods. The surveys will also be used to calculate a 'spillover factor' for use in energy and demand savings calculations. Depending on funding availability, we also recommend a third wave of surveys approximately a year after the program end to assess the sustainability of changes attributable to the program.

Task 9: Co-ordination with other project evaluations. Because the three different projects in the Development program involve several of the same market actors, data collection activities will be coordinated amongst the three projects to the extent possible to avoid over-contacting market actors. This is particularly important for non-participant interviews and end-user contacts.

Task 10: Analysis and reporting. For this task the evaluation will summarize all of the information gathered from the interviews, surveys, data analyses, and program documentation and database review to address the objectives laid out in the functional activities section of this plan.

For the first interim reports, the evaluation will focus mainly on process results to provide feedback for program re-design efforts. The final report will focus mainly on an evaluation of the program's procedures and processes and market effects that may result from the program. For example, the report will identify changes in business strategies of manufacturers and distributors and changes in opinions and attitudes of customers as well as identify barriers to energy efficient equipment. The final report will also contain near-term net energy and demand savings results from the program. If evaluation activities are continued after program end, an additional follow-up final report will cover the persistence of changes and adjust energy and demand savings accordingly.

Conclusion

As of June 2001, the evaluation framework has been agreed upon for all three intervention strategies within the Development Program. The second stage of the evaluation design work has begun. This second stage involves development of data collection instruments and a data warehousing system. The implementation of the evaluation plan is scheduled to begin in the fall of 2001.

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