

The Role of Partnerships in the Efficiency New Brunswick Large Industrial Program

Beth Herron and Peter Bassett, Efficiency New Brunswick

ABSTRACT

In January 2008, Efficiency NB launched its Large Industrial Program. To date 26 of 30 companies in the target market have joined the Program and \$108 million of energy efficiency projects are in implementation representing a GHG reduction of 182,000 tonnes/yr. The program is highly successful and won the prestigious I-Star Award from the Alliance to Save Energy in 2010. At the core of the Program model, and key to its success, is the establishment of Energy Management Partnerships between Efficiency NB and each organization. These partnerships transcend support for individual project transactions which tend to create more of a technical relationship and instead are based on the continuous management of energy. This creates an ongoing relationship with a longer term goal of supporting the development of a permanent energy management focus within industry as a means of improving business and environmental performance. Elements of the partnerships include:

- Negotiation of a formal master agreement covering support for capital projects; energy management information systems (EMIS) and; energy management capacity building;
- Clarification within the master agreement of the payback criteria required by industry to invest in Energy Efficiency Projects; as well as terms for incentive payments by the Program that are tied to action by Industry to implement projects meeting the stated investment criteria;
- Alignment of the Program structure with the typical internal Industry processes for investment decision-making;
- An innovative Program component called EMIS that promotes the development and implementation of *energy management information systems* that enable the organization to see energy performance and take action to improve it;
- Development and delivery of customized training to meet the needs of the Industrial Participants and their service providers;
- High quality account support from knowledgeable Industrial account representatives who proactively communicate and build relationships with each company.
- Coordinated communication activity such as joint press conferences and public announcements as well as in-plant events in order to celebrate the energy management successes.

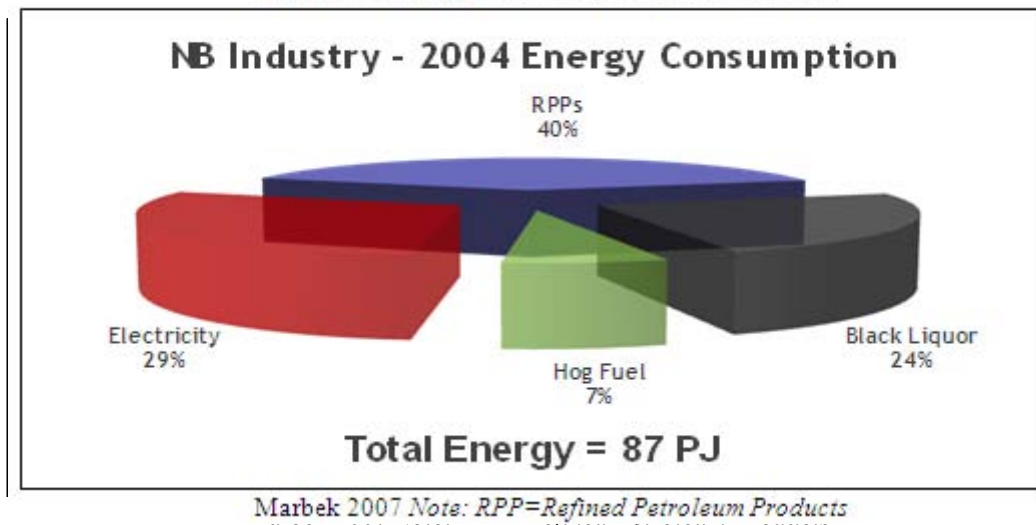
Our paper will explore the details of this successful partnership approach to Energy Efficiency Programming.

Introduction and Background

Efficiency New Brunswick (Efficiency NB) was created in 2005 by the Government of New Brunswick as a stand-alone provincial Crown Corporation responsible for developing and delivering energy efficiency programs and services, and conservation initiatives. With a broad mandate of all energy sources in all sectors, Efficiency NB provides a comprehensive suite of energy efficiency programs for the residential, commercial and industrial sectors and offers sound advice and practical solutions to help New Brunswickers use energy more efficiently, make better energy choices, manage energy expenses and lessen the impact of energy use on the environment.

Launched in January 2008, the Large Industrial program was designed to target the 30 largest Industrial energy users in the province. A Marbek, Neill Gunter study carried out in 2004 identified the total energy use by large industry in the province as 87PJ (Marbek 2007). Figure 1 below shows the breakdown of energy source. This same study estimated the savings potential to be between 5-13% or 3000-8000 TJ.

Figure 1. Large Industry Program Results



The purpose of our program is to assist New Brunswick Industry to improve their competitiveness, productivity and environmental performance through energy efficiency improvements. This mandate coupled with a very small taxpayer budget, drove the need for creative program design that would achieve sustainable savings with limited funds. We created a model that provides small incentives to identify projects and develop business cases as well as to develop and implement an Energy Management Information System (EMIS). We complement the incentives with an emphasis on capacity building. We deliver these Program elements through energy management partnerships with our customers. Our ultimate goal is to move towards an end-state where energy management has become a permanent part of the industry organizations which are then able to sustain energy management practices on their own year after year.

These partnerships transcend support for individual project transactions which tend to create more of a technical relationship and instead are based on the continuous management of energy. This creates an ongoing relationship with a longer term goal of supporting the

development of an ongoing energy management focus within industry as a means of improving business and environmental performance.

The key elements that demonstrate this partnership model within Efficiency NB’s Large Industrial Program are: the *program structure and participation agreement* that take into account the reality of industrial decision-making; the *account management and added value services* which include ongoing communication with the participant to understand needs and evolve Program responses to those needs; *strategic communication* that engages not only the operating levels of the organization but the strategic and employee levels; *EMIS* which is a tool that makes energy performance visible within the organization thereby informing people which enables them to take action to effectively manage energy and; *customized training and capacity building* to build the individual and organizational skills related to managing energy. The following sections provide a snapshot of program results and further detail regarding these partnership elements.

Program Results

To date Efficiency NB has signed 26 of the largest energy users to its large industry program. These companies represent the pulp and paper, food processing, wood product manufacturing, oil refining, and general manufacturing sectors. Through the program, companies develop and implement *capital projects* and *energy management information systems*. Capital projects installed to date include: conversion of boilers from oil to biomass; heat recovery; biogas generation from process wastewater; variable speed drives on pumps, compressed air system optimization, boiler and steam system optimization, and lighting. Table 1 below gives a snapshot of the impact of measures in the program that are either in construction or in operation.

Table 1. Large Industry Program Results

Large Industry Program	#	Annual TJ Reduction	Capital Invested	Annual \$ Savings	Incentives Paid
Large Industry Participants	26				
Capital Projects in construction or operation	29	2,621	\$108 million	\$26 million	\$774,000
EMIS in construction or operation	6	188	\$1.5 million	\$3.5 million	\$660,000
Impact of all measures to date in construction or operation	35	2,809	\$109.5 million	\$29.5 million	\$1,434,000

Efficiency NB May 2011

While the above figures appear very impressive, we need to clarify that the Program incentives have enabled the identification and business case development for projects but that company internal funds, a one-time \$3.4 million implementation stimulus fund as well as some targeted Federal Government incentives have funded the capital for the projects. Efficiency NB’s Program does not fund capital projects. Our Program funding is too small to sway the economics

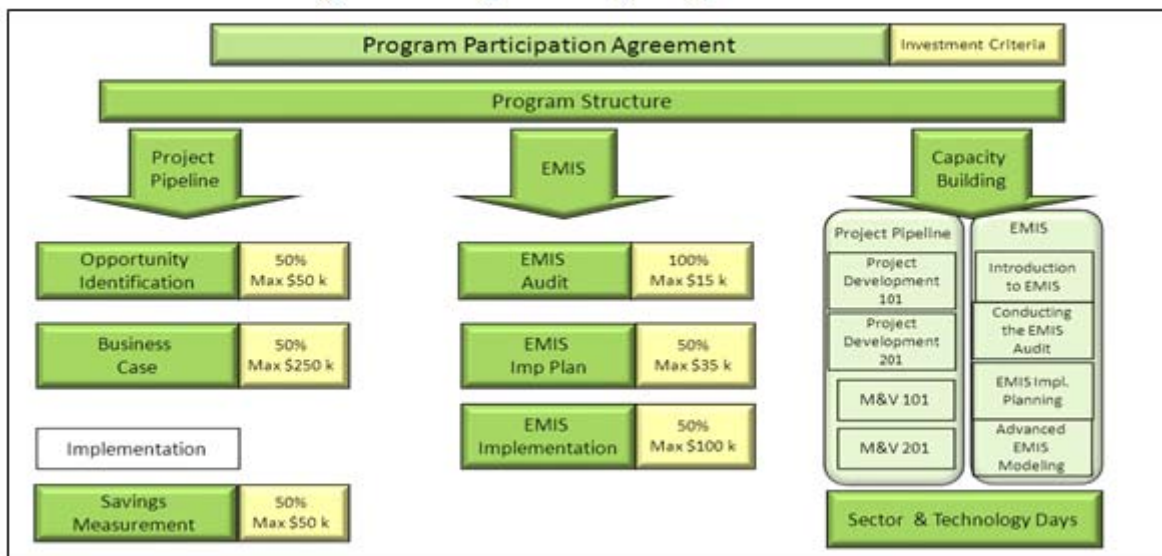
of projects and hence we have focused our limited funds on transformational activity related to the identification and business case development phase of projects and to making their savings visible. Our Project Pipeline process is more fully described in the following section.

Program Structure

When designing the Large Industry Program, the agency was faced with the challenge of creating market transformation with a relatively small budget. Large Industry projects range in the millions of dollars and there were insufficient funds within the Agency to make a real difference in the cost of these projects. A creative approach was required.

The overall design of the Large Industrial Program focuses on three pillars of activity as illustrated in Figure 2 below; *Technology/Capital Projects, Energy Management Information Systems (EMIS) and Organizational Capacity Building*. All Program activity takes place within a formal agreement signed by senior management. It is no mistake that this structure closely mirrors the structure of many successful energy management programs. A comprehensive review by Marbek for Efficiency NB of energy management best practices in Industry illustrates that the key success factors in sustaining energy management in any industrial organization are: *commitment from senior leadership, real time energy information that drives action and accountability and helps identify new technology projects, and an engaged, empowered and educated employee base* (ENB/Marbek, 2008). The design of our Program is intended to reflect the core elements of best practice and therefore facilitate the adoption of such a structure into our participant's on-going business activities.

Figure 2. Large Industry Program Structure



Efficiency NB March 2011

- The **Project Pipeline** supports 50% of costs to hire consultants to carry out Opportunity Identification studies and to build the Business Case for projects that meet Industry's investment criteria. The Program also funds 50% of the cost for additional metering and software required to measure project savings (Savings Measurement). Financial limit indicated in Figure 2 are the upper limit by activity to be paid by the Program for its 50% portion.

- The **EMIS** pillar supports the EMIS Audit and Implementation Planning activities (consulting) and then pays up to \$100,000 against capital implementation costs for installing an EMIS within the facility.
- **Capacity building** is specifically aligned with building organizational and individual skills within organizations in support of the other two pillars and in making energy management a permanent part of the company.

The project and EMIS streams of the program follow a structured path of development which is intentionally aligned with the typical project development and capital approval processes operating within most large organizations. Program incentive payments are contingent on “action by industry” to proceed to the next step with projects that meet their investment criteria. The Program therefore requires demonstrated proof of action to proceed to the next step as a condition of incentive payment for the preceding step. In the event that a study results in information that puts the project outside of the company investment criteria, the Program makes its 50% payment. The rationale for this is that we will share in the risk of looking for projects recognizing that not all will be winners. However if the study does identify projects that fall within the required hurdle rate, then the Program requires action before making a payment. This approach to incentive payments is viewed very positively by our participants who are, by nature, very performance driven.

The step-by-step project development process, implicit in both the Project Pipeline and EMIS components, involves interactions between industry and Program staff at the various stages. This opportunity to engage with the customer at each step provides a platform for strategic communication, for building the relationship and for identifying and clearing barriers that might impede project momentum. The capacity building stream is designed to provide support for each step of the Project Pipeline and EMIS Pillars in providing workshops, guidance material or just one on one training in each of the program areas. The Program has also adopted a structured and streamlined process with simple paperwork to make transactions with the Program efficient and quick. We believe that this style of service is reflective of what is expected in a competitive business environment.

By aligning our Program model with the way in which our industrial customers operate, we believe that we are creating a framework wherein we can concentrate on transformational activity and on deepening the energy management partnership between the agency and the participants.

Participation Agreement

The participation agreement is, in and of itself, the foundation of an ongoing partnership. The introduction of the formal agreement brings senior management to the table at the very beginning of the relationship. The need to make a conscious decision to enter into the program, coupled with the requirement to identify and formalize the investment criteria around energy projects, stimulates a dialogue within the company between various levels about investing in energy efficiency as well as the role of energy management in the organization. It brings a cross section of the organization together to begin a discussion around energy management and positions energy management as an ongoing process of continuous improvement driven from a business level.

The agreement requires that the executives define the investment criteria for a successful energy project to get access to the industry internal capital funding (*the Large Industrial*

Program does not provide capital funding for projects). The investment criteria embedded into the agreement creates a form of performance contract. It focuses the participants' technical staff and their service providers on developing actionable projects which fall within the industry's stated investment criteria. It also drives the conversion of projects through the study phases into implementation, as the agreement calls for action if investment criteria are met.

The umbrella agreement makes the participant eligible for a suite of services and incentives for the duration of the contract (i.e. 3 years). In contrast with a transactional relationship that begins and ends with the approved activity, this partnership approach sets the stage for an ongoing relationship during which the agency works with participants at their pace in whichever areas of the program they wish to focus at any given time.

Account Management and Added Value Service

The delivery mechanism for the industrial programs at Efficiency NB is through Energy Advisors or Account Managers. This was a conscious and strategic decision made to deliver on the core objectives of the program. With dedicated account management we are able to build the energy management dialogue with each participant on an ongoing basis. This ongoing relationship facilitates communication, provides a conduit for knowledge transfer and helps build a network to share experiences.

In addition, having a broader knowledge of the participants' facilities and understanding their needs, allows us to proactively help with training or other custom support mechanisms. Account Managers not only bring knowledge to the customer, they can also bring a wider pool of resources to the table as well as put them in touch with other participants, creating a network for sharing and collaboration.

We spend time internally as a program team, working on accounts together, sharing issues, identifying common needs and always putting the customer first. With the aim of helping participants become self-sustaining in their energy management practices, we attempt to create and maintain relationships within multiple levels of the organization. We are viewed as a partner on their road to sustainable energy management.

Inherent within the program's account management approach is a commitment to value-added service. We are known for our responsiveness and are, first and foremost, focused on the customer. The majority of our participants have many other competing responsibilities and priorities. In this light, quick turnaround, responsiveness, and overall genuine helpfulness makes their job easier, and provides value to their organization. In some instances we can be considered an extra resource or member of the team, a 'roving energy manager'.

Account managers spend time with participants helping scope projects, determining what to look for in a service provider and even helping research and source resources for custom technical support. Other situations call for less technical and more organizational support, helping to identify and deliver training, planning employee awareness campaigns, etc. By identifying areas where we can deliver more value, we step away from the traditional, transactional-based incentive program and become a trusted energy management partner.

"It worked really well," says Noel. "There was an excellent collaboration between Colin and us. Advice came really quickly and we worked as a team. He was like an advocate for us- he had a great level of knowledge and it was great to have that resource to draw on."

-Mathieu Noel, The Island Fishermen Co-operative, Jan 2011

Strategic Communication

A core focus of the program has been to support longer term shifts within organizations towards systematic and sustained energy management rather than a “fits and starts” project-centric focus stimulated by utility grants and/or high energy prices. Our relationship and dialogue is therefore based on the longer term issues associated with creating a sustaining culture for energy management within organizations. We recognized early that a key to shifting to a strategic dialogue regarding continuous energy management was to be in relationships at multiple levels of participant organizations including the senior management level. Our program concentrates on *communication* as a core element of Program delivery. It is our belief that our focus on maintaining a strategic dialogue with participants has resulted in an *ongoing conversation* with participants that transcends the ups and downs of project activity and is ultimately more valuable to them and, in turn, to our goal.

We also work with participants in a public way, developing joint press conferences, or statements celebrating the success of energy efficiency in their facilities and leveraging that message in the broader community. When Efficiency NB won the prestigious I-star award participants and service providers were quick to support the agency in a province wide newspaper supplement that truly showcased what is being done in energy efficiency within the Industrial Sector and celebrated our participants’ accomplishments. The photo in Figure 3 was taken from a joint press conference which celebrated the success of the projects implemented in several organizations with a special \$ 3.4 million Project Implementation Stimulus Fund. These joint and common messages reinforce the work of both the organizations and the agency and highlight the importance of partnerships in building a culture of energy efficiency.

Figure 3. Joint Stimulus Announcement March 2010



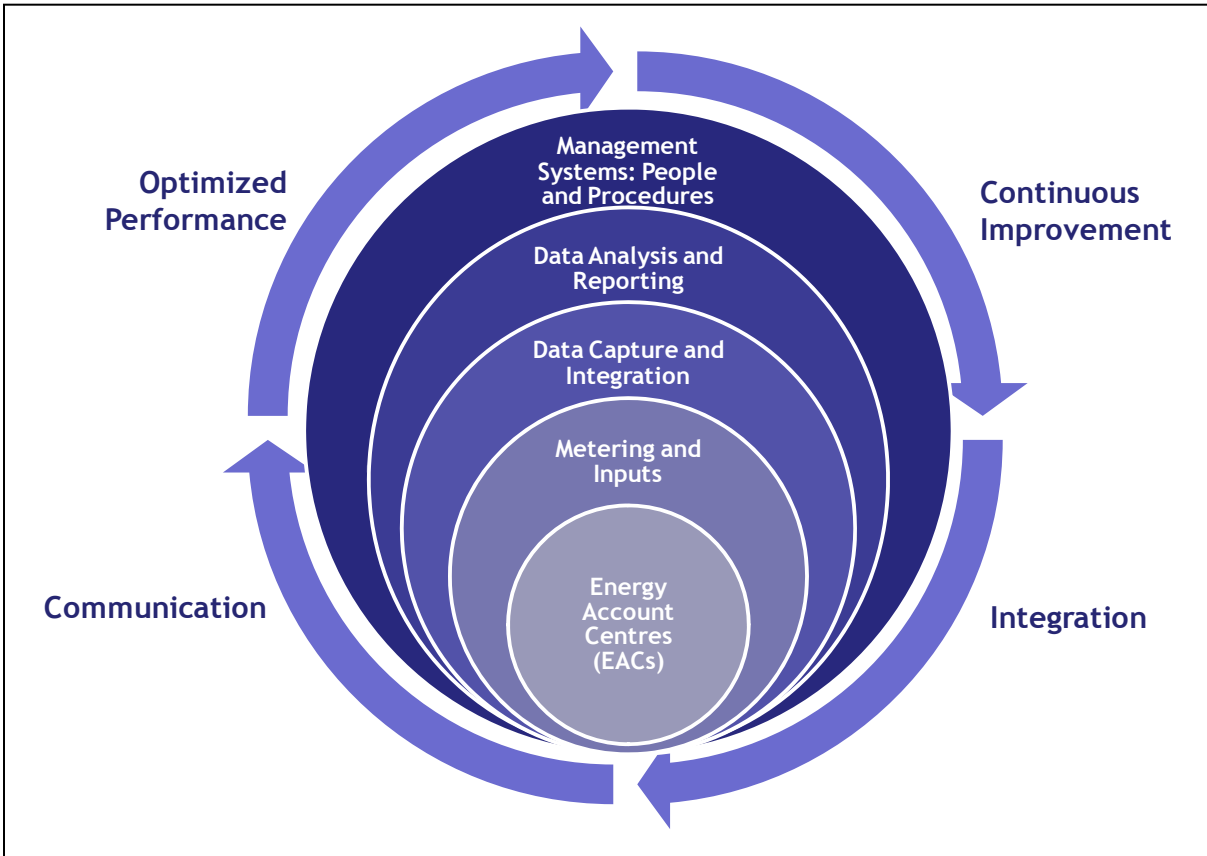
Jim Irving, President of J.D.Irving at the March 15, 2010 joint press event with Efficiency NB

EMIS

One Program element that has proven to be transformative and useful in advancing organizational energy management has been our EMIS initiative. It is also an element that would have been difficult to advance in the absence of a Partnership model. Our definition of EMIS expands beyond simple metering and data analysis to include the sphere of management systems

& procedures and organizational elements required to ensure that the insights gained from energy performance information are acted upon by people. Figure 4 below provides an illustration of EMIS and its elements.

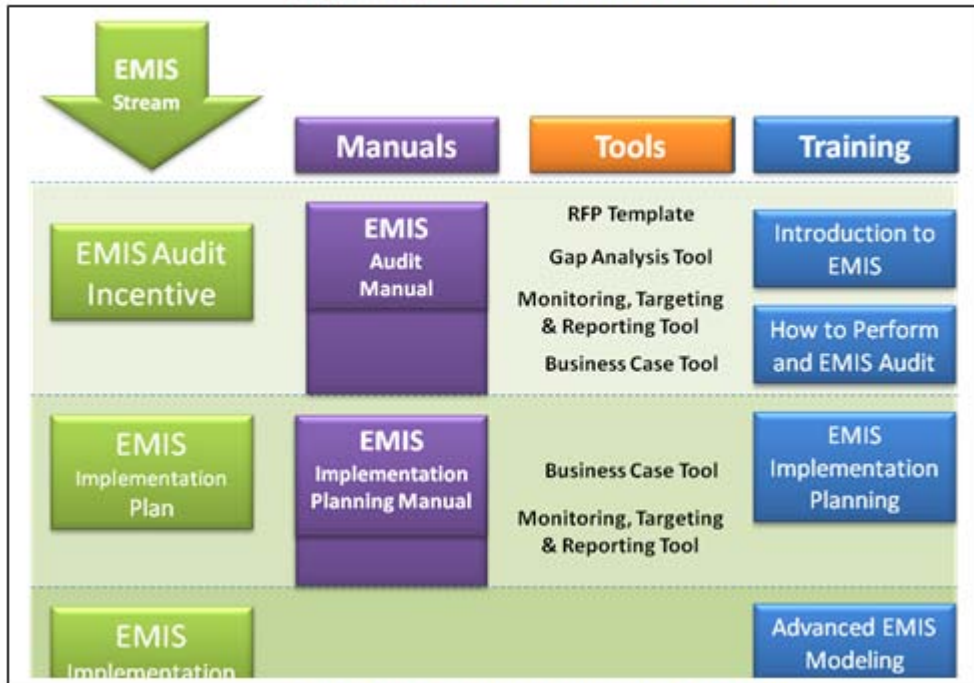
Figure 4. The EMIS Elements



Efficiency NB Implementation Planning Guide

Within six months of launching the Large Industrial Program, it was clear that the EMIS Program component had strong uptake with several companies signing up for EMIS Audits. We had laid out a structured path for developing and implementing EMIS within organization (*see Figure 2*) consisting of three distinct steps namely; *EMIS Audit* (aimed at meeting the need for management to see a Business Case for EMIS), *EMIS Implementation Plan* (detailed design and costing for EMIS) and *EMIS Implementation* (installation of EMIS). However there was very little existing documentation nor experienced local service providers to guide the process. Concerned that positive or negative experiences amongst early “takers” of the EMIS concept could dramatically affect the success or failure of the initiative, the Program located some international expertise in EMIS and developed specific guidelines and support material to ensure that the early EMISs that were developed would: (a) specifically address the need to view EMIS as a business investment and; (b) be wholly integrated into the organization and not be viewed as a tool or technology that would deliver savings in the absence of organizational action. A summary of the EMIS support tools developed are illustrated in Figure 5 below:

Figure 5. EMIS Guidance Material



Efficiency NB Training Summary Sept 2010

The EMIS component is directly aligned with the core Program goal of establishing energy management capacity. EMIS has acted as a catalyst for organizations to begin working on the organizational capacity dimension of energy management. The initial impetus for them to engage in EMIS has been the promise of a defined financial return. Once financial savings were defined, management seemed much more willing to allocate resources to more actively manage energy. To date, 20 out of our 26 participants are active in the EMIS component of our Program.

“Efficiency NB was very helpful in reviewing and commenting on the completed EMIS Audit to ensure that we were getting all that was required and for Flakeboard to qualify for Efficiency NB funding,” says Burke. “They also provided on-site training about the process to senior management, which helped me obtain a commitment to proceed.”

Pat Burke, Flakeboard Case Study Efficiency NB 2009

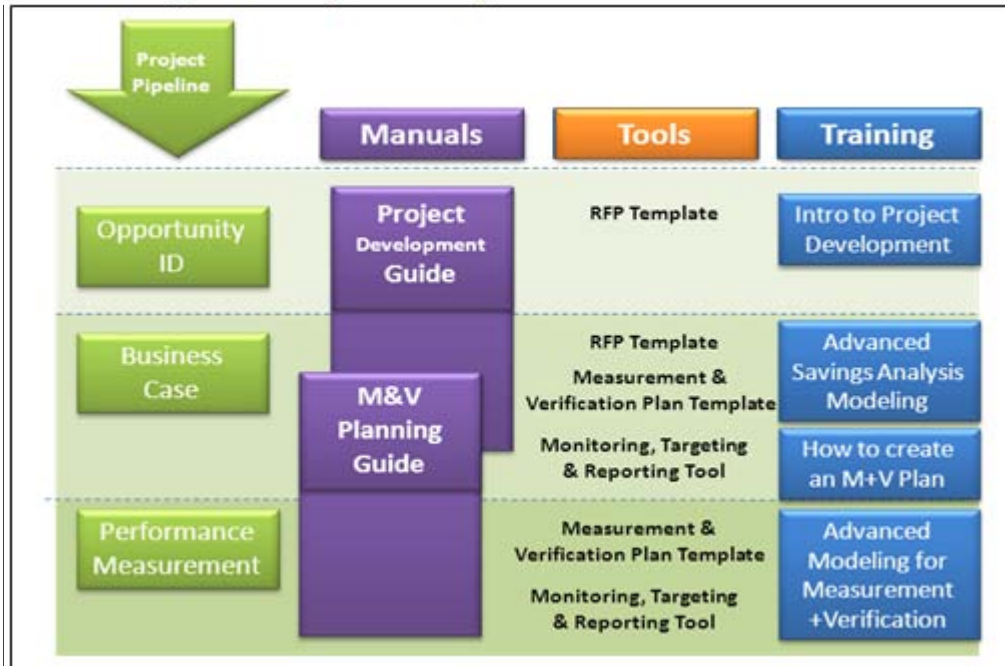
Customized Training and Capacity Building

As mentioned previously, a key mandate for Efficiency NB is to build capacity within industry and the service sector with the intent of creating a self-sustaining energy management marketplace. Training development and delivery is focused on the needs of participants and the service sector as well as on the gaps we see in the market.

As the program started, deficiencies were seen in the quality of the feasibility reports being developed, especially with respect to detailed savings analyses. This drove the development of a suite of Project Development Guidance Materials including checklists, a project development manual and accompanying workshop as well as more detailed workshop material on the why and how of detailed saving analysis. Similarly, as projects began to be

developed it was clear there was little knowledge in industry or the service sector on how to develop a measurement and verification plan to ensure project savings were being met. To address this need, we contracted experts in the area to help develop a guide and accompanying introductory and advanced workshops to help participants through the measurement and verification stage of their projects. The scope of this material is shown below in Figure 6.

Figure 6. Project Development and M+V Guidance Material



Efficiency NB Training Summary Sept 2010

These courses or modules are generally delivered as needed to individual participants and service providers or in a more formal classroom setting with a variety of participants/service providers if there is a general similar need across the market or a segment of the market. An example of this would be the EMIS 201 advanced data analysis course. In the fall of 2010 there were six companies all working through EMIS implementation planning or implementation. We brought them together and delivered the Data Analysis course when it was needed and relevant within their EMIS program. Not only did it help build their skill and advance their EMIS program, it brought them together to share experiences and learnings.

“I was then invited to one of ENB’s presentations that explained the types of projects that would qualify for funding,” says Michelle Mazerolle, one of the mill’s two electrical engineers. “They told us what they were looking for in terms of detailed feasibility studies as well as for measurement and verification plans. They really opened the door for us.”

Twin Rivers Paper Case Study, Efficiency NB 2010

A need was also expressed in the market for more in-depth, substantive energy management training. In 2008 there were few formal energy managers in the province. To satisfy this need we brought to the province the week-long AEE Certified Energy Managers (CEM) course and exam to 31 participants/service providers. This allowed our customers to stay

closer to home and take the course at a reduced rate. The emergence of corporate energy managers in NB has increased significantly in the last two years and as more companies are adopting a systematic approach to managing energy, this training is still in need. As such we are offering CEM for a second time, in the spring of 2011. Similarly, seeing a need for an increased focus on measurement and verification, both in industry and its service sector, we delivered the Certified Measurement and Verification Professional (CMVP) course in the fall of 2010.

The third type of training we develop and deliver is focused on technology or sector-specific energy efficiency opportunities. By understanding the market we are able to develop training to specific segments which both increases their skills and knowledge and stimulates new project ideas. Successful examples to date include a day focused on energy efficiency opportunities in sawmills, one day on the pulp and paper sector and a day focused on boilers.

Capacity building is a key pillar in the industrial program and within Efficiency NB overall. By working with our participants and understanding their needs, we are able to develop and deliver the type of training and support they need, when they need it. It is only by building the knowledge and skills of industry and the service sector that we will be able to build a sustaining culture of energy management.

Conclusion

By building energy management partnerships with its large industry participants, Efficiency NB has been able to develop and deliver an energy efficiency program that not only delivers results, it builds the skills and knowledge needed in these industries to sustain energy management practices and energy savings year after year. The step-by-step program structure, with formal master agreement, our high quality account support from knowledgeable Industrial account representatives, the innovative EMIS program, proactive strategic communication and ongoing capacity building are all elements that build and support these partnerships.

A model based on partnerships, and not only transactions, builds a platform of mutual benefit and growth which sets the stage for a self-sustaining energy management culture in New Brunswick. In a partnership model the agency and the participant communicate and work together on a series of issues that arise as the energy management pathway unfolds. It includes sharing risk, sharing knowledge, and helping each other reach goals. The basis of interaction is a longer term objective and a vision of organizational change that transcends project focused activity. The goal of market transformation is achieved through changing behavior and this is done by connecting with and focusing on people and organizational issues rather than just technical issues. We believe this focus on building partnerships in order to build organizational capacity is a key success factor of our Large Industry Program.

“ENB and Peter Bassett in particular [ENB’s senior energy advisor] have been a tremendous help to our company. They helped us scope out the projects and build a good business case, showed us how to improve efficiency on the new kilns we were buying, and gave us the push that we needed.”

Twin Rivers Paper, Plaster Rock Case Study, Efficiency NB, 2011

References

[Marbek 2007] Marbek Resource Consultants & Neill & Gunter; Advancing Opportunities In Energy Management In New Brunswick Industrial And Manufacturing Sectors, March 2007

[ENB/Marbek, 2009] Marbek Resource Consultants for Efficiency NB, Energy management Best Practice case Study Review and Synthesis, March 2009

Efficiency NB Case Studies can be found at: www.energycnb.ca