

Efficiency NB Industrial Program: A Structured Path to Turn Energy Efficiency Opportunities into Action

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ABSTRACT

Announced in June 2007, Efficiency New Brunswick's Industrial Program represents both an innovative program design and customized approach, specifically geared to bring energy investment decisions to action in the province's large industrial sector. This paper presents the Industrial Program as an example of how effective program policy, design and implementation, managed as an integrated continuum, can lead to significant results and excellent stakeholder value.

The paper provides an outline of the unique mandate of Efficiency NB as an Agency delivering energy efficiency programs and services, followed by a profile of New Brunswick's industrial sector. It then presents a summary of the Program's evolution from an initial conservation potential analysis, through the design phase, to implementation and ongoing operation. The paper presents the principal mechanisms by which the Program effectively brings investment decisions to action and concludes by presenting lessons learned.

Introduction and Background

Announced in June 2007, Efficiency New Brunswick's Industrial Program represents both an innovative program design and customized approach, specifically geared to bring energy investment decisions to action in the province's large industrial sector. This paper presents the Industrial Program as an example of how effective program policy, design and implementation, managed as an integrated continuum, can lead to significant results and excellent stakeholder value.

The paper provides an outline of the unique mandate of Efficiency NB as an Agency delivering energy efficiency programs and services, followed by a profile of New Brunswick's industrial sector. It then presents a summary of the Program's evolution from an initial conservation potential analysis, through the design phase, to implementation and ongoing operation. The paper presents the principal mechanisms by which the Program effectively brings investment decisions to action and concludes by presenting lessons learned.

About Efficiency New Brunswick

Efficiency New Brunswick (Efficiency NB) was created in 2005 by the Government of New Brunswick as a stand-alone 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.

Since its inception, Efficiency NB has made significant progress in the advancement of energy efficiency initiatives and action in New Brunswick. Its Residential Retrofit Program is second in Canada for the number of residential home energy evaluations undertaken by homeowners. The Agency's Commercial Bright Ideas Program transformed the commercial lighting market in the province in its first year of operation and received an Exemplary Program Award in 2006 from the ACEEE for this achievement. Its Industrial Program, the first of its kind in Canada, has engaged two thirds of the top energy users in the province through Participant Agreements. The success and recognized innovation of Efficiency NB's client-centered programs have helped New Brunswick carve out a niche as a national leader in energy efficiency programs and services.

A Profile of Industry in New Brunswick

According to most recent data (Stats Can), New Brunswick's 1700 manufacturing firms employ about 35,000 people. The manufacturing sector represents over 15 % of provincial GDP, with the total value of provincial manufacturing shipments in the order of \$15 billion.

A relatively small number of industries represent a significant proportion of economic activity in the province, namely food manufacturing, wood products manufacturing, paper manufacturing, primary mineral extraction, and oil and gas refining.

New Brunswick Provincial Energy Policy – The Funding of an Energy Efficient Program

Electrical Energy markets have evolved in recent years to allow for increased competition. Such competition among energy providers has extended beyond regional borders with the creation of open access markets. The New Brunswick energy policy provides direction that allows the province to fully participate in a competitive energy market and prepare for the future, while protecting the economic, environmental and societal concerns of its citizens.

The policy examined challenges and opportunities in each of the energy sectors relevant to New Brunswick and actions to meet the policy goals were identified for electricity, natural gas, refined petroleum products, renewable energy, energy efficiency and environmental concerns. The economic and environmental benefits to New Brunswick by increasing energy efficiency were also identified (White Paper).

Benefits of Increasing Energy Efficiency:

1. **Improved economic performance and competitiveness:** While energy expenses comprise 6.8% of U.S. Gross Domestic Product (GDP), for Canada the figure is approximately 12%. The New Brunswick economy is energy intensive due to the dominant role of natural resource-based industries such as pulp and paper and mining in the economy. This underscores the competitive importance of obtaining and using energy in a cost-effective, efficient manner in the province.

2. **More secure, reliable and cost-effective energy supply:** The ability of New Brunswick to meet economic growth forecasts is dependent, in significant part, on having a secure and reliable energy supply available at competitive cost. Improving energy efficiency in a cost-effective manner can help to achieve these growth forecasts. "Cost-effective" means that the cost of measures taken to increase energy efficiency is less than the incremental cost of energy that would otherwise have been consumed.
3. **Increased consumer disposable income from savings:** Spending less on energy, makes available more disposable income for expenditures on other goods and services.
4. **Mitigated effects of volatile energy prices:** Energy efficiency can mitigate the negative effect of price volatility by reducing energy consumption costs, as a percentage of total consumer expenses.
5. **Created employment:** Employment is created directly through capital investments in energy efficiency improvements and indirectly through supply and service industries. In addition, experience has shown that consumers tend to re-spend energy savings, thereby creating employment in alternative goods and services.
6. **Reduced air emissions:** Over 90% of total New Brunswick greenhouse gas ("GHG") emissions are associated with the production and consumption of energy. Energy efficiency improvements avoid the emissions that would otherwise result from additional energy use (White Paper).

The Provincial Department of Energy sees energy efficiency and demand reduction programs as alternatives to new energy supplies. These may have direct benefits for the provincially owned power utility, carrying lower risk and lower cost than new generation. Because of the lower cost, the effect over the long-term puts less pressure on rates and customers get energy savings from their individual improvements. The overall risk is lower because it is shared amongst a wide range of individual consumer investments in efficiency projects rather than in large central plants. The lower load on the grid also helps in making the system more reliable (White Paper).

Many end-use applications of energy, such as heating and hot water, can be provided through competing energy forms including electricity, oil or natural gas. The efficiency of energy end-use can vary significantly, depending on the energy source and conversion technology employed. For example, electric heat produced from a conventional thermal power plant is delivered at an end-use efficiency of approximately 30%, and from a combined cycle natural gas plant at approximately 45%. In comparison, the end-use efficiency of heating oil and natural gas utilized in a high efficiency furnace on site is at least 75%. These improvements in energy efficiency can result in significant emissions reduction, particularly for applications using natural gas, which is the cleanest burning fossil fuel available. Supporting fuel switching is also a means of smoothing the electrical load curve and can play a significant part in avoiding higher cost electricity generation (White Paper).

A Provincial Market Design Committee recognized that having utilities deliver energy efficiency and demand management programs, while at the same time trying to sell electricity for profits, were incompatible efforts. Their recommendation for efficiency program delivery by a "central facilitator, separate from energy suppliers" recognizes this motivational anomaly. Some of the fundamental requirements for an Agency to successfully achieve the province's objectives for the energy efficiency system are to have authority with clear and consistent direction and adequate funding.

Energy efficiency is a long-term, cost saving measure for the provincially owned electric utility. This, among other benefits, led to the creation of an energy efficiency program funded by the province and given a broad mandate to include all fuel sources.

Program Development from Identifying Industrial Sector Opportunity – A Pathway to Success

The early successes secured by the Industrial Program are products of the unique program development pathway adopted by Efficiency NB. The development of Efficiency NB's Industrial Program benefited from a series of key initiatives which permitted the Agency to move rapidly into program design and implementation to capture the opportunities identified for sector participants. The Program's unique development pathway effectively represents a "best-case" scenario from many perspectives, including energy conservation planning and policy development through to program design and implementation. The following are the crucial elements in the program framework and delivery that are understood to be central to its success:

1. The development of informed energy conservation policy objectives through the commissioning of a province-wide **energy conservation potential study** for industry;
2. A **consultation process** that carefully considered industry needs, barriers and current energy conservation program best-practices;
3. A detailed **program design** process that precisely defined the program principles, the target market, the required incentive levels, innovative program incentive mechanisms, and sound program governance and evaluation models;
4. The development of **guiding principles** of program implementation and a unique operating model.

Each of these steps is outlined in further detail in the following sections.

NB Industrial Energy Management Potential Study

In response to the White Paper released by the New Brunswick Department of Energy, Marbek Resource Consultants and Neill and Gunter, in partnership with the Canadian Manufacturers and Exporters Association of New Brunswick, were retained in late 2004 to conduct a potential study of opportunities for conservation and energy efficiency, fuel substitution and energy management best practices in New Brunswick's industrial sector.

The study found that in addition to actions already underway by industry, a potential reduction of between approximately 3,000 and 8,000 TJ of energy use could be achieved by 2020 with the deployment of conservation programs aimed at accelerating energy efficiency investments and fuel-substitution measures adopted by industry. The study suggested that these energy savings could represent between \$250M and \$500M of present value energy cost avoidance to industry over the 15 year study period.

Among other findings, the study showed that despite ongoing actions by industry, there remained tremendous opportunity to implement energy efficiency measures and energy management best practices. It also revealed a significant correlation between the adoption of energy management best practices and implementation of energy efficiency technology. As

such, another significant finding of the study found relatively low penetration of energy management best practices in New Brunswick industry that would ultimately support investments in technology.

Industry Consultants and Program Concept Development

In late 2006, the newly-formed energy efficiency Agency, Efficiency NB, retained Marbek Resource Consultants and Neill & Gunter to continue to build on the industry conservation potential study, and advance program concept development. The work entailed direct bilateral consultations with selected New Brunswick industries, and a market scan of best practices in North-American industrial energy efficiency programs (Stats Can). The aim of this intensive consultation process and review of industrial programs was to identify specific needs, barriers and perceptions in industry, to identify the most effective current conservation programming, and ultimately to recommend initial program concepts for consideration by the Agency.

The following important themes and conclusions emerged from the consultations, each of which played a pivotal role in the development of the program concepts.

Action: Without exception, all interviewees demonstrated they were currently taking significant action on the energy file, and they presented high levels of commitment respecting the ongoing management of energy as a strategic issue.

Capital: Lack of access to capital is typically cited as a barrier to implementing energy efficiency improvements; however, this was not supported by the consultations. Most industry representatives stated that the capital planning and approval process were well defined, and that the business case requirements in terms of competition for capital and hurdle rates were well known within the respective companies.

Business Case Development: All interviewees acknowledged a barrier they have experienced in accelerating implementation of further energy efficiency projects was the time and effort required to systematically build the business case for any given project or initiative, and the risk this investment of time and effort represents if the resulting project is not economically viable.

Monitoring of Key Performance Indicators (KPIs): Several of the plants interviewed reported they were achieving excellent results in driving down energy costs systematically by applying key energy use indicators to operations. This finding would ultimately lead to the development of the Energy Management Information System (EMIS) stream of the Program.

Training: All interviewees expressed interest in, and acknowledged the potentially significant benefits of, increased on-site operator training on best practices for specific end-uses.

The preliminary Industrial Program concept was developed directly from this round of consultations. The customized program approach proposed would differentiate itself from other more typical program approaches by incorporating the following high level operating principles:

Executive Level Engagement: Efficiency NB would seek to engage at the highest levels of management within each organization to establish buy-in to the process, and to develop a plan to move toward energy saving investments. This high level of engagement would ensure that the energy reduction initiative is treated as a strategic matter, the financial requirements are understood, and that commitments to implement projects are obtained.

Dedicated Expert Resources: Efficiency NB would engage dedicated senior level resources that are experts in industrial sector services and programs to serve the industrial sector.

These staff would provide credibility for Efficiency NB in industrial sector circles, and would ensure that Efficiency NB was speaking their client's language.

Flexible, Custom Solutions: Efficiency NB's approach would be to define a broad envelope of financial and non-financial support services that can be brought to bear to achieve the objectives of an energy reduction plan. Based on a written Participation Agreement, the client organization and Efficiency NB would agree to terms and conditions for support. Each Participation Agreement would be tailored to each client's unique situation and needs, within the pre-established envelope of possible support services.

Final Program Design

On reviewing the results of the energy efficiency potential analysis and the finding of the consultation process, Efficiency NB determined that there was a significant opportunity for accelerating industry investment by moving quickly to program design. Given that Efficiency NB's broad mandate includes all fuel sources, there was also clear recognition that the Industrial Program presented a significant opportunity to secure considerable and early reductions in green house gas emissions.

For these reasons, Efficiency NB took decisive action to mobilize a design and implementation team to bring the Program from concept to reality. The Agency hired a highly experienced Energy Manager as its Industrial Program Director, to appropriately equip the Agency to develop the Program's potential. The Agency then engaged Marbek Resource Consultants to move immediately into program design and implementation with an aggressive time frame for instituting the Program.

The program design detailed the specific program responses and requirements for the areas covered by their respective titles. The documents have proven invaluable, and continue to guide strategic program decisions. The final program design was documented in a series of "design briefs" which continue to serve as valuable tools for the program delivery and administration.

In June 2007, Efficiency NB formally announced the launch of its Industrial Program at the Annual Meeting of the Canadian Manufacturers and Exporters Association.

Moving Investment Decisions into Actions

The Industrial Program was specifically designed with the purpose of catalyzing "action". Its key objectives are to *identify*, *assess* and *implement* capital energy efficiency projects and Energy Management Information Systems (EMIS) that result in measurable energy savings.

Since the program goal is to achieve targeted energy savings (not to simply create study activity), the program strategy was to design a program process flow that moved projects aggressively to implementation and subsequent demonstration of energy savings. Further, the program flow would be aligned well with the way in which industries moved projects internally (including anticipated key investment decision points throughout that process). It would also need to squarely address the critical role that investment decisions have in the chain of events leading to implementation. The design also needed to address the risk that studies are conducted, defining viable opportunities, but then are not acted on.

From the start, Efficiency NB focused on creating program elements that would align with the processes operating in larger industrial companies related to the project cycle, from

initial project identification through investment grade analysis and business case preparation, winning of the “capital competition,” implementation and finally, the documentation of proven results, namely energy, and more importantly, dollar savings. The resulting program structure and design elements incorporated the following:

Engagement Phase - Initiating dialogue at the decision maker level of companies concerning the program offering and negotiating a financial hurdle rate required for investment into energy efficiency and EMIS projects;

Industrial Scale Incentives - The Program offers \$500,000 of incentives per participating plant as further detailed in this paper;

Program Elements - The program elements are designed to support Capital Projects, EMIS Systems and Energy Management Capacity Building;

A Structured Pathway to Implementation – The program design is structured to stimulate movement down a structured pathway to implementation that is aligned with investment decision criteria. Studies are strictly a stepping stone, not an end point in and of themselves;

The Agreement - The program Participants need to sign a legal Agreement specifying the Industry Investment Criteria and detailing incentive payments are contingent upon action by industry to move forward with viable projects;

Integrated Capacity Building - Training modules, manuals and guidelines are provided to Participants and the service sector to increase the probability of project success and to lay the foundation for sustainable activity;

Leveraging the Service Sector - Efficiency NB’s program delivery model is designed to leverage the service sector as an extension of its resources. The energy management capacity building stream of the Program supports the need for transfer of knowledge to the service sector. A service sector strategy focused on supporting projects under development as a first order priority helps to move projects to the implementation stage in a timely manner. As a secondary priority, emphasis is placed on the need for building local capacity for expertise in industrial Energy Auditing, Measurement and Verification and Energy Management Information Systems.

Engagement Phase

The initial challenge of the Program was to present it to industry at a senior management level. The aim would be to deliver a high level presentation to reinforce key elements of the Program, its benefits to Participants, and to secure a management decision to commit to signing the Program Participation Agreement.

A systematic approach was employed to get these senior level meetings for the presentation of the Program. Typically, prior to physically going to a plant, program staff would receive a call from someone at an industry that heard of the Program. During the call, the program representative would “pre-qualify” the industry to ensure the plant had an average monthly electrical peak demand greater than 2MW (minimum requirement for entry into the Program).

Following, the program representatives outline the Program and emphasize that participation requires a contractual commitment between the Agency and the industry through the signing of the Program Participation Agreement and furthermore, in the Agreement, industry must specify their Investment Criteria (the minimum financial hurdle rate) for the company to invest in energy efficiency and EMIS projects (“Industry Investment Criteria”). It was stressed

that payment of incentives is contingent upon demonstrated action by industry to move forward with projects that meet the stated Industry Investment Criteria. Typically, at this point, the industry representative would understand that the signing of an Agreement and the specifying of an investment hurdle rate required involvement by the plant manager level or higher and consequently the program presentations were scheduled to include those senior people.

The underlying strategy was to engage the company's senior people in a discussion around investment and implementation of projects right from the start rather than defining the Program as a study subsidy program that was not linked to the investment decision and implementation process.

Program Implementation and Ongoing Operation – Principal Mechanisms

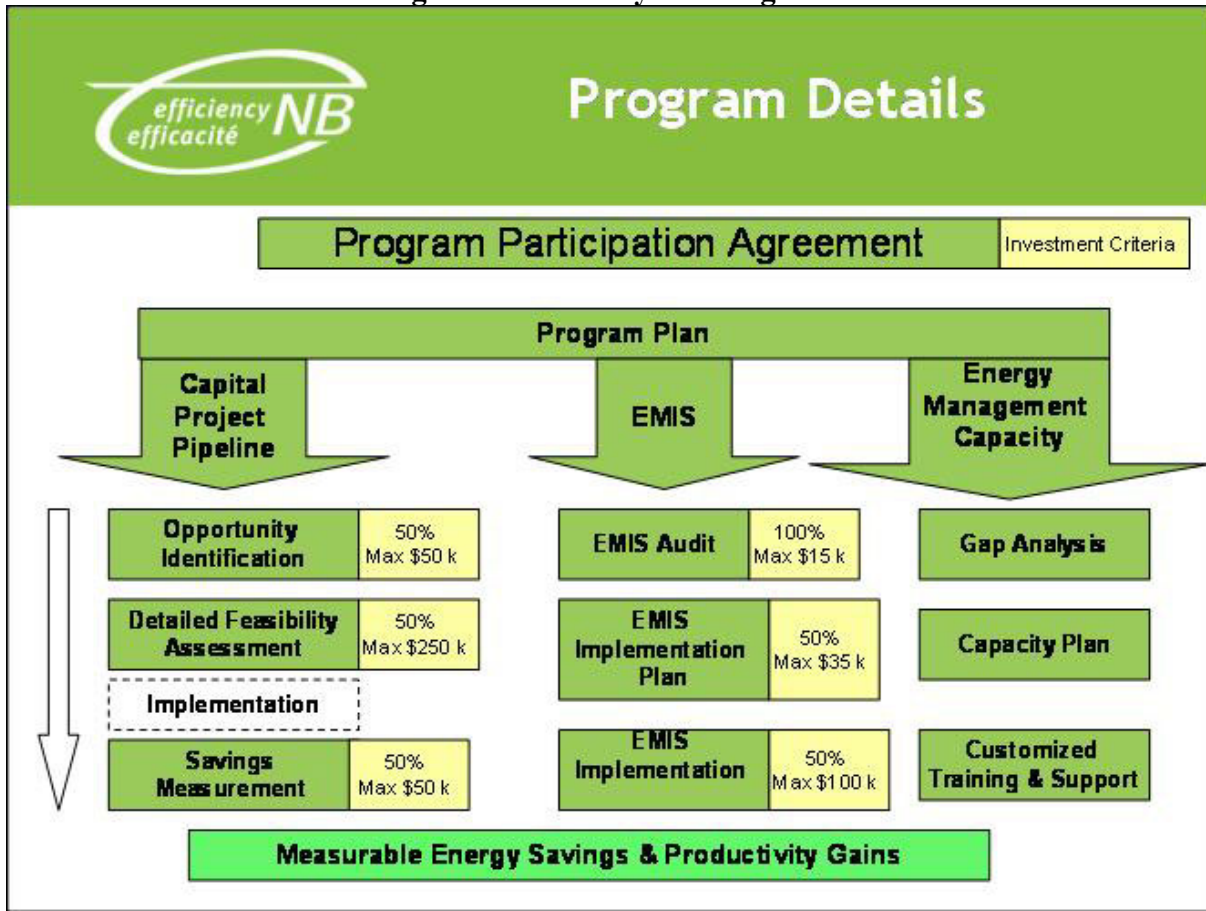
Industrial Scale Incentives, Program Elements and a Structured Pathway to Implementation

The program team designed a series of incentives that were: (a) appropriate to large industrial scale projects and (b) led a structured path to implementation and measurement of results and (c) were integrated with organizational investment decision making. In preparing to present the Program to industry decision-makers, it was recognized that senior level industry executive time was very limited and it was important to get attention and understanding across in a very short period of time. To accomplish this, the following slide was generated:

The slide effectively conveys:

- The three core pillars of the Program are Capital Project Pipeline, Energy Management Information Systems and Energy Management Capacity Building;
- All three pillars of the Program aim to produce energy savings and energy performance improvements in the form of “financial value” from (a) capital projects; (b) enhanced information systems and; (c) upgraded people skills;
- The incentive levels are substantial (detailed feasibility studies can obtain up to \$250,000 of funding) and total \$500,000 per site (*see slide for detail*);
- Payment of incentives is contingent upon demonstrated action by industry to move to the next stage of the process for projects that meet the pre-agreed Industry Investment Criteria. **No action, no payment.** The Program does however, pay for studies that fail to produce projects which meet the Criteria in order to de-risk the study activity itself;

Figure 1. Efficiency NB Program Details



- For the Capital Project Pipeline, incentives cover 50% of external service provider costs for Opportunity Identification and Detailed Feasibility Assessments and 50% of consulting, hardware and software costs for putting in place Savings Measurement (M&V) equipment/software to verify project performance on an ongoing basis following implementation. The Capital Project Pipeline incentives do not cover implementation costs. This was a specific design decision based on the intent of not “distorting” the investment decisions related to energy efficiency projects but rather letting them stand (un-crutched) on their own feet. The Program did choose to fund M&V costs to encourage companies to put instrumentation in place to track savings. The objective was to make project savings visible to management, demonstrate the project’s true ROI, and thereby help close the investment cycle;
- For the EMIS pillar, incentives cover 100% of external service provider costs for an initial EMIS Audit, 50% of the cost of an EMIS Implementation Plan and 50% of the consulting, hardware and software costs for installing an EMIS System. The Program funds 100% of an initial audit aimed at developing the preliminary business case. The decision to fund 100% of the first step was taken to ensure management are able to see the “return” from investments into energy metering and information systems in EMIS. The Agency is effectively kick-starting the process, and then also requiring action to the next stage in order to receive payment of the incentive;

- The Program offers support for the development of skills and organizational capacities in support of the Capital Project Pipeline and/or EMIS.

The Participation Agreement – A Structured and Disciplined Process

A decision was made during the design phase of the Program to require Participants to sign a formal Participation Agreement. The Agreement included:

- (a) A definition of the specific Industry Investment Criteria (defined by the industry);
- (b) Detailed terms and conditions for payment of incentives;
- (c) Guidelines for reports (Opportunity Identification, Detailed Feasibility Assessment, EMIS Audit and EMIS Implementation Plan); and
- (d) Definition of eligible expenses against which incentives could be paid.

The Agreement and its attachments total about 45 pages! Despite initial concerns that this requirement could act as a barrier to participation in the Program, the team determined that the risk was worth taking in order to try to achieve to a number of effects.

- (a) The signing of an Agreement would cause decision makers to be involved in a formal commitment related to energy management and more specifically, to stating clearly the terms (Industry Investment Criteria) under which they would invest in energy efficiency projects;
- (b) The Agreement would encode a process related to identification, assessment, implementation and measurement of results from energy management projects that oriented the company management to action and implementation rather than just the conducting of studies; and
- (c) The formalization of the Guidelines for reports and Agency requirement to review and approve reports would provide a window through which to impact quality and capacity within the industry or its service providers;

Each of these effects came out of the design decision to proceed with a significant upfront commitment of senior industry management through the Agreement process.

Integrated Capacity Building

Built into the design was a recognition that: (a) the Program 3-pillar model represented core elements needed to become ongoing internal functions within the industry and its service providers over time to remain sustainable and; (b) certain capacities needed to be developed within industry Participants and service providers in order to; (i) ensure the quality of studies and resulting projects and; (ii) to sustain activities required to identify, assess, implement, measure results and operate energy efficiency projects and EMIS systems over the long-term. Consequently, the following training modules and manuals were developed and integrated into the Program's Capacity Building Toolbox (see Table 1):

Table 1. Program's Capacity Building Toolbox

Incentive	Incentive Purpose	Training Module	Training Purpose	Manual and/or Guidelines	Manual and/or Guideline Purpose
Capital Project Pipeline					
<i>Opportunity Identification</i>	To identify potentially viable energy efficiency projects	Energy Auditing 101	To teach participants how to build energy savings into the business case at a preliminary level.	Energy Auditing Manual (draft)	To provide detailed guidance building progressive accuracy in energy auditing results.
<i>Detailed Feasibility Assessment</i>	To conduct detailed technical and economic assessment of specific energy efficiency projects to an investment grade level of analysis	Energy Auditing 201	To teach participants how to build energy savings into the business case at the detailed level.	Energy Auditing Manual (draft)	To provide detailed guidance building progressive accuracy in energy auditing results.
<i>Savings Measurement</i>	To demonstrate the results (financial returns) from projects to management to catalyze further investments and change culture	M&V 101 & 201	To teach participants how to use the M&V Guideline to prepare an M&V Plan.	M&V Plan Guideline	To provide detailed guidance in developing M&V Plans
EMIS					
<i>EMIS Audit</i>	To define the preliminary scope and business case for implementing an EMIS	EMIS 101	To prepare the organization for conducting an EMIS Audit	EMIS Audit Manual	To provide detailed guidance on the conducting of an EMIS Audit
<i>EMIS Implementation Plan</i>	To produce an investment grade report for the implementation of an EMIS system	EMIS 201	To develop skill in performance modelling	EMIS Implementation Manual	To provide detailed guidance on the conducting of an EMIS Implementation Plan
<i>EMIS Implementation</i>	To install and operate an EMIS system			EMIS Implementation Manual	To provide detailed guidance on the conducting of an EMIS Implementation Plan

Program Results and Lessons

High Level Results

Announced in June 2007, and fully operational as of January 2008, the Program has already achieved a number of notable results (as of March 31, 2009):

- **Program Participation** – More than doubled the first year target for 10 participants with 24 plants entering the Program. These 24 (out of a total market potential of 37) plants represent roughly 60% of the provincial industrial energy consumption.
- **Capital Projects** – In the first year 33% of participating Industries conducted activities under the Capital Project Pipeline Program component representing \$63M in capital investment and of this, \$18M has moved through analysis to construction. These projects

represent energy reductions equal to roughly 1200 Terra Joules and 120,000 tonnes of GHG.

- **EMIS Activity** – 30% of participating industries are currently developing EMIS Projects representing approximately \$2M of EMIS investment.
- **Financial Performance** – The Program is currently operating at approximately \$15/t of program total cost/potential GHG Reductions, with a total program cost leverage ratio of about 30:1 for capital projects identified to total program costs.

Lessons Learned to Date

In the last 12 months, the Program has achieved significant results and along the way a number of observations, some uncovered issues and lessons merit consideration.

Industrial Scale Incentives

- The level of incentive available per plant (\$500,000) was seen as substantial by most plants and viewed as meaningful;
- The alignment of the incentive payment process with “demonstrated action” by industry to move forward with projects that meet their Investment Criteria has been well received by industry and has led to a high rate of conversion from stage to stage. As industry realizes that it will only obtain the incentive if they move forward with projects, they are consequently selective with their use of the program funds. This has led to a high leverage ratio of program cost to dollars invested, since effectively, the Program does not pay incentives unless the implementation of the project eventually happens.

Aligning Program Delivery with Investment Decision Criteria and Implementation Action

The decision to start the engagement process with a legal Agreement that required industry to specify an “Investment Criteria” for energy efficiency and EMIS project implementation has proved effective in producing results. This combined with the structuring of our incentive payment terms to be tied to “action by industry” relative to projects that meet that “Investment Criteria”, has had several effects:

- It brought decision makers to the table right at the start of the engagement process and caused internal discussion and decisions about the hurdle rates required for investment into energy efficiency and EMIS projects. This got everyone focused on implementation issues rather than simply thinking about studying opportunity;
- The Agreement process aligned with the project “stage-gate” and investment analysis processes generally being deployed within industry;
- The fact that the Program only pays for a study following “demonstrated action” to move forward to the next step in the structured implementation path meant that value is placed on “*action to move towards implementation*”, rather than in the completion of studies.

The 3-Pillar Design

The 3-pillar design of the Program consists of “the Project Pipeline”, “EMIS” and “Energy Management Capacity Development.” The key message articulated to industry has been that all three are integrated components required to continuously drive energy savings from the business; through capital projects; enhanced information systems; and people.

Industry Engagement

- The program design aligns well with industry needs as evidenced by the level of engagement (24 of 37 industries signed the Agreement) far exceeding the Program’s year-one target of 10 plants). The action-based program structure seemed to resonate very well with the industrial market.
- The Program has lived up to its commitment to provide one-on-one customized account support to industry to actively assist these industrial operations to advance energy efficiency investments, instead of the more traditional approach of acting as a grant processor.

Project Development

The Project Pipeline structure moves Participants in a sequential way from Opportunity Identification to Business Case Preparation then through Implementation to Measurement & Verification of the energy savings. The M&V step closes the loop with the Investment Criteria element in that the “actual” ROI can be known. It is hoped by the Program that as the “actual savings” become known, that this in turn will positively affect management in feeling more confident about the investment return risk and this will result in more investments.

Energy Management Information Systems – EMIS

- Although most industries have invested extensively in hardware and software to monitor and control their processes, a comprehensive approach to EMIS which encompasses technology, people and the fundamentals of statistical analysis for the purpose of monitoring, targeting and reporting is uncommon.
- The Program’s comprehensive approach and generous opportunity identification incentives for EMIS has been welcomed by industry. More than 30% of program Participants are engaged in the development of EMIS projects.
- The Federal Government has recognized the significant work being undertaken by Efficiency NB and is supporting the development of an EMIS Toolkit which is intended to be deployed in all Canadian jurisdictions as a means of advancing energy efficiency in industry. The Toolkit includes tools such as an EMIS Audit Manual and EMIS 101/201 training courses to assist in a comprehensive development of quality projects and the building of participant and service sector EMIS skills.
- EMIS acts as a catalyst to bring management, technical and operations personnel into a unified discussion about improving energy performance.
- Based on our research, we discovered that EMIS has been very difficult to sell to management due to the difficulty in projecting the savings in a way that created confidence in management in the “return” on “investment. The Program therefore decided to fund 100% of an EMIS Audit (up to \$15,000) in order to get the preliminary ROI onto the table for management to see.

Capacity Development and Service Sector Capacity

- Deficiencies in capacity amongst industry and the service sector to conduct detailed project assessments for energy projects and prepare quality business cases has been observed, and needs to be re-emphasized in year two;
- Similarly, there is no “One-Stop Shop” for EMIS services. A service sector strategy will evaluate the opportunities and solutions for building capacity in this area in year two.

Program Implementation and Operations

- The Program moved from the design phase, through engagement to implementation and is transitioning to full-scale operation without significant issues;
- The design strategy of requiring participants to sign an Agreement as a pre-requisite to participation in the Program succeeded in engaging the organization’s decision-making level;
- Industry responded to the levels of financial incentive support as being appropriate to their needs;
- The program documents developed during the design have acted as a solid point of reference for program implementation issues and operating decisions;
- Because of the engagement strategy, the Program did not require significant marketing to achieve participation;
- The program principle of requiring “industry action” through elaboration of investment criteria in order to pay incentives was well received, and appears to work, resulting in a very good incentive dollar leverage ratio;
- The resource model in place is successful in both leveraging external expertise, as well as in building capacity within the delivery agency.
- The most common feedback from industry is that the Program provides a structured path for moving energy efficiency investment opportunities to actions.

It was noted early on that the program delivery needed to respect the significance of “face-time” spent with industry at the engagement phase. With the exception of the initial engagement at the corporate level, most discussions acknowledged that the culture is very informal. As a result, the Program adopted a practical approach to building relationships with industry.

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