

DSM Best Practices for Natural Gas Utilities: the Canadian Experience

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ABSTRACT

Gas utilities in Canada and the US have many similarities regarding DSM. As a result, a greater understanding of the Canadian best practices in DSM may be of value to utilities and other industry stakeholders as an informal way to benchmark their DSM and to learn from others in similar situations. This paper presents the 2008 Canadian natural gas utility best practices for monitoring and evaluation of DSM and discusses their applicability to other jurisdictions. The context for Canadian natural gas DSM is presented so that readers can better judge applicability to a particular jurisdiction/utility.

In 2008, the Canadian Gas Association retained IndEco Strategic Consulting Inc to prepare an update of the monitoring and evaluation best practices described in IndEco's earlier report, *Canadian natural gas distribution utilities' best practices in demand side management* (IndEco, July 2005). The update identifies 13 new best practices in DSM monitoring and evaluation. These are categorized according to whether the best practice is industry wide – most companies carry out the best practice – or whether the best practice is leading edge. Within each best practice, there is a range of ways in which the best practice is implemented that reflects the maturity of the company in DSM as well as its regulatory environment. Various ways that companies across Canada are implementing the best practice is discussed.

Introduction

Canadian natural gas local distribution utilities (LDCs) have long been proponents of energy conservation both in their own utility operations, and, since the early 1990's in many cases, through formal initiatives to encourage their customers to utilize natural gas wisely. Under DSM, customer programs were designed and launched. Initial programs concentrated on consumer education and awareness with communications to customers about the types of measures that could be taken to reduce their consumption. Subsequent efforts looked at adding more direct ways of influencing customer actions, often with the provision of financial incentives. As DSM has matured, some utilities have added market transformation programs to their DSM offerings.

Each year since 2000, the efforts of LDCs related to DSM have increased. In 2005 the Canadian Gas Association¹ decided it would be timely to investigate DSM best practices and retained IndEco Strategic Consulting (IndEco) to identify them (IndEco, *Canadian natural gas distribution utilities' best practices in demand side management*, July 2005). Between the completion of the first study and 2007, the LDCs gained significant experience and expertise in monitoring and evaluation of their DSM activities. During this period there were also changes in certain jurisdictions regarding regulatory requirements for monitoring and evaluation. In some cases, these changes required streamlined processes for monitoring, evaluation and stakeholder input. As a result, the CGA became interested in updating natural gas DSM best practices related to monitoring and evaluation in order to reflect this enhanced experience and retained IndEco to do a detailed investigation of monitoring and evaluation best practices in Canadian natural gas DSM.

¹ This is the Canadian equivalent of the American Gas Association.

The best practices study identifies thirteen DSM best practices for monitoring and evaluation among the CGA’s Canadian natural gas utility members, covering the period between 2004 and 2007. It should be noted that it is not the intention to imply that all thirteen best practices should be applied in every jurisdiction. Each best practice should be assessed within the context of the local jurisdiction. However, the best practices were described at a high enough level to accommodate a wide range of jurisdictions and different types of utilities, including investor-owned and publicly owned gas utilities.²

IndEco conducted the study through a formal request for information (RFI), which focused on the collection of quantitative data for the period of 2004-2007 related to DSM monitoring and evaluation. This information was complemented by a series of face-to-face and telephone interviews that IndEco conducted with the utility staff that focused on their processes and practices related to monitoring and evaluation. IndEco carried out the data collection and analysis between January and May 2008 and completed the final report in July 2008.

State of natural gas DSM in Canada

The participating LDCs are all unique organizations, with individual corporate structures, goals and policies. As Table 1 shows, the LDCs vary in ownership, throughput and customer base. The majority are investor-owned, while Manitoba Hydro and SaskEnergy are crown corporations owed by their province.

Table 1: General characteristics of natural gas utilities in Canada (2007)

LDC	Owner	Annual throughput ^{1,2}		Customers ¹	
		10 ⁶ m ³	10 ⁶ GJ	Total	Residential
ATCO	Investor	6,279	233	1,003,291	91.4%
Enbridge	Investor	12,073	447	1,860,857	91.6%
Gaz Métro	Investor	6,286	233	174,583	66.8%
Manitoba Hydro	Crown	2,156	75	261,159	90.6%
SaskEnergy	Crown	3,564	132	335,829	89.0%
Terasen	Investor	6,954	258	916,220	90.1%
Union	Investor	13,878	514	1,300,000	90.2%

1. Based on RFI responses.

2. Throughput for distribution only.

With the exception of Enbridge and Union, every LDC is located in a different province, meaning that nearly all companies face different energy efficiency policies and regulations. Enbridge, Gaz Metro, Manitoba Hydro, Terasen and Union all operate in a regulated DSM environment, where DSM plans are prepared and DSM is funded through ratepayers. ATCO and SaskEnergy treat DSM as one of the O&M expenditures that is rate-based. However, there are no specific regulatory requirements for DSM beyond its treatment as any other O&M expenditure. For the purposes of the study, ATCO and SaskEnergy’s DSM was treated as regulated DSM. Table 2 summarizes the regulatory environment of these companies.

² The CGA does not have any cooperatively-owned gas utility members. This type of gas utility is not common in Canada.

Table 2: Regulatory environment of natural gas companies conducting DSM in Canada

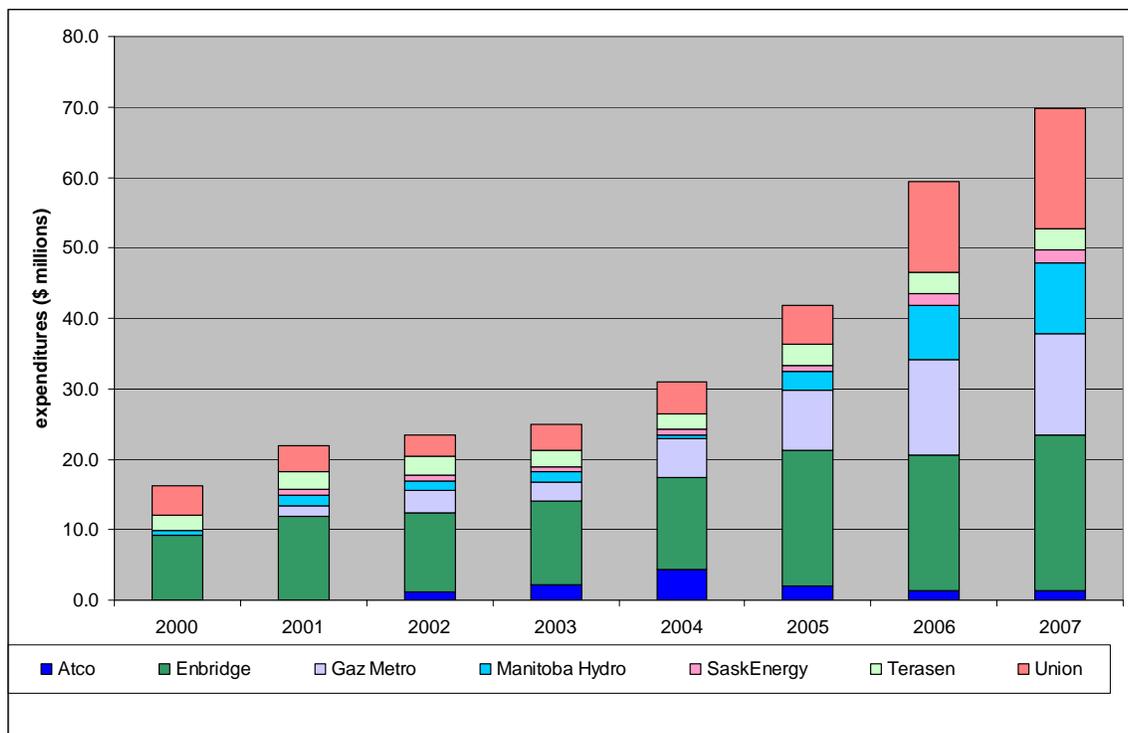
LDC	DSM approval agency	DSM since
ATCO	Alberta Utilities Commission ¹	2001
Enbridge	Ontario Energy Board	1995
Gaz Métro	Régie de l'énergie Québec	1999
Manitoba Hydro	Manitoba Public Utilities Board	2005
SaskEnergy	Crown Investment Corporation	2001
Terasen	British Columbia Utilities Commission	1997
Union	Ontario Energy Board	1997

1. As of January 1, 2008. Formerly Alberta Energy Utilities Board.

As illustrated in Figure 1, from 2000 to 2007 more than 288.7 million dollars (Canadian) were invested in DSM by the LDCs. Annual DSM expenditures increased steadily over the first four years, and more dramatically over the latter three years. The early growth is due to both an increase in the number of companies participating in DSM and an increase in DSM budgets within individual companies, while growth in the latter years is due almost exclusively to significant increases in DSM budgets.

Table 3 shows the 2007 DSM expenditures by each company and the percent of the company's gas revenue it represents. It has continued to hold true over the last several years that the largest DSM budget among Canadian natural gas utilities has been ten and twenty times the smallest, a fact explained by the differing sizes and markets of the various utilities.

Figure 1: DSM expenditures by company (2000 - 2007)¹



1. All values are actual values except ATCO 2007 values, which are budgeted.

Table 3: 2007 DSM expenditures, by company, as a proportion of revenue

LDC	DSM expenditure ¹ (\$ millions)	Total utility revenue ¹ (\$ millions)	% of total utility revenue	Utility revenue less cost of gas ¹ (\$ millions)	% of utility revenue less cost of gas
ATCO	\$ 1.4 ²	N/A	N/A	N/A	N/A
Enbridge	\$ 22.0	\$ 3,085	0.71%	\$ 972	2.26%
Gaz Métro	\$ 14.4 ³	\$ 1,600	0.90%	\$ 420	3.42%
Manitoba Hydro	\$ 10.1	\$ 528	1.91%	\$ 142	7.08%
SaskEnergy	\$ 1.8	\$ 962	0.19%	\$ 587	0.31%
Terasen	\$ 3.1	\$ 1,751	0.18%	\$ 622 ⁴	0.50%
Union	\$ 17.0	\$ 1,811	0.94%	\$ 655	2.60%

1. Based on RFI responses unless otherwise noted.
2. Value is budgeted for 2007, rather than actual expenditure.
3. Includes Energy Efficiency Fund expenditures.
4. Terasen Gas 2007 Annual Report, p.20.

Study methodology

We adopted the following definition of best practice:

“The term ‘Best Practice’ refers to the business practice that, when compared to other business practices that are used to address a similar business process, produces superior results.

Best practices are documented strategies and tactics employed by successful organizations and programs. Note, however, that rarely is an organization or program “best-in-class” in every area. The focus is not on identifying best programs or best organizations, but rather, best practices that exist within and across programs.”³

Two criteria were used to determine whether a monitoring and evaluation practice was a best practice:

- **Actionable.** The practice has to be practical and achievable by other LDCs
- **Results oriented.** The practice has to contribute to effective monitoring and evaluation

The best practices were categorized as two types:

- **Industry wide** – those practices that have already been adopted by (at least 50% of total number of participants) four or more Canadian gas LDCs
- **Leading edge** – those practices that are not in widespread use, i.e. by fewer than four Canadian gas LDCs (<50% of participants)

³ Source: www.eebestpractices.com. U.S. National Energy Efficiency Best Practices Study, December, 2004, Quantum Consulting Inc., for the California Best Practice Project Advisory Committee

This distinction does not suggest that leading edge best practices are in some way more important than those that are characterized as industry wide. It suggests only that some practices are more broadly adopted than others, and therefore, some may be more difficult to adopt (because of cost or other barriers), or that the lack of adoption more broadly of some practices may be a reflection of the maturity of the DSM industry.

Best practices

Thirteen best practices were identified and they are organized into three main categories: monitoring and tracking, evaluation systems, and verification and audit. Each best practice is described below under these main categories.

Monitoring and tracking

BP 1 - Develop measurable goals for DSM programs and track results.

This industry wide best practice has been adopted universally by Canadian gas LDCs. The LDCs set measurable goals for their DSM programs and then check at a variety of intervals (e.g. monthly, quarterly) the progress they are making towards meeting these goals. This progress is reviewed using tracked program results (actuals). The type and number of goals set vary depending on the LDC and the type of program. Common metrics for these goals include the number of participants, gas savings or revenues. For example, ATCO, for delivery of the Canadian federal ecoEnergy program, forecasts the number of participants and sets revenue goals and then tracks progress towards meeting them on a monthly basis. Manitoba Hydro sets participant and savings goals for all their programs and tracks actuals quarterly. Enbridge and Union, both with performance incentives for achieving net TRC benefits, set both TRC as well as gas saving goals and track progress monthly.

Developing measurable goals for DSM programs and tracking results is a best practice as it demonstrates that DSM is purposeful and quantifiable; it is done to achieve certain measurable goals and program management is geared to the efficient achievement of those goals. The LDCs align their success regarding DSM programs with measurable results. Knowing where they stand relative to their program goals during program delivery also allows the LDCs to make on-going adjustments to their programs to meet their DSM goals more effectively.

BP 2 - Develop and use customized tracking systems.

The development and use of customized systems for tracking program metrics and results is an industry wide best practice which has been adopted by all participating LDCs. Having a customized system to track program metrics and results is a best practice since such a system provides LDCs with a tool to meet their own specific program information needs in an organized manner, providing easy information access and retrievability. Each LDC understands what metrics the company needs to track for regulatory or information purposes and has created a customized system that addresses those needs.

The information needs of the LDCs vary and therefore the level of sophistication and complexity of the customized tracking systems also varies. For example, Enbridge offers over 40 programs in which over 193,000 customers participated in 2007 and therefore has a very large and complex system that it uses to track program metrics and results. SaskEnergy, on the other hand, provides four programs to a total of 8000 customers each year and therefore the size and complexity of the tracking system is lower. The software

used to create the tracking systems ranges from relatively simple Excel spreadsheets (e.g. Manitoba Hydro) to complex multi-layer databases (e.g. Enbridge). A number of LDCs are in the process of upgrading their software, for example, Manitoba Hydro is creating a new software tool. Within the industry, companies are moving toward integrating the tracking systems and databases created for DSM programs with other systems that the LDC already has in place. The majority of customized tracking systems are developed in-house by the IT department (e.g. Terasen, Gaz Metro, Union). Enbridge, due to the extent and complexity of its tracking system needs, sought outside expertise to develop its system.

BP 3 – Conduct an assessment of the level of market penetration for a program or measure.

Six of the seven LDCs (Enbridge, Gas Metro, Manitoba Hydro, SaskEnergy, Terasen and Union) assess the level of market penetration that a DSM program or measure achieves. For example, Manitoba Hydro determines the market potential and then examines where the utility's actions are in transforming the market. For its market transformation programs, Enbridge tracks, for example, number of workshops and participants, and change in market share, change in awareness determined by pre- and post-surveys.

Conducting an assessment of the level of market penetration is a best practice as it provides the LDCs with information on how close the market for a program and/or measure is to being transformed. This in turn can help the utility in setting measurable goals, such as gas savings or number of participants, going forward. If it is known how close a market is to being transformed, the LDC can focus on those markets or market segments that still need work and avoid wasting resources on a market that has already been transformed or has very limited potential.

BP 4 – Produce regular tracking reports for DSM programs.

The production of a regular tracking report for DSM programs is a practice adopted universally within the Canadian gas industry with all seven LDCs producing these reports. Producing a regular tracking report that describes DSM program results is a best practice as it allows LDCs to see on a regular basis how their programs are performing, relative to the goals set. Based on a review of this performance, LDCs can make appropriate adjustments. These reports act as an early warning system for decision makers at the LDC by allowing any adjustments to program design and delivery to be made in a timely fashion and prior to program completion. Some LDCs, for example, Enbridge, also routinely hold meetings between the DSM program manager and monitoring and evaluation group to discuss the DSM program results outlined in the tracking report and what adjustments can be made to the program based on these results.

The more frequently the tracking reports are produced, the more opportunity there is to adapt program design and delivery to meet the market conditions. Production of these tracking reports makes the administration of DSM programs more adaptive.

BP 5 – Produce a separate annual report that outlines the results of DSM programs.

The production of an annual report that outlines the results of DSM programs is an industry wide best practice adopted by five of the seven utilities (Enbridge, Gaz Metro, Manitoba Hydro, Terasen, Union). This is a best practices since it provides LDCs an opportunity to: take a step back and comprehensively examine their program results and performance, identify any opportunities for improvement in program design and delivery, identify any accomplishments and/or shortcomings that occurred in their programs, confirm or adjust the measurable goals set for each program, and communicate DSM activities to internal and external stakeholders.

The audience for the annual report may vary (one or more of internal LDC staff, general public, stakeholders, regulator). For example, Enbridge, Gaz Metro, Manitoba Hydro, Union and Terasen all file a report with their regulator that outlines the results of their DSM programs. Report content also varies. For example, Gaz Metro produces a Measurement Report annually for each program, which outlines program results. The utility also prepares an Evaluation Report when a program is evaluated. Enbridge and Union produce an annual report that describes the audited results of their DSM programs. Most of the annual reports focus solely on DSM. The exception is Terasen's report, which includes DSM results as part of the overall Annual Review of the company.

BP 6 – Include a line item for monitoring and evaluation in the DSM budget.

This industry wide best practice refers to LDCs including in their DSM budget a separate line item dedicated to conducting monitoring and evaluation activities. This is a best practice since it demonstrates that LDCs place a priority on DSM monitoring and evaluation, are aware of how much they are spending on this item, and are tracking these expenditures.

Four of the seven LDCs (Enbridge, Gaz Metro, Manitoba Hydro and Union) have a line item specific to monitoring and evaluation. For example, Union Gas has a line item called research and evaluation. Activities under this line item include forward-looking research and market evaluation. The intent of the line item is to help drive new programs and to greatly enhance existing ones.

Evaluation systems

BP 7 – Evaluate in a systematic fashion DSM programs and input.

This best practice refers to the planned system that the participating LDCs have for evaluating their DSM programs and input assumptions. Rather than evaluating their DSM programs and input assumptions in an ad hoc fashion, LDCs perform the evaluations in a systematic and planned manner. This is a best practice as it ensures that all of the programs and their input assumptions are captured over time, avoids duplication of effort by ensuring that programs and input assumptions are not evaluated before such evaluation is necessary, and ensures that evaluations only take place when there is appropriate data to produce meaningful evaluation results. For example, Gaz Metro conducts program evaluations on a systematic and rotating basis and then only when there are enough participants (defined by Gaz Metro as at least 30 program participants) to make the evaluation worthwhile.

Five of the seven LDCs (Enbridge, Gaz Metro, Manitoba Hydro, Terasen and Union) adhere to this best practice. Most evaluate their programs on an annual basis. The exception is Gaz Metro, which evaluates each one of its programs and input assumptions every three years. Union and Enbridge set their schedule for evaluating their program input assumptions in consultation with stakeholders that sit on their respective Evaluation and Audit Subcommittee (EAC). The EAC provides advice on what the evaluation priorities should be for the LDC in the upcoming year. Union and Enbridge also have three year Evaluation Plans that are reviewed by the EAC, approved by their regulator and updated annually to set evaluation priorities for both programs and input assumptions.

Gaz Metro has an explicit framework for evaluating its DSM programs including input assumptions - product, price, distribution network and promotion. For Union and Enbridge, the type of evaluation framework depends on the program. However, each year the results of the evaluation feed into the annual evaluation of the dispensation of each company's DSM variance account, the determination of its shared savings performance incentive, and its DSM lost revenue adjustment mechanism.

BP 8 – Make adjustments to savings.

This best practice refers to the adjustments that LDCs make to their gross gas savings results to take into account factors such as free-ridership, spillover⁴ and persistence. It is an industry wide best practice, with six of the seven participating LDCs (Enbridge, Gaz Metro, Manitoba Hydro, SaskEnergy, Terasen and Union Gas) who either examine or make adjustments for at least one of these impact factors.. This is a best practice as it demonstrates that the LDCs are making best efforts to accurately calculate the gas savings that result from their DSM programs and do not take credit for any gas savings achieved from their DSM that may not be a result of their programs. For example, on the residential side, Manitoba Hydro determines free-ridership levels by distributing an annual customer survey that includes questions that try to capture the motivations for participation in residential programs. On the commercial side, Manitoba Hydro tries to capture free-ridership by including relevant questions on program applications.

Both Enbridge and Union make adjustments to their gas savings to take into account persistence. For example, Union surveys a sample of participants in its Energy Savings Kits Program to ascertain measure persistence of the program measures.⁵ Enbridge also calculates persistence in its TAPS program.⁶

Margin of error is not an adjustment to gas savings, but rather a range around the savings that provides a degree of confidence in the numbers presented. If gas savings have a large margin of error, then there may be less confidence in the results and additional research may be required. To date, only Enbridge and Union are calculating margin of error around various metrics. For example, Enbridge includes a margin of error when conducting engineering reviews of custom retrofit projects. Union calculates a margin of error when conducting research on deemed savings for a technology.

If the expense or resources required to assess these savings adjustments become too large, then the utility should question whether the time and expense is justified or if resources would be better spent obtaining more gross savings.⁷

BP 9 – Conduct a technology assessment of a new technology prior to its inclusion in a program.

This leading edge best practice refers to LDCs conducting rigorous in-depth and multi-level evaluation of a technology prior to it being included in a DSM program. Before introducing a new technology into a program, all LDCs review the technical literature and may also be involved in organizations that conduct new equipment testing and/or peer review test results. Conducting the more comprehensive technology assessment is a best practice because it ensures that the quality of the measure is rigorously checked prior to inclusion in the DSM program and that the gas savings claimed by the technology are reasonable. Enbridge and Manitoba Hydro are the only LDCs that adhere to this best practice. For example, Enbridge first conducts an in-house evaluation, followed by evaluation by a third

⁴ None of the LDCs are currently calculating spillover, but Enbridge, SaskEnergy and Union Gas are interested in doing so and are moving toward addressing these effects. For example, SaskEnergy tried to capture spillover in its Commercial Boiler Program through a customer survey and informal discussion, but this was not successful in delineating a clear value. Union and Enbridge did a joint study on the effects of spillover on program participation and results.

⁵ ESK Program measures include a low-flow showerhead, faucet aerator, kitchen aerator, pipe wrap and a \$15 programmable thermostat coupon.

⁶ TAPS program measures include thermostat, aerators, pipe wrap and showerhead.

⁷ A recent Enbridge evaluation study cost about \$250,000, involved extensive stakeholder involvement throughout, and despite this effort, yielded results that were not satisfactory to all stakeholders.

party to verify the results obtained. Only once the results are verified is the technology included in the DSM program. Manitoba Hydro has a dedicated engineering group that continually reviews technologies prior to inclusion in a DSM program. Third party testing is used in situations where a technology's specifications have not been verified by a reputable third party organization.

BP 10 – Integrate feedback loops into program design and delivery.

This industry-wide best practice has been adopted universally by the LDCs. The utilities use the program results and the results of their evaluations to feed into program design and delivery. This is a best practice since it provides a mechanism for continual improvement of program design and delivery that will lead to improved results (e.g. gas savings achieved, cost efficiencies, participant numbers). The level of formality of the feedback loop varies among LDCs. Some are very formal and systematic. For example, Enbridge monitoring and evaluation staff meet monthly to discuss monthly tracking report results and what adjustments to the program can be made to improve results. In the last year, Enbridge has established an engineering fundamentals for its DSM group to close the loop between recommendations made by the auditor and/or evaluators for the measures used in custom DSM projects. Other feedback loops are more informal and happen on an as needed basis. For example, ATCO prepares a monthly tracking report, which compares actual expenditures and revenues, including participants, to those forecast in its annual Business Plan. If the actuals vary greatly from the forecast, say for program participants, the EnergySense group (which administers DSM) meets to improve marketing and promotion to increase program uptake.

An important part of this feedback loop is ongoing consultation with delivery agents and/or channel partners. The level of formality and feedback depends on the LDC. Some have a formal system and consultation process. For example, SaskEnergy has formalized consultation with delivery agents and channels through its Commercial Industry Dialogue Table, which meets quarterly and is comprised of industry members and contractors that provide feedback on program delivery, and also serve as a source of information on equipment and measures. Others, such as Terasen, consult more informally with trade allies, suppliers, consultants and internal experts. Union uses both informal and formal mechanisms. Union's Account Representatives and Program Designers have ongoing discussions with customers and delivery agents to assess the level of satisfaction, obtain feedback on design and delivery, and program improvements. In addition, Union conducts formal planning meetings with paid delivery agents to obtain program feedback. In 2007, Union also ran a formal ideation session with key stakeholders and experts to get their insights on program design, new programs, and new ideas.

BP 11 – Consult with stakeholders on monitoring and evaluation.

This best practice refers to consultation that takes place between LDCs and stakeholders⁸ on monitoring and evaluation. This is a best practice since it provides feedback for continual improvement, it streamlines the approvals process by obtaining feedback prior to approval (internal or external) from stakeholders, and it allows the LDCs to conduct monitoring and evaluation that stakeholders are interested in and produce results that the stakeholders want to see. Four of the seven LDCs (Enbridge, Gaz Metro, SaskEnergy and Union) engage in some level of consultation with stakeholders. Enbridge and Union involve their stakeholders through their formal EACs. Gaz Metro holds four consultation meetings annually with the regulator and hearing intervenors to get their input on the Measurement Reports for each program and on the internal DSM audit. SaskEnergy consults through its Commercial Industry Dialogue Table.

⁸ For this best practice, stakeholders are defined as any party interested in the DSM activities of the LDC.

BP 12 – Conduct on-site verification of installed DSM measures.

LDCs conduct on-site verification of installed DSM measures to ensure that the measures claimed to have been installed as a result of a DSM program were actually installed. This is a best practice since it verifies that the installation took place and contributes to concluding whether the gas savings claimed by the program are accurate. This is an industry wide best practice followed by four of the seven LDCs (Enbridge, Gaz Metro, Manitoba Hydro and Union).

How LDCs decide whether to conduct on-site verifications varies. For example, Enbridge conducts on-site verifications only on larger projects, with the potential for large gas savings. For smaller projects, Enbridge verifies installation of measures with the customer by phone or e-mail. Gaz Metro decides whether to do on-site verification on a program basis, for example, for its boiler program, it conducts on-site verification for all new construction/customer projects and for most existing customers. Union conducts on-site verifications on a random sample of its custom projects, which includes checking that all stated and claimed measures are installed and taking photos of the measures. Different independent third parties are retained to conduct on-site verification of industrial and commercial projects.

BP 13 – Conduct an independent audit of DSM activities.

Conducting an independent audit of DSM activities is a best practice as it provides an unbiased and independent review of DSM activities and results. Five of the seven participating LDCs (Enbridge, Gaz Metro, Manitoba Hydro, SaskEnergy and Union) have an independent audit of their DSM activities. Gaz Metro, Manitoba Hydro and SaskEnergy all conduct, internal, independent DSM audits. Gaz Metro's accounting department conducts an annual audit of all departments including the marketing department, which is responsible for DSM. This audit examines the processes employed in administering DSM including the databanks used and how the information is extracted and calculated. The regulators and intervenors are also involved in the internal audit, participating in consultation meetings four times a year at which Gaz Metro provides them with information on DSM activities and invites them to ask questions about the past year's data and activities for the upcoming year. As required by the regulator, Enbridge and Union engage third party auditors to conduct annual DSM audits to provide an opinion on the dispensation of the DSM variance account, the amount of the shared savings incentive and the lost revenue adjustment mechanism, and in forming these opinions to verify the financial results in the Evaluation Report, the reasonableness of the input assumptions, and recommend any forward looking evaluation work. The frequency of the audits varies, with Enbridge, Union and Gaz Metro conducting annual audits while SaskEnergy conducting audits on a periodic basis.

Conclusions

Monitoring and evaluation is essential to DSM. It is needed for continual improvement in DSM program design and delivery and can facilitate stakeholder buy-in. For certain regulated LDCs, it is necessary for regulatory compliance. As DSM has matured in Canada, natural gas LDCs have become more adept and sophisticated in monitoring and evaluation. This is evidenced by the number of best practices that have been identified since IndEco completed the original best practices work for the CGA in 2005. Over the last year, many best practices in DSM have become industry wide. While there is variability across the country in rigor and complexity of monitoring and evaluation, all utilities must justify their DSM expenditures. Effective monitoring and evaluation gives this justification credibility and support.

It should be noted that it is not the intention to imply that all thirteen best practices should be applied in every jurisdiction. Each best practice should be assessment within the context of the local jurisdiction. However, the best practices have been purposely developed at an aggregated enough level to accommodate a wide range of jurisdictions and different types of utilities.

Most utilities use similar cost-benefit tests (TRC) and face similar struggles in measuring certain input assumptions. The values used for input assumptions can be very contentious with stakeholders, particularly where there is a utility performance incentive involved. Some utilities have tried to reduce the level of contention by obtaining approval from the regulator for a set of input assumptions for prescriptive programs. Others involve their stakeholders (and regulatory staff in one case) in an informal and regular dialogue on assumptions and results.

For those required to use similar cost-benefit tests, there may be benefits in using the same values for certain input assumptions, such as measure life or savings per measures, across the industry in Canada and perhaps across North America. As well, there may be value in using the same methodologies for deriving certain adjustment factors (e.g. spillover, free ridership, persistence). In fact, Canadian utilities often use evaluation protocols that have been informed by or are common to those from the US.

With the cost, level of effort and contention increasing over monitoring and evaluation, at least in certain jurisdictions, there may be a need to reexamine the ways in which both input assumptions and savings adjustments are determined to ensure that there is appropriate value for money in their evaluation (i.e. balancing cost vs. level of statistical significance). Developing standardized methodologies and protocols for the gas industry may go a long way to reduce costs and regulatory risk.

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