

EM/MIPUG I-1

Reference:

Evidence of Dale Friesen, Summary of Recommendations and Conclusions, PDF pages 6 to 8.

Preamble:

General recommendations.

Question:

In your opinion, what flexibility should be afforded to Efficiency Manitoba for it to make adjustments to program offerings within an approved efficiency plan in order to:

- a) capture market opportunities;
- b) address emerging technology opportunities;
- c) address shortfalls in past year results?

Response:

(a)

Efficiency Manitoba should be granted the flexibility to match savings targets and expenditures over a longer-term horizon, so that short term annual targets and budget limitations do not over-rule spending decisions on cost-effective energy savings acquisitions that can contribute significantly to the long-term objectives included within the 15 year mandate.

Capturing significant market opportunities within the industrial sector is highly dependent on factors related to timing and costs that may not relate well to Efficiency Manitoba's mandated annual savings targets and the process for approving Efficiency Manitoba three-year plans. An inability to adapt to the potential annual variability in low-cost industrial savings opportunities within its three-year plans may constrain Efficiency Manitoba's ability to engage large industrial consumers and potentially lead to increased costs for achievement of individual annual targets using more costly short-term measures.

The initial Three-Year Plan appears to focus specifically on annual activities within the three-year window without fully considering the longer-term implications beyond the three-year period. A focus on annual targets (i.e. based on various interpretations of the Act and Regulation) will not always blend well with industrial sector opportunities and timelines, which are driven by the cyclical nature of market demand, production requirements and planned downtime for maintenance and other activities. The inherent variability in the timing of large savings opportunities within the industrial sector challenges a planning process focused on annual

targets, which is further challenged by the longer 12 to 36-month implementation periods for many larger industrial projects.

Examples include:

- Larger industrial operations may only undertake one planned shutdown during a three-year Efficiency Manitoba Plan. If that customer undertakes a significant energy efficiency project with a large savings outcome, results for the fiscal year in which the planned shutdown occurred may impact budgets and achievement of annual targets for the other two fiscal years in the plan, or challenge funding available to support smaller industrial projects with shorter timelines for implementation in years of large expenditures for major savings acquisition projects.
- Large facility expansions or new facility construction projects may arise during the course of the plan. Major expansions or new construction projects provide cost-effective opportunities to obtain significant savings at lower costs, which will be persistent through the remaining life of that process or facility. Such a project may span 2 to 3 years, extending beyond the period defined in a three-year plan. Efficiency Manitoba funding may be required to support implementation during the active three-year plan, however savings may only be realized in the subsequent three-year plan.
- Economic and market conditions may alter or inhibit funding decisions for industry. These types of conditions can have impacts on other types of customers as well in terms of achievability and investment requirements and further support a longer-term view on savings instead of year-to-year.

Projects with larger savings, while generally highly cost-effective, often require larger funding commitments and related incentive support, potentially causing significant variation in year-over-year spending and achievement of targets. In some cases, these projects may also require progress payments of incentives due to lengthy implementation periods, higher capital costs and expense for carrying expenditures through to project completion, while savings are not realized till after the three-year plan period has concluded.

Other Cost Considerations

Maximizing industrial sector participation will require Efficiency Manitoba to consider factors that are not generally included in metrics used to evaluate incentive thresholds or determine the cost-effectiveness of energy efficiency programming from a consumer perspective. The definition of eligible costs may also need to expand in some instances to support project implementation.

Continuity of production is a key priority when assessing the overall costs and benefits associated with efficiency improvements to existing processes/facilities due to the high cost associated with revenue lost for production downtime. Costs for downtime and lost productivity can exceed potential cost savings obtained through efficiency improvements by orders of magnitude. As a result, the industrial sector is generally resistant to taking production equipment out of service in order to implement efficiency improvements. Constraints for implementing

energy efficiency measures are therefore driven by windows of opportunity for limiting losses in productive output.

When combined with the longer timelines required for planning, capital spending justification and approval, it is not uncommon for larger industrial projects to require 12 to 36 months for implementation, with new plant expansions sometimes extending even longer.

Incentive Funding Caps

Caps that limit incentive support to 50% of costs for industrial projects are detrimental to the lowest cost acquisition of savings by Efficiency Manitoba. Increased funding for low-cost projects may provide an opportunity to increase participation and capture greater savings in a cost-effective manner if higher incentive levels reduce payback periods to levels referenced by the industrial sector for capital cost justifications.

As an example:

- An energy efficiency project with a three-year payback may not be supported by an industrial customer if it is competing for capital funding with a production-related project that has a similar or longer payback. Increasing the level of incentive support for such a project may reduce the payback period to a level that justifies the additional capital expenditure by the customer - supporting the achievement of Efficiency Manitoba's objectives while still maintaining a cost-effective portfolio.

It is unlikely that Efficiency Manitoba will have the budget to overcome every barrier to industrial energy efficiency enhancements. However, increased flexibility within the three-year plan and the longer 15-year mandate for both expenditures and targeted energy savings will result in significant savings from lower cost opportunities that still meets long-term objectives.

(b)

Efficiency Manitoba should consider economically cost-effective adjustments to incentive rates and loosening of strict funding caps under the Custom Program to address industrial sector concerns over higher initial costs and longer payback periods associated with the adoption of emerging technologies.

Emerging technology opportunities in the industrial sector are often quite sector specific. Since Manitoba's industrial sector is highly diversified, emerging technologies relevant to specific sub-sectors may not see wide-spread opportunities for adoption, making technology-specific programs (e.g. similar to the proposed Solar PV programs) for these sector-specific emerging technologies impractical. Early adoption can however provide significant opportunities for long-term savings acquisitions when incorporated during new construction or a major retrofit of an industrial process, that will be lost for extended periods of time if not implemented at this opportune stage. Early adoption can also be useful for information purposes for development of future Efficiency Manitoba three-year plans.

Efficiency Manitoba's response to MIPUG/EM 1-14a) indicates that funding for emerging technologies will be available through the Custom Program option or the approximately \$7.0

million contingency fund established under the Three-Year Plan. It does not however specifically state how these funding options will be tailored to the unique requirements of emerging technology adoption.

The use of the Customer Program option for supporting emerging technologies is potentially constrained by the proposed incentive outlined in DAYMARK/EM I-13de)-Attachment, which imposes a fixed rate incentive, capped by 50% of project costs or the amount required to reduce incremental project cost payback to 1.0 years. Since payback periods for emerging technologies are generally longer it is unlikely that the 1.0 year payback cap will come into effect. It is more probable that the available incentive will be limited by the fixed rate incentive or 50% of project cost cap. It is unclear whether the 50% of project costs is related to incremental project costs for the energy efficiency measure or total project costs.

The incentive structure for the Custom Program may be inadequate for mitigating the higher costs and extended payback periods for emerging technologies. Fixed incentive rates and cost coverage caps designed around the cost structures for mature technologies are less likely to address concerns that the industrial sector may have regarding higher initial costs of emerging technologies and criteria for capital spending justifications that do not support longer payback periods. These potential economic barriers can be further elevated by the fact that emerging technologies often bring an inherently greater perception of risk to a production-based environment. Resulting opportunities for early adoption of emerging technologies may be constrained or rejected when companies are planning to refurbish existing production processes or construct new production facilities. While industrial customers must assess the risk factors for early adoption of emerging technologies, a more flexible incentive structure for these emerging technologies may encourage greater uptake by the industrial sector.

(c)

Since Efficiency Manitoba has not achieved any past year results, a response can is not provided that directly references past shortfalls pertinent to the Crown Corporation's proposed programming. Referencing prior Power Smart programming experience for Manitoba Hydro is also not relevant since these programs did not have mandated annual achievement targets (i.e. 1.5% electric & 0.75% natural gas) or specified program durations (i.e. three-year plans) that constrained available annual budgets and timelines for achievement of those savings.

Manitoba Hydro often engaged customers considering expansions for existing processes or construction of new production facilities at an early stage in the project timeline. While these engagements were often driven by service extension timelines, coordination between Key/Major Account staff serving industrial customers and Energy Efficiency staff supporting DSM programs provided opportunities to engage customers about potential energy efficiency improvements, assess available technologies for those projects and review costs and timelines for adoption. DSM staff were then able to adjust future fiscal year budgets and savings projections accordingly if assessments proved those measures to be economic.

A similar approach could be adopted by Efficiency Manitoba if it able to cooperate closely with Manitoba Hydro, but the timing horizon for filing three-year plans would continue to compromise that process.

The three-year program cycle mandated for Efficiency Manitoba, with prior approval of spending and specified annual savings targets, provides lesser opportunities for program adjustments than are needed to initiate high value/low-cost industrial sector projects that may emerge during the delivery of a three-year plan. The longer timeframe required to implement many industrial measures may result in these opportunities being unable to deliver savings until the approved three-year plan period has expired. With no certainty regarding future budgets, Efficiency Manitoba may be unable to commit to these projects, causing customers to resist moving forward. Under these circumstances, potential lost opportunities may arise for acquiring cost-effective savings with long life cycles and persistence.

Additional flexibility for implementation of Efficiency Manitoba's three-year plans would also enable the Corporation to address changing market conditions that influence the timing of larger commercial and industrial projects (i.e. decrease in demand, over-supply, recessions, etc.). If economic conditions prevent the commercial and industrial sectors from moving forward with larger energy efficiency projects, Efficiency Manitoba may experience shortfalls in the achievement of its annual savings targets. It seems reasonable under these circumstances, to assume that funding budgeted for those projects will also not be spent. Should such a situation occur, Efficiency Manitoba would benefit from having the flexibility to reserve that funding for projects in future years when economic conditions improve. While this flexibility may cause savings to exceed annual targets in future years, it would support the longer-term objective of the 15-year mandate.

It should be noted however, that this flexibility should not necessarily extend to situations where Efficiency Manitoba spent the budgeted resources but was unable to achieve the anticipated level of savings. That is a performance issue, which differs from the scenario proposed in the paragraph above. Adopting the approach outlined above would encourage Efficiency Manitoba to use its resources prudently and focus on the longer-term objective of the mandate by removing the "use it or lose it" approach to funding that can occur when a short-term focus is over-prioritized.

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Reference:

Evidence of Bowman, Section 4.1, Estimated Short-Term Rate Impacts, PDF page 23 and 24.

Preamble:

On PDF pages 23 and 24, Mr. Bowman provides a discussion of Manitoba Hydro's cost of service treatment of DSM costs with his estimate of the reduced revenues through energy conservation and the incremental extra-provincial revenues available to Manitoba Hydro through that level of reduced domestic energy consumption.

On page 24 he states:

"EM's costs are on the order of \$50 million per year. DSM costs are amortized over 10 years, such that by the end of the first 3 year period, EM's costs will be amortized into rates at approximately \$15 million per year. At the same time, \$150 million will have been spent by Hydro, less approximately \$30 million that will have been amortized over years 1-3, for a net carried (borrowed) amount of \$120 million. At the most recent debt rates available for Hydro (2.91% plus 1% debt guarantee fee, for a total of 3.91%) this would result in approximately \$5 million in interest costs". Total annual impact of EM's activities at the end of year 3 is therefore approximately \$20 million."

Mr. Bowman then provides his estimate of reduced revenues to Manitoba Hydro from the effects of energy conservation and estimates the approximate increase in extra-provincial revenues afforded to Manitoba Hydro through the resulting increase in surplus energy available for export. He concludes by stating:

"Combining the above, the annual impact at the end of year 3 totals \$80 million in costs or lost revenue less \$43 million in added export revenue, for a net negative impact on Hydro's Cost of Service of \$37 million."

Question:

- a) Would Mr. Bowman agree that Efficiency Manitoba's investment in DSM programming would be treated by Manitoba Hydro in the same manner as Manitoba Hydro's current investment in its own DSM programming, as described in the preamble? If not, why not?
- b) If Manitoba Hydro, and not Efficiency Manitoba, were to undertake DSM programming such that a \$50 million annual investment is made, please confirm that Manitoba Hydro would need to fund that \$50 million through borrowing and incur the same level of estimated finance expense? If not, why not?

- c) If Manitoba Hydro and not Efficiency Manitoba were investing in programs that provided the same level and pattern of energy savings, that the revenue reductions would be the same, estimated by Mr. Bowman to be approximately \$40 million by the end of year 3? If not, why not?
- d) If Manitoba Hydro and not Efficiency Manitoba were to undertake DSM programming that resulted in the availability of 979 GWh of additional energy for export as per his analysis, that the resulting estimate of export revenues would also be \$43 million as estimated by Mr. Bowman? If not, why not?
- e) If Manitoba Hydro or Efficiency Manitoba undertook DSM programming with an equivalent level of investment, finance expense, energy reductions and incremental extra provincial revenues as in Mr. Bowman's example, would his analysis result in the same impact on MH's cost of service of \$37 million? If not, why not?
- f) Given that Manitoba Hydro's Integrated Financial Forecast already includes a forecast of DSM investment and considers the related domestic energy reductions, extra-provincial revenue implications and the impact on debt and finance expense associated with that current investment, is it not more appropriate to analyse the incremental difference in DSM investment, lost domestic revenues and incremental extra-provincial revenues between the Efficiency Manitoba plan and Manitoba Hydro's current forecast? If not, why not?

Response:

(a)

In principle, the payment of Efficiency Manitoba's costs by Manitoba Hydro provides the same economic benefit as when these programs were ran by Manitoba Hydro, and as a result should be treated in the same manner (e.g. amortized over a lengthy period commensurate with the benefits). However, It is not clear that accounting rules will automatically permit this, given Hydro is likely simply paying one annual amount. If so, it is expected that the PUB will need to provide direction or clarification on these matters at an appropriate time.

(b)

Confirmed.

(c)

Confirmed. The estimate was provided by Efficiency Manitoba, not Mr. Bowman.

(d)

Confirmed. The 979 GWh is per Efficiency Manitoba figures and not Mr. Bowman's analysis. Mr. Bowman provided the calculation of the \$43 million, but this is just a placeholder that cannot be confirmed without access to confidential Manitoba Hydro data.

(e)

Yes. All values would be effectively the same. There may be a difference in timing, or in recognition of some deferred amounts (such as pensions for employees if within Manitoba Hydro, versus cash payments to EM for the same general categories of expenses) but the difference would be minimal.

(f)

Manitoba Hydro's Integrated Financial Forecast includes an estimate of future DSM, but the PUB has never been in a position to sign off or endorse programming, much less programming over a 3 year period that goes beyond any then-current rate review. For this reason, the new framework encourages, if not requires, consideration of the impacts of EM's programming in a way that was not present when Manitoba Hydro ran the equivalent programming.

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Reference:

Evidence of Bowman, Section 5.0 Specific Comments on Programming, PDF page 29, third paragraph.

Preamble:

In Section 5.0, Mr. Bowman states "From a resource acquisition perspective, there are individual programs that should be noted to be of concern. These comments do not extend to programs targeted at Income Qualified or Indigenous which should be evaluated on metrics relevant to their relevant audience (emphasis added)."

Question:

Please elaborate on the "relevant metrics" that Mr. Bowman states should be used to evaluate the inclusion of such Income Qualified or Indigenous programs.

Response:

When offering DSM programming to the noted targeted customers, the PUB has a broad public interest mandate that has previously been concluded to include special consideration for specific populations. For example, Order 116/08 concluded that the Board could consider income in determining rates tied to those with issues of bill affordability. Board Order 59/18 addressed jurisdiction to set special rates for customers based on their characteristics.

Given issues of affordability are targeted topics for low income and indigenous customers, the metrics for these programs are likely tied to effects on affordability, and extent of access or uptake.

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Reference:

Evidence of Patrick Bowman, Section 2.2 (PDF pages 9 and 10) and Independent Expert Report of Daymark, page 80.

Preamble:

Daymark provided the following opinion regarding the applicability of the RIM test, found at page 80 of the Independent Expert Report:

“In the case of a large energy efficiency program, lasting many years and prioritizing wide outreach, one of the challenges of such a test is that, while some customers may reduce their energy consumption more than others, it is not clear that there will be a group of permanent total non-participants over the course of a fifteen-year program. Daymark does not advocate using the RIM ratio or economics at the program level.”

Question:

Does Mr. Bowman agree with Daymark’s statement in the preamble regarding the applicability of the RIM test? If not, please provide your position.

Response:

Mr. Bowman does not agree with Daymark’s statement.

The RIM test, or comparable rate impact assessments, assess the extent of cross-subsidization not just between non-participants and participants in conservation, but also between those who conserve through self-financing and those who rely on Efficiency Manitoba incentives, and between existing customers versus the competitiveness of new customers.

Take an extreme example where the operation of DSM programs doubles rates but cuts all users bills in half (i.e., no non-participants) – have all adverse effects of the doubling of rates been addressed by the reduced consumption? Typically the answer is no.

First, there is the issue of rate class impacts – rates may be lower on some components of the bill, but other functions may see increases. Not all customers use the functions equally.

Second, there is the issue of potential new customers who may come to Manitoba. For a new industrial plant. These customers will face the doubled rates, even though their level of conservation in their new plant is likely to be the same wherever they choose to locate. This will undoubtedly make Manitoba less competitive to future industrial operations.

Third, there is the issue of timing. Even if some participants are added each year, such that there is 100% coverage by year 15, there will a cohort of customers who paid materially higher rates (for higher than calculated by EM) during the 14 year window while the did not participate.

Finally, as a resource planning exercise (as opposed to a socially-driven equity exercise), rate impacts should be first and foremost in the consideration. The key concern in the NFAT review was that DSM was not being assessed in the same manner as generation resources such as Keeyask (which was assessed versus alternative ways to acquire the same amount of power, such as wind or solar) – yet that same outcome is occurring today with regard to DSM.

A properly structured resource acquisition process should not be distracted by how to chase down the last non-participants in year 14 or 15, but instead to simply find the lowest cost source of power (via conservation) that is needed to supply system needs economically, and acquire it. This is the model consistent with the PUB's conclusions in determining the Cost of Service treatment of DSM.