EnviroCentre Comments on the March 2010 *Review of DSM Framework for Natural Gas Distributors* prepared by Concentric Energy Advisors for the Ontario Energy Board

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The first paragraph of the Executive Summary of the *Review of DSM Framework for Natural Gas Distributors* ("the Report") disappoints because it clearly shows the limits of the research undertaken:

> "Concentric's research indicates that Ontario's existing DSM framework compares favorably to many other jurisdictions that were reviewed for this report."

With the exception of Great Britain, all of the other countries included in the review consume among the most energy per capita of OECD countries, which indicates that their Demand Side Management (DSM) frameworks have failed. Only compared to failures could Ontario's DSM framework be considered "favorably".

Indeed, recent decisions by the Ontario Energy Board ("the Board") to delay updating the current DSM framework – which dates back to 2006 – means that gas distributors are preparing DSM programs for 2011 based on a framework that was not cutting edge at the time and will be five years out of date when the new programs launch.

Unfortunately, the Report does not examine DSM policies and frameworks in more progressive European countries, where much more success has been achieved in this field. By restricting its choice to Anglophone countries; by not examining DSM policies and frameworks in Scandinavian countries that share similar climates with Ontario; and by not including countries like France, Belgium and Switzerland that share an official language of Ontario; the Report fails to provide a comprehensive analysis of successful DSM policies and frameworks in other jurisdictions of most use to Ontario.

If the Board believes that decisions affecting Ontario's energy future should be informed by world class information and developments, it needs to move beyond its reliance on American models and consultants, who can hardly be faulted for working in the most energy-inefficient country in the world.

Buried on Page 106 of the Report is the admission, not so surprising given the country in which they operate, that although "operating information is limited and somewhat difficult to obtain" even the most successful companies were only able to achieve reductions in gas consumption of less than 1% on average. This appears to contradict the reported finding on Page 26 of 9% savings by the American Gas Association of individual consumers but begs the question: what can one expect to learn from a country whose DSM frameworks have generally failed?

The Report goes on to acknowledge that there are "significant challenges which must be overcome in order to produce the magnitude of results which many policy-makers and stakeholders are seeking" but fails to put them on the table. Indeed, the Report sugar coats some of the challenges and ignores the most crucial challenges, presumably because they were not perceived to be part of its mandate.

The authors of the Report are to be commended, however, for at least raising the issue of extending the examination to electric providers as it is incongruous to continue treating gas and electricity under different regimes and there are indeed many "opportunities for synergies between DSM policies and frameworks for natural gas distributors and electric utilities". At least one gas distributor is now delivering CDM programs in conjunction with an electricity distributor and it appears possible for DSM and CDM programs to compete with each other for markets, an issue that the Board may wish to examine.

Cynical observers might conclude that the Report indulges the Board when it suggests that:

> "For Ontario, a more aggressive stance toward climate change may justify a different DSM framework … while a more traditional approach would suggest continuation of the existing policy, with minor modifications or adjustments."

because there is little evidence to suggest that the Board has considered climate change in any of its decisions to date.

There is no question, however, that the Report provides unwarranted compliments to the Board when it suggests that Ontario could "remain a leader in developing and implementing DSM programs". As noted above, Ontario could only be considered to be leading the pack of jurisdictions whose DSM frameworks have failed, but that is hardly a compliment. A recent report by the Environmental Commissioner of Ontario concludes that:

> "the Ontario government will need to expand its climate change policy agenda if it hopes to have any chance of reaching its short- and medium-term greenhouse gas (GHG) reduction targets".[1]

The Report does provide a useful analysis of Possible Regulatory Approaches to DSM in Table 1 but fails to identify how Ontario scores, simply assuming that the Board's primary objective ranges between Traditional and Progressive. Indeed, of the 13 other approaches described, the Board scores very low on its approaches to DSM as most are traditional, only a few are progressive, and none are aggressive. This is hardly a leadership position even when judged by the Report's own criteria.

The Board may wish to determine how Ontario would have been ranked by the American Council for an Energy-Efficient Economy in Table 9 of the Report.

The Executive Summary also errs by concluding that Ontario's DSM policies and programs achieve conservation targets "in an equitable, cost-effective and economically efficient manner". Were that true, so many lower-income households in Ontario would not continue to suffer from energy poverty; the consumption of energy in Ontario would not be among the highest per capita in the world; and Ontario would not continue to suffer high unemployment because of its inefficient, energy-intensive industries and distribution systems.

Ironically, the Report concludes that only an "Aggressive Regulatory Approach" would "Evaluate whether DSM results achieve program objectives". Although the Board may take issue with this Freudian spin if not slip on its role in evaluating the impact of its conservation programs, its reliance on utility reports and a "prudence review" appears to indicate that, to date, it has failed to determine if its DSM programs have indeed achieved their objectives.

It is also unfortunate that the Report fails to include any data on the effectiveness to date of Board-mandated DSM programs in Ontario that one could compare to the data provided for other jurisdictions that were studied.

Cost Effectiveness Tests

The authors of the Report are to be commended for recommending a Societal Cost Test that includes environmental and social externalities because of the obvious and increasingly significant public interests at stake. It is not clear that applying

[1] Gord Miller, Environmental Commissioner of Ontario, May 31, 2010.

them on a program basis, rather than a portfolio basis however, is desirable as that could discriminate against lower-income programs.

Even if the Board accepts the Report recommendation that DSM programs for lower-income households should be evaluated separately, using the Report recommended rate of 0.60 to 0.75 Total Resource Cost metric, a portfolio based approach would still undermine more innovative programs that generate deeper long-term results while continuing the current practice of focusing on low-hanging fruit that is often rife with free-riders.

Input Assumptions and Measures

The regulatory function of the Board may be undermined by delegating responsibility to gas distributors for calculating avoided costs or by relying on input "assumptions" rather than using real data.

Although it is commendable to establish a value for carbon emissions to be included in calculating avoided costs it is unfortunate that there appears to have been no coordination to date on this subject between the Board and the Ministry of Energy and Infrastructure or Ontario's Climate Change Secretariat. Indeed, the Report reveals a bias for "maximum economic penetration" and relegates environmental results, notably actual reductions of GHG emissions, to an academic exercise to take place at some point in the future.

It would be a false assumption to assume that free ridership is offset by spillover and one should rely on empirical data or on evidence from other jurisdictions to establish free ridership percentages only if such analyses are based on socio-economic groups, not individual programs.

Assigning "a percentage of credit to the utility based on the percentage of total dollars they spent on designing, developing and delivering the joint DSM programs" would only make sense if the percentage were also based on actual results, not projected results.

Relying on "a combination of customer and vendor surveys to estimate the effectiveness of market transformation programs" makes little sense given the significant stakes involved and the Board would should question any claims "that precise estimates are not attainable" in this sector.

Low Income Customers

Although expedient, it would be contrary to provincial policy to focus DSM programs for lower-income customers in geographic areas with the highest concentration of lower-income customers. People in Ontario are supposed to have equal access to programs like this regardless of where they live.

Focusing on those customers with the highest energy use and a history or late payments or disconnections would also be expedient but clearly discriminatory and against provincial policy as this kind of data is protected by privacy legislation. Such an approach would not be tolerated for upper-income customers and should not be recommended for lower-income customers.

Delivering lower-income programs on a neighborhood basis rather than on an individual customer basis does make sense because it is both expedient and reasonable as very few upper-income customers live in lower-income neighbourhoods.

Concentrating on programs that provide an immediate long-term benefit and coordinating with community organizations makes sense but relying on local contractors to modify behavior and attitudes in this "unique … market" would be of dubious value given the for-profit motivations of most contractors.

If all of the externalities recommended for inclusion are adequately incorporated into cost effectiveness metrics of DSM programs, calculating lower threshold Societal Cost tests for lower-income programs should be unnecessary.

There does not appear to be any justification for the recommendation to develop a separate financial incentive mechanism for lower-income programs that is contingent on market penetration, reductions in gas consumption per customer, and efforts to reduce customer bills through education and awareness programs, especially in the absence of similar approaches for higher-income customers.

Treating lower-income customers as just another "market" betrays well-established social policies in Ontario. Basing programs on reductions in the already minimal gas consumption of lower-income customers is discriminatory, as it is much easier to reduce the gas consumption of higher-income customers, who are more able to respond to education and awareness programs.

The Board may wish to request more accurate data on the breakdown of projected gas savings on a per capita basis between the residential and lower-income classes reported in Table 8 of the Report given the acknowledgement by the authors that they have not examined the correlation between per capita spending and reductions in gas consumption.

In answer to question from a distributor, the authors of the Report seriously underestimate the energy savings potential of lower-income customers based on behavioural and cost factors.

Budgets and Incentives

Although one can only support recommendations to increase investments in DSM programs in Ontario, it would be useful for the Board to show that investments of “between 4% and 6% of utility operating revenues less the cost of purchased gas” compare favorably to other OECD countries with more successful DSM programs and lower energy consumption. Even if the Board were to accept the higher end of this recommendation, it would still compare unfavourably to the 10% required by the State of Maine for lower-income programs.

It is logical to “allow gas distributors flexibility in proposing budgets to meet the DSM metrics and targets” because they are in “the best position to determine which programs will be most effective”. They could do an even better job if provided with stable, long-term programs rather than the constantly changing, short-term programs that have characterized recent DSM programs of the Board.

It is unfortunate that the Report fails to recommend multi-year targets and budgets as it is counter-productive for both distributors and delivery agents not to be able to make longer-term investments in this field. DSM recipients also suffer unduly when programs start and stop, further undermining the credibility of all concerned.

It also makes sense to “consider more extensive review of those programs that account for the majority of expenditures and savings” so that “smaller programs be subject to less rigorous or less frequent scrutiny”.

Limiting the budget for evaluating and monitoring DSM programs to between 3% and 5% of the total budget for each gas distributor may not be in the public interest given the lack of reliable data on the actual results of previous DSM programs.

Adopting “market penetration of Best Available Technologies as the primary metric to measure the success of individual DSM programs and measures” would not be a significant improvement over the existing approach, which by most accounts has failed. Perhaps the best example of this has been the marketing of compact fluorescent light bulbs (CFLs). Surveys show significant market penetration yet actual results have been disappointing because far too many CFLs have been installed in low-use applications or, as Commissioner Dian Grueneich of the California Public Utilities Commission noted at the First European Conference on Energy Efficiency and Behaviour, they have simply been left in drawers.

Basing Best Available Technology (BAT) metrics on the ENERGY STAR program, as suggested in a response to a stakeholder question, further undermines the utility of such an approach.

The commercial marketing focus of ENERGY STAR on best in category appliances caters to the demand of American consumers for other "features and comfort" that can enable their choice of appliance to consume more energy than the one it replaces. In practice, ENERGY STAR compares unfavourably to the Canadian EnerGuide and the European systems, which provide both absolute and comparative data instead of the more simplistic approach adopted for American consumers.

With regard to the answer provided by the Report's authors justifying its recommendation to use market penetration of BAT to simplify DSM administration, it is hard to understand why such an approach is a "much more objective and measurable standard than energy savings". It also appears to favour manufacturers and retailers of technologies and to discriminate against providers of energy-efficiency services, which play a much greater role in generating actual results than the Report acknowledges.

The best metric to measure the success of DSM programs is the percentage reduction in actual gas consumption per customer, not projected consumption, with an appropriate allowance for persistence.

It is troublesome that the anonymous[2] authors of the Report make recommendations based on what they "believe" as opposed to what they show has worked in other jurisdictions. If market penetration of BAT works better as the primary DSM metric, for example, where is the research to back up this belief?

Unfortunately, the Report pays virtually no attention to the issue of behaviour. It does not recognize that almost all DSM measures depend on consumers using them once installed and it makes no reference whatsoever to the October 2009 proceedings of the First European Conference on Energy Efficiency and

[2] Although not included in the Report, the names of the authors were subsequently provided in response to a stakeholder question.

Behaviour, held in Maastricht, or to any of the research presented there by one of the few American experts in this field.[3]

It follows that the financial incentive calculation should place less emphasis on market penetration and more emphasis on actual reduction in gas consumption per customer.

The Report also lacks credibility when it exaggerates the difficulty of measuring the effectiveness of DSM programs in one of the most accountable marketplaces in the world. One may assume that close to 99% of all commercial energy consumed in Ontario is precisely tracked by distributors and careful monitored by consumers. Although there are challenges monitoring, for example, DSM programs for water that is not metered and runs through leaky pipes, there is little excuse except inexperience for not being able to track the results of DSM programs for natural gas and electricity consumption.

The Report also errs when it does not question a utility report suggesting that the "most significant opportunities for natural gas savings for residential customers are technologies that reduce space heating requirements, such as high performance windows, programmable thermostats and thermal envelope improvements in older homes" as only the latter offers significant opportunities. In this case, it is clear that a focus on market penetration of the first two technologies combined with projected instead of actual savings would not deliver any significant results at all except for those who produce and distribute such technologies.

It is hard to square the regulatory mandate of the Board with a recommendation to "reward gas distributors with financial incentives" even if they exceed the targets. It is even harder to believe that distributors have been rewarded in the past for not meeting their targets and that the Board would make decisions on the Shared Savings Mechanism that ignored best available information in favour of outdated forecasts. One wonders how distributors could survive in today's marketplace if they themselves followed such business practices.

[3] The venerable Paul Stern, of the US National Research Council, recommended adoption of "stabilization wedges" designed to help ensure that the increasing rates of increased consumption stalled by the recession don't recover and noted that the two most significant wedges in the US would be migrating to 30 mpg cars and mass home insulation programs. By using "full court presses" that focus on specific behaviour changes, weatherization programs could achieve 80% penetration rates within five years, the only US data available in this field. He noted that the 90% subsidy programs are unnecessary and that the best incentive programs, a clever mix of messaging and facilitation, have never been tried in this field, at least in the United States.

It is also difficult to attribute the concerns of ratepayer advocates about the costs of more accurately determining free ridership levels to anything but self-interest as far too many middle and upper-income consumers are currently double, if not triple-dipping, by taking advantage of DSM measures offered by various levels of government for cost-effective energy-efficiency measures.

It is worth noting that the authors of Report acknowledged in a response to a question from a stakeholder that it "did not find any data indicating whether the percentage reduction [in gas consumption] has been increasing or decreasing in the years since DSM programs were implemented". This could be interpreted as a rather severe condemnation of DSM programs in general, or at least a confirmation of massive free riderships. The authors take the "view" that DSM programs are "one important factor that has reduced gas consumption" but make no attempt to correlate reductions to price increases and other factors.

The Report recommendation that the minimum annual budget be increased from about 2.4% to at least 3% and possibly as high as 6% falls far short of what is needed if Ontario is to meet its targets, as evidenced by a question from one of the distributors that the authors declined to answer.

In response to another question, the authors of the Report state that:

> "Explicit GHG reduction targets have not yet been established for the Province. It is therefore premature to pursue targets at the utility level".

This appears to contradict the data contained in Table 4 of the Report, which includes explicit targets up to the year 2050 set by the Province. The answer also reveals what some might interpret as a lack of urgency or even any understanding of the need to take "a more aggressive stance toward climate change [that would] justify a different DSM framework".

The Report also fails to recommend that more than the current 14% of DSM budgets be applied to lower-income program despite convincing evidence of high free ridership levels in the remaining 86% of the budget, especially when other DSM programs are included in the calculations. To that point, it is unfortunate that the Report fails to analyse the extent and impact of municipal and federal DSM programs available to Ontario consumers.

Program Evaluation, Stakeholder Input and Relation to Electric Programs

The recommendation that the Board appoint the entities responsible for conducting the independent program evaluation and the third-party audit of program results is long overdue as the current practice undermines the credibility of the regulatory process.

Although the Report provides valuable information on current DSM program in the United States and some provinces, it fails to report on the success of these programs, with the exception of a telling conclusion of the California Public Utility Commission:

> "All the Commission's findings, which were based on the most current *ex post* input assumptions, were much lower than what the utilities had been claiming, which were based on assumptions that were accurate at the time of implementation."

The recommendation to adopt the proposed annual reporting and evaluation reporting requirements as described in the Draft DSM Guidelines can only be supported if those guidelines require reporting of actual gas savings, not projected or estimated gas savings. The Board may wish to verify whether or not the data presented in Table 7 of the Report is based on accurate numbers generated from actual distribution and billing data.

Although any efforts to solicit stakeholder input are to be commended, those prescribed in the existing DSM Framework and those currently used by the Board have been cumbersome, expensive and not very effective. A radical transformation of the Board's operating methods with regard to its DSM program is long overdue.

Given the significant synergies to be achieved through cooperation between gas and electric utilities in Ontario on the delivery of DSM programs, it is not nearly enough for the Board to "encourage" such cooperation. The Board should assume its mandate and ensure that gas and electric utilities coordinate their efforts to improve customer participation, achieve administrative efficiencies, and generate much better actual results.

Ottawa
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