

File no. EB-2014-0134

October 15, 2014

Comments on the Ontario Energy Board Draft DSM Framework

Background

Established in 2002, the [Canada Green Building Council](#) (CaGBC) is a non-profit national organization dedicated to working with government and the private sector to accelerate the "mainstream adoption of green building principles, policies, practices, standards and tools." In collaboration with the national organization, the [Greater Toronto Chapter](#) (CaGBC-GTC) acts as a catalyst for green building development across the Greater Golden Horseshoe region of Ontario. With an ever-growing member network of over 6,000 building industry professionals, the CaGBC-GTC is dedicated to creating a cleaner, healthier, high-performance built environment through education, collaboration and innovation. We work with both government and private enterprise to accelerate the adoption of green building principles, policies, standards and tools. Our mission is to accelerate the transformation to high-performing, healthy green buildings, homes and communities. Our membership includes most of the leading green building practitioners and experts in Ontario. The Chapter is therefore well positioned to provide advice and support to the OEB and the Province with regards to energy conservation policy and programs.

Natural gas — mainly for space heating and water heating — accounts for the majority of energy-use and greenhouse gas emissions in Ontario's homes and buildingsⁱ. The Province of Ontario has established an ambitious GHG reduction target — 15% below 1990 levels by 2020 — which is unlikely to be met without substantial, absolute reductions in natural gas consumption. Natural gas combustion in urban areas also contributes significantly to local air pollution, resulting in hundreds of hospitalizations and premature deaths every year across Ontarioⁱⁱ. In this context, it is distressing to note that emissions from fuel consumption in Ontario's homes and buildings actually increased 8.7% between 1990 and 2012ⁱⁱⁱ. Clearly, Ontario is on the wrong path in terms of natural gas conservation.

CAGBC-GTC supports the Ontario Government’s “Conservation First” policy, and the Minister’s Directive to operationalize it in a new Demand Side Management (DSM) Framework for Ontario’s gas utilities. The new DSM Framework will be critical to the success of the Conservation First policy and the achievement of Ontario’s 2020 GHG reduction target. However, in our view, ***the draft DSM Framework will not allow for all cost-effective conservation and is not consistent with the Province’s 2020 GHG reduction target.*** With that in mind, CAGBC-GTC submits the following comments with respect to the draft DSM Framework issued by the OEB on September 15, 2014. We look forward to the opportunity to continue working with the OEB, the Province, and the utilities in the design and delivery of conservation programs and policy.

Role of Building Design and Planning Professionals

Achieving deep reductions in energy usage entails a systemic change to building design for both new and retrofit construction. Associations and companies are actively advocating and seeking solutions to global warming. Effective utility DSM program design will entail close collaboration with expert representation of design practitioners. An open and extensive consultation with both gas and electrical utility program designers and the design industry is recommended. CaGBC-GTC, the Ontario Association of Architects, ASHRAE, and other professional associations are already actively engaged in conservation policy issues.

Utility programs to-date have included some engagement in the design process but could be redesigned to be much more effective. As a start, the various programs of electrical LDC’s, OPA, gas distributors, and municipalities, lead to onerous and inconsistent application requirements. It would be far preferable that a full set of offerings came as a package and be accessed through one portal. This would require a much greater degree of coordination and integration than is presently being contemplated. Ideally, electrical CDM and gas DSM programs should be delivered by a single entity which would receive conservation funding from the utilities — a model which is being implemented in several leading jurisdictions. While the current framework does not contemplate this structural change, the OEB and the Province should give this issue consideration for the next DSM Framework. Educational support is included in the framework but primarily concerning customer awareness. The design professionals are formally educated as undergraduates as well as engaged in continuing

education and training. Current best practices applied holistically, can yield carbon-neutral solutions at the lowest life-cycle costs. The OAA has recently run a 40-hour full course ([OAA+2030 Professional Series™](#)) on how architects can achieve the 2030 Challenge.

CaGBC-GTC delivers educational programs for continuing improvement of LEED practitioners. Utility support could expand and improve these initiatives which will accelerate the adoption of advanced conservation and demand management practices.

Recommendations: CaGBC-GTC recommends that DSM Framework and Guidelines should encourage extensive consultation with green building practitioners in the design and implementation of DSM programs. Additionally, education of building design and planning practitioners should itself be considered as a DSM measure. In the long-term, it is recommended that the OEB and the Province consider shifting towards a model where electricity and gas conservation programs are completely integrated and ideally delivered through a single entity.

Cost-effectiveness Test

The [Minister's Directive](#) rightly emphasizes that the new DSM Framework should enable the achievement of *all cost-effective conservation*. In this context, the methodology used to assess the cost-effectiveness of DSM programs and measures is of critical importance. The cost-effectiveness test should account for all relevant costs and benefits, and should treat costs and benefits symmetrically^{iv}. The Total Resource Cost test (TRC) that has historically been prescribed by the Board fails on both counts. We therefore disagree with the Board's proposal to continue using the TRC as the primary cost-effectiveness screening tool for DSM programs.

The TRC test, as historically practiced and as described in the draft DSM Framework, does not treat costs and benefits symmetrically. It includes all costs borne by participants in DSM programs, but does not include all of the benefits to program participants. Typically, the only participant benefit included in the TRC assessment is the energy cost savings from conservation measures. Participants often elect to engage in conservation activities in order to achieve a much broader range of benefits in addition to energy cost savings, including improved thermal comfort, improved indoor air quality, improved property values, and reduced maintenance costs. DSM programs and measures that are

not cost-effective based on energy savings alone may be recognized as cost-effective if non-energy participant benefits are incorporated.

In addition to excluding non-energy participant benefits, the TRC test also excludes a wide variety of societal benefits. For example, the TRC test does not recognize any value to reducing GHG emissions and air pollution, despite the fact that these are major public policy priorities for the Province. This is particularly problematic given that the Ministers Directive explicitly states that “reducing air pollutants, including greenhouse gas emissions” is a desired outcome of the new Framework^v. Since climate change mitigation is an explicit objective of revising the DSM Framework, it follows that a suitable means of accounting for greenhouse gas emissions reduction is required. In turn, the value of these reductions requires monetizing (\$/T CO₂e) if there is to be an appropriate allocation of financial resources. Numerous other North American jurisdictions include a value for avoided GHG emissions in DSM cost-effectiveness screening^{vi}. The OEB could use these jurisdictions as reference points in developing an avoided GHG emissions value for Ontario.

DSM programs also benefit society by creating jobs and stimulating economic growth, both directly through increased demand for energy conservation services and materials, and indirectly by diverting money that was previously wasted (via inefficient use of gas) into more productive and labour intensive expenditures. Additionally, given the scale of the gas savings achieved under the previous framework, it is reasonable to conclude that DSM programs are lowering gas prices on the wholesale market, reducing natural gas bills for all customers (not just for DSM program participants)^{vii}. Figure 1 below illustrates how only a small fraction of DSM benefits (those shaded green) are incorporated into the TRC test.

Figure 1: Multiple benefits of DSM Programs



A major research report issued this year by the International Energy Agency (IEA) found that non-energy benefits of energy conservation are equal to or greater than the energy benefits^{viii}. The IEA projects that jurisdictions which do not take such non-energy benefits into account will fail to realize

up to two-thirds of cost-effective conservation potential. *The continued use of the TRC test will ensure that Ontario fails to achieve all cost-effective conservation.*

Recommendations: CaGBC-GTC recommends that the DSM Framework require utilities to assess the cost-effectiveness of DSM programs using a societal cost test approach that accounts for the multiple benefits of DSM programs. Alternatively, if the TRC test is retained, it should be broadened to include participant non-energy benefits (e.g. indoor air quality and thermal comfort), as well as adders for key societal benefits (e.g. reduced GHG emissions and air pollution).

DSM Targets

Gas conservation targets should be based on achieving all cost-effective gas conservation over the term of the DSM Framework (2015-2020). Targets should be informed by conservation potential studies conducted using a cost-effectiveness test which takes account of the full range of benefits from DSM. As such studies are not currently available, interim targets should be established based on utilities' past DSM achievements and the best practices of other jurisdictions with similar climates and "all cost-effective conservation" goals. The OEB has provisionally proposed utility-specific targets equivalent to achieving savings of 0.8% of gas sales annually^{ix}, which is approximately equivalent to the gas savings achieved by DSM programs in 2011 and 2012. This is considerably lower than the targets in leading jurisdictions with similar climates. For example, Massachusetts and Rhode Island both have DSM savings targets equivalent to approximately 1.1% of gas sales^x. The proposed target (~0.8%) represents a continuation of business as usual for the utilities, and is inconsistent with the Minister's Directive to pursue all cost-effective conservation.

Recommendations: CaGBC-GTC recommends that the utilities establish interim DSM targets for the first year of the Framework, in-line with leading jurisdictions with similar climates and "all cost-effective conservation" goals (i.e. at least 1.1% of annual gas sales). In the medium term, targets should be established based on achieving all cost-effective conservation, as established by DSM potential studies which take into account the multiple benefits of energy efficiency.

DSM Budgets

DSM budgets should be based on the estimated costs of the programs required to achieve all cost-effective conservation during the term of the DSM Framework. This is implicit in the Minister's

Directive to achieve all cost-effective conservation. In this light, the OEB's proposal to cap DSM program budgets at an arbitrary percentage of distribution revenues is highly problematic. DSM budgets should be based on DSM potential studies; in the short term, since suitable DSM potential studies are not available, interim budgets should be based on best practices in leading jurisdictions combined with historical DSM program experience in Ontario. Leading jurisdictions, such as those mentioned above, have DSM budgets equal to or greater than \$.008 per m³ of gas sales. Based on Ontario gas sales, that would equate to a province-wide DSM budget of at least \$200M annually^{xi}.

Recommendations: CaGBC-GTC recommends that the utilities establish interim budgets for the first year of the Framework, based on best practices in leading jurisdictions (i.e. at least \$200M).^{xii} In the medium term, budgets should be established based on the estimated program costs required to achieve all cost-effective conservation, as established by DSM potential studies that take into account the multiple benefits of energy efficiency.

Shareholder Incentives

If all cost-effective conservation is to be achieved, as per the Minister's Directive, then Ontario's gas utilities require strong incentives to prioritize DSM activities. In this context, the OEB's proposal to substantially reduce shareholder incentives from current levels is problematic. Reducing shareholder incentives for DSM sends the wrong signal to gas utilities and may discourage the achievement of all cost-effective conservation.

Shareholder incentives should also be structured to reward excellence and incentivize deep, long-term energy savings. The draft DSM Framework includes a proposal to provide a higher percentage of incentives for programs that are more challenging to achieve or that address key objectives, which is a step in the right direction.

Recommendations: CaGBC-GTC recommends that consideration be given to maintaining shareholder incentives at their current levels, while restructuring the incentives to encourage pursuit of deeper, longer-term savings.

Large Volume Consumers

The Minister's Directive to enable achievement of all cost-effective conservation necessitates that DSM programs be made available to all customer classes. In this context, the Draft DSM Guidelines'

approach of making DSM programs for large volume customers optional is problematic. Large volume customers account for a substantial share of total gas consumption; it is difficult to see how all cost-effective conservation could be realized without providing DSM programs to these customers.

Recommendation: CaGBC-GTC recommends that the DSM Framework and Guidelines require that all customer classes have the opportunity to participate in DSM programs.

Coordination and Integration of Gas and Electricity Conservation Programming

Energy conservation is most effective when undertaken using a holistic whole building approach that addresses all forms of energy. In this respect, the draft DSM framework includes very promising language encouraging coordination and integration of gas and electricity conservation efforts. A specific issue which is not addressed in the Draft Framework is the issue of fuel switching.

Conservation projects that involve switching from gas to electricity, or vice versa, may provide overall benefits to customers, the environment, and Ontario's energy system. Hybrid heating systems incorporating some combination of high-efficiency boilers, heat pumps, solar thermal, and/or combined heat and power can provide resilience and flexibility, while reducing overall energy-use and emissions. The DSM Framework should encourage consideration of such approaches where they are cost-effective and achieve reductions in greenhouse gas emissions. It is also important to note that municipalities have an important role to play in energy conservation programming. For example, the City of Toronto's [Green Standard](#) provides incentives in the form of development charge rebates to developments that exceed the energy performance requirements of the Ontario Building Code by 25%. Similarly the City of Toronto's [HELP](#) program provides low interest financing for energy retrofits that can be repaid through the property tax system. The DSM Framework should encourage collaboration with municipalities, where appropriate, in the design and delivery of conservation programs.

Recommendation: The CaGBC-GTC recommends that the DSM Framework encourage coordination and integration in the design and delivery of conservation programs between gas utilities, electricity utilities, and municipalities. Given the potential long-term benefits of coordinating utility and municipal DSM efforts, it is further recommended that utilities be required to report on municipal

collaboration efforts and lessons learned. Furthermore, it is recommended that the DSM Framework should require consideration of fuel-switching opportunities where they are cost-effective and can provide for reduced GHG emissions.

Performance Evaluation, Measurement and Verification (EM&V)

Recommendation: CaGBC-GTC supports the draft DSM Framework's proposal to remove utilities from the role of hiring and overseeing the firms that evaluate utilities' large custom commercial and institutional programs^{xiii}. Additionally, CaGBC-GTC recommends that the Board place more emphasis on on-site measurement for large commercial and industrial programs^{xiv}.



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ⁱ Environment Canada, 2014, *National Inventory Report: Greenhouse Gas Sources and Sinks in Canada Part 3, P.25 Table A11-12*.

ⁱⁱ Toronto Medical Officer of Health, 2014, *Path to Cleaner Air: Toronto Air Pollution Burden of Illness Update – Staff Report*, <http://www.toronto.ca/legdocs/mmis/2014/hl/bgrd/backgroundfile-68506.pdf>, for example.

ⁱⁱⁱ Environmental Commissioner of Ontario, *Looking for Leadership: The Costs of Climate Inaction, July 2014, Appendix 1*.

^{iv} For a discussion of cost-effectiveness testing for DSM program, see TAF (2014). *2014 OEB Gas DSM Framework Issue Paper: Screening Programs for Cost-Effectiveness*, p. 9, <http://www.towerwise.ca/wp-content/uploads/2014/08/DSM-Issue-Paper-4-Cost-Effectiveness-Screening-June-25-2014.pdf>

^v http://www.ontarioenergyboard.ca/oeb/Documents/Documents/Directive_to_the_OEB_20140326_CDM.pdf

^{vi} Synapse Energy Economics, *Energy Efficiency Cost-Effectiveness Screening: How to Properly Account for 'Other Program Impacts' and environmental Compliance Costs*, November 2012.

^{vii} TAF (2014). *2014 OEB Gas DSM Framework Issue Paper: Screening Programs for Cost-Effectiveness*, p. 9, <http://www.towerwise.ca/wp-content/uploads/2014/08/DSM-Issue-Paper-4-Cost-Effectiveness-Screening-June-25-2014.pdf>

^{viii} According to a recent publication by the International Energy Agency, the value of the non-energy benefits of energy efficiency (e.g. increased economic development, increased health and well-being, and improved industrial productivity) can be up to four times greater than the value of the energy savings delivered by DSM programs. In addition, methods for quantifying these benefits already exist (International Energy Agency [IEA], 2014, *Capturing the Multiple Benefits of Energy Efficiency: Executive Summary*, <http://www.iea.org/Textbase/npsum/MultipleBenefits2014SUM.pdf>).

^{ix} 0.8% of the average gas sales over the 2011-2013 period is equivalent to about 200 million m³ per year from 2015-2020 (Ontario Energy Board, Sept. 15, 2014, *EB-2014-0134: Draft Report of the Board - Demand Side Management Framework for Natural Gas Distributors*, p. 15, http://www.ontarioenergyboard.ca/oeb/Documents/EB-2014-0134/Draft_Report_of_Board_DSM_Framework_20140915.pdf).

^x TAF (2014). *2014 OEB Gas DSM Framework Issue Paper: Setting Savings Targets and Budgets*, pp. 3-4, <http://www.towerwise.ca/wp-content/uploads/2014/08/DSM-Issue-Paper-1-Savings-Goal-and-Budget-Setting-June-25-2014.pdf>

^{xi} TAF (2014). *2014 OEB Gas DSM Framework Issue Paper: Setting Savings Targets and Budgets*, pp. 3-4, <http://www.towerwise.ca/wp-content/uploads/2014/08/DSM-Issue-Paper-1-Savings-Goal-and-Budget-Setting-June-25-2014.pdf>

^{xii} For a discussion of DSM budgets in leading jurisdictions, see TAF, 2014, *2014 OEB Gas DSM Framework Issue Paper: Setting Savings Targets and Budgets*, p. 4, <http://www.towerwise.ca/wp-content/uploads/2014/08/DSM-Issue-Paper-1-Savings-Goal-and-Budget-Setting-June-25-2014.pdf>).

^{xiii} Verification of the savings from large custom industrial and commercial (C&I) programs is commonly called Custom Project Savings Verification, or "CPSV". (OEB, Sept. 15, 2014, *Draft Filing Guidelines to the Demand Side Management Framework for Natural Gas Distributors – EB-2014-0134*, p. 24, http://www.ontarioenergyboard.ca/oeb/Documents/EB-2014-0134/Draft_Filing_Guidelines_2015-2020_DSM_Framework.pdf)

^{xiv} This requires adequate funding for evaluation activities – typically at least 3% of a utility's DSM budget (TAF, 2014, *2014 OEB Gas DSM Framework Issue Paper: Measuring Program Performance*, p. 7, <http://www.towerwise.ca/wp-content/uploads/2014/08/DSM-Issue-Paper-3-Performance-Measurement-June-25-2014.pdf>).