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Comments by: Marion Fraser, President, Fraser & Company [(marion.fraser@rogers.com](mailto:(marion.fraser@rogers.com))

416 941-9729

# COMMENT

I am pleased to submit my comments on this Ministry Proposal.

As a professional who has been engaged in conservation and demand management (electricity) as well as demand side management (natural gas) in Ontario for over 40 years, I am very familiar with the range of programs, institutional arrangements and methodologies that have been employed in Ontario since 1983. I will use the term conservation to combine all energy and water savings no matter the source. Switching back and forth from CDM and DSM only confuses customers. My view on this matter is that the evidence is overwhelming a whole home, whole building, and whole industrial plant approach benefits customers most when their use of energy is managed and conserved in an integrated fashion.

## My Perspective on Conservation in Ontario.

For me, the true opportunity of conservation has always been to help customers get the best value for their energy dollars. Assisted by a vast array of talented people at the former Ontario Hydro, and my exposure to many US experts, including the individuals who coined the term DSM, I had the opportunity to develop a full understanding of the complete range of functions key to DSM from market research, strategy, program design and evaluation. As a result, I gained significant insight into what is commonly referred to the traditional rules for conservation, the *California Standard Practice*, which was developed for electrical utilities in California. It spread across the USA, North America, and the world. It was often applied to natural gas DSM which was a major mistake.

While at Ontario Hydro, I managed market research, program development, technical research requirements and results monitoring. I also had the pleasure of organizing and chairing the first International Conference on Demand Side Management in Toronto.

I have delivered at least 100 papers to conferences in Canada, the United States and in many international jurisdictions. I was invited to brief senior managers at the World Bank. The US Department of Energy invited me to teach a course at the DSM session of the Asia Pacific Economic Cooperative (APEC) in Korea. I brought Dr. Amory Lovins, world renowned expert and Dr. Arthur Rosenfeld from the Lawrence Berkeley Laboratory into sessions at Ontario Hydro. I also wrote a book on Energy Performance Contracting, an industry whose Canadian incarnation was far different from its US counterpart, many of whom participated in demand-side bidding.

I left Ontario Hydro in 1993 and established a Canadian office for one of the leading US based consulting firms in this field, Synergic Resources Corporation. My business was successful, and I had no interest in returning to a utility when I was approached five years later by an innovative Vice-President to become the Director of Marketing at Enbridge Gas Distribution. At that time, at Enbridge, Marketing, Sales and DSM were all in silos. I united them all under my favourite idea that each of those functions had the same goal – help customers get the best value for their energy dollars. I was successful in creating a team that consistently surpassed targets, negotiated the shareholder incentive and the lost revenue adjustment mechanism which leveled the playing field between DSM and Sales, or between demand and supply. I transferred all my knowledge and experience from 15 plus years of electricity DSM to natural gas.

What I did not understand then, and what I came to understand later, is the potential for saving electricity which is mostly based on substituting more efficient products for existing less efficient products only partially applies to natural gas. At first, I realized that determining the impact of saving gas for supply purposes was much simpler than saving electricity. With respect to electricity, understanding the impact of a more efficient lighting or a heating system depends on a wide range of factors- time of use, load shapes of customers’ consumption versus load shapes of the overall electricity system, and the component sources of electrical generation and other factors. The myriad of statistical and mathematical analytics was staggering.

Natural gas DSM seemed simple by comparison – there were weather sensitive loads – winter heating and year-round loads – water heating plus virtually constant industrial loads. However, the Ontario Energy Board’s EBO -169-III had applied the complex, statistical electrical DSM paradigm to natural gas. I admit, at the time, I bought into that paradigm. It was what I knew; so most early natural gas programs were incentives for higher efficiency products and equipment – shower heads, water heaters, furnaces, boilers, and so on. The average savings could be **estimated** and multiplied by the number of units installed with a discount for those customers who might have done it anyway (pejoratively called “free riders”) were the basis of the calculation of savings.

**The underlying economics of the California Standard Practice were also the basis for evaluation of results with a preference for equipment replacement not conservation through a combination of better equipment, improved systems, better management, and accountability through metered performance – a total disservice to customers but a benefit to utilities who could become helpers in selling new products. Customer bills are only reduced by real savings and not estimates.**

In Ontario, there is now a tried and true way to ensure results are real. Using the Ministry of Energy Data Base for the Public Sector and building on the energy plans by public sector organizations combining all energy forms as well as water in the monitoring and evaluation of savings. This process is one element of the *Green Energy and Economy Act* that the current government maintained. It is a gold mine. Ontario has documented results in Healthcare, Education, Municipal and Commercial Buildings that this data based approach to planning, implementing, and measuring results works[[1]](#footnote-1).

The good news for consumers is that the work the natural gas utilities did to improve the efficiency and the standards for furnaces and water heaters have delivered huge savings which have never factored into DSM calculations or shareholder incentives. Ontario Hydro had done the same. The new framework should not ignore the value added of technical resources from utilities and research and standard organizations in improving energy efficiency. It appears that the reorganization of Ontario’s energy sector has terminated their participation and it should be re-introduced.

Increasingly, my desire to help customers get the best value for their energy dollars expanded to include sustainable energy matters – renewables, carbon reductions, and conservation rather than just energy efficiency. Some people see the words conservation and energy efficiency as interchangeable, but in fact the impact of each is quite different, but both desirable.

At the same time the Canada Green Building Council was using an approach that used real metered data (energy and water bills adjusted by weather and other factors) to demonstrate not only the potential for saving energy, dollars and reducing carbon, but to demonstrate the actual results of doing so. Pilots projects sponsored by the CGBC across Canada were proving this better and more assured way to deliver results. I was lucky to have had a consulting contract assisting in these pilot projects.

I finally understood - it was all about **performance, measurement, and accountability**. It was only partially about substituting a more efficient product for an existing less efficient product. And with respect to saving natural gas, it was more about optimizing the energy system in a building so that all its component parts worked together and not against each other. And it was not a one-shot equipment replacement or retrofit project, it was continuous improvement taking the feedback from the system and the metered energy data to adjust, i.e. trim the sails.

I knew large commercial building managers had grown weary of utility programs that promised savings that did not necessarily materialize – the largest office tower in Canada had completed a total lighting replacement to more efficient lamps and got no dollar savings whatsoever – what it got was a higher and unneeded level of lighting – three times the lighting required – so the contractor sold the building management three times as many lamps as required and electrical incentives paid on a per lamp basis were three times what was required and yet the customer’s bill was not reduced and savings were not achieved, even if the traditional estimate assumed they were - the worst nightmare for society, energy professionals and customers.

And it should be the worst nightmare for agencies, boards and commissions engaged in consumer protection, energy conservation and environmental protection.

About that time, the Toronto and Region Conservation Authority had become the host of the World Green Building Council and was developing its energy conservation programs based on the approach used by the Canada Green Building Council. Its chair, Ian Jarvis, stepped down to concentrate his consulting business, EnerLife, on these programs such as Sustainable Schools, Greening Health Care, and the Mayors Megawatt Challenge. He engaged the natural gas utilities in the programs. The classic California Standard Practice Evaluation methodology discounted what was considered operational and behavioral improvements in favour of hard wired or hard piped equipment replacements.

EnerLife was hired by the Ontario Ministry of Energy to develop the data requirements for the implementation of the Energy Conservation Leadership Act, which by then had been subsumed in the Green Energy Act. Interestingly, this element was one of the few salvaged by the current Conservative government. EnerLife is not the only consulting firm helping customers apply this data-based approach.

Recently, the IESO funded a project to demonstrate the value of the performance-based approach when electric, gas and water utilities work together to help customers get value and the environment get protection. It should be required reading for all members of the Ministry on this project. It is available through the IESO.

#### Proposal Summary:

The current electricity conservation and demand management (CDM) Framework, known as the Interim Framework, is ending on December 31, 2020. We are developing a proposal for a new CDM framework that would, if approved, launch immediately after the end of the term of the current Interim Framework, on January 1, 2021.

#### Context

The Ministry of Energy, Northern Development and Mines is committed to ensuring that Ontario has a safe, reliable, and affordable electricity system and is committed to continuing to find efficiencies in the electricity sector.

The province offers a suite of conservation and demand management (CDM) programs under the Save on Energy name, which provide incentives and tools to help customers manage their electricity usage and costs. CDM programs defer or offset the need for new power plants and transmission lines, improving energy efficiency and reducing the strain on the electricity system. They are also an important contributor to the economy in Ontario, employing a network of suppliers, channel partners and contractors involved in program delivery.

Programs are governed by frameworks, which establish the rules and guidelines governing CDM program delivery. On March 21, 2019, the Independent Electricity System Operator (IESO) was directed to discontinue the previous 2015-2020 CDM framework and replace it with a streamlined suite of programs centrally delivered by the IESO under the 2019-2020 Interim Framework. This action was forecasted to save electricity rate payers up to $442 million between 2019 and 2022.

The outbreak of the Novel Coronavirus (COVID-19) in Ontario has negatively impacted businesses and has delayed the completion of CDM projects. We recognize that customers and the vendor community are looking for stability and predictability in CDM programming for the post-2020 period.

#### System Needs and Value of Electricity Conservation:

The COVID-19 outbreak has led to an overall decrease in electricity demand across the province; however, as the province gradually reopens, demand is expected to increase and capacity needs are expected to arise starting in 2023, increasing gradually through 2040.

The IESO released its last Annual Planning Outlook (APO) in January 2020. The APO forecasted capacity needs of approximately 2,000 megawatts (MW) starting in 2023 and growing slowly through 2040.

The IESO and the Ontario Energy Board also released a 2019 conservation Achievable Potential Study (APS) that concluded that there is significant cost-effective potential for electricity conservation in the province, which can help address these forecasted capacity needs as well as address local needs.

Electricity conservation can continue to play an important role in Ontario’s electricity system by lowering peak demand in the province. It is the most cost-effective resource to help meet the province’s energy needs. Based on IESO forecasts, electricity conservation delivered under the 2019-2020 Interim Framework has an average cost of two cents per kilowatt-hour. Electricity conservation can help defer or avoid investment in new, more expensive electricity infrastructure, as well as reduce operating costs of existing generation.

The IESO is separately planning to pilot an Energy Efficiency Auction mechanism outside of the proposed 2021-202 CDM Framework. The results of this pilot are intended to be used to help inform future opportunities for CDM to cost-effectively meet system needs through competitive mechanisms.

# COMMENT

While my comments on the overall proposal follow, I wish to caution the use of an Energy Efficiency Auction. In the late 1980s, this was called demand side bidding. A significant number of US utilities and Ontario Hydro offered such programs. While great in theory, the practical reality of this approach is not as simple or as successful as theory suggests. My major concern with this approach is that the customer ends up getting squeezed between the sponsoring organization and the energy service companies (ESCOs) with a predominant focus on “cream skimming” which leaves projects on the table undermining the total savings available to customers and the energy system. Many utilities ultimately spent additional funds to extract themselves from the contracts for these types of programs.

#### Proposal:

We are proposing a CDM Framework that would, if approved, launch on January 1, 2021. The current proposal, if approved, would have the following characteristics:

**Term**: Four-year term from January 1, 2021 to December 31, 2024, with a mid-term review at the end of 2022.

**Delivery**: The Framework would continue to be centrally delivered by the IESO with opportunities for anyone, including customers, LDC and program delivery companies to propose cost-effective programs or projects that meet local or regional electricity system needs.

**Objectives and customers served**: Address limited system needs in near team in the most cost-effective manner while maintaining program delivery capacity in the province; and increase CDM investments in the second two years of the Framework (2023-24) to meet system needs that emerge through the 2020s.To be achieved by:

Targeting provincial bulk system needs (primarily peak demand reductions) and local/regional system needs.

Recognizing the wide availability of cost-effective residential energy efficient products, this Framework would focus on providing education and tools for residential customers to empower them to improve their energy efficiency.

**Program Types**: Proposed programs under the new Framework would fall under the following general program types, with some offering benefits in more than one category. To provide a seamless transition from the Interim Framework and to target system needs as they arise; programs may be phased in over time.

Programs that incentivize whole building electricity savings and peak demand reduction and help business to increase their internal energy management capacity.

Programs that target local/regional needs, procured through a competitive process.

Customer-driven solutions for larger/complex projects.

Customer friendly and direct install programs that enable easy access and savings for standardized measures, including programs for small businesses.

Programs for on-reserve First Nations communities, including for remote communities soon to be connected to the provincial electricity grid.

A program for income-eligible households that would provide energy saving measures and installation of measures at no cost to the participant.

# COMMENTS

Given my cautions and observations based on my experience of over 36 years, I fundamentally agree with this proposal except for focusing only on electricity savings. My view on this matter is the evidence is overwhelming that a whole home, whole building, and whole industrial plant approach benefit most when their use of energy and water use is managed and conserved in an integrated fashion.

Below, I have presented my specific comments with respect to each of your elements of the proposal.

**TERM**: CDM Framework launched on January 1, 2021 with a four year term from January 1, 2021 to December 31, 2024, with a mid-term review at the end of 2022.

The start and stop processes in the recent past are confusing, a disservice to customers and uncertainty to staff. Based on experience these dates are never adhered to and customers are left hanging.

**Delivery**: The Framework would continue to be centrally delivered by the IESO with opportunities for anyone, including customers, LDC and program delivery companies to propose cost-effective programs or projects that meet local or regional electricity system needs.

With the merger of Enbridge and Union Gas, the service area is virtually the whole province. **My view is the Enbridge, rather than the IESO become the program administrator for both DSM and CDM**. My reason for this is simple; Enbridge has a full team of customer service representatives across the province. A renumeration formula could be developed based on energy savings and many of the staff whom the electric distribution utilities have let go could be rehired to provide a one stop service to customers. Other natural gas utilities and the prospect of new natural gas utilities would allow for them to contract as a delivery partner.

**Objectives and customers served**: Address limited system needs in near term in the most cost-effective manner while maintaining program delivery capacity in the province; and increase CDM investments in the second two years of the Framework (2023-24) to meet system needs that emerge through the 2020s.To be achieved by:

1. Targeting provincial bulk system needs (primarily peak demand reductions) and local/regional system needs.
2. Recognizing the wide availability of cost-effective residential energy efficient products, this Framework would focus on providing education and tools for residential customers to empower them to improve their energy efficiency.

Neither the electricity nor natural gas companies, “own the customer”. IESO has done a good job based on the OEB framework for Regional Planning to assess system related investments required and the value of conservation to avoid system expansion. But the IESO does not have a provincially dispersed staff to deliver programs. Local natural gas utilities should be included in regional electricity planning to ensure that priorities are being addressed. Both electricity and natural gas system expansions should be informed by a “net of conservation approach” to supply planning. With respect to residential consumer information and assistance Enbridge has already demonstrated its ability to deliver these services for Toronto Hydro.

**Program Types**: Proposed programs under the new Framework would fall under the following general program types, with some offering benefits in more than one category. To provide a seamless transition from the Interim Framework and to target system needs as they arise; programs may be phased in over time.

1. Programs that incentivize whole building electricity savings and peak demand reduction and help business to increase their internal energy management capacity.
2. Programs that target local/regional needs, procured through a competitive process.
3. Customer-driven solutions for larger/complex projects.
4. Customer friendly and direct install programs that enable easy access and savings for standardized measures, including programs for small businesses.
5. Programs for on-reserve First Nations communities, including for remote communities soon to be connected to the provincial electricity grid.

# COMMENTS

1. If whole home savings do not include all energy forms, it is a disservice to customers.
2. My earlier comments with respect to demand side bidding stand.

* Contracting out program delivery or delivery of customer specific projects, however, should always be competitively based.
* The IESO has no knowledge of local renovation and service delivery companies.
* The distributed resources of Enbridge have that strategic advantage to reduce costs.
* The priorities for electricity should be governed by regional plans.

1. Building on the success of programs such as Sustainable Schools, Greening Health care, etc. using a whole building approach should be the fundamental basis for achieving and measuring savings.
2. Agreed.
3. Agreed.

# COMMENT

Most customers in Ontario use both electricity and natural gas (or other fuels). The fact is that that the greatest energy and bill savings from conservation projects result from a holistic approach to energy use in homes, buildings and industrial plants to both determine the potential for conservation and to achieve a fully balanced use of energy and energy bill management to realize that potential.

My comments are respectively submitted.

1. Case Studies and a full explanation of the methodology are available at [www.enerlife.ca](http://www.enerlife.ca) [↑](#footnote-ref-1)