



FACULTY OF
ENVIRONMENTAL &
URBAN CHANGE

4700 KEELE ST
TORONTO ON
CANADA M3J 1P3

T 416 736 5252
F 416 736 5679

www.yorku.ca/euc

Responses to ERO number 019-7401 - Electricity Energy Efficiency Programming Post 2024

Mark Winfield, Ph.D.
Professor
Co-Chair, Sustainable Energy Initiative,
Faculty of Environmental and Urban Change
York University
Toronto
marksw@yorku.ca

September 2023

Questions:

I. Objectives and targets, definition, and funding source

A. Objectives and targets

1. How sufficient are the current primary objectives and targets for addressing evolving system and customer needs?
 - *The are not sufficient. Targets should reflect to assessed technically achievable, economically rational (on a full life-cycle cost basis relative to supply options, including environmental and social and system benefits) and achievable assuming a serious level of effort and complementary and supportive policy frameworks. Targets should be adjusted as technologies evolve and experience with program delivery improves and costs fall.*
 - *An underlying problem is the absence of any effective framework for system planning, with the result that it is difficult to assess the avoided costs flowing from CDM, DERs and DR, as it is unclear if program success will result in the avoidance of the need to develop new generating or transmission and distribution infrastructures. The current planning framework seems to assume capacity expansion (principally nuclear and gas) regardless of the impact of CDM strategies.*
2. Should additional objectives or targets be considered when developing electricity energy efficiency programming? For example, objectives and/or targets relating to beneficial electrification (replacing fossil fuel use with electricity in a way that reduces overall emissions and energy costs), overall grid efficiency including demand flexibility (reducing, increasing or shifting customer load), electricity bill reduction, etc.
 - *Yes – see above – these benefits should be captured in avoided environmental costs and social benefits. Benefit adders for grid benefits in terms of avoided infrastructure needs and improved resiliency and operational efficiency should be included.*

B. Definition:

3. Does this CDM definition appropriately capture DER, and demand response (DR), and other opportunities arising from new technologies and business models that enable greater customer choice to achieve more electricity savings within CDM? If not, what changes should be made recognizing there may be other revenue options and models that may become available to DERs (e.g., local and wholesale electricity markets) outside of CDM?
 - *DER should be considered as a separate category from CDM given the potential scale and significance of the resources in that category. CDM should focus on end-use efficiency. Consideration should also be given to treating DR as a separate category, although strategies around end-use efficiency, DER development and DR need to be coordinated and integrated into overall system planning.*
4. Should the definition consider additional elements such as beneficial electrification?
 - *Beneficial electrification should be treated as a different category from CDM which is focussed on end-use efficiency. A clear definition of 'beneficial electrification' would need to be developed, and appropriate frameworks developed for such initiatives specific to the residential, commercial and industrial sectors, particularly given the availability of other federal and provincial funds for these activities in the industrial sector in particular.*

C. Funding Source

5. Currently, funding from electricity ratepayers through the Global Adjustment (GA) can support electricity energy efficiency programs that target local and/or regional needs and which also demonstrate cost effectiveness at the system-wide level. How do we determine the extent to which local and/or regional programs are to be funded by all electricity ratepayers (i.e., through the GA)?
 - *See above – IESO and LDCs should not be permitted to pursue new conventional centralized generating assets or infrastructure expansions until it can be demonstrated that all cost-effective and achievable CDM, DER and DR opportunities are being pursued. Costs of these programs should be embedded in electricity rates, as by definition they will be lower than the cost of developing new conventional generating assets.*
 - *Some programs targeting specifically the needs of marginalized, disadvantaged or communities, should be included in the GA.*

6. Currently, DER and DR activities can be funded through the GA if they meet the CDM definition. Beneficial electrification is not an eligible CDM activity. Should beneficial electrification be an eligible CDM activity; and if so, what funding source is most appropriate (e.g., electricity ratepayer, natural gas ratepayer, taxpayer)?
- *No – beneficial electrification should be treated as a different category from CDM which is focussed on end-use efficiency. A clear definition of ‘beneficial electrification’ would need to be developed, and appropriate frameworks developed for such initiatives specific to the residential, commercial and industrial sectors, particularly given the availability of other federal and provincial funds for these activities in the industrial sector in particular.*

II. Responsiveness to system needs

7. Would a more enduring commitment to energy efficiency programming and funding produce better outcomes? What could this look like?
- *Yes – stable and long-term commitments to CDM and related programming is essential to their success as demonstrated in other jurisdictions, notably California. Development and optimization of CDM, DER and DR resources need to be embedded in the province’s electricity planning process, subject to meaningful regulatory oversight to ensure that these types of resources are being fully pursued before additional investments in centralized generating assets and infrastructure are authorized.*
8. In the context of the energy transition and growing electrification needs, how can electricity energy efficiency programs be better integrated into electricity distribution and transmission system planning as well as resource procurements?
- *See above*
9. What additional tools could be used to develop energy efficiency programming budgets and targets? Examples of existing available tools include:
- *Efficiency potential studies need to be updated on a regular (biannual if not annual) basis, to take into account technological developments, program experience and changes in economic circumstances.*
 - *The current mechanisms of current annual outlooks and acquisition reports although useful, are completely inadequate as a planning framework in general and for CDM, DER and DR development specifically. These strategies need to operate within a (currently non-existent) long-term planning framework, subject to meaningful regulatory oversight, to ensure that these ‘no-regrets’ options are being developed and optimized before*

the development of conventional high-impact, high-risk and high-cost generating assets (e.g. nuclear and fossil gas) and other conventional infrastructure.

10. How can electricity energy efficiency programs be better integrated or coordinated with other policy initiatives such as procurements (e.g., of DER resources), pricing schemes, building codes and energy efficiency standards, to help manage electricity demand and reduce GHG emissions?

- *Generally see the York University Sustainable Energy Initiative study "[Unpacking the Climate Potential of Energy Efficiency](#) (2020)*

11. What are examples from other jurisdictions where demand flexibility and targeted energy efficiency have helped optimize the use of the existing grid in constrained areas or where the grid is under-utilized? For example, aggregated demand response program, DER and non-wires alternatives, energy storage, locational value and electricity pricing options, etc.

- *The usual suspects – California and other states – see the work of The American Council for an Energy-Efficient Economy (ACEEE), along with other provinces with well-developed CDM programming and infrastructures (e.g. BC and Nova Scotia). There have also been interesting developments in the United Kingdom.*

III. Improving customer experience

A. Needs:

12. What additional support is needed to get customers to undertake more energy efficiency?

- *Supports need to be targeted to particular market segments and types – industrial, commercial, residential. Successful programs have been very effective in targeting programming to the needs of specific sub-sectors, and in some cases culturally appropriate approaches to those sectors. N.B. the California experience with 'direct install' programming for example. Particularly for residential and small commercial customers 'red tape' and number of agencies they need to engage with needs to be minimized, and assistance provided for the capital costs of upgrades.*

13. What should the government consider when communicating the benefits and motivations behind energy efficiency programs to encourage participation and improve public awareness? Examples of benefits are cost savings, comfort, enhanced customer choice, etc.

- *All of the above, although cost savings, enhanced building comfort (residential or commercial/institutional), operational*

efficiency (industrial) and in combination with DRs resiliency should all be emphasized.

14. Are there best practices from other jurisdictions on improving customer engagement in energy efficiency particularly for the hard-to-reach segments?

- *See above re: California direct install. Programs need to be taken directly to customers, in a culturally appropriate ways, address the constraints and underlying business models of customers (e.g. small businesses), one-window, supportive and user-friendly delivery to customers. Need to recognize the need to minimize capital and transaction costs to consumers – support with capital costs (up to 100%) will be appropriate for some low-income and otherwise marginalized communities. Note that there are some good examples of one-window, low/no cost delivery in the low-income programs already delivered by IESO and Enbridge. See also Winfield, Hall and Peters [‘A Quick Start Energy Efficiency Program for Ontario’](#) (Pembina Institute 2006)*

15. How can we make better use of technology to achieve our electricity energy efficiency goals?

- *Improve incorporation of CDM, DER and DR potential into system modelling and planning.*
- *Improve modelling capacity around CDM, DER and DR potential and the relationships between these technologies/options.*
- *Support research on the integration of CDM, DER and DR systems at the building, area, and distribution system levels and into system planning and operations.*
- *Develop better understanding of system benefits and full range of avoided costs and risks via CDM, DER and DR initiatives.*

B. Coordinated delivery:

16. What opportunities should Ontario consider, to improve the coordination of electricity and natural gas energy efficiency frameworks, program delivery, and oversight?

- *See above re: models for IESO/Enbridge ‘one-window’ delivery of low-income programs. Model should be expanded to cover wider range of household types and incomes, and should seek optimization from cost, resilience and GHG emission perspectives.*

17. What common performance metrics could be used to design, track, and evaluate coordinated energy efficiency activities (e.g., cost benefit tests, emissions reduction goals)?

- *Cost/benefit/TRC tests need to account for the full range of benefits realized through CDM, DER and DR programming*

and initiatives (e.g. avoid costs of new generation and infrastructure, GHG and environmental, operational system benefits, including resilience in the face of extreme weather and outages.

- *Contributions to reductions in GHG emissions and reduction/avoidance other adverse impacts of conventional generating assets (e.g. waste generation, air pollution) need to be recognized, as well as avoided economic and environmental risks (cost-overruns, major accidents).*
- *Societal benefits need to be fully captured, particularly benefits to low-income and marginalized households in terms of energy costs and housing quality, reduced energy costs and improved operations for businesses and institutions.*

18. Are there examples from other jurisdiction where natural gas and electricity energy efficiency program planning and delivery are integrated?

- *See above – California may be the best example. No really good examples in Canada that I know of.*

IV. General

19. The IESO's Mid-Term review of the 2021-2024 CDM Framework, including programming, was released in December 2022. Please share any further feedback on any of the existing programming, including opportunities for improvement or lessons learned from other jurisdictions.

- *See above. The province needs to take a vastly more ambitious approach to CDM, one which ensures the full development of all technically achievable, cost-effective, and achievable opportunities, and embeds this in the province's overall electricity and energy planning processes.*
- *The province needs to keep pace with the leading North American jurisdictions in terms of energy efficiency standards and codes, and to stay abreast of developments and experience in program design, delivery and outcomes in other jurisdictions, and incorporate policy and operational learning from those jurisdictions into its own programming.*
- *CDM, DER and DR development needs to be framed as a long-term strategy based on continuous improvement rather than an intermittent start-stop process. The assumption needs to be embedded that CDM is a long-term and on-going element of the province's energy and climate change planning processes.*