



Ontario
Executive Council
Conseil des ministres

Order in Council
Décret

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and concurrence of the Executive Council, orders that:

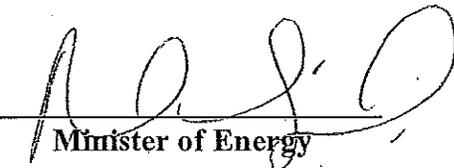
Sur la recommandation du soussigné, le lieutenant-gouverneur, sur l'avis et avec le consentement du Conseil des ministres, décrète ce qui suit:

WHEREAS it is desirable that the Province and the Ontario Energy Board move forward together with a plan to implement the advanced information exchange systems and equipment that together comprise the Smart Grid ("Smart Grid"), as defined in the amendments to the *Electricity Act, 1998* made by the *Green Energy and Green Economy Act, 2009*;

AND WHEREAS in furtherance of this goal, it is desirable that the Province provide guidance and direction to the Board as to the principles and objectives which must be met in order to fully achieve the Province's objectives related to the Smart Grid in a cost-efficient manner;

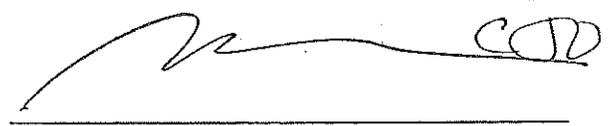
AND WHEREAS the Minister of Energy has the authority, with the approval of the Lieutenant Governor in Council, to issue Directives pursuant to section 28.5 of the *Ontario Energy Board Act, 1998*, as amended by the *Green Energy and Green Economy Act, 2009*, in relation to the establishment, implementation or promotion of a Smart Grid for Ontario;

NOW THEREFORE the Directive attached hereto, is approved.

Recommended: 
Minister of Energy

Concurred: 
Chair of Cabinet

Approved and Ordered: NOV 23 2010
Date


Administrator of the Government

MINISTER'S DIRECTIVE

TO: THE ONTARIO ENERGY BOARD

I, Brad Duguid, Minister of Energy, hereby direct the Ontario Energy Board pursuant to section 28.5 of the *Ontario Energy Board Act, 1998* (the "Act"), as described below.

The Board shall take the following steps in relation to the establishment, implementation and promotion of a smart grid:

1. The Board shall provide guidance to licensed electricity distributors and transmitters, and other regulated entities whose fees and expenditures are reviewed by the Board, that propose to undertake smart grid activities, regarding the Board's expectations in relation to such activities in support of the establishment and implementation of a smart grid.
2. For licensed distributors and transmitters, the guidance referred to in paragraph 1 shall be provided in particular to: (a) guide these regulated entities in the preparation of plans for the development and implementation of the smart grid, as contemplated in subparagraph 70(2.1)2(ii) of the Act ("Smart Grid Plans"); and (b) identify the criteria that the Board will use to evaluate Smart Grid Plans.
3. In developing the guidance referred to in paragraph 1, and in evaluating the Smart Grid Plans and activities undertaken by the regulated entities referred to in that paragraph, the Board shall be guided by, and adopt where appropriate, the parameters for the three objectives of a smart grid referred to in subsection 2(1.3) of the definition for "smart grid" as provided for under the *Electricity Act, 1998*, where such elements of said objectives are set out in Appendices A through C.
4. Further, in developing the guidance referred to in paragraph 1 and in evaluating the smart grid activities of the regulated entities referred to in that paragraph, the Board shall be guided by the following policy objectives of the government:
 - (i) *Efficiency*: Improve efficiency of grid operation, taking into account the cost-effectiveness of the electricity system.
 - (ii) *Customer value*: The smart grid should provide benefits to electricity customers.
 - (iii) *Co-ordination*: The smart grid implementation efforts should be coordinated by, among other means, establishing regionally

coordinated Smart Grid Plans (“Regional Smart Grid Plans”), including coordinating smart grid activities amongst appropriate groupings of distributors, requiring distributors to share information and results of pilot projects, and engaging in common procurements to achieve economies of scale and scope.

- (iv) *Interoperability*: Adopt recognized industry standards that support the exchange of meaningful and actionable information between and among smart grid systems and enable common protocols for operation. Where no standards exist, support the development of new recognized standards through coordinated means.
- (v) *Security*: Cybersecurity and physical security should be provided to protect data, access points, and the overall electricity grid from unauthorized access and malicious attacks.
- (vi) *Privacy*: Respect and protect the privacy of customers. Integrate privacy requirements into smart grid planning and design from an early stage, including the completion of privacy impact assessments.
- (vii) *Safety*: Maintain, and in no way compromise, health and safety protections and improve electrical safety wherever practical.
- (viii) *Economic Development*: Encourage economic growth and job creation within the province of Ontario. Actively encourage the development and adoption of smart grid products, services, and innovative solutions from Ontario-based sources.
- (ix) *Environmental Benefits*: Promote the integration of clean technologies, conservation, and more efficient use of existing technologies.
- (x) *Reliability*: Maintain reliability of the electricity grid and improve it wherever practical, including reducing the impact, frequency and duration of outages.

The Board may consider such other factors as are relevant in the circumstances.

5. In furtherance of the government’s policy objective as described in item (iii) of paragraph 4 above, the Board shall undertake a consultation process with licensed electricity distributors and other relevant stakeholders for the purpose of developing a regional or otherwise coordinated approach to the planning and implementation of smart grid activities by licensed electricity distributors that promotes coordination

amongst them having regard to, among other things, cost-effective outcomes.

6. Nothing in paragraph 5 shall be construed as limiting the ability of licensed electricity distributors to engage in smart grid activities or the authority or discretion of the Board in exercising its responsibilities in relation to the smart grid activities of licensed electricity distributors pending the development of the regional or coordinated approach referred to in that paragraph.

APPENDIX “A”

CUSTOMER CONTROL OBJECTIVES

For the purpose of providing the customer with increased information and tools to promote conservation of electricity, which will “expand opportunities to provide demand response, price information and load control to electricity customers”, in accordance with subsection 2(1.3)(b) of the Electricity Act, the following objectives apply:

- **ACCESS:** Enable access to data by customer authorized parties who can provide customer value and enhance a customer’s ability to manage consumption and home energy systems.
- **VISIBILITY:** Improve visibility of information, to and by customers, which can benefit the customer and the electricity system, such as electricity consumption, generation characteristics, and commodity price.
- **CONTROL:** Enable consumers to better control their consumption of electricity in order to facilitate active, simple, and consumer-friendly participation in conservation and load management.
- **PARTICIPATION IN RENEWABLE GENERATION:** Provide consumers with opportunities to provide services back to the electricity grid such as small-scale renewable generation and storage.
- **CUSTOMER CHOICE:** Enable improved channels through which customers can interact with electricity service providers, and enable more customer choice.
- **EDUCATION:** Actively educate consumers about opportunities for their involvement in generation and conservation associated with a smarter grid, and present customers with easily understood material that explains how to increase their participation in the smart grid and the benefits thereof.

APPENDIX “B”

POWER SYSTEM FLEXIBILITY OBJECTIVES

For the purpose of “enabling the increased use of renewable energy sources and technology, including generation facilities connected to the distribution system,” , in accordance with subsection 2(1.3)(a) of the Electricity Act, and recognizing the need for flexibility on the integrated power system, the following objectives apply:

- **DISTRIBUTED RENEWABLE GENERATION:** Enable a flexible distribution system infrastructure that promotes increased levels of distributed renewable generation.
- **VISIBILITY:** Improve network visibility of grid conditions for grid operations where a demonstrated need exists or will exist, including the siting and operating of distributed renewable generation.
- **CONTROL AND AUTOMATION:** Enable improved control and automation on the electricity grid where needed to promote distributed renewable generation. To the extent practical, move toward distribution automation such as a self-healing and self-correcting grid infrastructure to automatically anticipate and respond to system disturbances for faster restoration.
- **QUALITY:** Maintain the quality of power delivered by the grid, and improve it wherever practical.

APPENDIX “C”

ADAPTIVE INFRASTRUCTURE OBJECTIVES

For the purpose of “accommodating the use of emerging, innovative and energy-saving technologies and system control applications,” in accordance with subsection 2(1.3)(c) of the Electricity Act, the following objectives apply:

- **FLEXIBILITY:** Provide flexibility within smart grid implementation to support future innovative applications, such as electric vehicles and energy storage.
- **FORWARD COMPATIBILITY:** Protect against technology lock-in to minimize stranded assets and investments and incorporate principles of modularity, scalability and extensibility into smart grid planning.
- **ENCOURAGE INNOVATION:** Nest within smart grid infrastructure planning and development the ability to adapt to and actively encourage innovation in technologies, energy services and investment / business models.
- **MAINTAIN PULSE ON INNOVATION:** Encourage information sharing, relating to innovation and the smart grid, and ensure Ontario is aware of best practices and innovations in Canada and around the world.