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July 11, 2013

Ontario Energy Board  
P.O. Box 2319  
2300 Yonge Street, Suite 2701  
Toronto, ON M4P 1E4

Attention: Ms. Kirsten Walli, Board Secretary

Dear Ms. Walli:

**Re: EB-2013-0141 – Interrogatories from the Ontario Sustainable Energy  
Association**

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Please find attached the Ontario Sustainable Energy Association's Interrogatories to Hydro One in the above noted matter.

Yours truly,



Joanna Vince

cc. client

**IN THE MATTER OF** the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15,  
(Schedule B);  
**AND IN THE MATTER OF** an application by Hydro One Networks Inc. for  
an order approving just and reasonable rates and other charges for  
electricity distribution to be effective January 1, 2014

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**1. Reference: Exhibit C, Tab 1, Schedule 1, Page 1 of 18, Lines 18-20**

*Hydro One is executing to this plan and is on track to stay within the planned expenditures laid out in the filing; however, these expenditures will be over a longer period than originally anticipated.*

Provide the reasons for the delay or longer period of time required to implement the plan.

**2. Reference: Exhibit C, Tab 1, Schedule 1, Page 1 of 18, Lines 26-28**

*Once the target business capabilities and conceptual/system architectures were established, Hydro One proceeded to Phase 1 where it is currently implementing the new smart grid business capabilities and piloting them in the Owen Sound Area.*

Define “business capabilities”.

**3. Reference: Exhibit C, Tab 1, Schedule 1, Page 2 of 18, Lines 11-12**

*The pilot is being used to establish and test design parameters and standards as well as test business processes for scalability and effectiveness.*

Provide a list of the business processes being tested.

**4. Reference: Exhibit C, Tab 1, Schedule 1, Page 4 of 18, Lines 1 - 13.**

**(1.3)** For the purposes of this Act, the smart grid means the advanced information exchange systems and equipment that when utilized together improve the flexibility, security, reliability, efficiency and safety of the integrated power system and distribution systems, particularly for the purposes of,

- (a) enabling the increased use of renewable energy sources and technology, including generation facilities connected to the distribution system;
- (b) expanding opportunities to provide demand response, price information and load control to electricity customers;
- (c) accommodating the use of emerging, innovative and energy-saving technologies and system control applications; or
- (d) supporting other objectives that may be prescribed by regulation. 2009, c. 12, Sched. B, s.1 (5).

Show how the objectives of Hydro One smart grid plan will contribute to items (a), (b) and (c) in the above reference to the *Green Energy and Green Economy Act* and the Smart Grid Working Group Paper

**5. Reference: Exhibit C, Tab 1, Schedule 1, Page 5 of 18, Line 1**

*For example, technology related to energy storage and electric vehicles were not cost effective for piloting*

Provide the cost benefit analyses that indicated that energy storage and electrical vehicles were not cost effective for piloting.

**6. Reference: Exhibit C, Tab 1, Schedule 1, Page 5 of 18, Line 1 – 3**

*And the price points for some of the smart grid technologies were too high to be cost effectively deployed for Hydro One customers.*

List the smart grid technologies that were too high to be cost effectively deployed for Hydro One customers and provide the cost benefit analyses that indicated they were not cost effective.

**7. Reference: Exhibit C, Tab 1, Schedule 1, Page 5 of 18, Lines 3-6**

*Therefore, Hydro One elected to take a slower, more measured approach for some of the technologies that resulted in a longer than expected Phase 1 Release 1 duration. However the actual spending over the period 2010 to 2012 has remained within the Board approved amounts as shown in Table 1.*

Given that not all the technologies in the original plan were included in the pilot, yet almost 90% of the funds were spent, what accounts for the increased costs for the technologies that were chosen? Provide a variance analysis from the original plan, indicating what additional results came from the slower, more measured approach.

**8. Reference: Exhibit C, Tab 1, Schedule 1, Page 5 of 18, Lines 11-12**

*The work completed under Phase 1 Release 1 focused on establishing the Smart Zone Pilot and implementing a core set of systems infrastructure capable of scaling to meet the needs of the province for Hydro One's smart grid...*

For each of the items listed below this statement, describe the functionality of the systems infrastructure.

**9. Reference: Exhibit C, Tab 1, Schedule 1, Page 13 of 18, Lines 23-27**

*Hydro One plans to make enhancements to its Distribution Management System that will enable better management of the distributed generation connected to the distribution system. Hydro One will also pilot dispatching both small and large distributed generators to facilitate planned outages and maximize use of the available connection capacity.*

Demonstrate how the enhancements to the Distribution Management System will contribute to enabling the increased use of renewable energy sources and technologies, as required under the *Green Energy and Green Economy Act*

**10. Reference: Exhibit C, Tab 1, Schedule 1, Page 13 of 18, Lines 27, Page 14, Lines 1 - 2**

*Hydro One also has pilots planned for the integration of flywheel and battery energy storage into the Distribution Management System as another tool to manage the distribution system.*

Given that technology related to energy storage was deemed to not be cost effective for piloting, what factors have changed to include these two technologies in the pilots? What other technologies were considered?

**11. Reference: Exhibit C, Tab 1, Schedule 1, Page 17 of 18, Line 1****4.2. COLLABORATION WITH OTHER DISTRIBUTORS**

Does Hydro One monitor smart grid developments in the United States of America or in Europe? If so, what jurisdictions are monitored? How is this information used?

**12. Reference: Exhibit C-1-1, Appendix A, Page 1 of 17**

*Phase 1 Release 2 addressed by this BCS ("Release 2") will deliver a portfolio of smart grid deployments, each delivering a new or enhanced business capability. This will take the form of new and enhanced operations technology and information technology systems as well as a limited deployment of new assets on the distribution system. Release 2 builds on and leverages the foundation of core infrastructure and processes established in Release 1.*

Explain the term "limited deployment of new assets on the distribution system".

**13. Reference: Exhibit C-1-1, Appendix A, Page 2 of 7**

*The reason for the negative NPV for the overall ADS business case is that most of the benefits derived from provincial rollout flow to society even though Hydro One will build and maintain these new assets. This is the case for many of Hydro One's investments (e.g. forestry, pole replacements, etc.). The major factors in the societal benefit are: societal value of improved reliability (based on industry studies conducted) - \$578M; value of connecting more renewable generation - \$1,576M; reduction in energy losses - \$366M.*

File copies of all industry studies conducted.

Explain how the value of connecting more renewable generation was calculated.

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