

May 6, 2013

**BY COURIER (2 COPIES) AND EMAIL**

**Ms. Kirsten Walli**  
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Ontario Energy Board  
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Toronto, Ontario M4P 1E4  
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Dear Ms. Walli:

**Re: Environmental Defence Interrogatories  
EB-2013-0053 – Hydro One Networks Inc. (“Hydro One”)  
Guelph Area Transmission Line Project (“Project”)**

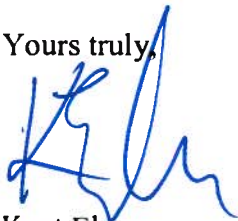
Enclosed please find Environmental Defence’s interrogatories in this matter.

We ask that Hydro One work together with the Ontario Power Authority (“OPA”) to provide the best available answers to these interrogatories. For example, a number of interrogatories specifically ask for information from the OPA. We ask that Hydro One request this information from the OPA for incorporation into Hydro One’s interrogatory responses. Where the OPA is unable to provide an answer, we ask that Hydro One provide its own best answer or estimate.

Alternatively, if Hydro One and the OPA are unable to work together to provide a single set of interrogatory responses, we propose that the OPA be made a party to this proceeding to answer any interrogatories that Hydro One is unable to answer. We believe this would be warranted seeing as the OPA authored the report that outlines the purported need for the project and assesses the alternatives (see Exhibit B, Tab 1, Schedule 5). Most of Environmental Defence’s interrogatories relate to this key report.

Please do not hesitate to contact me if anything further is required.

Yours truly,



Kent Elson

cc: Applicant and Intervenors

**Hydro One Networks Inc. ("Hydro One")  
Leave to Construct Guelph Area Transmission Line**

**Environmental Defence's Interrogatories for Hydro One**

Filed: May 6, 2013

See the note in the covering letter to these interrogatories regarding information held by the Ontario Power Authority ("OPA") that is requested in these interrogatories.

1. Reference: Ontario Power Authority, *Kitchener-Waterloo-Cambridge-Guelph Area*, March, 2013 (the "OPA KWCG Report"), Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the actual total peak demand (MW) for electricity in the KWCG area for each year from 2000 to 2012 inclusive. Please also break out these demands according to the six sub-categories shown in Table 1.

Please also provide the actual annual MWh demand for electricity in the KWCG area for each year from 2000 to 2012 inclusive. Please also break out these demands according to the six sub-categories shown in Table 1.

2. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide an excel spreadsheet with the electricity demand in the KWCG area during every hourly interval in 2010, 2011 and 2012. Please include the data in a single column or single row for each year (to assist in graphing the data).

3. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide an excel spreadsheet with the electricity demand in each of the six subsystems shown in Table 1 during every hourly interval in 2010, 2011 and 2012. Please include the data in a single column or single row for each subsystem and for each year (to assist in graphing the data).

4. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide a table indicating the difference between the KWCG peak (and each of the subsystem peaks) and the fourth highest hour as well as the difference between the KWCG peak (and subsystem peaks) and the eighth highest hour?

5. Reference: Ex. B, Tab 1, Schedule 5, Section 5

- a) Approximately when were (i) the OPA and (ii) Hydro One first aware of the need to take steps to ensure compliance with the ORTAC criteria described in section 5 of the OPA KWCG Report?
- b) When did (i) the OPA and (ii) Hydro One first begin to assess options to meet the needs described in section 5 of the OPA KWCG Report?

6. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's estimate of the peak demand (MW) for electricity for the KWCG area and each of the six subsystems shown in Table 1 for each year from 2013 to 2026 inclusive: a) before conservation and demand management (CDM) and distributed generation (DG); b) net of CDM; and c) net of CDM and DG.

7. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's estimate of the forecast annual electricity demand (MWh) for the KWCG area and each of the six subsystems shown in Table 1 for each year from 2013 to 2026 inclusive: a) before CDM and DG; b) net of CDM; and c) net of CDM and DG.

8. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's best estimate of the actual and forecast distributed generation (MW) in the KWCG area overall and broken out for each of the six subsystems shown in Table 1 for each year from 2010 to 2026 according to the following categories:

- a) Solar;
- b) Gas-fired generation;
- c) Gas-fired combined heat and power (CHP);
- d) Renewable CHP; and
- e) Other renewable.

For each year please also state the size (MW) of each: i) gas-fired CHP facility, ii) all other gas-fired generation facilities; and iii) renewable CHP facility.

9. Reference: Ex. B, Tab 1, Schedule 5, Page 17

The OPA KWCG Report states as follows:

Based on the allocation of the provincial targets, nearly 270 MW in peak demand reduction is expected from conservation achievement within the KWCG area by 2023. Within the South-Central Guelph, Kitchener-Guelph and Cambridge subsystems specifically, the planned peak demand reduction from conservation efforts by 2023 is over 130 MW. This planned conservation is expected to be achieved through a combination of peak demand savings resulting from province-wide conservation and demand management programs, improved building codes and equipment standards, and customer response to time-of-use pricing.

Please provide for: a) the KWCG area; b) the South-Central Guelph subsystem; c) the Kitchener-Guelph subsystem; and d) the Cambridge subsystem; for each year between 2013 and 2026 inclusive:

- a) The forecast incremental total peak demand reduction;
- b) The forecast cumulative total peak demand reduction;
- c) The forecast incremental peak demand reduction due to province-wide CDM programs;
- d) The forecast cumulative peak reduction due to province-wide CDM programs;
- e) The forecast incremental peak demand reduction due to improved building codes;
- f) The forecast cumulative peak demand reduction due to improved building codes;
- g) The forecast incremental peak demand reduction due to improved equipment standards;
- h) The forecast cumulative peak demand reduction due to improved equipment standards;
- i) The forecast incremental peak demand reduction due to time-of-use pricing; and
- j) The forecast cumulative peak demand reduction due to time-of-use pricing.

10. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide for the KWCG area and each of the subsystems shown in Table 1 for each year from 2013 to 2026 inclusive:

- a) The cumulative number of *peaksaver* and *peaksaver plus* participants;
- b) The cumulative peak demand reductions from the *peaksaver* and *peaksaver plus* participants;
- c) The cumulative total number of potential *peaksaver* and *peaksaver plus* participants; and

- d) The cumulative total potential demand reductions from the total number of potential *peaksaver* and *peaksaver plus* participants.

11. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's existing and forecast non-*peaksaver* and non-*peaksaver plus* demand response resources (e.g., DR1, DR2, DR3) for the KWCG area and each of the subsystems shown in Table 1 for each year from 2013 to 2026 inclusive.

12. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's best estimate of the non-*peaksaver* and non-*peaksaver plus* demand response potential (MW) in the KWCG area and each of the subsystems shown in Table 1 for each year from 2013 to 2026 inclusive.

13. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's best estimates of the number and aggregate capacity (MW) of commercial, institutional, multi-residential and industrial diesel back-up generators in the KWCG area and each of the subsystems shown in Table 1.

14. Reference: Ex B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's best estimate of the incremental demand response capability that could be obtained in the KWCG area and each of the subsystems shown in Table 1 for each year from 2013 to 2026 inclusive by installing natural gas-fired generators in commercial, multi-residential, institutional and industrial locations that have diesel back-up generation.

15. Reference: Ex B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's estimate of the economic potential for natural gas-fired combined heat and power (CHP) in the KWCG area and each of the subsystems shown in Table 1. Please provide the studies, analyses and input assumptions that support this estimate.

16. Reference: Ex B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's estimates of the economic potential for natural gas-fired CHP in the KWCG area and each of the subsystems shown in Table 1 in the following sectors: a) industrial; b) commercial; c) institutional; and d) multi-residential.

Please also include a break-out of the OPA's sectoral estimates by the following sizes: a) less than 10 kW; b) 10 to 50 kW; c) 51 to 100 kW; d) 101 to 500 kW; e) 501 to 999 kW; f) 1 to 5 MW; g) 5.1 to 10 MW; h) 10.1 to 20 MW; i) 20.1 to 50 MW; j) 50.1 to 99 MW; k) 100 to 200 MW; and l) greater than 200 MW.

17. Reference: Ex B, Tab 1, Schedule 5, Page 19

The OPA KWCG Report states as follows:

Additionally, it is the OPA's view that further distributed generation resources are not a cost effective means for addressing the needs of the KWCG area, due to robust load growth anticipated in the region combined with the relatively low cost of the recommended transmission reinforcement discussed in section 6.3 below. Distributed generation may be an effective option to meet an area's needs when low load growth is anticipated and/or the cost of the alternative solutions is high in comparison.

- a) Does the OPA agree that incremental distributed generation in the KWCG area could contribute to avoiding or deferring the need for additional generation resources in the rest of Ontario (e.g., Darlington re-build, Bruce re-build, Darlington new build). If "no", please fully explain why not.
- b) Please provide the OPA's best estimates of the cost per MWh of: i) the Darlington re-build project; ii) the Bruce B re-build project; and iii) the Darlington new build project. Please fully justify and document your estimates.
- c) Does the OPA agree that incremental CDM in the KWCG area could contribute to avoiding or deferring the need for additional generation resources in the rest of Ontario? If "no", please explain why not.

18. Reference: Ex B, Tab 1, Schedule 5, Pages 17-20

Has the OPA estimated the potential for incremental cost-effective CDM in the KWCG area in excess of the nearly 270 MW of CDM referenced on page 17?

If yes, please provide:

- a) The OPA's incremental cost-effective CDM potential estimates for the KWCG area and each of the subsystems referenced in Table 1 on page 10 for each year from 2013 to 2026 inclusive; and
- b) The OPA's studies and analyses that support these estimates.

19. Reference: Ex B, Tab 1, Schedule 5, Pages 17-20

Please provide the OPA's estimates of the avoided cost of new electricity supply (kW and kWh) in Ontario for each year from 2013 to 2026 inclusive, including the costs of generation,

transmission and distribution. Please provide the studies, analyses and input assumptions that support these avoided costs.

20. Reference: Ex. A, Tab 1, Schedule 1, Pages 1 & 2; and Ex. B, Tab 1, Schedule 5, Page 10

Please state the actual and planned capacities (MW) of the Hydro One transmission systems that serve the KWCG area and each of the subsystems shown on Ex. B, Tab 1, Schedule 5, page 10, Table 1.

Please state the increase in the actual and planned capacities of each of these systems if Hydro One upgrades approximately 5 km of the existing 115 kV double circuit transmission line section between CGE Junction and Campbell TS to a 230 kV double circuit transmission line and replaces approximately 2 km of Optic Ground Wire on the existing 230 kV structures between Cedar TS and CGE Junction.

21. Reference: Guelph City Council Report No. FIN-CE-12-03 re: Guelph Area Transmission Refurbishment Project and the Community Energy Initiative (December 3, 2012).<sup>1</sup>

According to the above captioned report (enclosed for your reference), generation projects totalling approximately 60 MW in the City of Guelph have been submitted to the OPA pursuant to its Feed-in-Tariff (FIT) Program and the Combined Heat and Power Standard Offer Program (CHPSOP). The report states as follows:

Across the community it is estimated that there are projects before the Ontario Power Authority with a total generation capacity of 60 Mega-Watts (MW). 60 MW represents approximately 25% of the average community-wide load electrical load of 240 MW and 20% of the approximate maximum peak summer load of 300 MW.

The 60 MW being proposed across the community roughly break down as follows:

- 30 MW Solar PV, including:
  - 1 MW City-owned Facilities
  - 8 MW Eastview closed landfill (Cooperative model)
  - 7.5 privately held land (Cooperative Model)
- 28 MW Combined Heat and Power (CHP), including:
  - Downtown

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<sup>1</sup> [http://guelph.ca/wp-content/uploads/council\\_agenda\\_120312.pdf#page=132](http://guelph.ca/wp-content/uploads/council_agenda_120312.pdf#page=132) (see pg. 132)

- Hanlon Creek Business Park
- 2 MW Biogas

- a) Please provide the OPA's best estimate of the amount of solar PV, CHP and biogas generation that it will contract for in the City of Guelph during each year from 2013 to 2026 inclusive.
- b) Has the OPA estimated the cost-effectiveness of each of these projects in terms of deferring the need for an upgrade of the Guelph transmission line and new or re-built electricity generation capacity in the rest of Ontario? If yes, please provide the OPA's analysis and estimates.

22. Reference: Ex. B, Tab 1, Schedule 5, Page 20, Table 3; Guelph City Council Report No. FIN-CE-12-03 re: Guelph Area Transmission Refurbishment Project and the Community Energy Initiative (December 3, 2012)

- a) Please explain whether, and to what extent, the 60 MW of projects referred to in the enclosed and above-referenced Council Report are accounted for and netted out of the demand forecast numbers listed in Table 3 of the OPA KWCG Report (re demand forecast by subsystem net of conservation and DG).
- b) Please provide a revised version of Table 3 based on the assumption that those 60 MW of projects are all issued contracts by the OPA and constructed as soon as possible.
- c) For each of the above referenced projects (totalling 60 MW), please explain why the OPA has not issued a contract for the specific project, whether the OPA intends to issue a contract in the near-term for each specific project, and if not, why not? Please also indicate in your answer the MW generation capacity for each project as well the resulting MW reduction in peak supply capacity need that can reliably be assumed will result from the project.
- d) Please describe and list all steps taken by the OPA and Hydro One to determine whether the CDM and/or DG measures outlined in the City of Guelph Community Energy Plan could feasibly avoid or defer the need for a new transmission line in the KWCG area. Please provide all documentation (e.g. memos, reports, etc.) prepared by the OPA and Hydro One in this regard.

23. Reference: Ex B, Tab 1, Schedule 4, Page 2

- a) Please provide a break-out of the electricity generation facilities in the KWCG area by size and fuel.

- b) Could a rise in the magnitude of local generation in the KWCG area increase its security of supply in the event of provincial blackout or a failure of the Hydro One grid?
- c) Please confirm that New York City is required to have sufficient local generation capacity to meet 80% of its peak day needs?
- d) Does the OPA believe that it would be in the public interest for the KWCG area to have sufficient local generation to meet at least: a) 25%; b) 50%; or c) 80% of its peak day needs? Please fully justify your response.

24. Reference: *Ontario's Long-Term Energy Plan*, page 34; EB-2007-0707, Exhibit E, Tab 5, Schedule 2, Pages 21 & 22; and Ex. B, Tab 1, Schedule 5, Page 23.

According to *Ontario's Long-Term Energy Plan*, “[a]s indicated in the 2007 Plan, the placement of a peaking natural gas-fired power plant in the Kitchener-Waterloo-Cambridge area is still necessary.”

According to the OPA’s 2007 *Integrated Power System Plan*, a 450 MW gas-fired peaker plant is needed for the Kitchener-Waterloo-Cambridge area.

According to the OPA’s evidence in this case, “[I]n the KWCG area, a large-scale gas-fired generator (e.g., 200 MW plus) can only be accommodated on the 230 kV transmission system. The optimum location to site such a facility would be in the Cambridge area near Preston TS...”

- a) When does the OPA believe that a large gas-fired power plant will be needed to meet the needs of the KWCG area?
- b) Can a large gas-fired peaker plant be located near the Preston TS in the absence of the proposed upgrade of the existing 115 kV transmission line between CGE Junction and Campbell TS to a 230 kV transmission line? If “yes”, please fully explain how.

25. Reference: Ex. B, Tab 1, Schedule 5, Pages 17-21

Why is the OPA not implementing programs to pursue all the cost-effective CDM and DG opportunities in the KWCG area that could defer the need for the proposed transmission line upgrade and generation projects in the rest of Ontario?

26. Reference: Ex. B, Tab 1, Schedule 5, Pages 17-21

- a) Please describe and list all steps taken by the OPA to assess whether increased CDM and/or DG could avoid or defer the need for a new transmission line in the KWCG area as well as the dates that each of these steps were taken. Please include a listing of the dates and subjects of all memos and reports prepared in this regard.

- b) Please provide a copy of all documentation (e.g. memos, reports, etc.) prepared by the OPA in relation to an assessment of whether increased CDM and/or DG could avoid or defer the need for a new transmission line in the KWCG area.
- c) Please describe and list all steps taken by Hydro One to assess whether increased CDM and/or DG could avoid or defer the need for a new transmission line in the KWCG area as well as the dates that each of these steps were taken. Please include a listing of the dates and subjects of all memos and reports prepared in this regard.
- d) Please provide a copy of all documentation (e.g. memos, reports, etc.) prepared by Hydro One in relation to an assessment of whether increased CDM and/or DG could avoid or defer the need for a new transmission line in the KWCG area.

27. Reference: Ex. B, Tab 1, Schedule 5, Page 20, Table 3

- a) Please describe all steps taken by the OPA and Hydro One to determine whether and how much CDM and DG could be implemented in addition to the amounts incorporated into table 3 (i.e. in addition to the allocation of provincial targets) in each subsystem area.
- b) Please provide a copy of all documentation (e.g. memos, reports, etc.) prepared by the OPA and Hydro One in this regard.

28. Reference: Ex. B, Tab 1, Schedule 5, Pages 17-21

Has the OPA or Hydro One completed a system-wide comparison of the cost-effectiveness of (i) implementing the lowest cost combination of CDM and DG options that could avoid the need for the proposed transmission line versus (ii) constructing the proposed transmission line, which accounts for all system-wide benefits from CDM and DG (such as avoiding the cost of increased generation, distribution, and transmission capacity and decreasing consumer costs resulting from conservation)? If no, why not. If yes, please provide the analysis.

29. Reference: Ex. B, Tab 1, Schedule 4, Page 1

- a) Did any members of the KWCG Working Group request that the OPA implement *additional* CDM programs and/or procure more DG in the KWCG area relative to what the OPA's evidence in this proceeding states that it is proposing to do? If "yes", please identify all the members that made such a request and fully describe their requests and the OPA's responses.
- b) Please provide copies of all of the KWCG Working Group's meeting agendas and minutes and reports.

30. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1

Please provide the OPA's documentation, studies and analyses that support the load forecasts for each of the KWCG subsystems shown in Table 1.

31. Reference: Ex. B, Tab 1, Schedule 5, Page 10, Table 1; and Ex B, Tab 4, Schedule 3, Pages 5 and 6.
  - a) Please provide Hydro One's forecast of the peak day demands of the KWCG area and each of the subsystems listed in Ex. B, Tab 1, Schedule 5, Page 10, Table 1 for each year from 2013 to 2040 inclusive.
  - b) Please provide the studies and analyses that support Hydro One's load forecasts.
32. Reference: Ex. B, Tab 1, Schedule 1, Page 10, Table 1; and Ex B, Tab 6, Schedule 1, Page 17
  - a) Please provide the IESO's forecast of the peak day demands of the KWCG area and each of the subsystems listed in Ex. B, Tab 1, Schedule 5, Page 10, Table 1 for each year from 2016 to 2026.
  - b) Please provide the studies and analyses that support the IESO's load forecasts.
33. Reference: Ex. B, Tab 1, Schedule 4, Page 1
  - a) Please state the maximum financial incentive that each LDC member of the KWCG Working Group can receive from the OPA if it under spends its CDM budget.
  - b) Please confirm that an LDC can earn the maximum financial incentive for under spending its CDM budget even if it fails to achieve 100% of its CDM target as established by the Ontario Energy Board.
34. Reference: Ex. B, Tab 1, Schedule 5, Page 28
  - a) Please provide an estimate (or various estimates) of the impact on Hydro One's net income for each of the next 20 years that will result from constructing the facilities proposed in this proceeding. Please make and state any reasonable assumptions necessary to provide an estimate.
  - b) Please provide an estimate (or various estimates) of the impact on Hydro One's net income (if any) for each of the next 20 years that would result from sufficient CDM and DG being implemented to avoid the need for the transmission line proposed in this proceeding. Please make and state any reasonable assumptions necessary to provide an estimate.

35. Reference: Ex. B, Tab 1, Schedule 1, Page 2

Please provide a breakdown of the KWCG system peak by each load station.

36. Reference: Ex. B, Tab 1, Schedule 5, Section 4, Page 10, Table 1

In Table 1 (Demand Forecast for the South-Central Guelph, Kitchener-Guelph, Cambridge, and Kitchener and Cambridge Subsystems), are the demand values coincidental peaks or only the peaks for each specific subsystem?

37. Reference: Ex. B, Tab 1, Schedule 5, Section 4

How many GAM Class A customers are served in each subsystem? What impact has the new GAM Class A/B had on each sub-system peak?

38. Reference: Ex. B, Tab 1, Schedule 5, Section 4

Was the system peak in KWCG coincidental with the Ontario system peak in 2012? 2011? 2010?

39. Reference: Ex. B, Tab 1, Schedule 5, Section 5

What is the transfer capability between the sources of supply in the KWCG area? In particular, what is the ability of one subsystem to support another subsystem that is experiencing an outage event? Please describe the limitations in transfer capability.

40. Reference: Ex. B, Tab 1, Schedule 5, Section 5

On page 13, the OPA KWCG Report states as follows:

Today, the double-circuit 115 kV transmission line (B5G/B6G) supplying South-Central Guelph from Burlington TS has a load meeting capability of approximately 100 MW. ... Based on the summer peak demand in the South-Central Guelph area, this supply capacity was exceeded in 2012 and is expected to remain beyond capacity over the next decade. Additional capacity is therefore required to meet current and growing electricity demand in the area. Until additional capacity is provided, operating measures (such as opening bus-tie breakers) will be required, resulting in a degradation of the level of supply security to the area.

- a) Describe how the operating measures (such as “opening bus-tie breakers”) in the South-Guelph 115kV subsystem have assisted in meeting the subsystem’s supply needs until now. Please describe all operating measures used, including “opening bus-tie breakers.”
- b) What other operating measures were investigated?

- c) The OPA states that these operating measures degrade the level of system security to the area. Please describe how these operating measures degrade the level of system security to the area?

41. Reference: Ex. B, Tab 1, Schedule 5, Section 5

Page 13 discusses “operating measures” used to assist supply needs in the South-Guelph 115kV subsystem.

- a) Were any operating measures considered in the Kitchener-Guelph 115kV subsystem? Please explain why or why not, and which options were considered (if any).
- b) Were any operating measures considered in the Cambridge 230kV subsystem? Please explain why or why not, and which options were considered (if any).

42. Reference: Ex. B, Tab 1, Schedule 5, Section 5, Page 14

On page 14, the OPA states that the load on D6V/D7V in the Waterloo-Guelph 230kV subsystem has exceeded the ORTAC 250 MW threshold by almost 60%. Why was this issue not addressed earlier?

43. Reference: Ex. B, Tab 1, Schedule 5, Section 5, Page 15

On page 15, the OPA states that the load on M20D/M21D in the Kitchener and Cambridge 230kV subsystem has exceeded the ORTAC 250 MW threshold by over 30%. Why was this not addressed earlier?

44. Reference: Ex. B, Tab 1, Schedule 5, Section 6, Page 18

On page 18, the OPA states that it is the view of the OPA that additional conservation is not a feasible means of addressing the KWCG area’s near- and medium-term needs. Please describe the background to the OPA’s experience with conservation programs on why additional conservation is not feasible. Please cite examples in other regions of the provinces.

45. Reference: Ex. B, Tab 1, Schedule 5, Section 6, Page 18

On page 18, the OPA estimates the effective capacity of the distributed generation resources in the KWCG area at 35 MW. Please describe how the OPA determined the effective capacity for the distributed generation resources in KWCG area.

46. Reference: Ex. B, Tab 1, Schedule 5, Section 6

Did the OPA consider alternative contracting methods with CHP facilities in the KWCG area to help address the supply need? If yes, please describe these.

47. Reference: Ex. B, Tab 1, Schedule 5, Section 6, Page 23

Please describe in detail how the supply capability for each of the subsystems would change with the installation of a 200MW (plus) gas-fired generator. What would the new need date be for each of the subsystems with the installation of the facility?

# COUNCIL REPORT



**TO** Guelph City Council

**SERVICE AREA** Corporate Administration, Finance and Enterprise  
**DATE** December 3, 2012

**SUBJECT** Guelph Area Transmission Refurbishment Project and  
the Community Energy Initiative

**REPORT NUMBER** FIN-CE-12-03

## SUMMARY

### Purpose of Report:

Overview of the Guelph Area Transmission Refurbishment Project and its relationship to the Community Energy Initiative. In summary:

- Description of the Guelph Area Transmission Refurbishment (GATR) Project, overseen by Hydro One.
- The position of Guelph Hydro Inc. and the GATR Project.
- Relationship to the GATR project to the Community Energy Initiative.

### Committee Action:

Committee receipt of the report; Guelph Area Transmission Refurbishment Project and the Community Energy Initiative.

Committee recommend that City Council correspond with the Ministry of Energy and ask for their direction to the Ontario Power Authority to approve Guelph-based projects currently seeking approval and to work with the City of Guelph in implementing local generation and to accelerate conservation activity to mitigate the timing and scope of the proposed Guelph Area Transmission Refurbishment Project.

Committee direct staff and support the Mayor in ongoing advocacy to the Minister of Energy, other Ministries as appropriate, the Ontario Power Authority and related staff in promoting the approval and implementation of local generation, and the acceleration of the conservation programming in the City of Guelph, as per the goals of the Community Energy Initiative.

Committee to City direct staff to investigate the feasibility of formal procedural interventions to the Guelph Area Transmission Refurbishment project through the Environmental Assessment process or with the Ontario Energy Board.

## **RECOMMENDATIONS**

**THAT** the report dated October 9, 2012 entitled '**Guelph Area Transmission Refurbishment Project and the Community Energy Initiative**' be received and;

**THAT** City Council direct the CAO to formally correspond with the Ministry of Energy requesting that they direct the Ontario Power Authority to approve Guelph-based projects currently in application under the Feed-In-Tariff and Combined Heat and Power Standard Offer programs and;

**THAT** City Council direct the CAO to formally correspond to the CEO of the Ontario Power authority to formally request the inclusion of representatives from the City of Guelph, on behalf of the Community Energy Initiative, in the ongoing study of energy supply to the Kitchener-Waterloo-Guelph-Cambridge region and;

**THAT** City Council direct the Mayor to continue to communicate with the Minister of Energy and other Provincial Ministers, as appropriate, to advocate on behalf of existing and future local energy generation and conservation projects and;

**THAT** City Council direct staff to continue to communicate to staff of the Ministry of Energy, other Ministries as appropriate and the Ontario Power Authority to advocate on behalf of existing and future local generation projects and;

**THAT** the City direct staff to investigate the feasibility of formal procedural interventions to the Guelph Area Transmission Refurbishment project such as a request for an Individual Environmental Assessment or intervening at the Ontario Energy Board as they consider the "Leave to Construct" for the GATR project.

## **BACKGROUND**

### **1. Hydro One and the Class EA Process**

Hydro One Networks Inc. (Hydro One) is planning to refurbish parts of the aging high-voltage electricity infrastructure serving the City of Guelph, Waterloo Region and the surrounding area of Kitchener-Waterloo-Guelph-Cambridge.

The undertaking consists of three main components:

- Upgrading the existing Cedar Transformer Station in the City of Guelph;
- Upgrading approximately five kilometres of existing transmission line from Campbell Transformer Station to CGE Junction, in the City of Guelph; and
- Upgrading the existing Guelph North Junction (northwest of Guelph in the Township of Centre Wellington), to a switching station.

The proposed Guelph Area Transmission Refurbishment Project is subject to the "Class Environmental Assessment for Minor Transmission Facilities" (Class EA) process, in accordance with the Ontario Environmental Assessment Act (EA Act).

The final Environmental Study Report (ESR) has been prepared in compliance with the requirements of the EA Act and describes the Class EA process that has been undertaken for the Project (See Appendix 1)

Hydro One has described the following Project Need:

*The Kitchener-Waterloo-Cambridge-Guelph (KWCG) area is one of the larger load centres in Ontario. Its electricity demand peaked at over 1,400 megawatts (MW) in the summer of 2011, and is expected to continue to grow over the next 20 years.*

*Despite its large electricity demand, there are no major sources of generation supply within the KWCG area. As a result, the area relies heavily on the transmission system to deliver electricity from the Ontario grid to its customers. There are four major sources of electricity supply from the transmission grid to the KWCG area— Detweiler TS in Kitchener from the west; the transmission line connecting Middleport TS in Hamilton and Detweiler TS from the south; Burlington TS from the east; and the transmission line connecting Orangeville TS and Detweiler TS from the north. All of these sources of supply, with the exception of the supply from the north, have reached or are approaching their maximum capacity for planning purposes.*

*To maintain a reliable supply of electricity to the KWCG area, the Ontario Power Authority (OPA), Hydro One Networks (Hydro One), local distribution companies (LDCs) and the Independent Electricity System Operator (IESO) are developing near and longer-term plans for the area. These plans will consider an integrated mix of solutions including conservation, local generation, distribution and transmission.*

*The Guelph Area Transmission Refurbishment (GATR) Project is one of the solutions needed to provide increased capacity for growth in the South-Central Guelph and Kitchener areas, and to improve the reliability of electricity supply to customers in the KWCG area for the next decade.*

The Class Environmental Assessment for the GATR project is now complete. Hydro One has come to the following conclusions.

- Potential short term and long term environmental effects were identified and corresponding mitigation measures were developed to address these effects.
- No adverse residual effects due to construction, operation or maintenance of the refurbished facilities were identified. Comments and issues raised during the review period were documented in this final ESR which was filed with the MOE on October 30, 2012.
- Prior to construction, Hydro One will seek all regulatory approvals, licences and permits as required. Contingent upon approval from the Ontario Energy

Board (OEB) for "Leave to Construct" under Section 92 of the OEB Act, it is expected that detailed engineering and construction will commence in the spring of 2013 and the in-service date of the project will be December 2015.

Despite repeated communications and interventions from the City of Guelph for considerations of the goals of the CEI in the Class EA process there is no specific or analytical evidence in the final EA Report that Hydro One considered, or engaged with the City of Guelph, to consider "an integrated mix of solutions including conservation, local generation, distribution and transmission" as described in the Project Need (as per above).

## **2. The Role of the Ontario Power's Authority, the GATR Project and Local Generation**

The Class EA and consultation process for the Guelph Area Transmission Refurbishment Project was first initiated by Hydro One in 2009. The process was put on hold in 2010 when an initiative was launched to develop a broader regional plan for the Kitchener-Waterloo- Cambridge-Guelph area.

The regional plan is being developed by the Ontario Power Authority (OPA) along with a working group made up of local utility partners, including Guelph Hydro and Hydro One.

In March 2012, the OPA advised Hydro One that the regional planning study had advanced sufficiently to confirm the need to proceed with the Guelph Area Transmission Refurbishment Project and recommended the proposed transmission refurbishments described in this document (and also refined by the October 2012 letter from OPA). As such, Hydro One resumed the Class EA process and re-introduced the Project, as defined by the OPA, to government agencies and the public.

Despite advancing the GATR project, the regional planning study for the Kitchener-Waterloo- Cambridge-Guelph area is expected to continue and provide an opportunity for continued consideration of local generation and conservation, such as those activities described in the Community Energy Plan, as solutions to matching electricity supply to electricity demand in the region.

The Ontario Power Authority also oversees the programs that support energy conservation. These programs are delivered by local distribution companies, of which Guelph Hydro Energy Systems is one.

The Ontario Power Authority also oversees two programs that support local generation; the Feed-In-Tariff (FIT) Program and the Combined Heat and Power Standard Offer Program (CHPSOP). The FIT program approves solar photo-voltaic projects and the CHSOP program considers combined heat and power (sometime referred to as co-generation) projects.

Across the community it is estimated that there are projects before the Ontario Power Authority with a total generation capacity of 60 Mega-Watts (MW). 60 MW represents approximately 25% of the average community-wide load electrical load of 240 MW and 20% of the approximate maximum peak summer load of 300 MW.

The 60 MW being proposed across the community roughly break down as follows:

- 30 MW Solar PV, including:
  - 1 MW City-owned Facilities
  - 8 MW Eastview closed landfill (Cooperative model)
  - 7.5 privately held land (Cooperative Model)
- 28 MW Combined Heat and Power (CHP), including:
  - Downtown
  - Hanlon Creek Business Park
- 2 MW Biogas

### **3. The City of Guelph – Interactions with the Ontario Power Authority and the Ministry of Energy.**

In advocating for the Community Energy Initiative, the City and its partners at Guelph Hydro Inc. (mainly through Envida) have been active in interacting with the Ontario Power Authority and the Ministry of Energy. The following summarizes some of the highlights.

- In 2007, the Ontario Power Authority awarded the City of Guelph a Certificate of Recognition for the Community Energy Plan.
- The Ontario Power Authority has also supported the Community Energy Initiative as participants in the Mayor's Task Force on Community Energy.
- In 2010, the City supported an application to the OPA's Conservation Fund, along with a number of community partners, to accelerate energy conservation activities in the community. It was not successful.
- The City has led delegations to formal meetings with the Minister of Energy to advocate for the generation projects, cited above, as key elements of supporting development and attracting investment in our community. Led by the Mayor, these delegations have met with the Minister 3 times in the last year and a half.
- City staff and staff at Envida have had extensive and ongoing interactions with staff at the Ministry of Energy and the Ontario Power Authority on specific aspects of the FIT and CHSOP applications as summarized above.

#### **4. Guelph Hydro Position on GATR**

Guelph Hydro Inc., of which the City of Guelph is sole shareholder, maintains the following strategic priorities in directing its planning and business execution.

1. Maintain a reliable supply of electricity to the City of Guelph
2. Support the Community Energy Initiative
3. Maintain "profitability"

With these priorities in mind Guelph Hydro Inc. has provided a formal correspondence on their position related to Hydro One's Class EA Report and their view to the long term issues related to electricity transmission to the City of Guelph.

In summary, Guelph Hydro Inc. is in support of the recommendations of the Class EA report. However, Guelph Hydro fully acknowledges its second priority obligation and mandate to the Community Energy Initiative.

Formal Correspondence from Guelph Hydro Inc. is attached as Appendix 2

#### **REPORT**

The GATR project presents a challenge to the Guelph Hydro Inc., and its regulated operations, Guelph Hydro Electrical Systems Inc.. As described above, in the "Background" section, the transmission infrastructure in the Guelph area is under increasing constrictions in the supply of electricity to the community. This is an ongoing reality as Guelph continues to grow towards its target of 175,000 citizens by 2031. Further, the infrastructure is aging and is increasingly subject to the risk of failure.

In the event of high-demand on the system (i.e. peak summer weather) or failed infrastructure (i.e. weather events), there is a real possibility of brownouts or rolling blackouts.

Based on this reality, and given their #1 strategic priority, Guelph Hydro Inc. and their regulated arm, Guelph Hydro Electrical Systems, are in support of the conclusions of Hydro One and the proposed GATR Project.

The proposed transmission lines are intended to bring electricity generated from outside of the region. A key goal of the Community Energy Initiative is the development of local generation. In the first five years since the April 2007 Council approval of the CEI, this has been a very successful element of the initiative. It is estimated that as much as 60 MW of projects have been proposed and are currently before the Ontario Power Authority for approval.

The average demand for the community is approximately 240 MW, peaking at nearly 300 MW during the warm summer months. However, because the majority

of these projects are awaiting approval, the ability of the local generation projects to alleviate the need for improved transmission, as described above is unclear.

Also, local Conservation and Demand Management programming, overseen by the Ontario Power Authority and delivered by the regulated arm of Guelph Hydro, Guelph Hydro Electrical Systems Inc., has played a role in reducing system capacity demand but is acknowledged to fall short of the conservation goals set in the CEI.

Although it is indicated in the final Class EA report from Hydro One that consideration of local generation and conservation/demand activities when determining the need and timing for the GATR project, it is not clear, analytically, how this consideration was made.

Generally, it is clear that local generation of electricity can alleviate the pressures on system capacity and the need for transmission upgrades. The current local generation in application before the OPA is estimated at 60 MW – approximately 25% of the city's current average demand and nearly 10% of the maximum summer demand.

However, the timing for building local generation to the scale contemplated in the Community Energy Initiative is not consistent with the imminent need to for system capacity. They are stalled in the application process with the Ontario Power Authority.

Generally speaking, accelerating the development of local generation, in the form of combined heat and power and solar photovoltaic projects, could have an impact of pushing out the timing of the GATR project. It may even have an impact on the scale of the GATR project. To date, the City has had no direct involvement in determining the relationship between the generation activities related to the CEI and their potential impact on the timing and scale of the GATR project.

The timing of the CEI local generation projects is largely dependent on the approvals process of the Ontario Power Authority.

City staff is of the understanding that, under the leadership of the Ontario Power Authority, the study of transmission issues in the Kitchener-Waterloo-Guelph-Cambridge is ongoing. It is a recommendation of this report that the City of Guelph seek a more integrated involvement in this ongoing process.

In advocating for more acknowledgement of the Community Energy Initiative, the City also has available to it two specific procedural options:

- A request to the Minister of Environment for an Individual Environmental Assessment citing the lack of consideration in the recently completed Class Environmental Report
- An intervention at the Ontario Energy Board as Hydro One seeks a "Leave to Construct" for the GATR project.

## **Conclusion**

The City will continue to advocate to the Ministry of Energy, the Ontario Power Authority and other provincial bodies as appropriate for the support of the Community Energy Initiative and the approval of Guelph-based projects currently under submission with the Ontario Power Authority.

The various processes underway provide an opportunity for the City of Guelph, and its partners in the Community Energy Initiative to promote the increased consideration of the Community Energy Initiative in playing a role in solving local, regional and provincial electrical distribution and generation issues.

## **CORPORATE STRATEGIC PLAN**

### **Innovation in Local Government**

- Ensure accountability, transparency and engagement

### **City Building**

- Ensure a well designed, safe, inclusive, appealing and sustainable City
- Be economically viable, resilient, diverse and attractive for business
- Strengthen citizen and stakeholder engagement and communications

## **FINANCIAL IMPLICATIONS**

N/A

## **DEPARTMENTAL CONSULTATION**

Planning Services  
Finance and Enterprise Services  
Office of the Chief Administrative Officer

## **COMMUNICATIONS**

One advocacy group, The Ontario Clean Air Alliance (CAA) has issued a press release advocating that the Province of Ontario and Hydro One do not need to develop the GATR project but need to increase support for the Community Energy Initiative. See Appendix 3.

The CAA press release urges citizens to communicate with the Mayor, MPP Liz Sandals and Ontario Energy Minister Chris Bentley which may result in a significant number of delegation requests for the December 3, 2012 Council meeting.

As of November 22, 2012, the Mayor's office has received approximately 200 correspondences supporting the recommendations of the CAA's press release. It is expected that there will be additional delegations speaking to this report.

## ATTACHMENTS

Attachment # 1 - Executive Summary of the Hydro One Environmental Study Report - Guelph Area Transmission Refurbishment.

Attachment # 2 - Formal Correspondence from Guelph Hydro Inc.

Attachment # 3 - Ontario Clean Air Alliance, November 8, 2012 Press Release.



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