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APPENDIX 1

OPA Analysis of Need for Proposed Facilities.

Appendix 1

OPA ANALYSIS OF NEED FOR PROPOSED FACILITIES

1.0 BACKGROUND

Under the *Electricity Act, 1998* (the “Act”), the OPA has the responsibility for long-term power system planning in Ontario. In accordance with the Act, the OPA is required to periodically develop an Integrated Power System Plan (IPSP). In developing the IPSP, the OPA must follow directives issued by the Minister of Energy setting out goals to be achieved during the period covered by the plan.

The Minister of Energy issued a directive to the OPA dated June 13, 2006, setting goals that the OPA must plan to meet in its first IPSP. These include the goal of increasing the installed capacity of renewable energy sources by 2,700 MW from the 2003 base by 2010 and increasing “the total capacity of renewable energy sources used in Ontario to 15,700 MW by 2025”. The directive further requires the OPA to plan to strengthen the transmission system in order to:

- Enable the achievement of the supply mix goals set out in this directive;
- Facilitate the development and use of renewable energy resources such as wind power, hydroelectric power and biomass in parts of the Province where the most significant development opportunities exist;
- Promote system efficiency and congestion reduction and facilitate the integration of new supply, all in a manner consistent with the need to cost-effectively maintain system reliability.

Consistent with its policy direction, the Government of Ontario also undertook the Renewable Energy Supply procurements (RES I and II), which led to the execution of

1 several contracts for wind projects in the Bruce area. By a directive dated November 7,
2 2005 (found at Exhibit B, Tab 6, Schedule 5, Appendix 8), the OPA was directed to
3 assume the responsibilities of the Crown under the contracts entered into as a result of the
4 RES I procurement process. By a directive dated November 16, 2005 (found at Exhibit
5 B, Tab 6, Schedule 5, Appendix 9), the OPA was directed to enter into contracts with the
6 proponents selected under the RES II procurement process. A schedule of the contracts
7 with the OPA for wind projects in the Bruce area that resulted from the RES I and II
8 procurement processes is found at Exhibit B, Tab 6, Schedule 5, Appendix 10.

9
10 Further, the Minister of Energy issued a directive to the OPA dated March 21, 2006
11 (found at Exhibit B, Tab 6, Schedule 5, Appendix 11) to develop a standard offer
12 program for renewable energy projects in the Province. The OPA has commenced the
13 implementation of this program; but in light of the system constraints in the Bruce area,
14 the OPA has decided to not issue contracts for developments in this area until there is
15 sufficient transmission capacity available or there are other means to manage the limited
16 transmission capacity.

17
18 The Government of Ontario also negotiated an agreement with Bruce Power for the
19 refurbishment and return to service of two idle nuclear units, Unit 1 and Unit 2, at the
20 Bruce A plant, the purchase of the power from these units, and the further refurbishment
21 of Units 3 and 4 at Bruce A. The Minister of Energy issued a directive to the OPA dated
22 October 14, 2005 (found at Exhibit B, Tab 6, Schedule 5, Appendix 12) to execute this
23 contract.

24
25 On August 29, 2007, the Ontario Power Authority (OPA) announced an agreement with
26 Bruce Power to amend the existing contract providing for the complete refurbishment of
27 Bruce A Unit 4—rather than the more limited steam generator replacement program
28 originally planned. The additional work will lengthen the life of Unit 4 by nearly 20
29 years to 2036, reducing Ontario's need for new build nuclear facilities. In so doing, the
30 province secures 20% more long-term electricity supply than originally contracted. The
31 agreement is consistent with the Minister of Energy's June 2006 Directive to the OPA

1 limiting the future use of nuclear power to today's installed capacity level of 14,000
2 megawatts. As a result of the amendment to the agreement, the in-service date for the
3 last of the eight units at Bruce has moved from 2012 to 2013.

4
5 The proposed Bruce to Milton transmission reinforcement project will help to achieve the
6 Government policy goals and enable the fulfillment of the aforementioned resource
7 development commitments in the Bruce area that were initiated by the Government prior
8 to the development of the IPSP.

9
10 The availability of the committed resources in the Bruce area and the means to deliver
11 those resources to the Ontario power grid is an underlying assumption in the development
12 of the IPSP. Beyond the existing and committed resources in the area, the assessment
13 done to date for the IPSP has identified significant potential, about 1000 MW, for further
14 renewable energy resource development in the Bruce area. Developing this potential,
15 which would be facilitated by the proposed project, will contribute to meeting the
16 Government's renewable energy resource target.

17 18 **2.0 NEED FOR THE PROJECT**

19 **2.1 Classification of Need**

20
21 The OEB's Filing Requirements for Transmission and Distribution Applications (EB-
22 2006-0170) provide in section 5.2 for transmission projects proposed in an application
23 under section 92 of the *Ontario Energy Board Act* prior to the approval of an Integrated
24 Power System Plan, to be categorized first into Development, Connection or
25 Sustainment. In this case, the project is a development project because the proposed
26 facilities provide for additional system capacity and maintain reliability and quality of
27 electricity supply.

28
29 Once this first categorization is complete, the project must then be categorized as either a
30 non-discretionary or discretionary project. A non-discretionary project is described as a

1 “must do” project, the need for which is determined beyond the control of the Applicant.
2 This project is considered to be non-discretionary because the proposed facilities are
3 needed to achieve objectives of the Government of Ontario that are prescribed in the
4 directives referred to in Section 1 – Background.

5 6 **2.2 Project Need**

7
8 As detailed in Section 1 – Background, about 1,500 MW of nuclear and 675 MW of wind
9 generation capacity was contracted for in the Bruce area in the past three years. In
10 addition, there are 15 MW of wind generation already in operation and 10 MW
11 contracted from the Renewable Energy Standard Offer Program. These resources
12 contribute to meeting the Government’s electricity policy objectives. With these
13 resources, the OPA estimates that the total generation available in the Bruce area will
14 total about 5,800 MW by 2009 and 7,300 MW by early 2013. With the additional wind
15 generation opportunities of about 1,000 MW also identified by the OPA in the area, the
16 total generation in the Bruce area could reach 8,300 MW by the middle of the next
17 decade.

18
19 As indicated in the OPA’s IPSP discussion papers (see Exhibit B, Tab 6, Schedule 5,
20 Appendices 5 and 6), the present transmission system has the capability to transmit about
21 5,000 MW of the generation from the Bruce area. This capability is established by the
22 IESO in setting its operating limits.

23
24 Hydro One, as set out in its Transmission Licence, must comply with the technical and
25 performance requirements of the Transmission System Code (“TSC”) and various
26 regulatory bodies, including the Northeastern Power Coordinating Council (“NPCC”) and
27 the North American Electric Reliability Council (“NERC”). These requirements include
28 the duties of maintaining acceptable voltages, keeping equipment operating within
29 established ratings, and maintaining system stability, both during normal operation and
30 under recognized contingency conditions on the transmission system.

1 Based on these requirements, the shortfall in transmission capacity as related to the
2 available resource in the Bruce area is forecast to be about 500 MW by 2009 and 2,100
3 MW by 2013, and could well be over 3,100 MW afterward should the renewable energy
4 potential continue to develop in the area. Given the expected shortfall between
5 transmission capability and forecast available generating capacity in the Bruce area, there
6 is a need to reinforce the transmission system out of the Bruce area as early as possible
7 both to permit full deployment of the committed generating resources and to enable the
8 development of potential new renewable energy resources in the Bruce area consistent
9 with Government policies and directives.

10
11 The OPA's conclusions are supported by the IESO. In its June 2006 Ontario Reliability
12 Outlook and its System Impact Assessment (SIA) for the proposed facilities, the IESO
13 identified the need for reinforcement of the transmission system in order to effectively
14 extract the committed and proposed additional generation capacity from the Bruce area
15 and to maintain reliable performance of the transmission system consistent with
16 applicable reliability planning standards and guidelines. The SIA also confirms that the
17 proposed facilities would be adequate to meet the applicable reliability standards and
18 guidelines and will not adversely impact the IESO-controlled grid. The SIA is filed
19 hereto as Exhibit B, Tab 6, Schedule 2.