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February 20, 2013

via RESS e-filing – signed original to follow by courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
PO Box 2319
2300 Yonge Street, 27th floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Toronto Hydro-Electric System Limited ("THESL")
OEB File No. EB-2012-0064
Responses to Undertakings on Oral Hearings on Bremner

THESL writes in respect of the above-noted proceeding.

Enclosed are THESL's written responses to the Bremner Oral Hearing Undertakings J6.1, J6.2, J6.3 and J6.7 received on February 19, 2013 and J7.2 received today.

Please do not hesitate to contact me if you have any questions.

Yours truly,

[original signed by]

Amanda Klein
Director, Regulatory Affairs
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:AK/RB/acc

cc: Fred Cass of Aird & Berlis LLP, Counsel for THESL, by electronic mail only
Intervenors of Record for EB-2012-0064 by electronic mail only

BREMNER ORAL HEARING UNDERTAKING RESPONSE INTERVENOR 3 – BUILDING OWNERS AND MANAGERS, GREATER TORONTO

UNDERTAKING NO. J6.1:

Reference(s):

Provide the aggregate capacity for Strachan, Windsor, Terauley, Cecil, and Esplanade stations.

RESPONSE:

The requested information is cited in THESL's pre-filed evidence (Tab 4, Schedule B17, Table 2; Tab 4, Schedule B17, Appendix 3, Table 3).

For ease of reference, this information is reproduced below:

Station	Station Rating	Year										
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Cecil	224	187	183	186	190	195	199	202	207	211	215	220
Esplanade	198	180	180	184	189	188	191	194	200	203	207	210
Strachan	175	138	138	143	150	153	157	160	164	166	170	174
Terauley	240	190	193	196	201	205	209	213	217	222	226	230
Windsor	340	311	310	316	322	329	335	340	348	355	363	371
Total	**1177**	**1006**	**1004**	**1025**	**1052**	**1070**	**1091**	**1109**	**1136**	**1157**	**1181**	**1205**

These five area stations are highly loaded. Strachan is at 72 percent, Windsor at 87 percent, Terauley at 80 percent, Cecil at 78 percent, and Esplanade at 86 percent. In addition, load growth and the limits of existing capacity are not the only drivers for the Bremner project. The proposed station is also required in order to provide the new feeder positions necessary to make new connections in its downtown service area.

BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 12 – ENVIRONMENTAL DEFENCE

UNDERTAKING NO. J6.2:

Reference(s):

Provide an estimate of the number of MW of distributed generation that THESL expects to come online in the next one-to-five years as a result of projects under 10MW.

RESPONSE:

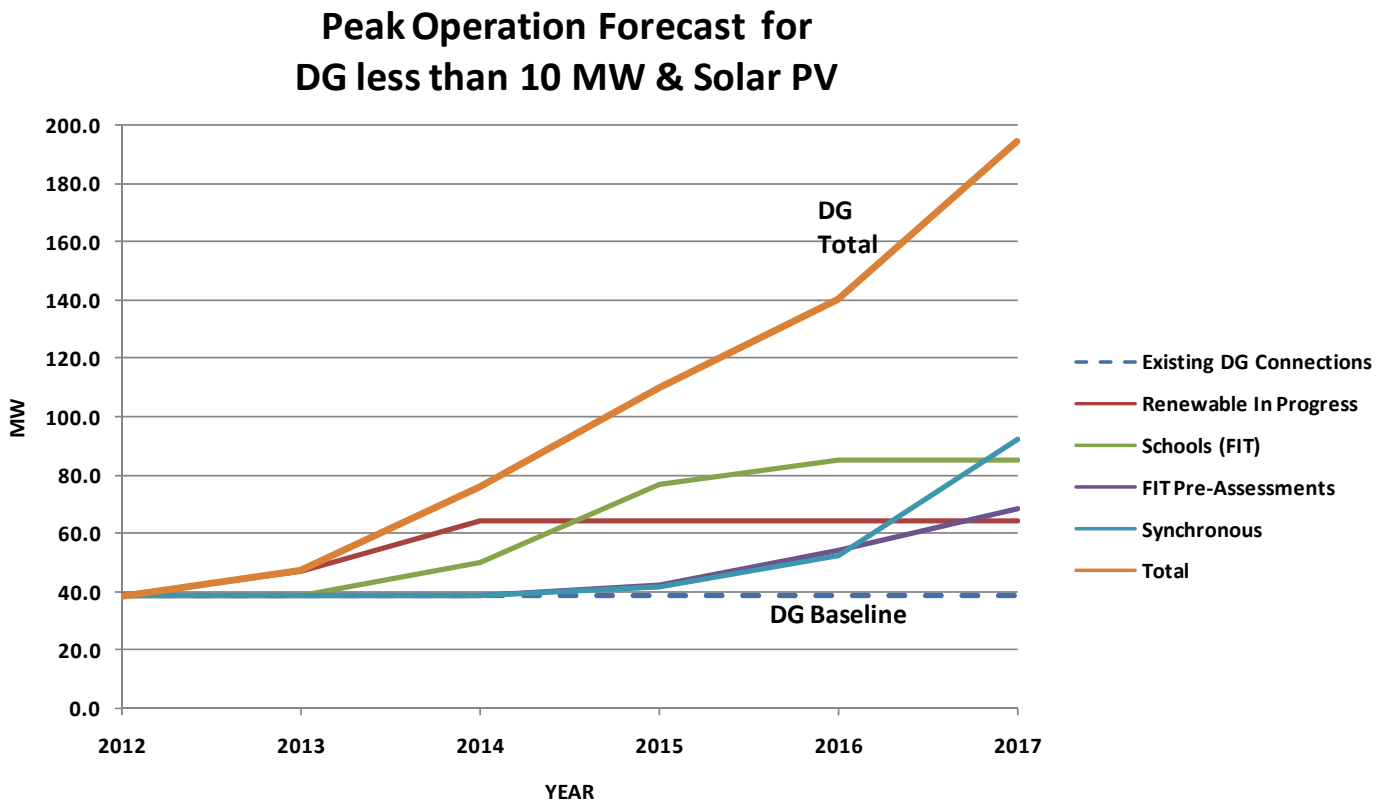
THESL has forecast that by 2017, there will be an incremental DG capacity of 380 MW which, along with the existing 80 MW DG base, will total 460 MW, across THESL's entire distribution system (i.e., beyond the downtown core).[1]

Figure 1 below provides a coincident peak operation forecast for DG given renewable energy and clean energy generation connections of 193MW. This is based on a peak capacity factor of 70% for synchronous DG to take into account that some of the DG may be operating at less than the connected capacity due to various factors such as in-service conditions. A 40% coincident capacity factor was also applied to the solar PV connections to account for solar output, irradiance levels and etc. This factor was based on OPA and THESL data from simulated and installed connections. The coincident peak capacity contribution of DG in meeting system loads is therefore estimated at 193 MW as shown in Figure 1, below.

[1] In performing this assessment, THESL has reviewed how much inverter-based and rotating devices (induction or synchronous machines) DG might be connected to its distribution system. THESL evaluated the DG technology combinations based on existing known renewable energy applicants from the FIT program and DG connection requests.

BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 12 – ENVIRONMENTAL DEFENCE

Figure 1



BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 12 – ENVIRONMENTAL DEFENCE

DG Forecast for Strachan, Windsor, Terauley, Cecil, and Esplanade Stations

Applying the same methodology, THESL has forecast the DG connected to the following five stations: Strachan, Windsor, Terauley, Cecil, and Esplanade TS. The resulting peak contribution of forecast DG in the next five years for projects under 10MW is 28 MW for this five-station area.

Table 1

	2012	Peak Operation 2017		
TS Name	Existing Generation	Large DG	Solar PV	Total Generation
Cecil	5.09	5.09	0.53	5.62
Esplanade	5.01	9.70	0.50	10.20
John	2.31	2.31	0.49	2.80
Strachan	1.12	2.71	1.80	4.51
Terauley	1.61	5.11	0.02	5.13
Total	15.14	24.92	3.33	28.25

BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 12 – ENVIRONMENTAL DEFENCE

UNDERTAKING NO. J6.3:

Reference(s):

Confirm whether a peak demand reduction was applied to or included in the forecast that appears at page 9 of the Navigant report to account for provincial codes and standards.

RESPONSE:

As background, THESL notes that the forecast shown on Figure 2 on Page 9 of the Navigant report is based on THESL's 2011 Load Forecast. A more up-to-date version of this forecast, based on THESL's 2012 load forecast, is provided in Figure 5 of the updated Bremner TS project evidence (Tab 4, Schedule B17, page 11).

The referenced forecast begins with THESL's 2011 actual loads, which necessarily includes Energy Efficiency savings (including Codes and Standards), Time-of-Use and Demand Response. Since the following years were forecast based on 2011 actuals, the same types of CDM savings are accounted for in the forecast loads beyond 2012.

BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 12 – ENVIRONMENTAL DEFENCE

UNDERTAKING NO. J6.7:

Reference(s):

Make best efforts to determine technical feasibility and cost of connecting the required 16 feeder lines from Windsor to Esplanade, using existing tunnels or otherwise, through the least expensive means.

In particular, ask Enwave whether (a) they have interest in entering a shared asset agreement and (b) whether their tunnel(s) could provide sufficient space to make the necessary connections.

RESPONSE:

Technical feasibility of Windsor-Esplanade connection

Without significant upgrades, Esplanade TS does not have the spare capacity of 72 MVA that would be required to supply Windsor TS during a switchgear replacement. Therefore, connecting 16 feeders from Esplanade TS to Windsor TS would not be sufficient to enable the Windsor TS upgrade.

Enwave

Even ignoring the capacity issues described above, there would likely be significant technical barriers to connecting Esplanade to Windsor using tunnels owned by Enwave. To install 16 feeder lines from Esplanade to Windsor using existing Enwave tunnels, THESL would conceivably have to install 1.1 km of underground infrastructure from Esplanade TS to meet the existing Wellington tunnel, excavate to the depth of the tunnel, retrofit the interior of the existing tunnel for its entire length to accommodate the 16 feeders, excavate to accommodate egress at the western end of the tunnel, and finally run

BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 12 – ENVIRONMENTAL DEFENCE

an additional 350 m of underground infrastructure from the end of the Wellington tunnel to the Windsor TS. The Esplanade TS component of the Esplanade-Strachan alternative described in the evidence elaborates upon a 2.2 km run of underground infrastructure from Esplanade TS to Windsor TS. By comparison, using the Enwave infrastructure would reduce this underground civil requirement to 1.5 km, the difference being housed in the Enwave tunnel.

Discussions with Enwave pursuant to this undertaking indicate that there may be numerous technical and commercial barriers to connecting these stations through Enwave's tunnels, in addition to the insufficient available capacity of Esplanade TS. These potential barriers include:

1. The Wellington tunnel is currently utilized by chilled water services and space may be restricted to the upper half of the tunnel for accommodation of feeders.
2. There may not be sufficient space to house the 16 feeders and, in any event, accommodation of cables would be subject to the cable separations required by code, as well as the labour access and safety requirements of the two trade unions that may conceivably be sharing the space.
3. Enwave indicates that entering into a shared asset agreement would require approval from its shareholders.
4. Additional potential barriers include thermal performance of the feeders, potential derating, and whether the tunnel must be retrofitted to accommodate a forced-air ventilation system.

BREMNER ORAL HEARING UNDERTAKING RESPONSE
INTERVENOR 10 – SCHOOL ENERGY COALITION

UNDERTAKING NO. J7.2:

Reference(s):

Confirm whether THESL has specified an in-service date for Bremner TS previously in OEB proceeding(s).

RESPONSE:

THESL's pre-filed evidence includes excerpts from previous proceedings in which Bremner TS was addressed (Tab 4, Schedule B17, Appendix 1). The station's service-date was addressed in EB-2009-0139 (Exhibit D1, Tab 9, Schedule 6, page 5) and EB-2010-0142 (Exhibit D1, Tab 9, Schedule 6, page 4), both of which are included as excerpts in Appendix 1.

The scope of the project presented in previous proceedings differs significantly from THESL's evidence in this application. While previous filings outlined the Bremner project on an order-of-magnitude basis, the level of detail is materially greater in the current application, both in terms of planning and execution, and, in particular is driven by the ICM criteria.