**Q. In the report, *Thermal Generation Refurbishment,* June 2014, page 7, Newfoundland Power Inc. ("Newfoundland Power") states that:**

> ***"Based on the engineering assessments completed in 2014, refurbishment of the Wesleyville and Greenhill gas turbines is necessary for their continued safe and reliable operation in the immediate term."***

**Newfoundland Power Inc. continues, in the next paragraph, by saying:**

> ***"Because of the age of the 2 systems, a further review is necessary to determine the long-term viability of continued investment in these assets."***

**Since Newfoundland and Labrador Hydro has received approval from the Board to increase its capacity on the Island Interconnected System by the addition of a 100 MW CT unit, why does Newfoundland Power consider it necessary to spend $1,345,000 on the Wesleyville Gas Turbine in order to produce between 10 MW and 14.7 MW in the immediate term?**

A. **1. Introduction**

The refurbishment of both the Greenhill and Wesleyville gas turbines is justified on the basis of (i) the local capacity and energy support that each provides to customers located near the turbines and (ii) the capacity support that each provides to the Island Interconnected System.

Newfoundland Power supports Newfoundland and Labrador Hydro's ("Hydro") installation of a 100 MW combustion turbine which is scheduled to be in-service in late 2014. However, the installation of this turbine will not eliminate the need to refurbish Newfoundland Power's gas turbines as proposed in this Application.

**2. Benefits of the Wesleyville Gas Turbine**

In 2002, Newfoundland Power's Salt Pond gas turbine was relocated to Wesleyville as the most economical means of improving reliability of service to customers along the northeast coast. This area is served by a radial transmission system which is subject to severe climatic stresses. The relocation of the gas turbine was justified on the grounds ofreliability improvement.[1] Improved reliability has resulted.[2]

[1] The relocation provided the lowest annual cost to reduce customer outages in the area. See *Salt Pond Gas Turbine Relocation Project*, March 2001, filed with Newfoundland Power's 2002 Capital Budget Application.

[2] In the 5 years ending 2013, the Wesleyville gas turbine has been run predominantly to support local reliability. During this period, the average reduction in customer minutes of outage was approximately 7 million minutes per year. This was almost 7 times the reduction forecast at the time of relocation of the gas turbine from Salt Pond.

The Wesleyville gas turbine also provides capacity support to the Island Interconnected System.[3] The value of capacity support for the Island Interconnected System for 1 year can be reasonably estimated at approximately $55/kW.[4] This indicates the capacity support provided by the Wesleyville gas turbine is worth approximately $550,000/year.[5]

## 3. The Current Supply Context

The difficulties experienced on the Island Interconnected System during the winter of 2013-2014 were substantially contributed to by the unavailability or derating of 8 separate Newfoundland and Labrador Hydro generating units. The loss of generation capacity ranged from an 8 MW derating at Granite Canal for an approximate 2 week period to the forced outage of the 165 MW Holyrood Unit 1 for a 4 day period.[6]

In its May 15, 2014 Interim Report in *the Investigation and Hearing Into Supply Issues and Power Outages on the Island Interconnected System* (the "Interim Report"), the Board expressed its concerns "…as to whether Hydro has sufficient generation capacity to meet customer demand over the next few years while at the same time maintaining adequate reserve capacity to deal with unplanned or unexpected system events…".[7] In addition, in the Interim Report the Board recognized that Hydro's plan to install a 100 MW combustion turbine by December 1, 2014 was "…ambitious…".[8]

Newfoundland Power supported the Board's expedited approval of Hydro's proposed installation of a 100 MW combustion turbine in May 2014.[9] However, Newfoundland Power recognizes the installation of the 100 MW combustion turbine in advance of the 2014-2015 winter season is not a certainty. Furthermore, continued load growth on the Island Interconnected System is expected over the next few years prior to the availability of production from Muskrat Falls. So, the addition of Hydro's 100 MW combustion turbine will not, in Newfoundland Power's view, fully address the increased near term vulnerabilities of the Island Interconnected System which were revealed by the events of

[3] The run time for the Wesleyville gas turbine for the period 2009 to 2014 YTD is found in Table 1 of Schedule A to this Application. Table 1 is also reproduced in the response to Request for Information DD-NP-002 along with a second table that details the run time hours at the request of Hydro. Approximately 22% of all run time hours for the Wesleyville Gas Turbine are at Hydro's request.

[4] This cost is based upon the costs of Hydro's 100 MW combustion turbine installation and is described at *Section 6.3: Estimated Benefits* in Schedule A to this Application. It is a conservative estimate. In Hydro's 2013 General Rate Application, demand costs for the Island Interconnected System which were allocated to Newfoundland Power were approximately $110/kW/year ($9.12 x 12 = $109.44).

[5] This indicates an approximate 2 ½ year payback of the $1,345,000 cost to refurbish the Wesleyville gas turbine ($1,345,000 ÷ $550,000 = 2.45).

[6] The generation shortfalls through this period are outlined in The Liberty Consulting Group's April 24, 2014 Interim Report, *Supply Issues and Power Outages on the Island Interconnected System*, pages 20-23.

[7] See Interim Report, page 24, lines 21-23.

[8] See Interim Report, page 32, lines 31-34. Installation of this 100 MW combustion turbine was approved by the Board on May 7, 2014 by Order No. P.U. 16 (2014).

[9] See May 2, 2014 letter to the Board from Newfoundland Power on Hydro's application for approval of the 100 MW combustion turbine.

the winter of 2013-2014. These factors, taken together, indicate that maintenance of existing generation on the Island Interconnected System for the near term is prudent if it can be done at reasonable cost.

The application before the Board concerning the refurbishment of Newfoundland Power's Wesleyville and Greenhill gas turbines addresses the continued availability of these assets over the near term (i.e., the next few years). The necessity or advisability of either (i) further investment in the assets over a longer term time horizon or (ii) replacement of the assets will be addressed within the context of, or following, the Board's assessment of longer term reliability on the Island Interconnected System.

**4. Concluding**

The refurbishment of the Wesleyville Gas Turbine to ensure its continued availability in the immediate term is justified based upon both local and system reliability benefits.

The addition of the 100 MW combustion turbine planned by Hydro will help address current supply vulnerabilities on the Island Interconnected System. This improvement in overall system security, however, does not substantially reduce the near term benefits that will result from the refurbishment of the Wesleyville gas turbine.