Q. **2013 General Rate Application, Wind Energy Purchases**

Provide a summary of the principal terms relating to each current contract for the purchase of wind energy production, including pricing, availability and the term of the contract.

A. Hydro has entered into Power Purchase Agreements (PPAs) for the purchase of wind energy on the Island Interconnected and the Isolated (Ramea) power systems.

On the Island Interconnected System, Hydro began to purchase wind energy from the St. Lawrence wind farm in October 2008 (with the commercial in-service effective May 31, 2009) and from the Fermeuse wind farm in April 2009 (with the commercial in-service effective June 30, 2009). The PPA with the St. Lawrence wind farm was signed with the original owners, NeWind Group Inc., in December 2006. Currently, this facility is owned by Enel Atlantic Canada Limited Partnership c/o NeWind Group Inc. The PPA with the Fermeuse wind farm was signed with the original owners, Vector Wind Energy Inc., in June 2007. Currently this facility is owned by Fermeuse Wind Power Corp. The terms of the PPAs are twenty years from the commercial in-service dates.

The agreements with both of the Island Interconnected wind projects are based on take-or-pay arrangements with pricing as determined by formulae in the PPAs. The energy prices have fixed and variable components with the variable components subject to annual CPI escalation. The pricing formula provisions for both projects are attached as PUB-NLH-014 Attachments 1 and 2. Hydro receives 75% of the amounts paid under the Federal EcoEnergy Renewable Energy Incentive program

from each project. The ten-year program pays $0.01/kWh over a maximum production of 82.78 GWh annually.

The annual production from the St. Lawrence wind farm has averaged nearly 104 GWh over the four-year period from 2009 to 2012. The annual production from the Fermeuse wind farm has averaged over 87 GWh for the three-year period from 2010 to 2012. Based on the wind farms historical annual production, availability, which is expressed as the average capacity factor, results in a 44% capacity factor for St. Lawrence and a 37% capacity factor for Fermeuse. Please refer to Schedule VI of the Regulated Activities for more detail regarding the annual energy purchases and costs from each project.

For the Isolated System at Ramea, Hydro has purchased wind energy from Frontier Power since 2004 and from Nalcor's Wind-Hydrogen-Diesel Research and Development project since 2009. The PPA with Frontier was signed with Frontier Power Systems Inc. in October 2003 and has a term of 15 years. An Agreement with Nalcor Energy was signed on February 15, 2010 and has no specified term.

For Frontier Power, the PPA stipulates that Hydro will purchase all energy produced, provided that Hydro has sufficient load to absorb the energy. To this end, controls are put in place to ensure that the power produced from the wind generation plant does not cause the total output from Hydro's Ramea diesel generating facility to fall below 30% of the prime power rating of the smallest diesel generating unit in service in the Ramea diesel generating facility.

For the Nalcor wind purchases, the Agreement stipulates that all operating costs are to be charged to and paid by Nalcor in accordance with the Nalcor Group of Companies' established intercompany transactions policy. Deducted from these

amounts are Hydro's avoided fuel costs resulting from the operation of the wind facilities.

The pricing in the agreements with both wind projects at Ramea are based upon the Avoided Fuel Cost (AFC). The pricing formula provisions for the projects are attached as PUB-NLH-014 Attachments 3 and 4.

The annual production from Frontier has averaged 408 MWh over the period from 2006 to 2012. The annual production from Nalcor's Wind-Hydrogen project has averaged 164 MWh over the period from 2010 to 2012.

St. Lawrence Wind Farm – Pricing Formula

ARTICLE 2
PURCHASE OF POWER AND ENERGY

2.01 Hydro agrees to pay for, and the Seller agrees to sell to Hydro at the Interconnection Point such Energy made available or capable of being made available by the Seller, subject to the provisions of Article 6, from the Facility before the Commercial In Service Date and throughout the Term of this Agreement and Hydro shall not reduce or refuse delivery of any such Energy at any time except to the extent permitted by the express terms of the Agreement.

2.02 The payments to be made for Energy in each month during the Term of this Agreement shall be based upon the following prices and formula:

$$EP_j = E_j \times ((FER \times FERe) + (OMER \times OMe_i))$$

where
- j is the month for which payment is payable;
- i is the calendar year in which month j falls;
- EP_j is the total payment for Energy for Month j;
- E_j is the Energy purchased under this Agreement by Hydro from the Seller in month j;
- FER is the fixed price component as stated in Article 2.03;
- FERe is the fixed price component escalation factor as defined in Appendix F;
- OMER is the operating and maintenance price component as stated in Article 2.03; and
- OMe_i is the operating and maintenance component escalation factor as defined in Appendix F.

2.03 The components of the purchase price for Energy shall be calculated based upon the following rates with escalation/de-escalation, as applicable, from January 1, 2007:

Fixed Energy Component (FER)	$0.0536 / kWh
Operating and Maintenance Component (OMER)	$0.0134 / kWh

Fermeuse Wind Farm – Pricing Formula

ARTICLE 2
PURCHASE OF POWER AND ENERGY

2.01 Hydro agrees to pay for, and the Seller agrees to sell to Hydro at the Interconnection Point such Energy made available or capable of being made available by the Seller, subject to the provisions of Article 6, from the Facility before the Commercial In Service Date and throughout the Term of this Agreement and Hydro shall not reduce or refuse delivery of any such Energy at any time except to the extent permitted by the express terms of this Agreement.

2.02 Subject to there being in force a Tax Agreement binding upon the Seller, the existence of which is a pre-condition of Hydro's requirement to make payments to the Seller for Energy purchases under this Agreement, the payments to be made for Energy in each month before the Commercial In Service Date and during the Term of this Agreement shall be based upon the following prices and formula:

$$EP_j = E_j \times ((FER \times FERe) + (OMER \times OMe_i)) \times MT_i$$

Where:

j	is the month for which payment is payable;
i	is the calendar year in which month j falls;
EP_j	is the total payment for Energy for Month j;
E_j	is the Energy purchased under this Agreement by Hydro from the Seller in month j;
FER	is the fixed price component as stated in Article 2.03;
FERe	is the fixed price component escalation factor as defined in Appendix F;
OMER	is the operating and maintenance price component as stated in Article 2.03;
OMe_i	is the operating and maintenance component escalation factor as defined in Appendix F; and
MT_i	is the adjustment to account for municipal taxation as defined in Appendix F.

2.03 The components of the purchase price for Energy shall be calculated based upon the following rates with escalation/de-escalation, as applicable, from January 1, 2007:

Fixed Energy Component (FER)	$0.0572 / kWh
Operating and Maintenance Component (OMER)	$0.0143 / kWh

Frontier Wind – Pricing Formula

SCHEDULE B

B.1 Calculation of Energy Payment

Hydro agrees to pay for Energy delivered in each month of the term of this Agreement, an amount calculated by application of the following formula:

$$EP_{ji} = ED_{ji} \times (FC_{ji} / EFF_{i-1})$$

where j is the month for which payment is payable;
i is the calendar year in which month j falls;
EP_{ji} is the total Energy Payment for Energy Delivered in Month j of calendar year i;
ED_{ji} is the Energy Delivered by the Generator to Hydro under the terms of this Agreement in Month j of calendar year i;
FC_{ji} is the average Fuel Cost for diesel fuel consumed in the Ramea diesel generating facility in Month j of calendar year i; and
EFF_{i-1} is the average plant Efficiency of Hydro's Ramea diesel generating facility for the calendar year immediately preceding the year for which payment is payable as stated in Section B.2.

B.2 Calculation of Variable EFF_{i-1}

The variable EFF_{i-1} is the average plant efficiency of Hydro's Ramea diesel generating facilities for the immediately preceding year and is the greater of either:

(a) 3.90 kWh/litre of fuel which is the average plant efficiency of Hydro's Ramea diesel generating facility for the year 2002; or

Frontier Wind – Pricing Formula (cont'd)

(b) $EFF_{i-1} = KWH_{i-1} / FUEL_{i-1}$

where i is the calendar year during which payment is payable;

KWH_{i-1} is the total number of kWh produced at Hydro's Ramea diesel generating facilities in the calendar year immediately preceding the year for which payment is payable; and

$FUEL_{i-1}$ is the total number of litres of diesel fuel consumed at Hydro's Ramea diesel generating facilities in the calendar year immediately preceding the year for which payment is payable.

Nalcor Wind Purchases – Pricing Formula

Schedule A

1. Calculation of Avoided Fuel Cost (AFC)

$AFC_{ji} = ED_{ji} \times (FC_{ji} / EFF_{i-1})$

Where j is the month for which payment is payable;
i is the calendar year in which month j falls;
AFC_{ji} is the Avoided Fuel Cost ($) for month j of calendar year I;
ED_{ji} is the energy delivered to Hydro from the Project in month j of year i:
FC_{ji} is the average Fuel Cost for diesel fuel consumed in the Ramea diesel generating facility in month j of calendar year i; and
EFF_{i-1} is the average plant efficiency of Hydro's Ramea diesel generating facilities for the calendar year immediately preceding the year for which payment is payable as stated in 2.

2. Calculation of Variable EFF_{i-1}

The variable EFF_{i-1} is the average plant efficiency of Hydro's Ramea diesel generating facilities for the immediately preceding year and is the greater of either:

(a) 3.90 kWh/litre of fuel which is the average plant efficiency of Hydro's Ramea diesel generating facility; or

(b) $EFF_{i-1} = KWH_{i-1} / FUEL_{i-1}$

where i is the calendar year during which payment is payable;
KWH_{i-1} is the total number of kWh produced at Hydro's Ramea diesel generating facilities in the calendar year immediately preceding the year for which payment is payable; and
$FUEL_{i-1}$ is the total number of litres of diesel fuel consumed at Hydro's Ramea diesel generating facilities in the calendar year immediately preceding the year for which payment is payable.