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Memorandum

To:	Kenneth Russell, Counsel, Ontario Electricity Financial Corporation	
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From: Todd Williams

Date: August 11, 2011

Re: Final (2010) 115-230kV DCR_{new} Calculations

Introduction

OEFC is required to calculate and publish the Final (2010) TMC and DCR_{new} for 115-230 kV as soon as market data are available. The data for both calculations are now available and OEFC has asked Navigant Consulting to perform these calculations.

The calculation of the 115kV and 230 kV TMC has been adjusted to reflect changes to rates resulting from the updated EB-2008-0272 Ontario Uniform Transmission Rate Order, issued by the OEB on January 21, 2010.

Additionally, the calculation of the 115 kV and 230 kV TMC has been adjusted to include settlement amounts to recover certain costs incurred by distribution companies for the connection of new renewable generation to their distribution systems. The costs for 2010 will be assessed for the period May to December 2010 and will be charged to participants based on their proportion of Allocated Quantity of Energy Withdrawn (AQEW) for the month¹. The recovery of these costs was enabled by Regulation 330/09², and the monthly amounts are approved by the OEB. The Renewable Generation Connection – Monthly Compensation Settlement Credit has been added to the Wholesale Market Service Charges (WMSC) component of the 115 kV and 230 kV TMC, but has been broken out for reference in the background section of this memo.

Also impacting the 115 kV and 230 kV TMC calculation is an IESO operating surplus rebate paid to market participants based on their proportionate quantity of energy withdrawn from the grid (excluding exports) in 2010. Navigant Consulting has reflected this rebate as a volumetric charge in the Final (2010) TMC calculation presented below.

 ¹ IESO – Recovering the Cost of Renewable Energy Connections; July 22, 2010 <u>http://www.ieso.ca/imoweb/news/newsltem.asp?newsltemID=5300</u>
 ² Ontario Regulation 330/09

http://www.e-laws.gov.on.ca/html/regs/english/elaws regs 090330 e.htm

Methodology and Results

The Final DCR_{new}(2010) values for both 115 kV and 230 kV are given in Table 1. Supporting information on the calculations involved is provided in the sections that follow.

Table 1: 115-230 kV DCRnew Values (cents per kWh)

Voltage	2010 Final
115 kV and 230 kV	7.6383

Total Market Cost Calculations

The Final 115 kV and 230 kV TMC for 2010 is 8.1132 cents/kWh, as shown in Table 2.

		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total /
MONTHLY STATISTICS														
days		31	28	31	30	31	30	31	31	30	31	30	31	365
total hours		744	672	744	720	744	720	744	744	720	744	720	744	8760
														Weighted
														Average
MARKET RATES														
HOEP	c/kWh	3.740	3.590	2.822	3.083	3.877	4.036	5.083	4.441	3.291	2.939	3.189	3.383	3.6255
WMSC	c/kWh	0.513	0.496	0.557	0.550	0.529	0.558	0.588	0.551	0.557	0.477	0.497	0.511	0.5321
Tx network	\$/kW-mth	2.970	2.970	2.970	2.970	2.970	2.970	2.970	2.970	2.970	2.970	2.970	2.970	
Tx line connection	\$/kW-mth	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	0.730	
DRC	c/kWh	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	0.700	
Global Adjustment	c/kWh	2.700	2.591	3.907	3.560	2.434	2.466	0.750	1.225	2.842	4.034	3.414	3.227	
IESO Operating Surplus Rebate	c/kWh	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	
TOTAL MARKET COST CALCUL	ATION													
Total market cost per month	c/kW-mth	6,055	5,319	6,303	6,045	5,971	5,949	5,659	5,508	5,682	6,424	5,978	6,180	
Total annual market cost	c/kW-yr													71,072
TMC = total market cost	c/kWh]	8.1132

Table 2:	Calculation	of Final (2010) 115-230 kV TMC
	Calculation	01 1 mai (2010)	110-200 KV 11VIC

115 kV and 230 kV DCRnew (2010) Calculations

The Final (2010) for 115kV and 230kV DCR_{new} is the greater of (i) the average of the 115-230 kV TMC for the three calendar-year periods from January 2008 through December 2010 inclusive, based on the number of days in each period and (ii) the Final 115-230 kV DCR_{new}(2009). The Final 115-230 kV DCR_{new}(2010) is 7.6383 cents/kWh, as shown in Table 3.

	2008 Final	2009 Final	2010 Final
Avg annual HOEP	4.8830	2.9518	
TMC (P) Current, based on actual HOEP WMSC, regulated tariffs, estimated rebate, etc.	6.9483	7.8553	8.1132
DCR _{new}	6.8616	7.1725	
Final DCR _{new} = greater of: i) Average of TMC (2008 to 2010) ii) DCR _{new} (2009)	7.6383 7.1725		
Therefore, Final DCR _{new} (2010)			7.6383

Table 3: Final 115-230 kV DCRnew(2010)

The documentation supporting the values used in the calculation shown herein is all publicly available via the IESO, the OEB, and Hydro One Networks, Inc.

Background on the DCR

A significant number of NUG PPAs contain provisions that provide for annual contract price adjustment based on the Ontario Hydro Direct Customer Rate ("DCR"). Since the DCR ceased to exist upon market opening it was necessary to establish a replacement index. The Board of Directors of OEFC approved the replacement of the DCR in the PPAs between OEFC and non-utility generators on the basis set out in the draft working paper dated June 24, 2002 prepared by the working committee of OEFC representatives and IPPSO representatives ("working paper"). This replacement index is based on the fully loaded cost of 100% load factor power that the typical direct customer would pay going forward in the restructured market, at the voltage provided. Values for DCR_{new}(P) and TMC(P) in this paper are calculated in accordance with the *working paper*, for year P.

It should be noted that Calculation of the Wholesale Market Service Charges for a given month currently includes the following components:

- 1. Hourly uplift settlement charges (amount in \$/MWh from IESO data identified as being 'final');
- 2. Monthly uplift charges (amount in \$/MWh from IESO data identified as being 'final');
- 3. IESO Administration Charge (amount in \$/MWh as determined by the OEB);
- 4. Rural and Remote Electricity Rate Protection (amount in \$/MWh, as determined by the OEB);
- 5. OPA Administration Charge (amount in \$/MWh, as determined by the OEB); and,
- 6. Renewable Generation Connection Monthly Compensation Settlement Credit.

The Wholesale Market Service Charges published in IESO monthly reports (currently Section 8 of that report) are not used for Final TMC calculations, since they are based on preliminary hourly uplift settlement charges.

At market opening, the Market Power Mitigation Agreement (MPMA) rebate framework applied to all Ontario consumers, and as such, is incorporated in DCR_{new} calculations. Bill 210 replaced the MPMA rebate with the more transparent Business Protection Plan Rebate (BPPR) insofar as customers are concerned. While the MPMA rebate was used in the TMC calculations for May 1, 2002 to April 30, 2003, the BPPR was used in the TMC calculation for subsequent periods.

Once again the rebate mechanism changed and the calculation of TMC was updated to reflect this change. Under the Electricity Restructuring Act 2004 (Bill 100), a new rebate mechanism was created called the global adjustment. The global adjustment reflects the difference between total payments made to contracted assets (including NUGs and RFP generators), load reduction contracts and regulated OPG generators (prescribed assets) and any offsetting market revenues. The global adjustment is calculated and paid each month and can be either positive or negative.

In addition to the global adjustment, the new regulation includes the OPG Non-Prescribed Assets ("OPNA") rebate, which ended April 30, 2009, but was last paid to market participants for the period ending January 31, 2009.

Additional details on these rebates and their treatment in the calculation of total market cost can be viewed in the updated Navigant Consulting letter to OEFC dated April 27, 2006 and posted on the OEFC website.

Recovering the Cost of Renewable Energy Generation Connections

The recovery of certain connection costs incurred by distribution companies with respect to renewable generation was enabled by Ontario Regulation 330/09. Navigant has included the Renewable Generation Connection Monthly Compensation Settlement Credit amounts in the monthly Wholesale Market Service Charges component of the TMC; however, for clarity, the monthly rates have been provided below:

Month (2010)	Rate (\$/MWh)	Preliminary /Final			
May	\$0.0408	Final			
June	\$0.0400	Final			
July	\$0.0348	Final			
August	\$0.0358	Final			
September	\$0.0415	Final			
October	\$0.0417	Final			
November	\$0.0402	Final			
December	\$0.0359	Final			

Table 4: Renewable Energy Generation Connection Monthly Compensation Settlement Credit