

Memorandum

To: Mike Manning, Chief Operating Officer, Ontario Electricity Financial Corporation

From: Todd Williams, Andy Tam

Date: February 10, 2016

Re: Second Interim (2015) and Provisional (2016) 115-230kV DCR_{new} Calculations

Introduction

The Ontario Electricity Financial Corporation (“OEF”) is required to calculate and publish the Second Interim (2015) and Provisional (2016) TMC and DCR_{new} for 115-230kV as soon as market data is available. The data for both calculations are now available and OEF has asked Navigant Consulting to perform these calculations.

The calculation of the 115-230kV TMC has been adjusted to reflect changes to rates resulting from the updated EB-2014-0357 Ontario Uniform Transmission Rate Order, issued by the Ontario Energy Board (“OEB”) on January 8, 2015.

Additionally, the calculation of the 115-230kV 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 2015 were assessed for the January to December 2015 period and were charged to participants based on their proportion of Allocated Quantity of Energy Withdrawn (“AQEW”) for the month¹.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 115-230kV TMC, and has been broken out for reference in the background section of this memo. The Independent Electricity System Operator (“IESO”) also introduced a Daily Uplift Charge as of October 2011, which has been added to the WMSC component of the 115-230kV TMC³.

¹ IESO – Recovering the Cost of Renewable Energy Connections; July 22, 2010
<http://www.ieso.ca/Pages/News/NewsItem.aspx?newsID=5300>

² Ontario Regulation 330/09
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090330_e.htm

³ IESO – Guide to Electricity Charges
<http://www.ieso.ca/Pages/Participate/Settlements/Guide-to-Electricity-Charges.aspx>

Changes in the Global Adjustment Allocation

Beginning in 2011, the way that the Global Adjustment is allocated to consumers has been changed. Prior to 2011, the Global Adjustment was allocated to all consumers based on their energy use. Ontario Regulation 398/10 changed this by amending Ontario Regulation 429/04. The amended regulation establishes two classes of consumers: Class A consumers, with average monthly demand greater than 5 MW; and Class B consumers.

TMC is calculated to reflect the allocation of the Global Adjustment to wholesale market participants at a 100% load factor under the amended regulation. More information about the allocation of the Global Adjustment can be found in the Navigant Consulting memo to the OEFC dated July 7, 2011 which is posted on the OEFC website.

The allocation of the Global Adjustment for the purpose of calculating TMC for this memorandum has been made without reference to the Judgment of Justice Wilton-Siegel dated March 15, 2015 in *N-R Power and Energy Corporation v. Ontario Electricity Financial Corporation* which is currently under appeal to the Court of Appeal for Ontario.

Methodology and Results

The Second Interim (2015) and Provisional (2016) DCR_{new} for 115-230kV is given in Table 1. Supporting information on the calculations involved is provided in the sections that follow.

Table 1: Second Interim (2015) and Provisional (2016) 115-230kV DCR_{new} (cents/kWh)

Voltage	2015 Second Interim	2016 Provisional
115-230kV	8.4598	8.4598

Total Market Cost Calculations

The Second Interim (2015) and Provisional (2016) TMC value for 115-230kV is 8.8649 cents/kWh, as shown in Table 2.

Table 2: Calculation of Second Interim (2015) and Provisional (2016) 115-230kV TMC

		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	2.864	4.965	2.423	1.574	1.422	1.420	2.025	2.187	2.986	2.411	0.929	1.004	2.1663
WMSC	c/kWh	0.538	0.567	0.378	0.283	0.305	0.312	0.316	0.355	0.709	0.453	(0.425)	0.366	0.3461
Tx network	\$/kW-mth	3.780	3.780	3.780	3.780	3.780	3.780	3.780	3.780	3.780	3.780	3.780	3.780	3.780
Tx line connection	\$/kW-mth	0.860	0.860	0.860	0.860	0.860	0.860	0.860	0.860	0.860	0.860	0.860	0.860	0.860
Debt Retirement Charge	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 (Class A)	c/kWh	3.501	2.831	3.940	5.349	5.235	5.432	5.637	5.481	4.596	4.630	7.211	6.232	
TOTAL MARKET COST CALCULATION														
Total market cost per month	c/kW-mth	6,120	6,554	6,000	6,156	6,165	6,126	6,920	6,954	6,937	6,560	6,523	6,641	
Total annual market cost	c/kW-yr													77,657
TMC = total market cost	c/kWh													8.8649

Second Interim (2015) and Provisional (2016) 115-230kV DCR_{new} Calculations

The Second Interim (2015) and Provisional (2016) 115-230kV DCR_{new} is the greater of (i) the average of the 115-230kV TMC for the three calendar-year periods from January 2013 through December 2015 inclusive, based on the number of days in each period and (ii) the Final (2014) 115-230kV DCR_{new}. The Second Interim (2015) and Provisional (2016) 115-230kV DCR_{new} is 8.4598 cents/kWh, as shown in Table 3.

Table 3: Second Interim (2015) and Provisional (2016) 115-230kV DCR_{new}

	2013 Final	2014 Final	2015 Second Interim	2016 Provisional
Avg annual HOEP	2.4980	3.2389	2.1663	
TMC (P) Current, based on actual HOEP WMSC, regulated tariffs, estimated rebate, etc.	8.0178	8.4965	8.8649	
DCR _{new}	7.7539	7.8825		
DCR _{new} (2015) = greater of: i) Average of TMC (2013, 2014, 2015) ii) Final DCR _{new} (2014)	8.4598	7.8825		
Second Interim DCR _{new} (2015)			8.4598	
Provisional DCR _{new} (2016)				8.4598

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 Non-Utility Generator (“NUG”) Power Purchase Agreements (“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 NUG’s on the basis set out in the draft working paper dated June 24, 2002 prepared by the working committee of OEFC representatives and Independent Power Producers Society of Ontario (“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 WMSC 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. Daily uplift charges (amount in \$/MWh from IESO data identified as being ‘final’);
3. Monthly uplift charges (amount in \$/MWh from IESO data identified as being ‘final’);
4. IESO Administration Charge (amount in \$/MWh as determined by the OEB);
5. Rural and Remote Electricity Rate Protection (amount in \$/MWh, as determined by the OEB);
6. OPA Administration Charge (amount in \$/MWh, as determined by the OEB); and,
7. Renewable Generation Connection Monthly Compensation Settlement Credit.

The WMSC published in IESO monthly reports (currently Section 7 of that report) are not used for 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 in Table 4 below. These values are also published within Section 7 of the IESO monthly reports.

Table 4: Renewable Energy Generation Connection Monthly Compensation Settlement Credit

Month (2015)	Rate (\$/MWh)	Preliminary / Final
January	\$ 0.0034	Final
February	\$ 0.0036	Final
March	\$ 0.0037	Final
April	\$ 0.0041	Final
May	\$ 0.0054	Final
June	\$ 0.0053	Final
July	\$ 0.0047	Final
August	\$ 0.0049	Final
September	\$ 0.0050	Final
October	\$ 0.0053	Final
November	\$ 0.0053	Final
December	\$ 0.0051	Preliminary