

Memorandum

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

From: Todd Williams

Date: February 6, 2017

Re: Second Interim (2016) and Provisional (2017) 115-230kV DCR_{new} Calculations

Introduction

The Ontario Electricity Financial Corporation (“OEF”) is required to calculate and publish the Second Interim (2016) and Provisional (2017) 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. This memo will provide the Second Interim (2016) and Provisional (2017) DCR_{new} 115-230kV calculation.

The calculation of the 115-230kV TMC has been adjusted to reflect changes to rates resulting from the updated EB-2015-0311 Ontario Uniform Transmission Rate Order, issued by the Ontario Energy Board (“OEB”) on January 14, 2016.

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 2016 were assessed for the January to December 2016 period and were charged to participants based on their proportion of Allocated Quantity of Energy Withdrawn (“AQEW”) for the month¹.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>

The Capacity Based Demand Response Recovery (CBDR) charge has been added to the WMSC component of the 115-230kV TMC as of its induction in May 2015. The CBDR charge is allocated using the same method as Global Adjustment charges (see “Global Adjustment Allocation” section below).

The Ontario Electricity Support Program (OESP) charge has been added to the WMSC component of the 115-230kV TMC as of its induction in January 2016.

Global Adjustment Allocation

Beginning in 2011, the way that the Global Adjustment is allocated to consumers was 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. Under the amended Regulation the Global Adjustment is allocated differently to Class A and Class B consumers.

In this memo TMC is calculated to include the amount of Global Adjustment payable by all energy consumers allocated on a pro rata energy use basis to reflect the allocation of the Global Adjustment required under the judgment of Justice Wilton-Siegel dated March 12, 2015 in N-R Power and Energy Corporation v. OEFC.

Methodology and Results

The Second Interim (2016) and Provisional (2017) 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 (2016) and Provisional (2017) 115-230kV DCR_{new} (cents/kWh)

Voltage	2016 Second Interim	2017 Provisional
115-230kV	11.1587	11.1587

Total Market Cost Calculations

The Second Interim (2016) and Provisional (2017) TMC value for 115-230kV is 12.1343 cents/kWh, as shown in Table 2.

Table 2: Calculation of Second Interim (2016) and Provisional (2017) 115-230kV TMC

		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total /
MONTHLY STATISTICS														
days		31	29	31	30	31	30	31	31	30	31	30	31	366
total hours		744	696	744	720	744	720	744	744	720	744	720	744	8784
														Weighted Average
MARKET RATES														
HOEP	c/kWh	1.278	1.150	0.519	0.573	1.201	1.869	2.092	3.045	1.529	1.146	1.496	1.943	1.4899
WMSC	c/kWh	0.589	0.003	0.527	0.566	0.211	0.631	0.688	0.795	0.646	0.565	0.041	0.590	0.4904
Tx network	\$/kW-mth	3.660	3.660	3.660	3.660	3.660	3.660	3.660	3.660	3.660	3.660	3.660	3.660	3.660
Tx line connection	\$/kW-mth	0.870	0.870	0.870	0.870	0.870	0.870	0.870	0.870	0.870	0.870	0.870	0.870	0.870
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	c/kWh	8.521	9.083	9.647	9.989	9.675	8.647	7.683	6.592	8.543	9.907	9.876	7.931	
TOTAL MARKET COST CALCULATION														
Total market cost per month	c/kW-mth	8,702	8,064	8,929	8,969	9,222	8,983	8,758	8,735	8,674	9,618	9,174	8,759	
Total annual market cost	c/kW-yr													106,588
TMC = total market cost	c/kWh													12.1343

Second Interim (2016) and Provisional (2017) 115-230kV DCR_{new} Calculations

The Second Interim (2016) and Provisional (2017) 115-230kV DCR_{new} is the greater of (i) the average of the 115-230kV TMC for the three calendar-year periods from January 2014 through December 2016 inclusive, based on the number of days in each period and (ii) the Final (2015) 115-230kV DCR_{new}. The Second Interim (2016) and Provisional (2017) 115-230kV DCR_{new} is 11.1587 cents/kWh, as shown in Table 3.

Table 3: Second Interim (2016) and Provisional (2017) 115-230kV DCR_{new}

	2014 Final	2015 Final	2016 Second Interim	2017 Provisional
Avg annual HOEP	3.2389	2.1663	1.4899	
TMC (P) Current, based on actual HOEP WMSC, regulated tariffs, estimated rebate, etc.	10.2604	11.0786	12.1343	
DCR _{new}		10.3755		
DCR _{new} (2016) = greater of: i) Average of TMC (2014, 2015, 2016) ii) Final DCR _{new} (2015)		11.1587 10.3755		
Second Interim DCR _{new} (2016)			11.1587	
Provisional DCR _{new} (2017)				11.1587

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 (2016)	Rate (\$/MWh)	Preliminary / Final
January	\$0.0036	Final
February	\$0.0038	Final
March	\$0.0039	Final
April	\$0.0041	Final
May	\$0.0190	Final
June	\$0.0181	Final
July	\$0.0163	Final
August	\$0.0156	Final
September	\$0.0184	Final
October	\$0.0194	Final
November	\$0.0191	Final
December	\$0.0172	Preliminary