



Memorandum

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

From: Benjamin Grunfeld, Andy Tam

Date: July 25, 2018

Re: Final (2017) 115-230kV DCR_{new} Calculations

Introduction

The Ontario Electricity Financial Corporation (“OEFC”) is required to calculate and publish the Final (2017) TMC_{Index} and DCR_{new} for 115-230kV as soon as market data is available. The data for both calculations are now available and OEFC has asked Navigant Consulting to perform these calculations. This memo will provide the Final (2017) DCR_{new} 115-230kV calculation.

The calculation of the 115-230kV TMC reflects interim rates resulting from the EB-2017-0280, 2017 Uniform Transmission Rate decision, issued by the Ontario Energy Board (“OEB”) on November 30, 2017.

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costs for 2017 were assessed and were charged to participants based on their proportion of Allocated Quantity of Energy Withdrawn (“AQEW”) for the month¹.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. Furthermore, the Independent Electricity System Operator (“IESO”) introduced a Daily Uplift Charge as of October 2011, which has been added to the WMSC component of the 115-230kV TMC³.

¹ IESO – Market Summaries

<http://www.ieso.ca/power-data/market-summaries-archive>

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 also 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 “Changes in the Global Adjustment Allocation” section below).

Under the Ontario Fair Hydro Plan Act, 2017 (the “FHP Act”), effective as of May 1, 2017 the Ontario Electricity Support Program (“OESP”) charge is paid by the Province rather than by ratepayers. OESP is not included in the calculation of TMC as of May 2017.

Changes in the 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*.

Ontario Fair Hydro Plan Act, 2017

Under the FHP Act, for certain consumers, a portion of the Global Adjustment costs, which would have been payable by these consumers, will be deferred (defined as the “IESO deferral” in the FHP Act), for eventual recovery through the clean energy adjustment (“CEA”), as provided for and defined in the FHP Act.

For NUGs whose power purchase agreements provide for rate escalation based on TMC_{Index} and DCR_{new} , in calculating TMC during the period of the IESO deferral under the FHP Act, the OEFC will include and add the annual total of the IESO deferral amounts for each year in the calculation of TMC for that year. In calculating TMC during future periods of CEA invoicing and recovery, the OEFC will not include the annual total of any CEA amounts in the calculation of TMC for those years.

The calculation of TMC in this memo reflects the inclusion of IESO deferral amounts.

Methodology and Results

The Final (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: Final (2017) 115-230kV DCR_{new} (cents/kWh)

Voltage	2017 Final
115-230kV	11.7010

Total Market Cost Calculations

The Final (2017) TMC value for 115- 230kV is 11.8888 cents/kWh, as shown in Table 2.

Table 2: Calculation of Final (2017) 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	2.036	2.014	2.451	0.966	0.256	0.473	1.166	1.571	2.035	0.795	1.299	1.932	1.4137
WMSC	c/kWh	0.667	0.697	0.451	0.728	(0.105)	0.570	0.399	0.396	0.482	0.383	(0.234)	0.506	0.4096
Tx network	\$/kW-mth	3.520	3.520	3.520	3.520	3.520	3.520	3.520	3.520	3.520	3.520	3.520	3.520	3.520
Tx line connection	\$/kW-mth	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880	0.880
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	7.554	7.802	6.443	9.414	10.779	10.948	9.196	8.817	7.489	10.291	8.124	8.232	
TOTAL MARKET COST CALCULATION														
Total market cost per month	c/kW-mth	8,592	7,975	7,913	8,942	9,093	9,578	8,967	8,984	8,149	9,494	7,560	8,899	
Total annual market cost	c/kW-yr													104,146
TMC = total market cost	c/kWh													11.8888

Final (2017) 115-230kV DCR_{new} Calculations

The Final (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 2015 through December 2017 inclusive, based on the number of days in each period and (ii) the Final (2016) 115-230kV DCR_{new}. The Final (2017) 115-230kV DCR_{new} is 11.7010 cents/kWh, as shown in Table 3.

Table 3: Final (2017) 115-230kV DCR_{new}

	2015 Final	2016 Final	2017 Final
TMC (P) Current, based on actual HOEP WMSC, regulated tariffs, estimated rebate, etc.	11.0786	12.1343	11.8888
DCR _{new}		11.1587	
Final DCR _{new} = greater of: i) Average of TMC (2015, 2016, 2017) ii) DCR _{new} 2016 Final	11.7010 11.1587		
DCR _{new} 2017 Final			11.7010

Background on TMC and 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. Capacity Based Demand Response charges (amount in \$/MWh from IESO data identified as being ‘final’); and,
7. Renewable Generation Connection Monthly Compensation Settlement Credit (amount in \$/MWh from IESO data identified as being ‘final’).

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 (2017)	Rate (\$/MWh)	Preliminary / Final
January	\$0.0196	Final
February	\$0.0221	Final
March	\$0.0201	Final
April	\$0.0234	Final
May	\$0.0228	Final
June	\$0.0219	Final
July	\$0.0203	Final
August	\$0.0207	Final
September	\$0.0221	Final
October	\$0.0226	Final
November	\$0.0215	Final
December	\$0.0195	Final