ONTARIO POWER GENERATION

Herman Mo
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September 1, 2020

VIA EMAIL

Ms. Christine Long
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, Suite 2700
Toronto, ON
M4P 1E4

Dear Ms. Long:

Re: EB-2020-0210 – 2021 Annual Hydroelectric Payment Amount Adjustment

Attached please find an application by Ontario Power Generation Inc. ("OPG") for an order or orders approving a payment amount for its regulated hydroelectric facilities.

OPG is also submitting this application on the Regulatory Electronic Submission System ("RESS"). This material will be available on OPG's website at https://www.opg.com in due course.

Yours truly,

Herman Mo

Att.

cc: Charles Keizer (Torys) via email
Aimee Collier (OPG) via email

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ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998;*

AND IN THE MATTER OF an Application by Ontario Power Generation Inc. for an order or orders approving a payment amount for hydroelectric generating facilities prescribed under Ontario Regulation 53/05 of the Act, as amended, commencing January 1, 2021.

APPLICATION

1. The applicant, Ontario Power Generation Inc. ("OPG") is a corporation, incorporated under the Ontario *Business Corporations Act*, with its head office in the City of Toronto. The principal business of OPG is the generation and sale of electricity in Ontario.

2. In this Application, OPG applies to the Ontario Energy Board ("OEB") pursuant to section 78.1 of the *Ontario Energy Board Act, 1998*, (the "Act"), for an order or orders approving a payment amount for hydroelectric generating facilities (the "regulated hydroelectric facilities") prescribed under Ontario Regulation 53/05 of the Act, as amended, ("O. Reg. 53/05") effective January 1, 2021.

3. For the purposes of section 6 (1) of O. Reg. 53/05, OPG requests that the OEB use the price-cap index methodology for the prescribed hydroelectric generating facilities approved in the EB-2016-0152 Decision and Order dated December 28, 2017 for the period from January 1, 2017 through December 31, 2021 to determine the 2021 payment amount.

4. OPG seeks an order declaring the current payment amount interim effective January 1, 2021 for the regulated hydroelectric facilities, if the order or orders approving the payment amount are not implemented by January 1, 2021 for the regulated hydroelectric facilities.

5. The Application will be supported by written evidence. The written evidence filed by OPG may be supplemented or amended from time to time by OPG prior to the OEB's final decision on the Application.

6. OPG requests that pursuant to section 32.01 of the OEB Rules of Practice and Procedure, this proceeding be conducted by way of a written hearing.

7. OPG requests that pursuant to section 6(1) of the Act, this proceeding be administered under delegated authority.

8. OPG further applies to the OEB pursuant to the provisions of the Act and the OEB Rules of Practice and Procedure for such orders and directions as may be necessary in relation to the Application and the proper conduct of this proceeding.

9. The persons affected by this Application are all electricity consumers in Ontario.

10. OPG requests that copies of all documents filed with the OEB by each party to this Application along with copies of all comments filed with the OEB in accordance with Rule 9 of the OEB Rules of Practice and Procedure be served on the applicant and the applicant's counsel as follows:

(a)	The applicant:	Herman Mo Manager, Regulatory Affairs Ontario Power Generation Inc.
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	Telephone: Facsimile: Electronic mail:	416-592-6891 416-592-8519 opgregaffairs@opg.com
(b)	The applicant's Counsel:	Charles Keizer Torys LLP
	Mailing address:	79 Wellington St. W. PO Box 270 Toronto Dominion Centre Toronto ON M5K 1N2
	Telephone: Facsimile: Electronic mail:	416-865-0040 416-865-7380 ckeizer@torys.com

(c) The applicant's Counsel:

Aimee Collier
Assistant General Counsel
Ontario Power Generation Inc.

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Dated at Toronto, Ontario, this 1st day of September, 2020.

Ontario Power Generation Inc.

Herman Mo
Manager, Regulatory Affairs

2021 HYDROELECTIC PAYMENT AMOUNT

1.0 PURPOSE

This evidence supports the approval and implementation of the 2021 Hydroelectric Payment Amount ("HPA") effective January 1, 2021, pursuant to the price-cap index approved for OPG's regulated hydroelectric facilities in the EB-2016-0152 Decision and Order issued on December 28, 2017 (the "EB-2016-0152 Decision").

This evidence is largely unchanged relative to the corresponding schedule in OPG's application for approval of the 2020 HPA (EB-2019-0209, Ex. I1-1-1). The only substantive changes relate to the updated inflationary index values and the resulting HPA value.

2.0 OVERVIEW

OPG requests the OEB to approve an HPA effective January 1, 2021, based on the requirements of the EB-2016-0152 Payment Amounts Order (the "EB-2016-0152 PAO"), the EB-2016-0152 Decision, and the relevant index values expected to be published by the OEB in the fall of 2020.[1] This approach is consistent with that undertaken by OPG in its application to approve the 2020 HPA in EB-2019-0209. Section 3.0 summarizes the annual HPA adjustment framework. Section 4.0 summarizes OPG's proposal to implement the 2021 HPA.

3.0 HYDROELECTRIC PAYMENT AMOUNT

The EB-2016-0152 PAO established a 2017 HPA of $41.67/MWh and a 2018 HPA of $42.05/MWh[2], and required that:

> "For the periods January 1, 2019 to December 31, 2019, January 1, 2020 to December 31, 2020 and January 1, 2021 to December 31, 2021, the HPA amounts will be determined through an annual hydroelectric payment amount adjustment application. The HPA for each year shall be determined using the price-cap index proposed by OPG in Ex. A1-3-2 of this proceeding, under which the HPA for the prior year is adjusted by the generation industry-weighted inflation factor (using the most current Statistics Canada

[1] Index values for the Canadian Gross Domestic Product Implicit Price Index – Final Domestic Demand ("GDP-IPI FDD") and Average Weekly Earnings for Ontario – Industrial Aggregate ("Ontario AWE") from Statistics Canada are typically published each fall by the OEB.
[2] EB-2016-0152 PAO, p. 9, paragraph 3.

values for GDP-IPI (FDD) and Ontario AWE), less a productivity factor of 0% less a stretch factor of 0.3%."[3]

The EB-2016-0152 Decision requires that the HPA for each year be determined using the price-cap index proposed by OPG in EB-2016-0152 Ex. A1-3-2 (the "approved methodology"). The EB-2016-0152 Decision established the formula to be applied to adjust rates annually, the base payment amount to which the annual adjustment formula is to be applied, and the basis upon which inputs to the annual adjustment formula are determined. The methodology approved by the OEB is as follows[4]:

$$\text{Payment Amount}(t) = \text{Payment Amount}(t\text{-}1) \times \left(1 + \text{Inflation Factor} - \left(\text{Productivity Factor} + \text{Stretch Factor} \right) \right)$$

In its EB-2019-0209 Decision and Payment Amounts Order, issued December 12, 2019, the OEB approved a 2020 hydroelectric payment amount of $43.15/MWh[5]. The 2020 hydroelectric payment amount was calculated in accordance with the approved methodology, using an escalation factor of 1.5% (an inflation factor value of 1.8% less the approved X-factor value of 0.3%).

OPG has calculated the proposed 2021 HPA pursuant to the approved methodology. Specifically:

1) **Prior Year's Payment Amount**: The approved 2020 HPA is $43.15/MWh as established in the EB-2019-0209 Decision and Payment Amounts Order.

2) **Inflation Factor**

   The composite inflation index approved by the OEB in EB-2016-0152 is determined using the annual change in the following sub-indices (and respective weightings):[6]

   i. GDP-IPI FDD from Statistics Canada applied to generation industry capital costs (81%) and non-labour O&M costs (7%); and

[3] *Ibid*.
[4] EB-2016-0152 Decision, p. 121.
[5] EB-2019-0209 Decision and Payment Amounts Order, p. 5.
[6] EB-2016-0152 Decision, p. 122.

ii. Ontario AWE from Statistics Canada applied to generation industry labour costs (12%).

The resulting approved formula for determining the annual inflation factor is:

[(81% + 7%) x GDP-IPI FDD] + [12% x Ontario AWE]

As the OEB is not expected to publish the Statistics Canada values to be used for setting 2021 rates until the fall of 2020, OPG has estimated the 2021 HPA using the 2018 and 2019 values for the indices published by Statistics Canada, and the OEB-approved weighting of the indices, resulting in an estimated inflation factor of 2.0%. OPG's calculations are set out in Chart 1, below.

Chart 1

Year	Inputs and Assumptions										
	Non-Labour GDP-IPI (FDD) - National							Labour AWE - All Employees - Ontario			Composite Index
	Q1	Q2	Q3	Q4	Annual	Annual % Change	Weight	Annual	Annual % Change	Weight	Annual % Change
2018	109.4	109.9	110.6	111.0	110.2			1,021.4			
2019	111.4	112.2	112.6	113.3	112.4	1.9%	88%	1,049.5	2.7%	12%	2.0%

3) **X Factor (Productivity and Stretch Factors)**

The OEB has approved a productivity factor of 0%[7] and a stretch factor of 0.3%[8] for the regulated hydroelectric facilities for the IR Term (2017-2021).

Based on the approved 2020 HPA, and using the inflation and X-factors summarized above, OPG estimates the 2021 HPA to be $43.88/MWh. If the OEB's published index values include different annual percentage changes in either of the GDP-IPI FDD or the Ontario AWE, OPG will update this Application and the proposed 2021 HPA accordingly.

4.0 IMPLEMENTATION

OPG requests OEB approval of an effective date, and implementation date, of January 1, 2021 for the 2021 HPA.

[7] EB-2016-0152 Decision, p. 128.
[8] EB-2016-0152 Decision, p. 129.

CUSTOMER IMPACTS

1.0 PURPOSE

This evidence describes the impact of the proposed 2021 hydroelectric payment amount ("HPA") on a residential electricity customer consuming 700 kWh per month (the "typical residential customer") and typical large industrial customers and medium/large business customers.

2.0 CUSTOMER IMPACTS

OPG has estimated the impact on customers in a manner that is consistent with previous OPG proceedings, based on the incremental annual changes in OPG's weighted average total payments[1] that would result from the 2021 hydroelectric payment amount (Ex. I1-1-1) proposed in this Application. The changes in the weighted average total payments are applied to the typical residential customer's usage of OPG generation, after adjusting for line losses and accounting for OPG's share of the province's generation.[2]

Typical residential consumption is 737 kWh, based on the monthly consumption (700kWh) used in the OEB "Bill Calculator" for estimating monthly electricity bills (using Time of Use pricing), increased to include line losses at an assumed factor of 1.0525. OPG runs the "Bill Calculator" on the OEB's website at: https://www.oeb.ca/consumer-protection/energy-contracts/bill-calculator for all local distribution companies available in the bill calculator and uses a simple average of all of the bills as the typical bill. The typical residential customer bill based on information updated as of June 2020 is $114.10/month.

As described in Ex. I1-1-1, OPG has calculated the HPA to be $43.88/MWh using an estimated escalation of 1.7%, which reflects the approved X-factor value of 0.3% and an estimated inflation factor value of 2.0% based on current Statistics Canada data tables for 2018 and 2019. Consistent with the approach used to estimate customer bill impacts in EB-2016-0152[3], EB-

[1] As set out in the EB-2018-0243 Settlement Proposal, Attachment A, Table 5, line 11, and EB-2019-0209, Exhibit I, Tab 1, Schedule 2, Table 3, line 11.
[2] Based on forecast demand for 2021 (134.3 TWh) from Table 3-1 of IESO Reliability Outlook Update from July 2020 to December 2021, released June 2020.
[3] EB-2016-0152 PAO, Appendix B, Table 1, Notes 1 and 2.

2018-0243[4], and EB-2019-0209[5], OPG has applied this 1.7% estimated escalation factor to calculate an updated illustrative HPA for 2021[6].

As shown in Table 1, OPG estimates the incremental impact of the proposed 2021 HPA on a typical residential customer's monthly bill to be $0.01, or 0.01% over the 2021 period. This increase is attributable to the difference between the higher price-cap index value of 1.7% for the 2021 HPA and the 1.5% value used in EB-2019-0209.

Using the same approach as in EB-2016-0152[7] and EB-2018-0243[8], the estimated customer bill impacts of the 2021 HPA for medium/large businesses and large industrial customers in the Alectra (PowerStream), Hydro One Networks Inc. and Toronto Hydro-Electric System Limited service areas for the January 1, 2021 to December 31, 2021 period are provided in Ex. I1-1-2, Tables 2b, 2c and 2d.[9]

[4] EB-2018-0243 Decision and Payment Amounts Order (December 13, 2018), Page 2.
[5] EB-2019-0209 Decision and Payment Amounts Order (December 12, 2019), Page 2.
[6] As noted in Ex. I1-1-1, OPG will update the Application to reflect index values for rates applications, typically published by the OEB in the fall of the preceding year, if they differ from the annual sub-index changes used by OPG in Ex. I1-1-1.
[7] EB-2016-0152 PAO, Appendix I.
[8] EB-2018-0243 Settlement Proposal, Attachment A.
[9] These are the same service areas presented for such customers in EB-2016-0152, EB-2018-0243 and EB-2019-0209

Numbers may not add due to rounding.

Table 1
Annualized Residential Customer Impact

Line No.	Description	Note	2020	2021
			(a)	(b)
1	**Typical Consumption (kWh/Month)**	1	737	737
2	**Typical Usage of OPG Generation (kWh/Month)** (line 1 x line 10)		386	375
3	**Typical Bill ($/Month)**	1	114.10	114.10
4	**Incremental Bill Impact ($/month)** (line 2 x line 7 / 1000)		0.00	0.01
5	**Incremental Bill Impact (%)** (line 4 / line 3)		0.00%	0.01%
6	Incremental Weighted Average Total Payments ($/MWh)	2	-	0.04
7	Year-Over-Year Change in Incremental Weighted Average Total Payments ($/MWh)		-	0.04
8	Total OPG Regulated Production (TWh)	3	70.3	68.4
9	Forecast of 2021 Provincial Demand (TWh)	4	134.3	134.3
10	OPG Proportion of Customer Usage (line 8 / line 9)		52.4%	50.9%

Notes:

1 Typical monthly consumption (700 kWh) and typical monthly bill are based on the OEB "Bill Calculator" for estimating monthly electricity bills (using Time of Use pricing), available at: https://www.oeb.ca/consumer-protection/energy-contracts/bill-calculator - accessed in June 2020.
Typical Consumption includes line losses (Assumed loss factor of 1.052).

2 Per Ex. I1, Tab 1, Schedule 2, Table 3, line 13.

3 Per Ex. I1, Tab 1, Schedule 2, Table 3, line 5 plus line 10.

4 Based on forecast demand for 2021 (134.3 TWh) from Table 3-1 of IESO Reliability Outlook Update from July 2020 to December 2021, released June 2020.

Numbers may not add due to rounding.

Table 2a
Annualized Bill Impact for Typical Alectra (PowerStream) Customers

Line No.	Description	Note	2020		2021	
			Medium/Large Business	Large Industrial	Medium/Large Business	Large Industrial
			(a)	(b)	(c)	(d)
1	**Typical Customer Usage (kWh/Month)**	1	82,952	2,840,600	82,952	2,840,600
2	**Total Forecast Production (TWh)**	2	70.3	70.3	68.4	68.4
3	**OPG Portion of Customer Usage**	3	52.4%	52.4%	50.9%	50.9%
4	**Customer Usage of OPG Generation (kWh/Month) (line 1 x line 3)**		43,441	1,487,594	42,223	1,445,889
5	**Typical Monthly Customer Bill ($)**	1	13,443	420,075	13,443	420,075
6	**Year-Over-Year Change in Incremental Weighted Average Total Payments ($/MWh)**	4	0.00	0.00	0.04	0.04
7	**Percentage Increase in Customer Bills (line 6 x (line 4/1000) / line 5)**		0.00%	0.00%	0.01%	0.01%
8	**Dollar Increase in Customers Bills ($)** (line 5 x line 7)		0.00	0.00	1.67	57.24

Notes:

1 Current Approved Rates and Usage (adjusted for line losses) are taken from the Alectra EB-2019-0018 PRZ Rate Model (2019-12-12) supporting the Partial Decision and Interim Rate Order (2019-12-12).
Medium/Large Business (EB-2019-0018 PRZ Rate Model (2019-12-12), Tab 20): GS between 50 and 4,999 customer, consumption 80,000 kWh, loss factor 3.69%.
Large Industrial (EB-2019-0018 PRZ Rate Model (2019-12-12), Tab 20): Large User customer, consumption 2,800,000 kWh, loss factor 1.45%.

2 Per Ex. I1, Tab 1, Schedule 2, Table 3, line 5 plus line 10.

3 Per Ex. I1, Tab 1, Schedule 2, Table 1, line 10.

4 Per Ex. I1, Tab 1, Schedule 2, Table 1, line 7.

Numbers may not add due to rounding.

Table 2b
Annualized Bill Impact for Typical Hydro One Networks Customers

Line No.	Description	Note	2020		2021	
			Medium/Large Business	Large Industrial	Medium/Large Business	Large Industrial
			(a)	(b)	(c)	(d)
1	**Typical Customer Usage (kWh/Month)**	1	38,306	1,655,471	38,306	1,655,471
2	**Total Forecast Production (TWh)**	2	70.3	70.3	68.4	68.4
3	**OPG Portion of Customer Usage**	3	52.4%	52.4%	50.9%	50.9%
4	**Customer Usage of OPG Generation (kWh/Month) (line 1 x line 3)**		20,060	866,954	19,498	842,649
5	**Typical Monthly Customer Bill ($)**	1	8,413	269,489	8,413	269,489
6	**Year-Over-Year Change in Incremental Weighted Average Total Payments ($/MWh)**	4	0.00	0.00	0.04	0.04
7	**Percentage Increase in Customer Bills (line 6 x (line 4/1000) / line 5)**		0.00%	0.00%	0.01%	0.01%
8	**Dollar Increase in Customers Bills ($)** (line 5 x line 7)		0.00	0.00	0.77	33.36

Notes:

1 Current Approved Rates and Usage (adjusted for line losses) are based on 2020 Bill Impacts per Hydro One's EB-2019-0043 Ex. 4.0 - 2020 Bill Impacts (2019-11-08)
Medium/Large Business (EB-2019-0043 Exhibit 4.0): GSd customer, consumption 36,104 kWh, loss factor 6.1%.
Large Industrial (EB-2019-0043 Exhibit 4.0): ST customer, consumption 1,601,036 kWh, loss factor 3.4%.

2 Per Ex. I1, Tab 1, Schedule 2, Table 3, line 5 plus line 10.

3 Per Ex. I1, Tab 1, Schedule 2, Table 1, line 10.

4 Per Ex. I1, Tab 1, Schedule 2, Table 1, line 7.

Numbers may not add due to rounding.

Table 2c
Annualized Bill Impact for Typical Toronto Hydro Customers

Line No.	Description	Note	2020		2021	
			Medium/Large Business	Large Industrial	Medium/Large Business	Large Industrial
			(a)	(b)	(c)	(d)
1	**Typical Customer Usage (kWh/Month)**	1	81,331	4,170,520	81,331	4,170,520
2	**Total Forecast Production (TWh)**	2	70.3	70.3	68.4	68.4
3	**OPG Portion of Customer Usage**	3	52.4%	52.4%	50.9%	50.9%
4	**Customer Usage of OPG Generation (kWh/Month) (line 1 x line 3)**		42,592	2,184,060	41,398	2,122,830
5	**Typical Monthly Customer Bill ($)**	1	13,786	705,268	13,827	707,192
6	**Year-Over-Year Change in Incremental Weighted Average Total Payments ($/MWh)**	4	0.00	0.00	0.04	0.04
7	**Percentage Increase in Customer Bills** (line 6 x (line 4/1000) / line 5)		0.00%	0.00%	0.01%	0.01%
8	**Dollar Increase in Customer Bills ($)** (line 5 x line 7)		0.00	0.00	1.64	84.04

Notes:

1 Current Approved Rates and Usage (adjusted for line losses) are taken from the THESL EB-2018-0165 Draft Rate Order
Medium/Large Business (EB-2018-0165 Draft Rate Order, Schedule 16): GS 50-999 customer, consumption 79,000 kWh, loss factor 2.95%
Large Industrial (EB-2018-0165 Draft Rate Order, Schedule 16): Large Use customer, consumption 4,100,000 kWh, loss factor 1.72%

2 Per Ex. I1, Tab 1, Schedule 2, Table 3, line 5 plus line 10.

3 Per Ex. I1, Tab 1, Schedule 2, Table 1, line 10.

4 Per Ex. I1, Tab 1, Schedule 2, Table 1, line 7.

Table 3
Computation of OPG Weighted Average Payment Amount and Total Payments

Line No.	Description	Note	2020	2021
			(a)	(b)
1	**Hydroelectric Payment Amount ($/MWh)**	1	43.15	43.88
2	**Hydroelectric Payment Rider A ($/MWh)**	2	1.01	0.00
3	**Hydroelectric Payment Rider B ($/MWh)** (Hydroelectric Interim Period Shortfall Recovery Rider)	3	0.24	0.00
4	**Hydroelectric Payment Rider C ($/MWh)**	4	1.25	2.05
5	**Hydroelectric Production Forecast (TWh)**	5	33.0	33.0
6	**Nuclear Payment Amount (NPA) ($/MWh)**	6	85.00	89.70
7	**Nuclear Payment Rider A (NPR) ($/MWh)**	7	2.04	0.00
8	**Nuclear Payment Rider B ($/MWh)** (Nuclear Interim Period Shortfall Recovery Rider)	8	5.64	0.00
9	**Nuclear Payment Rider C ($/MWh)**	9	2.28	6.13
10	**Nuclear Production Forecast (TWh)**	10	37.4	35.4
11	**Weighted Average Total Payments ($/MWh)** ((Sum lines 1 to 4) x line 5) + (Sum lines 6 to 9) x line 10)) / (line 5 + line 10)		71.84	71.76
12	**EB-2019-0209 Weighted Average Total Payments ($/MWh)**	11	71.84	71.72
13	**Incremental Weighted Average Total Payments ($/MWh)** (line 11 - line 12)		0.00	0.04
14	**Percentage Change in Weighted Average Payment Amount (Year over Year)**	12	3.5%	-0.1%

Notes

1 Col. (a) is the OEB approved 2020 hydroelectric payment amount per EB-2019-0209 Decision and Payment Amounts Order dated December 12, 2019. Col. (b) is the 2021 hydroelectric payment amount proposed in this application.

2 OEB-approved hydroelectric riders per EB-2016-0152 PAO App. D, Table 1, line 14.

3 Regulated Hydroelectric interim period shortfall recovery rider per EB-2016-0152 PAO App. F, Table 1, line 19.

4 OEB-approved hydroelectric riders per EB-2018-0243 Settlement Proposal, Attachment A, Table 5, line 4.

5 Regulated Hydroelectric production is the 2014 and 2015 average OEB approved hydroelectric production per EB-2013-0321 Decision and Order P. 9, and EB-2016-0152 PAO, App. I, Table 2, line 3.

6 OEB-approved nuclear payment amounts per EB-2016-0152 PAO, App. C, Table 1.

7 OEB-approved nuclear riders per EB-2016-0152 PAO App. E, Table 1, line 18 col (g).

8 Nuclear interim period shortfall recovery rider per EB-2016-0152 PAO App. F, Table 2, line 14.

9 OEB-approved nuclear riders per EB-2018-0243 Settlement Proposal, Attachment A, Table 5, line 9.

10 OEB-approved nuclear production amounts per EB-2016-0152 PAO App. C, Table 1, line 2.

11 Per EB-2019-0209 Ex. I, Tab 1, Schedule 2, Table 3, line 11, col (b) and col (c)

12 Col. (a) per EB-2019-0209 Ex. I, Tab 1, Schedule 2, Table 3, col (b), line 14.