

Board Staff Interrogatories
Ontario Power Generation Inc.
Thunder Bay Generation Station
Application for Approval of Reliability Must-Run Agreement
EB-2013-0061

Notes:

- A. Unless otherwise noted, all terms used in the interrogatories below are as defined in the RMR Agreement.

- B. Information provided in response to the interrogatories below should be provided only in respect of Thunder Bay Generating Station Unit G3 and related facilities (the “reliability must-run facility” under the RMR Agreement). All of the information requested on an historic basis should be allocated in an appropriate manner to Unit G3. Thus historic costs that are common to the full Thunder Bay Generation Station should be adjusted so as to maintain comparability between pre-2013 data and 2013 data. In your responses regarding historic cost information, please explain how such common costs have been adjusted/allocated.

Ref: RMR Agreement, Schedule D and Definitions, and OPG Letter to the Board dated February 27, 2013

1. Please provide data for Unit G3 of the Thunder Bay Generation Station on the following revenue and cost items, on a monthly basis, for each of the calendar years 2010, 2011 and 2012:

Revenues	Costs
1. Hourly Settlement Amounts in the real-time energy market	1. Variable costs of generation for Minimum Generation Block Run Times (“MGBRT”). For this item and items 2 to 4 below, please identify and use an appropriate reference weighted average cost of coal for the applicable year.
2. Hourly Settlement Amounts for operating reserve	2. Variable costs of generation – start up

Revenues	Costs
<p>3. Congestion Management Settlement Credit (“CMSC”) payments as follows:</p> <ul style="list-style-type: none"> a. Total CMSC payments received. Please provide these numbers broken down for real-time energy market amounts (constrained on and constrained off) and operating reserve market amounts (constrained on and constrained off). b. If any CMSC payments were adjusted/recalculated by reason of local market power, the dollar amount by which CMSC payments were clawed back. c. If any CMSC payments were adjusted/recalculated by reason of constrained off events in a “designated constrained off watch zone”, the dollar amount by which the CMSC payments were clawed back. 	<p>3. Variable costs of generation – other (i.e., not included in 1 or 2 above).</p>
<p>4. Real-time generator cost guarantee (“CGC”) payments</p>	<p>4. Fuel costs:</p> <ul style="list-style-type: none"> a. Cost of fuel b. Disposal costs. In addition to the value of the disposal costs, please explain how/under what circumstances “proceeds of disposition” arise.
<p>5. Day-ahead production cost guarantee (“PCG”) payments</p>	<p>5. Regulatory testing costs.</p>
<p>6. Reactive support service payments</p>	<p>6. Market costs, broken down as follows:</p> <ul style="list-style-type: none"> a. Global Adjustment b. All other market costs
<p>7. Voltage control service payments</p>	<p>7. OM&A costs Please provide a full breakdown of these costs as per Table 1 of Schedule D of the RMR Agreement.</p>
<p>8. Other market revenue (please specify)</p>	<p>8. Other costs Please provide a full breakdown of these costs as per Table 1 of Schedule D of the RMR Agreement</p>
<p>9. Non-IESO market revenue (please specify)</p>	<p>9. Auxiliary boiler fuel costs</p>

2. Please provide an estimate of the revenues that OPG expects to earn during the term of the RMR Agreement, broken down by category as per the table set out in interrogatory 1 above, except for items 3(b) and 3(c) which need not be included.
3. Please provide an estimate of the costs that OPG expects to incur during the term of the RMR Agreement, broken down by category as per the table set out in interrogatory 1 above, except for items 7 and 8 which need not be included to the extent already set out in Table 1 of Schedule D of the RMR Agreement.
4. Please identify and explain any incentive effects of the RMR Agreement in terms of the impact on OPG's offer behaviour and on the quantity of energy or operating reserve to be produced/scheduled in respect of Unit G3 of the Thunder Bay Generation Station. Please explain the potential impact on prices in the IESO-administered markets of any such incentive effects.

Ref: RMR Agreement, Schedule A, Section 4

5. OPG filed its application on February 27, 2013, however the term of the RMR Agreement is for the period from January 1, 2013 to December 31, 2013. Please provide the forecast of fixed costs applicable to each of the first three months of the term of the RMR Agreement (January 1, 2013 to March 31, 2013) and the actual fixed costs for each month during the same period.

Ref: RMR Agreement Schedule B

6. Please provide the EFOR-OP rates for Unit G3 of the Thunder Bay Generation Station for each of the years 2010, 2011 and 2012, calculated in accordance with Schedule B of the RMR Agreement.
7. Please provide the net penalty/reward that would have been payable under the RMR Agreement in each of the years 2010, 2011 and 2012 in respect of Unit G3 of the Thunder Bay Generation Station, had the RMR Agreement been in effect in those years.

Ref: RMR Agreement, Section 3.3

8. Section 3.3 of the RMR Agreement requires OPG to participate in the IESO-administered markets and in other electricity markets "in a commercially reasonable manner and in accordance with [OPG's] mandate, including in accordance with the provisions of Schedule A". It further states that, for greater certainty, acting in a "commercially reasonable manner" with respect to any given activity "includes, other than in exceptional circumstances, that [OPG] will offer a unit economically over a sustained period of time based on its costs and in a manner consistent with how

[OPG's] coal-fired generation is being offered pursuant to [OPG's] CO₂ Implementation Strategy, as amended from time to time".

- a) Please further explain what is meant by the requirement to act in a "commercially reasonable manner". Please include the following in your response: (i) the costs that are being referred to in the phrase "based on its costs"; (ii) whether the phrase "based on its costs" refers to OPG's costs prior to or after the receipt of any reimbursement of such costs by the IESO; (iii) under what "exceptional circumstances" is OPG not required to act in a "commercially reasonable manner"; and (iv) describe the offer behaviour that is considered to be consistent with OPG's CO₂ Implementation Strategy.
- b) Please provide a copy of the OPG CO₂ Implementation Strategy that applies during the term of the RMR Agreement. Please confirm whether OPG expects its CO₂ Implementation Strategy to change during the term of the RMR Agreement.
- c) Please provide a copy of the Resolution of OPG's Sole Shareholder – Addressing Carbon Dioxide (CO₂) Emissions Arising from the Use of Coal as currently in effect. Please confirm whether OPG expects that this Resolution will remain in effect, unamended, during the term of the RMR Agreement.

Ref: RMR Agreement, Schedule E and OPG Letter to the Board dated February 27, 2013

9. Please explain the purpose of the first portion of Schedule E ("Fuel Management at the Reliability must-run Facility") and how/in what respects it interacts with the remainder of the RMR Agreement. If available, please provide an estimate of the percentage of time that OPG expects that Unit G3 of the Thunder Bay Generation Station will be declared energy-limited.

10. OPG's request to de-register the Thunder Bay Generation Station was made on November 15, 2012, the IESO's technical assessment was communicated to OPG on January 7, 2013 and OPG's application for approval of the RMR Agreement was filed on February 27, 2013 (total elapsed time of a little over 3 months). Schedule E of the RMR Agreement states that OPG must notify the IESO no later than September 1, 2013 if OPG wishes to de-register Unit G3 of the Thunder Bay Generation Station. Please identify the date by which OPG would need to request de-registration of Unit G3 of the Thunder Bay Generation Station in order for any application for approval of a subsequent reliability must-run agreement to be filed with the Board by October 15, 2013. Please identify whether there are any technical or other reasons why the de-registration request could not be made as of that date.

General

11. Please provide the following for Unit G3 of the Thunder Bay Generation Station for each month in each of the 2010, 2011 and 2012 calendar years:

- a) total MWh of energy production
- b) total MW of operating reserve scheduled
- c) total number of starts for the Unit
- d) the average run time for the Unit once started.

Please also explain whether there is significant variance of run times around the average run time (i.e., are run times mostly close to the average run time or do they vary significantly from the average?).

12. Please provide an estimate of the following for Unit G3 of the Thunder Bay Generation Station over the term of the RMR Agreement:

- a) total MWh of energy production
- b) total MW of operating reserve scheduled
- c) if available, total number of starts
- d) if available, the average run time once started

13. Please provide the current status of the conversion of the Atikokan Generating Station conversion to biomass. Please include the date on which the conversion is expected to be complete and the converted Atikokan Generating Station is expected to be in service.