

2017 Annual Report on Costs Incurred as a Result of Mitigating Transmission Constraints

Date: June 15, 2017
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1 Background

The following report has been prepared pursuant to subsection 4(2) of Section 302.1 of the ISO rules, *Real Time Transmission Constraint Management* (“Section 302.1”), which requires the Alberta Electric System Operator (“AESO”) to: “monitor and publicly report on the costs incurred as a result of mitigating constraints on an annual basis.”

Section 302.1 was revised on November 26, 2015 to require the AESO to report on the costs of transmission constraints, as published in this document. The revisions to Section 302.1 also introduced a new pricing mechanism to mitigate the effects of transmission constraints on pool price.

When constraints on the transmission system prevent in-merit generation from supplying energy to the Alberta interconnected electric system (“AIES”), AESO System Controllers dispatch generators in order to balance the system with generation that would otherwise be priced out of merit. Until November 2015, this normally higher priced generation would set the system marginal price. Under revised Section 302.1, energy dispatched to replace constrained down generation (“CDG”) receives an additional uplift payment, referred to as transmission constraint rebalancing (“TCR”).

The AESO prepared three previous annual reports on estimated transmission constraint management (“TCM”) costs prior to the implementation of TCR:

- the AESO posted the 2014 Annual Report using the “LTP Theoretical”¹, “Ex Post based on Estimated CDG”², and “Ex Post based on Nominal CDG”³ method to estimate costs.
- the AESO posted the 2015 Annual Report using the “LTP Theoretical” and “Ex Post based on Estimated CDG” methods only to estimate costs, as the “Ex Post based on Nominal CDG” method is less representative of market outcomes.
- the AESO posted the 2016 Annual Report using “LTP Theoretical” and “Ex Post based on Estimated CDG” methods to estimate costs.

The implementation of TCR under revised Section 302.1 allows the AESO to report on the actual costs of CDG based on settlement data, rather than calculating estimates. As such, the 2017 Annual Report will not include the estimated cost calculations provided in previous annual reports.

¹ Using the “LTP Theoretical” method, the cost of “Nominal CDG” is simulated using a distribution of price impacts from a variety of dispatch levels. Nominal CDG refers to the constraint limit size without consideration of energy that would be in merit. For the duration of a constraint, the size of the constraint limit is used as a proxy for the volume of CDG.

² Using the “Ex Post based on Estimated CDG” method involves calculating CDG using actual event merit orders and CDG based on the amount of in-merit CDG assets in the area where CDG takes place. An “unconstrained SMP” value is estimated by assuming that CDG is not in place. Another SMP value is calculated assuming CDG exists. The difference in those SMP values is multiplied by Alberta interconnected electric system demand to estimate the cost of CDG.

³ Using the “Ex Post Based on Nominal CDG” method involves calculating CDG using actual event merit orders and nominal CDG. An “unconstrained SMP” value is estimated by assuming nominal CDG is not in place. Another SMP value is calculated assuming CDG exists. The difference in those SMP values is multiplied by Alberta interconnected electric system demand to estimate the cost of CDG.

2 Costs of the TCM Rule

2.1 Constrained Down Generation

For information on annual CDG volume and cost estimates for the years 2011-2015, please reference Table 1 in the [2016 AESO Annual TCM Report](#).

There were no TCR costs incurred between the November 26, 2015 effective date of revised Section 302.1 and December 31, 2015.

In 2016, there were five days when transmission constraints resulted in TCR charges.

Table 1: 2016 TCR Costs

Year	Actual TCR Cost (\$)
2016	\$7,499

2.2 Transmission Must Run

For information on annual TMR costs for years 2011-2015, please reference Table 2 in the [2016 AESO Annual TCM Report](#).

Table 2: 2016 TMR Costs

Year	Contracted TMR Costs (\$)	Conscripted TMR (\$)	Total TMR Costs (\$)
2016	\$26,825	\$1,230,734	\$1,257,559

2.3 Total Cost of Using the TCM Rule

For information on annual cost of using the TCM rule for years 2011-2015, please reference Table 3 in the [2016 AESO Annual TCM Report](#).

Table 3: 2016 Total TCM Costs

Year	Total Cost (\$)
2016	\$1,265,058