

General

8.1 Ancillary services are provided by **market participants** when the **ISO** determines there is a need for such services to maintain system **reliability** and ensure the reliable operation of the **interconnected electric system**. **Market participants** required by the **ISO** to provide **ancillary services** shall be directed to do so in accordance with **ISO rules** and will be compensated as provided in subsections 8.2 through 8.7 below, as applicable.

Contracted Ancillary Services

8.2 If at the time the **market participant** is directed to provide **ancillary services** the **market participant** has an existing contract with the **ISO** to provide the **ancillary services** in question from the directed facility (the “existing contract”), then the amount to be paid to the **market participant** by the **ISO** for the **ancillary services** shall be determined according to the terms of the existing contract.

Directed Ancillary Services Other Than Transmission Must-Run Services

8.3 If at the time the **market participant** is directed to provide an **ancillary service** other than transmission must-run service, the **market participant** does not have an existing contract, then the amount to be paid to the **market participant** by the **ISO** in respect of each **ancillary service** provided shall be the greater of the following monthly amounts. Each amount is the sum for the **month** of hourly compensation amounts:

- (a) The product of the MW hour directed and the highest price paid in the hour to **market participants** providing the same **ancillary service** pursuant to subsection 8.2 above and that the existing contract was the result of a competitive process conducted in the prior **12 months**; or
- (b) The verifiable net opportunity cost related to foregone electricity sales incurred by the **market participant** to supply the directed **ancillary service**, taking into account offsetting **power pool** energy receipts.

Transmission Must-Run Services

8.4(1) Transmission must-run services are **ancillary services** provided by **market participants** with **generating units** in response to a **directive** provided by the **ISO** to ensure safe and reliable electrical service for a region of the **interconnected electric system**.

8.4(2) Transmission must-run services are foreseeable if the **ISO**, taking into account reasonable procurement timing requirements, determines transmission must-run services are required to meet **ISO** transmission **reliability** criteria which includes consideration of expected operating conditions and transmission **planned outages**. Transmission must-run services are unforeseeable transmission must-run services if they do not constitute foreseeable transmission must-run services.

Arrangements and Compensation for Foreseeable Transmission Must-Run Services

8.5 Arrangements and compensation for foreseeable transmission must-run services will be made in accordance with the *Foreseeable TMR Service Procurement Procedure* (Appendix B of the **ISO tariff**).

Compensation for Unforeseeable Transmission Must-Run Services

8.6(1) If at the time the **market participant** is directed to provide unforeseeable transmission must-run service the **market participant** does not have an existing contract, then the amount to be paid to the

market participant in the applicable **settlement period** for unforeseeable transmission must-run service is equal to variable costs plus fixed costs, where:

- (a) variable costs means the hourly difference of the **pool price** subtracted from the energy price, which shall not be less than zero (0), multiplied by the corresponding hourly energy generated (MWh) by the specific directed **generating unit** in compliance with the **directive** to provide unforeseeable transmission must-run service, where:
 - (i) Energy price (\$/MWh) is the product of the heat rate multiplied by the fuel cost, added to the sum of the variable Rate STS charges, the variable O&M charge and the Cost of Emissions charge.
 - (ii) Heat rate (GJ/MWh) is the actual heat rate of the **market participant's generating unit** during the period when the unit was complying with the **directive**.
 - (iii) Fuel cost for a gas **generating unit** is the natural gas market price (\$/GJ), being the "Daily Spot Price at AECO-C and NIT", excluding weekends, as published in the *Canadian Gas Price Reporter*, for natural gas on the applicable **day**. The fuel cost for a coal **generating unit** shall be provided by the **market participant**.
 - (iv) Variable Rate STS charge (\$/MWh) is the actual cost of all variable charges from Rate STS of the **ISO tariff**, including the applicable **loss factor** charge or credit.
 - (v) Variable O&M charge (\$/MWh) is the all-in cost (including major/minor overhauls), fixed at \$4.00/MWh, of providing incremental output from the unit, excluding fuel costs and variable Rate STS charges.
 - (vi) Cost of Emissions charge (\$/MWh) is the actual compliance cost of emissions incurred under applicable Provincial or Federal emissions legislation or regulation, prorated for the amount of time that the **generating unit** of the **market participant** is providing unforeseeable transmission must-run service in response to a **directive**, and divided by the total generation for the **generating unit** in the applicable compliance period.
- (b) Fixed costs are equal to the average monthly fixed cost multiplied by the greater of the must-run ratio or the minimum must-run ratio, where:
 - (i) Average monthly fixed cost is equal to one-twelfth of the sum of the annual costs in items (A) through (H) as follows:
 - (A) annual amortization and depreciation amounts for the **market participant's** investment or for the **power purchase arrangement** acquisition cost related to the specific directed **generating unit**, consistent with amounts reported in the **market participant's** audited financial statements and adjusted for cogeneration infrastructure not utilized for generation purposes;
 - (B) the product of the unamortized or undepreciated capital investment multiplied by a deemed debt percentage of 70% and multiplied by a debt interest rate that is equal to the current 10-year Government of Canada bond interest rate plus 0.5% and where the unamortized or undepreciated capital investment is the greater of
 - (1) the **market participant's** initial cost of property, plant and equipment for the specific directed **generating unit** or the **market participant's** initial **power purchase arrangement** acquisition cost related to the specific directed **generating unit**, less accumulated depreciation or amortization, as the case may be, related to the specific directed **generating unit**; or
 - (2) 25% of the **market participant's** initial cost of property, plant and equipment for the specific directed **generating unit** or the **market participant's** initial **power**

purchase arrangement acquisition cost related to the specific directed **power purchase arrangement**.

- (C) the product of unamortized or undepreciated capital investment, as described in (B) above, multiplied by a deemed 30% common equity percentage of capital structure multiplied by a deemed 12% rate of return on equity;
 - (D) if the **market participant** provides verifiable actual values for the items in both (B) and (C) then those will be used instead of the deemed values;
 - (E) the product of the tax rates multiplied by the rate of return on equity amount determined in (C), where income tax costs reflect the marginal income tax rates for both federal and provincial portions of income tax;
 - (F) total annual direct fixed operation and maintenance costs associated with the specific directed **generating unit**;
 - (G) total annual direct fixed fuel costs associated with the specific directed **generating unit**; and
 - (H) fixed charges from applicable **power purchase arrangements** associated with the specific directed **generating unit**.
- (ii) Must-run ratio is the ratio of the number of hours in the **month** when unforeseeable transmission must-run services were provided to the total number of hours in the **month**;
 - (iii) Minimum must-run ratio is:
 - (A) 12% for the first or second unforeseeable transmission must-run service event within a rolling 12-**month** period in which transmission must-run service is directed by the **ISO**;
 - (B) 20% for the third unforeseeable transmission must-run service event within a rolling 12-**month** period in which transmission must-run service is directed by the **ISO**;
 - (C) 30% for the fourth unforeseeable transmission must-run service event within a rolling 12-**month** period in which transmission must-run service is directed by the **ISO**;
 - (D) 40% for the fifth unforeseeable transmission must-run service event within a rolling 12-**month** period in which transmission must-run service is directed by the **ISO**; or
 - (E) 50% for the sixth or any additional unforeseeable transmission must-run service event within a rolling 12-**month** period in which transmission must-run service is directed by the **ISO**.

If there is more than one unforeseeable transmission must-run service event in a **settlement period**, the minimum must-run ratio shall be the highest applicable percentage described in (A) through (E) above.

8.6(2) In lieu of the variable and fixed costs in subsections 8.6(1)(a) and (b) above, if a **market participant** can demonstrate foregone future energy sales due to a transmission must-run **directive**, then the verifiable net opportunity cost related to foregone electricity sales incurred by the **market participant** to supply the directed transmission must-run service, taking into account offsetting **power pool** energy receipts. This applies only to **market participants** that have responded to a transmission must-run **directive** using hydroelectric generating units.

Maximum Transmission Must-Run Services Compensation

8.7 The maximum monthly amount to be paid by the **ISO** for transmission must-run service results in the recovery of fixed, operating and maintenance costs, including a reasonable rate of return for the service provider and is equal to the average monthly fixed cost plus variable costs as provided for in subsection 8.6 above.

Invoicing

8.8 A **market participant** that provides unforeseeable transmission must-run service in response to a **directive** from the **ISO** will submit an invoice to the **ISO** within 15 **business days** after the end of the **month** in which the service was provided, with the exception of an invoice for the Cost of Emissions charge described in subsection 8.6(1)(a)(vi) which the **market participant** must submit to the **ISO** within 15 **business days** of the emissions compliance costs being incurred by the **market participant**. The amount of any invoices shall be determined in accordance with the method in subsection 8.6 above and will separately itemize the values used for each component specified (fixed and variable costs).

Audit Rights

8.9 The **ISO** has the right to audit a **market participant's** invoices and source information related thereto for transmission must-run services, provided that any such audit is:

- (a) conducted only on reasonable prior notice to the **market participant**;
- (b) conducted on the **market participant's** premises during normal business hours;
- (c) not conducted by or the information gathered made available to, those individuals at the **ISO** that determine contestability for purposes of the **ISO** procuring transmission must-run competitively;
- (d) conducted subject to section 103.1 of the **ISO rules**, *Confidentiality*; and that
- (e) no copies of records reviewed during the audit shall be made without the **market participant's** prior written consent.

Revision History

Effective	Description
2023-07-20	Revised as applied for in the AESO 2022 ISO Tariff Modernization Application, as approved in Commission Decision 27864-D01-2023 issued on May 31, 2023 and in effect as of July 20, 2023 as per Commission Decision 28294-D01-2023 (Alberta Electric System Operator ISO Tariff Compliance Filing Pursuant to Decision 27864-D01-2023).
2021-01-01	Revised and reformatted all subsections, as approved in Commission Decision 25175-D02-2020 issued on November 30, 2020.
2011-07-01	Revised and reformatted all subsections, as approved in Commission Decision 2011-275 issued on June 24, 2011.