ALBERTA UTILITIES COMMISSION

IN THE MATTER OF the *Electric Utilities Act*, SA 2003, c E-5.1, the *Alberta Utilities Commission Act*, SA 2007, c A-37, and the *Transmission Regulation*, AR 86/2007;

AND IN THE MATTER OF the Alberta Electric System Operator's ISO Rules Section 202.5 *Supply Surplus*, Section 203.6 *Available Transfer Capability and Transfer Path Management*, Section 302.1 *Real Time Transmission Constraint Management*, and Section 303.1 *Load Shed Service*;

AND IN THE MATTER OF the Alberta Electric System Operator's ISO Tariff Rate STS, Supply Transmission Service, and Rate IOS, Import Opportunity Service, and the Alberta Electric System Operator's discriminatory and unduly preferential interpretation, application, and implementation of Rates STS and IOS;

AND IN THE MATTER OF a complaint under Sections 25 and 26 of the *Electric Utilities Act*, Sections 8 and 23 of the *Alberta Utilities Commission Act*, and the Alberta Utilities Commission Rule 001: *Rules of Practice*.

COMPLAINT OF BHE CANADA LIMITED AND MATL CANADA G.P. LTD., as the General Partner of MATL CANADA L.P. REGARDING THE TARIFF, RULES, RELIABILITY STANDARDS, PRACTICES, AND CONDUCT OF THE ALBERTA ELECTRIC SYSTEM OPERATOR

February 9, 2024

TABLE OF CONTENTS

I. INTRODUCTION AND RELIEF SOUGHT

1. This is a complaint filed by BHE Canada Limited and MATL Canada G.P. Ltd., as the General Partner of MATL Canada L.P. (collectively, "BHE Canada") with the Alberta Utilities Commission ("AUC" or "Commission") pursuant to sections 25 and 26 of the *Electric Utilities Act* ("*EUA*"),[1] sections 8 and 23 of the *Alberta Utilities Commission Act* ("*AUCA*"),[2] and AUC Rule 001: *Rules of Practice*.[3] BHE Canada is the owner and operator of the Canadian portion of the Montana-Alberta Tie Line ("MATL"), an intertie connecting the Montana and Alberta electric grids. This complaint concerns the Alberta Electric System Operator's ("AESO") breaches of, and failure to comply with, numerous legislative obligations in its management of intertie capacity and import electricity flows into the Alberta competitive electricity market.

2. As outlined in further detail below, this complaint is brought on the grounds that, in breach of its legislative obligations, the AESO is:

(a) managing intertie capacity and import electricity flows into Alberta pursuant to ISO rules and associated practices that do not support the fair, efficient and openly competitive operation of the electricity market and are not in the public interest;

(b) engaging in unjust discrimination in the classes of system access service it offers under the ISO tariff, which tariff provides unduly preferential service to intra-Alberta supply customers and unfairly prejudices extra-Alberta import customers;

(c) failing to provide MATL and import customers with system access service that affords them a reasonable opportunity to exchange electric energy and ancillary services in the Alberta electricity market;

(d) failing to forecast the needs of Alberta and develop plans for the transmission system to provide efficient, reliable and non-discriminatory system access service to all market participants, including import customers, as well as the timely implementation of transmission system expansions and enhancements to facilitate non-discriminatory system access service;

(e) failing to monitor compliance of Alberta generators with ISO rules and reliability standards, including the AESO's generating unit technical requirements establishing frequency and speed governing requirements, and to refer suspected or known non-compliances to the Market Surveillance Administrator ("MSA") for enforcement; and

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1 *Electric Utilities Act*, SA 2003, c E-5.1 [*EUA*].

2 *Alberta Utilities Commission Act*, SA 2007, c A-37.2 [*AUCA*].

3 AUC, *Rule 001: Rules of Practice* (April 27, 2021).

(f) failing to keep pace with changes in the transmission planning and reliability criteria of the North American Electric Reliability Corporation ("NERC") and to develop and adopt current NERC transmission planning and reliability criteria to the detriment of the Alberta Interconnected Electric System ("AIES") and market participants, including interties and import customers.

3. On March 10, 2023, the AESO released its *2023 Reliability Requirements Roadmap* ("Reliability Roadmap"),[4] which confirmed what has long been known to many market participants—the AESO is failing to meet its overarching statutory obligation to provide for the safe, reliable and economic operation of the interconnected electric system and to promote a fair, efficient and openly competitive electricity market. For over a decade, the AESO has failed to undertake necessary enhancements to the transmission system to remove constraints affecting the interties so that imports can compete fairly and openly with domestically generated power in the Alberta electricity market. The Reliability Roadmap confirmed that these problems have only become significantly worse with the result that increasingly more $0-priced imports are not reaching Alberta consumers at a time of unprecedented electricity affordability concerns.

4. Instead of seeking solutions to the system-wide frequency stability concerns outlined in the Reliability Roadmap that would see all market participants sharing in the negative impacts of the identified system limitations, the AESO is addressing the reliability concerns that have developed under its oversight solely by further curtailing import available transfer capability ("ATC") on the interties. This is discriminatory and unfair — and it is Alberta consumers and MATL's customers that are paying the price for it. As outlined further below, BHE Canada's analysis suggests that the incremental curtailments of imports in place since March 15, 2023 may be costing Alberta consumers as much as $2.8 billion in incremental electricity costs on an annual basis.

5. The AESO has the dual obligation to plan and develop a transmission system that (i) satisfies reliability standards;[5] and (ii) is sufficiently robust so that 100% of the time under normal operating conditions and at least 95% of the time under abnormal operating conditions, all anticipated in-merit electricity, including from imports, can be dispatched without constraint.[6] Indeed, the AESO acknowledges that "the 'unconstrained' transmission model forms the backbone

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4 AESO, *2023 Reliability Requirements Roadmap* (March 10, 2023).

5 *Transmission Regulation*, AR 86/2007 [*TReg*], s. 15(1)(a).

6 *TReg*, s. 15(1)(e) and (f).

of the Alberta market model"[7] and that the *Transmission Regulation* "is clear that the use of non-wires solutions is to be limited, and that transmission should be planned to be unconstrained."[8] The Commission has confirmed that this fundamental tenet of Alberta's electricity market applies equally to imported electricity and domestically generated electricity.[9] BHE Canada agrees and notes that this is in keeping with Canada's international trade obligations under the *Canada-United States-Mexico Agreement* ("CUSMA").[10]

6. Despite the AESO's assertions, in practice, for more than a decade it has relied on non-wires solutions such as Load Shed Service for Imports ("LSSi")[11] that have been criticized by the MSA to address constraints on the interties and reliability concerns of the AIES. Instead of fulfilling its statutory mandate to resolve these system limitations in a timely, rational and effective manner, the AESO has allowed them to worsen dramatically. Since the release of the Reliability Roadmap, the combined path of the AB-BC and MATL interties is now routinely limited to a mere 325 MW of import ATC despite having total transfer capacity of 1110 MW (*i.e.*, the BC intertie having 800 MW and MATL having 310 MW). Prior to the release of the Reliability Report, the AB-BC and MATL interties had 550 MW of import ATC prior to arming of LSSi,[12] which was already well below the total transfer capability of 1110 MW. This was further reduced to 325 MW as of March 15, 2023. Despite indications from the AESO that it is taking steps to address this situation, a year has now gone by with no meaningful progress. Accordingly, the Commission's immediate intervention is required.

7. To make matters worse, under ISO Rules Sections 202.5 *Supply Surplus* and 302.1 *Real Time Transmission Constraint*, MATL (and the import interchange transactions over it) are curtailed prior to intra-Alberta generators when there are transmission congestion constraints or states of supply surplus. In other words, even when base ATC on the combined AB-BC and MATL

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7 AESO, *Guide to Understanding Alberta's Electric System.*

8 *Ibid*.

9 AUC Decision 2013-025: *Alberta Electric System Operator, Objections to ISO rules Section 203.6, Available Transfer Capability and Transfer Path Management* (February 1, 2013) ["*Decision 2013-025*"], para. 105.

10 *Canada-United States-Mexico Agreement* ("CUSMA"); *Canada–United States–Mexico Agreement Implementation Act*, S.C. 2020, c. 1.

11 The AESO describes LSSi as "a transmission system reliability product developed as part of [its] efforts to fulfill [its] intertie restoration obligation as mandated by legislation. LSSi is provided by load customers that agree to be quickly taken offline following the sudden loss of imports coming across the interties. This load shedding allows for arrest and recovery from frequency decay and preserves system stability": See AESO website: Load Shed Service for imports » AESO.

12 This had already been reduced from 600 MW on June 23, 2020.

path is already constrained to an anemic 325 MW, MATL faces further curtailment to zero in times of congestion or surplus. This is the case notwithstanding that all intertie offers are priced at $0 and are, accordingly, always in-merit.

8. Though the AESO's rationale for this approach is unclear, it appears to be grounded in the AESO's belief that it is permissible to do so because imports take only "opportunity" service under the ISO tariff (i.e., import opportunity service "IOS"), whereas Alberta generators take a firm-like transmission service (i.e., supply transmission service "STS"). On closer review of the ISO tariff rate schedules, however, there is little distinction between rates IOS and STS. Rate IOS customers are paying the same, but receiving a lesser transmission service from the AESO. Moreover, the only reason that imports take a class of system access service that is referred to as an "opportunity" service and not a "transmission" service (like load – DTS, or supply – STS) is because the AESO has never offered anything but an "opportunity" service for imports. In other words, import customers have not chosen to take a lesser service; they have taken the only one that has been made available to them. Respectfully, the unjust discrimination is patently clear and must be remedied by the Commission.

9. To date, the AESO's measures to remove constraints on the interties have been incomplete and flawed stop-gap actions, not long-term solutions to effectively reduce constraints on the AIES. The AESO has consistently, and in breach of its statutory duties, foregone developing and adopting cost-effective, technically viable measures to resolve these constraints over the long term, while facilitating a market that is fair, efficient and openly competitive, as mandated in the governing legislation. Now, upon realizing that the AIES has greater frequency stability concerns than the AESO had previously recognized, the AESO's discriminatory and anti-competitive solution has been to look solely to the interties, and not to domestic generators, to mitigate these new reliability concerns until more permanent solutions can be implemented. This approach is inconsistent with the legislative framework and the entire premise of Alberta's competitive wholesale electricity market. It is also inconsistent with approaches taken in other jurisdictions, including by the Federal Energy Regulatory Commission ("FERC").

10. While it appeared that the AESO might proceed with a back-to-back HVDC converter on MATL that would eventually alleviate the constraints MATL currently faces as a result of system

limitations, the prospect and timing of such a wires solution remains entirely unclear. The AESO's own schedule, which is not reflective of the current global supply chain constraints for HVDC converters, suggested implementation is still five years away.[13] BHE respectfully submits that Commission intervention is needed at this time to ensure that immediate steps are taken to ensure the fair, efficient and openly competitive operation of the Alberta electricity market and that interties and import customers have a reasonable opportunity to exchange electric energy. Moreover, even if an HVDC converter is ultimately implemented, it will not address the unfair and anti-competitive curtailment of MATL prior to Alberta generators in times of transmission congestion and supply surplus, which must be addressed through ISO rule and tariff changes. The AESO has repeatedly indicated that transmission congestion is only worsening and will continue to do so for the foreseeable future.

11. Simply stated, the AESO's treatment of interties and imported electricity relative to domestic electricity, and its failure to plan and develop AIES to remove constraints on imports, is in contravention of the overarching principle of equal and open unconstrained access. For more than ten years, the AESO has failed to appropriately address transmission system limitations that have restricted imported electricity from accessing the Alberta electricity market, which has hindered competition, harmed competitive market participants and, ultimately, harmed consumers of electricity in Alberta. There is no justification for the AESO's inaction and failure to meet its transmission planning obligations under the *TReg*. The AESO cannot continue to look only to the interties to bear the brunt of the AESO's own failure to plan and develop a transmission system that meets reliability standards and is sufficiently robust so that all anticipated in-merit electricity, including from imports, can be dispatched without constraint. In-merit electricity continues to be excluded and discriminated against, to the detriment of MATL and its shippers, other interties and their shippers, and Alberta electricity consumers.

12. Accordingly, for the reasons outlined in further detail below, BHE Canada respectfully requests that the AUC:

(a) find that ISO Rules Section 302.1 *Real Time Transmission Constraint Management* does not support the fair, efficient and openly competitive operation of the electricity market or is not in the public interest and direct the AESO to change the

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[13] AESO Stakeholder Symposium, Leadership in the Transformation (June 27, 2023) at p. 21.

ISO rule pursuant to s. 25(1)(6)(e) of the *EUA* in accordance with the revisions proposed in Appendix "B";

(b) find that ISO Rules Section 202.5 *Supply Surplus*, does not support the fair, efficient and openly competitive operation of the electricity market or is not in the public interest and direct the AESO to change the ISO rule pursuant to s. 25(1)(6)(e) of the *EUA* in accordance with the revisions proposed in Appendix "B";

(c) direct the AESO to procure, together with the measures described in (d) below, sufficient Fast Frequency Response ("FFR") Services by no later than July 1, 2024 such that there is adequate ATC for MATL to be operated at or near 300 MW of bi-directional capacity until more permanent solutions can be developed pursuant to s. 26(3)(b) of the *EUA*;

(d) direct the AESO to explore and implement by no later than July 1, 2024 all other potential frequency stability mitigation measures other than, or in addition to, curtailing imports that would be effective in increasing frequency stability including, but not limited to: (i) procuring additional operating and spinning reserves; (ii) lowering the Most Severe Single Contingency ("MSSC") limit; (iii) requiring all domestic generators to provide frequency response headroom (or alternatively procure headroom from those generators and interties willing to provide it for compensation); (iv) installing grid-forming technology; (v) requiring wider ride-through range; (vi) specifying Primary Frequency Response ("PFR") performance; (vii) implementing fast-ramp product; (viii) implementing fast net demand response ("FNDR") procurement; (ix) market design changes relating to unit commitment; (x) implementing a dynamic intertie ATC calculation to determine real-time capabilities; (xi) installing a sync condenser; and (xii) implementing synthetic inertia pursuant to s. 26(3)(b) of the *EUA*;

(e) direct the AESO to monitor Alberta generators for compliance with all ISO rules and reliability standards impacting frequency response, including but not limited to ISO Rules Section 502.5, and to refer all suspected or known non-compliances to the MSA for enforcement as it is required to do under s. 21.1 of the *EUA*;

(f) direct the AESO to immediately undertake a review, in consultation with those electricity market participants that it considers are likely to be affected, of its transmission planning reliability standards to ensure conformity with current NERC standards and to propose by no later than July 1, 2024 all such new or amended transmission planning reliability standards as are necessary to ensure conformity with current NERC standards, and provided they meet the requirements of s. 21(3) of the *TReg*, for approval of the Commission accordance with the process set out in s. 19(4) of the *TReg*; and

(g) all such further or other relief, in addition to, or in substitution for that requested as the Commission may deem appropriate.

II. BACKGROUND

A. Legislative Scheme and the AESO's Mandate

13. The AESO is governed by the *EUA* and associated regulations, including the *TReg*. Section 5 of the *EUA* sets out the purposes of the Act:

> **Purposes of the Act**
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> **5** The purposes of this Act are
>
> (a) to provide an efficient Alberta electric industry structure including independent, separate corporations to carry out the responsibilities of the Independent System Operator and the Balancing Pool, and to set out the powers and duties of those corporations;
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> (b) to provide for a competitive power pool so that an efficient electricity market based on fair and open competition can develop, where all persons wishing to exchange electric energy through the power pool may do so on non-discriminatory terms and may make financial arrangements to manage financial risk associated with the pool price;
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> (c) to provide for rules so that an efficient electricity market based on fair and open competition can develop in which neither the market nor the structure of the Alberta electric industry is distorted by unfair advantages of government-owned participants or any other participant;
>
> (d) to continue a flexible framework so that decisions of the electric industry about the need for and investment in generation of electricity are guided by competitive market forces;
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> (e) to enable customers to choose from a range of services in the Alberta electric industry developed by a competitive electricity market, and to receive satisfactory service;
>
> …
>
> (h) to provide for a framework so that the Alberta electric industry can, where necessary, be effectively regulated in a manner that minimizes the cost of regulation and provides incentives for efficiency.
>
> [Emphasis added]

14. The AESO's legislative mandate is guided by the foregoing purposes. The fundamental focus of the *EUA* on competition and the development of a fair, efficient and openly competitive ("FEOC") electricity market carries through to the AESO's express statutory duties. Particularly, its overarching duty is set out in s. 16 of the *EUA*:

> **Duty to act responsibly**
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> **16(1)** The Independent System Operator must exercise its powers and carry out its duties, responsibilities and functions in a timely manner that is fair and responsible to provide for the safe, reliable and economic operation of the interconnected electric system and to promote a fair, efficient and openly competitive electricity market for electricity.

15. In addition to s. 16, this complaint engages a number of the AESO's more specific legislative obligations that are not being met relative to interties and import customers, including its obligations:

(a) to provide system access service on the transmission system in a manner that gives all electricity market participants wishing to exchange electric energy and ancillary services a reasonable opportunity to do so;[14]

(b) to forecast the needs of Alberta and develop plans for the transmission system to provide efficient, reliable and non-discriminatory system access service and the timely implementation of required transmission system expansions and enhancements,[15] including by:

(i) assessing the transmission facilities required to provide for the efficient and reliable access to jurisdictions outside Alberta,[16]

(ii) preparing a transmission system plan that projects the transmission facilities required to meet the forecast load, imports and exports of electricity and anticipated generation capability, including appropriate reserves and facilities to serve areas or renewable or low emission generation, in a timely and efficient way, and projects the transmission facilities required to provide for the efficient and reliable access to jurisdictions outside Alberta,[17] and

(iii) by planning a system and making arrangements for the expansion or enhancement of that system so that all anticipated in-merit electricity (including imports)[18] can be dispatched without constraint when all transmission facilities are in service (and, when operating under abnormal operating conditions, so that transmission of all anticipated in-merit electricity (including imports) can occur at least 95% of the time, on an annual basis);[19]

(c) to operate the power pool in a manner that promotes the fair, efficient and openly competitive exchange of electric energy;[20]

(d) to facilitate the operation of electricity markets in a manner that is fair and open and that gives all electricity market participants wishing to participate in those

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14 *Ibid*, ss. 29, 17(b) and (g).

15 *Ibid*, ss. 33(1), 17(i) and (j).

16 *TReg*, s. 8(c).

17 *TReg*, s. 10(1)(a)(iv) and (v).

18 *EUA*, s. 17(c), which refers to imports, is incorporated by reference into ss. 15(1)(e) and (f) of the *TReg*.

19 *TReg*, s. 15(1)(e) and (f)

20 *EUA*, ss. 17(a), 18.

electricity markets and to exchange electric energy a reasonable opportunity to do so;[21]

(e) to determine, according to relative economic merit, the order of dispatch of electric energy and ancillary services in Alberta and from scheduled exchanges of electric energy and ancillary services between the interconnected electric system in Alberta and electric systems outside Alberta, to satisfy the requirements for electricity in Alberta;[22]

(f) to make ISO rules, for approval by the Commission,[23] respecting a number of matters, including the operation of the transmission system and the management of transmission constraints that may occur from time to time,[24] which rules must not be technically deficient, must support the fair, efficient and openly competitive operation of the electricity market, and must be in the public interest;[25]

(g) to make or adopt reliability standards[26] and plan a transmission system that satisfies reliability standards;[27]

(h) to monitor the compliance of electricity market participants with ISO rules[28] and, if the AESO suspects that an electricity market participant has contravened an ISO rule or a reliability standard, to refer the matter to the MSA;[29]

(i) to prepare an ISO tariff for submission to the Commission for approval, which tariff must set out the rates and terms and conditions for each class of system access service,[30] and must not be unduly preferential, arbitrarily or unjustly discriminatory or inconsistent with or in contravention of the *EUA* or any other enactment or any law;[31] and

(j) to prepare a plan and make arrangements to restore each intertie that existed on August 12, 2004 to, or near to, its path rating.[32]

16. In sum, the AESO is responsible for providing non-discriminatory system access service, planning a transmission system on a forward looking basis that meets reliability standards and is

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21 *Ibid*, s. 17(b).

22 *Ibid*, s. 17(c).

23 *Ibid*, s. 20.

24 *TReg*, s. 18.

25 *EUA*, s. 20.21(2).

26 *TReg*, s. 19.

27 *Ibid*, s. 15(1)(a).

28 *EUA*, s. 17(l.1).

29 *Ibid*, s. 21.1.

30 *Ibid*, ss. 17(g), 30(1), 119(4).

31 *EUA*, s. 121.

32 *TReg*, s. 16(1).

capable of dispatching all anticipated in-merit electricity without constraint when all transmission facilities are in service, and facilitating the operation of a FEOC electricity market. While ensuring system reliability is a crucial component of the AESO's mandate, it cannot be used as a barrier to facilitating, or an excuse for failing to facilitate, a FEOC electricity market in Alberta. Rather, the system must be planned to resolve reliability barriers. In this regard, the AESO is expressly required to plan the system to meet the current and future needs of electricity market participants,[33] including by assessing the transmission facilities required to provide for the efficient and reliable access to jurisdictions outside Alberta.[34]

17. Simply stated, the electricity market is not functioning as intended if in-merit electricity is available, or is reasonably expected to be available, but cannot be dispatched. Yet that is precisely what has been occurring in respect of imports over the interties for many years. Not only has the AESO failed to address reliability concerns impeding the dispatch of imports in a timely manner, but it has actually allowed the reliability of the AIES to degrade over time, as outlined in the Reliability Roadmap. The AESO has used, and continues to use, reliability as an excuse to curtail ever greater volumes of imports when it is well aware that there are other mitigative measures that it can implement, and should have already implemented, to enhance system reliability while it proceeds to undertake long overdue transmission system upgrades or find other more permanent solutions to address the reliability concerns.

18. Moreover, while the AESO may propose "non-wires solutions" such as LSSi to address reliability concerns, it may only do so: (a) in areas where there is limited potential for growth and when they are more cost-effective than transmission wires solutions; or (b) temporarily, for a specified short-term period.[35] Respectfully, a decade is not a short-term period and MATL is not located in an area with limited potential for growth. Accordingly, there is simply no legal justification for AESO's failure to address its reliability concerns in a timely manner or to rely on such concerns to discriminate against imports. As discussed further below, such conduct also raises serious concerns in light of Canada's international trade obligations under the CUSMA.

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33 *EUA*, s. 17(i).

34 *TReg*, s. 8(c).

35 *TReg*, s. 15(3).

B. BHE Canada and MATL

19. BHE Canada is the owner and operator of the Canadian portion of MATL, having acquired the business in May of 2020. MATL is a 230 kV international power line that runs from a substation located near Lethbridge, Alberta to a location near Great Falls, Montana. MATL is capable of transferring up to 300 MW of electricity in both directions between Alberta and Montana, but has historically operated primarily to import electricity into Alberta. As an international power line, the Canadian portion of MATL is approved and regulated both provincially and federally by the AUC and the Canada Energy Regulator ("CER"), respectively, and there are regulatory approvals authorizing its construction and operation from both regulators.[36] The US portion of the transmission line was constructed and is operated in accordance with a US Presidential Permit issued by the US Department of Energy and held by MATL LLP.[37]

20. Unlike other transmission facilities in Alberta, MATL is a merchant transmission line. As the former Alberta Energy and Utilities Board ("EUB") confirmed in Decision 2008-006 approving MATL, "[a]ll costs of the MATL project will be borne by private investors and not Albertans. The identified 'need' associated with this merchant transmission project is different than that required for conventional projects. … A merchant transmission line sells rights to its capacity to the highest bidder. Fundamentally, it is a 'user pay' concept and no financial burden is transferred to ratepayers."[38] Unlike other transmission facility owners in Alberta that are rate-regulated on a cost of service basis, MATL is a fully "at-risk" service provider and is not compensated by Alberta ratepayers for its costs, including its capital investment risk.

21. MATL itself is a competitive electricity market participant, and electricity transmitted across MATL and imported into Alberta competes with electricity flowing across Alberta's other interties, as well as with domestic generators in Alberta's competitive electricity market.

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[36] MATL was constructed and is operated under CER Permit EP-301 and AUC Transmission Line Permit and Licence No. U2010-404.

[37] United States Department of Energy, Office of Electricity Delivery and Energy Reliability, Presidential Permit No. PP-399.

[38] EUB Decision 2008-006, Montana Alberta Tie Ltd., 230-kV International Merchant Power Line Lethbridge Alberta to Great Falls Montana (January 31, 2008) [*EUB Decision 2008-006*] at p. 55.

C. Interties, Available Transfer Capability, and AUC Decision 2013-025 Regarding Objections to ISO Rules Section 203.6

22. A FEOC electricity market depends upon open and unconstrained access to that market. The Government of Alberta always understood that interties and access to markets beyond Alberta's borders would be important to realizing a FEOC electricity market. Accordingly, when considering the transmission system during deregulation, Alberta Energy published a transmission development policy paper in November 2003 in which it noted:

> Inter-ties are essential to a well-functioning market structure. Alberta is integrated with the electric systems of our neighbours. Transmission policy and the regulatory environment must facilitate open access to larger markets, while ensuring that Alberta's needs are met.
>
> …
>
> Transmission internal to Alberta should be reinforced so that under normal conditions, the existing inter-ties can import and export power on a continuous basis, in accordance with their design capability.[39]

23. These policy statements found their way into the *EUA* and *TReg* in express requirements, including, that the AESO provide non-discriminatory system access service,[40] that it prepare a transmission system plan that projects the transmission facilities required to meet imports and exports of electricity,[41] that it facilitate the operation of the electricity market in a manner that gives all electricity market participants wishing to participate in Alberta's electricity market a reasonable opportunity to do so,[42] and that it make arrangements to restore each intertie that existed on August 12, 2004 to, or near to, its path rating.[43]

24. There is no indication that the Government of Alberta's view of the important role interties play in the Alberta market has changed. Indeed, in its recent green paper, "*Transmission Policy Review: Delivering the Electricity of Tomorrow*", the Ministry of Affordability and Utilities has stated:

> Electricity transmission connections to other jurisdictions, commonly referred to as interties, support the operation of the electricity system by providing the AESO with a level of flexibility to maintain system reliability by providing near immediate response to generator outages and intermittent generation. Alberta currently has three interties that facilitate the import and export of electricity, one with each of B.C., Montana, and

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39 Alberta Energy Electricity Business Unit, "Transmission Development *The Right Path for Alberta* A Policy Paper", November 2003 at pp. 3 and 9 of 19.

40 *EUA*, s. 33(1).

41 *TReg*, s. 10(1)(a)(iv)

42 *EUA* ss. 29, 17(b).

43 *EUA*, s. 16(1).

> Saskatchewan. Imports currently offer at $0 per megawatt hour (MWh) and exports offer at $999.99/MWh, and transmission access across the interties must be coordinated with other jurisdictions that currently dispatch hourly. On an annual basis, Alberta is currently, and has historically been, a net importer of electricity. Interties are an essential part of a competitive market as a means to import power when needed to maintain reliability, to export surplus energy for additional generator revenue, and to ensure that the competitive wholesale market functions effectively.
>
> …Interties play a crucial role in achieving affordability, reliability, and decarbonization. First, interties allow for more $0/MWh priced imports to access the Alberta market, putting downward pressure on the wholesale pool price by increasing competition and displacing high-cost generators. Next, interties can provide key grid balancing, load management, and reserve capacity services. Finally, interties can facilitate decarbonization by allowing for surplus intermittent clean electricity generated in other jurisdictions to flow into Alberta and provide an avenue for export revenue for surplus intermittent clean electricity generated in Alberta.[44]
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> [Emphasis added]

25. Not only do these statements reflect the current government's recognition of the value of interties to the AIES, but they are consistent with the government's recognition of Alberta and Canada's international trade obligations under CUSMA, which are further addressed below. What is less clear from the above statements is whether the government appreciates that the AESO has been using the interties to provide the AIES "with a level of flexibility to maintain system reliability by providing near immediate response to generator outages and intermittent generation", without their consent, without compensation, and by improperly limiting ATC such that import customers do not have a reasonable opportunity to access the market. In effect, the AESO is confiscating capacity on MATL to maintain the reliability of the AIES, which faces system-wide limitations that have worsened under its watch.

26. There are a number of terms relevant to understanding the system limitations that result in the unfair and discriminatory treatment of the interties and import customers. Each intertie has a "path rating," which is the rating to transfer electric energy that is assigned to the transmission facility when it was placed in service and rated in accordance with reliability standards in effect at that time.[45] MATL's AESO-determined path rating is 310 MW.[46] However, one or both of the jurisdictions connected by an intertie may not be able to safely and reliably send or receive electric

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44 Government of Alberta, Ministry of Affordability and Utilities, *Transmission Policy Review: Delivering the Electricity of Tomorrow* (October 23, 2023).

45 *TReg*, s. 1(1)(i).

46 Note that while the AESO assigned a path rating of 310 MW to MATL, the Western Electricity Coordinating Council ("WECC") accepted a path rating of 325 Southbound MW and 300 Northbound MW.

energy up to the path rating, so the maximum capacity for electric energy that can be transmitted on the intertie is often less than the path rating. The amount of electric energy that can be reliably transferred over an intertie is called the total transfer capability ("TTC").[47] However, that amount is then further reduced by a transmission reliability margin ("TRM"), which is the amount of transfer capability the AESO determines is necessary to ensure reliable operation taking into account uncertainties in system conditions and the need for operating flexibility.[48] Ultimately, the AESO determines the commercially available transfer capability (*i.e.*, ATC) by taking the TTC minus the TRM.[49]

27. Notwithstanding the AESO's obligation to restore the BC-AB intertie and to plan and expand the system to meet reliability standards and so that it is relatively constraint-free, because of unremediated AIES constraints, the interties and import customers are subject to a scheme of pro-rata ATC allocation in accordance with ISO Rule Section 203.6, *Available Transfer Capability and Transfer Path Management* (the "ATC Rule").[50] The ATC Rule was intended as "a methodology for allocating ATC between interties when there is a simultaneous limit and there is more demand for ATC than there is capacity."[51] The AESO has determined that MATL and the AB-BC intertie share a common path rating for the purposes of ATC allocation because they currently both operate with alternating current. Accordingly, after initially making all the subtractions for AIES reliability constraints, the remaining ATC is then allocated between MATL and the AB-BC on a pro-rata basis. Prior to the release of the Reliability Roadmap, the combined path of the AB-BC and MATL interties had 550 MW of import ATC prior to arming of LSSi. It is now routinely limited to 325 MW, which represents less than 30% of its combined TTC.

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47 "Total Transfer Capability" is defined at p. 38 of the AESO's *Consolidated Authoritative Document Glossary* as meaning "the amount of real power the ISO determines can be reliably transferred over the interconnected transmission network under specified system conditions."

48 AESO, *Consolidated Authoritative Document Glossary* at p. 39. Calculations of the TRM in respect of the interties is complex and is further outlined in Information Document, Available Transfer Capability and Transfer Path Management, ID #2011-001R. For the interties, the TRM is composed of the system transmission reliability margin (TRM_S) for variations due to balancing of generation and load on the interconnected electric system plus the allocation transmission reliability margin (TRM_A) associated with joint operation of the transfer paths in the presence of a combined system operating limit.

49 "Available Transfer Capability" is defined at p. 4 of the AESO's *Consolidated Authoritative Document Glossary* as meaning "the remaining transfer capability the ISO determines can be commercially available for transfers over the interconnected transmission network over and above already committed uses, and is calculated as the total transfer capability minus the sum of any applicable transmission reliability margin and existing transmission commitments." As outlined at p. 5 of ID #2011-001R, ATC = TTC - (TRM_S + TRM_A).

50 AESO, ISO Rules Section 203.6, *Available Transfer Capability and Transfer Path Management*.

51 AUC Decision 2013-025, Alberta Electric System Operator, Objections to ISO rules Section 203.6 Available Transfer Capability and Transfer Path Management (February 1, 2013) [*Decision 2013-025*] at para 21.

28. The Commission had occasion to consider the ATC Rule and important issues respecting the place of interties and imports in the overall legislative scheme and Alberta electricity market in Decision 2013-025 regarding objections to the ATC Rule ("*Decision 2013-025*").[52] In that proceeding, the AESO took positions and the Commissions made findings that bear on the issues raised in this complaint. The key portions of *Decision 2013-025* for the purposes of this complaint are found at paragraphs 83-107, which BHE Canada commends to the Commission for its review. Most significantly, the Commission concluded that the "reasonable opportunity for system access applies equally to generators and interties."[53]

29. In summary, the AESO's position regarding the treatment of interties and their access to the AIES, which was accepted by the Commission, was:

(a) that a plain reading of the definitions of "transmission system", "interconnected electric system", "transmission facility" and "intertie" make clear that interties are part of Alberta's transmission system and mandate the AESO to include interties when planning for an unconstrained transmission system in accordance with s. 15(e) of the *TReg;*[54]

(b) that several sections of the governing legislation support treating imports and exports the same as other supply and demand transactions in the market, including ss. 5(b), 17(b), 18(1) of the *EUA*;[55]

(c) that several sections of the governing legislation indicates that the AESO is supposed to facilitate open access for interties, including sections 29 and 17(c) of the *EUA* and sections 15(e) and (f) of the *TReg;*[56]

(d) that in fulfilling its duties under ss. 15(1)(e) and 15(1)(f) of the *TReg* to plan and make arrangements for a congestion free transmission system for all anticipated in-merit electric energy, the AESO must take notice of the fact that there is

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52 *Ibid*.

53 *Ibid* at para. 92.

54 *Ibid* at para. 46.

55 *Ibid* at para. 83. In its evidence, the AESO stated "to the extent possible, industry suppliers with import capacity should be treated the same as intra-Alberta generators": See Exhibit 0145.02, AESO Evidence, June 15, 2012, pages 5-7.

56 *Ibid* at para. 85.

underutilized transmission capacity on the interties due to system limitations that restrict imports and exports. It interprets the legislation and regulatory scheme to require that imports and exports up to the path rating of each intertie should be considered as anticipated in-merit electric energy, with the result that it must plan the transmission system so that every intertie (both existing and future) can simultaneously transfer up to its path rating.[57]

30. The Commission accepted the AESO's position, finding:

> 50. The Commission finds that the Alberta portions of the interties are transmission facilities which are physically and electrically connected to the rest of the interconnected electric system and thus are part of the Alberta interconnected electric system and the transmission system as defined in the *Electric Utilities Act*. As such, the AESO has the same general responsibilities for interties that the AESO has for the interconnected electric system and the transmission system within Alberta. Further, legislative provisions applicable to transmission facilities in Alberta and the interconnected electric system are applicable to Alberta portions of the interties.
>
> …
>
> 87. The definition of market participant includes a person who transmits electricity or electric energy (an intertie operator) and a person who trades, purchases or sells electricity or electric energy (shippers on the interties). Thus it is clear to the Commission that the AESO's statutory duty is to provide both intertie operators and shippers with system access service that gives them a reasonable opportunity to access the AIES and by extension to the power pool.
>
> …
>
> 91. Regarding arguments made in this proceeding about treating interties and generators differently, the Commission is not persuaded to treat imports and exports differently than other supply and demand transactions in the market, having regard to clear reference in the Electric Utilities Act to Section 5(b) to "all persons wishing to exchange electric energy", Section 17(b) to "all market participants wishing to participate in those markets" and in Section 18(1) to "all market participants exchanging or wishing to exchange". <u>The Commission considers the AESO is correct in treating interties in the same manner as generators for the purposes of providing system access service and access to the power pool.</u>
>
> …
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> 105. If a market participant has made an investment in infrastructure in order to connect to the AIES, for example an intertie, it is clear to the Commission that the market participant wishes to exchange electric energy with the AIES. <u>In providing system access service the AESO must meet its legislated requirements regarding all in-merit or scheduled electric energy while also taking into account electric energy that is reasonably expected to be in-merit or scheduled. In this regard the Commission sees no distinction between an intertie and a generator</u>.
>
> …
>
> 129. The Commission finds that development of more interties and import capacity and the resulting prospects of increased power supply in the future from outside Alberta is more likely to achieve greater economic efficiency in the Alberta power market. Further, it is likely to result in public benefit for the consumers through increased competition.[58]
>
> [Emphasis added]

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[57] *Ibid* at paras. 102-104.

[58] *Ibid* at paras. 87, 91, 102 and 129.

31. In short, there can be no doubt that the reasonable opportunity for system access applies equally to generators and interties — they are to be treated in the same manner for purposes of system access service and access to the power pool. These findings of the Commission were subsequently upheld by the Alberta Court of Appeal in *Saskatchewan Power Corporation v Alberta (Utilities Commission)*.[59]

32. Despite its clear representations to the Commission, the AESO has not conducted itself in a manner consistent with its sworn evidence or the Commission's findings in *Decision 2013-025*. It does not treat interties in the same manner as generators for the purposes of providing system access service and access to the power pool. Unremediated AIES constraints as a result of both reliability concerns and congestion mean that in any given hour, MATL is not being permitted by the AESO to transmit as much in-merit energy into Alberta as its customers request, or as much as its physical facilities are capable of transferring. Through no fault of MATL, and because of the interconnection of numerous renewable projects over time and lack of proper planning, ATC has dramatically declined to a point where it simply cannot be reasonably argued that interties and import customers are being afforded a reasonable opportunity to participate in the Alberta electricity market. Additionally, curtailing imports prior to generators when there is congestion or supply surplus is discriminatory.

D. The June 7, 2020 Event and Known Generator Governor System Failures

33. Before addressing the Reliability Roadmap, it bears noting that nearly three years prior to its release, there was an under-frequency load shedding ("UFLS") event on June 7, 2020 during which approximately 400 MW of load was shed when the AB-BC and MATL interties tripped as a result of a lightning strike on the BC side of the 1201L BC intertie. At the time, there was a high level of import flow over the combined AB-BC and MATL interties as well as significant wind generation output. In its presentation to stakeholders, the AESO advised that the reasons for the AIES "under-performance" was low inertia on the system and the failure of generators to meet governor system requirements set out in the ISO rules.[60]

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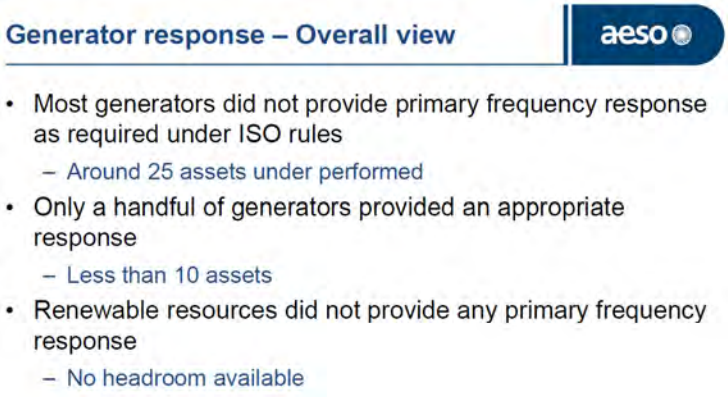
[59] *Saskatchewan Power Corporation v Alberta (Utilities Commission),* 2015 ABCA 183 at paras. 42-43.

[60] AESO, Available Transfer Capability Risk Mitigation Measures Overview Information Session (July 28, 2020) at pp. 18, 36.

34. More particularly, under Section 502.5 of the ISO rules, *Generating Unit Technical Requirements*,[61] all transmission connected generators greater than 10 MW are required to have a continuously acting governor in service and which is responsive to system frequency excursions:

> **Frequency and Speed Governing Requirements**
>
> **9(1)** A **generating unit** with a **maximum authorized real power** equal to or greater than 10 MW must have a continuously acting **governor system**, which must be designed:
>
> (a) to be continuously in service, free to respond to frequency changes and controlling the response to frequency changes while the **generating unit** is electrically connected to the **transmission system** and is producing any **real power** as measured at the generator stator winding terminals;
>
> (b) with a droop setting equal to or greater than 3% but less than or equal to 5%;
>
> (c) with a deadband, intentional plus unintentional, not exceeding plus or minus 0.036 Hz; and
>
> (d) with the capability of manual setpoint adjustments within a range of 59.4 Hz and 60.6 Hz.
>
> **(2)** A **generating unit** must be designed not to trip for under-frequency and over-frequency deviations for the minimum time frames as set out in Appendix 3.

35. As outlined in its presentation, the AESO determined that most generators did not provide the frequency response as required under ISO Rules Section 502.5:[62]



36. Despite what appears to have been numerous contraventions of an ISO rule, which the AESO is obligated to refer to the MSA for enforcement, BHE Canada has not been able to find any indication in the MSA's public reports that these contraventions were referred to the MSA for enforcement action. As outlined further below, the ongoing failure of generators to provide required frequency response, and of the AESO to require renewable resources to provide any frequency response, is causing or contributing to the reliability concerns that have resulted in the

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61 AESO, ISO Rules Section 502.5, *Generating Unit Technical Requirements*, s. 9.

62 *Ibid* at p. 36.

significant degradation of ATC. In effect, the interties are inequitably bearing the brunt of system-wide AIES reliability concerns. Moreover, despite having clear knowledge of these concerns, the AESO appears to have failed in a timely manner, or at all, to implement any meaningful solutions to address the frequency stability concerns identified in the wake of the June 7, 2020 event as they only worsened by March 2023.

37. Should the AESO, in response to this complaint, indicate that it is now advancing initiatives to require better frequency response from generators and to require renewable resources to provide frequency response, BHE Canada submits that Commission oversight is required to ensure the proper scope and timing of implementation of such steps. It has been nearly a year since the release of the Reliability Roadmap and BHE Canada has seen no meaningful progress or amelioration of the significantly reduced ATC.

E. Reliability Roadmap and Revisions to LSSi Arming Tables in Information Document #2011-001R

38. The AESO released its Reliability Roadmap on March 10, 2023. It was prepared by the AESO to assess operational challenges anticipated to arise from the transformation of the AIES in response to decarbonization. It documents the results of reliability assessments for historical and a number of future scenarios in the areas of primary frequency response, system strength, and flexibility capability.[63] Of course, that transformation is not beginning now; it has already been underway in Alberta for a number of years and the AESO has had knowledge of frequency response concerns arising from increasing volumes of inverter-based resources ("IBRs"), variable wind and solar generation, and reduced volumes of dispatchable, synchronized generation dating back at least to June of 2020.

39. Relevant to the present complaint are the findings in Section 3 and Appendix A of Reliability Roadmap in respect of frequency stability, which the AESO has identified as its "highest priority" as it found existing frequency-related operational challenges requiring immediate action to reduce frequency stability risk.[64] The AESO explains frequency stability as follows:

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63 Reliability Roadmap, *supra* at pp. 2 and 8.

64 *Ibid* at p. 2.

> Frequency stability is the ability of the grid to maintain sufficient frequency and recover to normal operating frequency following the sudden loss of a large supply source. Frequency stability is driven by system inertia and primary frequency response from supply sources and load. System inertia primarily impacts how quickly frequency falls after a contingency, while primary frequency response primarily impacts how far the frequency falls and how quickly the system stabilizes. To ensure the stability of the overall grid and to maintain compliance with reliability standards aimed at protecting the North American grid, the AESO must operate the system such that the Under-frequency Load Shedding (UFLS) protection system, designed to prevent cascading outages due to under-frequency conditions, is not expected to be triggered within system planning criteria. UFLS can be triggered if frequency drops too low immediately following a contingency or does not recover to a high enough level in sufficient time.[65]

40. The AESO notes that the ability to ensure real-time frequency stability is heavily dependent on the generation supply mix and load conditions. The higher the proportion of IBRs supplying renewable power and the lower the Alberta internal load demand, the more difficult it is for the AIES to provide sufficient frequency response.[66] The AESO explains that frequency stability is dependent on the ability to deploy sufficient frequency response mechanisms to arrest and recover from frequency changes caused by sudden supply loss. Such losses can arise as a result of an unplanned failure of system components, such as an internal generator or a transmission line, or as result of import loss from an AC intertie (*i.e.*, the BC or MATL interties). Insufficient frequency response in the AIES can lead to generator trips, UFLS activation or even BC and MATL intertie cascading trips.[67]

41. Based on its existing operational experience, the AESO notes:

> The capability of the AESO to arrest frequency decay without activating UFLS is being impacted by Alberta's changing generation supply mix and its inherent inertia and primary frequency response capabilities. Due to insufficient primary frequency response capabilities, UFLS was activated several times in 2020 and 2021. These UFLS activation events were triggered by the tripping of generation in Alberta while operating in islanded mode and/or tripping of the interties while interconnected with the Western Interconnection.[68]

42. As explained in the Reliability Roadmap, primary frequency response is the immediate proportional increase or decrease in real power output provided by generating units and the natural real power dampening response provided by load in response to system frequency deviations. It acts to stabilize system frequency following a disturbance causing an under- or over-frequency excursion and is typically controlled by a generator's governor which responds in the form of a

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65 *Ibid*.

66 *Ibid* at p. 15.

67 *Ibid* at p. 16.

68 *Ibid* at p. 24.

change in electrical output proportional to the ongoing frequency deviation and continues until frequency is within the deadband. The response occurs within the first few seconds after a frequency excursion and continues until frequency has been fully restored with the help of regulating reserve and contingency reserves, which are considered to be secondary and tertiary frequency response.[69] These are system-wide issues associated with the performance of intra-Alberta generators and load.

43. Based on the assessments it performed, the AESO concluded that "Alberta's changing generation supply mix is significantly impacting the AESO's ability to manage frequency stability and avoid UFLS in both the immediate term and over the longer term, given that IBRs do not provide frequency response in the same way as conventional generators." The AESO went on to note that there is "an urgent need to mitigate the risk of UFLS activation due to the sudden loss of a large supply source" and that "Primary frequency response (PFR) is the primary driver impacting frequency stability within the next 10 years."[70] Despite identifying a number of potential mitigation measures to address these concerns, most of which would be directed at the underlying cause of the problem (*i.e.*, generator PFR), the only immediate step taken by the AESO was to further increase required arming levels of LSSi needed to support import ATC on the BC and MATL interties.[71]

44. BHE Canada had hoped these issues would be comprehensively canvassed and addressed by the Commission in Module B of the inquiry into the ongoing economic, orderly and efficient development of electricity generation in Alberta. Module B was convened for the Commission to address article 1(e) of the terms of reference set out in the Schedule to Order in Council 173/2023,[72] which provides the AUC would inquire into "the impact the increasing growth of renewables has to both generation supply mix and electricity system reliability" (emphasis added).[73] The Commission, however, has established a narrow scope for Module B in which parties are limited in responding only to two expert reports prepared by experts retained by the Commission to consider "electricity system reliability" only with respect to supply adequacy and not operational

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69 *Ibid* at p. 21.

70 *Ibid* at p. 27.

71 *Ibid* at p. 29 and 32.

72 OIC 173/2023.

73 *Ibid*, Schedule, s. 1(e).

reliability.[74] That is, only half of the full system reliability picture is being considered in that proceeding and it is not the half that the AESO has identified as its highest priority (*i.e.*, frequency response), which it indicated "has been declining due to increasing inverter-based wind and solar generation and decreasing coal or natural gas generation synchronized to the grid."[75]

45. Coincident with the release of the Reliability Roadmap, without notice or consultation, the AESO released a revised version of Information Document, Available Transfer Capability and Transfer Path Management ID #2011-001R ("ID 2011-001R")[76] to take effect March 15, 2023. Though it is not an "authoritative document", ID 2011-001R sets out all of the calculations made by the AESO to determine ATC for purposes of application of the ATC Rule and ISO Rules Section 303.1, *Load Shed Service*.[77] The revised ID 2011-001R included changes to Tables 7a and 7b setting out significantly increased minimum levels of LSSi that must be armed to support imports on the BC and MATL interties under normal and severe weather, respectively. For example, Table 7a for normal weather conditions now provides, in part:

Table 7a: Minimum Amount of Load Shed Service for Import Load Requirement (MW)

Minimum amount of load shed service for import load requirement is based on the combined British Columbia/Montana net import schedule and the Alberta internal load during normal weather conditions.

BC / MT Import ATC (MW) [2,3]	AIL (MW)[1]											
	7000 to 7499	7500 to 7999	8000 to 8499	8500 to 8999	9000 to 9499	9500 to 9999	10000 to 10499	10500 to 10999	11000 to 11499	11500 to 11999	12000 to 12499	12500 and above
Below 299	0	0	0	0	0	0	0	0	0	0	0	0
300 to 303	4	0	0	0	0	0	0	0	0	0	0	0
304 to 307	8	4	0	0	0	0	0	0	0	0	0	0
308 to 311	12	8	4	0	0	0	0	0	0	0	0	0
312 to 315	16	12	8	4	0	0	0	0	0	0	0	0
316 to 319	20	16	12	8	4	0	0	0	0	0	0	0
320 to 323	24	20	16	12	8	4	0	0	0	0	0	0
324 to 327	28	24	20	16	12	8	4	0	0	0	0	0
328 to 331	32	28	24	20	16	12	8	4	0	0	0	0
332 to 335	36	32	28	24	20	16	12	8	4	0	0	0
336 to 339	40	36	32	28	24	20	16	12	8	4	0	0
340 to 343	44	40	36	32	28	24	20	16	12	8	4	0
344 to 350	51	47	43	39	35	31	27	23	19	15	11	7
351 to 400	101	97	93	89	85	81	77	73	69	65	61	57
401 to 450	151	147	143	139	135	131	127	123	119	115	111	107
451 to 500	201	197	193	189	185	181	177	173	169	165	161	157
501 to 550	251	247	243	239	235	231	227	223	219	215	211	207
551 to 600	301	297	293	289	285	281	277	273	269	265	261	257
601 to 650	351	347	343	339	335	331	327	323	319	315	311	307
651 to 700	401	397	393	389	385	381	377	373	369	365	361	357
701 to 750	451	447	443	439	435	431	427	423	419	415	411	407
751 to 800	501	497	493	489	485	481	477	473	469	465	461	457

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74 Exhibit 28542-X0004, AUC letter - Expert Reports - Scope of Work (October 24, 2023). The limited scope was confirmed during a technical session held by the Commission on November 9, 2023.

75 *Ibid* at p. 3.

76 AESO, *Information Document, Available Transfer Capability and Transfer Path Management ID #2011-001R*, March 10, 2023 Revision ("ID 2011-001R").

77 AESO, ISO Rules Section 303.1, *Load Shed Service*.

46. The effect of requiring the arming of increased volumes of LSSi was to immediately and dramatically reduce available import ATC. As the MSA described it, "[t]he higher LSSi requirements mean that available capacity on the BC/MATL intertie has been reduced, lowering import supply, and putting upward pressure on pool prices".[78] Not surprisingly, immediately following the announcement of the increased LSSi arming requirements, forward prices increased.[79] It should also be noted that the AESO had already taken this step twice before, increasing the LSSi arming requirements in July of 2018[80] and again in June of 2020.[81] In short, this demonstrates an ongoing decline in ATC.

47. Since March 15, 2023, BHE Canada's experience is that import ATC can be as low as 325 MW and averages approximately 415 MW of the 1110 MW TTC of the combined BC/MATL path, which reduction has been acknowledged by the AESO.[82] The beginning of this trend was reported by the MSA in its Q1 2023 Quarterly Report, in which it only had data for March 17 to 22, 2023, but noted:

> Effective March 15, 2023, the AESO increased the amount of LSSi required for a given BC/MATL import ATC. Figure 60 shows BC/MATL flows for March 17 to 22. During this period imports were constrained in 61 hours due to elevated pool prices. The average import ATC during these import-constrained hours was 427 MW according to the new LSSi requirements table, given the available LSSi and realized load level. Earlier in March, import ATC averaged 598 MW during hours of import constraint, or 171 MW higher. The revised LSSi tables reduce import ATC on BC/MATL, leading to more constrained hours and lower import supply.[83]
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> [Emphasis added]

48. The MSA has continued to provide updates on the worsening situation. In its Q2 2023 Quarterly Report, the MSA noted that "lower imports in Q2 were largely because of reduced import capacity on BC/MATL, resulting from more stringent requirements for Load Shed Service for imports (LSSi) that came into effect on March 15."[84] It went on to note that "BC/MATL was import constrained in 48% of hours and the average price differential between Alberta and Mid-C

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78 Market Surveillance Administrator, Q1 2023 Quarterly Report (June 2, 2023) at p. 8.

79 *Ibid* at p. 77.

80 AESO, Information Document, Available Transfer Capability and Transfer Path Management ID #2011-001R (July 20, 2018 Revision).

81 AESO, Information Document, Available Transfer Capability and Transfer Path Management ID #2011-001R (June 23, 2020 Revision).

82 The AESO has acknowledged this ATC curtailment impact in a presentation given on October 5, 2023: See AESO, *Frequency Response Program Stakeholder Session* (October 5, 2023) PowerPoint Presentation at p. 12.

83 *Ibid* at pp. 66-67.

84 MSA, Quarterly Report for Q2 2023 (August 15, 2023) at p. 10.

during these hours was $200/MWh. The average import capacity on BC/MATL during these constraints was 417 MW, which is down from 615 MW during constrained hours in January and February."[85] In its Q3 Quarterly Report, the MSA noted that "BC/MATL was import constrained in 16% of hours of Q3, and the average price differential between Alberta and Mid-C during these hours was $279/MWh. The average import capability on BC/MATL during these constrained hours was 296 MW."[86]

49. If sufficient LSSi was procured by the AESO and if LSSi was consistently available for arming when required, increases to the arming tables set out in ID 2011-001R might not be so problematic. Unfortunately, the AESO has not procured sufficient LSSi and it is well aware that LSSi is often not available when it is needed (*i.e.*, high priced hours, when the price-sensitive loads providing LSSi are already offline and when zero-priced imports would have the greatest benefits to Alberta consumers by reducing the pool price).[87] In other words, while the arming tables in ID 2011-001R provide LSSi volumes for various load and import scenarios, the practical reality is that many of those scenarios are actually infeasible as that volume of LSSi either has not been procured or would not be available when needed. Concerns about both the total volumes of LSSi and its availability have repeatedly been noted by the MSA. For example:

(a) In its Q2 2018 Quarterly Report, the MSA noted:[88]

> One of the main reasons that LSSi does not provide more value to the market is that most of the LSSi providers are price-responsive loads that actively monitor pool price levels in real-time. Before pool prices increase beyond a certain level, most of these LSSi providers have removed their offers to supply LSSi and instead curtailed their consumption in order to avoid the high prices. This means that the AESO cannot arm LSSi to increase the flow of imports when they are most valuable (i.e. when pool prices are high and the supply cushion is low). Instead, LSSi typically allows for more imports to flow when there is a relatively modest differential between pool prices and power prices in Mid-C; for example when pool prices are in the $30-$40/MWh range and Mid-C prices are $10-$20/MWh. At these times there is typically plenty of supply available in Alberta. This serves to limit the value that LSSi can provide from a market perspective.

(b) In its Q2 2020 Quarterly Report, the MSA noted:

> On June 7, 2020, a frequency excursion in Alberta occurred after lightning struck the BC interconnection. Subsequently, AESO has revised upwards the amount of LSSi it will use to support high imports on the BC/MATL interconnection. In the near future, import volumes will be limited

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85 *Ibid* at p. 62.

86 MSA, Quarterly Report for Q3 2023 (November 15, 2023) at p. 64.

87 The AESO has acknowledged the flawed design of LSSi: See AESO, *Frequency Response Program Stakeholder Session* (October 5, 2023) PowerPoint Presentation at p. 15.

88 Market Surveillance Administrator, Q2 2018 Quarterly Report (August 3, 2018).

on occasion as the volume of LSSi currently contracted by AESO is insufficient to meet requirements at high levels of imports.

(c) In its Q1 2021 Quarterly Report, the MSA noted:[89]

Subsequent to this, the AESO revised the normal weather table so that more LSSi is now required for a given level of demand and imports, in order to lower the risk of further frequency events. The increased LSSi requirements effectively reduce the amount of imports that can flow, particularly when higher pool prices are expected. This is because some LSSi providers are also price-responsive loads that are typically not consuming when prices are elevated and then not available to provide LSSi. The reduced import Available Transfer Capability (ATC) was another factor putting upward pressure on pool prices for some hours in late February and March.

(d) In its Q2 2021 Quarterly Report, the MSA noted:[90]

In hours when the Alberta pool price was materially higher than Mid-C, there were generally 600-700 MW of imports. Import transmission capacity during high pool price hours is often constrained by the availability of LSSi. The availability of LSSi can decline when pool prices are high because some LSSi providers are price-responsive loads that reduce their consumption when prices rise.

…

Table 5 shows the average availability of LSSi in Q1 and Q2 2021. In hours when the pool price was under $100/MWh in Q1 2021, the average amount of LSSi available to the AESO was 198 MW. In higher priced hours the available volume of LSSi was lower, 85 MW on average or 57% lower. In Q2 2021 the same trend was evident; in hours when the pool price was greater than or equal to $100/MWh the availability of LSSi fell by 46% compared to lower priced hours. This pattern occurs because some LSSi providers are price-responsive loads that reduce their consumption when pool prices are relatively high and therefore they are not in a position to offer LSSi at these times.

Table 5: Average LSSi available and armed volumes, by pool price (Q2 and Q1 2021)

	Q1 2021		Q2 2021	
	PP < $100	PP >= $100	PP < $100	PP >= $100
Armed (MW)	102	66	75	79
Available (MW)	198	85	183	99
Utilization (%)	51%	78%	41%	80%

(e) In its Q3 2022 Quarterly Report, the MSA noted:[91]

The average volume of net imports into Alberta during Q3 decreased by 13% compared to Q2, even though average pool prices were 81% higher. The reduced import flows in Q3 were largely the result of reduced available transmission capability (ATC) for imports to flow into Alberta.

[Emphasis added]

50. The AESO currently has contracted only 366 MW of LSSi until December 31, 2024.[92] As discussed further below, the AESO conducted a pilot of a service called Fast Frequency Response

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89 Market Surveillance Administrator, Q1 2021 Quarterly Report (May 14, 2021) at pp. 11-12.

90 Market Surveillance Administrator, Q2 2021 Quarterly Report (August 13, 2021) at pp. 18 and 20.

91 Market Surveillance Administrator, Q3 2022 Quarterly Report (November 15, 2022) at p. 35.

92 Market Surveillance Administrator, Q2 2021 Quarterly Report (August 13, 2021) at p. 20; see also https://www.aeso.ca/market/market-participation/ancillary-services/load-shed-service-for-imports/

("FFR"), which is an umbrella term the AESO now uses covering any fast-acting transmission reliability service that facilitates the arrest of, and recovery from, frequency decay, including LSSi. The FFR Pilot, however, was to assess the capability of new technologies, including Battery Energy Storage Systems ("BESS"), to help arrest and stabilize under-frequency excursions to mitigate the impact of a sudden supply loss.[93] Since conducting the FFR Pilot, the AESO has indicated that it has only procured 80 MWs of new FFR, and that it is only contracted until September 1, 2024.[94] The AESO has also noted that any new FFR to be procured will only have a contract term of 12-18 months.[95] These updates were provided by the AESO on February 1, 2024 and are concerning to BHE Canada, which has not seen any meaningful increase in ATC since the AESO procured the 80 MW of new FFR. Respectfully, the AESO's efforts over the past year do not meaningfully address the significant curtailment of ATC on the interties. The pace and scope of the AESO's efforts to address the dramatically reduced ATC on MATL are entirely out of proportion to the impacts being suffered by MATL, its import customers, and Alberta ratepayers as a result of the AESO's failure to meet its legislative obligations.

F. Increased Curtailments of ATC and Impacts to Alberta Consumers

51. Since the Reliability Roadmap was released and revised ID 2011-001R came into effect on March 15, 2023, BHE Canada has seen significantly greater volumes of import volumes on MATL curtailed due to inadequate LSSi/FFR availability. Below is a table setting out import volumes that actually flowed over MATL and that have been curtailed over the period from February 2023 to the end of December 2023. As outlined in the table below, over the period from March 15 to December 31, 2023, 241,179 MWh of zero priced imports (i.e., in-merit electricity) did not flow over MATL because of the AESO's failure to ensure that the breadth and depth of reliability support services available to it are adequate. Moreover, as outlined in the Reliability Roadmap, the AESO anticipates the frequency stability concerns that are being mitigated by reduced ATC on the BC and MATL interties will only worsen over time as more and more IBRs are connected to the AIES.

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93 AESO website: https://www.aeso.ca/market/market-participation/ancillary-services/fast-frequency-response/

94 This was confirmed during the Q&A portion of Fast Frequency Response Information Session held on February 1, 2024.

95 AESO, *Fast Frequency Response Information Session* (February 1, 2024) PowerPoint Presentation at p. 40.

Imports into AB	**Feb**	**Mar 1-14**	**Mar 15-31**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Volume of Energy that actually flowed on MATL for the time period (MWh)	58,508	41,546	52,808	86,959	96,777	88,252	81,997	70,330	73,748	62,492	64,312	32,433
Volume of Energy that was curtailed and therefore did not flow on MATL, but could have had there been adequate LSSI/FFR (MWh)	5,017	2,086	11,204	14,536	103,449	41,226	14,749	28,436	9,219	7,213	9,166	1,981
Proportion of curtailed energy in relation to what actually flowed	9%	5%	21%	17%	107%	47%	18%	40%	13%	12%	14%	6%

52. MATL and the import customers who flow their electricity over MATL are seriously prejudiced by these curtailments. While the foregoing table may appear to show some improvement in the situation toward the end of 2023, in fact, it simply reflects that MATL's northbound customers have dramatically reduced their gross import offers into Alberta because of the unpredictability of ATC. Accordingly, while MATL's customers are experiencing significant financial losses, the most significant harm is being suffered by Alberta consumers who are paying significantly more for their electricity than they should be as a result of these curtailments and reduced imports.

53. BHE Canada prepared an analysis of the pool price implications of the increased LSSi arming requirements and associated curtailments, which is attached hereto as Appendix "A". BHE Canada considered what the impact on pool price would have been had the revised LSSi arming table set out in ID 2011-001R been in place throughout 2022. This analysis was undertaken using 2022 data published by the AESO. It added the reduction in imports as a result of the increased LSSi arming requirements to the implied load to find the adjusted market clearing price on the hourly merit curve. The results of its analysis show that 715 GWh would have been curtailed and Alberta consumers would have paid an additional $2.8 billion for their electricity in 2022 if the revised LSSi arming tables had been in place.[96]

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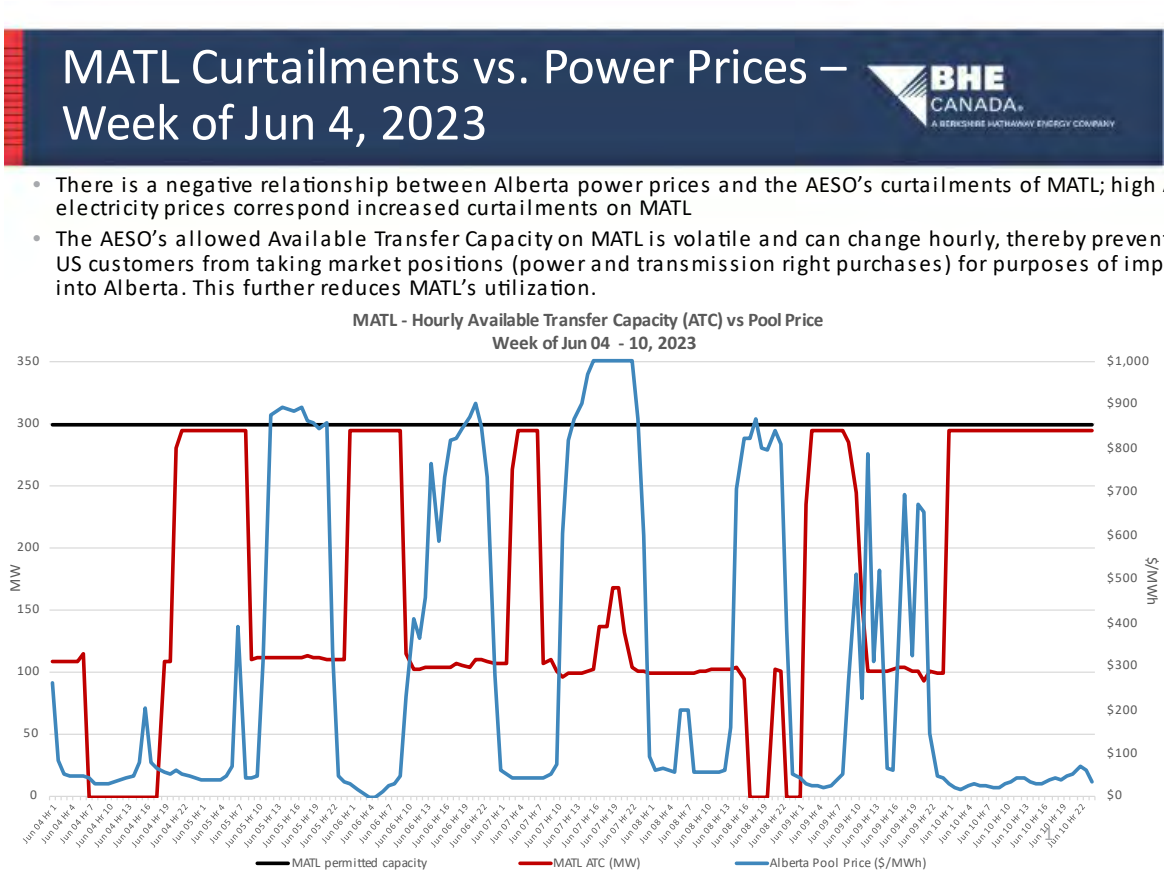
[96] Analysis of Pool Price Impacts of Increased LSSi Arming Requirements under ID 2011-001R and Associated Curtailments **[Appendix A]** at pp. 1 and 8.

54. This significant incremental cost to customers arises because ATC is at its lowest when pool prices are at their highest by virtue of the existing design of LSSi. This inverse relationship is shown in the graph below depicting MATL ATC versus pool price during the week of June 4, 2023:



55. At a time when affordability is a major concern of Alberta electricity ratepayers, BHE Canada respectfully submits that the Commission cannot ignore economic harm of the magnitude that is arising as a result of the increased curtailment of $0 import flows on the BC and MATL interties. Accordingly, BHE requests that this complaint be promptly addressed by the Commission.

G. Alternative Mitigation Measures

56. Though the only immediate step taken by the AESO to address the frequency stability concerns described in the Reliability Roadmap was to increase the LSSi arming tables in ID 2011-001R, there are other potential mitigation measures that the AESO could have implemented and

should now be ordered to pursue on an expedited basis. Other potential mitigation measures were even identified by the AESO in the Reliability Roadmap:[97]

> In addition to the identified mitigation actions underway, the AESO has identified other possible solutions to address reliability challenges including:
>
> - Lowering MSSC limit
> - Installing sync condenser
> - Implementing synthetic inertia
> - Installing grid-forming technology
> - Requiring wider ride-through range
> - Specifying PFR performance
> - Procuring additional FFR services when required
> - Implementing fast-ramp product
> - Implementing FNDR procurement
> - Market design changes relating to unit commitment

57. Apart from "explor[ing] near-term procurement of additional FFR services" and developing a technology-agnostic FFR services procurement to be operational by the beginning of 2025,[98] the AESO does not appear to be promptly pursuing the other above-mentioned potential mitigations measures. It also does not appear to be procuring additional spinning reserves or requesting domestic generators to provide headroom, which are other mitigation measures that BHE Canada has suggested to the AESO.

58. Not only is the AESO's response inadequate and discriminatory, but it is also out of step with approaches taken long ago in other jurisdictions across North America to address the same type of frequency stability concerns. The FERC, for example, recognized the potential reliability impact of the evolving generation resource mix and issued FERC Order No. 842 in February of 2018 requiring new synchronous and non-synchronous generators to install PFR capabilities before they connect to the grid.[99] Two years prior, in FERC Order No. 827, the FERC also removed a previous exemption for wind generators from the requirement that all large generators design their generating facilities to provide 0.95 leading to 0.95 lagging reactive power at the point of interconnection (or high-side of the generation substation for wind resources) for reasons of transmission system reliability.[100] Accordingly, all non-synchronous generators must also have the capability to control their reactive power so that the power factor falls within 0.95 leading to 0.95

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97 Reliability Roadmap at p. 29.

98 *Ibid* at p. 32.

99 FERC Order No. 842, *Essential Reliability Services and the Evolving Bulk-Power System—Primary Frequency Response*, 162 FERC ¶ 61,128, (February 15, 2018).

100 FERC Order No. 827, *Reactive Power Requirements for Non-Synchronous Generation*, 155 FERC ¶ 61,277 (June 16, 2016).

lagging range. This may create headroom on the active power output that may be used for frequency response.

59. BHE Canada submits that the above FERC requirements should also be implemented in Alberta.[101] Moreover, to ensure that generators have the means to provide frequency response during a low-frequency event, they must not be operating at their maximum capability. Accordingly, the AESO should require that all generators provide headroom (*i.e.*, the difference between their maximum capability and the available capability after accounting for frequency response). Imposing a headroom requirement on generators would see them treated like interties whose ATC is also being withheld by the AESO for reasons of frequency response. This would see a sharing of the burden of the system-wide frequency stability concerns in a manner that is consistent with the fair efficient and openly competitive operation of the Alberta market. Alternatively, the AESO could consider procuring headroom as an ancillary service for which generators and the interties are compensated.

60. BHE Canada requests that the AESO be directed to pursue all of these potential mitigation measures, including any others that may exist, on an expedited basis and that it implement all feasible options by no later than July 1, 2024. As it currently stands, by limiting base ATC over the BC and MATL interties to a mere 325 MW, the AESO is effectively using the transmission capacity on interties to access reliability benefits (such as inertia and frequency response) located outside of the AIES without compensation, including to Montana power generators paid for by Montana ratepayers. By operating the interties with limited ATC, MATL is providing a benefit to the AIES by enabling automatic and instantaneous energy flow to Alberta from Montana (and the rest of the western grid) in the event of a sudden loss of supply in Alberta. Not only is the discriminatory and unfair, but it is tantamount to the confiscation of capacity from MATL, a

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[101] On October 19, 2023, the FERC released FERC Order No. 901, in which it directed the North American Electric Reliability Corporation ("NERC"), the FERC-certified Electric Reliability Organization, to submit new or modified Reliability Standards that address specific matters pertaining to the impacts of inverter-based resources on the reliable operation of the Bulk-Power System. That is, FERC is now moving even beyond FERC Orders 842 and 827 to have NERC address reliability gaps pertaining to IBRs in four areas: (1) data sharing; (2) model validation; (3) planning and operational studies; and (4) performance requirements: See FERC Order No. 901, *Reliability Standards to Address Inverter-Based Resources*, 185 FERC ¶ 61,042 (October 19, 2023). While the AESO has acknowledged FERC Order No. 901, and its intention to implement IBR Technical Requirements that are Industry standards including FERC Order No. 901, it has not indicated any specific requirements it intends to implement or provided any concrete timeline for same: See AESO, *Grid Reliability Update Stakeholder Information Session* (November 23, 2023) PowerPoint Presentation at pp. 23-24.

merchant intertie with customers who have contracted for use of that capacity. This action also interferes with the Negotiated Rate Authority granted to MATL LLP by the FERC.

H. Alberta Reliability Standards are Not Keeping Pace with NERC and are Contributing to the Discriminatory Curtailment of Imports

61. Alberta Reliability Standards are based on the reliability standards developed by NERC, an Electric Reliability Organization recognized by the Province of Alberta.[102] The AESO is a member of NERC and of the Western Electricity Coordinating Council ("WECC") and has entered into a Memorandum of Understanding with NERC and WECC that describes the relationship among the Parties, identifies how Alberta Reliability Standards will be adopted and approved in Alberta, and identifies how compliance monitoring and enforcement of Alberta Reliability Standards will take place within Alberta.[103] NERC is responsible for developing reliability standards that can have application in Canada and the United States. Before adopting reliability standards for Alberta, the AESO must consult with those electricity market participants that it considers are likely to be directly affected and forward the proposed reliability standards to the Commission for review, with the recommendation that the Commission approve or reject them.[104]

62. Among the reliability standards that have been adopted in Alberta are the transmission planning performance standards ("TPL Standards") that include:

(a) TPL-001-AB-0: System Performance under Normal Conditions;

(b) TPL-002-AB1-0: System Performance Following Loss of a Single BES Element;

(c) TPL-003-AB-0: System Performance Following Loss of Two or More BES Elements; and

(d) TPL-004-AB-0: System Performance Following Extreme BES Events.

63. The current Alberta TPL Standards are based on NERC standards developed in 2010. Since that time, the NERC TPL Standards have continued to be updated and revised in response to changes in the bulk electric system, and in response to various Orders issued by FERC. In that time frame, all transmission systems and balancing authorities adjacent to Alberta (including

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102 *Transmission Regulation*, ss. 19-20.

103 Memorandum of Understanding between NERC, WECC and the AESO (July 15, 2010).

104 *Transmission Regulation*, ss. 19(4) and (f).

MATL, Northwestern Energy, BC Hydro, and SaskPower) have all adopted and are subject to updated NERC TPL Standards, including a material update in 2013 approving the consolidation of these into a single standard ("TPL-001-4") using probabilistic planning criteria rather than deterministic planning criteria.[105] This adoption by other jurisdictions has lead to a more flexible transmission system with increased available transmission capabilities in those systems.

64. In addition to increased transmission capabilities, TPL-001-4 accepted that while an objective of the annual transmission planning assessments is to minimize the risk of non-consequential load loss following a planned event, there were circumstances in which non-consequential load loss could be used for the purpose of transmission planning and to restore system conditions during contingency events. Specifically, TPL-001-4 allows for non-consequential load loss of up to 75 MW.[106] If applied in Alberta, this buffer of 75 MW could, at least in part, be applied to the 325 MW limitation and LSSI requirements to further improve the import ATC of the combined BC/MATL interties. The AESO's failure to implement this change over the course of the last decade is contributing to its discriminatory treatment of the interties and import customers.

65. In each of the Alberta TPL Standards, Appendix 1 indicates that "loss of demand or curtailed firm transmission service transfers" are not permitted in the planning process for Category B conditions – event that results in the loss of a single system element. Loss of a single system element, considered a single contingency, constitute the most common form of power system contingency events. Not permitting any form of demand loss or transmission curtailment under a single contingency event creates a restrictive system with limited flexibility in managing common power system event. This lack of flexibility also creates a construct where additional load shed service is required to be purchased as there are no allowances in planning assessments with current Alberta transmission planning standards to have "built-in" non-consequential load loss, ultimately harming ratepayers. It should be noted that the ability to utilize non-consequential load loss is for limited circumstances (*e.g.*, avoiding cascaded/uncontrolled outages) so as to not plan a system that would operate in an unreliable manner.

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105 NERC, Standard TPL-001-4 – Transmission System Planning Performance Requirements.

106 *Ibid*, Table 1, footnote 12 at p. 12.

66. As stated in the AESO's Reliability Roadmap, the AESO has increased the required arming levels of LSSi/FFR to reduce the probability of UFLS being triggered, and has cited the Alberta TPL Standards as a reason for its actions.[107] As noted above, the requirement of increased arming levels of LSSi under the ID 2011-001R update in March 2023 is what has adversely affected the import ATC on the interties. In other words, the AESO is not simply failing to procure adequate LSSi/FFR to support ATC, but has also established the amount of LSSi/FFR required based on out of date reliability standards that inflate what is reasonably necessary to the detriment of the interties and import customers.

67. More recently, NERC TPL-001-4 has been revised to TPL-001-5.1, which took effect in the US on July 1, 2023, in response to increases in inverter-based resources on the bulk power system (*e.g.*, wind, solar, battery storage systems, and hybrid power plants).[108] In conjunction with revisions to MOD-032-1, there is now an increased requirement for modelling and transmission planning to account for the increase in inverter based resources within NERC jurisdictional entities on the bulk electric system. In Canada, the Saskatchewan Electric Reliability Authority adopted TPL-001-5.1 on July 1, 2023, while the British Columbia Utilities Commission has held adoption of TPL-001-5.1 in abeyance at this time.

68. To date, the AESO has failed to commence consultation with market participants on any of these updated NERC standards, and, consequently, has failed to bring forward any recommendations to the Commission to either approve or reject the NERC TPL Standards from either 2013 or 2023. BHE Canada submits that this failure to act in response to new and updated NERC TPL Standards for over a decade has contributed to a lower ATC on the interties, decreased reliability on the AIES, harmed Alberta electricity consumers through higher electricity prices, and harmed MATL's customers that have made capital investments in firm transmission rights between the United States and Alberta.

I. Further Unfair and Discriminatory Curtailment of Imports Under ISO Rules Sections 202.5 and 302.1

69. In addition to, and separate from, the unfair curtailment of the interties and import customers to address system-wide frequency stability concerns that the AESO has allowed to

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[107] Reliability Report, p. 18 at footnote 7.

[108] NERC, TPL-001-5.1 – Transmission System Planning Performance Requirements.

develop, MATL and its customers are also facing discriminatory curtailment in circumstances of transmission congestion or supply surplus. More particularly, under ISO Rules Sections 202.5 *Supply Surplus* (the "Surplus Rule")[109] and 302.1 *Real Time Transmission Constraint Management* (the "TCM Rule"),[110] MATL and the import interchange transactions over it are curtailed prior to intra-Alberta generators when there are transmission congestion constraints or states of supply surplus. The discriminatory treatment is plain on the face of the rules. For example, the TCM Rule provides:

> 2(1) Subject to subsection 3, the ISO must comply with the following procedures in the following sequence to mitigate a transmission constraint in the present, real time:
>
> (a) taking into account the constraint effective factors, determine the pool assets that would be effective in mitigating the transmission constraint and apply the appropriate procedure set out in this subsection 2(1) to those effective pool assets;
>
> (b) ensure that any pool assets effective in mitigating the transmission constraint are not generating MW above their maximum capability, by cancelling any related directives;
>
> (c) curtail by directives, any downstream constraint side service under ISO tariff rate schedules Rate XOS 1 Hour and Rate XOS 1 Month and any upstream constraint side service under ISO tariff rate schedule Rate IOS, that are effective in mitigating the transmission constraint;
>
> (d) curtail by directives, any loads receiving service under ISO tariff rate schedules Rate DOS 7 Minutes, Rate DOS 1 Hour and Rate DOS Term at the downstream constraint side of the transmission constraint, that are effective in mitigating the transmission constraint;
>
> (e) issue a dispatch to any pool asset that is under contract with the ISO to provide transmission must-run and that is effective in mitigating the transmission constraint at the downstream constraint side;
>
> (f) issue a directive for transmission-must run to any pool asset that is not under contract with the ISO to provide transmission must-run and that is effective in mitigating the transmission constraint at the downstream constraint side;
>
> (g) issue directives to curtail any pool assets that are effective in mitigating the transmission constraint at the upstream constraint side using the following additional procedures:
>
> (i) the ISO must curtail using the energy market merit order with the highest priced in merit offer from the pool asset effective in mitigating the transmission constraint being curtailed first, followed by the pool asset with the next highest priced in merit offer, if necessary, during the remainder of the then current settlement interval and the next two (2) settlement intervals;
>
> (ii) if there is a need to curtail two (2) or more such pool assets having equally priced offers, then the ISO must issue directives to the pool assets to curtail using a pro-rata methodology;

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[109] AESO, ISO Rules Section (the "Surplus Rule").

[110] AESO, ISO Rules Section 302.1 - Real Time Transmission Constraint Management (the "TCM Rule").

> (iii) if the transmission constraint persists on a continuous basis for longer than the remainder of the then current settlement interval and the next two (2) settlement intervals, then the ISO must reallocate the required curtailment, using a pro-rata methodology, to all pool assets having in merit offers that are effective in mitigating the transmission constraint;
>
> [Emphasis added]

70. It is clear under s. 2(1)(g) that the intent of the TCM Rule is to try to preserve as much as possible the FEOC operation of the electricity market even in times of congestion as it imposes a reverse merit order curtailment process for generating assets that are effective in mitigating the transmission constraint, with equally priced offers being curtailed on a pro-rata basis; however, zero priced imports have already been curtailed 4 steps prior. The result is that equally priced domestic generation (and possibly even higher priced domestic generation) is being dispatched in priority to imports contrary to the entire design of the Alberta competitive electricity market, in breach of the AESO's obligations under the *EUA*, and contrary to Canada's international trade obligations under the CUSMA.

71. Since the beginning of 2021, MATL has been curtailed pursuant to the TCM Rule in 105 hours:

Event Date	Affected Hours	Curtailed MWh (Excluding System TRM)
2021-01-30	1	138
2021-06-27	6	1,011
2021-06-28	11	1,580
2021-06-29	9	1,325
2021-07-01	1	157
2021-07-02	4	591
2021-07-03	9	1,309
2021-07-05	9	1,354
2021-07-06	1	145
2021-07-07	6	870
2022-10-07	1	121
2022-10-08	6	870
2022-10-10	4	1,015
2023-05-16	3	835
2023-06-19	5	895
2023-07-25	11	3,245
2023-07-26	14	4,130
2023-10-17	4	1,180
Grand Total	**105**	**20,771**

72. Most concerningly, at a time when base ATC on the BC and MATL interties is already routinely constrained to 325 MW, MATL is experiencing more and longer curtailments under the TCM Rule. This is exacerbating the economic harm to its customers and to Alberta ratepayers. The AESO has acknowledged that congestion is increasing, and the AESO's use of the TCM Rule

is becoming more frequent.[111] Moreover, there are a number of additional renewable energy projects that are currently in the AESO's connection queue that will be located in the South Area Transmission Constraint Management Area, with the result that MATL will experience more frequent congestion-related curtailments. This was confirmed in the AESO's recently released congestion heat maps resulting from their cluster study for various projects in the connection queue in the Southeast area, where MATL is located. It indicates that the transmission lines just north of MATL's terminus will be congested between 20-50% of all hours.[112] The AESO's cost reporting also shows that the costs of constraint management have been increasing dramatically year over year since 2021.[113]

73. The Surplus Rule, which addresses circumstances where $0 offers exceed system load, functions similar to the TCM Rule by imposing a sequence that sees IOS customers curtailed many steps prior to STS customers:

> 2(1) If during a current hour the ISO forecasts that the interconnected electric system will experience a state of supply surplus in the next hour, as evidenced by the in merit electricity supply consisting of only multiple $0 offers and the supply of electricity available from these offers exceeds the system load, then the ISO may curtail next hour import interchange transactions to balance system supply and system load.
>
> (2) Subject to subsection 2(3), if during a current hour the ISO determines that a state of supply surplus is imminent in the current hour or already exists, then the ISO must comply with the following procedures as may be required, in the following sequence, to balance system supply and system load:
>
> (a) initiate curtailment of import interchange transactions;
>
> (b) allow pool participants to submit bids to increase export interchange transactions within two (2) hours of the start of a settlement interval;
>
> (c) allow pool participants to submit offers to decrease import interchange transactions within two (2) hours of the start of a settlement interval;
>
> (d) allow pool participants to submit restatements reducing generating unit and aggregated generating facility output within two (2) hours of the start of a settlement interval;
>
> (e) issue, on a pro rata basis: (i) dispatches to generating units and aggregated generating facilities for partial volumes of flexible blocks of the $0 offers;

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111 AESO, Market Pathways Primer (August 1, 2023) at p. 5.

112 AESO, Southeast-SE-01 Congestion Estimate Heat Map (January 12, 2024).

113 The AESO Estimated Cost of Constraint Report shows the annual total estimated cost for hours showing the South Planning Region (in which MATL is located) as the location of the constraint grew from $0.5 million in 2021 to $1.8 million in 2022 and to $6.2 million in 2023.

> (f) if there are generating units and aggregated generating facilities with $0 offers for inflexible blocks stating volumes greater than their declared minimum stable generation, then issue directives to curtail those generating units and aggregated generating facilities to their declared minimum stable generation, starting with the generating units and aggregated generating facilities having the greatest difference in MW between the then current dispatch level and minimum stable generation and continuing in descending order until all those generating units and aggregated generating facilities have received directives; and
>
> (g) issue directives for any other necessary actions, including shutting down generating units and aggregated generating facilities, to ensure system reliability.
>
> [Emphasis added]

74. While it may not be immediately apparent why curtailing imports in hours when the pool price settles at $0 is problematic for import customers, it must be understood that the imported power may also be generating renewable energy credits, tax credits, or may be subject to contractual terms under power purchase agreements.

75. The AESO's view appears to be that curtailing imports prior to domestic generation is permissible because IOS is an opportunity service under the ISO tariff, whereas STS is a firm-like service under the AESO tariff. As discussed further below, there is no meaningful distinction between rates IOS and STS and no basis under the *EUA* or otherwise at law for the discriminatory treatment of imports. It is contrary to the *EUA* and the CUSMA that the AESO is only offering a lesser service to imports than it offers to generators.

76. In accordance with the AESO's process, MATL filed an ISO Rule Proposal on June 2, 2023 seeking amendments to the TCM Rule and the Surplus Rule that would see imports treated the same as Alberta generators (the "MATL Rule Proposal"). A copy of the MATL Rule Proposal is appended hereto as Appendix "B". The AESO rejected the MATL Rule Proposal. In a letter dated August 15, 2023, the AESO indicated that, "in the AESO's view, the current treatment of imports provides a 'reasonable opportunity' for intertie market participants to exchange electric energy." Further, without providing any supporting justification or analysis, the AESO simply asserted that its "current practices are compliant with the United States-Mexico-Canada Agreement and align with the AESO's duties to provide non-discriminatory system access service and promote a fair, efficient and openly competitive market."[114]

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[114] AESO Letter re "Alberta Electric System Operator Response to MATL Canada G.P. Inc.'s June 2, 2023 Rule Proposal" (August 15, 2023).

77. BHE Canada wrote the AESO further outlining its CUSMA compliance concerns and seeking a substantive response from the AESO.[115] The AESO refused to provide any further support for its views and simply repeated its previous assertion that "the current treatment of imports provides a "reasonable opportunity" for intertie market participants to exchange electric energy in a manner that is compliant with the United States-Mexico-Canada Agreement and the AESO's duties to provide non-discriminatory system access service and promote a fair, efficient and openly competitive market."[116] The AESO invited BHE Canada to participate in its Market Pathways Initiative to address its concerns respecting ISO Rules Sections 202.5 and 302.1, which it suggested would provide an opportunity for a more wholistic review. BHE Canada did participate in that process, however, the process proceeded on an expedited timeline with a narrower agenda than originally anticipated, which did not address interties or imports. The AESO's failure to meaningfully address BHE Canada's serious concerns regarding the AESO's discriminatory practices in curtailing the interties and import customers prior to Alberta generation has necessitated this complaint.

J. CUSMA Implications

78. Because MATL, unlike the BC intertie, is an international power line, regard must also be had for international trade issues and Canada's obligations under the CUSMA, which is the successor to NAFTA. The CUSMA came into effect on July 1, 2020 and was implemented pursuant to the *Canada-United States-Mexico Agreement Implementation Act*.[117] Not unlike the domestic principles of non-discriminatory system access service found under the *EUA*, the CUSMA embodies a number of key principles intended to ensure fair and non-discriminatory international trade practices. These include:

(a) **Non-discrimination with respect to goods:** under Article 2.3, both national and regional (*e.g.*, provincial) level governments must treat imported foreign goods from another party the same as equivalent domestic goods. Article 2.3(1), which applies to national governments, provides that "[e]ach Party shall accord national

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115 MATL Letter re AESO Response to MATL Canada GP Inc. Proposal to Amend ISO rules, Section 202.5, Supply Surplus and Section 302.1, Real Time Transmission Constraint Management (September 11, 2023).

116 AESO Letter re Alberta Electric System Operator Response to MATL Canada G.P. Inc.'s September 11, 2023 Rule Proposal Response (November 3, 2023).

117 *Canada–United States–Mexico Agreement Implementation Act*, S.C. 2020, c. 1.

treatment to the goods of another Party in accordance with Article III of the GATT 1994, including its interpretative notes …" Article 2.3(2), which applies to regional governments, provides that "[t]he treatment to be accorded by a Party under paragraph 1 means, with respect to a regional level of government, treatment no less favorable than the most favorable treatment that regional level of government accords to any like, directly competitive, or substitutable goods, as the case may be, of the Party of which it forms a part."

(b) **Non-discrimination with respect to services:** under Article 15.3, both national and regional (*e.g.*, provincial) level governments must treat foreign services and service suppliers from another party the same as equivalent domestic services. Article 15.3(1), which applies to national governments, provides that "[e]ach Party shall accord to services or service suppliers of another Party treatment no less favorable than that it accords, in like circumstances, to its own services and service suppliers." Article 15.3(2), which applies to regional governments, provides that "[t]he treatment to be accorded by a Party under paragraph 1 means, with respect to a government other than at the central level, treatment no less favorable than the most favorable treatment accorded, in like circumstances, by that government to services and service suppliers of the Party of which it forms a part."

(c) **Non-discrimination with respect to investment:** under Article 14.4, both national and regional (*e.g.*, provincial) level governments must treat foreign investors and investments from another party the same as domestic investors and investments. Article 14.4(1), which applies to national governments, provides that "[e]ach Party shall accord to investors of another Party treatment no less favorable than that it accords, in like circumstances, to its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments in its territory." Article 14.4(2), which also applies to national governments, provides that "[e]ach Party shall accord to covered investments treatment no less favorable than that it accords, in like circumstances, to investments in its territory of its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other

disposition of investments." And, Article 14.4(3), which applies to regional governments, provides that "[t]he treatment accorded by a Party under paragraphs 1 and 2 means, with respect to a government other than at the central level, treatment no less favorable than the most favorable treatment accorded, in like circumstances, by that government to investors, and to investments of investors, of the Party of which it forms a part."

(d) **Elimination of prohibitions and restrictions on imported goods:** under Article 2.11(1), CUSMA parties "shall [not] adopt or maintain any prohibition or restriction on the importation of any good of another Party … except in accordance with Article XI of the GATT 1994, including its interpretative notes …"

79. The CUSMA also specifically includes the Canada-United States side letter on energy, "Annex – Energy Regulatory Measures and Regulatory Transparency."[118] Included in the side letter are:

(a) **Article 4(2):** "Each Party shall endeavor to ensure that in the application of an energy regulatory measure, an energy regulatory authority within its territory avoids disruption of contractual relationships to the maximum extent practicable, supports North American energy market integration, and provides for orderly and equitable implementation appropriate to those measures."

(b) **Article 5(1):** "Each Party shall ensure that a measure governing access to or use of electric transmission facilities and pipeline networks: (a) accords access to those facilities and pipeline networks for the purposes of importation from another Party, that is neither unduly discriminatory nor unduly preferential; and (b) to the extent tolls, rates, or charges are set, assessed, approved, or subject to oversight by a Party, establish that any tolls, rates, or charges payable for that access are just, reasonable, and neither unduly discriminatory nor unduly preferential."

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[118] CUSMA, Annex – Energy Regulatory Measures and Regulatory Transparency ("Canada-United States Side Letter on Energy").

80. The above identified provisions reflect the "national treatment" principle of non-discrimination under international trade law, which mandates that foreign goods, services, and investments be treated no less favourably than domestic goods, services, and investments. They also reflect the "importance of enhancing the integration of North American energy markets based on market principles, including open trade and investment … to support North American energy competitiveness, security, and independence."[119] Finally, these provisions are also consistent with the AESO's statutory duty to have, and the Commission's obligation to ensure, an ISO tariff that is not unduly preferential or arbitrarily or unjustly discriminatory under s. 121(2)(b) of the *EUA*.

III. GROUNDS FOR THE COMPLAINT

A. Overview of AUC Jurisdiction and Powers

81. The Commission has authority to consider complaints in respect of ISO rules, under s. 25 of the *EUA*, and the AESO's conduct under s. 26 of the *EUA*. After hearing a complaint in respect of an ISO rule, the Commission may direct the AESO to change the ISO rule or a provision of the ISO rule[120] if it is satisfied that the rule is technically deficient, does not support the FEOC operation of the electricity market, or is not in the public interest.[121] In considering a complaint in respect of the AESO's conduct, the Commission can direct the AESO to change its conduct in relation to a matter that is the subject of the complaint or direct the AESO to refrain from the conduct that is the subject of the complaint.[122]

82. Additionally, under s. 121 of the *EUA*, the Commission has oversight of the AESO's tariff and must ensure that it is both just and reasonable, and not unduly preferential, arbitrarily or unjustly discriminatory or inconsistent with or in contravention of the *EUA* or any other enactment or any law. Pursuant to s. 8 of the *AUCA*, the Commission has broad jurisdiction to do all things that are necessary for or incidental to the exercise of its powers and the performance of its duties and functions, including making orders granting the relief applied for.[123] Under s. 23 of the *AUCA*, the Commission may order any person to do anything that it is or may be required to do under the

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119 Canada-United States Side Letter on Energy, Article 3.

120 *EUA*, s. 25(6)(e).

121 *Ibid*, s. 25(1)(b).

122 *Ibid*, s. 26(3)(b) and (c).

123 *AUCA*, ss. 8(2) and (5).

AUCA, *EUA* or *TReg*, or to cease doing anything that is a contravention of the *AUCA*, *EUA* or *TReg*.

83. As regards the portion of this complaint relating to AESO rules and conduct, the Commission may only decline to hold a hearing or other proceeding if it considers the complaint is frivolous, vexatious, trivial or otherwise does not warrant a hearing or other proceeding, has already been considered by the AUC, or should be referred to the MSA.[124] BHE Canada respectfully submits that the nature and substance of this complaint is serious and plainly overcomes the low threshold of not being frivolous, vexatious or trivial. Given the magnitude of economic harm caused by the AESO's anti-competitive and discriminatory tariff, rules and conduct, the Commission cannot be ignore these matters, or regard them as not warranting a hearing. Moreover, given the seriousness of the complaint, the fact that it raises concerns respecting the classes of system access service provided under the ISO tariff, and the nature of the relief sought by BHE Canada, all of which the Commission has the jurisdiction to grant, the AUC is the appropriate arbiter of this complaint.

B. AESO Breaches of the *EUA* and *TReg*

i. The AESO is failing to provide MATL and import customers with system access service that affords them a reasonable opportunity to exchange electric energy and ancillary services in the Alberta electricity market in breach of ss. 17(b) and 29 of the EUA

84. Under s. 17(b) of the *EUA*, the AESO is obligated "to facilitate the operation of markets for electric energy in a manner that is fair and open and that gives all market participants wishing to participate in those markets and to exchange electric energy a reasonable opportunity to do so." In addition to facilitating the operation of the market to provide that "reasonable opportunity" to participate, s. 29 emphatically requires the AESO to "provide system access service on the transmission system in a manner that gives all market participants wishing to exchange electric energy and ancillary services a reasonable opportunity to do so." The Commission has had the opportunity to consider the AESO's "reasonable opportunity" obligation in numerous proceedings.

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[124] *EUA*, s. 25(4)

85. First, in Decision 2009-042, the Commission determined "there are no explicit or implicit transmission 'rights' but that the obligation imposed on the AESO is to provide market participants with a reasonable opportunity to access the AIES."[125] The Commission further clarified that requiring a market participant to be subject to remedial action scheme ("RAS"), was not inconsistent with a reasonable opportunity to access the AIES.[126] The Commission expanded on this in the context of access to ATC in Decision 2013-025:

> The Commission finds a clear legislative requirement to provide non-discriminatory system access service to market participants. The Commission has previously found that there is nothing inconsistent with the requirement of a RAS scheme to ensure the safety and reliability of the AIES and the provision of a reasonable opportunity to access the AIES, and a system that treated all market participants equally. The Commission concludes that a reasonable opportunity for system access service constitutes non-discriminatory access and equal treatment of market participants, subject to any RAS requirements for maintaining safety and reliability of the AIES where there may be insufficient transmission available. The Commission considers this reasonable opportunity for system access applies equally to generators and interties.[127]
>
> [Emphasis added]

86. In sum, the reasonable opportunity that the AESO must provide requires non-discriminatory access and equal treatment of market participants. BHE Canada submits that the AESO is not meeting this obligation where interties and import customers are concerned as they are not being afforded access to the AIES and the electricity market that is equal to that being afforded to domestic Alberta generators both because of reliability and congestion issues. While requiring that a market participant be subject to a RAS is not inconsistent with providing a reasonable opportunity, BHE submits that requiring one class of market participant to bear all, or more than its fair share, of system-wide reliability concerns is inconsistent with providing a reasonable opportunity to access the AIES. That is the effect of the AESO's amendment of ID 2011-001R to increase the LSSi arming tables without implementing any other mitigation measures instead of or in addition to it. As outlined in detail above, primary frequency response of generators and the increased IBRs in the generation supply mix are the primary drivers of the frequency stability concerns on the AIES, but the interties and import customer are the market

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125 AUC Decision 2009-042, *Alberta Electric System Operator, Objections to ISO Rule 9.4 Transmission Constraint Management* (April 9, 2009) at para. 158.

126 *Ibid*.

127 Decision 2013-025 at para. 92.

participants that are being constrained through dramatically reduced ATC. This is inequitable, discriminatory, and a breach by the AESO of ss. 17(b) and 29 of the *EUA*.

87. Moreover, the Commission has described the legislative scheme contemplated by the *EUA* and the *TReg* as one that "reveals an underlying obligation on the AESO to create a transmission operating environment in which service is unfettered, recognizing that constraints can occur from time to time."[128] The service provided to interties and to import customers is nowhere approaching "unfettered" and the BC and MATL interties are routinely and significantly constrained. Base ATC on the BC and MATL interties has decreased over the last ten years and often is as low as 325 MW during periods of high Alberta pool prices over a combined path of 1110 MW. The reliability constraints are made worse by the increasing congestion constraints that MATL is facing under the TCM Rule by being curtailed prior to Alberta generators. BHE Canada respectfully submits that MATL and import customers who flow electricity over it simply cannot be said to be receiving a reasonable opportunity to access Alberta competitive electricity market under these circumstances. The Commission's urgent intervention is needed to address this inequitable treatment that is resulting in Albertans paying unnecessarily inflated costs for their electricity.

88. Critical to an openly competitive market is non-discrimination as between imported electricity and domestically generated electricity. The AUC has expressly directed that interties and domestic generators must be treated equally for the purposes of the requirement to dispatch in-merit electricity under s. 15 of the *TReg*. In Decision 2013-025 regarding the ATC Rule, the AUC stated that "[i]n providing system access service the AESO must meet its legislated requirements regarding all in-merit or scheduled electric energy while also taking into account electric energy that is reasonably expected to be in-merit or scheduled. In this regard the Commission sees no distinction between an intertie and a generator"[129] (emphasis added). This direction is consistent with the fact that imported electricity competes with domestically generated electricity within Alberta's FEOC electricity market, and the benefits to consumers as a consequence of increased competition. It is also consistent with the principles underlying international free trade, which support a FEOC market, including Canada's national treatment

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[128] AUC Decision 2014-242: Alberta Electric System Operator, 2014 ISO Tariff Application and 2013 ISO Tariff Update (August 21, 2014) at para. 791.

[129] Decision 2013-025, *supra* at para 105.

obligations under the CUSMA not to give discriminatory preference to domestic energy over imported energy, as set out in the main text of the CUSMA and the US-Canada side letter on energy described above.

ii. The AESO is failing to operate the power pool in a manner that is fair, efficient, and open to all electricity market participants exchanging or wishing to exchange electricity through the power pool in breach of sections 17(a) and 18(1) of the EUA

89. The necessary corollary of failing to provide the interties and import customers with a reasonable opportunity to access the electricity market through non-discriminatory system access and the equal treatment of import customers and domestic generation is that the AESO is also failing to promote the FEOC operation of the electricity market and to operate the power pool in a FEOC manner. As outlined above, over the period from March 15 to December 31 2023, 241,179 MWh of zero priced imports (i.e., in-merit electricity) did not flow over MATL because of system constraints. Moreover, imports are constrained at times that coincide with high pool prices thereby amplifying the inefficiency of the AESO's current operation of the power pool. In the hours where imports are constrained because of inadequate ATC due to frequency stability concerns or congestion, the AESO is dispatching more expensive electricity than it should be.

90. Based on BHE Canada's supporting analysis set out in Appendix "A", if the increased LSSi arming tables had been in place in 2022, Alberta Consumers would have paid incremental costs of approximately $2.8 billion for electricity. BHE Canada submits that economic harm of this magnitude warrants the immediate intervention by the Commission and issuance of the relief requested by BHE Canada.

iii. The AESO is failing to forecast the needs of Alberta and develop plans for the transmission system to provide efficient, reliable and non-discriminatory system access service and the timely implementation of required transmission system expansions and enhancements in breach of sections 17(i), 17(j) and 33(1) of the EUA and sections 15(1)(e) and (f) of the TReg

91. The AESO's ability to provide a reasonable opportunity for market participants to access Alberta's electricity market and to facilitate a FEOC market for electricity is inextricably linked with its obligation to plan the AIES and to implement timely expansions and enhancements of the AIES so that it can meet those obligations. The AESO is obligated to plan the AIES based on

forecast needs. More particularly, it must assess the current and future needs of electricity market participants and plan the capability of the transmission system to meet those needs.[130] In doing so, the AESO is expressly required to project the transmission facilities required to meet forecast load, imports and exports of electricity and anticipated generation capability, including appropriate reserves.[131] It is also expressly required to project the transmission facilities required to provide for efficient and reliable access to jurisdictions outside Alberta.[132] Further, it must also make arrangements for the expansion or enhancement of the AIES so that all anticipated in-merit electricity (including imports)[133] can be dispatched without constraint when all transmission facilities are in service (and, when operating under abnormal operating conditions, so that transmission of all anticipated in-merit electricity including imports can occur at least 95% of the time, on an annual basis).[134] In short, if there is or may be a "constraint or condition affecting the operation or performance of the transmission system" the AESO is to arrange for it to be fixed.

92. Notwithstanding these obligations, instead of arranging to remedy the system wide frequency stability concerns it was aware of, the AESO has allowed them to worsen significantly. Similarly, while the AESO is obligated to restore the BC intertie to its path rating, it has allowed ATC over the combined BC and MATL to steadily decline with the result that significant volumes of in-merit import electricity are not being scheduled for dispatch. It has done so in breach of its obligations under ss. 17(i), 17(j) and 33(1) of the *EUA* and ss. 15(1)(e) and (f) of the *TReg.* It has also done so in direct contradiction to its own evidence before the Commission that it interprets the *EUA* and regulatory scheme, including its duties under sections 15(1)(e) and (f) to require that imports and exports up to the path rating of each intertie should be considered as anticipated in-merit electric energy, with the result that it must plan the transmission system so that every intertie (both existing and future) can simultaneously transfer up to its path rating.[135]

93. While it appeared that the AESO might proceed with a back-to-back HVDC converter on MATL that would eventually alleviate the constraints MATL currently faces as a result of system

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130 *EUA*, s. 17(i).

131 *TReg*, s. 10(1)(a)(iv).

132 *TReg*, s. 10(1)(a)(iv).

133 *EUA*, s. 17(c), which refers to imports, is incorporated by reference into ss. 15(1)(e) and (f) of the *TReg*.

134 *TReg*, s. 15(1)(e) and (f)

135 Decision 2013-025 at paras. 102-104.

limitations, the prospect and timing of such a wires solution remains entirely unclear. The AESO's own schedule, which is not reflective of the current global supply chain constraints for HVDC converters, suggests implementation is still five years away.[136] Moreover, an HVDC converter will not address congestion constraints in the South Area Transmission Constraint Management Area. BHE respectfully submits that Commission intervention is needed at this time to ensure the FEOC operation of the Alberta electricity market and that interties and import customers have a reasonable opportunity to exchange electric energy. The relief requested by BHE Canada is necessary to ensure that the AESO meets its legislative obligation to provide non-discriminatory system access service.

iv. ISO rules sections 202.5 and 302.1 do not support the FEOC operation of the electricity market and are not in the public interest contrary to sections 20.21(2) and 25(1)(b) of the EUA

94. The AESO is failing to meet its obligation to provide non-discriminatory system access service on the AIES that gives the interties and import customers a reasonable opportunity exchange electric energy;[137] it does so in the manner it addresses: (i) transmission congestion constraints in the area adjacent to the MATL through its practice of curtailing MATL Import Assets in advance of curtailing other pool assets; and (ii) states of supply surplus through its practice of curtailing import interchange transactions in advance of other in-merit electricity supply. This AESO's practice is not fair, efficient or openly competitive as there is no principled basis upon which to curtail imports prior to domestic generators. It is also contrary to Canada's international trade obligations under the CUSMA, including Canada's national treatment obligations under the CUSMA not to give discriminatory preference to domestic energy over imported energy, as set out in the main text of the CUSMA and the US-Canada side letter on energy described above.

95. The TCM Rule also has the potential to see zero priced imports curtailed prior to higher priced domestic electricity, which would be economically inefficient and not in the public interest as it would only serve to increase the electricity price paid by Albertans. The Commission has recognized that economic efficiency is a key component of the *EUA* and the FEOC operation of

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136 AESO Stakeholder Symposium, Leadership in the Transformation (June 27, 2013) at p. 21.

137 *EUA*, s. 33.

the electricity market that it seeks to foster, and has concluded that that ISO rules must likewise promote this statutory objective.[138] It has also noted that it is not economically efficient for Alberta consumers to pay more than necessary for congestion management and concluded that a constraint rule "must ultimately be capable of re-ordering electricity dispatch to minimize the effect upon competitive market outcomes for all contingencies whether frequent, infrequent, long duration or short duration that occur in real time."[139]

96. Where imports are concerned, the current TCM Rule does not do this. Curtailing zero priced imports prior to domestic Alberta electricity is diametrically opposed to the Commission's finding that a constraint rule should minimize the effect of the constraint on competitive market outcomes.

97. Any suggestion by the AESO that its practice of curtailing MATL Import Assets and import interchange transactions in advance of curtailing other pool assets is permissible, or can be justified, by virtue of the fact that importers take system access service under an opportunity service (Rate IOS) is unsupportable. If that is indeed the AESO's position, as outlined below, it simply supports the conclusion that the ISO tariff is unjustly discriminatory against import customers and provides unduly preferential service to intra-Alberta suppliers.

98. BHE Canada's proposed rule changes set out in Appendix "B" address the ongoing discriminatory treatment of MATL Import Assets and import interchange transactions under the TCM Rule and Surplus Rule. They simply see imports curtailed together with other pool assets with $0 offers on a pro rata basis. These proposed changes support the FEOC operation of the market and are in the public interest. BHE Canada respectfully requests that the Commission direct the AESO to change the provisions of the TCM Rule and Surplus Rule in accordance with the changes set out in Appendix "B" pursuant to s. 25(6)(e) of the *EUA*.

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138 Decision 2013-135, ATCO Power Ltd. and ENMAX Energy Corporation Complaints by ATCO Power Ltd. and ENMAX Energy Corporation regarding ISO rule Section 302.1: Real Time Transmission Constraint Management (April 5, 2013) ("Decision 2013-135") at para. 148.

139 *Ibid*. at paras. 149-105.

v. The ISO tariff is unjustly discriminatory and provides unduly preferential service to intra-Alberta generators under Rate STS as compared to extra-Alberta import customer under Rate IOS contrary to section 122 of the EUA

99. If the AESO is relying upon the fact that import customers take system access service under an "opportunity" service as opposed to a "firm" service (or firm-*like* service given that there are no transmission rights in Alberta) for any of its conduct, practices or rules that see domestic supply receiving preferential access to Alberta's competitive electricity market, such argument is without foundation and must be rejected. While import customers take service under a rate called Rate IOS – Import Opportunity Service and the domestic generators take service under Rate STS – Supply Transmission Service, the rate paid under the respective ISO rate schedules for these rates is virtually identical as it is a loss charge based on a loss factor determined in accordance with Section 501.10 of the ISO Rules, *Transmission Loss Factors.* [140] Accordingly, there is no principled basis upon which to treat them differently.

100. Moreover, the concept of an opportunity service (or interruptible service) is that a customer agrees to take a lesser service (*i.e.*, less reliable, recallable) because of a reduced rate than it otherwise would have paid for the greater (*i.e.*, more reliable, non-recallable) service. That is not the case under the ISO tariff, however, as the AESO has never offered anything other than an opportunity service to import customers. A review of historic tariff decisions relating to the AESO, and its predecessor the Transmission Administrator, reveals that firm and opportunity import and export services were initially intended to be pursued. When the cost allocation principles in the *TReg* were enacted providing that load was responsible for wires costs, the AESO appears to have taken the position that offering firm service to imports would disadvantage them relative to Rate STS (since Rate STS does not pay for wires costs).[141] This rationale, of course, does not support providing imports a lesser service. The AESO appears to have recognized this by the time it filed its next tariff application, where the Commission's predecessor noted:

> The AESO stated that in stakeholder consultations, it had initially proposed to develop non-recallable and opportunity import rates. However, non-recallable and opportunity distinctions do not exist for the AESO's domestic supply service. There likewise appeared

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140 AESO, ISO Tariff, Rate STS – Supply Transmission Service, s. 2(1); and Rate IOS – Import Opportunity Service, s. 2(1).

141 EUB Decision 2005-096, AESO 2005/2006 General Tariff Application (August 28, 2005) at p. 34.

> to be no basis upon which to differentiate between non-recallable and opportunity import rates. Rate IOS recovers only the cost of losses and a transaction fee.
>
> The AESO therefore proposed to continue the IOS rate as previously approved by the Board.
>
> No party expressed any concern with respect to this rate. The Board finds the AESO proposal to be reasonable and it is approved as filed.[142]
>
> [Emphasis added]

101. Simply stated, the fact that imports are classified as an "opportunity service" under the AESO's tariff does not justify differential treatment of imports. The classification of imports as "opportunity service" in the AESO's tariff has no legal significance, as it has no foundation in the governing legislation. The AUC made clear in Decision 2013-025 that the legislative scheme requires "treating interties in the same manner as generators for the purposes of providing system access service and access to the power pool" and that "this reasonable opportunity for system access applies equally to generators and interties."[143] To the extent that Import Opportunity Service under the ISO Tariff does not provide equal treatment and access as between interties and intra-Alberta generators, it is inconsistent with the legislative scheme, is not just and reasonable, is unjustly discriminatory, and is inconsistent with the AESO's own submissions before the AUC in that proceeding.

102. It should also be noted that under s. 121(2)(b) of the *EUA*, the Commission must ensure not only that the AESO's tariff is not unduly preferential, arbitrarily or unjustly discriminatory, but it must also ensure that it is not inconsistent with any other enactment or any law. As outlined above, the AESO's failure to provide interties and import customers with non-discriminatory system access service is contrary to Canada's international trade obligations under the CUSMA, including Canada's national treatment obligations under the CUSMA not to give discriminatory preference to domestic energy over imported energy, as set out in the main text of the CUSMA and the US-Canada side letter on energy described above. As above noted, the AESO has never provided any substantive support for its view that it treats imports in a manner that is compliant with CUSMA.

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142 EUB Decision 2007-106, AESO 2007 General Tariff Application (December 21, 2007) at p. 87.

143 AUC Decision 2013-025, *supra* at paras 91-92.

vi. The AESO is failing to monitor generator compliance with ISO rules and reliability standards impacting frequency response and to refer all suspected or known non-compliances to the MSA for enforcement contrary to sections 17(l.1) and 21.1 of the EUA

103. Under section 17(l.1), the AESO is expressly required to monitor the compliance of electricity market participants with ISO rules and under s. 21.1, if the AESO suspects that an electricity market participant has contravened an ISO rule or a reliability standard, the AESO must refer the matter to the MSA. In the wake of the June 7, 2020 event described above, the AESO determined that most generators did not provide the frequency response required under Section 502.5 of the ISO Rules. Despite its obligation to refer ISO rule contraventions to the MSA, BHE Canada has not been able to find any indication in the MSA's public reports that these contraventions were referred to the MSA for enforcement action. Moreover, it is entirely unclear whether generators remain non-compliant with this rule to this day. BHE Canada has been pursuing data requests with the AESO in an attempt to better understand this non-compliance, but to date has been told that given current priorities at the AESO, it does not have the resources to meet BHE Canada's data requests.

104. BHE Canada is frustrated that at the same time that ATC is being significantly curtailed on MATL due to frequency stability concerns, the AESO does not appear to be monitoring the compliance of generators with the very rules that are designed to mitigate these system-wide reliability concerns. BHE Canada respectfully requests that the AESO be directed to monitor Alberta generators for compliance with all ISO rules and reliability standards impacting frequency response, including but not limited to Section 502.5 ISO Rules, and to refer all suspected or known non-compliances to the MSA for enforcement. In short, to fulfill its statutory obligation.

vii. The AESO is failing to keep pace with changes in the transmission planning and reliability criteria of NERC and to develop and adopt current NERC transmission planning and reliability criteria contrary to section 19 of the TReg

105. As outlined above at paragraphs 61 to 68, the AESO is over a decade behind the times in its adoption of NERC reliability standards for Alberta. Alberta's TPL Standards are not consistent with NERC reliability standards that saw significant revisions in both 2013 and 2023 to address, among other things, impacts associated with increased penetration of IBRs. Alberta is out of step with other members of WECC, and with the neighbouring provinces of BC and Saskatchewan.

The AESO's failure to develop and adopt current NERC transmission planning and reliability criteria in Alberta has not only limited the flexibility of the AIES, but it has led to inflated LSSi/FFR requirements to support ATC on the interties and resulted in greater curtailments of imports to the detriment of import customers and Alberta ratepayers. The AESO's complacency in the face of changing reliability standards has also led to decade of IBRs being connected to the AIES without any obligation to provide primary frequency response.

106. BHE Canada respectfully requests that the AUC intervene and direct the AESO to immediately undertake a review, in consultation with those electricity market participants that it considers are likely to be affected, of its transmission planning reliability standards to ensure conformity with current NERC standards and to propose all such new or amended transmission planning reliability standards as are necessary to ensure conformity with current NERC standards by no later than July 1, 2024.

C. CUSMA Concerns

107. In addition to concerns under Alberta and Canadian law, the AESO's current conduct, practices, rules, and tariffs also raise concerns under the CUSMA, to which Canada is party. In particular, by discriminating against electricity imports over the MATL in favour of domestic suppliers from Alberta, the AESO violates CUSMA obligations to treat foreign goods (here, imported electricity from the United States),[144] services and service suppliers (here, U.S. electric utility services and service suppliers),[145] and investors and investments (here, U.S. investors and investments in the MATL)[146] from a CUSMA party the same as those from within Canada. In addition, by curtailing electricity imports over the MATL as described above, the AESO also "maintains … a restriction on the importation of [a] good of another Party" without appropriate basis under the GATT Article XI, in violation of CUSMA Article 2.11. Of relevance to the AUC's review of this case, many of the same claims have been raised by Canada, with respect to Canadian energy products, services/service suppliers, and investments/investors, in dispute settlement proceedings against Mexico relating to that country's own energy policies.[147]

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144 CUSMA, Article 2.3.

145 CUSMA, Article 15.3.

146 CUSMA, Article 14.4.

147 *Request for consultations – Certain measures in the electricity sector* (July 20, 2022).

108. Perhaps even clearer than the above CUSMA violations, the AESO's current conduct, practices, rules, and tariffs are contrary to the Canada-United States Side Letter on Energy, which was promulgated in recognition of the "importance of enhancing the integration of North American energy markets based on market principles, including open trade and investment…to support North American energy competitiveness, security, and independence."[148] Among the violations relevant to this case, the AESO has failed to "avoid…disruption of contractual relationships to the maximum extent practicable" and to "support…North American energy market integration."[149] Additionally, the AESO has failed to "accord…access to [transmission] facilities…for the purposes of importation from another Party…that is neither unduly discriminatory nor unduly preferential."[150]

109. To be clear, BHE Canada submits that compliance with the *EUA*, *TReg*, and Commission precedent would lead to compliance with the CUSMA, and that additional action would not be required to bring the AESO into conformity with Canada's international trade obligations. In particular, the above-identified CUSMA obligations are consistent with the legislative scheme requiring that the AESO provide non-discriminatory system access service and a reasonable opportunity for all electricity market participants wishing to exchange electricity to access the AIES. These obligations are also consistent with the Commission's findings in Decision 2013-025 that the AESO must treat "interties in the same manner as generators for the purposes of providing system access service and access to the power pool."[151]

110. Based on the above concerns, the Commission's intervention is urgently required to ensure that the AESO meets its statutory obligations under the *EUA* and that Canada meets its international trade obligations under the CUSMA.

IV. CONTACT INFORMATION

111. All communications in respect of this matter should be directed to BHE Canada's external counsel:

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148 Canada-United States Side Letter on Energy, Article 3.

149 *Ibid.*, Article 4(2).

150 *Ibid.*, Article 5(1).

151 Decision 2013-025 at para. 91.

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V. CONCLUSION AND RELIEF SOUGHT

112. For all the above reasons, BHE Canada respectfully requests that the Commission grant the relief requested in paragraph 12 above.

ALL OF WHICH IS RESPECTFULLY SUBMITTED this 9th day of February, 2024.

BHE CANADA LIMITED and MATL GP CANADA LTD., as General Partner of MATL CANADA L.P.

Per: Ed Rihn, Chief Executive Officer

APPENDIX "A"

Analysis of Pool Price Impacts of Increased LSSi Arming Requirements under ID 2011-001R and Associated Curtailments

MATL Canada
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1) Executive Summary

A counterfactual analysis of market data shows that, if the #ID2011-001R released on March 10th, 2023 had been in place for the full year 2022, there would have been additional import curtailments of 715 GWh and an additional energy cost to Alberta Interconnected Electric System (AIES) load of approximately $2.8 billion.

As outlined in this report, the analysis used conservative assumptions and does not include second-order effects like the impact of increased pool prices on operating reserves and lines losses which would also lead to higher costs for AIES load.

2) Background and Data Extracts

a) ATC Allocation Methodology

i) ISO Rule 203.6 Available Transfer Capability and Transfer Path Management[1] sets the requirement and process to curtail interchange schedules based on the available transfer capability (ATC) for each individual path and for the combined flowgates. The methodology in this analysis is consistent with the requirements set out in ISO Rule 203.6.

b) LSSI Requirements

i) The level of Load Shed Service for Imports (LSSI) required to be armed for a given level of imports is specified in Table 7 of the AESO Information Document #ID2011-001R, updated most recently on March 10, 2023. The last three updates are available as items A, B, and C in the appendix. The March 10, 2023 version introduced Table 7b with lower import limits during periods of severe weather conditions; this analysis only used the Table 7a for normal weather conditions due to the lack of clear definition of when Table 7b would be applied that could be used to interpret historical weather data.

ii) In 2018, the AESO procured 330 MW from seven providers on a term from January 2019 to December 2021, shown as item D in the appendix.

iii) In 2020, the AESO procured 366 MW from seven providers on a term from January 1st, 2022 to December 31st, 2031, shown as item E in the appendix.

iv) Average hourly Alberta Internal load (AIL) for all of 2022 was 9,882 MW. Table 1 uses the posted LSSI tables to demonstrate the maximum imports for a given level of armed LSSI at the 2022 average hourly AIL; the rows highlighted in red represent levels of imports that would not be possible given the amount of LSSI procured by the AESO at the time the updated table was posted.

[1] https://aeso.ca/assets/documents/203.6-Available-Transfer-Capability-and-Transfer-Path-Management-2023-03-31.pdf

Table 1 – Maximum BC/MT imports for a given level of LSSI armed

2018 LSSI Table	
BC/MT Import Level (MW)	LSSI Required (MW)
300	0
400	0
500	0
600	0
700	10
800	61
900	151
1000	246
1100	341
1200	435

2020 LSSI Table	
BC/MT Import Level (MW)	LSSI Required (MW)
300	0
400	0
500	0
600	10
700	100
800	193
900	292
1000	387
1100	488
1200	585

2023 LSSI Table	
BC/MT Import Level (MW)	LSSI Required (MW)
300	0
400	81
500	181
600	281
700	381
800	481
900	581
1000	681
1100	781
1200	881

c) LSSI Offered

i) LSSI for a given hour is offered by the service providers with the AESO selecting the volumes to be armed based on the process outlined in ID #2011-001R. The design of the LSSI service requires the provider that offers volumes to, if armed, maintain the dispatched level of load for that hour at their expense; forecast high pool prices is a disincentive for providers to offer LSSI in a given hour. The average correlation between pool prices and LSSI volumes offered in 2022 was -0.51, meaning on average for every 10% increase in the actual pool price, 5.1% less LSSI volume was offered.

ii) At the time of preparing the analysis supporting this report in April of 2023, the AESO had only published LSSI hourly volumes from January 2013 to August 2020.[2] An hourly average LSSI offered for 2022 was calculated from a data service that saved extracts of the AESO Current Supply Demand API[3] in five minute intervals for the whole year. The hourly average data is set out in Appendix F; Table 2 shows the hourly average LSSI offered by month, with the associated hourly average pool price and correlation factor between LSSI offered and actual pool price.

[2] https://www.aeso.ca/market/market-and-system-reporting/data-requests/lssi-hourly-volumes-for-january-2013-to-august-2020/. The AESO has since published LSSI volumes for September 2020 to December 2023 on the data requests site (available here: https://www.aeso.ca/market/market-and-system-reporting/data-requests/lssi-hourly-volumes/), which we have since reviewed and determined are not materially different from the data used in our analysis.
[3] https://api.aeso.ca/web/api/ets

Table 2 – Monthly

Year	Month	Avg LSSI Offered	Avg Pool Price	Correlation Factor
2022	1	169.3	90.81	-0.37
2022	2	156.1	105.22	-0.55
2022	3	192.9	75.42	-0.41
2022	4	183.9	117.11	-0.38
2022	5	178.1	121.28	-0.43
2022	6	186.9	129.03	-0.54
2022	7	203.4	141.53	-0.57
2022	8	175.5	257.70	-0.64
2022	9	173.4	266.74	-0.64
2022	10	192.9	142.05	-0.39
2022	11	174.9	187.01	-0.60
2022	12	152.3	311.73	-0.68
2022	Annual	178.5	162.46	-0.51

d) Load

i) The LSSI tables require the Alberta Internal Load (AIL) to determine which column of the LSSI table applies for a given hour. For the 2022 analysis, the actual hourly AIL in MWh was extracted from the AESO Actual Forecast Report[4] and is shown as column E in Appendix G.

ii) AIL includes behind the fence load at cogeneration plants, which should not be included in a calculation of the additional energy prices for rate payers. The AESO publishes the hourly Alberta Interconnected Electric System (AIES) load on the System & Regional Load tab of the Annual Market Statistics Report[5] and is shown as column F in Appendix G.

e) Pool Price

i) Section 201.6 of the ISO rules, subsection 5, specifies the ISO must set the pool price for each settlement interval as the time weighted average of the one-minute system marginal price values for that settlement interval[6]. The analysis uses the hourly average pool price value as the starting point to calculate the increase in cost from having to dispatch resources higher on the merit curve due to a curtailment of imports rather than recalculate the minute by minute changes in the system marginal price. This simplification is reasonable for two reasons:

(1) The other data in the calculation such as load and intertie flows are only available as hourly totals so recalculating the impact on minute resolution system marginal prices would require additional assumptions on partial blocks that would be difficult to test for reasonableness without additional data being made available by the AESO.

[4] https://api.aeso.ca/web/api/ets
[5] https://public.tableau.com/app/profile/market.analytics/viz/AnnualStatistics_16161854228350/Introduction
[6] http://ets.aeso.ca/Market/Reports/Manual/HelpText/current-pool-price-metadata.pdf

(2) The energy merit curve, an example of which is shown as Figure 1 below, typically gets steeper as load progresses higher up the curve producing a larger increase in bid price per MW of additional offers dispatched. If the analysis was done on minute by minute system marginal prices, for hours with a range of prices, the increase in the hourly average price would be higher than the analysis done on hourly average prices so the approach is inherently conservative. Example 1 below uses the merit curve in Figure 1 and shows the impact of additional dispatches for a 200 MW reduction in imports which produces an adjusted price of $212.47 based on minute by minute marginal pricing and $159.65 based on an adjustment to the hourly average.

Figure 1 – Merit curve example

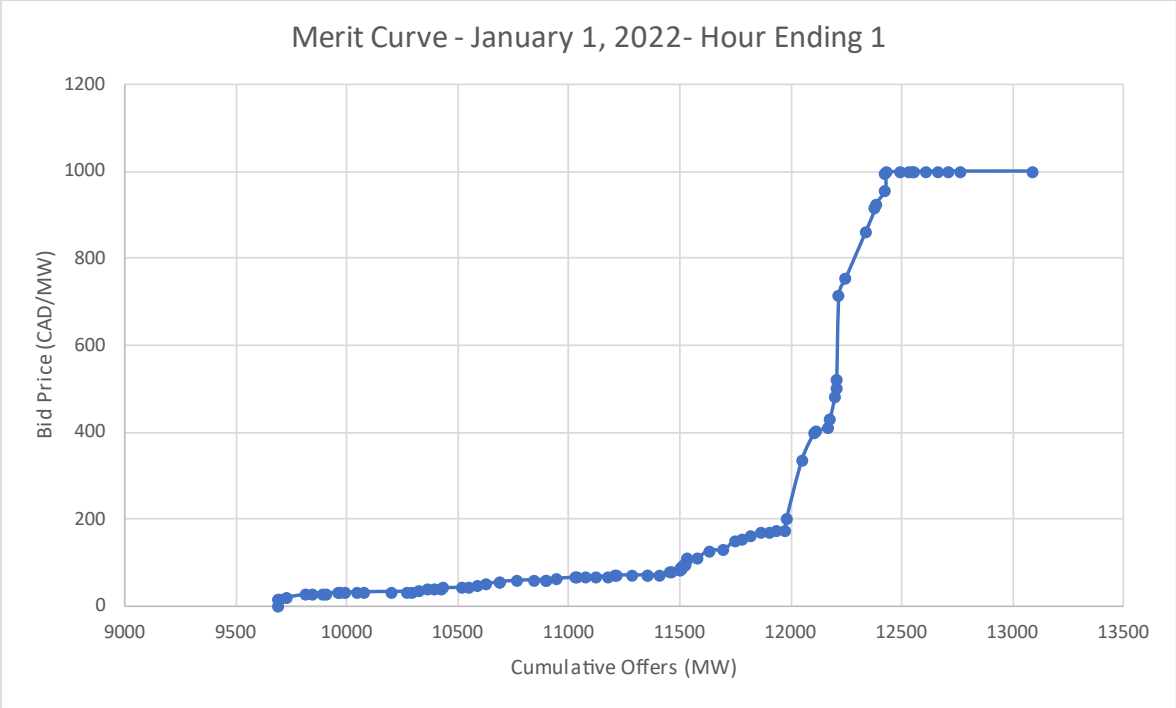


Table 3 – Calculation Basis Comparison

Minutes	Actual Price (CAD/MWh)	Cumulative Offers (MW)	+200 MW for Curtailed Imports (MW)	Adjusted Price (CAD/MWh)
40	$ 70.14	11,214	11,414	$ 78.58
20	$ 200.00	11,979	12,179	$ 480.26
Weighted Average	$ 113.43			$ 212.47
Hourly Average	$ 113.43	11,587	11,787	$ 159.65

ii) The hourly average pool price in CAD$/MWh for 2022 was extracted from the AESO Pool Price Report[7] and is shown as column E in Appendix G.

[7] https://api.aeso.ca/web/api/ets

f) Merit Curve

i) The AESO publishes the detailed merit curve 60 days after the operating day on the Energy Merit Order Report[8]. For use in the analysis, each hourly merit curve for 2022 was filtered for availability, grouped into blocks with the same bid price and sorted in order of increasing bid price to calculate a running total of blocks available. The summary merit curve data is set out in Appendix H.

ii) The analysis does not consider whether a given block is flexible; this is a conservative assumption because additional dispatches may go to a higher price but smaller flexible block rather a lower price non-flexible block.

iii) The published merit order reflects the final merit curve of the hour which could include changes to offer amounts with valid operational reasons that happen at some point during the operating hour. Bid prices cannot be changed during the operating hour, but a change in offer amounts late in the hour could produce an unrealistic impact when projected for the whole hour in the counterfactual analysis. This impact is expected to be mostly conservative in the analysis, with circumstances where generators restate to increase the volumes offered at $0 in situations when they choose to run for their stated minimum runtime being more common than generators reducing their availability for outages or de-rates encountered during the hour.

g) Intertie Flows

i) Hourly net flows on the BC, MATL, and Saskatchewan interties are published by the AESO on the Interties tab of the Annual Market Statistics Report[9] and is shown as column G in Appendix G.

ii) AESO rule 203.6, section 10(2)(a)[10] specifies that the evaluation of import ATC on the individual BC and MATL interties is based on the net interchange offers. The remaining steps in section 10 build off the initial evaluation of net interchange offers, meaning if the net interchange on the BC/MATL flowgate is below the limit calculated by the LSSI requirements, and that each intertie has already passed their individual test, there should be no additional curtailment.

3) Model Methodology

a) Key Assumptions

i) Section 2 of this report includes discussion of assumptions specific to each category of input data.

ii) There are hours from 2022 where the hourly average interchange flows are higher than the limit those calculated from the LSSI table; on assumption that flows above the limit were permitted for some over-arching reason the same amount above the limit was allowed in the counterfactual analysis.

iii) Following the discussion in section 2.e), the portion of the current block assumed to be dispatched to

[8] https://api.aeso.ca/web/api/ets
[9] https://public.tableau.com/app/profile/market.analytics/viz/AnnualStatistics_16161854228350/Introduction
[10] https://aeso.ca/assets/documents/203.6-Available-Transfer-Capability-and-Transfer-Path-Management-2023-03-31.pdf

align with the hourly average pool price is divided by 2, increasing the likelihood that a small incremental import curtailment will not cause an increase in pool prices. This assumption produces a conservative estimate of the additional cost from incremental import curtailments.

b) Calculation of hourly additional costs to AIES load

i) Step 1 – Original and adjusted LSSI limit
Find the maximum allowable imports for a given level of AIL and LSSI offered.

Maximum Imports (2020 Table) =MAXIFS('2020 LSSI Table'!$A$2:$A$193, '2020 LSSI Table'!$B$2:$B$193, "<="&[@[alberta internal load]], '2020 LSSI Table'!$C$2:$C$193, "<="&[@[LSSI Offered]])

Maximum Imports (2023 Table) =MAXIFS('2023 LSSI Table'!$A$2:$A$342, '2023 LSSI Table'!$B$2:$B$342, "<="&[@[alberta internal load]], '2023 LSSI Table'!$C$2:$C$342, "<="&[@[LSSI Offered]])

ii) Step 2 – Curtailed Imports
Find the level of curtailed imports based on the actual flows in the hour and the allowable flows under the March 10th, 2023 LSSI table, with an adjustment for actuals flows above the level allowed from the June 23rd, 2020 LSSI table.

Curtailed Imports =IF([@[Net BC/MATL Flows]]>[@[Maximum Imports (2023 Table)]], [@[Net BC/MATL Flows]] - [@[Maximum Imports (2023 Table)]], 0) - IF([@[Net BC/MATL Flows]]>[@[Maximum Imports (2020 Table)]], [@[Net BC/MATL Flows]] - [@[Maximum Imports (2020 Table)]], 0)

iii) Step 3 – Pool price implied dispatch
Find the level of dispatch equivalent to the hourly average pool price in two steps; the first finds the full block immediately below the hourly average pool price and the second finds the portion of the next block based on a linear interpretation.

Minimum Merit Curve Equivalent Dispatch =MAXIFS(ImportAnalysis_MeritCurveSummary[Running Total],ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt],[@[begin_datetime_mpt]],ImportAnalysis_MeritCurveSummary[Bid],"<="&[@[pool_price]])

Risked Portion of Next Block = (((VALUE([@[pool_price]]) - MAXIFS(ImportAnalysis_MeritCurveSummary[Bid], ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt], [@[begin_datetime_mpt]], ImportAnalysis_MeritCurveSummary[Running Total], [@[Minimum Merit Curve Equivalent Dispatch]])) / (MINIFS(ImportAnalysis_MeritCurveSummary[Bid], ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt], [@[begin_datetime_mpt]], ImportAnalysis_MeritCurveSummary[Running Total], ">"&[@[Minimum Merit Curve Equivalent Dispatch]]) - MAXIFS(ImportAnalysis_MeritCurveSummary[Bid], ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt], [@[begin_datetime_mpt]], ImportAnalysis_MeritCurveSummary[Running Total], [@[Minimum Merit Curve Equivalent Dispatch]]))) * (MINIFS(ImportAnalysis_MeritCurveSummary[Running Total],

ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt], [@[begin_datetime_mpt]], ImportAnalysis_MeritCurveSummary[Bid], ">"&[@[pool_price]]) - MAXIFS(ImportAnalysis_MeritCurveSummary[Running Total], ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt], [@[begin_datetime_mpt]], ImportAnalysis_MeritCurveSummary[Bid], "<="&[@[pool_price]]))) / 2

iv) Step 4 – Adjusted pool price
Find the bid level consistent with the adjusted equivalent dispatch.

Adjusted Equivalent Dispatch =[@[Minimum Merit Curve Equivalent Dispatch]] + [@[Curtailed Imports]] + [@[Risked Portion of Next Block]]

Adjusted Pool price =IF([@[Curtailed Imports]]=0, VALUE([@[pool_price]]), MINIFS(ImportAnalysis_MeritCurveSummary[Bid], ImportAnalysis_MeritCurveSummary[begin_dateTime_mpt], [@[begin_datetime_mpt]], ImportAnalysis_MeritCurveSummary[Running Total], ">="&[@[Adjusted Equivalent Dispatch]]))

v) Step 5 – Additional cost
Calculate the additional cost to the AIES load from the adjusted pool price.

Additional Cost = ([@[Adjusted Pool Price]] - [@[Actual Pool Price]]) * [@[System Load (AIES)]]

vi) Step 6 – Annual summary
Sum the additional energy cost and the total curtailed imports.

Annual Additional Energy Cost =SUM(ImportAnalysis[Additional Cost])
Annual Curtailed Imports =SUM(ImportAnalysis[Curtailed Imports])

c) Sample Hour

i) July 27, 2022 2pm MDT selected as a sample hour with a wide separation of adjusted pool prices resulting from different versions of the LSSI requirements table.

ii) Input Data:
AIL: 10,996 MW
AIES Load: 8,143 MW
BC/MATL Net Flows: 638.9 MW (positive imports are net imports)
LSSI Offered: 108 MW
Pool Price: $498.52 / MWh

iii) Calculation Results:
Step 1:
Maximum Imports (2020 Table) = 700 MW
Maximum Imports (2022 Table) = 400 MW

Step 2:

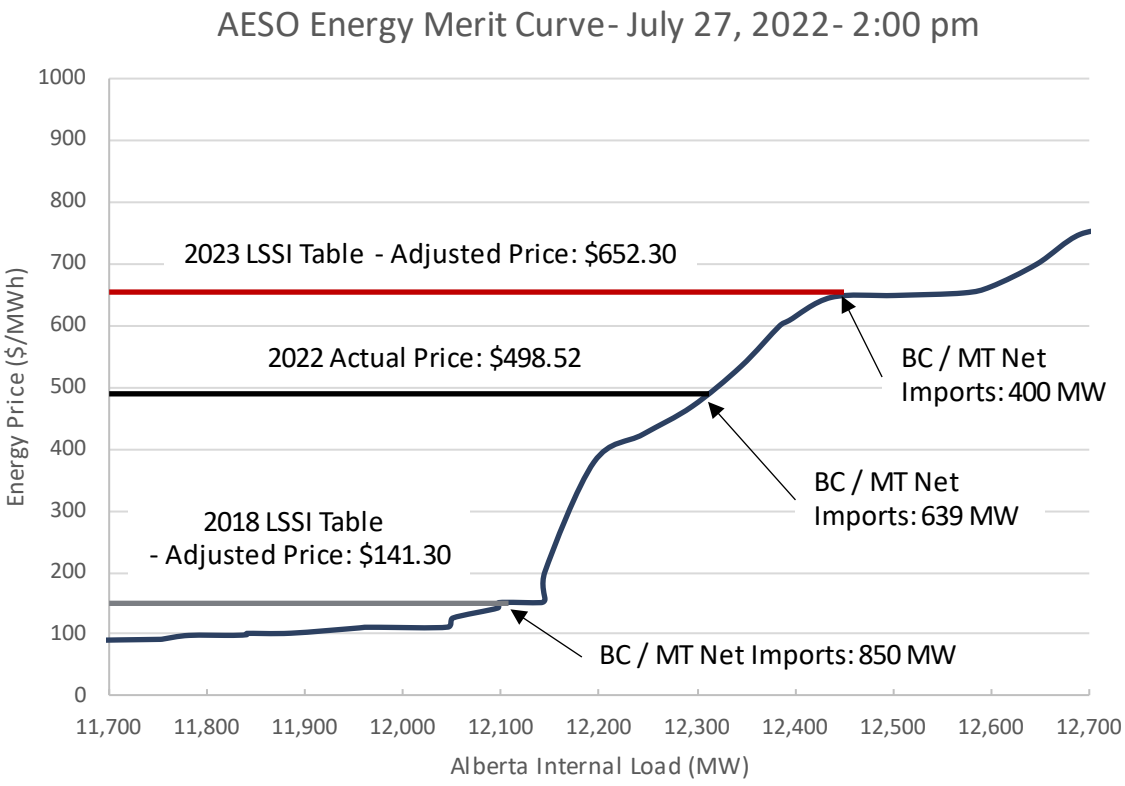
Curtailed Imports = 238.9 MW

Step 3:
Minimum Merit Curve Equivalent Dispatch = 12,295 MW
Risked Portion of Next Block = 12 MW

Step 4:
Adjusted Equivalent Dispatch = 12,546
Adjusted Pool Price = $652.30

Step 5:
Additional Cost = $1,252,230.54

iv) Figure 2 – Merit Curve and Adjusted Pool Prices



4) Results

a) Curtailed Imports and Additional Energy Cost

i) The annual additional curtailed imports in the analysis is 715 GWh.

ii) The annual additional energy cost to AIES load is approximately $2.8 billion.

b) Impact to typical AIES consumers

i) The annual total AIES load for 2022 was 61,891.9 GWh; the additional energy cost of AIES load in the analysis is $45.78 / MWh.

ii) Based on the consumption profiles established by the AESO in the May 31st, 2020 Delivered Cost of Electricity Report[11] and the Government of Alberta's example of a typical dairy operation[12], the table below show the impact of the additional energy cost per consumption profile.

Table 4 – Cost Impacts per Consumption Profile

Consumption Profile	Average Annual Usage (MWh)	Additional Annual Cost ($)	Examples
Residential	7	300	Detached, semi-detached, apartment dwellings
Farm	15	600	Farms, ranches
Dairy	111	4,900	Sample 100 cow dairy
Small Commercial	33	1,400	Small retail, restaurants, other small businesses
Medium Commercial	308	13,600	Large retail, medium sized businesses
Large Commercial	16,540	731,300	Large shopping centre, commercial office
Industrial	43,550	1,925,700	Manufacturing, forstry, refining, oil sands
Alberta Total (AIES)	61,891,880	2,800,000,000	All electricity consumers

5) Limitations

a) Changed LSSI Offers

i) Section 2(c) discusses the correlation between LSSI offers and pool prices. If imports are systemically curtailed leading to higher pool prices, it is likely that the LSSI offered by providers would be further reduced which would further increase the curtailed imports. The counterfactual analysis did not consider this second-order effect of higher pool prices.

b) System Marginal Price

i) Section 2(e) discusses the impact of calculation using minute by minute system marginal prices, rather than the hourly average prices, which would result in higher adjusted pool prices but rely on additional information not provided by the AESO. The counterfactual analysis used hourly average prices which likely understates the aggregate impact of curtailed imports.

c) Changed bidding behaviour

[11] https://www.aeso.ca/assets/Uploads/AESO-Delivered-Cost-of-Electricity-Report-FINAL-31May2020.pdf
[12] https://open.alberta.ca/dataset/9f69749b-6b62-4474-8dfe-25e78986918a/resource/24dcf621-f817-460b-a7c1-760a0ef16e43/download/af-energy-efficiency-on-dairy-farms.pdf

i) If imports were systemically restricted in 2022, beyond the existing level of curtailments required in the June 23rd, 2020 version of ID#2011-001R, it is likely that generators would change their bidding behaviour to take advantage of the lessened competition. The additional curtailment represents an average of 175 WM in affected hours which is 0.8% of annual AIL.

ii) While the change in behaviour could be argued to produce either an increase or a decrease in bids by existing internal generators, the evidence following the implementation of the March 10th, 2023 version of ID#2011-001R shows a further increase in bids by internal generators. Table 5 below shows that, from the second quarter of 2022 to the data available for the second quarter of 2023 following the change to ID#2011-001R, there was an increase of 3.52% of available MW being bid between $900 and $999.99 with a reduction in the available MW in all of the bid ranges from $100 - $899.99.

Table 5 – Available MW by Bid Price

Year / Quarter	0 - 99.99	100 - 199.99	200 - 299.99	300 - 399.99	400 - 499.99	500 - 599.99	600 - 699.99	700 - 799.99	800 - 899.99	900 - 999.99
2022	**88.83%**	**1.73%**	**0.68%**	**0.40%**	**0.48%**	**0.48%**	**0.52%**	**0.71%**	**1.71%**	**4.44%**
1	91.30%	1.33%	1.01%	0.45%	0.60%	0.41%	0.36%	0.32%	1.17%	3.06%
2	88.39%	2.94%	0.97%	0.67%	0.67%	0.61%	0.59%	0.67%	1.85%	2.64%
3	87.72%	1.15%	0.48%	0.20%	0.34%	0.48%	0.58%	0.89%	2.13%	6.02%
4	88.09%	1.62%	0.34%	0.32%	0.34%	0.45%	0.56%	0.93%	1.67%	5.69%
2023	**89.38%**	**0.59%**	**0.24%**	**0.24%**	**0.38%**	**0.47%**	**0.50%**	**0.63%**	**1.62%**	**5.96%**
1	89.11%	0.63%	0.29%	0.29%	0.43%	0.55%	0.54%	0.64%	1.70%	5.83%
2	89.82%	0.52%	0.15%	0.16%	0.31%	0.33%	0.44%	0.61%	1.50%	6.16%

d) Additional reserves and line losses

i) The analysis only considered additional costs to AIES load from increases to the energy cost; however the operating reserve and line loss components of the AESO reported wires costs also depend on the pool price so the aggregate increase will be more than what is calculated in this report.

6) APPENDICES

APPENDIX A

LSSI table posted July 20, 2018 in ID#2011-001R

Table 7: Minimum Amount of Load Shed Service for Import Load Requirement

Minimum amount of load shed service for import load requirement is based on the combined British Columbia/Montana net import schedule and the Alberta internal load.

BC / MT ATC Import (MW)[2,3]	AIL (MW)[1]										
	7500 to 7999	8000 to 8499	8500 to 8999	9000 to 9499	9500 to 9999	10000 to 10499	10500 to 10999	11000 to 11499	11500 to 11999	12000 to 12499	12500 and above
Below 600	0	0	0	0	0	0	0	0	0	0	0
601 to 650	10	10	10	10	10	10	0	0	0	0	0
651 to 700	15	12	10	10	10	10	10	10	10	10	10
701 to 750	51	41	35	31	27	25	22	20	19	17	16
751 to 800	106	86	75	67	61	55	51	47	44	41	38
801 to 850	163	137	122	112	104	97	92	87	82	79	75
851 to 900	212	186	171	160	151	145	139	134	129	125	122
901 to 950	261	234	218	207	199	192	186	181	176	172	169
951 to 1000	310	283	267	255	246	239	233	228	223	219	215
1001 to 1050	359	331	314	302	293	286	279	274	269	265	261
1051 to 1100	412	382	364	351	341	333	327	321	315	311	307
1101 to 1150	462	430	411	398	388	380	373	367	361	356	352
1151 to 1200	511	478	459	445	435	426	419	412	407	402	397
1201 to 1250	561	526	506	492	481	472	464	458	452	447	442

Notes:

1. If the Alberta internal load falls on or very close to a boundary of Table 1 ranges, the AESO uses the lower Alberta internal load range to determine the amount of load shed service for imports to arm.
2. When 5L92 is out of service, the AESO uses the total net combined British Columbia/Montana import plus the Alberta interconnected electric system most severe single contingency to determine the import level when applying this table.
3. When 2L294, 2L113, 1L274/L274 or the Natal transformers are out of service, the AESO uses the total net combined British Columbia/Montana import and the AIES load plus the British Columbia load served from Alberta via the 138 kV system to determine the LSSi required level.

Posting Date: 2018-07-20 Page 11 of 20 Public

APPENDIX B

LSSI table posted June 23, 2020 in ID#2011-001R

Information Document
Available Transfer Capability and Transfer Path Management
ID #2011-001R

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Table 7: Minimum Amount of Load Shed Service for Import Load Requirement

Minimum amount of load shed service for import load requirement is based on the combined British Columbia/Montana net import schedule and the Alberta internal load.

BC/MT ATC Import[2,3]	AIL (MW)[1]											
	7000 to 7499	7500 to 7999	8000 to 8499	8500 to 8999	9000 to 9499	9500 to 9999	10000 to 10499	10500 to 10999	11000 to 11499	11500 to 11999	12000 to 12499	12500 and above
Below 500	0	0	0	0	0	0	0	0	0	0	0	0
501 to 550	23	23	10	0	0	0	0	0	0	0	0	0
551 to 600	72	72	55	24	24	10	0	0	0	0	0	0
601 to 650	120	120	105	72	72	50	47	43	26	10	0	0
651 to 700	172	170	156	124	116	100	93	89	74	51	43	41
701 to 750	219	219	207	175	167	147	140	134	116	103	89	86
751 to 800	270	268	257	225	218	193	187	182	165	150	135	128
801 to 850	321	317	307	275	262	243	235	229	214	196	181	175
851 to 900	373	365	358	325	310	292	282	276	263	243	227	222
901 to 950	418	413	408	376	360	339	328	323	312	289	273	268
951 to 1000	477	467	457	427	411	387	375	370	362	336	321	315
1001 to 1050	535	520	506	478	451	437	421	416	409	382	371	362
1051 to 1100	595	580	566	533	501	488	470	461	457	429	419	408
1101 to 1150	650	635	621	584	551	538	516	508	507	478	468	453
1151 to 1200	714	691	670	649	591	585	563	558	554	526	514	499
1201 to 1250	778	752	727	704	641	635	608	605	600	575	559	544

Notes:

1. If the Alberta internal load falls on or very close to a boundary of Table 1 ranges, the AESO uses the lower Alberta internal load range to determine the amount of load shed

APPENDIX C

LSSI table posted March 10, 2023 in ID#2011-001R

Information Document
Available Transfer Capability and Transfer Path Management
ID #2011-001R

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Table 7a: Minimum Amount of Load Shed Service for Import Load Requirement (MW)

Minimum amount of load shed service for import load requirement is based on the combined British Columbia/Montana net import schedule and the Alberta internal load during normal weather conditions.

BC / MT Import ATC (MW) [2,3]	AIL (MW)[1]											
	7000 to 7499	7500 to 7999	8000 to 8499	8500 to 8999	9000 to 9499	9500 to 9999	10000 to 10499	10500 to 10999	11000 to 11499	11500 to 11999	12000 to 12499	12500 and above
Below 299	0	0	0	0	0	0	0	0	0	0	0	0
300 to 303	4	0	0	0	0	0	0	0	0	0	0	0
304 to 307	8	4	0	0	0	0	0	0	0	0	0	0
308 to 311	12	8	4	0	0	0	0	0	0	0	0	0
312 to 315	16	12	8	4	0	0	0	0	0	0	0	0
316 to 319	20	16	12	8	4	0	0	0	0	0	0	0
320 to 323	24	20	16	12	8	4	0	0	0	0	0	0
324 to 327	28	24	20	16	12	8	4	0	0	0	0	0
328 to 331	32	28	24	20	16	12	8	4	0	0	0	0
332 to 335	36	32	28	24	20	16	12	8	4	0	0	0
336 to 339	40	36	32	28	24	20	16	12	8	4	0	0
340 to 343	44	40	36	32	28	24	20	16	12	8	4	0
344 to 350	51	47	43	39	35	31	27	23	19	15	11	7
351 to 400	101	97	93	89	85	81	77	73	69	65	61	57
401 to 450	151	147	143	139	135	131	127	123	119	115	111	107
451 to 500	201	197	193	189	185	181	177	173	169	165	161	157
501 to 550	251	247	243	239	235	231	227	223	219	215	211	207
551 to 600	301	297	293	289	285	281	277	273	269	265	261	257
601 to 650	351	347	343	339	335	331	327	323	319	315	311	307
651 to 700	401	397	393	389	385	381	377	373	369	365	361	357
701 to 750	451	447	443	439	435	431	427	423	419	415	411	407
751 to 800	501	497	493	489	485	481	477	473	469	465	461	457
801 to 850	551	547	543	539	535	531	527	523	519	515	511	507
851 to 900	601	597	593	589	585	581	577	573	569	565	561	557
901 to 950	651	647	643	639	635	631	627	623	619	615	611	607
951 to 1000	701	697	693	689	685	681	677	673	669	665	661	657
1001 to 1050	751	747	743	739	735	731	727	723	719	715	711	707

Information Document
Available Transfer Capability and Transfer Path Management
ID #2011-001R

aeso

BC / MT Import ATC (MW) [2,3]	AIL (MW)[1]											
	7000 to 7499	7500 to 7999	8000 to 8499	8500 to 8999	9000 to 9499	9500 to 9999	10000 to 10499	10500 to 10999	11000 to 11499	11500 to 11999	12000 to 12499	12500 and above
1050 to 1100	801	797	793	789	785	781	777	773	769	765	761	757
1101 to 1150	851	847	843	839	835	831	827	823	819	815	811	807
1151 to 1200	901	897	893	889	885	881	877	873	869	865	861	857
1201 to 1250	951	947	943	939	935	931	927	923	919	915	911	907

Table Notes:

1. If the Alberta internal load falls on or very close to a boundary of Table 1 ranges, the AESO uses the lower Alberta internal load range to determine the amount of load shed service for imports to arm.
2. When 5L92 is out of service, the AESO uses the total net combined British Columbia/Montana import plus the Alberta interconnected electric system most severe single contingency to determine the import level when applying this table.
3. When 2L294, 2L113, 1L274/L274 or the Natal transformers are out of service, the AESO uses the total net combined British Columbia/Montana import and the AIES load plus the British Columbia load served from Alberta via the 138 kV system to determine the LSSi required level.

APPENDIX D

AESO 2018 LSSI Procurement

Screen capture from the AESO website at this address on August 1, 2023: https://www.aeso.ca/market/market-participation/ancillary-services/load-shed-service-for-imports/

2018 LSSi procurement

On May 1, 2018 the AESO posted a Request for Expressions of Interest (REOI) to procure LSSi for 2019 and subsequent years. The purpose of the REOI was to assist the AESO in identifying interested parties, and to provide key details related to the Request for Proposals (RFP) stage of the competition and the accompanying Import Load Shed Agreement. Additionally, the AESO hosted an LSSi information session on May 8, 2018 for interested parties.

On June 1, 2018 the AESO opened the RFP stage for a contract term beginning January 2019 through to the end of 2021. The RFP attracted competitive interest and the AESO subsequently contracted 330 MW of LSSi from seven successful proponents.

The LSSi procurement was overseen by a Fairness Advisor at every stage to ensure the competition was administered in a fair and transparent manner, and adhered to all confidentiality requirements, policies and guidelines. To read the Fairness Advisor's report for the 2018 LSSi procurement, please **click here**.

APPENDIX E

AESO 2020 LSSI Procurement

Screen captured from the AESO website at this address on August 1, 2023: https://www.aeso.ca/market/market-participation/ancillary-services/load-shed-service-for-imports/

LSSi procurement competition

The AESO currently contracts 330 MW of LSSi from seven companies, with terms of service that commenced in January 2019 and will conclude at the end of 2021.

The AESO remains committed to ensuring the energy and ancillary services markets continue to operate together to deliver a reliable, efficient, and cost-effective electricity system. In 2020 we conducted a two-stage competition to procure LSSi for the next service period that will commence in January 2022 and conclude at the end of 2024.

The Request for Expressions of Interest (REOI) stage, which opened on September 17, 2020 and closed on October 7, 2020, assisted the AESO in identifying parties interested in participating in the competition. Information was provided on prospective facilities, and feedback was solicited on key provisions of the Import Load Shed Agreement.

The Request for Proposals (RFP) stage opened on October 28, 2020 and proposals were accepted until December 10, 2020. Contracts were awarded in late Q1 2021.

The RFP attracted strong interest and the AESO has contracted 366 MW of LSSi from seven service providers for the service period starting on January 1, 2022 and ending on December 31, 2024.

The LSSi procurement was overseen by a Fairness Advisor at every stage to ensure the competition was administered in a fair and transparent manner, and adhered to all confidentiality requirements, policies and guidelines. To read the Fairness Advisor's report for the 2020 LSSi procurement, please **click here**.

APPENDIX F

Hourly average LSSI offered and pool price – Page 1
(Excerpt Only – Excel Spreadsheet filed separately, See "LSSI Offered" Tab)

Year	Month	Day	Hour Ending	LSSI Offered (MW)	Pool Price (CAD/MWh)
2022	1	1	0	183.4	65.64
2022	1	1	1	197.6	61.59
2022	1	1	2	214.5	56.67
2022	1	1	3	240.3	45.58
2022	1	1	4	241.2	57.39
2022	1	1	5	229.2	58.11
2022	1	1	6	213.6	53.37
2022	1	1	7	213.0	41.23
2022	1	1	8	213.4	40.92
2022	1	1	9	212.8	39.58
2022	1	1	10	210.6	41.14
2022	1	1	11	208.8	51.16
2022	1	1	12	208.3	50.88
2022	1	1	13	174.2	54.35
2022	1	1	14	124.4	52.48
2022	1	1	15	124.6	53.93
2022	1	1	16	124.4	62.89
2022	1	1	17	142.5	83.49
2022	1	1	18	182.4	69.75
2022	1	1	19	181.5	66.28
2022	1	1	20	183.3	55.82
2022	1	1	21	230.4	47.65
2022	1	1	22	229.3	46.66
2022	1	1	23	227.8	55.65
2022	1	2	0	227.8	48.74
2022	1	2	1	225.6	32.45
2022	1	2	2	225.4	33.48
2022	1	2	3	225.6	38.35
2022	1	2	4	225.4	36.12
2022	1	2	5	225.2	40.34
2022	1	2	6	225.3	46.45
2022	1	2	7	225.3	46.29
2022	1	2	8	221.8	48.44
2022	1	2	9	210.0	42.75
2022	1	2	10	197.3	38.62
2022	1	2	11	199.0	47.67
2022	1	2	12	181.9	48.09
2022	1	2	13	150.5	49.11
2022	1	2	14	148.3	51.94
2022	1	2	15	176.7	49.52
2022	1	2	16	200.4	59.43
2022	1	2	17	201.0	70.95
2022	1	2	18	161.4	151.42
2022	1	2	19	122.3	96.94
2022	1	2	20	180.0	107.75
2022	1	2	21	227.8	77.41
2022	1	2	22	216.0	100.08
2022	1	2	23	200.8	90.69
2022	1	3	0	210.7	70.43

APPENDIX G
Analysis Table – Page 1
(Excerpt Only – Excel Spreadsheet filed separately, See "Analysis" Tab")

AB_Date	AB_Hour	begin_datetime_mpt	pool_price	alberta internal load	System Load (AIES)	Net BC/MATL Flows	LSSI Offered	Maximum Imports (2020 Table)	Maximum Imports (2023	Curtailed Imports	Minimum Merit Curve Equivalent	Risked Portion of Next	Adjusted Equivalent Dispatch	Actual Pool Price	Adjusted Pool Price	Additional Cost
2022-01-01	0	2022-01-01 00:00	65.64	10746	7692	499.6	183	800	500	0	11074	8	11082	65.64	65.64	0
2022-01-01	1	2022-01-01 01:00	61.59	10618	7569	449.6	198	800	500	0	10797	11	10808	61.59	61.59	0
2022-01-01	2	2022-01-01 02:00	56.67	10499	7462	449.5	215	800	500	0	10600	21	10621	56.67	56.67	0
2022-01-01	3	2022-01-01 03:00	45.58	10451	7452	449.5	240	850	550	0	10465	9	10474	45.58	45.58	0
2022-01-01	4	2022-01-01 04:00	57.39	10408	7332	124.6	241	850	550	0	10418	31	10449	57.39	57.39	0
2022-01-01	5	2022-01-01 05:00	58.11	10401	7369	144.7	229	800	550	0	10501	0	10501	58.11	58.11	0
2022-01-01	6	2022-01-01 06:00	53.37	10438	7454	294.7	214	800	500	0	10365	1	10366	53.37	53.37	0
2022-01-01	7	2022-01-01 07:00	41.23	10529	7561	269.7	213	800	500	0	10436	0	10436	41.23	41.23	0
2022-01-01	8	2022-01-01 08:00	40.92	10576	7598	294.7	213	800	500	0	10474	7	10481	40.92	40.92	0
2022-01-01	9	2022-01-01 09:00	39.58	10625	7590	269.7	213	800	500	0	10383	0	10383	39.58	39.58	0
2022-01-01	10	2022-01-01 10:00	41.14	10756	7726	244.7	211	800	500	0	10451	7	10458	41.14	41.14	0
2022-01-01	11	2022-01-01 11:00	51.16	10822	7868	169.7	209	800	500	0	10497	5	10502	51.16	51.16	0
2022-01-01	12	2022-01-01 12:00	50.88	10851	7895	94.7	208	800	500	0	10472	0	10472	50.88	50.88	0
2022-01-01	13	2022-01-01 13:00	54.35	10839	7854	44.7	174	750	500	0	10526	8	10534	54.35	54.35	0
2022-01-01	14	2022-01-01 14:00	52.48	10747	7809	44.7	124	700	450	0	10462	7	10469	52.48	52.48	0
2022-01-01	15	2022-01-01 15:00	53.93	10770	7855	194.7	125	700	450	0	10505	2	10507	53.93	53.93	0
2022-01-01	16	2022-01-01 16:00	62.89	11119	8183	224.5	124	750	450	0	10776	25	10801	62.89	62.89	0
2022-01-01	17	2022-01-01 17:00	83.49	11295	8322	149.5	143	750	450	0	11264	1	11265	83.49	83.49	0
2022-01-01	18	2022-01-01 18:00	69.75	11141	8189	119.7	182	800	500	0	10974	22	10996	69.75	69.75	0
2022-01-01	19	2022-01-01 19:00	66.28	10946	8065	19.7	182	750	500	0	10935	2	10937	66.28	66.28	0
2022-01-01	20	2022-01-01 20:00	55.82	10787	7920	-20.3	183	800	500	0	10655	4	10659	55.82	55.82	0
2022-01-01	21	2022-01-01 21:00	47.65	10543	7720	-80.3	230	850	550	0	10518	12	10530	47.65	47.65	0
2022-01-01	22	2022-01-01 22:00	46.66	10289	7446	-80.3	229	800	550	0	10447	4	10451	46.66	46.66	0
2022-01-01	23	2022-01-01 23:00	55.65	9999	7165	-199.3	228	800	500	0	10178	3	10181	55.65	55.65	0
2022-01-02	0	2022-01-02 00:00	48.74	9846	7007	-199.3	228	800	500	0	9894	6	9900	48.74	48.74	0
2022-01-02	1	2022-01-02 01:00	32.45	9768	6969	129.7	226	800	500	0	9540	0	9540	32.45	32.45	0
2022-01-02	2	2022-01-02 02:00	33.48	9700	6870	49.8	225	800	500	0	9500	5	9505	33.48	33.48	0
2022-01-02	3	2022-01-02 03:00	38.35	9681	6816	-50.2	226	800	500	0	9584	8	9592	38.35	38.35	0
2022-01-02	4	2022-01-02 04:00	36.12	9695	6826	-98.2	225	800	500	0	9538	17	9555	36.12	36.12	0
2022-01-02	5	2022-01-02 05:00	40.34	9791	6916	-48.2	225	800	500	0	9551	2	9553	40.34	40.34	0
2022-01-02	6	2022-01-02 06:00	46.45	9908	7042	15.7	225	800	500	0	9771	4	9775	46.45	46.45	0
2022-01-02	7	2022-01-02 07:00	46.29	10098	7248	84.7	225	800	500	0	10107	1	10108	46.29	46.29	0
2022-01-02	8	2022-01-02 08:00	48.44	10279	7376	-0.3	222	800	500	0	10183	0	10183	48.44	48.44	0
2022-01-02	9	2022-01-02 09:00	42.75	10377	7443	-80.2	210	800	500	0	10138	18	10156	42.75	42.75	0
2022-01-02	10	2022-01-02 10:00	38.62	10510	7560	54.7	197	800	500	0	9999	16	10015	38.62	38.62	0
2022-01-02	11	2022-01-02 11:00	47.67	10635	7634	-145.2	199	800	500	0	10154	21	10175	47.67	47.67	0
2022-01-02	12	2022-01-02 12:00	48.09	10602	7595	-95.2	182	750	500	0	10240	20	10260	48.09	48.09	0
2022-01-02	13	2022-01-02 13:00	49.11	10594	7538	4.7	151	750	450	0	10301	11	10312	49.11	49.11	0
2022-01-02	14	2022-01-02 14:00	51.94	10631	7583	4.8	148	750	450	0	10328	9	10337	51.94	51.94	0
2022-01-02	15	2022-01-02 15:00	49.52	10744	7692	-30.3	177	750	500	0	10341	6	10347	49.52	49.52	0
2022-01-02	16	2022-01-02 16:00	59.43	11061	7991	19.8	200	800	500	0	10832	0	10832	59.43	59.43	0
2022-01-02	17	2022-01-02 17:00	70.95	11351	8246	4.7	201	800	500	0	11202	3	11205	70.95	70.95	0
2022-01-02	18	2022-01-02 18:00	151.42	11263	8046	-184.2	161	750	450	0	11532	1	11533	151.42	151.42	0
2022-01-02	19	2022-01-02 19:00	96.94	11172	8020	4.8	122	750	450	0	11452	4	11456	96.94	96.94	0
2022-01-02	20	2022-01-02 20:00	107.75	11103	7941	54.8	180	800	500	0	11520	22	11542	107.75	107.75	0
2022-01-02	21	2022-01-02 21:00	77.41	10982	7823	204.8	228	800	550	0	11436	12	11448	77.41	77.41	0
2022-01-02	22	2022-01-02 22:00	100.08	10757	7573	104.8	216	800	500	0	11464	0	11464	100.08	100.08	0
2022-01-02	23	2022-01-02 23:00	90.69	10487	7374	204.8	201	800	500	0	11116	0	11116	90.69	90.69	0
2022-01-03	0	2022-01-03 00:00	70.43	10287	7164	204.7	211	800	500	0	10939	26	10965	70.43	70.43	0
2022-01-03	1	2022-01-03 01:00	70.25	10192	7041	319.6	229	800	550	0	11059	0	11059	70.25	70.25	0
2022-01-03	2	2022-01-03 02:00	67.91	10128	7042	419.6	229	800	550	0	11020	0	11020	67.91	67.91	0
2022-01-03	3	2022-01-03 03:00	68.25	10177	7029	419.6	210	800	500	0	11080	2	11082	68.25	68.25	0
2022-01-03	4	2022-01-03 04:00	70.66	10225	7113	419.7	207	800	500	0	11254	0	11254	70.66	70.66	0
2022-01-03	5	2022-01-03 05:00	71.98	10333	7215	419.6	231	800	550	0	11279	20	11299	71.98	71.98	0
2022-01-03	6	2022-01-03 06:00	74.25	10558	7427	509.8	232	850	550	0	11478	0	11478	74.25	74.25	0
2022-01-03	7	2022-01-03 07:00	64.38	10871	7753	816.5	231	850	550	266.5	11684	6	11957	64.38	70.49	47370.83
2022-01-03	8	2022-01-03 08:00	79.04	11139	7978	813.5	232	850	550	263.5	12125	1	12389	79.04	169.2	719296.48
2022-01-03	9	2022-01-03 09:00	170.74	11251	8005	579.5	207	800	500	79.5	12245	4	12328	170.74	348.9	1426170.8
2022-01-03	10	2022-01-03 10:00	218.04	11394	8174	619.7	160	750	450	169.7	12397	2	12569	218.04	815.46	4883311.08
2022-01-03	11	2022-01-03 11:00	148.77	11463	8252	723.6	119	750	400	323.6	12274	6	12604	148.77	248.98	826932.92
2022-01-03	12	2022-01-03 12:00	176.62	11533	8294	678.6	108	750	400	278.6	12462	0	12741	176.62	395.82	1815852.8
2022-01-03	13	2022-01-03 13:00	186.47	11554	8293	668.6	118	750	450	218.6	12449	0	12668	186.47	395.82	1736139.55
2022-01-03	14	2022-01-03 14:00	176.13	11516	8312	682.6	127	750	450	232.6	12457	0	12690	176.13	369.38	1606294
2022-01-03	15	2022-01-03 15:00	131.95	11573	8381	701.6	132	750	450	251.6	12093	1	12345	131.95	172.77	342112.42
2022-01-03	16	2022-01-03 16:00	117.08	11784	8594	720.6	137	750	450	270.6	12145	5	12421	117.08	250.12	1143345.76
2022-01-03	17	2022-01-03 17:00	140.51	11939	8781	727.5	130	750	450	277.5	12259	13	12549	140.51	339.52	1747506.81
2022-01-03	18	2022-01-03 18:00	74.05	11825	8625	722.5	131	750	450	272.5	12020	0	12293	74.05	151.25	665850
2022-01-03	19	2022-01-03 19:00	70.21	11774	8561	594.3	155	800	450	144.3	11704	31	11879	70.21	74.01	32531.8
2022-01-03	20	2022-01-03 20:00	73.11	11709	8537	499.5	183	800	500	0	11698	18	11716	73.11	73.11	0
2022-01-03	21	2022-01-03 21:00	74.21	11516	8359	399.6	213	850	500	0	11708	2	11710	74.21	74.21	0
2022-01-03	22	2022-01-03 22:00	68.47	11241	8123	399.6	248	850	550	0	11341	16	11357	68.47	68.47	0
2022-01-03	23	2022-01-03 23:00	67.51	10914	7853	469.6	249	850	550	0	11023	14	11037	67.51	67.51	0
2022-01-04	0	2022-01-04 00:00	56.14	10716	7590	469.6	249	850	550	0	10719	0	10719	56.14	56.14	0

APPENDIX H
Summary Merit Curve – Page 1
(Excerpt Only – Excel Spreadsheet filed separately, See "ImportAnalysis_MeritCurveSummar" Tab)

begin_dateTime_mpt	Bid	SumOfenergy_blocks_available_MW	Running Total
2022-01-01 00:00	0	9686	9686
2022-01-01 00:00	14	1	9687
2022-01-01 00:00	15	9	9696
2022-01-01 00:00	19	29	9725
2022-01-01 00:00	25.91	90	9815
2022-01-01 00:00	28.22	28	9843
2022-01-01 00:00	28.5	43	9886
2022-01-01 00:00	28.64	21	9907
2022-01-01 00:00	30.37	50	9957
2022-01-01 00:00	30.38	10	9967
2022-01-01 00:00	30.42	24	9991
2022-01-01 00:00	31.45	50	10041
2022-01-01 00:00	31.46	35	10076
2022-01-01 00:00	32.44	123	10199
2022-01-01 00:00	32.45	72	10271
2022-01-01 00:00	32.78	20	10291
2022-01-01 00:00	35.02	30	10321
2022-01-01 00:00	38.61	40	10361
2022-01-01 00:00	40.14	30	10391
2022-01-01 00:00	40.65	31	10422
2022-01-01 00:00	41.23	12	10434
2022-01-01 00:00	41.82	80	10514
2022-01-01 00:00	45	31	10545
2022-01-01 00:00	46.23	38	10583
2022-01-01 00:00	50.88	39	10622
2022-01-01 00:00	53.78	63	10685
2022-01-01 00:00	55	3	10688
2022-01-01 00:00	58.11	80	10768
2022-01-01 00:00	59.3	78	10846
2022-01-01 00:00	59.86	48	10894
2022-01-01 00:00	60.71	0	10894
2022-01-01 00:00	62.83	52	10946
2022-01-01 00:00	64.91	85	11031
2022-01-01 00:00	65.01	3	11034
2022-01-01 00:00	65.02	40	11074
2022-01-01 00:00	67.01	50	11124
2022-01-01 00:00	67.99	50	11174
2022-01-01 00:00	69.07	30	11204
2022-01-01 00:00	70.14	10	11214
2022-01-01 00:00	70.25	70	11284
2022-01-01 00:00	70.49	70	11354
2022-01-01 00:00	70.94	0	11354
2022-01-01 00:00	71.52	50	11404
2022-01-01 00:00	78.58	50	11454
2022-01-01 00:00	80	6	11460
2022-01-01 00:00	84.23	40	11500

APPENDIX “B”

MATL ISO Rule Proposal

Purpose of the Form

Section 20.81 of the *Electric Utilities Act* requires the AESO to establish a process for market participants and interested parties to propose ISO rules for the AESO's consideration. To propose a new ISO rule, an amendment to an existing ISO rule or a removal of an existing ISO rule, please complete and submit this form.

Completed proposal forms will be posted to the AESO website with Individual Name, Title and Contact Details removed. Please ensure that any confidential or commercially sensitive information submitted with your proposal has been clearly identified.

ISO Rule Proposal Description

1. Proposal Date:

June 2, 2023

2. Proposal Type:

☐New ISO rule(s)	☒Amend existing ISO rule(s)	☐Removal of existing ISO rule(s)

3. Provide a concise description of the issue that the proposed rule is intended to address, the level of urgency, and any industry impacts. Please provide a list of any relevant supporting data, analysis, or materials and include these documents as attachments to this form.

Despite representations it has made to the Alberta Utilities Commission ("AUC") that interties and generators should be treated the same for the purposes of providing system access service and access to the power pool[1] (which the AUC and the Alberta Court of Appeal have confirmed is the correct approach[2]), the AESO has long treated electricity imports differently from domestic electricity and has established rules and practices that hinder competition, harm competitive markets, and harm Alberta consumers. While the AESO is statutorily obligated to ensure the safe, reliable and economic operation of the transmission system,[3] it must also provide non-discriminatory system access service on that system that gives all electricity market participants a reasonable opportunity to exchange electric energy.[4] It currently does not meet this requirement in the manner that it addresses (i) transmission congestion constraints in the area adjacent to the Montana-Alberta intertie ("MATL")

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1 *Decision 2013-025*, Alberta Electric System Operator, Objections to ISO rules Section 203.6 Available Transfer Capability and Transfer Path Management (*"Decision 2013-025"*) at paras. 83-85 and 92.

2 *Decision 2013*-025, para. 105*; Saskatchewan Power Corporation v Alberta (Utilities Commission)*, 2015 ABCA 183 at paras. 42-43.

3 *Electric Utilities Act*, SA 2003, c E-5.1 ("*EUA*"), s. 16.

4 *EUA,* ss. 29 and 33.

through its practice of curtailing MATL Import Assets in advance of curtailing other pool assets; and (ii) states of supply surplus through its practice of curtailing import interchange transactions in advance of other in-merit electricity supply. As outlined further below, the proposed rule changes are intended to address the ongoing discriminatory treatment of MATL Import Assets and import interchange transactions under ISO Rules 302.1, *Real Time Transmission Constraint Management,* and 202.5, *Supply Surplus*.

Amongst other obligations, under Section 17 of the *EUA,* the AESO has a duty:

> (b) to facilitate the operation of electricity markets in a manner that is fair and open and that gives all electricity market participants wishing to participate in those electricity markets and to exchange electric energy a reasonable opportunity to do so;
>
> (c) to determine, according to relative economic merit, the order of dispatch of electric energy and ancillary services in Alberta and from scheduled exchanges of electric energy and ancillary services between the interconnected electric system in Alberta and electric systems outside Alberta, to satisfy the requirements for electricity in Alberta (emphasis added)…

Furthermore, the AESO's rules must support the fair, efficient and openly competitive operation of the electricity market.[5] It's obligations are further addressed in AUC decisions and regulations, including:

- AUC Decision 2013-025, where the Commission found that there is a clear legislative requirement to provide non-discriminatory system access service to market participants, which means equal treatment of market participants and includes a reasonable opportunity for system access service that applies equally to generators and interties;[6] and
- Alberta's *Fair, Efficient and Open Competition Regulation*, that identifies "restricting or preventing competition, a competitive response or electricity market entry by another person…" as conduct that does not support the fair, efficient and openly competitive operation of the electricity markets.[7]

The AESO's discriminatory practices in managing transmission congestion and supply surplus are also noncompliant with the United States-Mexico-Canada Agreement ("USMCA"). While international trade issues have not appeared to be of concern to the AESO, we note that the AESO's predecessor was certainly alive to potential contraventions of NAFTA arising from curtailment practices.[8]

Any suggestion by the AESO that its practice of curtailing MATL Import Assets and import interchange transactions in advance of curtailing other pool assets is permissible, or can be justified, by virtue of the fact that importers take system access service under an opportunity service (Rate IOS) cannot be supported. Any distinction in tariff services provided to different types of supply (i.e. imports and intra-Alberta generation) is unduly discriminatory, and unduly preferential and falls afoul of all of the above noted obligations as well as section 121(2)(b) of the *EUA* for the same reasons. Fundamentally, Rate IOS and STS customers pay the same rates, yet Rate STS is being provided with preferential access to the transmission system. Moreover, and also in breach of the AESO's duty to provide non-discriminatory system access, the AESO has not offered any service

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5 *EUA,* s. 25(1)(b)(ii).

6 *Decision 2013-025*, para. 92.

7 AR 159/2009, s. 2(i).

8 EUB Decision 2002-099, *ESBI Alberta Ltd, Transmission Administrator, Congestion Management Principles* (November 5, 2002) at para. 1072.

other than opportunity service to imports.[9] Simply stated, the AESO cannot rely on its current practice to provide non-discriminatory service offerings to justify further discrimination.

MATL Canada G.P. respectfully proposes the rule changes described below in order to ensure fair and equitable treatment of imports with other market participants. This matter is urgent as the current rule is not compliant with the AESO's statutory obligations and because it compounds the separate issue of the constraints that the interties are already unfairly shouldering because of incremental curtailments of available transfer capability since the AESO's recent release of its *2023 Reliability Requirements Roadmap*.

The impact of this proposed rule change to other pool assets is anticipated to be minimal as it is expected to be localized to the Effective Pool Assets listed in ID#2013-009R, which applies only to the South Area Transmission Constraint Management Area. MATL Canada G.P. is not aware of the other interties facing similar constraints at this time.

4. Provide a description of your proposal to address the issue described in #3. Include the purpose or objective of the proposed new or amended ISO rule. Note that it is not necessary to provide draft rule language.

MATL Canada G.P. proposes to amend ISO Rule 302.1 by deleting the following text from s. 2(1)(c) of the rule "and any upstream constraint side service under ISO tariff rate schedule Rate IOS".

> **Requirements**
>
> **Real Time Transmission Constraint Mitigation**
>
> 2(1) Subject to subsection 3, the ISO must comply with the following procedures in the following sequence to mitigate a transmission constraint in the present, real time:
> …
> (c) curtail by directives, any downstream constraint side service under ISO tariff rate schedules Rate XOS 1 Hour and Rate XOS 1 Month ~~and any upstream constraint side service under ISO tariff rate schedule Rate IOS~~, that are effective in mitigating the transmission constraint;

The objective and effect of this revision to ISO Rule 302.1 would be to treat the "MATL Import Assets", as described in ID#2013-009R, in a non-discriminatory manner such that it would be curtailed on a pro-rata basis under s. 2(1)(g) like all other effective pool assets. Any necessary revisions to ID#2013-009R to include "MATL Import Assets" and any other pool assets connected to the 240kV network as effective pool assets should also be made, as set out in Appendix 1.

MATL Canada G.P. also proposed to amend ISO Rule 202.5 by deleting the following text from ss. 2(1) and 2(2) of the rule:

> **Requirements**
>
> **State of Supply Surplus and Multiple Zero Dollar ($0) Offers**

[9] MATL Canada G.P. understands the AESO's rationale for this was simply that offering firm service to imports would disadvantage them relative to Rate STS because of the cost allocation principles in the Transmission Regulation: EUB Decision 2005-096, AESO 2005/2006 General Tariff Application at p. 34. This does not, however, support providing imports a lesser service.

2(1) ~~If during a current hour the ISO forecasts that the interconnected electric system will experience a state of supply surplus in the next hour, as evidenced by the in-merit electricity supply consisting of only multiple $0 offers and the supply of electricity available from these offers exceeds the system load, then the ISO may curtail next hour import interchange transactions to balance system supply and system load.~~

~~(2)~~ Subject to subsection 2(~~3~~2), if during a current hour the ISO determines that a state of supply surplus is imminent in the current hour or already exists, then the ISO must comply with the following procedures as may be required, in the following sequence, to balance system supply and system load:

~~(a) initiate curtailment of import interchange transactions;~~

(~~b~~a) allow pool participants to submit bids to increase export interchange transactions within two (2) hours of the start of a settlement interval;

(~~c~~b) allow pool participants to submit offers to decrease import interchange transactions within two (2) hours of the start of a settlement interval;

(~~d~~c) allow pool participants to submit restatements reducing generating unit and aggregated generating facility output within two (2) hours of the start of a settlement interval;

(~~e~~d) issue, on a pro rata basis:
(i) dispatches to import interchange transactions, generating units and aggregated generating facilities for partial volumes of flexible blocks of the $0 offers;

(~~f~~e) if there are generating units and aggregated generating facilities with $0 offers for inflexible blocks stating volumes greater than their declared minimum stable generation, then issue directives to curtail those generating units and aggregated generating facilities to their declared minimum stable generation, starting with the generating units and aggregated generating facilities having the greatest difference in MW between the then current dispatch level and minimum stable generation and continuing in descending order until all those generating units and aggregated generating facilities have received directives; and

(~~g~~f) issue directives for any other necessary actions, including shutting down generating units and aggregated generating facilities, to ensure system reliability.

(~~3~~2) If the ISO determines that a generating unit or aggregated generating facility is running at a generation level higher than its minimum stable generation in order to provide regulating reserve, then the ISO may, as part of the effective execution of the procedures set out in subsection 2(~~2~~1), issue a dispatch to curtail delivery of regulating reserve from that generating unit or aggregated generating facility and issue a dispatch for regulating reserve to another generating unit or aggregated generating facility which can provide regulating reserve while operating at a lower generation level at or above minimum stable generation.

(43) If during a current hour the present, real time operating conditions change such that the ISO determines that following the procedural sequence set out in subsections 2(~~2~~1) and 3 would put the ISO in contravention of any reliability standard requirement by failing to achieve compliance within the operating limits or required response time specified in that reliability standard, then the ISO may alter the procedural sequence.

(~~5~~4) If the ISO alters the procedural sequence as set out in subsection 2(43), then once the ISO is assured that the interconnected electric system is operating in a safe and reliable mode, the ISO must recommence the procedural sequence set out in subsections 2(~~2~~1) and 3.

Transitioning Out of a State of Supply Surplus

3 When the ISO determines that the interconnected electric system is transitioning out of a state of supply surplus, the ISO must reverse any actions taken under subsection 2(~~2~~1), in reverse order, to balance system supply and system load.

The objective and effect of these revisions to ISO Rule 202.5 would be to treat import interchange transactions in a non-discriminatory manner such that they would be curtailed on a pro-rata basis with generating units and aggregated generating facilities under the newly numbered s. 2(1)(d).

5. Provide a list of related ISO rules, Information Documents, and any other relevant AESO documents.

ISO Rule section 202.5 Supply Surplus

ISO Rule section 302.1 Real Time Transmission Constraint Management

AESO Information Document South Area Transmission Constraint Management ID#2013-009R

Proponent Information

List at least one contact. For additional contacts, copy the table below and include all the requested details for each person. If more than one contact is provided, please identify the main contact.

Individual Name:	[redacted]
Title:	[redacted]
Company Name:	MATL Canada G.P. Inc.
Contact details:	[redacted]

Note that personal information collected on this form will be used to contact you to administer the ISO rule proposal process. This information is collected in accordance with section 33(c) of the *Freedom of Information and Protection of Privacy Act*. Questions related to the handling of personal information can be directed to privacy@aeso.ca.

Submit form to: ruleproposals@aeso.ca