**IN THE MATTER OF** an Arbitration under Chapter 3 of the IESO Market Rules made pursuant to section 32 of the Ontario *Electricity Act, 1998*, S.O. 1998, c. 15, as amended

B E T W E E N:

NEXUS ENERGY INC.

Applicant

- and -

INDEPENDENT ELECTRICITY SYSTEM OPERATOR (IESO)

Respondent

**REPLY OF THE APPLICANT, NEXUS ENERGY INC.**

1. In reply to the IESO's Responding Memorial, Nexus Energy submits that:

   (a) the IESO has failed to demonstrate that congestion rents are a "settlement amount" as defined under the Market Rules;

   (b) the IESO is disguising a penalty in a convoluted and unsupported interpretation of the Market Rules relating to "settlement amount";

   (c) Nexus Energy's interpretation of the Market Rules is consistent with industry practice by both the IESO and market participants. It is very telling that:

      (i) the IESO has not challenged whatsoever Nexus Energy's affidavit evidence that "avoided congestion rent" was not deemed by the industry at large as a recoverable amount at the relevant time; and

(ii) the IESO subsequently amended the Market Rules to convert "avoided congestion rent" as part of a "settlement amount" determined in accordance with Chapter 9. That this mechanism did not expressly exist before May 1, 2025 reveals that it was never known or made clear to market participants that "avoided congestion rents" would be recoverable as a settlement amount in respect of a failed transaction;

(d) the Market Rules that are the subject of this Arbitration are to be interpreted in accordance with the principles of contractual interpretation, not statutory interpretation. But in any event there should not be a material difference in interpretations and outcomes by either approach;

(e) both the procedural fairness and estoppel issues raised by Nexus Energy are within the jurisdiction of this Arbitration. The IESO's position that they are not is an attempt to distract the reader from the serious procedural breaches that it has committed;

(f) given that the MACD Vice-President Glenn McDonald has not provided evidence despite the issues raised by Nexus Energy, an adverse inference should be drawn that Glenn McDonald received confidential MSP-related information relevant to the Notice of Non-Compliance and IESO Order

issued against Nexus Energy – which receipt is procedurally unfair and unlawful[1]; and

(g) the IESO's sudden change of course in interpreting congestion rents was prompted by a provincial Auditor General's Report and not an MSP Monitoring Report.

**Congestion rents are not a "settlement amount"**

2. The parties agree that a "settlement amount" is defined under the Market Rules as an amount of money to be paid by or to a market participant, determined in accordance with Chapter 9" (underlining added).

3. There are two components to the definition of "settlement amount":

(a) an amount of money to be paid by a market participant; and

(b) determined in accordance with Chapter 9.

4. The IESO conveniently glosses over the second component and from there concludes that given that congestion is an amount to be paid, and given that it was

[1] Nexus Energy will not Reply in detail in every aspect of the IESO's Responding Memorial. For example, Nexus Energy denies the IESO's submission that there is no dispute between the parties on the three issues listed in paragraph 6 of the Responding Memorial; to the contrary, these points are directly in issue. In addition, based on paragraph 74 of the Responding Memorial, the IESO seems to have misread paragraph 42 of Robin Doolittle's affidavit. Nexus Energy agrees with the IESO that the "Renewed Market Rules" became effective in May 2025 and therefore do not apply to the Subject Transactions at issue in this Arbitration.

avoided, it is subject to adjustment as a settlement amount under Chapter 3, section 6.6.10A.2.

5. While congestion rent is an amount to be paid, it is not determined or determinable in accordance with Chapter 9. Instead, it is expressly determined in accordance with Chapter 7. Contrast this with the other settlement amounts listed in section 6.6.10A.2 which are expressly determined in accordance with Chapter 9, such as "transmission rights payments, congestion management settlement credits…".

6. The IESO tries to hoodwink the reader by introducing the mental gymnastics of a mathematically complex formula set out in Chapter 9 used for determining other settlement amounts, e.g. the energy market price.[2] With respect, accepting the IESO's tortured analysis of Chapter 9 – which analysis the arbitrator must accept in order to find that the IESO has the authority to recover congestion rents under Chapter 3, section 6.6.10A.2 in this case - is simply too much of a stretch.

7. It cannot stand, particularly considering that congestion rents, shorthand for "intertie congestion pricing" or "ICP", are expressly determined in accordance with Chapter 7. The IESO's own evidence yields this necessary inference.[3]

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[2] Responding Memorial of the IESO dated January 30, 2026, paras 61 to 66.

[3] Responding Memorial of the IESO dated January 30, 2026, Tab 2, Affidavit of Robert Yeoman sworn January 30, 2026 ("***Yeoman Affidavit***"), paras 15(b)-(c). It is conceded here that congestion pricing is also known as ICP. This is significant because ICP is expressly defined to be an amount that is "determined in accordance … with Chapter 7", and not in accordance with Chapter 9 as is required to meet the definition of "settlement amount" under the Market Rules.

8. If we accept that Chapter 9 allows for the determination of congestion rents, then the intentional provisions of Chapter 7 become meaningless. Surely this was never the intent of the Market Rules.

9. In these circumstances, the IESO's misleading attempt to stretch the definition of "settlement amount" under Chapter 11 and infuse it with "congestion rents" fails.

10. As a result, the IESO does not have the authority to seek recovery of congestion rents under Chapter 3, section 6.6.10A.2 as a "settlement amount".

**The payment at issue is a financial penalty improperly imposed by the IESO**

11. Without lawful authority to recover congestion rents under the Market Rules as a "settlement amount", the $2,078,824.92 payment the IESO has taken from Nexus Energy is effectively a penalty. This is particularly the case where Nexus Energy has already paid to the IESO over $1,663,000 (and which it is not disputing) for the Subject Transactions.

12. The IESO has stated, both in its Notice of Non-Compliance and in its Responding Arbitration Memorial, that the payment at issue in this arbitration is not a financial "penalty" but that it nevertheless retains the authority to issue a financial penalty under Chapter 3, section 6.2.7 of the Market Rules.[4] The IESO also submits it was under no obligation to follow its own Sanction Assessment process set out in Chapter 3 of the Market Rules because "no financial penalty was imposed by the IESO".[5]

[4] Responding Memorial of the IESO dated January 30, 2026, para 72.
[5] Responding Memorial of the IESO dated January 30, 2026, para 97.

13. But, as described in Robin Doolittle's affidavit evidence, the charge by the IESO of $2,078,824.92 for "avoided congestion rents" was a payment out-of-pocket by Nexus Energy for transactions that never occurred[6]; because the Subject Transactions never flowed Nexus Energy did not receive any market revenues for them. Indeed, the IESO expressly found that issuing a financial penalty against Nexus Energy "would not be appropriate"[7]. This is precisely because there has been no allegation of malintent or egregious conduct in this case.

14. As correctly noted by the IESO, a financial penalty requires a separate and comprehensive assessment under Chapter 3, section 6.2.7 of the Market Rules (with additional prescribed procedural protections), which was not (nor is purported by the IESO to have been) conducted in this case. It is simply too late – and procedurally unfair - for the IESO to now try to arrive at the same result by imposing what is effectively a financial penalty but calling it a "settlement amount".

**Nexus Energy's interpretation of the Market Rules is consistent with industry practice by both the IESO and other market participants**

15. Nowhere in the IESO's Responding Memorial does it take issue with or challenge the veracity of Nexus Energy's supporting affidavit evidence – including the affidavit evidence of former and long-standing Ontario Power Generation energy trader and compliance team leader Giuseppe Rosati – that there was no industry knowledge,

[6] Memorial of the Applicant Nexus Energy Inc. dated October 31, 2025, para 61; and Tab 2, Affidavit of Robin Doolitte affirmed October 29, 2025 ("***Doolittle Affidavit***"), para 32.
[7] *Doolittle Affidavit*, Exhibit "F", IESO Notice of Non-Compliance dated December 17, 2024, para 79.

understanding or practice of ICP or congestion rents being recoverable by the IESO in respect of failed transactions.

16. For clarity, it is not that Nexus Energy was simply unaware. From 2005 until 2019, all invoicing, settlements, charges, enforcement actions (or lack thereof) by the IESO illustrates that the IESO itself interpreted the Market Rules as precluding congestion rent from being a “settlement amount” recoverable for failed transactions. Put differently, Nexus Energy’s understanding is due to, and is a direct result of, how the IESO operated the market following the 2006 Market Rule Amendments.

17. That the recovery of ICP by the IESO for failed intertie transactions was not part of industry practice or knowledge is further exemplified by the fact that at least three other (and larger) energy trader market participants were purportedly investigated and charged ICP between 2019 and 2021, before the IESO/MACD began to pursue its investigation of Nexus Energy.

18. As explained at paragraphs 156 to 160 of Nexus Energy’s Memorial, at no time did MACD publish any guidance for the benefit of stakeholders of its purported ability to seek payment for “avoided congestion rents”. This is despite having an established practice of issuing Market Rules Interpretation Bulletins and other compliance and enforcement guidance documents including Statements of Approach.

19. Instead, and incredibly even after its Investigation of Nexus Energy and issuance of the Notice of Alleged Breach in April 2024, the IESO continued to publicly represent until at least May 2024 that IFCs and EFCs (not avoided congestion rents) were the

mechanism by which failed intertie transactions would be addressed from a compliance perspective.[8]

20. The IESO made no public mention of "avoided congestion rents" until they became expressly included as part of the calculation of IFCs/EFCs as part of the IESO's Market Renewal Program in May 2025.[9] As stated in paragraph 154 of Nexus Energy's Memorial, the express inclusion of congestion rents payable in respect of failed intertie transactions from May 2025 onwards is a clear admission that prior to this time the Market Rules did not authorize the IESO to recover avoided congestion rent.

**The correct interpretation principles are contractual and not statutory**

21. Section 32 of the Ontario *Electricity Act* gives the IESO authority to "make" or create the Market Rules. The *Electricity Act* does not dictate specific provisions or language to be used in the Market Rules for the recovery of congestion rents for failed intertie transactions, or at all, as would be the case for subordinate legislation. The content of the Market Rules is instead drafted by IESO staff for submission to and approval by the IESO Board of Directors.

22. Once approved, the Market Rules becomes the subject of a contract between each market participant and the IESO, as expressly stated in both the IESO Participation

[8] Memorial of the Applicant Memorial of the Applicant Nexus Energy Inc. dated October 31, 2025, para 196.
[9] Memorial of the Applicant Nexus Energy Inc. dated October 31, 2025, para 196.

Agreement[10] and the Market Rules[11]. These provisions would become meaningless if the IESO's proposed interpretive approach were accepted.

23. There is no precedent for the IESO's contention that the Market Rules "must be interpreted in accordance with the rules of *statutory* interpretation." The IESO cites only to a general text on statutory interpretation and a court decision involving the Federal Child Support Guidelines under the *Divorce Act*, neither of which has any relevance to the dispute that is the subject of this Arbitration.[12]

24. In interpreting its own market rules (i.e. tariffs), the U.S. Federal Energy Regulatory Commission (FERC) has confirmed that general contract law principles apply in resolving tariff disputes: "[l]ike a contract, a tariff must be interpreted to give meaning to all provisions of the tariff"[13].

25. This language was recently cited by a U.S. District Court in dismissing a motion brought by FERC to enjoin a market participant from pursuing a challenge to a FERC-issued compliance order for alleged tariff (market rule) breaches. In so doing, the U.S. District Court affirmed that although not identical, "tariff violation claims … are in the nature of common law claims for breach of contract"[14].

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[10] *Doolittle Affidavit,* p 2, para F, Exhibit "B", "Participation Agreement between Nexus Energy and IESO signed August 16, 2017".
[11] *Doolittle Affidavit,* Exhibit "K", "Chapter 1 of the IESO Market Rules issued June 2, 2021", p 3, ss 4.3.1.
[12] Responding Memorial of the IESO dated January 30, 2026, para 49.
[13] *Nicole Gas Production, Ltd.* 105 FERC ¶ 61,371, p 9 (2003).
[14] *American Efficient LLC, et al. v. FERC* U.S. Court File No. 1:25-c-68, Memorandum Opinion and Order dated November 24, 2025, pp 23-24.

26. In any event, the only contemporaneous evidence of "legislative" intent is the amendment proposals submitted by IESO/MACD staff to the IESO Board of Directors in support of the 2006 Market Rule Amendments following the 2005 MACD Report. As described more fully at paragraphs 128 to 136 of Nexus Energy's Memorial, it is precisely that evidence which demonstrates the IESO (Board)'s intent to limit compliance investigations for failed intertie transactions to instances of "egregious behaviour".

27. The IESO is for the first time now advocating for a statutory interpretation, presumably to minimize or ignore evidence of surrounding circumstances (industry practice) as described above.[15] This tactic is also misplaced. While both contractual and statutory interpretation begin with a plain reading of the text, taken as a whole, both approaches also permit the consideration of contemporaneous evidence[16], particularly in situations of ambiguity as is the case here.

28. Moreover, the factual matrix evidence IESO seeks to ignore is IESO's own statements and understanding as subsequently adopted by Nexus Energy specifically and the industry generally when Nexus Energy signed the Participation Agreement in 2017 – namely, that MACD would pursue compliance investigations for failed intertie transactions only where there is demonstrable "egregious" conduct.[17]

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[15] Responding Memorial of the IESO dated January 30, 2026, para 50.

[16] Regarding contractual interpretation, see *Sattva Capital Corp v Crescent Moly Corp*, 2014 SCC 53 para 47; *Project Freeway Inc. v ABC Technologies Inc*, 2025 ONSC 1048 at para 36 and *Project Freeway Inc. v ABC Technologies Inc,* 2025 ONCA 855 at paras 8-10; regarding statutory interpretation, see *Reference re iGaming Ontario*, 2024 ONCA 570 at paras 135-141.

[17] Notably, while Nexus Energy argues that contemporaneous factual matrix evidence can and should be considered to interpret any ambiguity, its core argument is that there is no authority for "avoided congestion rents" based on a plain reading of the Market Rules. For example, see Nexus Energy's Memorial, paras 52-67.

29. In any event, irrespective of whether contractual or statutory interpretation principles are applied, the conclusion is the same. Whether the relevant evidence is treated in this arbitration as support for the "surrounding circumstances" under a contractual interpretation, or otherwise for the "context and purpose" under a statutory interpretation, it reasonably leads to a finding that compliance investigations for failed intertie transactions would be limited to instances where the market participant has engaged in "egregious" behaviour – which has never been alleged against Nexus Energy in this case.

30. Indeed, the Subject Transactions in this arbitration form less than 4% of the total intertie transactions performed by Nexus Energy during the Relevant Period. According to the MACD Report, this constitutes a "low" rate of recurrence and would therefore not meet any threshold for "egregious" behaviour – even if breaches based on lawful authority are proven (which is denied).[18]

**Procedural fairness and estoppel issues are within the jurisdiction of this arbitration and warrant an order prohibiting the IESO from enforcing the Notice of Non-Compliance and Order against Nexus Energy**

31. Even if is found that the IESO has the authority to recover congestion rents under Chapter 3, section 6.6.10A.2 of the Market Rules (which is denied), both Issue 2 (duty of fairness) and Issue 3 (estoppel) asserted in Nexus Energy's Memorial are within the Arbitrator's jurisdiction in this proceeding and warrant prohibiting the IESO from enforcing the Notice of Non-Compliance and Order against Nexus Energy in this case.

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[18] *Doolittle Affidavit,* Exhibit "I", "IESO report entitled 'Intertie Transaction Failure Guidelines' dated November 18, 2005", p 8.

32. The sources of the Arbitrator's jurisdiction are broad and include the following:

(a) Chapter 3 of the Market Rules, Section 2 (Dispute Resolution); and

(b) the Ontario *Arbitration Act, 1991* (except where otherwise excluded).[19]

33. Nothing in the jurisdictional sources for this Arbitration precludes the adjudication of procedural fairness or estoppel issues. To the contrary:

(a) Chapter 3 of the Market Rules requires Section 2 (Dispute Resolution) to be "liberally construed to secure the most expeditious, just and least expensive determination on its merits of every proceeding conducted hereunder";[20]

(b) Chapter 3, Section 2 of the Market Rules also directs that the Arbitrator "may do whatever is reasonably necessary and permitted by law to enable the effective … adjudication of any matter" before the Arbitrator;[21] and

(c) the Ontario *Arbitration Act, 1991* entitles the Arbitrator to rule on her own jurisdiction[22] and to decide the dispute in accordance with both law and equity (with equitable remedies expressly part of her jurisdiction).[23]

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[19] *Doolittle Affidavit,* Exhibit "L", "Chapter 3 of the IESO Market Rules issued May 1, 2023", ss 2.1.6 and 2.7.13.
[20] *Doolittle Affidavit,* Exhibit "L", "Chapter 3 of the IESO Market Rules issued May 1, 2023", ss 2.1.1.
[21] *Doolittle Affidavit,* Exhibit "L", "Chapter 3 of the IESO Market Rules issued May 1, 2023", ss 2.1.2.
[22] Ontario *Arbitration Act, 1991*, s 17.
[23] Ontario *Arbitration Act, 1991*, s 31.

34. The IESO grossly misrepresents the application of the *Rayonier* decision to suggest this challenge should be pursued by judicial review. There, the affected market participant (Rayonier or RYAM) was challenging the jurisdiction of the IESO to make certain Market Rules that purportedly gives it the authority to both conduct and enforce Market Rule breach investigations. Rayonier also raised a separate structural bias argument that it was contrary to procedural fairness for the Market Rules to allow the investigation, prosecution and determination of alleged compliance breaches to all be performed by the same entity (MACD).

35. Because it was seeking to set aside certain Market Rules, Rayonier commenced a judicial review for, among other things, an order from the Divisional Court declaring the relevant Market Rules themselves *ultra vires* and therefore unenforceable.

36. The IESO sought to quash the judicial review by arguing in part that the Market Rules dispute resolution process was the appropriate forum offering an adequate alternative remedy for the structural bias issue raised by Rayonier[24]. As the IESO argued in its supporting factum:

> *"… the IESO submits that an arbitrator [appointed under the IESO Market Rules dispute resolution process] would have the jurisdiction to address the validity and natural justice issues raised by RYAM in relation to the Notices [i.e. of Non-Compliance and associated Orders issued by MACD]*[25]
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> . . . . . .

[24] Reply Memorial of Nexus Energy Inc. dated March 13, 2025, Tab 1, Supplementary Affidavit of Francois Tardif affirmed March 13, 2026 ("***Supplementary Tardif Affidavit***"), Exhibit "A", Factum of the Moving Party (IESO), para 79.
[25] *Supplementary Tardif Affidavit*, Exhibit "A", Factum of the Moving Party (IESO), para 87.

> *Thus, no matter the nature of the dispute, the Market Rules provide for an adequate (and preferable) remedy instead of an application for judicial review to this court."*[26]

37. Read correctly, the decision of Lederer J. accepted the IESO's position and found that Rayonier precisely "*had* options available to it" (emphasis added) under the Market Rules dispute resolution process to raise its structural bias/procedural fairness challenge and that such process (including arbitration) was to be exhausted before a judicial review could be brought on such issue, i.e. that it was plain and obvious that a judicial review could not succeed on the structural bias/procedural fairness issue alone until the Market Rules dispute resolution process had been exhausted:

> *"… Here there is no inherent bias in the structure of the process when it is considered in its entirety. It was not a failure. As arranged within the process [Rayonier] was given a chance to comment. It did. Both negotiation and mediation would provide a further opportunity for its position to be brought forward. It they failed to resolve the dispute, a full hearing, by an arbitrator, would be available and would be followed by an appeal to the Ontario Energy Board, if either party required it."*[27]

38. In other words, Lederer J.'s decision (including the language cited at paragraph 101 of the IESO's Responding Memorial) confirms that procedural fairness issues are properly within the jurisdiction of an arbitration commenced under the Market Rules dispute resolution process.

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[26] *Supplementary Tardif Affidavit*, Exhibit "A", Factum of the Moving Party (IESO), para 90.
[27] *Rayonier A.M. Canada Enterprises Inc. v. Independent Electricity System Operator*, 2020 ONSC 5460 (CanLII), para 24.

39. Despite that finding, Lederer J. nevertheless denied the IESO's quash motion, determining that the jurisdictional question of whether the IESO has the authority to make certain Market Rules was an issue that would be more efficiently determined by way of judicial review to the courts[28]:

> *"The problem, if there is one, is that the issue of structural bias does not stand alone, it is brought in company with the proposition that the decision maker, that is the IESO, is without authority or jurisdiction to create the dispute resolution process [under Chapter 3 of the Market Rules]. As its counsel has conceded that is an issue that can be the subject of judicial review."*

40. Unlike in *Rayonier,* Nexus Energy's procedural fairness challenges in this arbitration concern the *application* of the Market Rules and the Protocol – not the jurisdiction to make them. Nexus Energy is not seeking to strike down any Market Rules as *ultra vires*. As the IESO itself argued in *Rayonier*, procedural fairness (natural justice) issues are properly within the scope of an IESO arbitration. This includes Issue 2 (duty of fairness) asserted in Nexus Energy's Memorial.

41. Similarly, there is also nothing in the Market Rules or otherwise which precludes Nexus Energy's Issue 3 (estoppel) from being considered in this Arbitration.

42. The IESO states that "[e]stoppel cannot be used to prevent a public authority from fulfilling its statutory obligations or enforcing clear legal requirements".[29] However, as stated above, there is no statutory obligation or legal requirement for the IESO to make

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[28] *Rayonier A.M. Canada Enterprises Inc. v. Independent Electricity System Operator*, 2020 ONSC 5460 (CanLII), para 31.

[29] Responding Memorial of the IESO dated January 30, 2026, para 113.

Market Rules for the recovery of "avoided" congestion rents for failed intertie transactions. Rather, the IESO relies on Chapter 3, section 6.6.10.2A of the Market Rules as unilaterally drafted by IESO staff and approved by the IESO Board of Directors.

43. Requiring Nexus Energy to pursue Issues 2 and 3 by way of a separate judicial review rather than through this Arbitration (which is already constituted to determine Issue 1) would be directly contrary to the letter and spirit of the Market Rules and law set out above. In addition to squandering time, money and other resources for both parties, it would run the risk of inconsistent rulings on the same set of facts. The Arbitrator has ample authority to adjudicate all three issues in the same proceeding.

44. This is the first arbitration hearing to be conducted under the Market Rules since the opening of the IESO-administered markets in 2002, almost 24 years ago. Caution should be taken before excluding categories of issues from the scope of arbitrations conducted under the Market Rules – particularly in the absence of any legislative, judicial or other legal requirement to do so. Limiting and/or bifurcating the scope of the dispute resolution provisions under the Market Rules could have significant precedential and costly ramifications for both market participants and the IESO in the future.

**Undisputed Lack of Independence and Bias**

45. That it "is not a secret"[30] that Glenn McDonald simultaneously wears multiple hats – (i) leading MACD and reporting to the IESO Board of Directors; (ii) supporting and reporting to the OEB's MSP; and (iii) participating as a member of the IESO executive

[30] *Yeoman Affidavit*, para 84.

team reporting to the President and CEO – does not mean it is lawful.[31] As detailed in Nexus Energy's Memorial, MAU employees serving the IESO (who also work directly for the MSP) are prohibited from sharing information relating to MSP's activities with other IESO employees unless they have obtained consent from the MSP. Yet Glenn McDonald instructs both MACD and MAU staff, including in relation to MSP monitor reporting activities[32].

46. In light of these overlapping roles and the lack of direct affidavit evidence to the contrary, an adverse inference should be drawn that Glenn McDonald, in his role with MACD and the Investigation against Nexus Energy, would have improperly had possession and knowledge of the confidential draft May 2017 MSP Monitoring Report (and more specifically Recommendation 3-2[33]).

47. This is important because that confidential draft Report was highly relevant to MACD's Investigation and Glenn McDonald's issuance of the final Notice of Non-Compliance and Order issued against Nexus Energy. Such use of confidential MSP information is procedurally unfair and in direct breach of the Protocol.

48. The timing of the IESO's response to Recommendation 3-2 is also suspect and cannot be credibly relied on in this dispute, for the reasons described more fully below.

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[31] See, for instance, *Supplementary Tardif Affidavit*, Exhibit "B", Auditor General's 2017 Annual Report, Chapter 3, section 3.06, pp 360-361, section 4.7 and Recommendation 12.
[32] *Yeoman Affidavit*, para 88.
[33] Namely, that the "IESO should revise the methodology used to set the intertie failure charge [IFCs] to include the congestion rents that an intertie trader avoids when it fails a scheduled transaction for reasons within its control". Memorial of the Applicant Nexus Energy Inc. dated October 31, 2025, Tab 3, Affidavit of Francois Tardif affirmed October 29, 2025 ("***Tardif Affidavit***"), Exhibit "O", p 82.

49. The IESO submits that "no MAU employees had any involvement in the Investigation [against Nexus Energy]". This belies logic and is plainly false. Most obviously, Robert Yeoman is an MAU employee and admits he was involved in the Investigation as Director of both Rule Compliance and Market Surveillance, and in both capacities reports directly to Glenn McDonald including in "reviewing MSP reports".[34] This blatantly contravenes the requirement under the Protocol to ensure that MAU employees take direction exclusively from the MSP (which does not include Glenn McDonald) with respect to MSP-related activities.[35]

50. Citing only to the affidavit of Robert Yeoman, the IESO submits that "to the extent Mr. McDonald received any [confidential MSP-related information from the MAU], it would have been unrelated to the Investigation [against Nexus Energy]". With respect, it is simply insufficient for Nexus Energy (or the Arbitrator) to accept this to be the case simply because Glenn McDonald's subordinate says so. Indeed, it is both telling and contrary to the best evidence rule that the IESO chose not to file direct affidavit evidence from Glenn McDonald despite having every opportunity to do so.

51. It is relevant and necessary to know the extent to which Glenn McDonald received confidential MSP-related information regarding the Investigation, Notice of Non-Compliance and Order against Nexus Energy. Any such receipt by Glenn McDonald was contrary to the Protocol and procedurally unfair.

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[34] *Yeoman Affidavit*, paras 86-87.
[35] *Tardif Affidavit,* Exhibit "M", "OEB and IESO Protocol dated April 25, 2005", ss 2.2.6.

52. Such information includes the extent to which Glenn McDonald "reviewed", provided input on and/or discussed with the MAU or MSP the draft May 2017 MSP Monitoring Report (and more specifically Recommendation 3-2). The IESO heavily relies on Recommendation 3-2 in support of its purported authority to recover "avoided" congestion rents for failed intertie transactions (even where there is no "egregious" behaviour) and to argue that Nexus Energy was given ample notice of same.[36]

53. The extent to which Glenn McDonald (and any other MACD members) had involvement with the IESO's response to Recommendation 3-2 is also relevant as to why MACD suddenly changed course and began pursuing compliance investigations for "avoided" congestion rents after refraining from doing so for almost 15 years following the implementation of automated IFCs and EFCs in 2006.

**The IESO's Sudden Change of Course in Interpreting Congestion Rents was Prompted by the Ontario Auditor General's 2017 Report on the IESO/MACD**

54. Contrary to the IESO's Responding Memorial[37] and affidavit evidence[38], the IESO was not prompted to pursue the Investigation against Nexus Energy due to "addressing the continuing problem of failed transactions that result in traders avoiding the payment of congestion rents" identified in the May 2017 MSP Monitoring Report. This MSP concern was in fact not addressed until the implementation of the IESO's Market Renewal

[36] *Yeoman Affidavit*, paras 25 to 27. Also see *Doolittle Affidavit,* Exhibit "F", "IESO Notice of Non-Compliance dated December 17, 2024, paras 67-68.
[37] Responding Memorial of the IESO dated January 30, 2026, para 79 and footnote 77.
[38] *Yeoman Affidavit*, paras 25-27. Also see *Doolittle Affidavit*, Exhibit "F", paras 67-68.

Program in May 2025 when congestion rents expressly became part of the calculation of IFCs/EFCs.[39]

55. The better explanation for the change in MACD's treatment of congestion rents for failed intertie transactions in or around 2019 is the Office of the Auditor General for Ontario value-for-money audit report on the IESO (including MACD) released in December 2017. Chapter 3, section 3.06 of the Auditor General's report found in part that:

> *"[MACD] … has limited resources and lacks explicitly legislated investigative powers to do more and timelier work. … at the time of our audit, there was only enough staff to investigate just one of five cases that the Director [Glenn McDonald] identified to be in the same significant recovery/fine range as the last three investigations. Also, an average of 30% of [MACD]'s employees have left each year since 2012 because about a third of 'MACD's staffing allocation is for temporary positions only".*

The Auditor General accordingly recommended as follows:

> *"To ensure that [MACD] can conduct proper oversight of the market, we recommend that the IESO: assess the resources needed to eliminate its investigation backlog and conduct the large-scale investigations that have proven effective in recovering funds and identifying and sanctioning significant rule violations; and attract and retain staff with experience in market rules and expertise in investigation."*[40]

56. The Auditor General's report further noted that:

> *"… the Ontario Energy Board itself could have done more to protect ratepayers' interests by attempting to address the IESO's lack of action on the [MSP]'s repeated recommendations to fix certain weaknesses and flaws in the design of Ontario's electricity market.*

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[39] *Yeoman Affidavit*, para 32; and *Tardif Affidavit*, Exhibit "N", pages 40 and 43.
[40] *Supplementary Tardif Affidavit*, Exhibit "B", Auditor General's 2017 Annual Report, Chapter 3, section 3.06, item 9.

. . . . . .

> *The Ontario Energy Board could have, but has never, taken this action to challenge the IESO's lack of action on the [MSP]'s recommendations for fixing problems with market design."*[41]

57. The IESO agreed with the Auditor General's recommendation [42] MACD subsequently sought and received approval to convert six contracted staff to regular (i.e. full-time and non-temporary) status. The IESO also deployed a more targeted recruitment strategy which resulted in ten new hires into MACD.[43]

58. Coupled with the Auditor General's report to conduct more compliance investigations and the need to demonstrate additional MACD staff would facilitate a meaningful increase in such investigations, it is apparent the IESO's response to Recommendation 3-2 was drafted in a self-serving way in part to justify MACD reversing course and commencing compliance investigations for "avoided" congestion rents.

59. This *ad hoc* change had no authority under the Market Rules and was contrary to the IESO's previous representations in the MACD Report and the Market Rule Amendments that such investigations would be limited to instances of "egregious"

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[41] *Supplementary Tardif Affidavit*, Exhibit "B", Auditor General's 2017 Annual Report, Chapter 3, section 3.06, p 328.
[42] *Supplementary Tardif Affidavit*, Exhibit "B", Auditor General's 2017 Report, Chapter 3, section 3.06, p 328.
[43] *Supplementary Tardif Affidavit*, Exhibit "C", IESO 2019 Expenditure and Revenue Requirement Submission to the Ontario Energy Board (EB-2019-0002), Exhibit C-6-1: Status Report on Certain Recommendations to the IESO included in Chapter 3 of the Auditor General's 2017 Annual Report, pp 4-5 of 9, item 9.

conduct. The change in course was also not rooted in the May 2017 MSP Monitoring Report.

60. The best evidence rule required the IESO to provide direct evidence from Glenn McDonald on these matters and associated actions taken by MAU members under his command, which the IESO failed to do. Nexus Energy accordingly will be seeking to cross-examine Glenn McDonald at the arbitration hearing or, alternatively, will ask the Arbitrator to draw adverse inferences against the IESO.

**ALL OF WHICH IS RESPECTFULLY SUBMITTED**

March 13, 2026

**BLAKE, CASSELS & GRAYDON LLP**
Barristers & Solicitors
199 Bay Street
Suite 4000, Commerce Court West
Toronto ON M5L 1A9

**Bradley E. Berg** LSO #38755M
Tel: 416-863-4316
brad.berg@blakes.com

**Reena Goyal** LSO #50324A
Tel: 416-863-5807
Fax: 416-863-2653
reena.goyal@blakes.com

Lawyers for the Applicant

TO: **GOODMANS LLP**
Barristers and Solicitors
Bay Adelaide Centre
333 Bay Street
Suite 3400
Toronto ON M5H 2S7

**Kirby Cohen**
**Michael Wilson**
Tel: 416-979-2211
Fax: 416-979-1234
kcohen@goodmans.ca
mwilson@goodmans.ca

Lawyers for the Respondent

**IN THE MATTER OF** an Arbitration under Chapter 3 of the IESO Market Rules made pursuant to section 32 of the Ontario *Electricity Act, 1998*, S.O. 1998, c. 15, as amended

B E T W E E N:

NEXUS ENERGY INC.

Applicant

- and -

INDEPENDENT ELECTRICITY SYSTEM OPERATOR (IESO)

Respondent

**SUPPLEMENTARY AFFIDAVIT OF FRANCOIS TARDIF**

**(AFFIRMED MARCH 13, 2026)**

I, Francois Tardif, of the City of Vaughan, in the Province of Ontario, AFFIRM:

1. I am the Director of Risk and Regulatory Affairs of Nexus Energy Inc., the applicant in this proceeding. This affidavit is in addition to the previous affidavit affirmed by me on October 29, 2025 and filed in this proceeding.

2. A copy of the IESO's written argument which I am advised by Reena Goyal, counsel for Nexus Energy Inc., was filed in the *Rayonier* case cited at paragraphs 91 and 101 of the IESO's Responding Memorial, is attached as **Exhibit "A".**

3. A copy of Chapter 3, Section 3.06 of the Ministry of Energy 2017 Auditor General Report entitled "Independent Electricity System Operator Market Oversight and Cybersecurity", is attached as **Exhibit "B"**.

4. A copy of the IESO's Status Report on Certain Recommendations to the IESO included in Chapter 3 of the Auditor General's 2017 Annual Report, which I am advised by Reena Goyal was filed by the IESO in an Ontario Energy Board proceeding bearing file number EB-2019-0002, is attached as **Exhibit "C"**.

**AFFIRMED BEFORE ME** by Francois Tardif, in the City of Vaughan, in the Province of Ontario before me at the City of Vaughan, in the Province of Ontario on March 13, 2026, in accordance with O. Reg 431/20, Administering Oath or Declaration Remotely.

Signed by:
318AEB2DF95849A...

Commissioner for Taking Affidavits
(or as may be)

Signed by:
2B6827D981FD4C6...

Francois Tardif

**Exhibit “A”**

to the Affidavit of Francois Tardif

Sworn before me on March 13, 2026, in accordance with O. Reg. 431/20, Administering Oath or Declaration Remotely

Signed by:
318AEB2DF95849A...

**Nilou Nezhat**
Commissioner for Taking Affidavits
*(or as may be)*

Court File No.

***ONTARIO***
**SUPERIOR COURT OF JUSTICE**
**DIVISIONAL COURT**

B E T W E E N :

RAYONIER A.M CANADA ENTERPRISES INC.

Applicant
(Responding Party)

- and -

INDEPENDENT ELECTRICITY SYSTEM OPERATOR

Respondent
(Moving Party)

# FACTUM OF THE RESPONDENT/MOVING PARTY
**(Motion To Quash Judicial Review**
**Returnable July 28, 2020)**

**McMillan LLP**
4400-181 Bay Street
Toronto ON  M5J 2T3, Canada

**Adam D.H. Chisholm** LS#: 56736M
adam.chisholm@mcmillan.ca
Tel: 416-307-4209

**Neil Campbell** LS#: 31774T
neil.campbell@mcmillan.ca
Tel: 416-865-7025

**Nicole Rozario** LS#: 72376V
nicole.rozario@mcmillan.ca
Tel: 416.945.8007

Fax: 416-865-7048

Lawyers for the Respondent/Moving Party,
Independent Electricity System Operator

**TO:** **McCarthy Tétrault LLP**
Suite 5300, TD Bank Tower
66 Wellington Street West
Toronto ON M5K 1E6

**George Vegh** LS: 32088J
gvegh@mccarthy.ca
Tel: 416-601-7709

**Julie Parla** LS: 45763L
jparla@mccarthy.ca
Tel: 416-601-8190

Fax: 416-868-0673

Lawyers for the Applicant/Responding Party,
Rayonier A.M. Canada Enterprises Inc.

**FACTUM OF THE RESPONDENT/MOVING PARTY**
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- and -

INDEPENDENT ELECTRICITY SYSTEM OPERATOR

Respondent
(Moving Party)

**FACTUM OF THE RESPONDENT/MOVING PARTY**
**(Motion To Quash Judicial Review**
**Returnable July 28, 2020)**

## PART I - INTRODUCTION

1. The Independent Electricity System Operator ("**IESO**") requests that Rayonier A.M. Canada Enterprises Inc. ("**RYAM**")'s application for judicial review be quashed, stayed or dismissed in deference to a mandatory dispute resolution process and because of the adequate alternative remedy doctrine.

2. RYAM's application for judicial review concerns two Notices of Non-Compliance ("**Notices**") issued by the IESO. The Notices are issued under the Market Rules that govern the IESO-controlled grid and IESO-administered markets for electricity. The Notices determined that RYAM committed more than 44,000 breaches of the Market Rules.

3. RYAM's application for judicial review seeks to quash the Notices and obtain other related relief.

4. RYAM's proceeding suffers from two fatal flaws. Both flow from the dispute resolution process contained in the Market Rules (the "**Market Rules DRP**"). The Market Rules DRP is a mandatory three-step negotiation, mediation and *de novo* arbitration process.

5. First, RYAM contractually agreed to the Market Rules DRP, both by express agreement and as a legislatively deemed term of the license that RYAM obtained from the Ontario Energy Board ("**OEB**") authorizing it to participate in the IESO-administered electricity markets. The extensive body of case law concerning mandatory dispute resolution clauses prevents RYAM from bringing this judicial review application at this time.

6. Second, RYAM has adequate alternative remedies: the mandatory negotiation, mediation and, if necessary, arbitration phases of the Market Rules DRP, followed by a right of appeal to the OEB. These are specialized forums for resolving matters arising under the Market Rules. RYAM has exhausted none of these remedies and should not be permitted to bring its application for judicial review. These processes may resolve the issues between the parties entirely or otherwise make the court's involvement unnecessary.

7. The Honourable Corbett J. directed that this motion be heard together with a motion brought by RYAM to stay the Notices. Not only should the Notices not be stayed, but this application should not proceed at all.

8. RYAM benefitted from its decision to become a participant in the IESO-administered markets. It was aware at all times that participation was governed by the Market Rules. Any issues RYAM now wishes to raise regarding the Notices

are appropriately dealt with through the Market Rules DRP and not by way of judicial review.

## PART II - THE FACTS

### A. RYAM's License Bound It To The Market Rules

9. The Market Rules govern the IESO-controlled grid and the IESO-administered markets related to electricity and ancillary services.

Market Rules for the Ontario Electricity Market ("**Market Rules**"), Chapter 1, s. 4.1.1, Book of Authorities of IESO ("**IESO BOA**"), Tab 3.

10. RYAM, originally named Spruce Falls Inc. and later Tembec Enterprises Inc., was a market participant in the IESO-administered markets before, during and after the conduct that is the subject of the Notices.

Affidavit of Christopher Black sworn June 2, 2020 ("**Black Affidavit**") at paras. 4-5, Motion Record of RYAM ("**RYAM MR**"), Tab 2 at 7.

Black Affidavit, Exhibit "B", Notice of Non-Compliance dated May 26, 2020 ("**First Notice**") at para. 131, RYAM MR, Tab 2B at 49-50.

11. RYAM applied to the OEB for and obtained a license allowing it to participate in the IESO-administered markets as an electricity wholesaler.

Black Affidavit, Exhibit "A", RYAM OEB Licence, RYAM MR, Tab 2A at 13.

12. The *Ontario Energy Board Act, 1998* grants the OEB the authority to specify the conditions under which a license for market participation may be issued. The legislature, through the *OEB Act*, also deems that a condition of each licence is an obligation to comply with the Market Rules.

*Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Sched. B [***OEB Act***], ss. 70(2), 70(4).

13. Compliance with the Market Rules is therefore expressly a condition of RYAM's Electricity Wholesaler Licence issued pursuant to the *OEB Act*.

Black Affidavit, Exhibit "A", RYAM OEB Licence at s. 4.2, RYAM MR, Tab 2A at 15.

## B. RYAM Contractually Agreed to Comply with the Market Rules

14. RYAM also agreed to be bound by the Market Rules. The Market Rules state that the Market Rules have the effect of a contract between each market participant and the IESO by virtue of the execution of a participation agreement.

Market Rules, Chapter 1, s. 4.3.1, Book of Authorities of IESO ("**IESO BOA**"), Tab 3.

15. The Market Rules prevent participation in the IESO-administered markets unless, among other things, the person agrees to be bound by the Market Rules by executing a participation agreement.

Market Rules, Chapter 2, s. 1.2.2.3, IESO BOA, Tab 3.

16. RYAM, under its previous names Spruce Falls Inc. and Tembec Enterprises Inc., entered into a Participation Agreement with the IESO dated January 15, 2002 and a Participation Amending Agreement dated March 7, 2007.

Affidavit of Erin Williams sworn June 19, 2020 ("**Williams Affidavit**"), Exhibit "H", Participation Agreement dated January 15, 2002 ("**Participation Agreement**"), Motion Record of IESO ("**IESO MR**"), Tab 2H at 1009;

Williams Affidavit, Exhibit "I", Participation Amending Agreement dated March 7, 2007, IESO MR, Tab 2I at 1025.

17. RYAM's Participation Agreement contains RYAM's express agreement to be bound by and to comply with all of the provisions of the Market Rules so far as they are applicable to RYAM.

Williams Affidavit, Exhibit "H", Participation Agreement at s. 3.1, IESO MR, Tab 2H at 1009.

18. Beyond being a market participant, RYAM also voluntarily elected to become a "dispatchable load". RYAM could have received electricity without being a dispatchable load. There are currently only six dispatchable loads in Ontario. In registering as a dispatchable load, RYAM became able to obtain significant benefits from the IESO-administered markets, subject to complying with applicable Market Rules.

Williams Affidavit at paras. 9-12, Exhibits "J"-"L", IESO MR, Tab 2 at 10-11, 1040, 1042, 1045, 1055-1059, 1063;
Affidavit of Virginia Fletcher sworn June 12, 2020 ("**Fletcher Affidavit**"), Exhibit "CCC", Appendix B (Preliminary Sanction Assessment) to IESO Letter dated May 29, 2020 at para. 16, Application Record of RYAM ("**RYAM AR**"), Tab 2CCC at 933.

## C. The IESO Investigated RYAM's Conduct Under the Market Rules

19. The IESO's Market Assessment and Compliance Division (**"MACD**") is a unit within the IESO responsible for fostering compliance with, and the enforcement of the Market Rules.

Fletcher Affidavit, Exhibit "B", Printout of IESO webpage, "Market Oversight", RYAM AR, Tab 2B at 53.

20. The IESO, through MACD, investigated RYAM's conduct in the IESO-administered markets and, particularly, its conduct as a dispatchable load. At the conclusion of its investigations, the IESO issued the Notices.

21. The Notices comprehensively disclose RYAM's conduct contrary to the Market Rules. The IESO's investigation of RYAM concluded that RYAM committed more than 44,000 breaches of the Market Rules in conjunction with its conduct as

a dispatchable load. The IESO estimated that RYAM received over $20 million in payments arising from its breaches of the Market Rules.

Black Affidavit, Exhibit "C", Notice of Non-Compliance dated May 29, 2019 ("**Second Notice**") at paras. 6, 56, RYAM MR, Tab 2C at 68, 78.

22. The Notice dated May 26, 2020 imposes financial penalties of $377,000 related to numerous failures to comply with information requests during the IESO's investigation, and an order requiring RYAM to provide a privilege log in respect of information RYAM continues to withhold from the IESO.

Black Affidavit, Exhibit "B", First Notice at para. 146, RYAM MR, Tab 2B at 55-56.

23. RYAM has not alleged in its Notice of Application or the affidavit from its executive in support of its motion for a stay of the Notices that it did not commit the breaches of the Market Rules.

24. RYAM has not challenged section 2 of Chapter 3 of the Market Rules containing the Market Rules DRP.

25. RYAM has also not challenged section 6.6 of Chapter 3 of the Market Rules, which contain the provisions related to "Non-Compliance Letters and Financial Penalties" that can be imposed by the IESO when Market Rules are breached.

Market Rules, Chapter 3, s. 6.6, IESO BOA, Tab 3.

## D. The Market Rules DRP Has Been Integral to the Operation of the Electricity Market Since its Formation

26. The First Interim Report of Market Design Committee dated March 31, 1998 was submitted to the Government before the passage of the *Electricity Act*. The Market Design Committee was appointed to provide recommendations to the government

on the design of an Independent Market Operator and propose rules and protocols that will be needed for a fully competitive electricity market in Ontario. Professor Ronald Daniels chaired the Market Design Committee, which was composed of various electricity and legal experts.

Williams Affidavit, Exhibit "B", First Interim Report of the Market Design Committee dated March 31, 1998 ("**MDC First Report**"), IESO MR, Tab 2B at 40-47.

27. The MDC First Report included recommendations about the jurisdiction of the dispute resolution panel to resolve disputes related to Ontario's electricity market. It recommended that decisions of the dispute resolution panel be final and backed by a privative clause, subject to appeal to the OEB only where the financial penalty was above a certain threshold or the market participant's registration was suspended or revoked.

Williams Affidavit, Exhibit "B", MDC First Report at s. 6.2.3, IESO MR, Tab 2B at 70.

28. The Market Design Committee suggested a division of roles between the IESO and OEB as follows:

| Responsibilities | Role of [IESO] | Role of OEB |
|---|---|---|
| Dispute Resolution | • monitor compliance with market rules and any relevant legislation<br>• ensure there is an efficient mechanism for resolving disputes on the interpretation and application of the rules between market participants and the [IESO] | • hear appeals on major disputes<br>• remand written decisions to the [IESO] and parties to the dispute<br>• issue directions to the [IESO] and parties to the dispute |

Williams Affidavit, Exhibit "B", MDC First Report s.10, IESO MR, Tab 2B at 86.

## E. The Market Rules Contain a Comprehensive Dispute Resolution Regime and Appeal Rights

29. The passage of the *Electricity Act, 1998* created the Independent Market Operator (now IESO), which operates Ontario's electricity system.

*Electricity Act, 1998*, S.O. 1998, c. 15, Sched. A [***Electricity Act***].

30. The *Electricity Act* empowers the IESO to make rules to "establish and govern" markets related to electricity and to "govern" the operation and use of the IESO-controlled grid. It also authorizes the IESO to make orders imposing financial penalties on market participants.

*Electricity Act*, ss. 32.

31. Chapter 3 of the Market Rules deals with "Administration, Supervision, Enforcement". Section 2 of Chapter 3 specifically deals with dispute resolution, and contains the Market Rules DRP.

Market Rules, Chapter 3, s. 2, IESO BOA, Tab 3.

32. The goal of the Market Rules DRP is described by the IESO as intended to "resolve disputes between parties in the Ontario electricity marketplace, in the most expeditious and most cost-effective way".

Williams Affidavit, Exhibit "D", Printout of IESO webpage, "Dispute Resolution - Overview", IESO MR, Tab 2D at 778.

33. Subject to exemptions that are not relevant to RYAM's application, the Market Rules DRP applies to any dispute between the IESO and any market participant which arises under the Market Rules, market manuals or any standard, policy or procedure established by the IESO pursuant to the Market Rules, including with

respect to any alleged violation or breach thereof, whether or not specifically identified in the Market Rules as a dispute to which the Market Rules DRP applies.

Market Rules, Chapter 3, s. 2.2.1.1, IESO BOA, Tab 3.

34. The Market Rules DRP has three mandatory steps: a good faith negotiation phase, a mediation procedure and a comprehensive arbitration clause.

Market Rules, Chapter 3, ss. 2.5, 2.6 and 2.7, IESO BOA, Tab 3.

**PART III - KEY ISSUES**

35. There are two key issues on this motion to quash, stay or dismiss RYAM's application for judicial review:

(a) Is RYAM required to use the Market Rules DRP to resolve its disputes about the Notices arising under the Market Rules?

(b) Should this judicial review application should be quashed as a result of the adequate alternative remedy doctrine?

**PART IV - LAW AND ARGUMENT**

36. RYAM's application for judicial review should not proceed because two well-established principles of law dictate that it should be quashed, stayed or dismissed.

37. The Honourable Corbett J. made a case management direction that IESO "shall deliver" its own motion materials to quash this application for judicial review at the same time that it responds to RYAM's stay motion. The issues in this motion substantially overlap with the serious issue to be tried threshold for RYAM's stay

motion. Given the court's direction and the overlap, it is appropriate for the court to resolve all of these issues at the same time.

*Rayonier v. IESO*, 2020 ONSC 3574 (Div. Ct.) (CanLII) at para. 3;

See also *Spence v. University of Toronto*, 2017 ONSC 3803 (Div. Ct.) (CanLII) at para. 15.

## A. This Judicial Review Should be Quashed Because of RYAM's Agreement to Mandatory Dispute Resolution

38. RYAM contractually agreed to comply with the Market Rules by applying to become an OEB-licensed market participant and by entering into the Participation Agreement with the IESO. RYAM's judicial review application should be quashed based solely on RYAM's contractual agreement to the Market Rules DRP.

### i. Contractual Dispute Resolution Agreements are to be Respected

39. An agreement to arbitrate has long been considered one of the most powerful means for commercial entities to determine how their disputes will be resolved. Courts have consistently given great deference to contractual mandatory arbitration clauses.

40. For example, as recently reiterated by the Court of Appeal, "[t]he law favours giving effect to arbitration agreements. This is evident in both legislation and in jurisprudence".

*Haas v. Gunasekaram*, 2016 ONCA 744 (CanLII) at para. 10;

F. Paul Morrison, McCarthy Tetrault, "Ontario Court of Appeal Reaffirms that Agreements to Arbitrate are Strictly Enforced" 25 January 2017, IESO BOA, Tab 2.

41. The *Arbitration Act* contains mandatory language permitting a party to seek to have a court proceeding that is subject to an arbitration clause stayed. The

*Arbitration Act* states that a court in which a proceeding is commenced shall, on the motion of another party to the arbitration agreement, stay the proceeding.

*Arbitration Act, 1991*, S.O. 1991, c. 17, [***Arbitration Act***], s. 7.

42. The courts will defer to arbitration clauses in judicial review proceedings. They are reluctant to permit parties to sidestep an agreed-upon dispute resolution regime and the *Arbitration Act* by commencing an application for judicial review.

*Kucyi v. Kucyi*, 2005 CanLII 48539 (Ont. Div. Ct.) (CanLII) at para. 9.

43. The hybrid model of an arbitration accompanied by a mediation commitment that is employed in the Market Rules DRP is equally enforceable in Ontario.

*Thomson v. Thomson*, 2012 ONCJ 141 (Ont. Ct. J.) (CanLII) at para. 50;

*Lougheed v. Garden City Entrepreneurs Inc.*, 2008 CanLII 38262 (Ont. Sup. Ct. J.) (CanLII) at paras. 13, 17, 20;

*Tall Ships Landing Developments v. Leeds Standard Condominium Corporation No. 41*, 2019 ONSC 2600 (CanLII) at paras. 22, 34-35.

### ii. The Market Rules DRP Applies to this Dispute

44. The Market Rules DRP applies broadly. Subject to exceptions that are not relevant in these proceedings, the Market Rules DRP applies to:

> "*any dispute between the IESO and any* market participant *which arises under the* market rules, market manuals *or any standard, policy or procedure established by the* IESO *pursuant to these* market rules*, including with respect to any alleged violation or breach thereof, whether or not specifically identified in the* market rules *as a dispute to which this section 2 applies"*

Market Rules, Chapter 3, s. 2.2.1.1, IESO BOA, Tab 3 (Note – italicization in original, signifying defined terms in the Market Rules; emphasis added with underlining).

45. The dispute between RYAM and the IESO arises under the Market Rules as well as under investigative procedures established by the Market Rules. The Notices

relate to RYAM's breaches of the Market Rules. The Market Rules DRP therefore applies.

46. RYAM has not challenged the validity of the Market Rules DRP in this proceeding. RYAM's Notice of Application challenges the IESO's jurisdiction to enact and apply Chapter 3, section 6.2, which are the IESO's principal investigative powers (the "**Investigation Rules**"). It does not allege that the Market Rules DRP (found in Chapter 3, section 2 of the Market Rules) is in any way invalid.

47. Even if RYAM successfully challenges other provisions of the Market Rules (such as Chapter 3, section 6.2), the parties' agreement to use the Market Rules DRP survives.

*Arbitration Act*, s. 17(2).

### iii. Any Dispute About the Applicability of the Market Rules DRP Should be Resolved by the Arbitrator

48. If RYAM were to dispute the applicability of the mandatory mediation and arbitration process, such a challenge would have to be resolved by the arbitrator in the first instance. This "competence-competence principle" has been repeatedly affirmed by courts of all levels in Canada including the Supreme Court of Canada. It is also found in the *Arbitration Act*.

*Arbitration Act*, s. 17(1);

*Dell Computer Corp. v. Union des consommateurs*, 2007 SCC 34 (CanLII) at paras. 84, 163;

*Seidel v. Telus Communications Inc.*, 2011 SCC 15 (CanLII) at paras. 28-29.

### iv. The Market Rules DRP Applies Despite Allegations of Jurisdiction and Natural Justice

49. RYAM's categorization of its complaints about the Investigation Rules as jurisdictional and concerning natural justice does not trump the foregoing principles, nor does it provide RYAM with a mechanism to avoid the Market Rules DRP.

#### (1) As a Matter of Contractual Agreement, the Legislative Validity of Market Rules Chapter 3, Section 6.2 is Irrelevant

50. RYAM agreed to be bound by the Investigation Rules and all other Market Rules. Its argument that the Investigation Rules are *ultra vires* the IESO has no relevance to its contractual agreement that disputes arising under the Market Rules are governed by the Market Rules DRP.

#### (2) The Market Rules DRP Can Apply to Issues of Validity

51. The Market Rules DRP can be used to address issues related to the validity of the Investigation Rules.

52. Validity issues may arise where one party is a public actor and the parties are subject to a statutory arbitration scheme in which the arbitrator derives authority from legislation. In such circumstances, arbitrators are empowered to deal with issues of validity, so long as they have the right to determine questions of law.

53. For example, in the context of statutory labour arbitrations, the Supreme Court of Canada has found that arbitrators appointed pursuant to a collective agreement

have been conferred with the power to interpret law and accordingly, hold a concomitant power to determine whether that law is constitutionally valid.

*Douglas/Kwantlen Faculty Assn. v. Douglas College*, [1990] 3 S.C.R. 570 (CanLII) at paras. 70, 82-83.

*Cuddy Chicks Ltd. v. Ontario (Labour Relations Board)*, [1991] 2 S.C.R. 5 (CanLII) at para. 11.

54. The Supreme Court of Canada has set out factors to determine whether an administrative decision-maker has jurisdiction to decide questions of law. Courts have applied these factors equally to arbitrators appointed under a statutory scheme. These factors weigh in favour of the Market Rules DRP arbitrator deciding questions of law.

*Martin v. Nova Scotia (Workers' Compensation Board)*, [2003] 2 S.C.R. 504 (CanLII) [*Martin*] at paras. 52-53;

*Laurent v. Fort McKay First Nation*, 2009 FCA 235 (CanLII) at para. 66.

(a) The legislature was aware of the proposed scope of the Market Rules that included a comprehensive scheme for resolving disputes, subject to the rights of appeal it provided from an arbitrator's decision. It had the benefit of that knowledge when enacting the *Electricity Act* and the *OEB Act*;

Williams Affidavit, Exhibit "B", MDC First Report at ss. 6.2, 10, IESO MR, Tab 2B at 68-70, 78.

*Martin, ibid.* (CanLII) at para. 52.

(b) The arbitrator appointed under the Market Rules DRP will be independent, which further implies that he or she has the jurisdiction to decide questions of law; and

Market Rules, Chapter 3, ss. 2.7.1, 2.7.1D, 2.7.6, IESO BOA, Tab 3;

*Martin, ibid.* (CanLII) at para. 52.

(c) Section 8(2) of the *Arbitration Act* permits an arbitral tribunal to determine any question of law. It has not been excluded from the Market Rules DRP arbitration.[1]

*Arbitration Act*, ss. 2(1)(a), 8(2).

55. Remedies do not determine jurisdiction, and RYAM's claim for invalidity should not permit it to end-run the contractual dispute resolution process that it agreed to.

*Paul v. British Columbia (Forest Appeals Commission)*, 2003 SCC 55 (CanLII) at para. 40.

### (3) The Market Rules DRP Provide for a *De Novo* Hearing, Which Can Resolve Natural Justice Issues

56. In this matter, the *de novo* arbitration in the Market Rules DRP cures any complaints made by RYAM about natural justice or procedural fairness.

57. Procedural fairness deficiencies may be cured by a *de novo* adjudication.

Donald JM Brown and John M Evans, Judicial Review of Administrative Action in Canada, (Toronto: Thomas Reuters, 2019),§ 3:2370, IESO BOA, Tab 1;

*AlGhaithy v. University of Ottawa*, 2012 ONSC 142 (Div. Ct.) (CanLII) at para. 38.

58. When determining whether a proceeding is *de novo* or appellate in nature, the court will consider the following non-exhaustive list of characteristics:

(a) the materials filed in the proceeding;

(b) the degree to which the subsequent hearing affords procedural fairness;

[1] The limited procedural provisions of the *Arbitration Act* that are excluded from the operation of the Market Rules DRP are listed in Chapter 3, sections 2.1.6 and 2.7.13 and do not include section 8(2).

(c) the issues to be decided and the amount of discretion in awarding the subsequent relief; and

(d) whether the subsequent decision of the arbitrator replaces the previous decision.

59. All of these factors point unequivocally to the conclusion that an arbitration under the Market Rules DRP is a *de novo* hearing with abundant natural justice and procedural fairness protections.

**(a) The Notices are Not Required to be Filed with the Arbitrator**

60. The Market Rules do not require the parties to file the Notices with the arbitrator. Instead, the issues argued at arbitration are outlined in the parties' written representations. The fact that the Notices are not required to be provided to the arbitrator supports the conclusion that the arbitration is a hearing *de novo*. Where nothing indicates that the underlying record for a decision shall be transferred to a subsequent decision maker, the matter is more likely to be a *de novo* rather than a "pure" appeal.

Market Rules, Chapter 3, ss. 2.5.1, 2.5.2, 2.5.4, 2.5.5, 2.7.7, 2.7.8, 2.7.9, IESO BOA, Tab 3;

*Harelkin v. University of Regina*, [1979] 2 S.C.R. 561 (CanLII) at para. 66.

**(b) The Market Rules DRP Affords Complete Procedural Fairness**

61. The Market Rules DRP arbitration process affords participants procedural fairness, which favours a finding that it is a *de novo* hearing. The DRP involves trial-like steps. The market participant and the IESO are both entitled to legal representation. Market participants who may be affected by the arbitration award may seek leave

to intervene. The arbitrator can make document production orders against either party and compel testimony. Witnesses provide written evidence in-chief and are made available for cross-examination under oath at an oral hearing. The parties have opportunities to make written submissions in advance followed by oral arguments at an open hearing. The arbitrator provides written reasons for his or her decision.

Market Rules, Chapter 3, ss. 2.7.7, 2.7.8, 2.7.12, 2.7.16 - 2.7.18, 2.7.20, 2.7.22, IESO BOA, Tab 3.

62. A hearing structure where witnesses are called, lawyers may be present and arguments are presented has been construed as *de novo*. The ability to hear new evidence has also been held to be relevant to whether the matter is treated as a hearing *de novo*.

*McNamara v. Ontario Racing Commission (*1998), 164 D.L.R. (4th) 99 (Ont. C.A.) (CanLII) at para. 27;

*Harelkin v. University of Regina*, [1979] 2 S.C.R. 561 (CanLII) at para. 66.

### (c) The Arbitrator is Afforded Significant Discretion

63. The discretion afforded to the arbitrator suggests that the Market Rules DRP arbitration is a hearing *de novo*.

64. The Supreme Court of Canada has said that a hearing is *de novo* if it is a fresh determination based upon new evidence.

*R. v. Dennis*, [1960] S.C.R. 286 (CanLII) at paras. 12-13.

65. The Market Rules DRP will involve fresh evidence.

66. In a dispute regarding a breach of the Market Rules, the arbitrator may impose such financial penalties, assess such damages or make such further and other orders or directions as are just and reasonable within certain limits.

Market Rules, Chapter 3, ss. 2.2.1.1, 2.7.24, 2.7.24.1, 2.7.24.2, IESO BOA, Tab 3.

67. The Market Manuals confirm that the arbitrator has broad jurisdiction to make any award that is just and reasonable, subject to certain limitations.

Williams Affidavit, Exhibit "E", Market Manual 2.1, Dispute Resolution at s. 2.4, IESO MR, Tab 2E at 815.

#### (d) The Decision of the Arbitrator Replaces the Decision of the IESO

68. An award of the Market Rules DRP arbitrator concerning a breach of the Market Rules is deemed to be the decision or order of the IESO. The appeal provisions in the *Electricity Act* apply to the arbitrator's award. This factor weighs in favour of the Market Rules DRP arbitration being a *de novo* hearing.

*Murray v. Aviva Canada Inc.*, 2007 CarswellOnt 6074 (Fin. Serv. Comm. Arb.) at para. 22.

Market Rules, Chapter 3, ss. 2.2.1.1, 2.7.24, IESO BOA, Tab 3;

*Electricity Act*, s. 36.

### B. The Availability of an Adequate Alternative Remedy Warrants Quashing this Application

69. RYAM's failure to abide by its contractual agreement to the Market Rules DRP is not the only fatal flaw in its judicial review application. The adequate alternative remedy doctrine ("**AAR Doctrine**") should also bar this application.

70. RYAM has not taken advantage of either the mandatory Market Rules DRP or the statutory right of appeal to the OEB. Having not exhausted its remedies, it should not be permitted to bring this judicial review application.

### i. The Market Rules DRP and *Electricity Act* Contain a Mandatory Appeal Route

71. The Market Rules DRP is statutorily imposed on RYAM from two sources: the delegated rule-making authority exercised by the IESO under the *Electricity Act*, and the licensing process undertaken by the OEB pursuant to the *OEB Act*. These statutory requirements are in addition to RYAM's contractual agreement to the Market Rules, discussed above.

*Electricity Act*, s. 32;
*OEB Act*, s. 70(4);
Williams Affidavit, Exhibit "H", Participation Agreement at Art. 3.1, IESO MR, Tab 2H at 1009.

72. As described above, the Market Rules contain a good faith negotiation, mediation and arbitration processes. Once the Market Rules DRP is complete, RYAM has an additional right of appeal to the OEB under the *Electricity Act*, if the arbitrator's order imposes a penalty in excess of $10,000.

*Electricity Act*, s. 36(1)(a);
*Appeal from Penalties Imposed Under the Market Rules*, O. Reg. 12/01, s.1.

73. The Market Design Committee made specific recommendations to the Government about the available appeal route. After receiving those recommendations, the legislature included a privative clause in the *Electricity Act* and the IESO included a parallel privative clause in the Market Rules established under that statutory authority.

74. The *Electricity Act* requires compliance with the Market Rules DRP before a party may exercise its right of appeal to the OEB:

> An appeal shall not be commenced under subsection (1) unless the appellant has made use of the provisions of the market rules relating to dispute resolution.

*Electricity Act*, s. 36(2).

75. The Market Rules state:

> [W]here any dispute of a kind described in section 2.2.1 or 2.2.2 arises, the parties concerned shall comply with the procedures set forth in this section 2 [i.e. the Market Rules DRP] before commencing a civil or other proceeding in relation to the dispute, including but not limited to the filing of an appeal pursuant to subsection 36(1) of the *Electricity Act, 1998*.

Market Rules, Chapter 3, s. 2.2.4, IESO BOA, Tab 3.

76. RYAM has not challenged the validity of the privative clauses.

### ii. The Adequate Alternative Remedy Doctrine Should Bar this Application

77. Where an adequate alternative remedy is available, a court may exercise its discretion to refuse to grant prerogative writs through the application of the AAR Doctrine.

78. The leading case on the AAR Doctrine, *Harelkin*, considered a dispute where an applicant did not seek available relief from the university's senate committee before starting a court application. The Supreme Court held that the court application should not have been commenced because the applicant had an

adequate alternative remedy, and an even better remedy, in the form of an appeal to the senate committee.

*Harelkin v. University of Regina*, [1979] 2 S.C.R. 561 (CanLII) at paras. 71, 73.

79. In order for an alternative forum or remedy to be adequate, neither the process nor the remedy need be identical to those available on judicial review. The test to be considered is whether the alternative remedy adequately addresses the applicant's grievance.

*Strickland v. Canada (Attorney General)*, 2015 SCC 37 (CanLII) at para. 42.

80. The following factors support the application of the AAR Doctrine to RYAM's application for judicial review:

(a) If the good faith negotiation process established in section 2.5 of Chapter 3 of the Market Rules is successful, the court's assistance will not be required.

Market Rules, Chapter 3, s. 2.5.3A, IESO BOA, Tab 3.

(b) If the structured mediation process prescribed in section 2.6 of Chapter 3 of the Market Rules is successful, the court's assistance will not be required.

Market Rules, Chapter 3, s. 2.6, IESO BOA, Tab 3.

(c) If RYAM's dispute regarding the Notices is not resolved through negotiation or mediation, RYAM can proceed with the arbitration process under section 2.7 of Chapter 3 of the Market Rules. This *de novo* hearing leads to decisions that are deemed to replace the Orders and become the IESO's orders. The arbitrator's decisions are then subject to appeal to the OEB. The court's assistance will not be required for any of these steps.

Market Rules, Chapter 3, s. 2.7, 2.7.24, IESO BOA, Tab 3.

(d) The mediation and arbitration steps in the Market Rules DRP will each be undertaken by a qualified, independent and neutral third party. Members of the Dispute Resolution panel include the Hon. Dennis O'Connor, Bryan Duguid, Ellen Fry and John J. Marshall.

Market Rules, Chapter 3, s. 2.6.2.2, 2.7.6, IESO BOA, Tab 3;
Williams Affidavit, Exhibit "D", Printout of IESO webpage, "Dispute Resolution - Panel Members", IESO MR, Tab 2D at 782.

(e) If this judicial review continues, the parties will be compelled to go to the cost of adjudicating the Notices at least twice - once in this court and once before the Market Rules DRP adjudicator.

(f) As discussed above, the *Electricity Act* and Market Rules each contain a privative clause.

81. RYAM can stay the financial penalties and avoid publicity by promptly activating the Market Rules DRP. RYAM would then receive a complete *de novo* hearing in the arbitration (assuming that the two steps preceding the arbitration do not settle the matter). RYAM has an available appeal route which it has not exhausted and which should not be bypassed.

Market Rules, Chapter 3, s. 2.3.3, IESO BOA, Tab 3;
Williams Affidavit, Exhibit "G", Market Manual 2.6, Treatment of Compliance Issues at s. 1.3.10, IESO MR, Tab 2G at 931.

### iii. The Doctrine of Collateral Attack Should Bar this Application

82. The doctrine of collateral attack complements the AAR Doctrine. It prevents a party from undermining and circumventing a binding order by challenging its validity in the wrong forum. The validity of an order should not be challenged in

separate proceedings when that party has not used the direct challenge procedures that were established for the order.

*Garland v. Consumers' Gas Co.*, 2004 SCC 25 (CanLII) at paras. 71-72.

83. The Supreme Court of Canada has held that the determination to be made regarding collateral attack is not with respect to whether a person has the right to challenge the validity of an order; rather, the issue is whether the legislature has prescribed a specific forum for doing so.

*R. v. Consolidated Maybrun Mines Ltd.*, [1998] 1 S.C.R. 706 (CanLII) at para. 46.

84. The legislature has prescribed a complete and detailed scheme for market participants like RYAM to challenge orders made after an investigation by the IESO, beginning with the Market Rules DRP and followed by an appeal to the OEB. Circumventing this scheme would undermine the integrity of electricity market regulation relied upon by all participants in the IESO-administered markets and would run counter to the intention of the legislature.

### iv. RYAM has Also Ignored the Provisions for Challenging the Market Rules

85. RYAM claims that an arbitrator does not have jurisdiction to deal with its application for judicial review because the relief it is seeking involves making changes to the Market Rules:

> *"the IESO's dispute resolution process does not permit an adjudicator to conclude that any Market Rules are invalid, ultra vires or null and void for lack of jurisdiction."*

Market Rules, Chapter 3, sections 2.2.3.1 and 2.2.3.2, RYAM Factum of the Moving Party (Motion for Stay) at para. 9.

86. These two provisions exclude the use of the Market Rules DRP for issues related to amendments of Market Rules:

> 2.2.3.1 applications by any person to review a market rule, which applications shall be governed by section 4;
>
> 2.2.3.2 disputes with respect to a proposal to amend or not to amend any provision of the market rules;

Market Rules, Chapter 3, s. 2.2.3.1, 2.2.3.2, IESO BOA, Tab 3.

87. As noted above, the IESO submits that an arbitrator would have the jurisdiction to address the validity and natural justice issues raised by RYAM in relation to the Notices. It does not appear that RYAM is seeking to amend the Market Rules, but if that is its intention, it has also chosen the wrong forum and process for such changes.

88. The Market Rules contain a comprehensive framework for "Rule Amendments". In particular, section 4.3 prescribes the process for "Requests for Review or Amendment of Market Rules" by market participants, the IESO itself or other interested persons.

Market Rules, Chapter 3, s. 4.3, IESO BOA, Tab 3.

89. It was open to RYAM to seek amendment of the Market Rules any time after it obtained its license from the OEB and signed its participation agreement. Such a process could have addressed RYAM's purported concerns about the Investigation Rules (or any other aspects of the Market Rules). It has not done so.

90. Thus, no matter the nature of dispute, the Market Rules provide for an adequate alternative (and preferable) remedy instead of an application for judicial review to this court.

## PART V - ORDER REQUESTED

91. The IESO seeks an order quashing, staying or dismissing this application for judicial review and awarding its costs of this motion, including all applicable taxes and disbursements.

**ALL OF WHICH IS RESPECTFULLY SUBMITTED** this 22nd day of June, 2020

**McMillan LLP**
4400-181 Bay Street
Toronto ON M5J 2T3, Canada

**Adam D.H. Chisholm** LS#: 56736M
adam.chisholm@mcmillan.ca
Tel: 416-307-4209

**Neil Campbell** LS#: 31774T
neil.campbell@mcmillan.ca
Tel: 416-865-7025

**Nicole Rozario** LS#: 72376V
nicole.rozario@mcmillan.ca
Tel: 416.945.8007

Fax: 416-865-7048

Lawyers for the Respondent/Moving Party,
Independent Electricity System Operator

**SCHEDULE "A"**
**LIST OF AUTHORITIES**

Jurisprudence

1. *AlGhaithy v. University of Ottawa*, 2012 ONSC 142 (Div. Ct.) (CanLII).
2. *Cuddy Chicks Ltd. v. Ontario (Labour Relations Board)*, [1991] 2 S.C.R. 5 (CanLII).
3. *Dell Computer Corp. v. Union des consommateurs*, [2007] 2 S.C.R. 801 (CanLII).
4. *Douglas/Kwantlen Faculty Assn. v. Douglas College*, [1990] 3 S.C.R. 570 (CanLII).
5. *Garland v. Consumers' Gas Co.*, 2004 SCC 25 (CanLII).
6. *Haas v. Gunasekaram*, 2016 ONCA 744 (CanLII).
7. *Harelkin v. University of Regina*, [1979] 2 S.C.R. 561 (CanLII).
8. *Kucyi v. Kucyi*, 2005 CarswellOnt 7579 (Div. Ct.) (CanLII).
9. *Laurent v. Fort McKay First Nation*, 2009 FCA 235 (CanLII).
10. *Lougheed v. Garden City Entrepreneurs Inc.*, 2008 CanLII 38262 (Ont. Sup. Ct. J.) (CanLII).
11. *Martin v. Nova Scotia (Workers' Compensation Board)*, [2003] 2 S.C.R. 504 (CanLII).
12. *McNamara v. Ontario Racing Commission* (1998), 164 D.L.R. (4th) 99 (Ont. C.A.) (CanLII).
13. *Murray v. Aviva Canada Inc.*, 2007 CarswellOnt 6074 (Fin. Serv. Comm. Arb.).
14. *Paul v. British Columbia (Forest Appeals Commission)*, 2003 SCC 55 (CanLII).
15. *R. v. Consolidated Maybrun Mines Ltd.*, [1998] 1 S.C.R. 706 (CanLII).
16. *R. v. Dennis*, [1960] S.C.R. 286 (CanLII).
17. *Rayonier v. IESO*, 2020 ONSC 3574 (CanLII).

18. *Seidel v. Telus Communications Inc.*, 2011 SCC 15 (CanLII).

19. *Spence v. University of Toronto*, 2017 ONSC 3803 (Div. Ct.) (CanLII).

20. *Strickland v. Canada (Attorney General)*, 2015 SCC 37 (CanLII).

21. *Tall Ships Landing Developments v. Leeds Standard Condominium Corporation No. 41*, 2019 ONSC 2600 (CanLII).

22. *Thomson v. Thomson*, 2012 ONCJ 141 (CanLII).

Secondary Sources

23. Donald JM Brown and John M Evans, Judicial Review of Administrative Action in Canada, (Toronto: Thomas Reuters, 2019), IESO BOA, Tab 1.

24. F. Paul Morrison, "Ontario Court of Appeal Reaffirms that Agreements to Arbitrate are Strictly Enforced", McCarthy Tétrault LLP (25 January, 2017), IESO BOA, Tab 2.

25. Excerpt of Market Rules for the Ontario Electricity Market (IESO), IESO BOA, Tab 3.

# SCHEDULE "B"
# RELEVANT STATUTES

## 1. *Arbitration Act, 1991*, SO 1991, c 17, ss. 2, 7, 8, 17.

**Application of Act**
**Arbitrations conducted under agreements**

**2** (1) This Act applies to an arbitration conducted under an arbitration agreement unless,

(a) the application of this Act is excluded by law; or

(b) the *International Commercial Arbitration Act* applies to the arbitration.

**Stay**

**7** (1) If a party to an arbitration agreement commences a proceeding in respect of a matter to be submitted to arbitration under the agreement, the court in which the proceeding is commenced shall, on the motion of another party to the arbitration agreement, stay the proceeding. 1991, c. 17, s. 7 (1).

**Powers of court**

8 (1) The court's powers with respect to the detention, preservation and inspection of property, interim injunctions and the appointment of receivers are the same in arbitrations as in court actions. 1991, c. 17, s. 8 (1).

**Questions of law**

(2) The arbitral tribunal may determine any question of law that arises during the arbitration; the court may do so on the application of the arbitral tribunal, or on a party's application if the other parties or the arbitral tribunal consent. 1991, c. 17, s. 8 (2).

**Rulings and objections re jurisdiction**
**Arbitral tribunal may rule on own jurisdiction**

**17** (1) An arbitral tribunal may rule on its own jurisdiction to conduct the arbitration and may in that connection rule on objections with respect to the existence or validity of the arbitration agreement. 1991, c. 17, s. 17 (1).

**Independent agreement**

(2) If the arbitration agreement forms part of another agreement, it shall, for the purposes of a ruling on jurisdiction, be treated as an independent agreement that may survive even if the main agreement is found to be invalid. 1991, c. 17, s. 17 (2).

**2. *Electricity Act, 1998*, SO 1998, c 15, Sch A, ss. 32, 36.**

**Market rules**

**32** (1) The IESO may make rules,

(a) governing the IESO-controlled grid;

(b) establishing and governing markets related to electricity and ancillary services; and

(c) establishing and enforcing standards and criteria relating to the reliability of electricity service or the IESO-controlled grid, including standards and criteria relating to electricity supply generated from sources connected to a distribution system that alone or in aggregate could impact the reliability of electricity service or the IESO-controlled grid. 1998, c. 15, Sched. A, s. 32 (1); 2004, c. 23, Sched. A, s. 41 (1, 2); 2009, c. 12, Sched. B, s. 11 (1).

**Examples**

(2) Without limiting the generality of subsection (1), the market rules may include provisions,

(a) governing the making and publication of market rules;

(b) governing the conveying of electricity into, through or out of the IESO-controlled grid and the provision of ancillary services;

(c) governing standards and procedures to be observed in system emergencies;

(d) authorizing and governing the giving of directions by the IESO, including,

(i) for the purpose of maintaining the reliability of electricity service or the IESO-controlled grid, directions requiring persons, including persons providing electricity supply generated from sources connected to a distribution system, within such time as may be specified in the direction, to synchronize, desynchronize, increase, decrease or maintain electrical output, to take such other action as may be specified in the direction or to refrain from such action as may be specified in the direction, and

(ii) other directions requiring market participants, within such time as may be specified in the direction, to take such action or refrain from such action as may be specified in the direction, including action related to a system emergency; and

(e) authorizing and governing the making of orders by the IESO, including orders,

(i) imposing financial penalties on market participants,

(ii) authorizing a person to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid, or

(iii) terminating, suspending or restricting a person's rights to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid. 1998, c. 15, Sched. A, s. 32 (2); 2004, c. 23, Sched. A, s. 41 (2-6); 2009, c. 12, Sched. B, s. 11 (2).

**General or particular**

(3) A market rule may be general or particular in its application. 1998, c. 15, Sched. A, s. 32 (3).

***Legislation Act, 2006*, Part III**

(4) Part III (Regulations) of the *Legislation Act, 2006* does not apply to the market rules or to any directions or orders made under the market rules. 1998, c. 15, Sched. A, s. 32 (4); 2006, c. 21, Sched. F, s. 136 (1).

**Publication and inspection of market rules**

(5) The IESO shall publish the market rules in accordance with the market rules and shall make the market rules available for public inspection during normal business hours at the offices of the IESO. 1998, c. 15, Sched. A, s. 32 (5); 2004, c. 23, Sched. A, s. 41 (7).

**Notice to Board**

(6) The IESO shall not make a rule under this section unless it first gives the Board an assessment of the impact of the rule on the interests of consumers with respect to prices and the reliability and quality of electricity service. 2004, c. 23, Sched. A, s. 41 (8).

**Transition**

(7) All rules made before subsection 4 (1) of Schedule A to the *Electricity Restructuring Act, 2004* comes into force remain in effect until amended or revoked in accordance with this Act. 2004, c. 23, Sched. A, s. 41 (8).

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**Appeals from orders**

**36** (1) A person who is subject to an order made under the market rules may appeal the order to the Board if the order,

(a) requires the person to pay a financial penalty or other amount of money that exceeds the amount prescribed by the regulations;

(b) denies the person authorization to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid; or

(c) terminates, suspends or restricts the person's rights to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid. 1998, c. 15, Sched. A, s. 36 (1); 2004, c. 23, Sched. A, s. 45 (1).

**Other methods of resolution**

(2) An appeal shall not be commenced under subsection (1) unless the appellant has made use of the provisions of the market rules relating to dispute resolution. 1998, c. 15, Sched. A, s. 36 (2).

**Time for appeal**

(3) The appeal must be filed within the time prescribed by the rules of the Board. 1998, c. 15, Sched. A, s. 36 (3).

**Stay of order**

(4) An appeal does not stay the operation of the order pending the determination of the appeal unless the Board orders otherwise. 1998, c. 15, Sched. A, s. 36 (4).

**Same**

(5) In determining whether to stay the operation of an order, the Board shall consider,

(a) the public interest;

(b) the merits of the appeal;

(c) the possibility of irreparable harm to any person; and

(d) the balance of convenience. 1998, c. 15, Sched. A, s. 36 (5).

**Powers of Board**

(6) After considering the appeal, the Board may make an order,

(a) dismissing the appeal;

(b) revoking or amending the order appealed from; or

(c) making any other order or decision that the IESO could have made. 1998, c. 15, Sched. A, s. 36 (6); 2004, c. 23, Sched. A, s. 45 (2).

**Same**

(7) In addition to its powers under subsection (6), the Board may also make an order revoking, suspending or adding or amending a condition of the appellant's licence. 1998, c. 15, Sched. A, s. 36 (7).

**3. *Appeal from Penalties Imposed Under the Market Rules*, O. Reg. 12/01.**

1. The amount of $10,000 is prescribed for the purpose of clause 36 (1) (a) of the Act. O. Reg. 12/01, s. 1.

**4. *Ontario Energy Board Act, 1998*, SO 1998, c 15, Sch B. ss. 70(2), (4).**

**Licence conditions**

**70**...

**Examples of conditions**

(2) The conditions of a licence may include provisions,

(a) specifying the period of time during which the licence will be in effect;

(b) requiring the licensee to provide, in the manner and form determined by the Board, such information as the Board may require;

(c) requiring the licensee to enter into agreements with other persons on specified terms (including terms for a specified duration) approved by the Board relating to its trading or operations or for the connection to or use of any lines or plant owned or operated by the licensee or the other party to the agreement;

(d) governing the conduct of the licensee, including the conduct of,

(i) a transmitter or distributor as that conduct relates to its affiliates,

(ii) a distributor as that conduct relates to a retailer,

(ii.1) a distributor or suite meter provider as such conduct relates to,

(A) the disconnection of the supply of electricity to a consumer, including the manner in which and the time within which the

disconnection takes place or is to take place, and with respect to a low-volume consumer, periods during which the disconnection may not take place,

(B) the manner, timing and form in which the notice under subsection 31 (2) of the *Electricity Act, 1998* is to be provided to the consumer, and

(C) subject to the regulations, the manner and circumstances in which security is to be provided or not to be provided by a consumer to a distributor or suite meter provider, including,

(1) the interest rate to be applied to amounts held on deposit and payable by the distributor or suite meter provider to the consumer for the amounts,

(2) the manner and time or times by which the amounts held on deposit may or must be paid or set-off against amounts otherwise due or payable by the consumer,

(3) the circumstances in which security need not be provided or in which specific arrangements in respect of security may or must be provided by the distributor or suite meter provider to the consumer, and

(4) such other matters as the Board may determine in respect of security deposits,

(iii) a retailer, and

(iv) a generator, retailer or person licensed to engage in an activity described in clause 57 (f) or an affiliate of that person as that conduct relates to the abuse or possible abuse of market power;

(d.1) governing conditions relating to any matter prescribed by regulation in respect of retailers of electricity in relation to the retailing of electricity, subject to any regulations made under this Act;

(e) specifying methods or techniques to be applied in determining the licensee's rates;

(f) requiring the licensee to maintain specified accounting records, prepare accounts according to specified principles and maintain organizational units or separate accounts for separate businesses in order to prohibit subsidies between separate businesses;

(g) specifying performance standards, targets and criteria;

(h) specifying connection or retailing obligations to enable reasonable demands for electricity to be met;

(i) specifying information reporting requirements relating to the source of electricity and emissions caused by the generation of electricity;

(j) requiring the licensee to expand or reinforce its transmission or distribution system in accordance with market rules in such a manner as the IESO or the Board may determine;

(k) requiring the licensee to enter into an agreement with the IESO that gives the IESO the authority to direct operations of the licensee's transmission system;

(l) Repealed: 2016, c. 10, Sched. 2, s. 15.

(m) requiring licensees, where a directive has been issued under section 28.2, to implement such steps or such processes as the Board or the directive requires in order to address risks or liabilities associated with customer billing and payment cycles in respect of the cost of electricity at the retail and at the wholesale levels and risks or liabilities associated with non-payment or default by a consumer or retailer.

…

**Market rules**

(4) Every licence shall be deemed to contain a condition that the licensee comply with the market rules that apply to that licensee. 1998, c. 15, Sched. B, s. 70 (4).

| | | | |
|---|---|---|---|
| RAYONIER A.M CANADA ENTERPRISES INC.<br>Applicant/Responding Party | and | INDEPENDENT ELECTRICITY SYSTEM OPERATOR<br>Respondent/Moving Party | Court File No. |

***ONTARIO***
**SUPERIOR COURT OF JUSTICE**
**DIVISIONAL COURT**

Proceeding commenced at Toronto

# FACTUM OF THE MOVING PARTY
**(Motion To Quash Judicial Review**
**Returnable July 28, 2020)**

**McMillan LLP**
4400-181 Bay Street
Toronto ON  M5J 2T3

**Adam D.H. Chisholm** LS#: 56736M
adam.chisholm@mcmillan.ca
Tel: 416-307-4209

**Neil Campbell** LS#: 31774T
neil.campbell@mcmillan.ca
Tel: 416-865-7025

**Nicole Rozario** LS#: 72376V
nicole.rozario@mcmillan.ca
Tel: 416.945.8007

Fax: 416-865-7048

Lawyers for the Respondent/Moving Party
Independent Electricity System Operator

**Exhibit “B”**

to the Affidavit of Francois Tardif

Sworn before me on March 13, 2026, in accordance with O. Reg. 431/20, Administering Oath or Declaration Remotely

Signed by:
318AEB2DF95849A...

**Nilou Nezhat**
Commissioner for Taking Affidavits
*(or as may be)*

Ministry of Energy

# Independent Electricity System Operator—Market Oversight and Cybersecurity

## 1.0 Summary

The Independent Electricity System Operator (IESO) operates the wholesale electricity market (electricity market). This includes receiving competitive price offers from power generators and electricity importers to supply electricity.

Ontario power generators generally set their offers in order to recover their marginal costs for producing electricity (i.e., the costs of the fuel (gas), labour used and other variable costs). At the same time, the IESO receives bids from a small number of large industrial consumers and out-of-province electricity importers indicating how much electricity they are willing to consume and at what price. The IESO chooses the power generators with the lowest-price offers to supply the electricity needed to meet consumer demand. A new market clearing price for electricity is set every five minutes, and the average of the 12 prices set per hour is the Hourly Ontario Energy Price charged to consumers.

Since 2015, the IESO has also been responsible for long-term planning for electricity and procuring the generation capacity Ontario needs. Procurement is done through signing contracts with electricity power generators. These contracts provide guaranteed payments that compensate generators for building generation equipment (for example, nuclear and gas plants) and maintaining it.

Responsibility for oversight of the electricity market is shared by the Ontario Energy Board (OEB) and the IESO as follows:

- The IESO is responsible for fixing weaknesses and flaws in the design of the market. The **IESO's Market Assessment and Compliance Division (IESO Oversight Division)** monitors and investigates suspicious activity by market participants signalling they may be breaking market rules, and fines rule-breakers. (Market rules originate in the *Electricity Act, 1998*, and are intended to ensure that the wholesale sale and purchase of electricity and ancillary services are efficient, competitive and reliable. They include provisions for making the rules; conveying electricity through the grid; authorizing who can participate in the market; selling, purchasing and dispatching electricity; resolving disputes; and monitoring, surveilling and investigating the activities and conduct of market participants.)
- The OEB reviews the ratepayer impact assessment that the IESO provides before the IESO implements a change to the design of the market. The OEB can revoke any market rule

change and ask the IESO Board to further review or reconsider the change if the OEB considers that the change does not meet any of the criteria of the *Electricity Act, 1998*, which includes, among other things, considerations of the public interest and impact on ratepayers. The **Ontario Energy Board's Market Surveillance Panel (OEB Panel)** monitors the market operated by the IESO, and investigates and reports on ways that the market is vulnerable to being abused by market participants because of weaknesses and flaws in its design.

We found that the OEB Panel has been effective in monitoring and reporting inappropriate market conduct, and recommending that the IESO fix problems with the market design. However, our audit also found that the Ontario Energy Board itself could have done more to protect ratepayers' interests by attempting to address the IESO's lack of action on the OEB Panel's repeated recommendations to fix certain weaknesses and flaws in the design of Ontario's electricity market.

As well, we noted that the IESO has a Market Renewal Initiative that consists of a working group helping to determine the future design of the electricity market in Ontario. In addition to there being little representation for residential ratepayers' interests in the working group, it has membership from market participants that have been, or are being, investigated for benefitting financially from existing market design problems.

Further, we found that the government has several times broadened participation in the Industrial Conservation Initiative (ICI), a program that allows industrial ratepayers to reduce their electricity charges by shifting their global adjustment costs to residential and small-business ratepayers. The OEB Panel reported on the impact of the ICI shortly after it was launched in January 2011. Electricity prices for about 65 large industrial ratepayers decreased by about 13%. In the first 10 months of the ICI, their global adjustment charge was reduced by about $245 million. This $245 million was added to the electricity bills of residential and small-business ratepayers. Since the initial launch, the ICI was further expanded three times, shifting a larger amount of global adjustment charge from large industrial ratepayers to residential and small-business ratepayers.

We also audited how well the IESO protects its critical IT assets and infrastructure, and found the IESO's cybersecurity system complies with power grid reliability standards. However, the IESO could be better equipped to defend itself from an advanced cyberattack should one occur.

Our specific findings include:

- **The Ontario Energy Board could have done more to protect ratepayers' interests.** Before the IESO Board implements changes to the market rules, it must give the Ontario Energy Board an assessment of the impact that approved changes have on ratepayers. If the Ontario Energy Board deems that changes are not in the ratepayers' interest, it can revoke the changes and ask the IESO for further consideration. The Ontario Energy Board could have, but has never, taken this action to challenge the IESO's lack of action on the OEB Panel's recommendations to fix problems with market design. This is especially the case for the Panel's recommendations for two programs, as follows:
  - In 2010, 2011, 2014, 2015 and 2016, the OEB Panel recommended that the Real-Time Generation Cost Guarantee Program (shortened in this report to the **Standby Cost Recovery Program**) be reviewed, reassessed, justified, and scaled back.
  - In almost all of its 28 reports (completed between 2002 and 2017), the OEB Panel expressed concerns about the Congestion Management Settlement Credits (shortened in this report to the **Lost Profit Recovery Program**).

The IESO's lack of action has resulted in gas and previous coal generators, as well as industrial consumers, receiving in many cases excessive payments

from these programs, including some from misusing market rules.

- **The IESO continues to pay gas generators about $30 million more per year than necessary despite the OEB Panel recommending that the IESO scale back its Standby Recovery Program.** Through the Standby Cost Recovery Program, the IESO pays generators for additional fuel, maintenance and operating costs to start and then operate their equipment while on standby to supply electricity. The IESO introduced the Standby Cost Recovery Program in 2003, at a time when electricity experts were concerned that Ontario was not prepared to meet its upcoming demands for electricity. Since then, Ontario has procured additional generation capacity, and, according to the OEB Panel, regularly finds itself in surplus power conditions and is a net exporter of electricity.

  OEB Panel reports in 2010 and 2011 recommended that the IESO revise (2010) and reassess (2011) whether the Standby Cost Recovery Program is providing any benefits for ratepayers, which the IESO did not do. A 2014 OEB Panel report recommended that the IESO provide detailed analysis to justify the need for the Program's continued existence, which the IESO did not provide.

  In 2015, the OEB Panel did its own detailed analysis of 2014 market data and reported that the Program was almost never needed (that is, it was relied on less than 1% of the time) to meet domestic demand, and less costly alternatives should be explored.

  Yet the Program continues—and furthermore, is inappropriately benefiting gas generators, as described in the next point.
- **Nine gas and coal generators claimed as much as $260 million in ineligible costs under the Standby Cost Recovery Program between 2006 and 2015.** About two-thirds of this amount ($168 million) has been recovered. Up until August 2017, the IESO's practice was to pay gas generators (and coal generators before they were completely shut down by 2014) for costs charged to the Standby Cost Recovery Program without first reviewing the claims. The OEB Panel was concerned that generators were submitting ineligible costs. In 2011, the Panel encouraged the IESO Oversight Division to audit the costs claimed by gas and coal generators. Nine of the 11 gas and coal generators registered with the Standby Cost Recovery Program at that time were audited. The audits identified almost $260 million (about 40%) in possible ineligible cost claims out of about $600 million paid out during the years that were audited. For example, generators claimed thousands of dollars annually for staff car washes, carpet cleaning, road repairs, landscaping, scuba gear and raccoon traps, which have nothing to do with running power equipment on standby. The Oversight Division found that one generator claimed about $175,000 for coveralls and parkas at one facility over a two-year period.
- **The Standby Cost Recovery Program allows gas generators to operate their equipment inefficiently, costing ratepayers more than necessary.** By shutting down and then restarting their power equipment, gas generators become eligible to charge some of their costs to the Standby Cost Recovery Program. But if they run their equipment continuously, they cannot claim these costs. In reporting about payments that generators received under the Standby Cost Recovery Program as a result of shutting down and then restarting their equipment within a short period of time, the OEB Panel estimated that, in summer 2010, about $19 million in additional costs were incurred because of this practice, nearly all of which was charged to ratepayers.
- **The IESO continues to pay market participants through the Lost Profit Recovery Program despite repeated warnings from**

**the OEB Panel that generators and large industrial consumers take advantage of the Program at ratepayers' expense.** The Lost Profit Recovery Program, which had paid market participants a total of about $1.6 billion from 2002 to the end of 2016, was set up in 2002 as a temporary measure to compensate market participants and maintain power system reliability when the IESO intervened in the market to relieve congestion in transmission lines in such a way that companies would lose money. As the Program was being set up for the opening of the competitive market in 2002, the OEB Panel reported that market participants could misuse some aspects of this Program to receive payment for lost profits they did not actually incur.

Identifying and investigating specific market participants is time-consuming and challenging, and the OEB Panel has reported on only six investigations so far. The OEB Panel reported that, in three of these cases, companies have misused the Lost Profit Recovery Program. For example, during an eight-month period from January 2010 to August 2010, a pulp-and-paper company was paid $20.4 million ($10.6 million was subsequently recovered). The Panel has also been concerned about large payments totalling $500 million paid out to market participants in northwestern Ontario since the Program started.

The OEB Panel has repeatedly recommended that the IESO fix the problems with the design of this program. The IESO has fixed some problems, but the Program continues, and the OEB Panel remains concerned that the Program continues to be open to market participants being compensated for lost profits that they did not actually incur.

- **Market participants have significant influence over IESO changes to the market rules.** The IESO's Board is responsible for fixing market design problems. This involves approving changes to market rules that govern the Standby Cost Recovery Program. The OEB Panel reported in late 2016 that gas generators and others that have a direct and substantial financial interest in IESO programs like the Standby Cost Recovery Program influence the process that the IESO uses to change market rules. We reviewed the IESO's Technical Panel meeting minutes and found that the latest market rule changes to the Standby Cost Recovery Program, approved by the IESO Board in 2017, were influenced by gas generators and that these changes did not address the OEB Panel's recommendations to stop reimbursing gas generators for certain operating and maintenance costs.

  The IESO has undertaken a Market Renewal Initiative to prepare the province for the electricity system of the future. A 23-member working group is advising the IESO on important issues involving the future design of the electricity market. Some members of this group, nominated by the IESO, work for companies that have claimed ineligible costs under the Standby Cost Recovery Program, and have been investigated and were found to have financially benefited from market design problems related to the Lost Profit Recovery Program.

- **Three investigations by the IESO's Oversight Division uncovered significant problems resulting in over $30 million in fines and settlement recoveries. However, the Division has limited resources and lacks explicitly legislated investigative powers to do more and timelier work.** The Director of the IESO Oversight Division, appointed in 2011, has led the completion of three major investigations in the past three years. Each led to a sanction or settlement with the company involved, and total fines and recoveries that exceeded $30 million. However, at the time of our audit, there was only enough staff to

investigate just one of five cases that the Director identified to be in the same significant recovery/fine range as the last three investigations. Also, an average of 30% of the Division's employees have left each year since 2012 because about a third of the Division's staffing allocation is for temporary positions only.

The Oversight Division lacks explicit legislative authority to compel the production of information and evidence in the course of its investigations. This slows down and prevents it from obtaining all evidence it needs to determine the extent of a violation in order to apply the appropriate penalty.

- **The IESO Oversight Division is not fully independent in doing its job.** The Director of the IESO Oversight Division reports to the senior management of the IESO rather than to the independent Board. The Director of the Oversight Division is thus less independent than the IESO's Director of Internal Audit, who reports to the Board. In Alberta, the Market Surveillance Administrator is a corporation independent of Alberta's Electricity System Operator. In the United States, oversight of electricity markets is conducted by the Federal Energy Regulatory Commission, which is independent from market operators, like the IESO.
- **The government has been expanding the Industrial Conservation Initiative (ICI). This results in increasing the electricity charges for residential and small-business ratepayers while decreasing the electricity charges for large industrial ratepayers.** The ICI allows eligible large industrial ratepayers reductions in the amount of global adjustment they are charged monthly. The amount of the reduction is based on how much they lower their use of electricity during the five hours that electricity demand is at its highest each year. The OEB Panel reported on the impact of the ICI shortly after it was launched in January 2011. Electricity prices for 65 large industrial ratepayers decreased by about 13%. In the first 10 months of the ICI, their global adjustment charge was reduced by about $245 million. This $245 million was added to the electricity bills of residential and small-business ratepayers. Since the initial launch, the ICI was further expanded three times, shifting a significant amount of the global adjustment charge from large industrial ratepayers to residential and small-business ratepayers. The decrease in the global adjustment charges to ICI participants has been, and will continue to be, shifted to residential and small-business ratepayers, increasing their electricity charges. For example, since the ICI was launched in January 2011, electricity charges for residential and small-business ratepayers have almost doubled from about 7 cents per kilowatt hour (cents/kWh) to 12 cents/kWh, while electricity charges for large industrial ratepayers have decreased from about 7 cents/kWh to about 6 cents/kWh as of June 2017.
- **The IESO's cybersecurity system complies with power grid reliability standards, but improvements would help it better address the risks of cyberbreaches and cyberattacks.** The IESO could do more to improve its cybersecurity, such as creating a senior executive position dedicated to cybersecurity; increasing its cybersecurity staff; having an IT cybersecurity vendor on standby; procuring technology that monitors authorized users' access to confidential information to prevent and identify breaches; and encrypting its backup tapes.

This report contains 18 recommendations, consisting of 22 actions, to address our audit findings.

## Overall Conclusion

Our audit concluded that the Ontario Energy Board's Market Surveillance Panel (OEB Panel) has been effective in monitoring and reporting

on inappropriate market conduct by market participants and recommending that the IESO fix problems with electricity market design. However, the IESO has not implemented some important recommendations of the OEB Panel directed at the Standby Cost Recovery and Lost Profit Recovery programs. Also, the Ontario Energy Board itself could have revoked the most recent changes to the Standby Recovery Program and asked the IESO to reconsider them, as these changes did not address some important recommendations of the OEB Panel.

The financial impact of the Industrial Conservation Initiative (ICI) on residential and small-business ratepayers is not transparent. The Ontario Energy Board Panel estimates that the ICI has been shifting global adjustment costs from large industrial users to residential and small-business ratepayers since 2011. With the ICI being broadened in January and July, 2017, this shift will increase.

While the IESO's cybersecurity system complies with the North American Electric Reliability Corporation power grid reliability standards, internal operational improvements would help it even better address the risks of cyberbreaches and cyberattacks.

# 2.0 Background

## 2.1 Ontario's Electricity Grid

An electricity grid is an interconnected network for delivering electricity from producers to consumers. It consists of generating stations that produce electrical power, high-voltage transmission lines that carry power from distant sources to demand centres and distribution lines that connect individual customers. In Ontario, the power generated is of many types: nuclear, hydro, natural gas, wind, solar and bio-energy.

The Province of Ontario belongs to the Eastern Interconnection electricity grid, which supplies power to Manitoba, Minnesota, Michigan and New York, in addition to Ontario. Power generators sell power into the grid for use by the region's residents, institutions and businesses.

Ontario's electricity consumers' demand for electricity changes with the time of day and season. Because the cost to store electricity on a large scale has been prohibitive, the amount of electricity that is sold into the grid at any time must always be perfectly matched with demand. To maintain reliability, that requires constant adjustments to the amount of electricity going into the grid as demand fluctuates. It is the job of the Independent Electricity System Operator (IESO) to operate the Ontario grid, making these reliability adjustments and administering the Ontario market through which electricity is sold. The reliability adjustments made by the IESO must be in accordance with standards set by the North American Electric Reliability Corporation (NERC). The IESO also manages the exchange of power through interconnections with Manitoba, Quebec and the United Sates.

As shown in **Section 2.2** and **Appendix 1**, Ontario's grid and market took time to evolve and have undergone many changes in the past several decades.

## 2.2 The History of Ontario's Electricity Market

Prior to the late 1990s, Ontario's electricity generation and transmission were provided by a single government agency called Ontario Hydro.

In the 1970s and 80s, Ontario Hydro constructed three nuclear plants; over the next 10 years, budget overruns and delays in their construction cost the province billions of dollars. In the early 1990s, Ontario faced a recession, which significantly reduced the demand for electricity. Reduced demand means higher electricity prices, since electricity costs have to be covered by fewer users. As a result of this reduced demand, electricity prices increased by 40%, and generation capacity exceeded demand by 50%. In an effort to stabilize electricity rates for consumers, in 1993

the Ontario government introduced a rate freeze for the next 10 years. This caused Ontario Hydro's long-term debt to increase.

In 1995, Ontario began to transform its electricity industry from a government-owned structure to a competitive marketplace. Ontario's electricity marketplace opened on May 1, 2002. Almost immediately, with a potential shortage of supply and an increased demand for electricity during the summer of 2002, electricity rates began to increase significantly; the government responded by freezing rates and agreeing to pay the difference between the higher market price and the lower frozen rate charged to consumers until May 2005. Ontario determined that it needed to introduce non-market mechanisms for generators to recover their costs and operate profitably. It became challenging to attract private investments into Ontario's electricity sector. At the same time, existing nuclear plants required significant restoration, and the province was facing a potential shortfall in the supply of electricity.

In 2004, the government created the Ontario Power Authority (OPA) to be responsible for long-term planning of the electricity industry. The OPA entered into long-term contracts with gas, wind and solar generators, typically covering a 20-year period or longer for nuclear and hydroelectric generators. These contracts guaranteed payments to generators for building and maintaining equipment to produce electricity. In 2007, the government introduced a regulation that required Ontario's four coal-fired power plants to cease burning coal by the end of 2014. In 2009, the OPA moved toward procuring renewable energy and streamlining the development of renewable energy projects. On January 1, 2015, the OPA merged with the IESO, to operate the electricity grid, administer the electricity market, and continue long-term planning and conservation efforts.

**Appendix 1** gives the history of Ontario's electricity market in greater detail.

## 2.3 Ensuring a Reliable Supply of Electricity

### 2.3.1 Building Long-Term Capacity through Contracts with Generators

Long-term contracts with generators provide guaranteed payments that compensate generators for building generation equipment (for example, nuclear and gas plants) and maintaining it. These contracts also obligate the generators to make their generation equipment available to provide electricity to the IESO-managed electricity market.

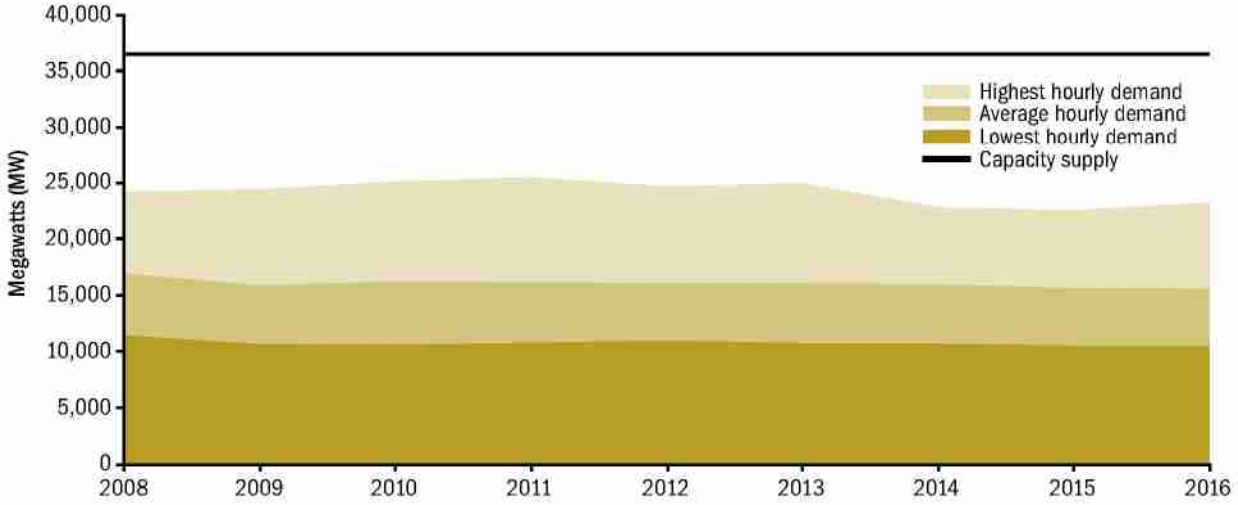
### 2.3.2 Allocating Resources to Meet Different Demand Levels

Ensuring a reliable supply of electricity means that there must always be enough supply to meet fluctuating demand. Demand can be divided into three levels: a minimum amount that must be continuously supplied, the average demand, and demand that peaks significantly higher than average. For example, in 2016, Ontario's hourly demand for electricity averaged about 15,600 megawatt hours (MW). However, during one hour on September 7, 2016, demand peaked at about 23,200 MW, or almost 50% more. To put this into perspective, for all of 2016, Ontario's demand for electricity exceeded 20,000 MW in only 5% of hours in the year. Given that most electricity in Ontario is supplied by a number of large-scale generators (see below), this means that some generators actually produce electricity for only a very short time when demand is peaking or when another generator breaks down. Ontario's total generation capacity as of September 2017 was about 36,500 MW, well above both the average demand and the historic peak demand. However, a portion of this generating capacity cannot sustain operation at all times because of fuel limitations (for example, wind and solar).

**Figure 1** shows the three levels of demand over a recent 10-year period.

**Figure 1: Ontario's Hourly Electricity Demand and Capacity Supply, 2008–2016**

Source of data: Independent Electricity System Operator (IESO)




The continuously supplied electricity to meet the minimum demand is typically from large-scale, reliable generators with lower operating costs: that is, nuclear energy and hydroelectric suppliers.

When demand peaks to high levels, the additional power is typically supplied by natural-gas electricity generators. This more flexible resource is "dispatchable," which means that generation levels can be more easily changed (ramped up or down) to match changes in demand. Wind and solar energy output is dependent on weather conditions, so their contribution to meeting demand must be managed by dispatchable generators such as natural gas.

### 2.3.3 Managing the Market and Grid to Balance Supply and Demand in Real Time

The IESO manages the market and grid to achieve the best possible balance between supply and demand in real time. It does this as one way to help keep both cost and supply stable and predictable.

While generators recover their capital and maintenance costs through long-term contract payments, most contracts are structured so that generators' additional operating costs (such as buying and burning gas) are recovered through the market price. Generators submit offers into the market to sell electricity, and they compete with one another. The IESO pays the chosen generators the market clearing price, calculated every five minutes based on supply and demand, for the electricity they produce and sell into the market.

To ensure electricity supply during peak demand times, the IESO arranges for certain generators to have their equipment turned on and waiting on standby so their power can be dispatched quickly. The IESO compensates the generators for their fuel, maintenance and operating costs for being on standby. This compensation comes from the Real-Time Generation Cost Generation Program (which we will refer to as the Standby Cost Recovery Program).

To avoid congestion that could damage transmission lines, the IESO may request a chosen generator to stop supplying electricity and another generator to supply the electricity instead, overriding the market's supply arrangements. The IESO may also request large industrial consumers to adjust their demand to ease congestion. In all these cases, the IESO compensates the generators for any profits they have lost as a result of these IESO interventions to maintain power system reliability. The compensation is called Congestion Management Settlement Credits (which we will refer to as the Lost Profit Recovery Program).

## 2.4 The Electricity Charge on Ratepayer Bills

The electricity charge—a single line on most residential and small-business electricity bills—actually has two components: the market price and the global adjustment. By far the biggest component (85% of the electricity charge in 2016) is the global adjustment. Specifically, of the total electricity charge paid by ratepayers in 2016 of $14.8 billion, $12.3 billion went to the global adjustment and $2.5 billion went to the market price.

**Figure 2**, along with the next three subsections, provides details on these two components of the electricity charge as well as the costs of reliability programs that, in addition to the IESO administrative costs, are recovered through the regulatory charge on ratepayer bills.

### 2.4.1 The Market Price

The market price (technically, the Hourly Ontario Electricity Price, or HOEP), is the hourly average of the market clearing price paid to generators. As explained in **Section 2.3.3**, generators offer to supply electricity into the market based on the cash they need to cover their marginal maintenance and operating costs to produce electricity—basically, buying and burning gas or whatever fuel is involved, as well as other incremental costs. Ontario's market price (HOEP) can therefore be viewed as a partial reflection of a competitively generated electricity market price. Another major portion of Ontario's electricity charge, through which generators recover their costs to build and maintain generation facilities through their long-term contracts, is the global adjustment.

### 2.4.2 The Reliability Programs

The IESO operates several reliability programs that supplement or override the market price to ensure electricity supply is steady and reliable. In 2016, market participants received about $500 million from these programs, which are governed by market rules and include the two programs (Standby Cost Recovery and Lost Profit Recovery) that are the focus of this audit. Costs associated with the reliability programs are recovered through the regulatory charge on ratepayer bills.

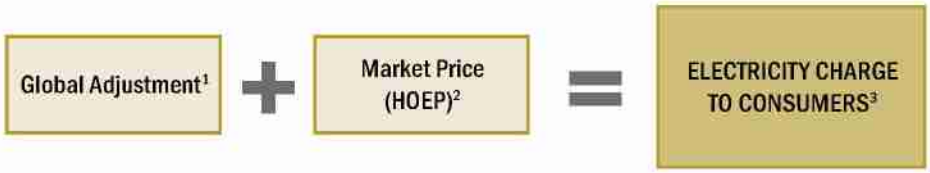
### 2.4.3 The Global Adjustment

The global adjustment, introduced in 2005, is mainly the cost of building and maintaining



**Figure 2: Understanding the Electricity Charge on Consumers' Electricity Bill**

Prepared by the Office of the Auditor General of Ontario




1. The **Global Adjustment** consists of:
   - **Nuclear Refurbishment:** Refurbishing and maintaining Ontario's nuclear fleet.
   - **Natural Gas:** Building and maintaining natural gas generation.
   - **Non-Utility Generators:** Building and maintaining about 30, mostly privately owned, generators under contracts negotiated with the Ontario Electricity Financial Corporation.
   - **Renewables:** Building and maintaining wind, solar, biomass and other renewable generation.
   - **Ontario Power Generation:** Electricity produced by OPG's nuclear and hydroelectric facilities at regulated rates set by Ontario Energy Board.
   - **Conservation Programs:** Energy-saving programs administered by the Independent Electricity System Operator and local distribution companies.
2. The **Market Price [Hourly Ontario Energy Price (HOEP)]** consists of **Electricity (Commodity) Production Costs:** buying and burning gas and other fuels to produce electricity, and variable operating costs.
3. The total of the Global Adjustment and Market Price (HOEP) is the **Electricity Charge to Consumers** that consumers pay, broken down into on-peak, mid-peak and off-peak hours. Residential and small-business consumers paying under the Regulated Price Plan pay time-of-use prices, set by the Ontario Energy Board.

generation capacity (Nuclear Refurbishment, Natural Gas, Independent Generators and Renewables in **Figure 2**), the cost to produce electricity by Ontario Power Generation's nuclear and hydroelectric generating stations (mostly at Ontario Energy Board–regulated rates) and Conservation programs.

The breakdown on the 2016 total global adjustment charge of $12.3 billion is as follows:

- $2.9 billion for **Nuclear Refurbishment and Hydroelectric**—This amount was in the form of contract payments to Bruce Power, operating the Bruce A and B Nuclear Generating Stations, and four suppliers of hydroelectric power.
- $1 billion for **Natural Gas**—This amount was in the form of contract payments to over 30 natural-gas power generators.
- $840 million to **Non-Utility Generators** (Independent Generators)—This amount was in the form of contract payments to about 30 independent generators.
- $3.5 billion for **Renewables**—This amount was in the forms of contract payments and Feed-In Tariff Program payments to producers of renewable energy.
- $3.5 billion to **Ontario Power Generation**—This amount paid for the power produced from the Pickering and Darlington Nuclear Generating Stations, 66 hydroelectric stations, and one wind turbine. The prices for most of this power were set by the Ontario Energy Board.
- $600 million for **Conservation Programs**—This amount is for costs associated with energy conservation programs administered by the IESO and Local Distribution Companies.

In **Section 3.05** of our *2015 Annual Report*, we presented our observations from our audit of the former Ontario Power Authority's (OPA) electricity power system planning process. Most of the costs included in the global adjustment result from the government's energy policies and electricity power system planning conducted by the former OPA, which merged with the IESO on January 1, 2015. As just detailed, these include the long-term contracts to build and maintain generation capacity, the government programs that fund the development of wind and solar generation, and the construction of new gas-powered plants to generate the capacity lost from the elimination of coal-fired power plants.

**Figure 3** shows how each component of the global adjustment has changed between 2011 and 2016.

### 2.4.4 Global Adjustment Is Growing and Market Price Is Shrinking

**Figure 4** shows how the average electricity charge on ratepayers' bills has been divided up between the global adjustment and the market price from 2008 to 2016.

The IESO has attributed the decline in the market price partially to a decrease in the operating costs to produce electricity. That runs contrary to the increasing costs of building and maintaining generation capacity. According to the IESO, electricity has been becoming cheaper to produce because of a decrease in natural gas prices and an increase in wind and solar generation (whose operating costs are extremely low, as they do not burn any fuels).

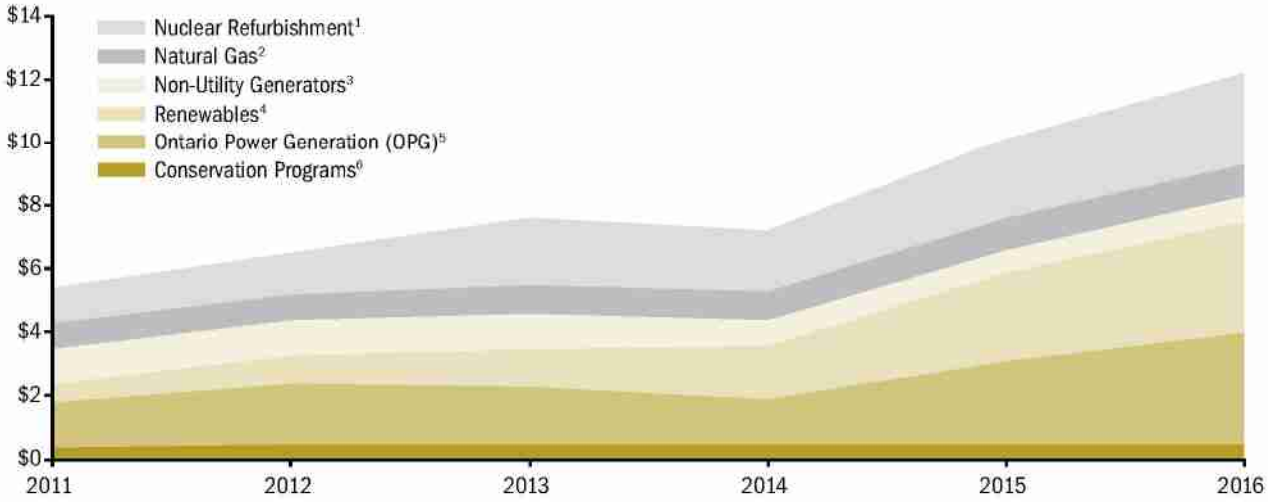
## 2.5 Oversight of the Electricity Market and of the IESO

The IESO manages the market and, under the *Electricity Act, 1998*, establishes the rules for its operation. The rules are in place to:

- ensure that the market works reliably to supply electricity, and that generators and industrial consumers participate in the market responsibly;
- govern IESO Reliability programs that supplement or override the market price to ensure that electricity supply is steady and reliable; and

**Figure 3: Cost Components in the Global Adjustment ($ billion)**

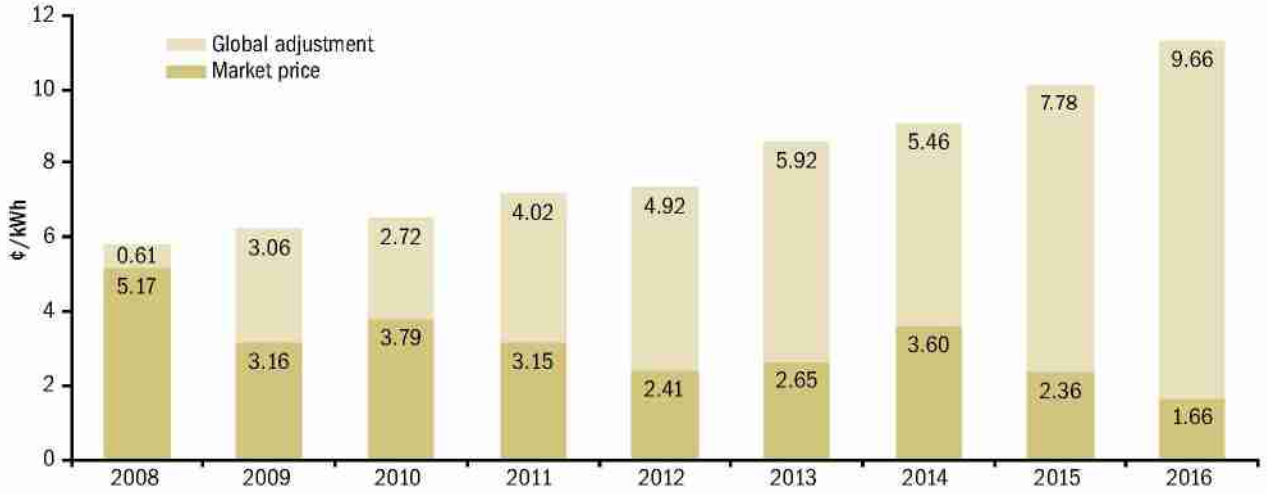
Source of data: Independent Electricity System Operator (IESO)




1. **Nuclear Refurbishment:** Nuclear and hydroelectric generation under long-term contracts with the IESO.
2. **Natural Gas:** Natural-gas generation under long-term contracts with the IESO.
3. **Non-Utility Generators:** Power produced by about 30, mostly privately owned, generators under long-term contracts with the Ontario Electricity Financial Corporation.
4. **Renewables:** Wind, solar, biomass and other renewable generation under long-term contracts with the IESO and under the Renewable Energy Standard Offer Program (RESOP) and the Feed-In Tariff (FIT). On October 1, 2009, the RESOP program was replaced by FIT.
5. **Ontario Power Generation (OPG):** Baseload power produced by OPG's nuclear and hydroelectric facilities under regulated rates set by the Ontario Energy Board.
6. **Conservation Programs:** Conservation programs include the Conservation Fund, which provides financial support for electricity conservation technologies, practices and research.

**Figure 4: The Global Adjustment and Market Price Components of the Average Electricity Charge, 2008–2016**

Source of data: Independent Electricity System Operator (IESO)




- give the IESO the authority to monitor and investigate market participants for breaking or misusing the rules.

In 2005, under the *Electricity Restructuring Act*, the government transferred some of the IESO's oversight responsibilities to the Ontario Energy Board. Specifically, the Ontario Energy Board became responsible for the Market Surveillance Panel (OEB Panel) that monitors whether the market is being operated fairly and efficiently by the

IESO, and for investigating and reporting on ways that market participants could, if not actually break the rules, misuse and exploit them for their own ends. **Figure 5** shows how the oversight function is shared between the IESO and the Ontario Energy Board, and the two bodies' staffing.

Under the *Electricity Act, 1998*, the IESO must give the Ontario Energy Board an assessment on the impact on ratepayers of any approved changes to market rules before the IESO implements them. The Ontario Energy Board can revoke any market rule change and ask the IESO's board to further review or reconsider the change if the Ontario Energy Board considers that the change does not meet any of the criteria of the *Electricity Act, 1998*, which include, among other things, considerations of the public interest and impact on ratepayers. These criteria in the Act are referred to in our report as impact on ratepayers.

To assist it in its functions, the OEB Panel has the right under the *Electricity Act, 1998*, to compel information, but it cannot impose fines. In contrast, the IESO, which operates under market rules, has the right to impose fines but no explicit legislative authority to compel information.

## 2.6 IESO's Computer Systems

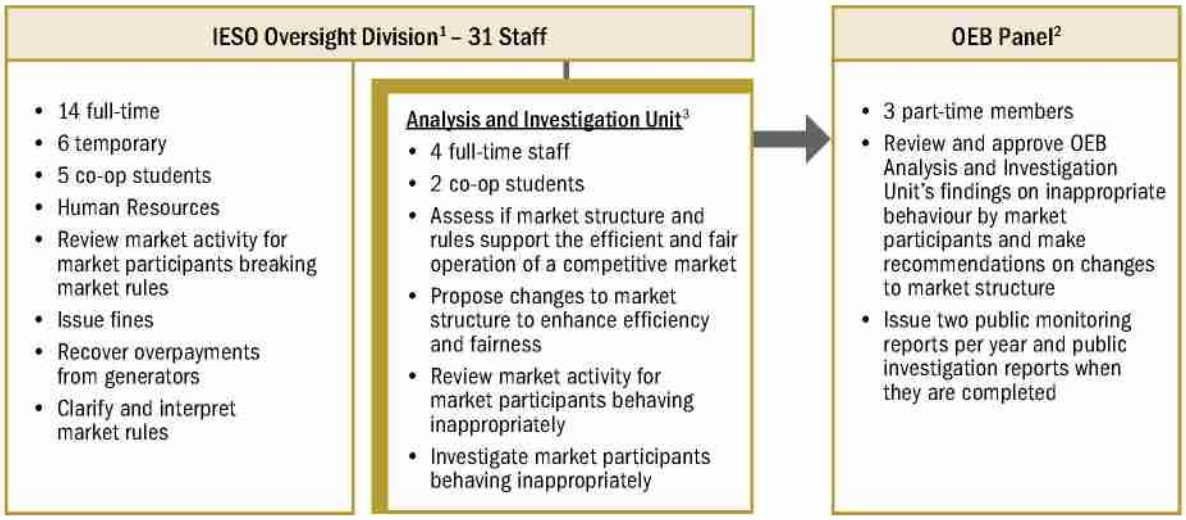
**Figure 6** describes the three computer systems the IESO relies on to support its functions.

### 2.6.1 The Grid System

The grid system is connected to a network of over 75,000 electronic sensors scattered across the province. This network enables the electricity grid to operate. All of the electricity grids in the Eastern Interconnection Grid, Ontario's included, fall under the authority of the North American Electric Reliability Corporation (NERC). NERC is a not-for-profit international regulatory authority that develops and enforces standards for power grid reliability. The IESO's grid system must meet these standards. This entails having systems for ensuring

**Figure 5: Assignment of Oversight Responsibilities at the Independent Electricity System Operator (IESO) and the Ontario Energy Board (OEB) as of September 1, 2017**

Source of data: Independent Electricity System Operator (IESO)




1. The official name is the Market Assessment and Compliance Division.
2. The official name is the Market Surveillance Panel.
3. In 2005, the OEB and the IESO entered into an agreement whereby the IESO would create and maintain a separate and independent unit to support the OEB (in this audit report, we call it the Analysis and Investigation Unit). Although the Unit operates under the IESO Oversight Division and is staffed by IESO personnel, its files and information are shielded from the IESO and available only to the OEB Panel. This is indicated by the thicker borders walling the unit off from the IESO.

**Figure 6: Key Functions Performed by the Independent Electricity System Operator's (IESO) Computer Systems**
Source of data: Independent Electricity System Operator (IESO)

| Grid System | Market System | Administration System |
|---|---|---|
| • Collects and processes weather information<br>• Forecasts electricity demand<br>• Calculates and communicates dispatch instructions to generators<br>• Monitors the transmission system and generators' performance | • Accepts and validates market bids and offers<br>• Collects electricity production data from generators<br>• Processes payments and issues trade confirmations<br>• Processes electricity production and consumption information used for public reporting | • Supports administration of conservation programs<br>• Supports market oversight analysis and investigation<br>• Contains databases and electronic records for administration services, including email, telephone, accounting, payroll and contracts |

the grid system is secure, and for analyzing and monitoring threats to security in real time.

### 2.6.2 The Market System

The market system is connected to a network of about 560 market participants that include generators, electricity exporters and local distribution companies. The market system also processes payments to market participants. In 2016 these payments totalled about $17.5 billion.

### 2.6.3 The Administration System

The administration system contains databases and electronic records for administration services, and also supports the administration of conservation programs and market oversight analysis and investigation.

## 2.7 Cyberattacks

Cyberattacks are launched by hackers trying to find a way to install malicious software (malware) onto a network or computer system, or embed malware in an email attachment or website. Malware is designed to exploit vulnerabilities in the system to enable the attacker to, for example, take control of the system, delete files, extract confidential information, or damage physical equipment.

### 2.7.1 Cyberattacks in the Electricity Sector

According to the Canadian Cyber Incident Response Centre, the energy and utilities sector is the third-most attacked sector after the technology and finance sectors. Seven percent of all cyberattacks target the electricity sector. In July 2017, the U.S. government warned that a hacking campaign was specifically targeting the nuclear and energy sectors.

The following are examples of successful cyberattacks that have already occurred in the energy sector:

- In 2012, a cyberattack on the national oil company of Saudi Arabia damaged about 35,000 computers and deleted all of the company's data. Operations were disrupted for over two weeks.
- In 2015, a cyberattack on the Ukrainian electricity grid temporarily disrupted the flow of power, causing blackouts that affected almost 230,000 for close to six hours.
- In September 2015, the security of the IESO's network was breached, and market participants had access to the confidential contract information of one market participant for seven minutes.
- In December 2016, an employee at St. Catharines Hydro responded to a fraudulent email that appeared to be from the utility's bank. The employee entered the utility's banking login information, and $655,000 was stolen.

Monitoring systems at the IESO identified that during a recent week, the following attempted cyberattacks were prevented by the IESO's cybersecurity systems:

- Almost 22,000 spam emails containing malware were sent.
- About 6,000 random intrusions into the IESO's computer networks were attempted.
- About 7.4 million attempted data transfers were flagged as suspicious and possibly indicative of random hackers trying to extract confidential information.

## 3.0 Audit Objective and Scope



Our audit objective was to assess whether the Independent Electricity System Operator (IESO) had effective systems and processes in place to ensure that:

- oversight of electricity market participants is sufficient and market participants operate in accordance with market rules; and
- critical IT assets and infrastructure are protected so that the reliability of the grid is maintained.

Before starting our work, we identified the audit criteria we would use to address our audit objective. These criteria were established based on a review of applicable legislation, policies and procedures, and internal and external studies. Senior management at the IESO and the Ontario Energy Board reviewed and agreed with the suitability of our audit objective and related criteria as listed in **Appendix 2**.

We focused on the Ontario Energy Board's oversight of the IESO and the IESO's activities in the five-year period ending March 31, 2017, and considered relevant data and events in the last 10 years. We conducted our audit from January to July 2017, and obtained written representation from the IESO and the Ontario Energy Board that, effective November 21, 2017, they have provided us with all the information they were aware of that could significantly affect the findings or the conclusion of this report.

In conducting our work, we reviewed documents and interviewed staff at two of the IESO's office locations. We also reviewed publications from leading IT security intelligence organizations and IT frameworks and good practice guidance such as COBIT 5 (which is a framework for the governance and management of enterprise IT).

Specifically, we interviewed senior management at the IESO, staff at the Oversight Division, staff in the IT Department and IESO Internal Audit, the Chief Information Officer, and the Chair of the IESO's Board of Directors. The documents we reviewed included policies and procedures, investigations and recoveries completed. We also collected and analyzed market oversight investigation and payment recovery information.

We reviewed IT records and examined related documentation such as threat and risk assessment reports, cybersecurity vulnerability assessments, IT policies, service-level agreements, backup and system recovery plans and procedures as well as reports on the IESO's compliance with North American Electric Reliability Corporation IT security standards.

We also reviewed the semi-annual electricity market monitoring reports published by the Ontario Energy Board Market Surveillance Panel for the past 10 years and its special report on Congestion Payments in Ontario's Wholesale Electricity Market published in 2016, and all six investigation reports the Panel has issued since 2003. We also met with the Ontario Energy Board, the current chair and members of the Market Surveillance Panel and the former chair of the Market Surveillance Panel. Throughout our report, we refer to some of the information reported by the Market Surveillance Panel. For the purpose of providing a clearer explanation of the technical information reported by the Panel, we had to interpret

and simplify what the Market Surveillance Panel has reported.

In addition, we did a jurisdictional scan and engaged with the current head of the Market Surveillance Administrator in Alberta, the former head of the Market Surveillance Administrator in Alberta and the IESO Oversight Division in Ontario, and the head of an external oversight body for the New York Independent System Operator.

We engaged an expert with knowledge of the fields of electricity and energy to assist with interpretation of technical information that we reviewed as part of this audit and to provide knowledgeable insight and perspective on the issues we identified.

# 4.0 Detailed Audit Observations—Market Oversight

As explained in **Section 2.4**, ratepayers' bills have an electricity charge that is made up of the global adjustment and the market price. In addition, there is a regulatory charge through which the costs of reliability programs operated by the Independent Electricity System Operator (IESO) are recovered.

In 2016, ratepayers paid about $12.3 billion in global adjustment and an additional $2.5 billion for electricity bought as a commodity on the market (i.e., market price), as well as about $500 million for the reliability programs.

The Ontario Energy Board has oversight responsibility for about 29% of the $12.3-billion global adjustment (or $3.5 billion), which is paid to Ontario Power Generation. The remaining 71%, or $8.8 billion, is paid to generators under long-term contracts procured mostly by the former Ontario Power Authority that on January 1, 2015, was merged with the IESO. The IESO has oversight responsibility for about $500 million relating to the reliability programs.

In **Section 4.1**, we present our findings that relate to Ontario Energy Board oversight of IESO reliability programs governed by market rules and explain how the Ontario Energy Board could have done more to protect ratepayers' interests. In **Section 4.2**, we discuss the impacts of the government's decision to implement the Industrial Conservation Initiative, which allows large industrial ratepayers to reduce the amount of global adjustment they pay.

## 4.1 The IESO and Ontario Energy Board Could Have Done More to Support the OEB Panel's Recommendations

Under the *Electricity Act, 1998*, the IESO must give the Ontario Energy Board an assessment of the impact on ratepayers of any approved changes to market rules before the IESO implements them. The Ontario Energy Board has the authority to revoke the changes to market rules and send them back to the IESO for further consideration. The Ontario Energy Board, however, cannot order that the IESO make specific changes to market rules. Also, the IESO is not required to make changes or reapprove market rules revoked by the Ontario Energy Board. The Ontario Energy Board has never revoked a market rule change approved by the IESO Board.

The OEB Panel has made numerous recommendations to the IESO Board relating to the Real-Time Generation Cost Guarantee Program (shortened in this report to the Standby Cost Recovery Program) and Congestion Management Settlement Credits (shortened in this report to the Lost Profit Recovery Program):

- In 2010, 2011, 2014, 2015 and 2016, it recommended that the Standby Cost Recovery Program be reviewed, reassessed, justified or scaled back, and questioned if the program needs to be retained. As detailed in **Section 4.3**, this Program on average pays gas generators about $60 million per year and, according to an OEB Panel estimate, if the

IESO eliminates the reimbursement of certain operating and maintenance costs, the cost of the Program would be reduced by approximately $30 million annually.

- In almost all of its 28 reports (between 2002 and 2017), the OEB Panel expressed concerns about or recommended changes to the Lost Profit Recovery Program. As detailed in **Section 4.4.2**, this program on average pays market participants about $110 million per year, and, according to the OEB Panel, its weaknesses have allowed market participants to offer or bid prices into the market not based on actual costs or electricity supply needs but for the sole purpose of getting payments from the program.

These programs are governed by market rules, and their costs are charged to ratepayers through the regulatory charge on ratepayer bills. In the cases where the OEB Panel has concerns, the Ontario Energy Board has never revoked and sent back to the IESO for reconsideration a market rule change.

The OEB Panel has also pointed out that gas generators and others that have a direct and substantial financial interest in IESO programs like the Standby Cost Recovery Program influence the process that the IESO uses to change market rules. In this situation, the Ontario Energy Board's responsibility to protect ratepayers' interests should be even more heightened.

We made similar observations in our *2011 Annual Report* (see **Section 3.02** on our audit of regulatory oversight of the electricity sector). In our 2013 follow-up of the 2011 audit (see **Section 4.02** of our *2013 Annual Report*), the Ontario Energy Board informed us that in 2011, the Board began a correspondence with the IESO regarding the recommendations the OEB Panel made in its report to the IESO and that it requested and received in writing the following information from the IESO:

- steps the IESO intends to take in response to any recommendations made to it in the OEB Panel report;
- estimated timelines for completion of those steps; and
- whether, in the IESO's view, any actions or market rule amendments beyond those noted in the OEB Panel's report should be taken.

Based on this information provided to us in 2013 by the Ontario Energy Board, we concluded that our recommendation had been substantially implemented. However, during our 2017 audit, we found that the IESO has not always taken all the steps it could to meaningfully implement the OEB Panel's recommendations pertaining to the Standby Cost Recovery and the Lost Profit Recovery programs.

## RECOMMENDATION 1

To ensure that ratepayers' interests are protected and that recommendations made by the Ontario Energy Board Market Surveillance Panel to improve market rules are addressed, we recommend that the Independent Electricity System Operator (IESO):

- implement the Ontario Energy Board Market Surveillance Panel's (OEB Panel) recommendations in an effective and timely way; and
- where the OEB Panel submits a report to the Independent Electricity System Operator that contains recommendations relating to the misuse, abuse or possible abuse of market power, the IESO should use its authority to amend the market rule immediately and submit it to the Ontario Energy Board for its review.

## IESO RESPONSE

The IESO supports the OEB Panel's work and acknowledges the recommendation made by the Auditor General. The IESO carefully considers every OEB Panel recommendation and the OEB Panel's underpinning analysis, and responds to each recommendation outlining the actions it will take in a letter directed to the Chair and CEO of the Ontario Energy Board. The IESO has acted on a number of the recommendations

made by the OEB Panel in the past and has made a number of market rule amendments as a result. The IESO will further continue to analyze and assess OEB Panel recommendations and consider possible amendments to market rules to address those recommendations, while also balancing the need to ensure the reliability of the electricity network, to consider the impact upon market design, including potential unintended adverse effects, and to assess the ability of the IESO and market participants to implement the change.

Where the OEB Panel submits a report to the IESO that contains recommendations related to market power, the IESO will take the action required of it under the *Electricity Act, 1998*,including amending the market rules where so ordered by the Board.

## RECOMMENDATION 2

To ensure that ratepayers' interests are protected and that recommendations made by the Ontario Energy Board Market Surveillance Panel (OEB Panel) to improve market rules are addressed, we recommend that the Ontario Energy Board (OEB) use its legislative authority to revoke and refer a market rule amendment back to the Independent Electricity System Operator (IESO) for further consideration when the OEB's review determines that an amendment to the market rule is not in the best interest of ratepayers, having regard to the fact that it does not address the Market Surveillance Panel's recommendations. The OEB should continue to revoke and refer such a market rule amendment back to the IESO until it is satisfied that the market rule amendment is in the best interest of ratepayers.

## ONTARIO ENERGY BOARD RESPONSE

The Ontario Energy Board (OEB) agrees with the importance that the Auditor General attaches to outcomes that are in the best interests of ratepayers. The OEB supports the recommendations of its OEB Panel, and will continue to use the tools at its disposal to signal that support while respecting its own mandate and processes and the authority and responsibilities of other agencies.

Since 2011, the OEB has regularly corresponded with the IESO regarding the recommendations the OEB Panel makes in its reports. When the OEB renewed the IESO's licence in 2013, a new licence condition was included that requires the IESO to make annual filings to the OEB on the status of actions taken further to recommendations in OEB Panel reports, including the rationale for not taking action where a recommendation remains outstanding.

The OEB will continue to work with the IESO to ensure that high-priority recommendations made by the OEB Panel are appropriately addressed in a timely manner.

## OFFICE OF THE AUDITOR GENERAL RESPONSE

Although the OEB obtains annual filings from the IESO on the status of actions taken on the OEB Panel's recommendations, we noted that these status updates do not meaningfully address the recommendations pertaining to the Standby Cost Recovery and Lost Profit Recovery programs.

## RECOMMENDATION 3

To ensure that ratepayers' interests are protected and that recommendations made by the Ontario Energy Board Market Surveillance Panel (OEB Panel) to improve market rules are addressed, we recommend that the Ministry of Energy review the legislative power and authority of the Ontario Energy Board to conduct a review of a market rule on its own motion, and to consider expanding its authority under the *Electricity Act, 1998*, when misuse and abuse of a market rule is brought forward by the OEB

Panel and is not effectively being addressed by the Independent Electricity System Operator (IESO) in a timely manner.

## MINISTRY RESPONSE

The Ministry of Energy supports the Ontario Energy Board (OEB) and the IESO in the important roles they play to ensure that Ontario's electricity market operates efficiently.

The Ministry, in consultation with both the OEB and the IESO, will review the *Electricity Act, 1998*, regarding the market rule approval process. The Ministry will also review the authority of the OEB.

## 4.2 Government Not Transparent about the Effect of Expanding the Industrial Conservation Initiative

### 4.2.1 Overview

The government introduced the Industrial Conservation Initiative (ICI) to provide large industrial ratepayers with an incentive to reduce their consumption when the demand for electricity is at its peak. The government announced at the time of its launch in 2011 that by encouraging less consumption, the ICI could reduce the need to procure new generation resources. However, new generation resources have been procured since 2011.

The incentive the ICI provides is a reduction in the amount of global adjustment eligible ratepayers have to pay each month (recall from **Section 2.4** that the global adjustment is the larger of the two components of a ratepayer's electricity charge, the other being the market price of electricity). Under the ICI, an eligible industrial ratepayer has its global adjustment charge reduced in accordance with its portion of the overall provincial demand for electricity in the five hours of the year demand is at its highest.

To illustrate how this works, **Figure 7** presents hypothetical ratepayer data, and **Figure 8** shows the calculations.

**Figure 7: Hypothetical Data for an Industrial Ratepayer Eligible for the Industrial Conservation Initiative**

Prepared by the Office of the Auditor General of Ontario

| 5 Hours With Highest Demand | Ratepayer's Demand (MW) | Overall Provincial Demand (MW) |
|---|---|---|
| July 1, 5–6 p.m. | 5.2 | 23,000 |
| July 12, 4–5 p.m. | 5.5 | 22,500 |
| August 22, 5–6 p.m. | 5.7 | 23,800 |
| August 23, 3–4 p.m. | 5.1 | 23,500 |
| September 4, 2–3 p.m. | 5.8 | 24,000 |
| **Total** | **27.3** | **116,800** |

The electricity charge for the hypothetical industrial ratepayer in this example will be the market price plus $255,366 each month. Once the industrial ratepayer's global adjustment amount is calculated, the payment amount is fixed for the whole year, regardless of the amount of electricity the industrial ratepayer actually consumes at any time other than the five hours provincial peak demand is at its highest.

The more the industrial ratepayer reduces its electricity consumption during the five hours of highest peak demand, the lower its fixed monthly global adjustment charge will be. If the industrial ratepayer reduces consumption to zero during those five hours, the global adjustment component of its monthly bill will be eliminated altogether, and it pays just the market price for electricity every month for a full year. This can be a very significant discount—as **Figure 4** shows, for 2016, the global adjustment made up 85% (9.66 cents per kilowatt hour [cents/kWh] of the total 11.32 cents/kWh) of Ontario ratepayers' electricity charge.

To be eligible when the ICI was first launched in 2011, an industrial ratepayer's monthly peak demand had to average out, over the 12 months from May 1 to April 30, to at least 5 MW. Since then, eligibility was expanded three times (that is, the minimum average monthly peak demand was lowered three times), as follows:

- July 2015—from 5 MW to 3 MW;
- January 2017—from 3 MW to 1 MW; and

**Figure 8: Calculations for Hypothetical Industrial Ratepayer's Global Adjustment Charge**
Prepared by the Office of the Auditor General of Ontario

| Ratepayer's Portion of Overall Annual Provincial Demand | | | | |
|---|---|---|---|---|
| Total Ratepayer Demand | ÷ | Total Overall Provincial Demand | | |
| 27.3 MW | ÷ | 116,800 MW | = | 0.00023373 |

| Ratepayer's Fixed Global Adjustment Monthly Payment | | | | |
|---|---|---|---|---|
| Ratepayer's Portion of Overall Provincial Demand | × | Total Monthly Global Adjustment | | |
| 0.00023373 | × | $1.076 billion | = | $255,366 |

- July 2017 (under the *Ontario Fair Hydro Plan Act, 2017*)—from 1 MW to 0.5 MW.

To put this into perspective, the initial requirement of a minimum 5 MW peak demand restricted eligibility to very large industrial electricity consumers, such as car manufacturing plants, cement companies, mining companies and pulp-and-paper mills. The latest lowering of the requirement to a minimum 0.5 MW peak demand makes commercial operations as small as greenhouses eligible for the ICI.

### 4.2.2 OEB Panel Reports that the ICI Increases Electricity Charges to Residential and Small-Business Ratepayers

The OEB Panel reported on the impact of the ICI shortly after it was launched. In summer 2011, electricity prices for large industrial ratepayers had decreased by about 13% compared to the summer before. In the first 10 months of the ICI, about 65 large industrial ratepayers reduced their global adjustment charge by about $245 million. This $245 million was added to the electricity bills of residential and small-business ratepayers.

Electricity prices continued to decrease for eligible industrial ratepayers in the ensuing years as a result of the ICI. The average monthly electricity prices they paid stayed below what they paid in 2010 (with the exception of three months in winter 2014 when the market price spiked because of a sudden rise in gas prices).

In the same time period, electricity prices for residential and small-business ratepayers almost doubled, as shown in **Figure 9**.

As of December 2016, about 80 industrial ratepayers participated in the ICI. With the government's significant lowering of the eligibility threshold in January and July 2017 (on the latter date as part of the Fair Hydro Plan), many more non-residential ratepayers are eligible to participate in the ICI. As a result, more global adjustment charges have been shifted to residential and small-business ratepayers.

#### RECOMMENDATION 4

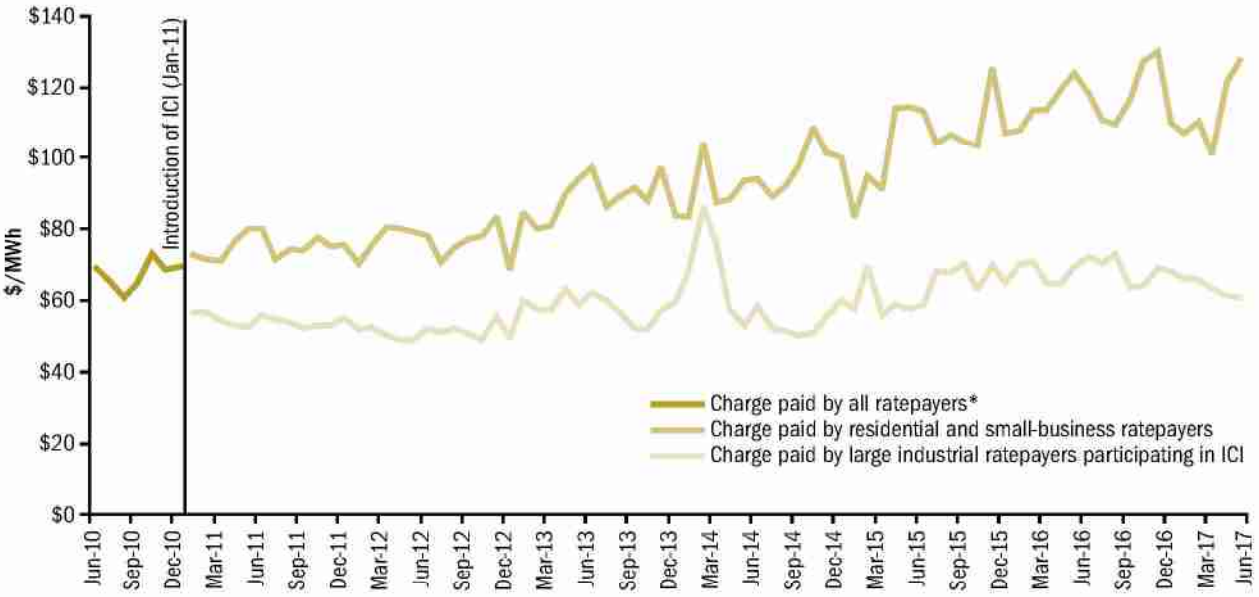
To ensure the transparency of government decisions, we recommend that the Ministry of Energy review the impact of the Industrial Conservation Initiative on low-energy-consuming ratepayers and publicly report this information.

#### MINISTRY RESPONSE

The Ministry continues to monitor the impact of the Industrial Conservation Initiative (ICI) on the electricity system in reducing peak demand and the impact on all classes of electricity consumers. The recovery mechanism under ICI maintains the relationship between a consumer's electricity costs and their contribution to provincial peak demand.

**Figure 9: Electricity Charge Before and After the Introduction of the Impact of Industrial Conservation Initiative (ICI)**

Source of data: Independent Electricity System Operator (IESO)




* The Industrial Conservation Initiative (ICI) split the charge paid by all ratepayers into two charges: one for large industrial ratepayers participating in ICI, and a second one paid by all other (residential and small-business) ratepayers.

Lowered peak demand reduces the need for supply resources and ultimately the projection for electricity system cost. The Independent Electricity System Operator (IESO) estimates that ICI reduced peak demand by about 1,300 megawatts in 2016. ICI supports a fair cost allocation framework where consumers who are contributing the least to peak demand pay a smaller portion of these related long-run costs. It is also worth noting that the IESO publishes on its website the allocation of global-adjustment costs each month, as well as the consumption for each class of consumer.

The Ministry would also like to clarify that the benefit for residential and small-business consumers will not be influenced by ICI expansion. The Ontario Fair Hydro Plan reduced electricity bills for residential consumers by an average of 25% and will hold any increases to the rate of inflation for four years.

## 4.3 The IESO Continues to Administer the Standby Cost Recovery Program Despite Reasons Not To

The Standby Cost Recovery Program pays generators for costs to start and then run their equipment while on standby to supply electricity. The generators enrolled in the Program are gas plants (prior to their closures by 2014, coal-fired power plants were also enrolled), whose equipment needs to be warmed up, running and ready to go so the IESO can dispatch them to supply electricity very quickly should demand spike suddenly or unexpectedly.

When the Program was introduced in 2003, it reimbursed generators only for their fuel costs for being on standby. In 2009, the program was expanded to also reimburse them for their additional operating and maintenance costs while on standby.

### 4.3.1 The IESO Has Not Implemented the OEB Panel's Recommendation to Reassess and Change the Standby Cost Recovery Program

The OEB Panel reported in 2015 that the electricity supplied by the gas generators that claimed $61 million in costs in 2014 under the Standby Cost Recovery Program was used for less than 1% of the hours to meet Ontario demand.

The OEB Panel was concerned that the Program is overused, at a time when Ontario regularly finds itself in surplus power conditions and is a net exporter of electricity.

OEB Panel reports in 2010 and 2011 recommended that the IESO revise (2010) and reassess (2011) whether the Standby Cost Recovery Program is providing a net benefit for ratepayers, which the IESO did not do. A 2014 OEB Panel report recommended that the IESO provide detailed analysis of market data to justify the need for the Standby Cost Recovery Program's continued existence, which the IESO did not provide. In its 2016 report, the OEB Panel again questioned the need for this Program and why the IESO does not stop reimbursing gas generators for certain operating and maintenance costs, which, according to the OEB Panel, would save ratepayers millions.

The IESO has asserted that the Program is still needed for reliability purposes. However, the IESO has yet to provide any detailed analysis to justify the need for the Standby Cost Recovery Program and its concerns about reliability if the program was discontinued.

### 4.3.2 Changes to the Standby Cost Recovery Program Do Not Encourage Generators to Be Efficient—Costing Ratepayers More than Necessary

In 2009, the type of costs reimbursed by the Standby Cost Recovery Program expanded from just gas and coal generators' standby fuel costs to their maintenance and operating costs as well.

This change has reduced the incentive for gas and coal generators (prior to their closure) to try to operate more efficiently by managing costs. Costs associated with the Standby Cost Recovery Program are directly passed through to ratepayers.

In 2015, the OEB Panel reported that ratepayers would save about $30 million annually if the Program stopped reimbursing gas generators for certain maintenance and operating costs.

In addition to the savings, this change would provide an incentive for generators to operate more efficiently and minimize these costs, as they would no longer be automatically reimbursed.

The IESO has not implemented the Panel's recommendations. As a result, the Program continues today to reimburse gas generators for their maintenance and operating costs.

### 4.3.3 Nine Gas and Coal Generators Have Claimed $260 Million in Ineligible Costs under the Program—About $168 Million Recovered

In response to a suggestion by the OEB Panel, in 2012 the IESO Oversight Division started auditing the costs claimed by nine of the 11 gas and coal generators registered under the Standby Cost Recovery Program at that time. Since then, the number of generators registered under the Program has increased to 17. The audits conducted by the Oversight Division identified almost $260 million in possible ineligible cost claims out of a total of about $600 million paid out to gas and coal generators under the Program. The Oversight Division recovered about $168 million (about two-thirds) of the $260 million through settlements with individual generators, and at the time of our audit it was trying to recover another $10 million that generators were disputing. **Figure 10** shows the results of the audits.

Only fuel, maintenance and operating costs that gas and coal generators incur for being on standby are eligible to be claimed under the Standby Cost Recovery Program. The IESO was not reviewing all

**Figure 10: Results of Audits of Costs Claimed by Nine Generators under the Standby Cost Recovery Program**

Source of data: Independent Electricity System Operator (IESO)

| Generator* | Years of Submissions Covered by Audits | Total Claims Paid ($ million) | Ineligible Costs ($ million) | Ineligible Costs % of Total Paid | Ineligible Costs Recovered Total Recovered ($ million) | Ineligible Costs Recovered % of Ineligible Costs Recovered |
|---|---|---|---|---|---|---|
| Company A | 2009–15 | 240.0 | 162.1 | 68 | 110.0 | 68 |
| Company B | 2006–15 | 147.0 | 50.9 | 35 | 22.0 | 43 |
| Company C | 2006–15 | 78.0 | 22.7 | 29 | 17.4 | 77 |
| Company D | 2008–14 | 72.0 | 2.1 | 3 | 1.3 | 62 |
| Company E | 2010–12 | 23.0 | 7.5 | 33 | 7.5 | 100 |
| Company F | 2009–12 | 17.0 | 6.5 | 38 | 3.5 | 54 |
| Company G | 2010–12 | 7.9 | 4.1 | 51 | 2.7 | 66 |
| Company H | 2006–12 | 3.6 | 2.3 | 64 | 2.3 | 100 |
| Company I | 2006–15 | 2.4 | 1.2 | 50 | 0.8 | 67 |
| **Total** | | **590.9** | **259.4** | **44** | **167.5** | **65** |
| **Average** | | | | **41** | | **71** |

* Audit information is designated confidential information under the provisions of the Market Manual, Market Rules and the *Electricity Act, 1998*. We therefore refer to generators in this figure anonymously as "Company A," "Company B," and so on.



cost claims submitted by generators before paying. Generators claimed thousands of dollars annually for staff car washes, carpet cleaning, road repairs, landscaping, scuba gear and raccoon traps, which have nothing to do with running power equipment on standby. For example, the Oversight Division found that one generator claimed about $175,000 for coveralls and parkas at one facility over a two-year period.

In October 2017, the OEB Panel released a public report detailing the results of its investigation of the Goreway Power Station's misuse of the Standby Cost Recovery and Lost Profit Recovery programs. Through review of Goreway's internal records and documents and other information, the OEB Panel found the following:

- Goreway claimed $17 million in costs for which it could not provide any supporting records.
- Goreway claimed an extra $25,000 in costs each time it started its power equipment. The total of payments it received under the Standby Cost Recovery Program as a result was $5 million.
- Goreway claimed ineligible costs that included $6.5 million for gas to fuel a steam turbine that does not consume any gas and $300,000 for landscaping.
- Goreway provided to the IESO Oversight Division, which was conducting its own audit, documents containing fictitious costs. Some related to equipment parts worth about $27 million that Goreway had no intention of purchasing and that would be redundant.

### 4.3.4 Electricity Bought at Higher Cost from Gas Generators Because Gas Generators Used the Standby Cost Recovery Program to Suppress the Market Price

Besides filing ineligible claims for costs that have nothing to do with fuel, maintenance or operating costs, some gas generators have filed Standby Cost Recovery Program claims for their costs to produce electricity, instead of reflecting those costs in their offer to sell electricity to the market (those costs would then be recovered through the market price, as explained in **Section 2.4**). Only incremental costs to run equipment on standby should be

claimed under this Program, not generators' costs to produce electricity for sale to the market. The OEB Panel reported on this in 2010.

Claiming their costs to produce electricity under the Standby Cost Recovery Program enabled gas generators to lower the price they offered to be chosen to produce electricity. **Figure 11** shows how the market price is suppressed when gas generators misuse the Program by claiming their costs to produce electricity.

This has led to the IESO's inefficiently selecting which gas generators will produce electricity (that is, the IESO buys electricity from a gas generator that produces it for a higher overall cost), resulting in a depressed market price and an inflated global adjustment.

According to a Panel estimate, the market price for electricity from January to April 2010 was artificially lower by as much as 85% than it would have been if generators had not claimed their costs from the Standby Cost Recovery Program. The OEB Panel also estimated that between December 9, 2009, and April 30, 2010, the loss associated with the IESO's buying electricity from one gas generator that produced it for a higher overall cost was about $16.3 million.

The OEB Panel has not done any similar reviews since 2010.

### 4.3.5 Electricity Costs Higher Because Gas Generators Do Not Continuously Run Their Equipment When on Standby

Another way reported by the OEB Panel that gas generators can raise electricity costs is by shutting down their equipment while on standby, only to restart it again within two hours. This allowed generators to submit their equipment start-up costs under the Standby Cost Recovery Program. Running their equipment continuously would have saved money, but generators could not have then submitted the additional start-up costs for reimbursement. The OEB Panel reported that in summer 2010, nearly all of the $19 million in extra electricity costs charged to ratepayers was because of this practice.

#### RECOMMENDATION 5

To protect ratepayers' interests and to improve the transparency of the decisions of the Independent Electricity System Operator (IESO),



**Figure 11: Standby Cost Recovery Program—How Market Price Is Suppressed[1]**

Prepared by the Office of the Auditor General of Ontario


1. This figure is for demonstration purposes only and does not reflect an actual transaction that has occurred.
2. Based on an artificially lower offer, Generator 1 would be selected by the Independent Electricity System Operator (IESO) to produce electricity over Generator 2, even though Generator 1's cost to produce electricity is $50 higher. Generator 1 recovers $100 worth of costs through the Standby Cost Recovery Program, which is charged directly to ratepayers.

we recommend that the IESO provide a detailed analysis to the Ontario Energy Board Market Surveillance Panel (OEB Panel) to support its assertion that the Standby Cost Recovery Program is necessary to ensure a reliable supply of electricity for Ontarians.

### IESO RESPONSE

In 2018, the IESO will present to the OEB Panel a detailed analysis supporting the rationale for its previous assertions to the OEB Panel that a real-time generator commitment mechanism (currently the Real-Time Generator Cost Guarantee Program, referred to in this report as the Standby Cost Recovery Program) is necessary to allow the IESO to comply with North American power system reliability standards and ensure a reliable supply of electricity for Ontarians.

### RECOMMENDATION 6

To ensure that ratepayers are not charged for unnecessary costs, we recommend that, if the Independent Electricity System Operator does not cancel the Standby Cost Recovery Program, it fully implement the Ontario Energy Board Market Surveillance Panel's (OEB Panel) recommendations and not reimburse generators for operating and maintenance costs under the Program.

### IESO RESPONSE

The IESO acknowledges the recommendation made by the Auditor General and notes that the total costs of the Real-Time Generator Cost Guarantee Program (referred to in this report as the Standby Cost Recovery Program) have fallen from $61 million in 2014 to $23 million in 2016. In light of OEB Panel recommendations, the IESO implemented a new cost recovery framework for this Program on August 1, 2017. Under this new framework, the values for 14 of 15 eligible costs are now set and approved in advance of participating in the Program for each program participant. This change introduced transparency and removed the potential for overpayments and the need for after-the-fact audits for these components. One cost component is still subject to audit, as it cannot be pre-approved, but this cost component was not identified as an issue in the Standby Cost Recovery Program audits.

The IESO acknowledges issues with the current Standby Cost Recovery Program in our responses to previous OEB Panel reports and has committed to replace it. The IESO has initiated a $200-million comprehensive program to fundamentally overhaul Ontario's electricity market. Market Renewal is estimated to result in up to $5.2 billion in savings, the majority of which is estimated to be realized by ratepayers (see "The Future of Ontario's Electricity Market, A Benefits Case Assessment of the Market Renewal Project," **http://www.ieso.ca/-/media/files/ieso/document-library/engage/me/benefits-case-assessment-market-renewal-project-clean-20170420.pdf?la=en** and **http://www.ieso.ca/sector-participants**). The Enhanced Real-Time Unit Commitment initiative of Market Renewal will replace the current Standby Cost Recovery Program with a transparent and competitive mechanism that will ensure reliability through a more efficient commitment of resources near real time.

## 4.4 The IESO Continues to Pay Market Participants under the Lost Profit Recovery Program without Addressing the Program's Flaws and Weaknesses

### 4.4.1 Overview

The Lost Profit Recovery Program was established in May 2002. The Program compensates market participants if they lose money from a change that the IESO makes to the way it has scheduled power to be dispatched. The need to make these

interventions, and then to pay compensation, is built into Ontario's market design: one scheduling approach considers system constraints (such as transmission line capacity) to determine which generator produces power, but another scheduling approach, based on an unconstrained (competitive and open) transmission system, is used to determine market price.

One of the reasons for the IESO's intervention in the market schedule is to keep transmission lines from being overloaded. Another is to fill an unexpected shortfall in supply. Here are three scenarios where this program comes into play:

- Generator A has successfully offered to supply electricity for the market for a given time period. However, the IESO must order it to stop supplying electricity because of a potentially damaging overload in the transmission lines. Generator A loses money as a result. The Program compensates Generator A for the lost profit.
- There is a shortfall in electricity because the IESO has ordered Generator A to stop supplying. The IESO orders Generator B, whose bid to supply electricity was too high to be chosen, to supply the shortfall at the market price. Generator B's costs to supply the electricity are higher than the market price. The Program compensates Generator B for the difference between its costs to supply electricity and the market price.
- A large industrial consumer offers, for a price, to reduce its high demand for electricity at a given time. The IESO cannot accept this offer as it already planned to supply the electricity, and sending the supply through the transmission lines without the consumers needed to draw down the supply would cause a potentially damaging overload in the transmission lines. The IESO orders the large industrial consumer to keep its demand high, and the large industrial consumer loses money as a result. The Program compensates the large industrial consumer for this loss.

Between 2002 and the end of 2016, market participants have been paid about $1.6 billion, or $110 million annually on average, under this Program.

### 4.4.2 The OEB Panel Has Reported the Potential for Participants to Misuse Market Rules under the Lost Profit Recovery Program

A 2016 OEB Panel special report on the Lost Profit Recovery Program states: "Since market opening, no element of Ontario's wholesale electricity markets has attracted the attention and concern of the Market Surveillance Panel [OEB Panel] more than [Lost Profit Recovery Program] payments."

Even before the market opened in 2002, the OEB Panel reported that the market participants could offer or bid prices not based on actual costs or supply needs but for the sole purpose of getting payments from the Program.

Soon afterwards, the OEB Panel was reporting not just on the potential for this to happen, but also on actual situations of market participants misusing the program. The OEB Panel began reviewing the payments market participants received under the Program after the market opened in 2002, and also investigating the behaviour of certain participants. The results of five investigations, some of which took from two to four years to complete, have been made public by the OEB Panel. These are summarized in **Figure 12**.

The OEB Panel has also reported on large payments made under the Program. As of the end of 2015, about $500 million of the total $1.5 billion paid out went to market participants in northwestern Ontario. The generators in that region represent less than 5% of Ontario's generation capacity, and the demand for electricity in that region has fallen. The concern is that the market participants involved may be submitting bids and offers into the market to create the conditions under which they can claim lost profits that they may not have incurred.

**Figure 12: Investigations into the Lost Profit Recovery Program Reported by the Ontario Energy Board (OEB) Panel[1]**

Source of data: Ontario Energy Board (OEB)

| Year | Market Participant | Summary of Results |
|---|---|---|
| 2016 | Goreway Power Station | A substantial portion of the $11 million paid to Goreway under the Program between June 2009 and June 2012 is believed by the OEB Panel to have resulted from misuse of the rules. |
| 2015 | Resolute Forest Products Inc.[2] | During an eight-month period in 2010, the company misused market rules to gain $20.4 million. The OEB Panel reported that the company used one of the Panel's past reports, which recommended that the IESO fix the rules, to learn how to misuse the rules. As a result of a subsequent investigation by the IESO's Oversight Division, Resolute repaid $10.6 million.[3] |
| 2014 | Greenfield Energy Centre | Between December 2010 and August 2011, the company misused market rules to gain $432,000. Greenfield Energy later repaid the amount in full to the IESO. |
| 2012 | TransAlta Energy Marketing Corp. | The investigation exposed weaknesses in certain market procedures, which the OEB Panel recommended that the IESO fix. |
| 2012 | West Oaks Energy NYINE, LP | The investigation exposed weaknesses in certain market procedures, which the OEB Panel recommended that the IESO fix. |

1. The only other investigation conducted by the OEB Panel since 2003 did not relate to the Lost Profit Recovery Program (it was a complaint about possible withholding by Ontario Power Generation of coal-fired generation).
2. In 2011, Abitibi Bowater Inc. (Abitibi) was renamed Resolute Forest Products Inc. At the time, Abitibi owned and operated Bowater Canadian Forest Products Inc. and Abitibi-Consolidated Company of Canada.
3. The OEB Panel does not have the authority to issue fines or sanctions against market participants. It can report and make recommendations, and refer the matter to the IESO Oversight Division. The Division can issue fines; however, it has to conduct its own independent investigation. For further discussion see **Section 4.7.5**.



As mentioned in **Section 4.3.3**, the OEB Panel released a public report detailing a generator's misuse of the Standby Cost Recovery and Lost Profit Recovery programs. The OEB Panel found that this generator received under the Lost Profit Recovery Program a large portion of $11 million for claimed lost profits that did not exist. The OEB Panel also reported that some of the IESO's fixes to the market rules that the generator misused may still leave the Program open for other generators to misuse.

The OEB Panel has analyzed the Program in almost all of its 28 reports and made several recommendations for the IESO to fix the rules' flaws that allow market participants to claim artificial losses. The Panel has also recommended that the IESO restrict this Program. The IESO has fixed some of the flaws, but sometimes not to the full extent recommended by the Panel. The IESO has otherwise responded to the OEB Panel that it is deferring making any major changes to the Program until the working group of its Market Renewal Initiative completes its work. However, changes resulting from this work will not be implemented for another five years. (See **Section 4.6.2** for more information on this working group.)

## RECOMMENDATION 7

To ensure that ratepayers are not charged for unnecessary costs associated with the Lost Profit Recovery Program, we recommend that the Independent Electricity System Operator (IESO) implement the recommendations of the Ontario Energy Board Market Surveillance Panel (OEB Panel) regarding this Program.

## IESO RESPONSE

The IESO acknowledges the recommendation made by the Auditor General and carefully considers every OEB Panel recommendation

and the OEB Panel's underpinning analysis, and responds to each recommendation outlining the actions it will take in a letter directed to the Chair and CEO of the OEB. The IESO has acted on a number of the recommendations made by the OEB Panel related to Congestion Management Settlement Credits (referred to in this report as the Lost Profit Recovery Program) and has implemented more than a dozen market rule amendments regarding the Program. In light of the recommendations made by the OEB Panel over the years, the IESO will continue to consider the OEB Panel recommendations when assessing amendments to market rules while also balancing the need to ensure the reliability of the electricity network, to consider the impact upon market design including potential unintended adverse effects and to assess the ability of the IESO and market participants to implement the change.

The IESO has initiated a $200-million comprehensive program to fundamentally overhaul Ontario's electricity market. Market Renewal is estimated to result in up to $5.2 billion in savings, the majority of which is estimated to be realized by ratepayers (see "The Future of Ontario's Electricity Market, A Benefits Case Assessment of the Market Renewal Project," **http://www.ieso.ca/-/media/files/ieso/document-library/engage/me/benefits-case-assessment-market-renewal-project-clean-20170420.pdf?la=en** and **http://www.ieso.ca/sector-participants**). The Single Schedule Market (SSM) initiative of Market Renewal will eliminate the Lost Profit Recovery Program.

## 4.5 Market Participants Benefiting from Market Flaws Are Involved in Changing Market Rules and Market Design

### 4.5.1 Overview of the Market Rule Amendment Process

The IESO Board has the authority and responsibility to amend market rules. Anyone, including the IESO or market participants, can request an amendment to the market rules. Before the IESO Board approves any amendment, it is first reviewed by the IESO Technical Panel, appointed by the IESO Board, made up of members who are mostly industry and generators' representatives. **Figure 13** shows the most recent composition of the Technical Panel as of June 27, 2017.

The Technical Panel considers each proposed amendment and decides if:

- the amendment should not be adopted;
- the amendment should be adopted and recommended for IESO Board approval; or
- the amendment needs further clarification or stakeholder input and should then be resubmitted to the Technical Panel for reconsideration.

**Figure 13: Composition of Technical Panel**

Source of data: Independent Electricity System Operator (IESO)

| Member* | Representation |
|---|---|
| 1 | Consumer |
| 2 | Energy-Related Business/Services |
| 3 | Natural Gas Industry |
| 4 | Independent Electricity System Operator (IESO) |
| 5 | Market Participant |
| 6 | Generator |
| 7 | Generator |
| 8 | Residential Consumer Group |
| 9 | Industrial Consumer Group |
| 10 | Electricity Wholesalers |
| 11 | Transmitters |
| 12 | Chair |

* Number of members can fluctuate.

### 4.5.2 Gas Generators Are Involved in the Rule-Changing Process of the Standby Cost Recovery Program

As mentioned in **Sections 4.3.1** and **4.3.2**, the OEB Panel has repeatedly recommended that the market rules that govern the Standby Cost Recovery Program be changed. The OEB Panel specifically recommended that the IESO stop reimbursing gas generators for their maintenance and operating costs. The following is a chronology of key events relating to issues with the Standby Cost Recovery Program:

- 2011 and 2014—The OEB Panel recommends that the Standby Cost Recovery Program be reviewed to assess its benefits for ratepayers and whether it continues to be needed.
- 2012–2014—The IESO Oversight Division audits payments made between 2006 to 2015 under the Program and finds $260 million paid to gas and coal generators was for possibly ineligible costs.
- 2015—The OEB Panel again recommends that the IESO define the eligible costs more precisely.
- April 20, 2016—IESO management submits a proposal to its Technical Panel to amend the market rules governing the Standby Cost Recovery Program. The amendments are to clarify and better define the operating and maintenance costs eligible for recovery, and to reduce the scope and frequency of audits conducted by the IESO Oversight Division (because clarifying and better defining eligible costs will reduce or eliminate generator claims for ineligible costs).
- September 13, 2016—At a public meeting held by the Technical Panel, IESO management tells the panel that generators are continuing to submit ineligible cost claims, that IESO staff are burdened with having to review these claims, and that these costs need to be more clearly defined for generators. Generators tell the Technical Panel that the IESO has not sufficiently consulted them on the changes it is considering making to the Standby Cost Recovery Program. The Technical Panel votes six to four against recommending to the IESO Board that changes be made to the Standby Cost Recovery Program. The rationale provided by the six members voting no is primarily that IESO management has not allowed generators to review the proposed changes and provide input on the technical details supporting them.
- October 2016–March 2017—The IESO obtains input from gas generators on the technical details, revises its proposed changes and resubmits them to the Technical Panel.
- March 21, 2017—The Technical Panel votes seven to four (with one abstention) in favour of recommending the changes to the IESO's Board for approval.
- April 2017—The IESO Board approves market rule changes to better define and pre-approve costs that generators can claim and to reduce the scope and frequency of audits of generator cost claims under the Standby Cost Recovery Program.
- May 2017—IESO management says to the Technical Panel that involving generators in the process of drafting technical details that support market rules (as was done between October 2016 and March 2017) contravenes its usual procedures.

In reviewing these events, we were particularly concerned about the involvement of generators in the process of drafting technical details that support market rules. This involvement was apparently based simply on generators' assertion that they were not sufficiently consulted on the changes to the technical details that support market rules—yet such consultation is not a normal procedure.

At the time of our audit, the IESO had not meaningfully addressed the recommendations made by the OEB Panel, and gas generators continued to be reimbursed for their operating and maintenance costs under the Standby Cost Recovery Program. We noted as well that neither had the Ontario

Energy Board used its authority to revoke the IESO Board–approved changes to the Program and send the changes back to the IESO for reconsideration on the basis that they are not in the best interest of ratepayers.

### 4.5.3 Market Participants Are Heavily Involved in the Market Renewal Process

In 2016, the IESO started a Market Renewal Initiative (Initiative) to address known issues with the current market design. These issues relate to the fact that, over the 15 years the market has been in place, two different schedules have governed its operations. One scheduling sequence determines market price based on an unconstrained transmission system. The second scheduling sequence considers transmission constraints to schedule which generator produces power. The "two-schedule" system was intended to be only temporary when the market opened in 2002, but this problem has not been resolved to date. This system also prompted the need for the Lost Profit Recovery Program and has resulted in the inefficiencies that have been reported by the OEB Panel and that we have highlighted in **Section 4.4**.

The IESO stated in a 2017 report published as part of the Market Renewal Initiative that one area the Initiative will specifically address is changes to the Lost Profit Recovery Program. The IESO told us that it expects to implement these changes sometime in 2022.

A 23-member working group is leading the Initiative, advising the IESO on strategic, policy and market design issues. Its members represent generators, consumers and other stakeholders.

**Figure 14** shows the make-up of the working group. Some of the members that are on the working group are representing companies that have been found by the OEB Panel and/or the IESO Oversight Division to have misused market rules. More specifically:

- Goreway (whose representative is co-chairing the Initiative)—was found by the OEB Panel to have claimed ineligible or fabricated costs under the Standby Cost Recovery Program totalling $89 million and took advantage of market rules that govern the Lost Profit Recovery Program to obtain a substantial portion of the $11 million it received for lost profits that were not incurred. (See **Section 4.4.2** for details.)
- Resolute Forest Products—was found by the OEB Panel to have obtained $20.4 million by misusing market rules that govern the Lost Profit Recovery Program and was found by the IESO Oversight Division to have broken market rules by repeatedly submitting false bids to withdraw electricity from the grid when



**Figure 14: Members of the Market Renewal Initiative Working Group as of October 1, 2017**

Source of data: Independent Electricity System Operator (IESO)

| Representing Generators | Representing Consumers | Representing Other Stakeholders |
|---|---|---|
| Co-Chair/Goreway Power Station | Co-Chair/Tembec | EnerNOC |
| Brookfield Renewable Power | Ivaco Rolling Mills | HQ Energy Marketing |
| Vacant | Gerdau | NRStor |
| NextEra | Resolute Forest Products | Energy Storage Canada |
| Northland Power | Association of Major Power Consumers in Ontario | Alectra |
| Ontario Power Generation | Vacant | Market Surveillance Panel |
| TransCanada Energy | Power Consumer | Opus One Solutions |
| Association of Power Producers of Ontario | Canadian Manufacturers and Exporters | Peak Power Energy |
| | | Milton Hydro |

it could not do so and by defying the IESO's dispatch instructions. (See **Section 4.4**.)

The 23-member working group also includes three other organizations that have or are being investigated by the IESO Oversight Division for misusing market rules:

- a market participant that was being investigated by the IESO Oversight Division at the time of our audit for major breaches of market rules that govern the Lost Profit Recovery Program involving a potential $20 million in related payments;
- a market participant that submitted ineligible cost claims under the Standby Cost Recovery Program that the IESO Oversight Division estimated to be about $51 million (see **Section 4.3**); and
- a market participant that claimed ineligible costs under the Standby Cost Recovery Program totalling $7.5 million (see **Section 4.3**).

Audit information and the names of market participants under investigation are designated confidential under the provisions of the Market Manual, market rules and the *Electricity Act, 1998*. We therefore do not disclose the names of these market participants in our report.

We also noted that the representation of consumers in the working group is weighted in favour of high-volume electricity consumers, as opposed to medium- and low-volume electricity consumers.

## RECOMMENDATION 8

To ensure that the Market Renewal Initiative (Initiative) considers and protects all ratepayers' interests, we recommend that the Independent Electricity System Operator (IESO):

- immediately prohibit representatives from companies that have been found by the Ontario Energy Board Market Surveillance Panel or the IESO Oversight Division to have misused IESO programs from participating in the Initiative working group;
- establish a minimum number of working group members representing low-power consumers and ensure that those positions are always filled; and
- publicly report in clear language how the results of the Initiative will be in the best interests of all ratepayers.

## IESO RESPONSE

The IESO acknowledges the recommendations of the Auditor General and will continue to evaluate the membership of the working groups used for Market Renewal.

The IESO will also continue to ensure that its stakeholder engagement processes, including Market Renewal, seek representation from low-volume consumers where appropriate. The IESO's stakeholder engagement processes seek the input from a wide representation of participants—generators, traders, consumers, stakeholders, First Nations and Metis Peoples, communities, and the general public—and are guided by seven engagement principles that were put in place in November 2015 (see **http://www.ieso.ca/sector-participants/engagement-initiatives/overview/engagement-principles**).

One of the principles, which applies to Market Renewal, seeks to ensure adequate representation in each engagement of the public or those that have a tendency to remain silent or reluctant to engage. Where practical, a variety of engagement methods will be offered to provide flexibility to participate.

The IESO is also required by statute (the *Electricity Act, 1998*, S.O. 1998, c. 15, Sched. A, s. 188) to have a Stakeholder Advisory Committee that provides appointed stakeholder representatives with the opportunity to present advice and recommendations on key initiatives like Market Renewal directly to the IESO's independent Board of Directors and Leadership Team. Members include low-volume consumers (see **http://www.ieso.ca/-/media/files/ieso/document-library/sac/sac_tor.pdf**).

## 4.6 The IESO Oversight Division's Ability to Uncover Significant Rule Violations Is Limited

In addition to conducting its own market monitoring, the Oversight Division receives information from the IESO about suspicious or anomalous market activity that could signal rule violations. Market participants can also self-report rule violations. The Oversight Division investigates the activity and, if there was a violation, warns or fines the guilty party. **Figure 15** lists the range of possible sanctions that the Oversight Division can issue for rule violations.

### 4.6.1 Limited Investigations Have Uncovered Significant Rule Violations

The focus of the Oversight Division's investigations between 2003 and 2014 was on self-reported partial and full non-compliance of market rules: 341 investigations resulting in fines or payment recoveries were completed, and 70 market participants were issued fines totalling about $2.5 million.

In contrast, between 2015 and 2017, the focus shifted to major investigations; only three such investigations were completed, but they uncovered repeated non-compliance over an extended period: the total fines or settlements exceeded $30 million. **Figure 16** summarizes the investigation results.

The scale of these last three investigations was much larger than the earlier investigations, and there was less co-operation from the investigated market participants. The average time to complete them was three-and-a-half years.

### 4.6.2 IESO Oversight Division Under-Resourced, Resulting in a Backlog of Investigations

One reason for the large-scale investigations taking years to complete was the Oversight Division's lack of staff. Only two active investigators did the work. At the time of our audit, the Division Director had identified, out of a total 78 possible rule violations, five potential major violations requiring large-scale investigations. However, only one investigation was under way. Four others were suspended because of a lack of resources.

In addition, as of June 2017, the Division had a backlog of 43 investigations of minor breaches of market rules.

### 4.6.3 Ontario Has Similar Staffing to Alberta But Faces Greater Investigative Challenges

We conducted a comparison of Ontario's Oversight Division to the most comparable Canadian jurisdiction, Alberta. Alberta is the only other province that operates an electricity wholesale market and has a market oversight function that is similar to Ontario's.

We found that both provinces' oversight functions have similar levels of staffing. At the time of



**Figure 15: Range of Possible Sanctions Issued by the Independent Electricity System Operator (IESO) Oversight Division**

Source of data: Independent Electricity System Operator (IESO)

| Level of Non-compliance | Level of Co-operation | Range of Sanctions per Breach |
|---|---|---|
| Partial compliance | Self-report, full co-operation | Warning letter or fine of up to $2,000 |
| Full non-compliance | Self-report, full co-operation | Warning letter or fine of up to $4,000 |
| | No self-report, partial co-operation | Warning letter or fine of up to $6,000 |
| | No self-report, no co-operation | Fine of $1,000 to $10,000 |
| Repeated full non-compliance* | Not applicable | Fine of up to $1,000,000 |

* Repeated non-compliance or a breach during a declared emergency or market suspension, or if the breach had an impact on market or electricity grid reliability.

**Figure 16: Results of Three Large-Scale Investigations by Independent Electricity System Operator's (IESO) Oversight Division**

Source of data: Independent Electricity System Operator (IESO)

| Year Completed | Market Participant | Description of Breach | Settlement/Fine ($ million) |
|---|---|---|---|
| 2017 | Manitoba Hydro | From October 2011 to September 2012, Manitoba Hydro repeatedly breached market rules and submitted misleading market offers to sell electricity into the market and refused to co-operate during the investigation. | 9.6 |
| 2016 | Resolute Forest Products Inc. pulp and paper facilities in Fort Frances and Thunder Bay | From October 2004 to September 2013, Resolute repeatedly breached market rules and submitted false bids to withdraw electricity from the grid when it could not do so, and did not follow IESO's dispatch instructions. | 10.6 |
| 2015 | Goreway Power Station | Between June 10, 2009, and March 31, 2013, Goreway repeatedly made false claims to IESO's Cost Recovery Program totalling $12 million. | 10.0* |

* The IESO's Oversight Division negotiated settlements with Manitoba Hydro and Resolute Forest Products. In contrast, Goreway was fined an extra $10 million and repaid the $12 million as part of a larger negotiated settlement that was recovered from Goreway as a result of the audits of its claims under the Standby Cost Recovery Program.



our audit, the IESO Oversight Division had 14 full-time staff, while Alberta's oversight function had 12 full-time staff.

Working with about the same number of staff, however, Ontario has greater investigative challenges. Ontario's Standby Cost Recovery Program and the Lost Profit Recovery Program have presented a number of issues that required enforcement action and, as a result, required significant financial resources from the IESO Oversight Division. Similar programs with significant enforcement issues do not exist in Alberta's electricity wholesale market, which has resulted in less extensive investigative work by its staff, and far smaller fines issued, compared to Ontario. In 2015 and 2016, Alberta issued a combined total of 1,071 fines, averaging only about $230 each. Further, most rule violations in Alberta have been self-reported by market participants, not uncovered by large-scale investigations.

Adding to the comparison, Alberta's electricity market is only half the size of Ontario's: Alberta's installed generation capacity is about 16,300 MW, while Ontario's is about 36,500 MW, and Alberta's highest demand for electricity in 2016 was about 11,000 MW, versus Ontario's of about 23,200 MW.

### 4.6.4 High Employee Turnover in the IESO Oversight Division

At the time of our audit, the IESO Oversight Division had a budget to employ a total of 24 full-time staff and 10 temporary staff. We found that only 60% of these positions were filled—that is, 20 staff were employed at the Division (14 full-time and six temporary staff).

In Ontario, many staff hired for the temporary positions leave, contributing to an average staff turnover of almost 30% per year since 2012. This turnover has meant that new staff often lack the experience and need more time to conduct effective, thorough and in-depth investigations. This is a serious shortcoming given that, as detailed in **Section 4.6.1**, the focus of the Oversight Division has shifted to larger-scale, more challenging probes into significant non-compliant conduct by market participants.

## RECOMMENDATION 9

To ensure that the Independent Electricity System Operator (IESO) Market Assessment and Compliance Division can conduct proper

oversight of the market, we recommend that the IESO:

- assess the resources needed to eliminate its investigation backlog and conduct the large-scale investigations that have proven effective in recovering funds and identifying and sanctioning significant rule violations; and
- attract and retain staff with experience in market rules and expertise in investigation.

## IESO RESPONSE

The IESO agrees with the Auditor General's recommendation, as it is consistent with recent increases in staff at the Oversight Division and the process of ongoing review of priorities.

As part of the IESO Business Planning process for 2018, the IESO is evaluating the risk profile of a variety of its priorities, including the enforcement of market rules. As part of this exercise, consideration is being undertaken to both increase the total level of resources made available for enforcement, as well as the conversion of some current resources to full-time and non-temporary staff. In doing so, attracting staff with expertise in market rules and investigations will be a priority.

### 4.6.5 IESO Oversight Division Has No Explicitly Legislated Investigative Authority

The IESO Oversight Division has no explicit legislative authority to compel the subjects of its investigations to provide information. Instead, the Division must rely on market-rule-based obligations that are more limited than the investigatory powers given to the OEB Panel under the *Electricity Act, 1998*. This means that there is no way of ensuring that its investigations:

- uncover the full extent of rule violations committed by market participants; and
- issue appropriate penalties for those violations.

In contrast, under the *Electricity Act, 1998*, the OEB Panel is empowered to compel the subjects of its investigations to provide information. This means that the OEB Panel can obtain complete evidence to determine the full extent of market participants' behaviour. However, the OEB Panel is not empowered to sanction or fine the market participants it investigates. It can refer matters to the IESO Oversight Division.

The IESO Oversight Division must conduct its own investigations of these market participants, without explicit legislative authority to compel the subjects of its investigations to provide information.

As a result, for example:

- The Oversight Division was not able to uncover the full extent of rule violations committed by Manitoba Hydro, which in 2011 and 2012 submitted misleading offers to sell electricity (see **Figure 16**) and then, while being investigated by the Oversight Division, refused to answer some questions and provide requested information.
- The Oversight Division's ongoing investigation of one market participant for allegedly breaking market rules that govern the Lost Profit Recovery Program to gain an estimated $20 million has been prolonged and hampered by this market participant's refusal to provide some requested information.

## RECOMMENDATION 10

To enable the Independent Electricity System Operator Market Assessment and Compliance Division (Oversight Division) to conduct thorough and effective investigations, we recommend that the Ministry of Energy give the Oversight Division explicit legislative authority under the *Electricity Act* to compel information and evidence in the course of its investigations.

## MINISTRY RESPONSE

The Ministry of Energy supports the vital role that the Oversight Division plays in investigating potential infractions in Ontario's electricity system.

To ensure that the Oversight Division can effectively conduct its investigations, the Ministry will consult with the Independent Electricity System Operator regarding the potential need for additional legislative authority to assist the Oversight Division in performing its mandated duties.

### 4.6.6 IESO Oversight Division's Computer System Lacks Functionality

The Oversight Division uses a computer system developed in-house in 2003 to log, track and analyze information about possible breaches of market rules. When Oversight Division staff demonstrated the system to us, we found that it can no longer support the Oversight Division's oversight activities. For example:

- it lacks the basic functions needed to analyze trends in the information it contains;
- it is prone to freezing (it stopped working a number of times during the demonstration, and staff informed us that they were afraid the system would crash if they demonstrated certain functions); and
- staff are unable to enter fines issued to generators where the fine amounts are more than five digits.

At the time of our audit, the Oversight Division staff providing IT support for the system did not have IT expertise. As shown in **Figure 6**, the system is part of the larger administration system for the IESO; the IESO's IT Department provides support to the grid and market systems but not to the system used by the Oversight Division.

When we asked why the system had not been replaced, the IT Department and the Oversight Division's Director told us that plans were made in 2011 to replace it, but:

- the Oversight Division lacked staff with the skills needed to help implement a new system; and
- IT resources were too constrained as a result of the merger of the IESO and the OPA to procure the replacement.

In the absence of a sufficiently functional computer system, Oversight Division staff manually track and analyze some market activity information in spreadsheets. But due to a lack of resources, these spreadsheets are not always updated and the updates, entered manually, are prone to errors, which we identified when we reviewed them.

#### RECOMMENDATION 11

To ensure that the Independent Electricity System Operator (IESO) Market Assessment and Compliance Division (Oversight Division) can conduct proper oversight of the market, we recommend that the IESO replace the Oversight Division's computer system as soon as possible.

#### IESO RESPONSE

As part of the IESO Business Planning process for 2018, the IESO is evaluating the risk profile of a variety of its priorities, including the sufficiency of resources directed towards the Oversight Division's IT support and replacement of the computer system.

## 4.7 Oversight Division Not Independent of the IESO

Since market opening, a letter between the IESO CEO and the Oversight Division Director has delegated the IESO's rule enforcement responsibilities to the Oversight Division. The Oversight Division is empowered to investigate not just market participants for rule violations, but also the IESO itself. This makes it critical that the Oversight Division operates independently of the IESO.

The IESO Oversight Division is not fully independent given that IESO senior management is involved in Oversight Division activities and operations. For example:

- In one instance, we found that senior management was involved in negotiating a settlement with a generator to recover ineligible overpayments identified through the audits of the

Standby Cost Recovery Program (discussed in **Section 4.3**). In contrast, the Alberta Electricity System Operator has no direct involvement with Alberta's oversight function. Rather, the head of Alberta's oversight division is appointed by and reports directly to the Minister of Energy, who evaluates the performance of the division. This separation of functions would prevent Alberta's system operator from interfering with the activities of Alberta's oversight division. The instance we cite here is further inappropriate in that the IESO is considered a market participant under Ontario market rules, and the IESO Oversight Division even has the authority to sanction the IESO.

- The IESO's CEO is responsible for approving the Division's budgets and approving any budget increases. In Alberta, the Chair of the Alberta Utilities Commission (with similar functions to the Ontario Energy Board) approves its oversight division's yearly budget, which is then funded by Alberta's Electricity System Operator. To avoid any conflict of interest, the Chair of the Alberta Utilities Commission cannot sit on any commission proceedings that are initiated by Alberta's oversight division.
- In the United States, electricity markets are monitored and investigated by the Division of Energy Market Oversight that operates within the Federal Energy Regulatory Commission. The Commission is responsible for the regulation of the interstate transmission of electricity, natural gas and oil, and is an independent agency. Its members are appointed by the President of the United States with the advice and consent of the Senate.

### RECOMMENDATION 12

To strengthen independence of the Independent Electricity System Operator (IESO) Market Assessment and Compliance Division (Oversight Division), we recommend that the IESO change the Oversight Division's reporting structure.

### IESO RESPONSE

The IESO agrees with the Auditor General's recommendation.

The IESO's independent Board of Directors approved in October 2017 a new reporting structure whereby the Director of the Oversight Division will report directly to the IESO Board of Directors and report only administratively to the IESO CEO.

## 5.0 Detailed Audit Observations—Cybersecurity

### 5.1 The IESO Lacks Dedicated Cybersecurity Resources

Given the realistic threat of a cyberattack on the operations of the IESO, best practices suggest that the IESO should have individuals specifically dedicated to ensuring that it is protected from a cyberattack. The qualified individuals need to be at the senior executive level as well as in the front lines of the organization. The IESO is lacking in both.

#### 5.1.1 No Senior Executive Position Is Dedicated to Cybersecurity

The IESO does not have a designated senior executive responsible for cybersecurity.

Leading frameworks and good practice guidance such as COBIT 5 (which is a framework for the governance and management of enterprise IT) and NIST Special Publication 800-12 (which gives guidelines for maintaining the security of information travelling across networks) suggest that organizations appoint a senior official who is accountable for the security of all enterprise information and for defining, operating and monitoring a system for information security management. NIST Special

Publication 800-52 further recommends that this senior official be provided "resources to coordinate, develop, implement, and maintain an organization-wide information security program."

Comparable organizations that follow this best practice and have a dedicated senior executive solely responsible for reporting cybersecurity matters to senior executives and the Board of Directors include Hydro One and grid operators in New York, New England and California. In these cases, the senior executive position is the Chief Information Security Officer.

At the IESO, the most senior individual directly responsible for cybersecurity is a Team Lead who reports to the IT manager. The IT manager in turn reports to the Chief Information Officer, who reports to the Board. The problem with this is that the person with the most responsibility for cybersecurity does not have the authority to make the decisions needed to ensure the IESO has sufficient cybersecurity measures in place. Correspondingly, the people who do have the authority to make top-level decisions may not understand the impact their decisions will have on IESO cybersecurity.

## RECOMMENDATION 13

To strengthen its cybersecurity governance, we recommend that the Independent Electricity System Operator (IESO) create a senior-level position for cybersecurity and establish a formal reporting process to both IESO executives and the IESO Board of Directors.

## IESO RESPONSE

The IESO agrees with the Auditor General's recommendation.

The IESO is already in the process of recruiting a new Chief Information Officer (CIO) with an increased focus on cybersecurity, and will consider creating a senior-level position for cybersecurity with formal reporting to both IESO executives and the IESO independent Board of Directors.

### 5.1.2 Number of Cybersecurity Staff Is under the Recommended Level

At the time of our audit, the IESO had four cybersecurity staff, a number that had not increased over the past decade. One of the four was eligible for retirement. However, during the past decade, IESO staff have almost doubled in number, and cyberattacks have become more sophisticated and frequent.

Having so few cybersecurity staff can increase the risk of the IESO falling prey to a cyberattack and responding to it too slowly. The risk is greatly increased should two cyberattacks happen at the same time. For example, in January 2017, hackers attacked a computer system that supported the operations of the former Ontario Power Authority (part of the IESO from the January 1, 2015, merger—see **Appendix 1**). The IESO's four cybersecurity staff worked overtime for several days to contain this one attack. If a second attack had been launched during this time, there would not have been sufficient staff to respond to it quickly enough.

Two external consultants who conducted separate reviews of the IESO's IT environment in 2015 and 2016 both recommended that the IESO should have at least seven dedicated cybersecurity staff.

An alternative to increasing the number of internal staff is to engage an external IT cybersecurity vendor to be on standby to provide immediate support or cybersecurity experts to help deal with a second or more sophisticated attack. The Alberta Electric System Operator has such a vendor on standby.

## RECOMMENDATION 14

To ensure there are sufficient cybersecurity resources in place to respond to cyberattacks, we recommend that the Independent Electricity System Operator (IESO) increase the number of cybersecurity staff to the recommended level of seven and/or engage an external IT cybersecurity vendor to be on standby.

### IESO RESPONSE

The IESO complies with all applicable North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards, which include standards for cybersecurity. The IESO is in the process of implementing an independent consultant's recommendation to increase the number of current cybersecurity staff in a manner consistent with the Auditor General's recommendation. The IESO has also retained the services of a cybersecurity vendor to augment the existing staff in the event of a cybersecurity event. The IESO is also an active member of the North American Cybersecurity Mutual Assistance Program (CMA), which provides access to cybersecurity specialists from over 150 North American utilities in the event of a cyberincident.

### 5.1.3 Role of Cybersecurity in IT Planning Needs to Be Heightened

According to leading security intelligence organizations, having an independent cybersecurity department with clearly defined roles and responsibilities ensures that security is at the forefront of all IT project planning, reducing cybersecurity risks. The IESO does not have such a department, and it is up to the IT project managers to decide whether and when to involve cybersecurity staff in IT planning.

We found that in a number of instances, project managers involved cybersecurity staff only in the later stages of a project. This increased the risk that something was missed that could make the IESO more vulnerable to an attack or that costly redesigns would be necessary at the late stage when cybersecurity staff pointed out what had been missed.

For example, the IESO did not involve cybersecurity staff when it moved its email service to the cloud for external storage. It did not realize that the firewall needed to be updated to allow the external use of the cloud. After the move, the email service stopped working. Only when cybersecurity staff were brought in was the problem identified. The disruption to email and the additional time and cost taken to resolve the issue could have been avoided if cybersecurity staff had been consulted during the planning phase of the project.

The relatively low priority assigned to cybersecurity issues is also a problem when cybersecurity has to compete with other IT issues. For example, in March 2017, cybersecurity staff found that the IESO's cybersecurity technology was malfunctioning and asked the IT department to fix it. The IT department delayed the fix because of a shortage of resources and competing priorities, and the IESO's cybersecurity risk was heightened until the technology was fixed.

### RECOMMENDATION 15

To reduce cybersecurity risk and to prevent potential costly IT project redesigns, we recommend that the IT department of the Independent Electricity Sector Operator (IESO) involve its cybersecurity staff in the early stages of all IT projects that could pose cybersecurity risks.

### IESO RESPONSE

The IESO complies with all applicable North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards, which include standards for cybersecurity. It is the IESO's current practice that security risk assessments are incorporated in the IT project management practices. Having said that, the IESO will continue to enhance its approach to ensure "cybersecurity by design" in all of its IT-related projects. That means ensuring that the cybersecurity requirements are being considered early in the process of any new IT program design and that sufficient cybersecurity staff are allocated at this important part of any project. This will be further facilitated by the formation of the IESO's new Program Management Office, which will ensure an enterprise-holistic view on all IESO projects.

## 5.2 No Centralized Control and Monitoring of User Access

The IESO's market system stores and processes an average of about 135,000 transactions involving confidential information per day. This makes the IESO a potential target for hackers wanting to access or steal this information.

Although the IESO has monitoring technology that works well to identify threats and risks in instances of spam and to block suspicious data traffic, we identified a weakness: the IESO's cybersecurity systems do not monitor the activities of privileged users in real time to proactively trigger alerts for unusual behaviour. About 14% of IESO employees have privileged-user access, meaning that they have almost unrestricted freedom to access any part of the computer system or network. Privileged users can abuse their authority and hack a system, or a hacker can try to steal the privileged user's log-in credentials and use them to launch a cyberattack.

Also, the IESO's cybersecurity system cannot support real-time analysis and investigation of certain types of breaches. In addition, because of the way some computer systems are connected, the cybersecurity system cannot record certain hacker activity during an attack.

This may have been a factor in a 2015 breach where the confidential contract information of one market participant was accessible to other participants for about seven minutes. The breach was not identified by the IESO but rather by a generator that alerted the IESO.

### RECOMMENDATION 16

To reduce the cybersecurity risk of the Independent Electricity System Operator (IESO), we recommend that the IESO procure technology that prevents and identifies breaches of confidential information and monitors staff access to confidential information in real time.

### IESO RESPONSE

The IESO agrees with the Auditor General's recommendation.

The IESO complies with all applicable North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards, which include standards for cybersecurity. The IESO has procured technology that prevents and identifies breaches of confidential information and monitors staff access to confidential information in real time through the Advanced Malware project, and is implementing that technology now, with a target completion date of the end of the fourth quarter of the 2017 fiscal year.

## 5.3 No Cybersecurity Policy for External Vendors

External vendors providing specialized IT services are usually given log-in credentials that then reside outside the IESO, increasing the risk of their being stolen and used by hackers to attempt a cyberattack. The IESO does not have a strong, uniform policy that holds vendors accountable for maintaining high security over these credentials.

Instead, each department is responsible for managing its own relationship with vendors and can decide whether or not to enforce cybersecurity requirements with vendors.

Also, the cybersecurity team does not review the contracts and does not assess on an ongoing basis the security risk of external vendors. Information security does perform an initial evaluation of third-party vendor risk but it also does not monitor this risk on an ongoing basis. Changes might occur in the vendor's environment that may introduce new unassessed risk to the IESO.

### RECOMMENDATION 17

To reduce the cybersecurity risk of the Independent Electricity System Operator (IESO), we recommend that:

- the IESO establish an external vendor cybersecurity policy; and
- the cybersecurity team conduct a regular assessment of the security risk that external vendors pose to the IESO.

### IESO RESPONSE

The IESO complies with all applicable North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards, which include standards for cybersecurity. The cybersecurity team works directly with the procurement and legal processes to ensure security requirements are met. The IESO was an active participant in the development of the NERC Supply Chain risk standards, and is in the process of developing and implementing supply chain risk management measures to comply with these standards, which will also include processes that are responsive to the recommendation.

## 5.4 Backup Tapes Not Adequately Protected

The IESO's policies pertaining to storage of its system backup information could be improved in two ways.

First, the tapes on which the IESO stores system backup information are not encrypted. This means that anyone accessing the tapes can access the information.

Second, some backup tapes are stored on-site. If the IESO's location were to sustain physical damage, the tapes could also be damaged. As a result, it would take the IESO longer to recover from a potential attack or natural disaster.

### RECOMMENDATION 18

To ensure that backup tapes are adequately protected and available when needed, we recommend that the Independent Electricity System Operator (IESO):

- properly encrypt all backup tapes; and
- store them in a secure off-site location.

### IESO RESPONSE

The IESO complies with all applicable North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection standards, which include standards for cybersecurity.

Access to backup tapes is tightly controlled both in on-site and off-site storage. The IESO will investigate the feasibility of storing all backup tapes off-site and of further protecting backup tapes with encryption. The IESO does not rely on backup tapes as a primary recovery mechanism as all of our critical systems are high availability and site redundant through our Backup Data Centre.

# Appendix 1: Ontario's Electricity Grid—Key Events and Historical Outline

Prepared by the Office of the Auditor General of Ontario

| Period | Key Events |
|---|---|
| 1970–1980s | Ontario Hydro constructed the Bruce, Pickering and Darlington Nuclear Generation Stations. Construction delays reached 10 years and cost overruns reached billions of dollars. |
| 1990–1992 | Ontario experienced a recession that reduced electricity demand. Electricity rates increased by 40%, while generation capacity exceeded demand by 50%. |
| 1993 | The Ontario government froze electricity rates for almost the next 10 years. This caused Ontario Hydro's debt to rise. |
| 1995 | The government embarked on a program to transform the electricity industry from a government-owned Ontario Hydro to a competitive market-based structure. |
| 1996 | The government's Advisory Committee on Competition in Ontario's Electricity System delivered a report recommending the breakup of Ontario Hydro and a move toward a competitive electricity market. |
| 1998 | With the passage of the *Energy Competition Act, 1998*, Ontario Hydro ceased to exist. Ontario Hydro was replaced by five entities:<br>• Ontario Power Generation (OPG), an electricity generator;<br>• Hydro One Inc., responsible for the transmission and distribution of electricity to consumers;<br>• the Ontario Electricity Financial Corporation (OEFC), responsible for retiring Ontario Hydro's debt;<br>• the Independent Electricity Market Operator (IMO), the IESO's predecessor, responsible for operating the new electricity market; and<br>• the Electrical Safety Authority, responsible for regulating electricity inspections. |
| 1999 | Ontario Energy Board (OEB), which had been regulating the province's natural gas sector since 1960, was tasked with regulating the electricity sector. |
| 2002 | The Electricity Wholesale Market opened on May 1, 2002. Following the market opening, with a potential shortage of supply and an increased demand for electricity during the summer of 2002, electricity rates began to increase significantly. The government passed the *Electricity Pricing, Conservation and Supply Act, 2002* on December 9, 2002, to freeze electricity rates for most consumers until 2005. |
| 2003 | The Electricity Conservation and Supply Task Force was set up to create an action plan to attract new generators in Ontario. The task force projected that as early as 2006, Ontario might not have enough power to meet peak demand. It recommended a future electricity sector that relied less on the competitive market price of electricity and more on long-term contract pricing. |
| 2004 | The government passed the *Electricity Restructuring Act, 2004*, to create the Ontario Power Authority, which became responsible for long-term planning and procurement of power under long-term contracts. |
| 2005 | In May 2005, the government ended the electricity price freeze and the OEB's Regulated Price Plan took effect; the plan was designed such that the rate charged to residential and small-business consumers approximately reflects the full cost of electricity. |
| 2007–2009 | The government ordered the closing of coal-fired plants by December 31, 2014. The *Green Energy and Green Economy Act, 2009* empowered the OPA in the renewable energy field. |
| 2015 | The IESO merged with the OPA and acquired responsibility for long-term planning, procurement and conservation efforts. |

## Historical Outline

### Government's Control of Electricity Until 2002

Prior to the 1980s, having the government supply electricity was viewed as the most cost-effective way to provide electricity to consumers. The government's provision of electricity was seen as a natural monopoly. This precluded the entry of the private sector, since the lack of competition would greatly reduce the chance to make a profit.

The government-owned company that used to provide Ontario's electricity was called Ontario Hydro. In the 1970s and 1980s, Ontario Hydro constructed the Bruce, Pickering and Darlington Nuclear Generation Stations. Construction delays stretched to 10 years and cost overruns reached billions.

The Ontario government faced a new challenge in the early 1990s with a recession that reduced electricity demand. Electricity rates increased by 40%, while generation capacity exceeded demand by 50%. In response, in 1993, the government froze electricity rates for almost the next 10 years. This caused Ontario Hydro's debt to rise even higher. Over the next five years, Ontario Hydro's total long-term debt increased from $33 billion to $38.1 billion.

Advances in generation technology and the expansion of the transmission system during this period challenged the view that electricity was best provided by government. The idea grew that electricity generation could be a competitive enterprise. Beginning in the 1990s, in response to rising electricity prices, several jurisdictions around the world, including the United States, began to create electricity wholesale markets where electricity became viewed as a commodity that could by bought and sold. The vision was that private-sector involvement in these competitive markets would lead to efficiencies that would result in lower electricity prices.

## The Move toward a Competitive Electricity Market in Ontario

In 1995, the government embarked on a program to transform the electricity industry from government-owned Ontario Hydro to a structure based on a competitive market. In 1996, the government's Advisory Committee on Competition in Ontario's Electricity System delivered a report recommending the break-up of Ontario Hydro to accomplish this. In 1998, with the passage of the *Energy Competition Act*, Ontario Hydro was replaced by five organizations:

- Ontario Power Generation (OPG), an electricity generator;
- Hydro One Inc., responsible for the transmission and distribution of electricity to consumers;
- the Ontario Electricity Financial Corporation (OEFC), responsible for retiring Ontario Hydro's debt;
- the Independent Electricity Market Operator (IMO), the IESO's predecessor, responsible for operating the new electricity market; and
- the Electrical Safety Authority, responsible for regulating electricity inspections.

In 1999, the Ontario Energy Board, which had been regulating the province's natural-gas sector since 1960, was tasked with regulating the electricity sector.

Ontario's electricity market opened on May 1, 2002. Almost immediately, electricity rates began to increase significantly, from about 3 cents per kilowatt hour (/kWh) to over 8 cents/kWh by August 2002. In response to pressure from consumers distressed over high prices, the government passed the *Electricity Pricing, Conservation and Supply Act*. This Act froze electricity rates for most consumers at 4.3 cents/kWh effective December 9, 2002. The market continued to operate, but the government paid the difference between the higher market price and the lower frozen rate charged to consumers until May 2005.

Other jurisdictions that have tried to set up a wholly competitive market have had similar experiences to Ontario. Only when demand is high and supply is low can the price rise high enough to enable generators to recover all their costs just through the market price. The rest of the time, it would not be economical for generators to operate, which would force them out of business and risk electricity shortages. In North America, only the state of Texas has been able, for the most part, to successfully implement an electricity market where generators recover most of their costs from the market price. In all other jurisdictions, some other mechanism besides market price has been set up for generators to recover their costs.

## The Need to Attract New Generators in Ontario

In June 2003, the government established the Electricity Conservation and Supply Task Force. It determined that a number of factors had contributed to a climate of regulatory and financial uncertainty that was deterring private-sector investment in Ontario's electricity sector. Those factors included:

- numerous delays in opening the market (it took five years from when government committed to it to when it opened);
- the subsequent rate freeze; and
- the collapse of Enron, a large publicly traded American company involved in wholesale trading of electricity that engaged in elaborate, systematic accounting fraud, which led to scandal, its bankruptcy in 2001 and the shutdown of Arthur Andersen, one of the country's biggest accounting firms, after being found guilty of criminal charges for how it handled its audits of Enron.

At the same time that the private sector was wary of participating in Ontario's electricity sector, the province was facing a potential looming electricity supply shortfall. Nuclear plants were approaching the end of their operating lives and would need to be temporarily shut down for refurbishment. The task force projected that as early as 2006, Ontario might not have enough power to meet peak demand. It recommended a future electricity sector that relied less on the competitive market price of electricity and more on long-term contract pricing.

Most of the task force's recommendations were adopted by the government in the *Electricity Restructuring Act*, passed in December 2004. This Act created the Ontario Power Authority (OPA), responsible for long-term planning and procuring power under long-term contracts starting in 2005. The contracts signed with generators typically covered a 20-year period (for gas, wind and solar generators) or even longer (for nuclear and hydroelectric generators). Generators receive guaranteed payments during the life of the contracts.

In May 2005, the Ontario Energy Board's Regulated Electricity Price Plan took effect. This plan unfroze electricity rates; it was designed such that the rate charged to residential and small-business consumers approximately reflects the full cost of electricity.

Under this framework of an electricity market with limited competitiveness, long-term contracts guaranteeing payments to generators, and regulated electricity prices, the government continued bringing on new generators. In 2007, it issued a regulation requiring Ontario's four coal-fired power plants to stop burning coal by December 31, 2014. In 2009, it passed the *Green Energy and Green Economy Act*, which empowered the OPA to procure renewable energy and to streamline the development of renewable energy projects.

## The Merging of the IESO and the OPA

In 2015, through amendments to the *Electricity Act*, the IESO merged with the OPA. This meant that, in addition to operating the electricity grid and administering the electricity market, the IESO is now also responsible for long-term planning, procurement and conservation efforts.

# Appendix 2: Audit Objectives and Criteria

Prepared by the Office of the Auditor General of Ontario

## Audit Objective

To assess whether the Independent Electricity System Operator (IESO) has effective systems and processes in place to ensure that:

- oversight of electricity market participants is sufficient and that participants operate in accordance with market rules; and
- critical IT assets and infrastructure are protected so that the reliability of the grid is maintained.

## Audit Criteria

- Roles and responsibilities are clearly defined and accountability requirements are established to facilitate monitoring of the electricity market and reliability of the grid, in accordance with legislative, contractual and program requirements.
- Cost-effective procedures, controls and processes are in place to monitor the electricity market in accordance with market rules.
- Current evidence and best practices are used to inform the development of strategies, action plans and programs to maintain reliability of the electricity grid.
- Appropriate procedures, controls and processes are in place to detect security attacks, threats, weaknesses and vulnerabilities, and assess their impact on IESO's security posture while supporting key program objectives.

# Appendix 3: Glossary of Terms

Prepared by the Office of the Auditor General of Ontario

## Section 1: Market Oversight

**Alberta Electricity System Operator (AESO)**: the independent operator of Alberta's electric system. The mandate of the AESO under the *Electric Utilities Act, 2003*, is to direct the reliable operation of the Alberta interconnected electric system, plan the transmission system and operate the wholesale electricity market. The AESO also evaluates Alberta's current and short-term electricity needs, and the adequacy and reliability of the integrated power system to meet those needs.

**Alberta Market Surveillance Administrator (MSA)**: established in 2007, the Market Surveillance Administrator is a monitor, reporter, investigator and adviser for Alberta's electricity industry. One of the MSA's roles is to protect and promote the fair, efficient and openly competitive operation of Alberta's wholesale and retail electricity markets.

**Alberta Utilities Commission (AUC)**: an independent, quasi-judicial agency of Alberta that regulates the utilities sector, and is responsible for ensuring that the delivery of Alberta's utility service is fair, responsible and in the public interest.

**Analysis and Investigations Unit**: the term used in this report to refer to the Market Assessment and Investigations Unit. This is the independent unit that supports the Ontario Energy Board's (OEB) Market Surveillance Panel (Panel). In 2005, the Independent Electricity System Operator (IESO) and the OEB established a protocol where employees of the IESO's Market Assessment and Compliance Division (Oversight Division) would assist the OEB Panel in carrying out its functions. The IESO established the Analysis and Investigations Unit to carry out this role, which is housed in the IESO's Oversight Division.

**bid**: in the wholesale electricity market, the price quoted for an immediate purchase of electricity. Retailers, distribution system owners and other market participants submit bids to purchase electricity from the power pool (wholesale market).

**bioenergy**: energy produced from a biomass living or recently living plant or animal source, such as waste, wood, agricultural residues, animal manure, food processing by-products and kitchen waste.

**capacity**: (1) a measure (in megawatts) of the output of a power plant. (2) the maximum sustainable amount of electricity that can be generated or carried in an instant. (3) the amount of electricity delivered to or required by an electric system component such as a power plant, turbine or transmission circuit.

**coal-fired power plant**: a type of power plant that makes use of the combustion of coal in order to generate electricity.

**congestion**: a situation that arises when there is a mismatch between power offered and the ability of the transmission lines to deliver that power, blocking the path between generators and consumers. A congested transmission system is a bit like a traffic jam on a highway. Too much electricity running through the system at a particular point in time limits the ability of some generators to move their power to various locations.

**conservation (of electricity)**: any activity that reduces the amount of electricity used overall, or shifts the consumption of electricity from a peak time to a time of lower demand. Conservation includes energy efficiency, demand management, fuel switching and customer-based generation.

**distribution system**: a network that carries electricity from the transmission system and delivers it to consumers. Typically, the network would include medium-voltage power lines, substations and pole-mounted transformers, low-voltage distribution wiring and electricity meters.

**dispatch instructions**: physical operating instructions issued by the Independent Electricity System Operator either in the real-time dispatch process or in those dispatch intervals when administrative prices were applied.

**dispatchable**: a term describing generation sources that can increase or decrease their output when requested as demand fluctuates or the availability of other sources changes. Dispatchable generators submit offers to supply electricity in different quantities and prices for each hour of the day. They must be able to adjust the amount of electricity they generate in response to new instructions issued every five minutes by the Independent Electricity System Operator. An example of a dispatchable generation source is natural gas.

**Eastern Interconnection Electricity Grid**: the alternating-current power grid (or "interconnection") that reaches from Central Canada eastward to the Atlantic coast (excluding Québec), south to Florida and west to the foot of the Rockies (excluding most of Texas). It is one of the two major interconnections in North America (along with three minor interconnections). All of the electric utilities in the Eastern Interconnection are electrically tied together during normal system conditions and operate at a synchronized frequency operating at an average of 60 Hertz.

***Electricity Act, 1998***: Ontario legislation to ensure the adequacy, safety, sustainability and reliability of electricity supply in the province.

**Electricity Charge**: the charge shown on consumer electricity bills that incorporates both the Hourly Ontario Energy Price and global adjustment fees.

**Electricity Conservation and Supply Task Force (ECSTF)**: a task force formed in response to the August 2003 blackout in eastern North America to provide recommendations on the current market approach.

**electricity demand**: the rate at which electric energy is delivered to or by a system or part of a system, generally expressed in kilowatts or megawatts, at a given instant or averaged over any designated interval of time.

**electricity grid**: a centrally operated, interconnected network of generating plants, substations and power lines. Also referred to as an **electricity system** and a **transmission system**.

**electricity supply**: in Ontario, the energy supplied to the market by generators located within Ontario and by imports from neighboring jurisdictions.

**electricity system**: the interconnected system of generating plants, substations and power lines that carries electricity from producers to consumers. Also referred to as an **electricity grid** and a **transmission system**.

**energy storage**: the collection of energy so it can be used at a later date. Examples include batteries and hydro-electric dams.

**Federal Energy Regulatory Commission (FERC)**: an independent agency in the United States that regulates the interstate transmission of electricity, natural gas and oil. FERC also reviews proposals to build interstate natural gas pipelines, natural gas storage projects and liquefied natural gas terminals; and licenses non-federal hydro power projects. The Energy Policy Act of 2005 gave FERC authority to oversee the reliability of the bulk power system. This includes the authority to approve mandatory cyber security reliability standards.

**Feed-In Tariff Program**: a program to procure renewable energy launched in September 2009 under the direction of the Minister of Energy, providing renewable energy generators with significantly higher contract prices than the previous procurement initiative, the Renewable Energy Standard Offer Program (RESOP), which it replaced.

**generation**: the production of electricity.

**generation capacity**: the amount of capacity available to generate power at a time of peak electricity demand.

**generator**: a company that produces electricity and feeds electricity into the Ontario electricity grid. Ontario Power Generation, a Crown corporation, is Ontario's largest power generator, operating electricity-producing stations throughout Ontario. Over the North American bulk electricity system, electricity can also be received from out-of-province power generators

**global adjustment**: a component of electricity bills whose amount is calculated to make up the difference between the revenues obtained from the electricity market price and the total payments made to regulated and contracted generators (whose prices are guaranteed) and the former Ontario Power Authority's conservation programs.

***Green Energy and Green Economy Act***: the Act enacted in May 2009 with provisions intended to attract investment in renewable energy, promote a culture of energy conservation, create a competitive business environment, increase job opportunities and reduce greenhouse gas emissions.

**Hourly Ontario Electricity Price (HOEP)**: in the electricity market administered by the Independent Electricity System Operator, the HOEP is charged to local distribution companies and other non-dispatchable loads, and paid to self-scheduling generators. Businesses that use more than 250,000 kilowatt hours (kWh) per year pay the hourly price. The HOEP is also the basis for regulated rates charged to residential and small business customers. The HOEP values are reported as dollars per MegaWatt hour ($/MWh).

**hydroelectric generation**: a type of power generation that converts the energy of falling or flowing water into electricity.

**IESO Oversight Division**: the term used in this report to refer to the Independent Electricity System Operator's Market Assessment and Compliance Division.

**Independent Electricity System Operator (IESO)**: the administrator of the Ontario wholesale electricity market to match electricity supply with demand. Also responsible for forecasting Ontario's long- and short-term electricity requirements and providing direction to electricity transmitters and distributors on the capital work needed to increase the capacity of Ontario's electricity system.

**IESO-administered grid**: the portion of the Ontario transmission system that is controlled by the Independent Electricity System Operator (IESO). This includes all transmission lines equal or greater than 50 kiloVolts. These are high-voltage transmission lines that provide wholesale electricity to large industrial consumers, and to distributors who then provide electricity at the retail level.

**installed generation capacity**: the maximum intended power output from a facility.

**kilowatt (kW)**: a standard unit of power equal to 1,000 watts (W).

**kilowatt hour (kWh)**: a way of measuring energy production or consumption over time. A kilowatt hour measures 1,000 watts produced or consumed in one hour.

**large industrial consumers**: electricity consumers that are connected to the high-voltage grid and purchase wholesale electricity from the Ontario electricity market.

**local distribution companies (LDCs)**: companies that own and operate infrastructure to convert high-voltage electricity to lower-voltage electricity through the use of transformers, and deliver electricity through distribution lines to residential and small business customers.

**Lost Profit Recovery Program**: the term used in this report to refer to Congestion Management Settlement Credits (CMSCs). These credits are out-of-market payments made to suppliers (generators and importers) and dispatchable consumers (dispatchable loads and exporters) in the IESO-administered markets. CMSCs are paid to these participants whenever they are constrained on or off. They are constrained on or off whenever their market schedule and dispatch schedule quantities are different.

**market design flaw**: a defect in the market design, poorly specified rules or procedures, or a gap in the market rules or procedures that creates opportunities for exploitation by market participants without necessarily involving breaches of market rules.

**market participant**: an entity authorized by market rules to participate in the IESO-administered market or to cause or permit electricity to be transmitted into, through or out of the IESO-controlled grid.

**market price**: the price of energy or operating reserve determined in the real-time electricity market.

**Market Renewal Initiative Working Group (MRWG)**: a representative stakeholder forum to guide, advise and inform the Independent Electricity System Operator (IESO) on important strategic, policy and design issues that will impact the overall success of the IESO's Market Renewal Initiative.

**market rules**: the rules that govern the operation of the wholesale electricity market in Ontario, administered by the Independent Electricity System Operator (IESO). Market rules define the roles and obligations of the IESO and all market participants that own or operate elements and facilities in the electricity grid. In order to participate in the market, participants must comply with all market rules and applicable reliability standards. Failure to comply with the standards can result in sanctions issued by the IESO Oversight Division.

**market schedule**: the dispatch schedule that would have resulted in the absence of transmission constraints on the IESO-controlled grid.

**megawatt (MW)**: a standard unit of power equal to 1,000 kilowatts (kW) or 1 million watts (W).

**megawatt hours**: a way of measuring energy production or consumption over time. A megawatt hour (MWh) measures 1 million watts produced or consumed in one hour.

**Ministry of Energy**: the Ontario government ministry responsible for setting the legislative and policy framework to assure a clean, reliable and affordable energy system for all Ontarians. It develops and advises on all aspects of energy policy for Ontario, including policies for electricity, natural gas and oil. It oversees the Ontario Energy Board and the Independent Electricity System Operator, and represents the shareholder—the provincial government—in dealings with Hydro One and Ontario Power Generation.

**net exporter of electricity**: a jurisdiction that exports more electricity than it imports. Ontario is an example. Ontario imports electricity, primarily from its neighboring provinces of Québec and Manitoba, and exports electricity, primarily to Michigan and New York State.

**North American Electricity Reliability Corporation (NERC)**: a not-for-profit regulatory authority whose mission is to assure the reliability of North America's bulk electricity system. NERC develops and enforces reliability standards that must be followed by North American electricity transmitters.

**nuclear power**: power derived from the use of nuclear reactions that release nuclear energy to generate heat, which most frequently is then used in steam turbines to produce electricity in a nuclear power plant.

**Ontario Energy Board (OEB)**: the regulator of electricity and natural gas in Ontario. OEB's objective is to promote a viable, sustainable and efficient energy sector that serves the public interest and assists consumers in obtaining reliable energy services at a reasonable cost. It licenses electrical generators, transmitters and distributors, and sets rules that they must follow. It also approves the rates that electrical utilities can charge their customers, as well as the construction of any electrical transmission lines that are more than two kilometres long.

**OEB Panel**: the term used in this report to refer to the Market Surveillance Panel (MSP). The MSP is housed under the Ontario Energy Board, and consists of three part-time panel members including a panel Chair, and is supported by the Analysis and Investigations Unit from the IESO Oversight Division. The MSP is mandated to monitor and report on the following:

1. inappropriate or anomalous conduct by market participants, including gaming behaviour;
2. whether IESO activities have had an impact on market efficiencies or effective competition;
3. whether the market rules or IESO rules and procedures are flawed or inefficient; and
4. market design flaws or whether other aspects of the structure of the IESO-administered markets are consistent with the efficient and fair operation of a competitive market.

**Ontario Power Authority (OPA)**: the entity formerly responsible for forecasting electricity demand and procuring electricity supply to meet the province's power needs.

**Ontario Power Generation (OPG)**: an Ontario-based electricity generation company whose principal business is the generation and sale of electricity in Ontario. Its focuses are the efficient production and sale of electricity from its generation assets, and maintaining a safe, open and environmentally responsible operation.

**peak capacity**: the maximum power output for which a generating unit, generating station or other electrical apparatus is rated. Common units include kilowatts (kW) and megawatts (MW). Also used to refer to the maximum potential output for the entire electricity system.

**peak demand**: the maximum amount of electricity used on the system in any given time period. Peak demand can be measured per hour for a customer, a group of customers or the system as a whole. Also a measure of the amount of power needed to serve all customers during times of high power use. Peak demand is measured in kilowatts (kW) or megawatts (MW). It is often stated as the highest hourly consumption of electricity during a year

**procurement**: the purchase of electrical energy for resale to consumers.

**ramp up/down**: the rate at which a generator or load can change from one level of production or consumption to a different level of production or consumption. For example, if a generator can move from a production level of 50 MW at the beginning of a five-minute dispatch interval to 100 MW at the end of the five-minute dispatch schedule, the generator has a ramp rate of 10 MW per minute.

**rate regulation**: the process by which regulatory bodies determine the rates charged to customers in regulated industries, including gas and electricity. In Ontario, the Ontario Energy Board (OEB) sets rates for natural gas distribution and electricity transmission and distribution based on cost estimates submitted by the utilities and allowances of an approved capital structure and return on capital. These costs are scrutinized by the OEB prior to setting rates.

**real time**: the actual time when a process (such as electricity generation) occurs.

**Regulated Price Plan**: A time-of-use pricing plan for residential and small-business consumers developed by the Ontario Energy Board that sets the prices for electricity during peak, off-peak and mid-peak periods of the day.

**renewable energy**: energy generated by natural processes, the four major forms of which are hydro (energy generated from the movement of water), wind (energy generated by turbines from air currents), solar (energy generated by photovoltaic cells that capture radiant light and heat from the sun) and bioenergy (energy generated by burning organic forestry residues and agriculture wastes).

**renewable energy generation facility**: a generation facility that generates electricity from a renewable energy source.

**residential and small-business consumers**: electricity consumers that pay time-of-use rates, which offer different prices for on-peak, mid-peak and off-peak periods. This pricing structure encourages users to shift some of their usage from high-price peak hours to less expensive off-peak hours and reduce their impact on the system.

**side payments**: a term used by the OEB Panel in its reports to describe payments like Congestion Management Settlement Credits (CMSCs).

**solar power**: the radiant energy of the sun that can be converted into other forms of energy, such as heat (solar thermal) or electricity (photovoltaic).

**sanction**: an action taken by the IESO Oversight Division against a market participant found to be in breach of market rules or reliability standards. Sanctions range from non-compliance letters to financial penalties. Persistent breaches may result in de-registration, suspension or termination of the right to participate in the market.

**Standby Cost Recovery Program**: the term used in this report to refer to the Real-Time Generation Cost Guarantee Program.

**submitting bids/offers**: the bids and offers settled every five minutes in the wholesale electricity market, resulting in the Market Clearing Price (MCP). For each five-minute interval, dispatch instructions specify the required amount of energy that sellers should add into or buyers should withdraw from the IESO-controlled grid based on their accepted offers and bids.

**Technical Panel**: a group that proposes and reviews amendments to market rules and, if requested, advises the Independent Electricity System Operator Board of Directors on specific technical issues relating to the operation of IESO-administered markets.

**transmission**: the transfer of high-voltage electricity over interconnecting lines that link points of supply to points where energy is delivered to other electric systems or transformed to low voltage for distribution to consumers

**transmission lines**: the movement of electricity at high voltages from generation sites to local distribution systems and consumers.

**transmitter**: an electrical utility, such as Hydro One, that transfers electricity over long distances at voltages above 50 kilovolts between electricity generators (such as Ontario Power Generation) and local distribution companies or large industrial users.

**two-schedule electricity market**: the electricity wholesale market design used in Ontario. It consists of two dispatch algorithms: the market algorithm and the dispatch algorithm. The market algorithm balances electricity supply and demand assuming no internal congestion constraints, and determines the uniform Market Clearing Price (MCP) used for settlement purposes. The dispatch algorithm recognizes internal congestion constraints and re-dispatches generation and dispatchable load so as to respect all constraints.

**wholesale electricity market**: the market in which electricity is sold to retail companies or provided to distributors, which pass through the price to their customers.

**wind power**: electricity produced from a system of airfoils or blades that capture the energy of the wind to spin a drive shaft to run an electricity generator.

## Section 2: Cybersecurity

**backup information**: files, equipment, data and procedures available for use in the event of a failure or loss, if the originals are destroyed or out of service.

**backup tapes**: the tapes on which data from a primary storage device is periodically copied so the data can be recovered if there is a hard disk crash or failure

**cloud storage**: convenient, on-demand network access to a shared pool of resources that can be rapidly provisioned and released with minimal management effort or service-provider interaction.

**COBIT 5**: a complete, internationally accepted framework for governing and managing enterprise information and technology (IT) that supports enterprise executives and management in their definition and achievement of business goals and related IT goals. COBIT describes five principles and seven enablers that support enterprises in the development, implementation, and continuous improvement and monitoring of good IT-related governance and management practices.

**cyberattack**: an assault against a computer system or network.

**cybersecurity**: the protection of information assets by addressing threats to information processed, stored and transported by internetworked information systems.

**cybersecurity governance**: a governance view that ensures that information and related technology support and enable the enterprise strategy and the achievement of enterprise objectives; this also includes the functional governance of information technology (IT), i.e., ensuring that IT capabilities are provided efficiently and effectively.

**data breach**: an incident wherein information is stolen or taken from a system without the knowledge or authorization of the system's owner.

**data traffic**: typically refers to overall network usage at a given moment. However, it can refer to specific transactions, messages, records or users in any kind of data or telephone network.

**encryption**: the process of taking an unencrypted message (plaintext), applying a mathematical function to it (encryption algorithm with a key) and producing an encrypted message (ciphertext).

**firewall**: a system or combination of systems that enforces a boundary between two or more networks, typically forming a barrier between a secure and an open environment such as the Internet.

**hackers**: individuals who attempt to gain unauthorized access to a computer system.

**Information Technology (IT)**: the hardware, software, communication and other facilities used to input, store, process, transmit and output data in whatever form.

**IT cybersecurity vendor**: an organization that sells cybersecurity. Refers to both manufacturers and distributors as long as they sell cybersecurity products to the general public.

**IT environment**: the set of hardware, software and facilities that integrates an enterprise's IT assets.

**IT projects**: a structured set of activities concerned with delivering a defined capability (that is necessary but not sufficient to achieve a required business outcome) to the enterprise based on an agreed-on schedule and budget.

**login credentials**: one of three types of identity data. Login credentials to a managed system usually consist of a user ID and password. Identification may also involve a PKI certificate, and authentication may use tokens, biometrics or a set of personal questions that the user must answer.

**NIST Special Publication**: a type of publication issued by National Institute of Standards and Technology. The Special Publication 800-12 reports on the Information Technology Laboratory's research, guideline, and outreach efforts in computer security, and its collaborative activities with industry, government, and academic organizations.

**privileged users**: users who, by virtue of function and/or seniority, have been allocated powers within the computer system that are significantly greater than those available to the majority of users.

**security intelligence organizations**: organizations that analyze and refine information about potential or current attacks that threaten an organization's security.

**spam**: computer-generated messages sent as unsolicited advertising.

**Exhibit “C”**

to the Affidavit of Francois Tardif

Sworn before me on March 13, 2026, in accordance with O. Reg. 431/20, Administering Oath or Declaration Remotely

Signed by:
318AEB2DF95849A...

**Nilou Nezhat**
Commissioner for Taking Affidavits
*(or as may be)*

**Status Report on Certain Recommendations to the IESO included in Chapter 3 of the Auditor General's 2017 Annual Report**

| No. | Auditor's Recommendation | IESO Accepting Recommendation? (In-Full / In-Part / Not at All) | Status of Implementation | Expected Date of Completion | IESO Explanatory Notes |
|---|---|---|---|---|---|
| 1 | To ensure that ratepayers' interests are protected and that recommendations made by the Ontario Energy Board Market Surveillance Panel to improve market rules are addressed, we recommend that the Independent Electricity System Operator (IESO):<br><br>• Implement the Ontario Energy Board Market Surveillance Panel's (OEB Panel) recommendations in an effective and timely way; and<br><br>• Where the OEB Panel submits a report to the Independent Electricity System Operator that contains recommendations relating to the misuse, abuse or possible abuse of market power, the IESO should use its authority to amend the market rule immediately | In-Full | The Independent Electricity System Operator (IESO) will continue to analyze and assess the Ontario Energy Board's (OEB) Market Surveillance Panel (MSP) recommendations and implement recommendations where there is clear and substantiated evidence that changes to Market Rules are required. In some instances, additional analysis is needed to affirm MSP recommendations. In other cases, a decision must be made where it is more cost effective to focus on the enduring solution, such as changes contemplated by the Market Renewal Program, rather than divert scarce resources to implement a short term solution, if there is one. When considering amendments, the IESO must balance the need to ensure the reliability of the electricity network, to consider the impact upon market design, including potential unintended adverse effects, and to assess the ability of the IESO and | On-going | |

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| | and submit it to the Ontario Energy Board for its review. | | market participants to implement the change. The IESO has acted on many recommendations made by the OEB's MSP in the past and has implemented a number of market rule amendments as a result. | | |
| 6 | To ensure that ratepayers are not charged for unnecessary costs, we recommend that, if the Independent Electricity System Operator does not cancel the Standby Cost Recovery Program, it fully implement the Ontario Energy Board Market Surveillance Panel's (OEB Panel) recommendations and not reimburse generators for operating and maintenance costs under the Program. | In-Full | The Independent Electricity System Operator (IESO) is making fundamental changes to the electricity market, through the Market Renewal Program, that will include replacing the current real-time generator commitment mechanisms with a more efficient and transparent form of unit commitment.<br><br>The IESO is currently developing the Enhanced Real-time Unit Commitment project, which will replace the Standby Cost Recovery Program when it goes live, expected in 2022. The IESO will be examining a number of issues in this new program's design, including treatment of costs, and has encouraged the MSP to continue to stay involved in the design and engagement process. The ERUC high-level design document has been | Enhanced real-time unit commitment is targeted for implementation by 2022. | |

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| | | | published for stakeholder review in December 2018. | | |
| 7 | To ensure that ratepayers are not charged for unnecessary costs associated with the Lost Profit Recovery Program, we recommend that the Independent Electricity System Operator (IESO) implement the recommendations of the Ontario Energy Board Market Surveillance Panel (OEB Panel) regarding this Program. | In-Full | The Independent Electricity System Operator (IESO) is making fundamental changes through the Market Renewal Program that include eliminating the need for CMSC payments by replacing Ontario's current two schedule market with a Single Schedule Market (SSM). While some out-of-market energy payments will continue to exist, the total amount will be greatly reduced with the elimination of CMSC payments.<br><br>In 2018, the IESO has engaged stakeholders including the OEB Panel to participate in the design of the Single Schedule Market (SSM). The SSM high-level design was published in September 2018 for stakeholder review. In 2019, the IESO will continue to work with stakeholders on the detailed design phase of the SSM. | The SSM is targeted for implementation by 2022. | As noted in a December 2016 report by the Market Surveillance Panel: "many of the most problematic issues associated with the CMSC regime have been brought to an end – in large measure as a result of the Panel having identified these situations, and the IESO having acted to eliminate them." Furthermore, the SSM initiative of Market Renewal will eliminate the Lost Profit Recovery Program. |
| 8 | To ensure that the Market Renewal Initiative (Initiative) considers and | In-Part | In December 2017, a member representing low volume consumers | Complete | |

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|---|---|---|---|---|---|
| | protects all ratepayers' interests, we recommend that the Independent Electricity System Operator (IESO):<br><br>• Immediately prohibit representatives from companies that have been found by the Ontario Energy Board Market Surveillance Panel or the IESO Oversight Division to have misused IESO programs from participating in the Initiative working group;<br><br>• Establish a minimum number of working group members representing low-power consumers and ensure that those positions are always filled; and<br><br>• Publicly report in clear language how the results of the Initiative will be in the best interests of all ratepayers. | | was added to the Market Renewal Working Group (MRWG).<br><br>The engagement work plan will continue to be aligned with the IESO engagement principles to gather a wide representation from IESO market participants, sector stakeholders and other stakeholders such as low volume consumers. As market renewal moves into new High Level Design and Detailed Design stages, the IESO engagement plans will provide methods and channels to encourage the representation of low volume consumers in engagement activities.<br><br>The IESO market renewal webpage explains the key benefits of market renewal for Ontario. | | |
| 9 | To ensure that the Independent Electricity System Operator (IESO) | In-Full | The Market Assessment and Compliance Division (MACD) has | Complete | |

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|---|---|---|---|---|---|
| | Market Assessment and Compliance Division can conduct proper oversight of the market, we recommend that the IESO:<br><br>• Assess the resources needed to eliminate its investigation backlog and conduct the large-scale investigations that have proven effective in recovering funds and identifying and sanctioning significant rule violations; and<br><br>• Attract and retain staff with experience in market rules and expertise in investigation. | | sought and received approval to convert six contracted staff to regular (i.e., full-time and non-temporary) status.<br><br>The IESO also deployed a more targeted recruitment strategy tailored to the expertise required for MACD enforcement work. This strategy has resulted in 10 new hires into MACD in 2018. | | |
| 11 | To ensure that the Independent Electricity System Operator (IESO) Market Assessment and Compliance Division (Oversight Division) can conduct proper oversight of the market, we recommend that the IESO replace the Oversight Division's computer system as soon as possible. | In-Full | The Market Oversight and Compliance Division (MACD) has procured and been actively using two support systems for its enforcement work, a case management workflow tool, and a litigation support system that enables the analysis and submission of evidence in contested proceedings. | Complete | |

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|---|---|---|---|---|---|
| | | | Its tools are similar to those used by a variety of sophisticated investigative and adjudicative organizations, such as the Ontario Securities Commission and the Federal Court. The contractor assisting MACD in its use of these tools developed those tools and works with those organizations for the same purposes. | | |
| 12 | To strengthen the independence of the Independent Electricity System Operator (IESO) Market Assessment and Compliance Division (Oversight Division), we recommend that the IESO change the Oversight Division's reporting structure. | In-Full | Prior to the release of the Auditor's report, the Independent Electricity System Operator (IESO) completed implementing a new reporting structure whereby the Director of the Oversight Division reports directly to the IESO Board of Directors and reports only administratively to the IESO CEO. | Complete | |
| 13 | To strengthen its cybersecurity governance, we recommend that the Independent Electricity System Operator (IESO) create a senior-level position for cybersecurity and establish a formal reporting process to both IESO executives and the IESO Board of Directors. | In-Full | Upon the effective start date of the new CIO, the IESO initiated the development process to create a senior-level cybersecurity role. The senior-level cybersecurity role was filled October 2018. | Complete | |
| 14 | To ensure there are sufficient | In-Full | The IESO retained the services of a | Complete | |

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| | cybersecurity resources in place to respond to cyberattacks, we recommend that the Independent Electricity System Operator (IESO) increase the number of cybersecurity staff to the recommended level of seven and/or engage an external IT cybersecurity vendor to be on standby. | | third party vendor to provide additional support to IESO cybersecurity staff by enabling 24/7 operational cybersecurity support.<br><br>The IESO has also increased the total allotted staff within the cybersecurity team to 8, and have plans to add an additional 3. As well, 5 members of the access management team have been integrated into the security team in 2019, totalling 16. The additional increase for 2019 is to support the IESO's additional license requirements to provide cybersecurity services into the sector. | | |
| 15 | To reduce cybersecurity risk and to prevent potential costly IT project redesigns, we recommend that the IT department of the Independent Electricity System Operator (IESO) involve its cybersecurity staff in the early stages of all IT projects that could pose cybersecurity risks. | In-Full | The Chief Information Officer (CIO) and incoming senior-level cybersecurity resource will establish effective governance ensuring that security practices are being built-in to the IESO's project management program and individual IT project lifecycles. Integration into the Enterprise Project Management Program has been completed. Cybersecurity has been integrated into Enterprise Project Management function. | Complete | |

| No. | Auditor's Recommendation | IESO Accepting Recommendation? (In-Full / In-Part / Not at All) | Status of Implementation | Expected Date of Completion | IESO Explanatory Notes |
|---|---|---|---|---|---|
| | | | The IESO will also be developing a best practice guide for the sector on cybersecurity risks in the supply chain. This would be applicable to the vendor supply chain that delivers industrial control system hardware, software, and computing and networking services associated with not only the bulk system operations, but traditional enterprise environments. The IESO best practice guide for supply chain risks was released to the sector on September 19, 2018. | | |
| 16 | To reduce the cybersecurity risk of the Independent Electricity System Operator (IESO), we recommend that the IESO procure technology that prevents and identifies breaches of confidential information and monitors staff access to confidential information in real time. | In-Full | The Advanced Malware project is closed and the associated technology investments are providing value in identifying and responding to cybersecurity issues, including access to confidential information. | Complete | |
| 17 | To reduce the cybersecurity risk of the Independent Electricity System Operator (IESO), we recommend | In-Full | The Independent Electricity System Operator (IESO) is in the process of developing and implementing supply | On-going | The process of holistically addressing supply chain risks will be addressed through the |

| No. | Auditor's Recommendation | IESO Accepting Recommendation? (In-Full / In-Part / Not at All) | Status of Implementation | Expected Date of Completion | IESO Explanatory Notes |
|---|---|---|---|---|---|
| | that:<br><br>• the IESO establish an external vendor cybersecurity policy; and<br><br>• the cybersecurity team conduct a regular assessment of the security risk that external vendors pose to the IESO. | | chain risk management measures that comply with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection Supply Chain risk standards, which will also include processes that are responsive to the recommendation.<br><br>The IESO is expanding its cybersecurity governance framework over the next two to three years to meet the National Institute of Standards and Technology (NIST) Cybersecurity framework that will help assess and mitigate vendor risks to the supply chain. This framework will establish effective security governance around external vendors. | | enhancements of the governance framework. IESO external vendor must comply with IESO cybersecurity standards as defined in our standard legal terms. The IESO cybersecurity standards outlined best practice controls for managing risks in vendor's information systems along with the associated data.<br><br>For 2019, Legal templates have been updated to enable IESO IT security to annually review vendor security risk posture reports. |
| 18 | To ensure that backup tapes are adequately protected and available when needed, we recommend that the Independent Electricity System Operator (IESO):<br><br>• properly encrypt all backup tapes; and<br>• store them in a secure off-site location. | In-Full | The Independent Electricity System Operator (IESO) has eliminated the use of tape-based backups in favour of system and data redundancy across two highly available and redundant data centers. | Complete | |

| | | | |
|---|---|---|---|
| NEXUS ENERGY INC. | -and- | INDEPENDENT ELECTRICITY SYSTEM OPERATOR (IESO) | **IN THE MATTER OF** an Arbitration under Chapter 3 of the IESO Market Rules made pursuant to section 32 of the Ontario *Electricity Act, 1998*, S.O. 1998, c. 15, as amended |
| Applicant | | Respondent | |

**SUPPLEMENTARY AFFIDAVIT OF FRANCOIS TARDIF**
**AFFIRMED MARCH 13, 2026**

**BLAKE, CASSELS & GRAYDON LLP**
Barristers & Solicitors
199 Bay Street
Suite 4000, Commerce Court West
Toronto ON M5L 1A9

**Bradley E. Berg** LSO #38755M
Tel: 416-863-4316
brad.berg@blakes.com

**Reena Goyal** LSO #50324A
Tel: 416-863-5807
reena.goyal@blakes.com

Lawyers for the Applicant

| NEXUS ENERGY INC. -and- | INDEPENDENT ELECTRICITY SYSTEM OPERATOR (IESO) |
|---|---|
| Applicant | Respondent |

**IN THE MATTER OF** an Arbitration under Chapter 3 of the IESO Market Rules made pursuant to section 32 of the Ontario *Electricity Act, 1998*, S.O. 1998, c. 15, as amended

**REPLY OF THE APPLICANT, NEXUS ENERGY INC.**

**BLAKE, CASSELS & GRAYDON LLP**
Barristers & Solicitors
199 Bay Street
Suite 4000, Commerce Court West
Toronto ON M5L 1A9

**Bradley E. Berg** LSO #38755M
Tel: 416-863-4316
brad.berg@blakes.com

**Reena Goyal** LSO #50324A
Tel: 416-863-5807
Fax: 416-863-2653
reena.goyal@blakes.com

Lawyers for the Applicant