IESO Licence Obligation under Section 6.2 Part (e)

Provide the Board, on or before the end of each calendar year, with the status of actions taken by the Licensee further to all recommendations addressed to the Licensee in any report issued by the Market Surveillance Panel in that year and the preceding four calendar years to the extent that they remain outstanding and, where no action has been taken in relation to a recommendation, the rationale for not taking action. The Licensee's response to recommendations in any report issued by the Market Surveillance Panel within 30 days of the end of the calendar year will be included in the succeeding report.

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July 16, 2020	Recommendation 3-2 In order to provide more consistent market outcomes, the IESO should give further consideration to improving how the need for additional system flexibility is addressed, such as specifying the conditions that require intervention and scheduling the required amount of spinning reserve explicitly in the normal OR market. Although it is acknowledged that no industry standard exists to address flexibility, alternative solutions should also be considered to ensure the most suitable approach is used.	Although no industry-standard approach exists to address system flexibility using market mechanisms, the IESO has looked at various approaches from other jurisdictions and believes it is on the right track to address system flexibility needs. Since May 24, 2018, the IESO has been explicitly increasing operating reserve (OR) requirements in the current OR market when the need for flexibility arises. OR is scheduled in the market on an economic basis and is co-optimized with energy. In comparison to the previous IESO practice of manually committing resources for flexibility, scheduling additional OR provides a transparent signal to the market when there is a flexibility need anticipated and ensures this need is addressed on an economic basis through a market-based solution. Initial assessments of the current flexibility solution were presented to the Market Development Advisory Group on June 27, 2019. These assessments indicate that the solution results in significant savings in comparison to past practices to meet system flexibility requirements. The IESO agrees with the MSP that it is important to consider improvements to the existing solution and to assess alternative

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		solutions. The IESO has completed a preliminary review of the existing solution which included reassessing the criteria utilized for increasing OR for flexibility. As a result of this review, the IESO found areas in its internal procedure where more clarity around the conditions that necessitate additional flexibility services can be specified. The internal procedure has been updated and has been implemented by the IESO. The IESO also agrees with the MSP on the need to do a more fulsome review of the existing solution and is planning on conducting that review after the implementation of the Market Renewal Program (MRP). The IESO has decided to conduct this more fulsome review after the implementation of MRP due to the significant improvements being made to the OR market through MRP that will further increase the transparency and efficiency of the existing OR flexibility solution; including better optimization in the pre-dispatch timeframe should resources need to be economically committed for flexibility. The IESO will perform the more fulsome review one year after the implementation of MRP in order to fully assess the impacts of these
		improvements on the existing OR flexibility solution.
December 19, 2019	Recommendation 2-1 The IESO should consider ways and means of deterring the Operating Reserve nodal price chasing behaviour.	The IESO has reviewed the issue identified by the MSP and has identified an enduring solution. The IESO is currently working on better understanding the implementation impacts of the enduring solution, including work on other MSP recommendations. The IESO will provide an update to the MSP on its proposed approach in Q1 2021.

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December 19, 2019	Recommendation 2-2 The IESO should ensure its procedure for determining an outage when administering Transmission Rights aligns with the Market Rules	The IESO agrees with the MSP's recommendation and acknowledged the TR payments made during outages may not be aligned with existing Market Rules. The IESO held a public webinar in March 2020 to identify this issue to stakeholders and discuss next steps. An interim, manual solution was implemented in April 2020 to stop the improper payments to TR holders. An enduring, automated solution was implemented in October 2020.
December 19, 2019	Recommendation 3-1 A) The Panel recommends that - when implementing changes to the market - the IESO audit the pre-deployment testing process to ensure that sufficient controls are in place to identify errors and unintended consequences. B) The Panel recommends that, as soon as possible after the IESO detects an error or unintended consequence that significantly impacts the wholesale electricity market, it publicly discloses details of the error or unintended consequence, the impact on the market and the actions taken or to be taken to address the matter.	Part (A) Internal Audit is in the process of conducting a review of the IESO's pre-implementation testing, including the definition of requirements, for IT and OT projects. This IESO expects to complete this review by the end of Q4 2020. Part (B) The IESO has completed a review of its current practices to report publicly on IESO errors and is enhancing and formalizing its process, including materiality thresholds, for reporting significant, anomalous market events to the public. The IESO expects to finalize this process by the end of Q4 2020 or early Q1 2021.

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April 29, 2019	 Recommendation 3-1 A) The IESO should formalize the process by which it determines when to disable and re-enable the variable forecasting tool, and should communicate that process to market participants to increase transparency. B) When a variable generator is on mandatory dispatch and the forecasting tool is disabled the IESO should set the generator's unconstrained schedule at its forecasted output rather than its maximum offered capacity. 	The IESO agrees with the MSP's recommendation and has addressed it with the following actions: Part (A) In December 2019, the IESO amended Market Manuals to include that the IESO will issue an advisory notice when the tool is disabled/re-enabled and the circumstances under which the IESO may disable the forecast. Part (B) The IESO implemented a tool change in October 2020. Variable generators receiving mandatory dispatch will have their market schedules set to their 5-minute forecast even when the 5-minute variable generation forecast tool has been disabled.
March 22, 2018	Recommendation 3-1 The Independent Electricity System Operator should implement rules that allow it to recover Congestion Management Settlement Credit payments made to dispatchable loads when those payments are the result of an operational constraint arising from conditions at the dispatchable load's facility. The IESO should also examine whether the scope of the current provisions that allow it to recover CMSC payments from generators	The IESO agrees with the MSP that dispatchable loads should not receive CMSC payments as a result of operational constraints arising from conditions at their facility. In June 2019, the IESO eliminated a \$4,000 materiality threshold to claw-back unwarranted CMSC payments from dispatchable loads. Additionally, the IESO has commenced the Market Rule amendment process to recover inappropriate CMSC payments from SEAL-related constraints (constraints applied to prevent endangering the safety of any person, equipment damage, or violation of any applicable law) to dispatchable loads. Implementation of the rule change is targeted for Q1 2021.

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	in relation to SEAL-related constraints should be expanded to cover any other operational constraints arising from conditions at the generator's facility.	Finally, the IESO was unable to determine any instances of CMSC payments made to dispatchable generators related to non-SEAL related operational constraints arising from conditions at the generator's facility. The IESO does not plan on taking further action unless the MSP has identified additional findings of unwarranted CMSC not captured by the existing processes.
March 22, 2018	Recommendation 4-1 The Independent Electricity System Operator should set the replacement bid price to \$0/MWh, or slightly negative, when it calculates constrained-on Congestion Management Settlement Credit payments for exports bid at negative prices.	No change relative to 2019 annual update. The IESO is concerned that a higher replacement bid price floor for calculating CMSC, as suggested by this recommendation, may deter traders from submitting export bids below \$0/MWh on any intertie due to the risk of being constrained-on which would impose unnecessary losses on traders and deter trading. This could result in both a reduction in the effectiveness of a valuable system tool during surplus conditions and possibly higher costs to ratepayers. The IESO continues to monitor the materiality of the issue raised by the MSP. The amount of uplift charges related to the recommendation remains low at less than \$70,000 in total from 2016 to September 2020. The IESO does not intend to pursue this recommendation any further.

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March 22, 2018	Recommendation 4-2 A. The Independent Electricity System Operator's Board of Directors should revise the materiality threshold value such that operating reserve payments are clawed back when a market participant fails to fully respond to its operating reserve activation. B. When a market participant fails to fully respond to an operating reserve activation, the Independent Electricity System Operator should calculate the claw back based on the ratio of the energy not provided in response to the activation relative to the energy required by the activation.	The changes proposed as part of Improving Accessibility of Operating Reserve stakeholder engagement (refer to IESO's response to Recommendation 3-1 of May 2017 MSP report) are expected to address the availability of operating reserve (OR) prior to activation. By contrast, the MSP's recommendations here relate to concerns after OR is activated. The materiality of these concerns will be impacted by the success of the IESO's efforts to address the upstream OR accessibility concerns. The proposed changes as part of the aforementioned stakeholder engagement are expected to not only improve the OR accessibility but also incent OR providers to offer their actual OR capability which in turn may reduce the materiality of non-compliance with OR activations. This is why the IESO is proposing to address the MSP's recommendations on the materiality threshold (4-2 Part A) and Operating Reserve Energy Shortfall Fraction (ORESF) claw-back calculation (4-2 Part B) one year after the proposed changes to improve OR accessibility take effect. The IESO expects that one year will be a sufficient period to evaluate the effectiveness of proposed changes on OR accessibility and OR activation performance.
May 8, 2017	Recommendation 3-1 The IESO should take steps to ensure that dispatchable loads are only compensated for the amount of operating reserve they	In 2020, the IESO continued to work with stakeholders through the Improving Accessibility of Operating Reserve stakeholder engagement to evaluate proposed solution to address the accessibility issue. The IESO presented two solutions to stakeholders:

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	were capable of providing in real-time. More fundamentally, the IESO should explore options for ensuring unavailable OR is not scheduled in the first instance.	 An operating reserve (OR) payment settlement claw-back for inaccessible OR; and Market Rule revision or clarification to measure OR performance based on incremental energy change commensurate to the amount of OR activated. The IESO has received stakeholder feedback on the proposed solutions and is developing additional details on the solutions that will be shared with stakeholders at the next webinar. For further details on this initiative, please refer to the Improving Accessibility of Operating Reserve stakeholder engagement webpage.
May 8, 2017	Recommendation 3-2 The IESO should revise the methodology used to set the intertie failure charge to include congestion rents that an intertie trader avoids when it fails a scheduled transaction for reasons within its control.	The IESO is on track to address this issue through Market Renewal Program (MRP). The MSP's recommendation to revise the intertie failure charge seeks to mitigate the impact that failed intertie transactions have on Financial Transmission Rights (FTR) funding. Through the MRP, the IESO will move FTR settlement from real-time to a financially- binding day-ahead market. This solution will address the MSP's concern as it decouples FTR funding (day ahead) from failed intertie transactions (real-time). In the interim, the IESO has Market Rules in place to allow for the recovery of transmission rights payouts when the trader fails its intertie transactions, and the IESO intends to adjust settlement

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		amounts paid or payable to traders in situations where the trader has failed to schedule the transaction with the appropriate scheduling entity other than for bona fide and legitimate reasons.
May 8, 2017	Recommendation 4-1 A. The IESO should revise the manner in which it allocates disbursements from the Transmission Rights Clearing Account such that disbursements are proportionate to transmission service charges paid over the relevant accrual period. B. The IESO should not disburse any further funds from the Transmission Rights Clearing Account until such time that Recommendation 4-1(A) has been addressed.	The IESO is in the process of implementing changes to address this recommendation. In early 2020, the IESO completed its review of the Transmission Rights Clearing Account (TRCA) disbursement methodology with stakeholders. The outcome of the review was to change the TRCA disbursement methodology to one based on the proportion of transmission service charges paid, as suggested by the MSP. The IESO has completed the Market Rule amendment process and is on track for the changes to be implemented and effective for the May 2021 disbursement.
May 8, 2017	Recommendation 4-2 The IESO should reassess the value provided by the capacity procured through its Demand Response auction in light of Ontario's surplus capacity conditions, as well as the stated preference of the government and the IESO (through its Market Renewal initiative) for technology-neutral procurement at least cost.	The IESO continues to be committed to developing and enabling supply resources to compete to provide capacity – that is, resources that would be available to supply energy – and improve power system reliability. On September 5, 2019, the IESO published Market Rule amendments to transition the Demand Response Auction (DRA) into the Capacity Auction (formerly Transition Capacity Auction). The IESO's Capacity Auction will create a level playing field to support technology- neutral procurements of resources by evolving the DRA to include

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		participation of other resources. The first Capacity Auction will take place in early December 2020 to procure capacity for the summer 2021 and winter 2021-2022 periods.
		The IESO remains committed to transitioning to the long-term use of competitive mechanisms to meet Ontario's resources adequacy needs. The IESO is currently conducting the Resource Adequacy engagement to inform development of a framework to competitively meet the province's long-term adequacy needs using a suite of tools, including capacity auctions. This work includes establishing a methodology for setting targets for the amount of capacity to be acquired.
November 17, 2016	Recommendation 2-1 Given the number of recent changes in operating reserve market, the Panel recommends that the IESO review	The IESO is on track to address Control Action Operating Reserve (CAOR) through the implementation of the Market Renewal Program (MRP).
	whether the real-time operating reserve prices transparently reflect the value of operative reserve as more Control Action Operative Reserve capacity is scheduled, and whether changes to Control Action Operative Reserve offer quantities and prices could enhance the efficiency of the operating reserve market.	As part of the MRP design, CAOR will no longer be offered into the operating reserve (OR) market. The CAOR mechanism will be replaced in the market with the introduction of an operating reserve demand curve (ORDC) that aims to better reflect scarcity/violations in settlement ready prices. An ORDC is a more appropriate method to reflect OR prices in the new day-ahead and real-time markets.

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November 17, 2016	Recommendation 3-1 The Panel recommends that the IESO eliminate from the Real-time Generation Cost Guarantee (RT-GCG) program the guarantee associated with a) incremental operating costs for start-up and ramp to minimum loading point; and (b) incremental maintenance costs for start-up and ramp to minimum loading point.	As discussed with the MSP in 2018, the IESO does not intend to take any additional actions at this time to change the current RT-GCG program design. The Enhanced Real-time Unit Commitment (ERUC) process will be replacing the IESO's current pre-dispatch process and the associated Real-time Generator Cost Guarantee program. In 2019, the IESO published the ERUC high-level design and is currently working with stakeholders in the detailed design. The ERUC process is expected to be implemented as part of MRP.
November 17, 2016	Recommendation 3-2 The Panel recommends that the IESO modify the RT-GCG program such that the revenues that are used to offset guaranteed costs under the program are expanded to include any net energy and operating reserve revenues earned, as well as all congestion management settlement credit (CMSC) payments received on: (a) output above a generation facility's minimum loading point during its minimum generation block run time (MGBRT), and (b) output generated after the end of the facility's MGBRT.	Please refer to the IESO's response above to Recommendation 3-1 from the MSP Report published on November 17, 2016.