

**EB-2019-0002**  
**ONTARIO ENERGY BOARD**

**IN THE MATTER OF** subsection 25 (1) of the *Electricity Act, 1998*;

**AND IN THE MATTER OF** a Submission by the Independent Electricity System Operator to the Ontario Energy Board for the review of its proposed expenditure and revenue requirements for the fiscal year 2019 and the fees it proposes to charge during the fiscal year 2019.

**REVISED SUBMISSION FOR REVIEW**

1. The Independent Electricity System Operator ("IESO") submitted its 2019-2021 Business Plan to the Minister of Energy, Northern Development and Mines ("Minister") for approval pursuant to section 24 (1) of the *Electricity Act, 1998* as amended ("Act") and the IESO received a letter from the Minister approving the Business Plan.
2. The IESO hereby submits to the Ontario Energy Board ("OEB") its proposed 2019 expenditure and revenue requirements and the fees it proposes to charge in 2019 (the "2019 Revenue Requirement Submission" or "Submission") for review and approval pursuant to subsection 25 (1) of the Act.
3. The IESO proposes a 2019 net revenue requirement of \$190.8 million, the same level as in 2018 and 2017.
4. The current IESO usage fees of \$1.2402/MWh for domestic customers and \$1.0115/MWh for export customers were made interim effective January 1, 2019 by a December 18, 2018 OEB Decision on Interim Fees (EB-2018-0143). The IESO proposes usage fees for the same customer classes approved by the OEB in EB-2018-0143, of

\$1.227/MWh for domestic customers and \$1.0125/MWh for export customers effective January 1, 2019. Domestic customers include all withdrawals for consumption in Ontario and embedded generation.

5. Pursuant to subsection 25 (1) of the Act, the IESO is seeking the following approvals from the OEB:
  - a) Approval of the proposed IESO usage fees of \$1.227/MWh for domestic customers (including embedded generation) and \$1.0125 MWh for export customers to be paid commencing January 1, 2019.
  - b) Approval of its proposed 2019 capital expenditure envelope of \$43.3 million for capital projects.
  - c) Approval to charge (or rebate) market participants the difference between the 2019 IESO usage fees approved by the OEB and the interim usage fee they paid, if any, based on their proportionate quantity of energy withdrawn until the end of the month in which OEB approval is received for the 2019 usage fees. Any such charges (or rebates) will be provided in the next billing cycle following the month in which OEB approval is received.
  - d) Approval to rely on and use the information provided to the IESO by LDCs on the amount of embedded generation in their service territory under O. Reg. 429/04 in calculating the total usage fee to be billed to each LDC each billing period.
  - e) Approval of the proposed 2019 net revenue requirement of \$190.8 million.

- f) Approval to retain \$10 million as an operating reserve in the Forecast Variance Deferral Account ("FVDA").
  - g) Approval to rebate the year-end balance in the FVDA above the requested \$10 million operating reserve. The IESO will rebate the surplus to market participants proportionate to the fees collected in 2018. The rebates will be provided in the next billing cycle following the month in which OEB approval is received.
  - h) Approval to continue to charge registration fees of up to \$10,000 per proposal for electricity supply and capacity procurements, including ancillary services.
  - i) Approval to continue charging \$1,000 for the IESO's market participation application fee.
  - j) All necessary interim orders, orders and directions, pursuant to the *Ontario Energy OEB Act, 1998* and the OEB's Rules of Practice and Procedure, as may be necessary in relation to this Submission and execution of the approvals requested in the IESO's 2019-2021 Business Plan.
6. The IESO proposes that the OEB review of the Submission proceed by way of a written hearing.
7. The IESO intends to submit its 2018 Audited Financial Statements, as well as any supplementary evidence, to the Board and all intervenors once they become available.
8. The IESO may amend its pre-filed evidence from time to time, prior to and during the course of the OEB proceeding. Furthermore, the IESO may seek to have additional meetings with OEB Staff and intervenors in order to identify and address any further

issues arising from this Submission, with a view to an early settlement and disposition of this proceeding.

9. The IESO requests that a copy of all documents filed with the OEB by each party to this proceeding, be served on the IESO and the IESO's counsel in this proceeding as follows:

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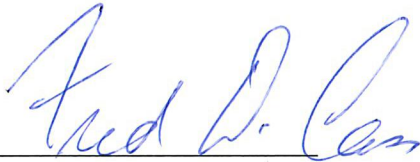
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DATED at Toronto, Ontario, this August 26, 2019

INDEPENDENT ELECTRICITY SYSTEM OPERATOR



by its counsel in this proceeding  
Fred D. Cass

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**INDEPENDENT ELECTRICITY SYSTEM OPERATOR  
2019 REVENUE REQUIREMENT SUBMISSION (EB-2019-0002)**

**EXHIBIT LIST**

<b>Exhibit</b>	<b>Tab</b>	<b>Schedule</b>	<b><u>Description</u></b>
<b>A – ADMINISTRATION</b>			
<b>A</b>	<b>1</b>	<b>1</b>	Submission
<b>A</b>	<b>1</b>	<b>2</b>	Exhibit List
<b>A</b>	<b>2</b>	<b>1</b>	IESO's Letter to the Minister Requesting Approval of the 2019-2021 Business Plan – September 4, 2018
<b>A</b>	<b>2</b>	<b>2</b>	2019-2021 Business Plan – September 4, 2018
<b>A</b>	<b>2</b>	<b>3</b>	Minister's Letter Approving the IESO's 2019-2021 Business Plan – December 11, 2018
<b>A</b>	<b>3</b>	<b>1</b>	2018 Audited Financial Statements
<b>B – REVENUE REQUIREMENT, FEES AND DEFERRAL AND VARIANCE ACCOUNTS</b>			
<b>B</b>	<b>1</b>	<b>1</b>	2019 Revenue Requirement and Usage Fee Methodology
<b>B</b>	<b>2</b>	<b>1</b>	2019 Registration and Application Fees, Forecast Variance Deferral Account and Capital Expenses
<b>B</b>	<b>3</b>	<b>1</b>	2018 Estimated Year-End Financials, Surplus and Staffing <u>Attachment 1</u> - Appendix 2-AA (capital projects) <u>Attachment 2</u> - Appendix 2-JB (OM&A cost drivers) <u>Attachment 3</u> - Appendix 2-JC (OM&A programs) <u>Attachment 4</u> - Appendix 2-K (employee costs)
<b>C – EVIDENCE RESPONDING TO OEB DECISIONS AND SETTLEMENT PROPOSAL</b>			
<b>C</b>	<b>1</b>	<b>1</b>	IESO Regulatory Scorecard <u>Attachment 1</u> - IESO's 2019 Regulatory Scorecard
<b>C</b>	<b>2</b>	<b>1</b>	Market Renewal Program Cost Report

Exhibit	Tab	Schedule	<u>Description</u>
			<u>Attachment 1</u> - Baseline MRP Schedules and Budget
C	2	2	Update on Status of Incremental Capacity Auction
C	3	1	Cost Allocation Study
C	4	1	Total Compensation Study <u>Attachment 1</u> - Non-Executive Total Remuneration Review
C	5	1	Transmission Losses
C	6	1	Annual Status Report on 2017 Auditor General's Report Recommendations
<b>I - INTERROGATORIES</b>			
Exhibit	Tab (Issue)	Schedules per Intervenor and Interrogatory Number	
I	0	Schedule 2.01 to 2.18 BOMA <u>BOMA 2.05</u> Attachment 1 – ETNO Member Bios Attachment 2 – ETNO Terms of Reference <u>BOMA 2.10</u> Attachment 1 – MOU Minister of Energy and Chair IESO	
I	0	Schedule 4.01 Energy Probe	
I	0	Schedule 8.01 to 8.06 CME	
I	1.0	Schedule 3.01 to 3.07 VECC	
I	1.0	Schedule 12.01 and 12.02 EDA	
I	1.1	Schedule 1.01 and 1.07 OEB	
I	1.1	Schedule 4.02 to 4.06 Energy Probe	
I	1.1	Schedule 7.01 PWU	



<b>Exhibit</b>	<b>Tab</b>	<b>Schedule</b>	<b><u>Description</u></b>
<b>I</b>	<b>1.1</b>	Schedule 10.01 to 10.08 SEC <u>SEC 10.1</u> Attachment 1 – Agenda Item Summary 2019-2021 Business Plan Attachment 2 – IESO 2019-2021 Business Plan Draft to Audit Committee Attachment 3 – 2019-2021 Business Plan Presentation to Audit Committee Attachment 4 – Resolution Board Approval of 2019-2021 Business Plan <u>SEC 10.6</u> Attachment 1 – Ministerial Directive CFF wind-down – March 2019 Attachment 2 – Ministerial Directive Interim Framework – March 2019 <u>SEC 10.7</u> Attachment 1 - Report on Governance and Decision Making – November 23, 2018	
<b>1</b>	<b>1.1</b>	Schedule 11.01 to 11.03 APPrO	
<b>I</b>	<b>1.1</b>	Schedule 12.03 EDA	
<b>I</b>	<b>1.1</b>	Schedule 13.01 to 13.13 AMPCO <u>AMPCO 13.07</u> Attachment 1 - SAC Presentation – February 14, 2019 Attachment 2 - BoD Presentation – December 5, 2018 Attachment 3 - BoD Presentation – June 13, 2018 Attachment 4 - Grid Innovation Fund Portfolio - February 15, 2019	
	<b>1.2</b>	Schedule 1.08 OEB	
	<b>1.2</b>	Schedule 9.01 SUP	
	<b>1.3</b>	Schedule 1.09 to 1.16 OEB <u>OEB STAFF 1.09</u> Attachment 1 - IESO Organizational Charts	
	<b>1.3</b>	Schedule 4.07 and 4.08 Energy Probe	
	<b>1.3</b>	Schedule 7.02 to 7.05 PWU <u>PWU 7.05</u> Attachment 1 - Appendix C (Non-Executive Total Remuneration Review)	

<b>Exhibit</b>	<b>Tab</b>	<b>Schedule</b>	<b><u>Description</u></b>
			<i>(provided in excel only)</i>
	<b>1.3</b>		Schedule 10.09 SEC
	<b>1.3</b>		Schedule 13.14 to 13.17 AMPCO <u>AMPCO 13.16</u> Attachment 1 - Appendix 2-K Employee Costs <i>(provided in excel only)</i>
	<b>1.4</b>		Schedule 1.17 OEB
	<b>1.4</b>		Schedule 4.09 and 4.10 Energy Probe
	<b>1.4</b>		Schedule 10.10 and 10.11 SEC
	<b>1.4</b>		Schedule 13.18 AMPCO
	<b>2.1</b>		Schedule 4.11 Energy Probe
	<b>2.2</b>		Schedule 6.01 HQEM
	<b>4.0</b>		Schedule 3.08 and 3.09 VECC
	<b>4.1</b>		Schedule 1.18 OEB
	<b>4.1</b>		Schedule 13.19 AMPCO
	<b>5.0</b>		Schedule 3.10 and 3.11 VECC <u>VECC 3.10</u> Attachment 1 - Updated C-1-1 Attachment 1 - 2019 IESO Regulatory Scorecard <i>(provided in excel only)</i>
	<b>5.0</b>		Schedule 4.14 and 4.15 Energy Probe
	<b>5.1</b>		Schedule 1.19 and 1.20 OEB
	<b>5.1</b>		Schedule 4.16 and 4.17 Energy Probe
	<b>5.1</b>		Schedule 5.01 to 5.10 OSEA <u>OSEA 5.03</u> Attachment 1 - First Nations Energy Symposium – March 2019 <u>OSEA 5.05</u>

Exhibit	Tab	Schedule	<u>Description</u>
			Attachment 1 - Report on Indigenous Conservation Programming – March 2018 Attachment 2 - Ministerial Directive - First Nations Conservation – March 2019 <u>OSEA 5.06</u> Attachment 1 - Removing Obstacles for Storage Resources in Ontario – December 19, 2018
	5.1		Schedule 10.13 SEC
	5.2		Schedule 1.21 OEB
	5.2		Schedule 4.18 Energy Probe
	5.2		Schedule 9.02 to 9.07 SUP
	5.2		Schedule 10.14 and 10.15 SEC
	5.3		Schedule 1.22 OEB
	5.3		Schedule 9.08 SUP
	6.0		Schedule 3.12 VECC
	6.0		Schedule 12.4 EDA
	6.1		Schedule 1.23 and 1.24 OEB
	6.1		Schedule 4.19 Energy Probe
	6.1		Schedule 10.16 to 10.22 SEC <u>SEC 10.16</u> Attachment 1 – MRP - BoD Dashboard and MRESC Materials <u>SEC 10.21</u> Attachment 1 - A Benefits Case Assessment of the Market Renewal Project, The Brattle Group – April 20, 2017 <u>SEC 10.22</u> Attachment 1 – MRP - Professional and Consulting Costs
	6.1		Schedule 11.04 and 11.05 APPrO
	6.1		Schedule 12.05 EDA

<b>Exhibit</b>	<b>Tab</b>	<b>Schedule</b>	<b><u>Description</u></b>
	<b>6.1</b>		Schedule 13.20 AMPCO
	<b>6.2</b>		Schedule 1.25 to 1.27 OEB
	<b>6.2</b>		<p>Schedule 11.06 to 11.14 APPrO</p> <p><u>APPrO 6</u></p> <p>Attachment 1 – MRP – Risk Assessment Observations and Recommendations, Audit Committee Meeting of February 26, 2019, KPMG - January 25, 2019</p> <p>Attachment 2 – MRP – Risk Summary (KPMG Key Risks) – MRESC – April 30, 2019</p> <p><u>APPrO 11</u></p> <p>Attachment 1 – MRP - Future Market Evolution Request for Proposal - April 18, 2018</p>
	<b>6.2</b>		Schedule 12.07 EDA
	<b>6.2</b>		<p>Schedule 13.21 to 13.34 AMPCO</p> <p><u>AMPCO 28</u></p> <p>Attachment 1 – MDAG Draft Terms of Reference – April 16, 2019</p>
	<b>6.3</b>		Schedule 4.20 Energy Probe
<b>S – SETTLEMENT PROPOSAL</b>			
<b>S</b>	<b>1</b>	<b>1</b>	Settlement Proposal

**2019 REGISTRATION AND APPLICATION FEES,  
FORECAST VARIANCE DEFERRAL ACCOUNT AND CAPITAL EXPENSES**

**2019 Registration and Application Fees**

The OEB approved the following registration fees in the IESO's 2018 Revenue Requirement Submission:

- Registration fees of up to \$10,000 per proposal for electricity supply and capacity procurements, including ancillary services;
- The application fee of \$1,000 per application for market participants.

The IESO seeks approval to continue to charge the above fees. The IESO forecasts that it will receive negligible revenues through these registration fees in 2019.

**The Forecast Variance Deferral Account**

In its 2018 Revenue Requirement Submission, the IESO sought, and the Board approved, the continuation of the Forecast Variance Deferral Account ("FVDA").

The IESO requests approval to continue to use the FVDA. The IESO's revenue requirement is a fixed amount approved by the OEB with the IESO usage fees determined based on a forecast of withdrawals from the IESO controlled grid, embedded generation and exports. While the IESO provides a forecast of these withdrawals, there is inherently a variance between the forecast withdrawals and actual withdrawals. Similarly, it is to be expected that there will generally be some variance between actual revenues and expenses and the OEB-approved revenue requirement. The IESO proposes to continue to track these variances through the FVDA.

## **Operating Reserve**

As part of the approved 2017 Package Settlement, under Issue 4.1, \$4.0 million was rebated out of the \$10 million 2016 operating reserve to account for a reduction in the 2017 Market Renewal Program operational budget. In 2018, the operating reserve balance of \$6 million amount was approved in the EB-2018-0143 OEB Decision and Order. Given the scope and complexity of the IESO's mandate, the IESO recognizes the potential for additional unplanned work activities that are beyond the control of management. The IESO is seeking approval to increase the operating reserve back to its approved 2016 operating reserve level of \$10 million as set out further in Exhibit B-1-1.

## **Capital Expenses**

The IESO is seeking approval of its proposed 2019 capital expenditure envelope of \$43.3 million for capital projects, inclusive of \$26 million for the MRP. A summary of capital spending and associated project descriptions is included in Appendix 3 of the IESO's approved 2019–2021 Business Plan at Exhibit A-2-2. The forecasted 2019 capital envelope for Core Operations and MRP compared to 2017 and 2018 budgeted envelope and actual is shown in Table 4 below:

**Table 4: 2019 Capital Envelope compared to 2017 and 2018**

<b>Capital (\$ millions)</b>	<b>2017 Envelope</b>	<b>2017 Actuals</b>	<b>2018 Envelope</b>	<b>2018 Estimate*</b>	<b>2019 Envelope</b>
Core Operations	25.0	15.4	22.6	14.4	17.3
Market Renewal Program	--	0.2	4.0	1.2	26.0
<b>Total</b>	25.0	15.6	26.6	15.6	43.3

\*Finalized 2018 data will be available when the IESO's 2018 Audited Financial Statements are completed.

1 In 2019, MRP costs will be predominantly classified as capital expenses as the program  
2 starts the detailed design related to the energy and capacity work streams. In 2017 and  
3 2018, capital spending levels were lower than planned primarily due to changes in  
4 timing of capital projects, the initial stages of development of which are treated as  
5 expenses.

6 In order to improve forecast accuracy, the IESO introduced an enhanced project  
7 prioritization process in late 2018, to identify and prioritize the projects that support the  
8 IESO's strategic outcomes, while balancing the need to maintain our critical IT systems.

9 The IESO's portfolio of capital projects found in Appendix 3 of the Business Plan,  
10 reflects the IESO's capacity to support enterprise-wide projects while delivering on the  
11 MRP. Similar to previous years, the IESO regularly examines its portfolio throughout  
12 the year to ensure that it continues to support the IESO's strategic outcomes and make  
13 adjustments as required. Specific projects are committed individually throughout the  
14 year within the total capital envelope.

15 The IESO will continue to focus on capital project alignment with its strategic themes as  
16 outlined in Appendix 1 of the Business Plan.

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## APPENDIX 2-AA CAPITAL PROJECTS

Capital Projects Table (Note 1)

Change Initiatives/Projects (in millions)	2018 Estimate	2019 Plan	2020 Plan	2021 Plan
MIS Upgrade	1.3	-	-	-
Data Centre Capacity Management	1.7	-	-	-
Operations Readiness Initiatives (ORI Initiatives)	2.0	0.3	-	-
Wallboard Refresh	1.8	2.0	-	-
Infrastructure Refresh	1.1	2.6	3.0	3.0
Replacement of Settlement Systems	-	1.5	3.0	6.0
FIT & microFIT Tool Redevelopment and Integration Project	0.8	0.2	-	-
Aspen Refresh Project	0.6	0.2	-	-
IESO Simulator Project – Phase 2	0.2	0.3	-	-
Wide Area View	0.2	0.5	2.5	0.5
PMU Phase 3	-	1.0	2.5	0.5
Oracle 12c Technical Refresh	-	1.4	-	-
Tier 1 Storage Refresh	-	0.1	1.0	
SCADA/EMS Replacement	-	-	3.5	6.0
Control Room Upgrade	-	1.5	-	-
IT Service Management (ITSM)	-	0.2	0.5	0.3
Dispatch Data Management System (DDMS) Refresh	-	0.7	1.5	1.0
Access Switches	-	-	1.0	-
<b>Capital (\$1M &amp; above)</b>	<b>9.7</b>	<b>12.5</b>	<b>18.5</b>	<b>17.3</b>
Other Capital Initiatives/Projects	4.7	4.8	1.8	0.6
<b>Core Operations Capital</b>	<b>14.4</b>	<b>17.3</b>	<b>20.3</b>	<b>17.9</b>
Market Renewal Program (MRP)	1.2	26.0	43.3*	40.8*
<b>Total Capital including Market Renewal</b>	<b>15.6</b>	<b>43.3</b>	<b>63.6</b>	<b>58.7</b>

**Note 1:** The Change Initiatives/Projects reflects the IESO 2019-2021 Business Plan (Exhibit A-2-2), with the 2018 estimates updated with more recent values.

\*These numbers will be finalized in the IESO's 2020-2022 Business Plan.

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## MARKET RENEWAL PROGRAM COST REPORT

The Market Renewal Program (“MRP”) Cost Report is a separate cost centre related specifically to MRP spending that was established through the IESO’s 2017 Revenue Requirement Submission.

As part of the approval of the 2018 Package Settlement the IESO filed its baseline MRP schedules and budget with the OEB on January 2, 2019. The baseline MRP schedules and budget are provided as Attachment 1 to this exhibit.

### **The Market Renewal Program**

The IESO’s MRP represents the most ambitious set of enhancements to Ontario’s electricity market design since market opening in 2002. The MRP will address known issues with the existing market design and will deliver ratepayer value by meeting system needs more cost-effectively. Market renewal is about improving the way electricity is priced, scheduled and procured in order to meet Ontario’s current and future electricity needs reliably, transparently, and efficiently.

In 2019, the MRP will be entering the detailed design phase for both the Energy and Capacity work streams of the program. The current total program budget is estimated at \$247 million, with further budget refinement expected upon completion of the business case at the end of 2019. The total budget estimate captures additional work to enable participation in future markets, as well as legal and consulting support for the development of market rules and additional design elements.

The MRP was formalized as a project in the IESO's 2017-2019 Business Plan and significant progress has been made on the initiative since that time. The program includes four initiatives that will continue in 2019 and beyond.

**Table 1: MRP Work Streams and Initiatives**

MRP Work Stream	Initiatives
Energy	<ul style="list-style-type: none"><li>• Single Schedule Market</li><li>• Day-Ahead Market</li><li>• Enhanced Real-time Unit Commitment</li></ul>
Capacity	<ul style="list-style-type: none"><li>• Incremental Capacity Auction</li></ul>

- **Single Schedule Market**

The IESO is working with stakeholders to design and develop a single schedule market ("SSM") to replace the existing two schedule system. This initiative is a key foundational element of the IESO's MRP and will help ensure that the system will send transparent price signals to meet different system needs. The SSM will substantially reduce out of market payments associated with congestion management settlement credits.

- **Day-Ahead Market**

The IESO is working with stakeholders to design and develop a financially-binding Day-Ahead Market ("DAM"). A Day-Ahead Market will provide market participants with price certainty ahead of real-time and increase operational certainty for both market participants and the IESO.

1       • **Enhanced Real-time Unit Commitment**

2       The IESO is working with stakeholders to design and develop an Enhanced Real-  
3       Time Unit Commitment (“ERUC”) program. An ERUC program will improve the  
4       efficiency of unit commitments in the intra-day timeframe by considering all  
5       resource costs in commitment decisions and reduce out of market payments  
6       associated with the current real-time generator cost guarantee program. An ERUC  
7       program will also improve commitment decisions overall by optimizing over  
8       multiple hours rather than solving for each hour independently.

9       • **Incremental Capacity Auction**

10       The IESO is working with stakeholders to design and develop an Incremental  
11       Capacity Auction (“ICA”). The ICA initiative will develop an enduring market-  
12       based mechanism that will secure incremental capacity to help ensure Ontario’s  
13       reliability needs are met cost effectively. Developing an ICA is a key element of the  
14       IESO’s MRP.

15       In 2018, the primary focus of the MRP was the development of a High-Level Design  
16       (“HLD”) for each initiative within the program. Throughout this process the IESO engaged  
17       with stakeholders to ensure their perspectives were considered in the design of Ontario’s  
18       future electricity markets. In September, the IESO published the draft HLD for the SSM. In  
19       December, draft HLDs for the DAM and ERUC initiatives were published. Over the course  
20       of 2018, the IESO also presented many of the key design decisions that will be included in  
21       the HLD for the ICA. A draft version of the ICA HLD is targeted for publication prior to  
22       the end of Q2 2019.

1 In 2019, a number of milestones are expected to be achieved for the MRP. Stakeholder  
2 feedback on each of the draft HLDs will be reviewed and the documents will be finalized,  
3 closing the HLD phase of the program. The detailed design phase of the program will be  
4 launched, signaling a change of focus from a higher-level framework for the design to a  
5 more in-depth exploration of the tools and processes that will need to evolve and  
6 examining the extent of market rule and manual changes.

7 The IESO will also develop a business case for the MRP. In 2017, a benefits case for the  
8 program was published, providing an early assessment of the potential benefits of the  
9 program. With the completion of the HLD phase of the MRP, the IESO will be in a position  
10 to produce a business case which more closely reflects the market design that will be  
11 implemented in Ontario. The business case will be provided to the IESO Board of Directors  
12 for approval in Q3 2019 and to stakeholders thereafter.

13 At the program level, the focus in 2019 includes more detailed planning for detail design  
14 and implementation, as well as monitoring and controlling the execution of the 2019  
15 detailed design activities, as further described below.

## 16 **Engaging Stakeholders**

17 In order to develop HLDs for the MRP initiatives, the IESO has engaged regularly with  
18 stakeholders throughout 2017 and 2018 across a number of forums.

19 Engagement on the decisions within the Energy work stream HLDs has occurred primarily  
20 at stakeholder engagement meetings for each of the initiatives. For example, in 2018, the  
21 IESO hosted eight engagement meetings for each of the SSM, DAM, and ERUC. Average  
22 participation for these meetings ranged from 55 to 60 stakeholders per session. Similarly,

1 design discussions for the Capacity work stream primarily occurred at the ICA stakeholder  
2 engagement with six stakeholder engagement meetings held over the course of 2018.

3 The focused design work was supported by active engagement from stakeholders on  
4 related topics and issues at a variety of additional forums including:

- 5 • The Market Renewal Working Group (“MRWG”) – a select group of stakeholders  
6 tasked with providing strategic advice to the IESO on the MRP, and;
- 7 • The Non-Emitting Resource Subcommittee (“NERSC”) – a subcommittee of the  
8 MRWG focused on identifying potential barriers to participation and potential  
9 market outcomes under Ontario’s future electricity market design.

10 In 2019, the IESO will continue to engage with stakeholders throughout the detailed design  
11 phase. For the Energy work stream, engagement will now occur through one single  
12 initiative that will encompass multiple design forums focused on specific elements of  
13 detailed design that cut across the three Energy initiatives. The MRWG will be replaced  
14 with a new Market Development Advisory Group (“MDAG”), whose scope will be broader  
15 than the MRP. The MDAG will support the IESO’s efforts to evolve the Ontario electricity  
16 market, beyond the MRP, to cost-effectively ensure reliability in the near and longer terms.  
17 A schedule of all activities, engagement and work with stakeholders, including the  
18 activities of the MRWG, is available on the IESO’s website<sup>1</sup>.

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<sup>1</sup> <http://www.ieso.ca/en/sector-participants/market-renewal/overview-of-market-renewal>

## **Cost and Performance Reporting**

In order to meet the requirements of the MRP cost and performance reporting described by the OEB in its EB-2017-0150 Decision, the budget for 2018 and beyond will be reported at the work stream level.

### **A. 2018 MRP Budget and Actual Operating and Capital Costs**

Table 2 below outlines the MRP's 2018 actual results and variances against the 2018 budget. At the program level, MRP was underspent by \$0.4 million or 3% in 2018. Operating results were \$2.3 million above budget, while capital results were \$2.7 million under budget. This variance corresponds to the delayed completion of the HLDs. The planned capitalization of costs associated with detailed design were then pushed back accordingly. Only the detailed design work for the SSM initiative was started in 2018.

**Table 2: MRP results for 2018**

<b>Cost Category</b>	<b>2018 Forecast</b>	<b>2018 Budget</b>	<b>2018 Variance</b>
Compensation & Benefits	9.2	7.4	1.8
Professional & Consulting	5.0	4.1	0.9
Operating & Administration	0.8	1.2	(0.4)
<b>Operating Results</b>	<b>15.0</b>	<b>12.7</b>	<b>2.3</b>
Compensation & Benefits	0.3	1.9	(1.6)
Professional & Consulting	0.3	1.4	(1.1)
Operating & Administration	0.7	0.7	-
<b>Capital Results</b>	<b>1.3</b>	<b>4.0</b>	<b>(2.7)</b>
Compensation & Benefits	9.5	9.3	0.2
Professional & Consulting	5.3	5.5	(0.2)
Operating & Administration	1.5	1.9	(0.4)
<b>Total Results</b>	<b>16.3</b>	<b>16.7</b>	<b>(0.4)</b>

Detailed variance explanation by work stream will be provided below.



## Energy Work Stream

Table 3 below outlines the results for the Energy work stream in 2018. The forecasted spending on the Energy work stream was under budget by \$1.2 million. Operating results are \$0.1 million below budget as less consultant support was required to complete HLD in 2018. The variance was offset by additional staff required to meet the HLD timelines. Capital spending in 2018 was \$1.1 million below budget as only the SSM initiative started detailed design work in 2018. The detailed design work for ERUC and DAM has begun and will continue in 2019.

**Table 3: Energy Work Stream results for 2018**

<b>Cost Category</b>	<b>2018 Forecast</b>	<b>2018 Budget</b>	<b>2018 Variance</b>
Compensation & Benefits	3.4	2.9	0.5
Professional & Consulting	1.4	2.0	(0.6)
Operating & Administration	0.1	0.1	-
<b>Operating Results</b>	<b>4.9</b>	<b>5.0</b>	<b>(0.1)</b>
Compensation & Benefits	0.3	1.2	(0.9)
Professional & Consulting	0.3	0.5	(0.2)
Operating & Administration	-	-	-
<b>Capital Results</b>	<b>0.6</b>	<b>1.7</b>	<b>(1.1)</b>
Compensation & Benefits	3.7	4.1	(0.4)
Professional & Consulting	1.7	2.5	(0.8)
Operating & Administration	0.1	0.1	-
<b>Total Results</b>	<b>5.5</b>	<b>6.7</b>	<b>(1.2)</b>

## Capacity Work Stream

Table 4 below outlines the results for the Capacity work stream in 2018. The forecasted spending on the Capacity work stream was over budget by \$0.7 million. Operating results were \$2.3 million over budget while capital results are \$1.6 million under budget. This

*For the highlighted portions please refer to the updated evidence filed as Update on Status of Incremental Capacity Auction - Exhibit C, Tab 2, Schedule 2*

corresponds to the time and effort required to develop the HLDs throughout 2018 and pushing into 2019 – later than originally planned when the 2018-2020 Business Plan was developed in mid-2017. Accordingly, the planned capitalization of costs associated with detailed design were pushed back. None of the \$1.6 million in budgeted capital spending was incurred in 2018, but is expected to start in 2019 with the completion of HLD.

**Table 4: Capacity Work Stream results for 2018**

<b>Cost Category</b>	<b>2018 Forecast</b>	<b>2018 Budget</b>	<b>2018 Variance</b>
Compensation & Benefits	3.4	2.0	1.4
Professional & Consulting	1.8	0.8	1.0
Operating & Administration	-	0.1	(0.1)
<b>Operating Results</b>	<b>5.2</b>	<b>2.9</b>	<b>2.3</b>
Compensation & Benefits	-	0.7	(0.7)
Professional & Consulting	-	0.9	(0.9)
Operating & Administration	-	-	0.0
<b>Capital Results</b>	<b>-</b>	<b>1.6</b>	<b>(1.6)</b>
Compensation & Benefits	3.4	2.7	0.7
Professional & Consulting	1.8	1.7	0.1
Operating & Administration	-	0.1	(0.1)
<b>Total Results</b>	<b>5.2</b>	<b>4.5</b>	<b>0.7</b>

## **Operability Work Stream**

In the 2018 budget there was \$0.7 million allocated to an operability work stream which included more frequent intertie scheduling. It was determined in early 2018 that this work will be pursued outside of the program, with the \$0.7 million operating budget being reallocated to other activities within the program.

## General Work Stream

Table 5 below outlines the results for the General work stream in 2018. The forecasted spending on the General work stream was over budget by \$0.8 million. Operating results were \$0.8 million above budget due to additional work to analyze how non-emitting resources might participate in future markets along with additional costs for legal support. Capital results in 2018 related to the MRP team relocation were on budget at \$0.7 million, which includes the cost of additional office space required for the MRP team.

**Table 5: General Work Stream results for 2018**

Cost Category	2018 Forecast	2018 Budget	2018 Variance
Compensation & Benefits	2.4	2.2	0.2
Professional & Consulting	1.8	0.9	0.9
Operating & Administration	0.7	1.0	(0.3)
<b>Operating Results</b>	<b>4.9</b>	<b>4.1</b>	<b>0.8</b>
Compensation & Benefits	-	-	-
Professional & Consulting	-	-	-
Operating & Administration	0.7	0.7	-
<b>Capital Results</b>	<b>0.7</b>	<b>0.7</b>	<b>-</b>
Compensation & Benefits	2.4	2.2	0.2
Professional & Consulting	1.8	0.9	0.9
Operating & Administration	1.4	1.7	(0.3)
<b>Total Results</b>	<b>5.6</b>	<b>4.8</b>	<b>0.8</b>

## **B. 2019 MRP Budget Operating and Capital Costs by Work Stream**

The total budget for the MRP in 2019 is \$11.7 million in operating expenses, and \$38.0 million in capital expenses, as per Table 6 below:

Updated: August 26, 2019

EB-2019-0002

Exhibit C

Tab 2

Schedule 1

Plus Attachments

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1 **Table 6: 2019 Market Renewal Program Operating and Capital Budget**

<b>Cost Category</b>	<b>2019 Budget</b>
Compensation & Benefits	5.7
Professional & Consulting	4.8
Operating & Administration	1.2
<b>Operating Total</b>	<b>11.7</b>
Compensation & Benefits	17.1
Professional & Consulting	7.1
Operating & Administration	13.8
<b>Capital Total</b>	<b>38.0</b>
Compensation & Benefits	22.8
Professional & Consulting	11.9
Operating & Administration	15.0
<b>Program Total</b>	<b>49.7</b>

2

3 The 2019 MRP operating budget by work stream is described in Table 7 below:

4 **Table 7: 2019 MRP Operating Budget by Work Stream**

<b>Work Stream</b>	<b>Cost Category</b>	<b>2019 Budget</b>
Energy	Compensation & Benefits	0.9
Energy	Professional & Consulting	1.3
Energy	Operating & Administration	0.1
<b>Energy</b>	<b>Energy Total</b>	<b>2.3</b>
Capacity	Compensation & Benefits	3.5
Capacity	Professional & Consulting	1.1
Capacity	Operating & Administration	0.2
<b>Capacity</b>	<b>Capacity Total</b>	<b>4.8</b>
General	Compensation & Benefits	1.3
General	Professional & Consulting	2.4
General	Operating & Administration	0.9
<b>General</b>	<b>General Total</b>	<b>4.6</b>
Program	Compensation & Benefits	5.7
Program	Professional & Consulting	4.8
Program	Operating & Administration	1.2
<b>Program</b>	<b>Program Total</b>	<b>11.7</b>

*For the highlighted portions please refer to the updated evidence filed as Update on Status of Incremental Capacity Auction - Exhibit C, Tab 2, Schedule 2*

The 2019 MRP capital budget by work stream is described in Table 8 below:

**Table 8: 2019 MRP Capital Budget by Work Stream**

Work Stream	Cost Category	2019 Budget
Energy	Compensation & Benefits	10.0
Energy	Professional & Consulting	4.3
Energy	Operating & Administration	12.4
<b>Energy</b>	<b>Energy Total</b>	<b>26.7</b>
Capacity	Compensation & Benefits	7.0
Capacity	Professional & Consulting	2.8
Capacity	Operating & Administration	1.5
<b>Capacity</b>	<b>Capacity Total</b>	<b>11.3</b>
Program	Compensation & Benefits	17.0
Program	Professional & Consulting	7.1
Program	Operating & Administration	13.9
<b>Program</b>	<b>Program Total</b>	<b>38.0</b>

**Annual and Projected Final Project Costs**

The current total program budget is estimated at \$247 million, with further budget refinement expected with the completion of the business case in Q4 2019. The increased total budget compared to earlier estimates reflects additional definition to the program scope through the development of the HLDs and the associated additional program planning work that has been completed.

**Table 9: 2019 MRP Annual and Projected Final Project Costs**

		2017	2018	2019	2020	2021	2022	2023	2024	Total
Work Stream	Cost Category	Actual	Estimate	Business Plan			Budget*	Budget*	Budget*	Program
Energy	Operating	3.2	4.8	2.4	5.4	2.1				246.9
Energy	Capital	-	0.6	26.7	28.1	25.7				
<b>Energy</b>	<b>Total</b>	<b>3.2</b>	<b>5.4</b>	<b>29.1</b>	<b>33.5</b>	<b>27.8</b>	-	-	-	
Capacity	Operating	1.6	5.2	4.7	1.5	2.2				
Capacity	Capital	-	-	11.3	15.2	15.1				
<b>Capacity</b>	<b>Total</b>	<b>1.6</b>	<b>5.2</b>	<b>16.0</b>	<b>16.7</b>	<b>17.3</b>	-	-	-	
General	Operating	3.1	4.9	4.6	5.3	5.3				
General	Capital	0.2	0.7	-	-	-				
<b>General</b>	<b>Total</b>	<b>3.3</b>	<b>5.6</b>	<b>4.6</b>	<b>5.3</b>	<b>5.3</b>	-	-	-	
MRP	Operating	7.9	14.9	11.7	12.2	9.6	8.0	7.0		
MRP	Capital	0.2	1.3	38.0	43.3	40.8	27.0	13.0		
<b>MRP</b>	<b>Total</b>	<b>8.1</b>	<b>16.2</b>	<b>49.7</b>	<b>55.5</b>	<b>50.4</b>	<b>35.0</b>	<b>20.0</b>	<b>12.0</b>	

\* Budget estimates are used for 2022 – 2024 and will be further refined after completion of the Business Case.

### Staffing Levels

The MRP staffing requirements include both incremental MRP core resources as well as MRP support resources from the IESO's core operations. A description of each of these resources is provided below.

- MRP Core Resources are resources assigned directly to the MRP, either through rotations from the IESO's core operations or external hires on temporary contracts.
- MRP Support resources are resources within the IESO's core operations whose roles include supporting various market development initiatives corporate wide, or are support function resources within core operations that are supporting the MRP, such as stakeholder engagement, communications, legal, market rules, finance, HR, and various other subject matter experts.

MRP resources for 2018 are shown in Table 10 below. Additional resources were added to the program in order to complete HLD within the current schedule, causing the staffing variance.

**Table 10: 2018 MRP Staffing**

Staff	2018 Average: Latest Estimate	2018 Average: Budget	Variance	2018 Dec 31st: Latest Estimate	2018 Dec 31st: Budget	Variance
<b>MRP Incremental Resources</b>						
Regular	51.0	43.0	8.0	62.0	52.0	10.0
Temporary	11.0	0.0	11.0	14.0	0.0	14.0
<b>MRP Incremental Resources Total</b>	<b>62.0</b>	<b>43.0</b>	<b>19.0</b>	<b>76.0</b>	<b>52.0</b>	<b>24.0</b>
<b>MRP Partial Resources Total</b>	<b>13.0</b>	<b>16.0</b>	<b>(3.0)</b>	<b>16.0</b>	<b>16.0</b>	<b>0.0</b>
<b>MRP Resources Total</b>	<b>75.0</b>	<b>59.0</b>	<b>16.0</b>	<b>92.0</b>	<b>68.0</b>	<b>24.0</b>

In 2019, the MRP is continuing its staffing efforts. Incremental staffing in 2019 is shown at the program level in Table 11, and by initiative in Table 12.

**Table 11: 2019 MRP Incremental Staffing by Work Stream**

	Regular	Temporary	Total
Energy	41.0	14.0	55.0
Capacity	36.0	19.0	55.0
General	11.0	4.0	15.0
<b>Total</b>	<b>88.0</b>	<b>37.0</b>	<b>125.0</b>

**Table 12: 2019 MRP Budgeted Resources by Work Stream**

	Incremental Resource	Shared Resource	Total
Energy	55.0	10.0	65.0
Capacity	55.0	5.0	60.0
General	15.0	6.0	21.0
<b>Total</b>	<b>125.0</b>	<b>21.0</b>	<b>146.0</b>

1 **Actual and Projected Cost Savings – on an Annual and Cumulative Basis**

2 Business case development has commenced following the publication of the Energy  
3 workstream HLDs. With the development of the business case, and approval by the IESO  
4 Board of Directors, the IESO will be better able to discuss the MRP's actual and projected  
5 cost savings, annually and cumulatively, by work stream. The business case is expected to  
6 be completed Q4 2019.

7 The benefits case, commissioned by the IESO in 2017 and prepared by The Brattle Group,  
8 provided a benefit-cost analysis of the MRP that identified significant quantifiable net  
9 benefits to Ontario even under the most conservative assumptions. The report outlined the  
10 quantifiable impacts of the MRP's workstreams that would yield expected gross efficiency  
11 benefits of hundreds of millions of dollars per year, which are projected to continue to  
12 increase and accrue in subsequent years. The report stated that the benefits of the MRP will  
13 pay back its implementation cost in just over a year and discussed how different market  
14 participants can expect to be impacted. The Brattle Group's benefits case is available on the  
15 IESO's website<sup>2</sup>.

16 **Actual Annual Achievement Against Plan**

17 Comparison of actual annual achievement against plan will be fully enabled in the IESO's  
18 2020 Revenue Requirement Submission through:

- 19
  - Comparison of budget and actual operating and capital costs by work stream, and;

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2 <sup>2</sup> <http://www.ieso.ca/-/media/Files/IESO/Document-Library/engage/me/Benefits-Case-Assessment-Market-Renewal-Project-Clean-20170420.pdf?la=en>

For the highlighted portions please refer to the updated evidence filed as Update on Status of Incremental Capacity Auction - Exhibit C, Tab 2, Schedule 2



- Quantification of the project performance measures of Cost Performance Index (“CPI”) and Schedule Performance Index (“SPI”) (available in the 2020 Revenue Requirement Submission for 2019).

#### **Baseline MRP Schedules and Budget**

The IESO’s baseline MRP schedules and budget were filed with the OEB on January 2, 2019 to complete the provisions of the 2018 Package Settlement. The baseline schedules and budget represent the planned cost and schedule of the project and are used as a standard against which actual performance is measured.

The baseline MRP schedules and budget form the foundation that will enable the MRP to track performance measures such as CPI and SPI on a go-forward basis, starting January 1, 2019. The IESO will be able to report on annual CPI and SPI for the MRP work performed in 2019, in the 2020 Revenue Requirement Submission.

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**UPDATE ON STATUS OF INCREMENTAL CAPACITY AUCTION**

On July 16, 2019, the IESO announced that it would cease to move forward with the Incremental Capacity Auction (ICA) high level design (HLD) published in March of 2019, but would proceed to implement enhancements to the Demand Response auction that will continue to evolve over time into an enduring auction mechanism. The revised approach reflects an update in the IESO's planning outlook which indicates that, over the next decade, there is enough energy to meet provincial demand and a limited need for additional capacity if existing Ontario resources are reacquired when their contracts expire. These limited capacity needs can be met through existing and available resources such as demand response, imports, generators coming off long-term contracts, uprates and energy efficiency.

Along with the limited capacity needs for Ontario in the future, the current path of the HLD had a lack of stakeholder support to proceed with detailed design. The first step in the revised approach was to stop further work on the HLD and detailed design for the ICA. The IESO will be meeting with stakeholders that were engaged in the HLD, to discuss their comments on the design elements of the ICA to determine how their feedback should be reflected in the IESO's plans going forward and which features from the HLD will support resource adequacy needs and inform changes to future capacity auction design in Ontario.

The IESO remains committed to providing open, transparent and competitive mechanisms for acquiring capacity and allowing a variety of resource types to compete. It will initiate an engagement with stakeholders on alternative approaches that could work in concert with auctions to meet capacity needs. The Capacity work stream will continue to support the development of options and tools to meet resource adequacy needs as well as auction enhancements to support an enduring auction. The revised approach allows the IESO to promote competition in a capacity auction market and through other mechanisms.

**2019 Capacity Forecast Operating and Capital Costs**

In latter 2019 and in 2020 and beyond, Capacity resources will be focused on design and engagement work related to addressing resource adequacy needs.

Operating expenses to support the Capacity work stream were budgeted at \$4.8 million and the current 2019 forecast is in line with budget. The operating expenses incurred to date by the Capacity work stream went into the development of the published ICA HLD<sup>1</sup> and the associated stakeholder engagement activities. The costs for the remainder of 2019 will include engaging with stakeholders involved in the ICA HLD on which features of the HLD are needed to support addressing resource adequacy needs and broader discussions on competitive procurement mechanisms.

In its capitalization policy, the IESO considers Public Sector Accounting Standards and the provisions in the Office of the Provincial Controller Division's Tangible Capital Assets Guideline. Generally, IESO projects have three phases: Initiation, Implementation and Closure. Capitalization begins in the Implementation project phase which includes detailed design. With the decision not to proceed with the detailed design stage of ICA, planned capitalization will not take place. Approximately \$0.5 million of the Capacity work stream capital costs spent prior to the revised approach and incurred in the first half of 2019 will be expensed as operating costs.

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<sup>1</sup><http://www.ieso.ca/en/Market-Renewal/High-Level-Designs/Incremental-Capacity-Auction-High-Level-Design>

<b>Table 1: 2019 Capacity Work Stream - Operating Budget &amp; Forecast</b>			
<b>Cost Category</b>	<b>2019 Budget</b>	<b>2019 Forecast</b>	<b>Variance</b>
Compensation & Benefits	3.5	3.6	0.1
Professional & Consulting	1.1	0.9	(0.2)
Operating & Administration	0.2	0.3	0.1
<b>Capacity Total</b>	<b>4.8</b>	<b>4.8</b>	<b>-</b>

1

2 **Table 2: 2019 Capacity Work Stream – Operating Expenses – Actual & Budget**

(\$ millions)	January 2019 – June 2019 Year to Date			Capacity Capital costs expensed as Operating	July 2019 - December 2019 Rest of Year		
	Actual	Budget	Variance	Forecast	Forecast	Budget	Variance
Compensation & Benefits	1.4	2.9	(1.5)	0.2	2.0	0.6	1.4
Professional & Consulting	0.3	0.7	(0.4)	0.2	0.4	0.4	-
Operating & Administration	-	0.1	(0.1)	0.1	0.2	0.1	0.1
<b>Total Operating Expenses</b>	<b>1.7</b>	<b>3.7</b>	<b>(2.0)</b>	<b>0.5</b>	<b>2.6</b>	<b>1.1</b>	<b>1.5</b>

3

4 Capacity work stream costs for the remainder of 2019 were predominantly budgeted as capital costs  
5 for the planned detailed design stage. As a result, the revised approach for the Capacity work  
6 stream creates a reduction of \$12 million of capital costs. Revised 2019 capital costs for the MRP are  
7 now \$26 million, compared to the original budgeted \$38 million.

<b>Table 3: 2019 Capacity Work Stream - Capital Budget &amp; Forecast</b>			
<b>Cost Category</b>	<b>2019 Budget</b>	<b>2019 Forecast</b>	<b>Variance</b>
Compensation & Benefits	7.0	0.0	(7.0)
Professional & Consulting	3.3	0.0	(3.3)
Operating & Administration	1.7	0.0	(1.7)
<b>Capacity Total</b>	<b>12.0</b>	<b>0.0</b>	<b>(12.0)</b>

1  
 2 The \$12 million reduction in capital budget for the Capacity work stream is due to the  
 3 cancellation of planned hiring that would have supported the detailed design phase.  
 4 Capacity incremental staffing resources were originally budgeted at 55 but are reduced to  
 5 27 as a result of the revised approach to the ICA. Resources will be gradually reduced  
 6 through the rest of the year. The IESO expects further reductions in resources into 2020.

<b>Table 4: 2019 Capacity Work Stream - Incremental Staffing</b>			
<b>Staffing</b>	<b>2019 Budget</b>	<b>2019 Forecast</b>	<b>Variance</b>
<b>Regular</b>	36.0	18.0	(18.0)
<b>Temporary</b>	19.0	9.0	(10.0)
<b>Total</b>	<b>55.0</b>	<b>27.0</b>	<b>(28.0)</b>

<b>Table 5: 2019 Capacity Work Stream - Budgeted Resources</b>			
<b>Capacity</b>	<b>2019 Budget</b>	<b>2019 Forecast</b>	<b>Variance</b>
<b>Incremental Resource</b>	55.0	27.0	(28.0)
<b>Shared Resource</b>	5.0	2.0	(3.0)
<b>Total</b>	<b>60.0</b>	<b>29.0</b>	<b>(31.0)</b>

1

## 2    **MRP Business Case**

3    Given the revised approach to the Capacity work stream, the MRP Business Case will focus  
4    exclusively on assessing the net benefits of the new energy market as defined in the Energy  
5    HLDs. Analysis of the future benefits of MRP, as well as the total annual and projected  
6    MRP budget will be further refined through the MRP Business Case and the IESO's 2020-  
7    2022 Business Plan. The IESO will aim to complete the Business Case in Q4 2019 for IESO  
8    Board approval. More information on the continued engagement for the MRP Business  
9    Case can be found on the MRP Update Meeting webpage [here](#).

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