VECC INTERROGATORY 10

5.0 Commitments from Previous OEB Decisions

INTERROGATORY

5.1 Reference C-1-1

a) Please update the 2018 scorecard to show year-end actual results.

RESPONSE

a) The IESO's 2019 Regulatory Scorecard updated with year-end actual results is provided as Attachment 1 to this response.

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VECC INTERROGATORY 11

5.0 Commitments from Previous OEB Decisions

INTERROGATORY

5.2 Reference: C-1-1, pg. 1

a) The IESO explains that it is proposing to replace the current Stakeholder Satisfaction Measure with a more focused measure. Please explain how this new metric will be measured and when it will be implemented.

RESPONSE

a) The current stakeholder satisfaction benchmark is comprised of a basket of metrics for several stakeholder categories as found in the IESO Stakeholder Satisfaction Survey. The current benchmark is so broad it is difficult to inform an effective action plan to increase satisfaction with IESO engagement.

The IESO plans to change the benchmark to a more focused measure in 2019, specifically, meeting or exceeding stakeholder expectations of their engagement with the IESO. This metric can be measured using a single question from the annual IESO Stakeholder Satisfaction Survey. The 2019 goal will be to maintain the 2018 score, i.e. at least 80 per cent of stakeholders indicate that their experience with IESO's engagement meets or exceeds their expectations.

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ENERGY PROBE INTERROGATORY 14

Issue 5.0 Commitments from Previous OEB Decisions

INTERROGATORY

EP-14

Reference: Exhibit B, Tab 1, Schedule 1, Page 6;

Preamble: *"In addition, through the Package Settlement the IESO agreed to apply the same cost allocation principles used for the SME to the Market Assessment and Compliance Division's enforcement ("MACD Enforcement") activities. While these activities were not included in the BDR Report, it was agreed that they are of a similar type of non-fees funded activity of the IESO. Therefore, costs the IESO incurs for work and staff time in support of MACD Enforcement will be charged to MACD Enforcement in the same manner as such work is done to support the SME is charged to the SME."*

a) Specifically for SME and MRP please provide details on how the 2019 costs are allocated, including non-core functions and management/governance costs?

b) Who pays these costs, i.e. what is the allocation to users?

RESPONSE

a) The purpose of the cost allocation study was to identify cost allocation principles to non-fees funded IESO activities. This includes the SME. The MRP is a fees-funded IESO activity and is excluded from the proposed cost allocation principles.

b) For the SME, the funding for its activity comes from the Smart Metering Charge allocated to LDCs.

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ENERGY PROBE INTERROGATORY 15

Issue 5.0 Commitments from Previous OEB Decisions

INTERROGATORY

EP-15

Reference: Exhibit A, Tab 3, Schedule 1, Pages 8 of 42, MACD

Preamble: "*As of December 31, 2018, the IESO was managing more than 33,700 electricity resource contracts, representing over 26,700 MW of capacity, with annual contract settlements in excess of $7 billion. Ongoing administration of these contracts involves enforcing contract provisions, negotiating, finalizing and implementing amendments, and resolving commercial disputes, as well as building and maintaining models for calculating and issuing contract payments."*

a) Please indicate if the 2018, MACD activity in 20 significant investigations, audits and payment recoveries of matters in excess of $200 million, and impact to reliability is typical or atypical related to the statement that "In the previous three years, MACD has returned more than $120 million to the market through enforcement actions".

b) Please provide a high-level summary of the 20 MACD 2018 contract administration activities and indicate the outlook for the 2019 activities.

c) What were the costs and benefits for the historic years and forecast for 2019?

RESPONSE

a) The $120 million return of enforcement-related money represents an atypical payment amount, as it relates to a historical pattern from market opening in 2002, and that is unlikely to repeat, including as an example the initial audits of the GCG ("Generator Cost Guarantee") program. The $200 million represents an exposure analysis which reflects the total funds being assessed as part of the residual audits of GCG audit program and the maximium monetary impact of potential breaches of market rules currently under investigation. In reality, as audits and investigations progress, the final audit and investigation determinations will ultimately be less than the intial monetary amounts under an audit/investigation assessment.

b) To preserve the integrity of MACD enforcement and compliance actions, the IESO does not disclose information on active investigations.

c) Please see the response to OEB Staff Interrogatory 10, at Exhibit I, Tab 1.3, Schedule 1.10.

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OEB STAFF INTERROGATORY 19

5.0 Commitments from Previous OEB Decisions

5.1 Is the IESO's 2019 Regulatory Scorecard appropriate?

Staff IR #19

INTERROGATORY

Reference: Exhibit C-1-1, Attachment 1 – 2019 IESO Regulatory Scorecard

Preamble:

Under the Performance Category Stakeholder Satisfaction, the IESO modified the Measure by adding, "meets or exceeds expectation" and added the Performance Category of "Non-compliance Detection".

Questions:

a) Why is the IESO introducing these changes to the Performance Categories at this time?
b) Given the IESO has met the bulk of its targets in 2018, is there a need to modify/update the proposed targets for 2019?
c) Should the Measure under the Performance Category for Conservation be updated along with the targets to reflect recent changes and modifications to Conservation programs such as Green Ontario Fund?
d) Should the Measure under the Performance Category for Planning Reliability be updated along with the targets to reflect the changes to the initiatives under the Long Term Energy Plan?

RESPONSE

a) The current stakeholder satisfaction benchmark is comprised of a basket of metrics for several stakeholder categories as found in the IESO Stakeholder Satisfaction Survey. The current benchmark is so broad it is difficult to inform an effective action plan to increase satisfaction with IESO engagement. As such, the new benchmark is a more focused

measure, specifically, *meeting or exceeding stakeholder expectations of their engagement with the IESO.* This metric can be measured using a single question from the annual IESO Stakeholder Satisfaction Survey. For 2019, the goal will be to maintain the 2018 score, i.e. at least 80 per cent of stakeholders indicate that their experience with IESO's engagement meets or exceeds their expectations.

As part of the obligations from the 2018 Package Settlement, the IESO proposed a new measure related to its market assessment and compliance activities. The new measure fulfills the commitment set out in the 2018 Package Settlement and underlines the IESO's commitment to its role in governing and monitoring the market.

b) The IESO has made an effort to set 2019 targets that are realistic and attainable. As the IESO gains experience with the Scorecard and the measures evolve, the IESO will continue to refine the targets in future years.

c) The IESO is currently reviewing its corporate performance measures related to conservation given the March 21, 2019 directive from the Ministry of Energy, Northern Development and Mines which terminated the Conservation First Framework and Industrial Accelerator Program and initiated the 2019-2020 Interim Framework of IESO centrally delivered CDM programs. Revisions are expected once the IESO's CDM plan and interim frameworks targets are finalized.

d) The 2017 Long-Term Energy Plan measure on the Regulatory Scorecard remains to be a relevant measure, as many of the initiatives remain underway, and will continue throughout 2019. The key initiatives for 2019 are described in the MDA section of the Regulatory Scorecard.

OEB STAFF INTERROGATORY 20

5.0 Commitments from Previous OEB Decisions

5.1 Is the IESO's 2019 Regulatory Scorecard appropriate?

Staff IR #20

INTERROGATORY

Reference: Exhibit C-1-1. Pg. 2 of 2

Preamble:

At C-1-1. Pg. 2 of 2, the IESO states:

> "In 2019, the IESO will target 80% of the highest impact market events are triaged within 14 days of observation, ensuring highest impact market events are addressed in a timely manner."

Questions:

a) Please describe the process engaged by the IESO to develop the operational effectiveness target.
   i. How did the IESO determine that the target is reasonable? As an example, was the target informed by a benchmarking process?

RESPONSE

a) Development of the operational effectiveness target was primarily informed by a jurisdictional analysis of comparative enforcement and compliance organizations. The IESO (MACD) reviewed Performance Measurement targets at other regulators, such as the Competition Bureau Canada, the Ontario Securities Commission, and the Federal Energy Regulatory Commission. The IESO (MACD) also consulted the IESO's Board of Directors and Enterprise Risk Management team.

   i) The target was selected following a process comprised of a jurisdictional scan, assessment of industry practices and consideration of the MACD mandate. The

IESO largely developed the triage process as part of its ongoing process improvement initiative, relying on experienced employees to determine appropriate steps and timelines. Based on MACD's own assessment, as part of its ongoing process improvement efforts, 14 days was determined as an achievable and effective timeline to enable remediation of important issues. The 80% target was established, recognizing the performance measurement metric is new and due to the uncertainty arising from the highly variable complexity of impactful market events.

ENERGY PROBE INTERROGATORY 16

Issue 5.1 Is the IESO's 2019 Regulatory Scorecard appropriate?

INTERROGATORY

EP-16

Reference: EB-2017-0143, 2018 Scorecard

Preamble: The referenced IESO Scorecard identifies Implementation of the Long Term Energy Plan ("LTEP")

a) Please identify the number of staff assigned to the LTEP initiative in 2018 and 2019.

b) The IESO's 2018 Scorecard identifies that six key LTEP initiatives were to be completed by year end 2018:

c) Please provide and discuss the status of each of these six initiatives

RESPONSE

Note when responding that there are questions a) and b) only.

a) As indicated in response to OEB Staff Interrogatory 18 (EB-2018-0143), the IESO's 2018-2020 Business Plan allocated 5.25 incremental FTEs in 2018 for the LTEP initiatives. The IESO's 2019-2021 Business plans allocated 2 incremental FTEs in 2019 for the LTEP initiatives. In addition to the incremental resources, implementation of the initiatives was also supported by core staff as part of their regular core functional duties. The breakdown of incremental staff is not available by initiative.

b) Please see the response to part c) below.

c) Please find the status of the 2018 LTEP initiatives, described as part of the Regulatory Scorecard, in the table below.

2018 Initiative		Status
1	Development of options to improve First Nation and Metis energy support programs.	Complete. Options for First Nation and Métis energy support programs

2018 Initiative		Status
		presented through a webinar hosted on March 26, 2018.
2	Report produced on Indigenous Conservation programming.	Complete. Indigenous Conservation Programming Report posted to IESO website on March 29, 2018.
3	Develop a program to support renewable distributed generation demonstration projects - By the end of 2018, engage on investigation topics, draft project selection and funding agreement documents for engagement, issue call for first investigation topic and announce successful projects. This process may continue into 2019 with further investigation topics.	Refer to the response to OSEA IR 4.
4	Identify potential obstacles to fair competition for energy storage and where appropriate, propose mitigation strategies - By the end of 2018, engage to identify obstacles and develop mitigation strategies on obstacles that are found to be inappropriate, report on obstacles and mitigation strategies.	Complete. Report published on the IESO website on December 19, 2018.[1]
5	Identify options for pilot projects that evaluate using electricity to create hydrogen - By the end of 2018, undertake market research, draft and issue a request for expression of interest and identify options for pilot projects.	Refer to the response to OSEA IR 7.
6	Development of a coordinated cost-effective, long-term approach to replacing transmission assets at end-of-life - By the end of 2018, finalize a process for integration into bulk and regional planning processes.	The final draft of the process has been completed and presented to stakeholders for comment. The process will be finalized and published in Q2, 2019.[2]

1

[1] Additional information is available at: http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Energy-Storage-Advisory-Group
[2] Additional information is available at: http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Transmission-Asset-End-of-Life-Asset-Replacement-Information-Process

ENERGY PROBE INTERROGATORY 17

Issue 5.1 Is the IESO's 2019 Regulatory Scorecard appropriate?

INTERROGATORY

EP-17

References.: Exhibit A, Tab 2, Schedule 2, Page 20, CPM 10.1; Exhibit C, Tab 1, Schedule 1, Page 1

Preamble: *"The IESO's 2019 Regulatory Scorecard ("Scorecard") is included as Attachment 1 to this Exhibit. The Scorecard has been updated to reflect 2018 actual values for each of the measures, as well as 2019 targets."*

a) Why does the evidence (reference above) not appear to include the OEB Regulatory Scorecard for 2019? Please file a copy.

b) How is customer satisfaction measured?

c) What are the conservation targets for 2019-20? Are they the same as per the LTEP or changed? If they are changed please provide the revised targets.

RESPONSE

a) Please see the response to VECC Interrogatory 10, at Exhibit I, Tab 5.0, Schedule 3.10.

b) Please see the response to OEB Staff Interrogatory 19 a), at Exhibit I, Tab 5.1, Schedule 1.19.

c) Please see the response to BOMA Interrogatory 18 a), at Exhibit I, Tab 0, Schedule 2.18.

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OSEA INTERROGATORY 1

(ISSUE 5.1) OSEA IR 1

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1

Preamble: In the Explanation of Scorecard Measures tab of the 2019 IESO Regulatory Scorecard, the IESO states "Engaging stakeholders and communities is an integral part of the IESO decision-making process – helping transform the sector for the benefit of all. As a result, the IESO has an extensive stakeholder engagement program reaching out to communities, market participants, sector stakeholders and the public at large."

a) As part of this engagement program, has the IESO engaged with small generators to inquire about and understand how the IESO may assist small generators to implement more distributed energy resources?

b) If yes, please provide details of IESO's engagement with small generators.

RESPONSE

a) The IESO uses a variety of approaches to appeal to our broad stakeholder base, including small generators. This includes a mix of web-based discussions and in-person discussions. The integration of DERs is being examined through several active engagements of which small generators are welcome to participate in.

b) The Innovation Roadmap engagement will establish priorities for learning, capability building and the removal of barriers within IESO's scope of accountability to the innovation of others in order to support improved system reliability, cost effectiveness and efficiency, and other benefits for the people of Ontario. The roadmap will be supported by a multi-year plan to prioritize, focus and coordinate IESO's work with others to address shared goals for research and development to support grid modernization. Preparing for an increase in DER deployment and exploring new participation models for DERs are among the areas of focus. Small generators have participated in this engagement to date and are encouraged to continue their participation.

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OSEA INTERROGATORY 2

(ISSUE 5.1) OSEA IR 2

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1

Preamble: In the 2019 IESO Regulatory Scorecard, the IESO mandates a target of 8.7 terawatt-hours (TWh) of energy savings through the Conservation first Framework (CFF) and Industrial Accelerator Program by 2020. The IESO also states in the Scorecard that the cumulative 2019 target is 7.25 TWh.

a) Please advise how much under budget the IESO currently is to-date for the CFF and Industrial Accelerator Program.

b) Please provide details about how the IESO plans to meet the remainder of its 2020 TWh target.

c) Please advise if IESO is projecting to spend the total budget for Conservation First Framework programs for 2019? 2020?

d) Given the recent announcement by the Provincial Government that some CDM programming will be transferred from LDCs to be administered and delivered now by the IESO:

   i. Does the IESO have an expectation about the timing of this redistribution of CDM administration/delivery from LDCs to the IESO?

   ii. Does the IESO expect that this will impact the IESO's expenditures and revenue requirements for 2019? If yes, please explain how. If not, please explain why not.

   iii. What work is the IESO doing to prepare for this change?

RESPONSE

a) The March 21, 2019 directive terminated the Conservation First Framework (CFF) and Industrial Accelerator Program (IAP). Only existing contractual commitments will be honored, and therefore the total budget for the CFF and IAP will not be expended. As communicated by the Minister, the termination of the CFF and IAP, and the initiation of

the Interim Framework will result in an overall net reduction in costs to the ratepayer of $442 million over 3 years.

From January 1, 2015 to December 31, 2018, a total of $1.18 billion has been spent on the CFF and IAP.

b) The March 21, 2019 directive terminated the Conservation First Framework and Industrial Accelerator Program. The IESO is currently developing a CDM plan for the interim framework to be submitted to the Ministry by end of April and posted publically thereafter. Performance targets for 2019-2020 interim framework will be developed and reported against following the submission of the CDM plan.

c) The March 21, 2019 directive terminated the Conservation First Framework (CFF) and Industrial Accelerator Program (IAP). Only existing contractual commitments will be honored, and therefore the total planned budget for the CFF and IAP will not be expended. As communicated by the Minister, the termination of the CFF and IA, and the initiation of the Interim Framework will result in an overall net reduction in costs to the ratepayer of $442 million over the next three years.

d)

i. LDCs will cease delivering CDM program as of March 31, 2019, as per the March 21, 2019 directive. The LDCs will close out current commitments with customers through an approved CFF wind down budget from the IESO and per the IESO CFF Wind Down Guidelines. As of April 1, 2019, the IESO has begun delivery of the Interim Framework, as outlined in the directive.

ii. The will be no implications for IESO's staffing levels and/or operation costs related to the IESO's revenue requirement related to Conservation Demand Management as a result of the directives given that costs associated with the 2019-2020 Interim Framework will continue to be recovered from the Global Adjustment Mechanism.

iii. As per the directive, the IESO began delivering the Interim Framework as of April 1, 2019. The IESO is leveraging existing service provider contracts to manage the transition and is initiating competitive procurements of new service providers to support the delivery of the Interim Framework.

OSEA INTERROGATORY 3

(ISSUE 5.1) OSEA IR 3

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1 (Management Discussion and Analysis); Exhibit A, Tab 3, Schedule 1 (2018 Annual Report)

Preamble: In the 2019 IESO Regulatory Scorecard, the IESO identifies the following performance measure: "Key initiatives from the 2017 Long-Term Energy Plan are progressing on time and budget". In the Management Discussion and Analysis Tab of the Scorecard, the IESO lists its initiatives from the 2017 Long Term Energy Plan. Key Initiative 1 for 2018 is: "Development of options to improve First Nation and Métis energy support programs."

In the 2018 Annual Report, the IESO states that it hosted a First Nations Energy Symposium in 2018.

a) What options has the IESO developed to date to improve First Nation and Métis energy support programs?

b) Has the IESO commenced pilot study/studies to assess options to meet this key initiative?

   i. If so, what progress has the IESO made in its pilot study/studies?

   ii. If so, are there any preliminary results?

c) Please provide details of the key outcomes and results from the First Nations Energy Symposium in 2018, and any action items.

RESPONSE

a) The IESO continuously receives informal feedback from Indigenous groups through program delivery, and through engagements lead by the IESO's First Nation and Métis Relations business unit. The IESO has also formally engaged with Indigenous groups to get feedback on Energy Support Programs. Following the 2017 Indigenous Community Energy Symposium, the IESO held webinars in spring 2018 to seek input from First Nation and Métis communities and organizations on how the IESO could improve the Energy Support Programs. Based on all of the feedback received from Indigenous

groups, the IESO made adjustments to the Energy Support Programs in May 2018 to better align them with community needs and interests.

b) No. As noted in the response to question a), the IESO amended the Energy Support Programs in May 2018 based on formal and informal feedback received from Indigenous groups.

c) The 2018 First Nations Energy Symposium summary is provided as Attachment 1 to this exhibit and is also publicly available on the IESO website at http://www.ieso.ca/en/Get-Involved/Indigenous-Relations/2018-First-Nations-Energy-Symposium.

First Nations Energy Symposium
Post-Symposium Summary

March 2019

ieso
Connecting Today.
Powering Tomorrow.

The First Nations Energy Symposium is an integral element of the IESO's engagement with Indigenous communities. It is intended to bring together representatives from First Nations communities and organizations across Ontario so they can learn about opportunities in Ontario's electricity sector; identify and overcome barriers to economic and social development; and share their experience, expertise and ideas related to energy matters.

The impacts of accessible and affordable energy go well beyond simply heating schools, chilling arenas, powering devices, lighting businesses and other familiar uses. Instead, energy can power change. A reliable, sustainable electricity system can alter the trajectory of First Nations communities. It can drive economic growth and deliver meaningful improvements in other areas, including health and safety, community development, education and capacity, and environmental performance.

Building on the success of the previous year's event, the 2018 First Nations Energy Symposium attracted 248 attendees from 80 First Nation communities, tribal councils and Indigenous organizations as well as 28 youth representatives. Together, these groups created an environment where successes were celebrated, learnings were shared, relationships were built and economic progress for First Nation communities was prioritized.

Survey Says...

The IESO conducted a post-Symposium survey, which showed the following:

- **97%** of respondents were either satisfied or very satisfied with the Symposium
- **86%** of respondents found the quality of Symposium presentations either good or very good

These were important conversations, and the IESO thanks all attendees for their passion and their engagement. Symposium participants contributed to an important dialogue on how the IESO can work with First Nation communities and organizations to support community transformation through energy.

A number of key themes and observations emerged over the course of the Symposium:

Community-led energy projects can create a stronger future for First Nations

- Energy projects have the potential to transform Indigenous communities and deliver improved economic, environmental and social outcomes
- Indigenous communities have an important role to play in the electricity planning process in Ontario – not just at the local level but at the regional and provincial levels as well
- One of the paths to true economic reconciliation and wealth creation is through procurement of goods and services from Indigenous-owned companies
- Equity ownership in energy projects is an important contributor to long-term, sustainable economic development in First Nation communities
- A clean energy future should integrate community values, traditions, principles and knowledge
- Community-based decision-making and community-led priority setting should be respected when non-Indigenous project developers are considering partnerships with First Nations
- Among many Indigenous people, there is a sacred responsibility to protect the land, water, air and all life found there – considerations that should be prioritized for an energy project to proceed
- When combined with renewable generation, enabling technologies such as energy storage and smart control systems have the potential to improve reliability, reduce consumption of diesel fuel and facilitate economic and population growth

WHAT WE HEARD:

"Presentations and workshops allowed me to interface with other First Nation reps to see what challenges are similar and different and how to move forward with that information."

WHAT WE HEARD:

"I liked the opportunity to talk to IESO staff and make connections with potential partners."

Fort Severn invests in sustainability and resilience

An innovative energy project is catalyzing change in Fort Severn, the northernmost community in Ontario. With more than $500,000 in funding from the IESO's Indigenous Energy Support Programs, the community is building a 300-kilowatt combined ground-mount and rooftop solar project that has the potential to reduce reliance on diesel fuel by up to 20 per cent when fully implemented.

To further enhance reliability and help the community achieve its environmental objectives, this multi-phase project will eventually integrate battery storage and optimization measures, making for a flexible and robust microgrid that will serve the roughly 500 individuals who call Fort Severn home.

Energy production is only one aspect of this ground-breaking initiative. "This project is a game-changer for our community," said Chief Paul Burke, who spoke about the project at the 2018 First Nations Energy Symposium. "In addition to enhancing the reliability of our power system, it has already created jobs and opportunities for our members. I hope our project can serve as a model for other remote, diesel-reliant communities that want a more sustainable future."

Building bridges, removing barriers key to delivering results

- To be effective and deliver desired results, engagement with Indigenous communities must be open, authentic, meaningful and acted upon
- Business, government and Indigenous communities need to understand each other's policies, processes and priorities in order for the relationship to deliver results that benefit all partners
- Greater transparency and coordination among the different levels of government will result in more efficient decision-making, more cost-effective projects and more impactful results
- Building energy awareness, understanding and support among First Nation community members requires a commitment to active, long-term communication and engagement by project partners

WHAT WE HEARD:

"Networking is very valuable. I appreciate the time given for First Nations to directly connect with the IESO."

WHAT WE HEARD:

"It was my first time there so I was impressed with content and support from IESO staff."

IESO launches new Suite of Energy Support Programs

In addition to bringing people together to identify opportunities and celebrate successes, the 2017 Symposium enabled attendees to provide valuable feedback to the IESO on its portfolio of Indigenous Energy Support Programs. Drawing heavily on what was heard, the IESO unveiled an enhanced suite of programs in 2018. These funding programs promote broad participation in Ontario's energy sector by supporting community energy planning and renewable energy project development, as well as building energy knowledge and awareness, and skills related to energy projects.

Since these programs were introduced in 2009, the IESO has invested more than $24 million in Indigenous-led projects in Ontario.

For further information about the programs, including eligibility requirements, please visit our Indigenous Funding Programs page.

Building capacity through community energy champions

In direct response to community-led recommendations to improve the Indigenous Energy Support Programs, in 2018 the IESO launched the Community Energy Champion (CEC) initiative. The objective of this innovative new program is to support First Nation or Métis communities and organizations in planning, implementing and evaluating energy-related priorities by providing funding to hire a designated, local community energy champion.

Successful applicants are eligible to receive up to $50,000 per year for three years, which will enable skills development and continuity of local projects. CEC funding is awarded based on the extent to which an application addresses community energy needs and the degree to which it meets specific application review criteria, which include strategic fit; community benefit, need and support; financial feasibility; and project purpose and expected outcomes.

While CEC applications are accepted on an ongoing basis, 31 applications were received in 2018, with total support requested in excess of $4.5 million. This funding will help enable community members to acquire technical skills that support personal and community growth.

For further information, please visit the IESO's Community Energy Champion Program page.

Planning underway for 2019 Symposium

Consistent with feedback the IESO received after the 2018 event, this year's First Nations Energy Symposium will feature a greater emphasis on capacity building and is expected to include more skills-based presentations that will enable attendees to learn how to leverage community energy projects to transform local economies – and lives.

The dates of the fall 2019 Symposium will be confirmed in the coming weeks. Among the highlights will be an opportunity to hear from the first group of leaders funded through the IESO's Community Energy Champions program. They will be given a platform to share their experiences, insights and learnings, so as to inform and inspire other community leaders focused on energy projects.

The IESO will also host another interactive session for Energy Support Program applicants to meet with program staff to review and refine applications.

WHAT WE HEARD:

"Great conference. Continue to build on ways to facilitate opportunities for First Nation communities and people to move forward."

Community capacity building supports skills development and job creation

- It costs money to create a skilled Indigenous workforce but the long-term benefits – to Canada, the community and the individual – justify the investment
- Opportunities for youth should be prioritized so they can see the advantages of seeking local employment, which contributes to the economic prospects of their communities

Investing in change: Indigenous Energy Support Programs and other sources of capital

- Access to capital is still a barrier to the development of many energy projects in First Nation communities and can be an impediment to self-reliance
- The IESO's Indigenous Energy Support Programs play an important role in enabling and encouraging economic development, financial independence and energy resilience

Resources

Community Energy Resources and Funding

IESO Programs

Community Energy Champion Program:
ieso.ca/en/Get-Involved/Funding-Programs/Community-Energy-Champion-Program/CEC-Overview

Education and Capacity Building Program:
ieso.ca/Get-Involved/Funding-Programs/Education-and-Capacity-Building-Program/Overview

Funding Programs:
ieso.ca/Get-Involved/Funding-Programs

Indigenous Community Energy Plan Program:
ieso.ca/Get-Involved/Funding-Programs/Indigenous-Community-Energy-Plan-Program/ICEP-Overview

Indigenous Energy Projects Program:
ieso.ca/Get-Involved/Funding-Programs/Indigenous-Energy-Projects-Program/IEP-Overview

Save on Energy: Home Assistance Program:
saveonenergy.ca/en/For-Your-Home/Low-Income-Help

Transmission Procurement Process:
ieso.ca/en/sector-participants/engagement-initiatives/engagements/development-of-an-ieso-competitive-transmission-procurement-process

Other Programs

Conservation on the Coast:
conservationonthecoast.com

First Nations Conservation Program:
hydroone.com/saving-money-and-energy/residential/first-nations-conservation-program

Northern Ontario Energy Credit (NOEC):
https://www.canada.ca/en/revenue-agency/services/child-family-benefits/provincial-territorial-programs/2019-northern-ontario-energy-credit-noec-calculation-sheet-single-individuals-who-have-no-children.html

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OSEA INTERROGATORY 4

(ISSUE 5.1) OSEA IR 4

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1 (Management Discussion and Analysis)

Preamble: In the 2019 IESO Regulatory Scorecard, the IESO identifies the following performance measure: "Key initiatives from the 2017 Long-Term Energy Plan are progressing on time and budget". In the Management Discussion and Analysis Tab of the 2019 IESO Regulatory Scorecard, the IESO lists its initiatives from the 2017 Long Term Energy Plan.

Key Initiative 3 for 2018 is to "Develop a program to support renewable distributed generation demonstration projects - By the end of 2018, engage on investigation topics, draft project selection and funding agreement documents for engagement, issue call for first investigation topic and announce successful projects. This process may continue into 2019 with further investigation topics."

a) The IESO notes that this initiative was re-prioritized in 2018.

   i. When does the IESO intend on completing this initiative?

   ii. Why was this initiative re-prioritized?

b) How much progress has IESO made in developing a program(s) to support renewable distributed generation demonstration projects?

c) Has the IESO taken any of the steps listed above, i.e. engaged on investigation topics, drafted project selection and funding agreement documents for engagement, issued a call for first investigation topic and announced successful projects?

   i. If so, what are the results?

   ii. If not, why not? When does IESO expect to complete the steps listed above?

d) Describe the investigation topics and successful projects resulting from this program to date.

e) What investigation topics does the IESO intend to pursue in 2019?

f) In its 2019-2021 Business Plan, the IESO states that one of its annual corporate targets is "Implementation of the emerging technology, research and development plan for electricity sector innovation for work streams, including distributed energy resources, storage and data access, resource efficiency (e.g., automation, artificial intelligence) and achieve milestones identified for 2019".

i. Please advise of the progress that IESO has made to-date in implementing the research and development plan for distributed energy resources and energy storage.

RESPONSE

a) i. & ii. The development of renewable distributed generation demonstration projects has been put on hold while the IESO focuses its efforts on a number of priority initiatives, including the Market Renewal Program (MRP) which will improve the efficiency of the IESO administered markets and the Transitional Capacity Auction which will provide a mechanism to meet Ontario's incremental capacity needs prior to implementation of the MRP. The IESO does not currently have a timeline for the completion of this initiative. The IESO does note that many of the research objectives previously articulated for the proposed Renewable Distributed Generation Integration (RDGI) Fund could be achieved through the existing Grid Innovation Fund (GIF) administered by IESO. Other sources of funding (e.g. from the federal government) may also be accessible to achieve the same objectives.

For more information on the GIF please see the response to AMPCO Interrogatory 7, at Exhibit I, Tab 1.1, Schedule 13.07.

b) c) i., ii. & d)

In 2018, the IESO began a process to explore Virtual Net Metering pilots under the RDGI Fund. The IESO engaged with stakeholders on investigation topics in a webinar on March 29, 2018 with feedback to these questions posted on April 12, 2018. The IESO also developed a number of forms related to Virtual Net Metering pilots (including: Application Guide, Prescribed forms for participation, Contribution Agreement and Application Form) and released Application Guidelines on May 4, 2018.

The IESO will not be proceeding with Virtual Net Metering pilots, however, as the relevant regulations do not enable Virtual Net Metering as had previously been contemplated. Because the Virtual Net Metering pilots have not proceeded and because the IESO is not currently pursuing other renewable distributed generation demonstration projects, no successful projects have been announced. The IESO does not

currently have a timeline for completion of the development of a program to support renewable distributed generation demonstration projects.

e) The IESO does not have plans to pursue additional investigation topics in 2019.

f) i. The IESO has developed an Innovation Roadmap and associated 2019-2021 work plan to prioritize, focus and coordinate IESO's work with others to address shared goals for research and development to maintain electricity system affordabiltiy and reliablity in light of significant technological, economic and consumer change. Many of the initiatives within the Roadmap are related to the development of white papers and demonstration projects focused on the evolving role for distributed energy resources and storage resources. The final version of the Innovation Roadmap will be published in May, 2019. A preliminary list of initiatives to be included in the Innovation Roadmap was provided in a presentation to the IESO's Stakeholder Advisory Committee on February 14, 2019. Please also see the response to AMPCO Interrogatory 7.

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OSEA INTERROGATORY 5

(ISSUE 5.1) OSEA IR 5

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1 (MDA)

Preamble: In the Management Discussion and Analysis Tab of the 2019 IESO Regulatory Scorecard, the IESO lists its initiatives from the 2017 Long Term Energy Plan.

Key Initiative 2 for 2018 is "Report produced on Indigenous Conservation programming."

a) Please produce this report and provide any subsequent updates to the IESO's work completed relating to this Key Initiative 2 since this report was published.

RESPONSE

a) The report is provided as Attachment 1 to this response[1].

Since the publication of this report, the IESO has received government direction to fund and deliver conservation programs targeting on-reserve First Nations communities. The direction is attached as Attachment 2 to this response[2].

[1] The report is publicly available on the IESO website at: http://www.ieso.ca/-/media/Files/IESO/Document-Library/indigenous-relations/Indigenous-Conservation-Programming-A-New-Approach-March2018.pdf?la=en

[2] The direction is also publicly available on the IESO website at: http://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives

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MARCH 2018

Indigenous Conservation Programming: A New Approach

Report on Energy Conservation for First Nations and Métis in Ontario

ieso
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Powering Tomorrow.

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Message from Terry Young, Vice-President, Policy, Engagement and Innovation

The Latin roots of the verb "to conserve" combine two elements: *con*, meaning together, and *servare*, meaning to keep. Conservation can bring people and communities together. It embodies the idea of preservation and protection – generally of a valuable resource. Without a doubt, energy is one of those valuable resources.

It is the bedrock on which a modern society is built. It powers our homes and businesses, our schools and cultural centres, our hospitals and arenas. It powers a safe, healthy and prosperous society.

When the Minister of Energy directed the IESO to prepare a report on options to improve conservation programs, and access to programs, for First Nations and Métis, as part of the *2017 Long-Term Energy Plan*, the IESO initiated a broad engagement process. It was important to gather information to better understand how well Ontario's energy conservation programs are serving these groups. As part of that research, the IESO wanted to understand what energy means to Indigenous people, organizations and communities.

What became clear is that energy represents opportunity – the opportunity to enjoy warm and comfortable homes, develop and expand businesses, acquire and apply transferrable skills, generate new sources of revenue and protect the environment for future generations. Energy also connects people and communities.

During the engagement process, the IESO learned that many First Nations communities have embraced energy conservation and community energy planning, but others are not as far along the continuum. We also heard that Métis citizens, particularly seniors, are struggling with the cost of energy and are not aware of the conservation opportunities available to them.

The IESO is committed to working with First Nations and Métis to enable them to participate more fully in Ontario's energy sector. In the coming months and over the longer term, the IESO will be working to refine existing programs and develop new ones that will be better aligned with community-identified needs, priorities and objectives. The IESO will continue to engage First Nations and Métis people regularly to ensure programs are accessible and effective. Indigenous successes will be celebrated so that other communities and organizations can learn from their peers.

The IESO is grateful to everyone who took part in a meeting, completed a survey, participated in a webinar, attended the Indigenous Community Energy Symposium, or provided feedback through some other means. You shared your views and ideas with great candour, which will enable the IESO to take concrete, meaningful action to improve energy-related outcomes in Ontario's Indigenous communities.

Through this report, the IESO will share its findings and its recommendations with the Ministry of Energy, with a view to developing ideas and options that build on a shared commitment to change.

I hope you will keep in touch. Together, we will help to power a reliable and sustainable energy future for First Nations and Métis across the province. You can reach me at terry.young@ieso.ca or 416-506-2832.

Chi miigwetch; Nya: weh; Marsi; Merci; Thank you.

Terry Young

Executive Summary

Conservation has proven to be a low-cost and efficient way of reducing the province's longer-term energy needs as well as the need for costly investments in new generation and transmission infrastructure.

This report was developed in response to the Minister of Energy's Direction, reflected in the *2017 Long-Term Energy Plan: Delivering Fairness and Choice*, which instructs the Independent Electricity System Operator (IESO) to prepare a report on options to improve conservation programming, and access to programs, for Ontario First Nations and Métis, including those communities served by Independent Power Authorities (IPAs).

In response to the Minister's Direction, the IESO undertook the following:

- Reviewed various community energy plans funded through the Aboriginal Community Energy Plan (ACEP) program, with a goal of identifying underlying challenges and conservation opportunities;
- Reflected on feedback from First Nations and Métis gathered during engagements related to the Long-Term Energy Plan, as well as community meetings;
- Analyzed third-party evaluation report findings from the Aboriginal Conservation Program (ACP). This program provided customized conservation services to on-reserve First Nations to reduce their electricity use and lower their monthly utility bills, and was in market from 2013 until 2015;
- Collected input through an online survey and the following in-person engagements:
  - Four regional meetings (Thunder Bay, Sudbury, London, Vaughan)
  - Indigenous Community Energy Symposium (Toronto)
  - Nishnawbe Aski Nation Climate Change Coordinators meeting
  - Métis Nation of Ontario (MNO) and MNO Councils meeting
  - IESO's Aboriginal Energy Working Group (AEWG)
  - Community visits to the Chippewas of the Thames and the Chippewas of Georgina Island
  - Province-wide webinar with 80 attendees registered
- Conducted interviews with community representatives and other industry representatives who provide energy conservation-related services to Indigenous customers;
- Examined the current suite of provincial Save on Energy programs to see if they meet existing community needs, and if not, identify opportunities for improvement;
- Considered options such as IESO organizational changes and external partnerships to help build momentum for energy conservation with First Nations and Métis.

Hearing directly from community leaders and representatives was an invaluable part of the research for this report. Based on these meetings, it became clear that for

many First Nations and Métis people, energy conservation has implications that can be much broader than simply implementing an energy plan. As a result, the solution to greater participation in energy conservation may well lie in a coordinated response that cuts across different levels of government.

In the *Feedback* section of this report (see page 7), barriers to greater uptake are divided into three categories – Programs, Capacity Building and Partnerships – illustrating there is no one barrier limiting participation in conservation programming, and also no single catch-all solution. For this same reason, the recommendations in this report are as wide-ranging as they are interconnected.

The IESO intends to capitalize on its role as an industry leader in the energy sector and will work to enable changes that help First Nations and Métis to realize more efficient and sustainable energy use, in the short- and longer-term.

With this in mind, the IESO will look within its own organization to identify structural, cultural, procedural and operational barriers that may need to change in order to allow greater – and more accessible – participation in conservation programming for First Nations and Métis.

Readers should also note that the recommendations included in this report are a first step, reflecting the IESO's commitment to moving forward, while at the same time continuing to seek input from First Nations communities and Métis Councils and their members on how to improve energy conservation programming across the province.

> *"The more we know about Save on Energy programs before preparing our community energy plans, the better. If we write a community energy plan without knowing what type of funding is available, it's likely things won't line up and we won't get funding."*
>
> Participant at London regional meeting

The IESO's longer-term goal is to continue learning and fine-tuning its energy conservation programming to ensure there is consistent access, delivery, follow-up and measurement, as well as greater awareness for the benefits that accrue to First Nations and Métis when they adopt an energy-efficiency mindset.

Finally, in addition to responding to the Minister's Direction, this report is intended to serve as an information tool. Community members told us unequivocally, and unanimously, that one of the biggest stumbling blocks on the road to more efficient energy use was their difficulty in accessing information. In the Appendices, readers will find resources, samples and contacts that may help their communities move forward.

Over 300 attendees at 2017 Indigenous Community Energy Symposium met to share learnings, build collaboration and promote community energy planning across the province.

Energy Conservation: Perceptions and Implications

On August 1, 2017, the delivery charge was eliminated from electricity bills for on-reserve First Nations residential customers. While the credit reduces the cost of electricity, participants in various engagements said that pursuing energy conservation initiatives still makes a difference, particularly for large non-residential buildings that are currently exempt from the First Nations Delivery Charge Credit.

For many Indigenous people, conserving energy is not just about managing energy costs, taking advantage of energy-efficient technology and mitigating the impacts of climate change. It touches on affordability and is seen by many as a way to improve living conditions. At its core, a healthy home is not just a basic need; it is the place that determines life outcomes for the people who live there.

Participants at all meetings indicated that energy conservation can lead to the following benefits and opportunities:

- Healthier and more sustainable communities;
- Reduced environmental impacts;
- Greater self-sufficiency and autonomy;
- Improved community capacity and awareness;
- Accelerated economic development including an increase in business and economic opportunity.

Of the things that stand in the way of greater energy efficiency in First Nations communities, participants at various community engagements noted:

- Lack of training, information and skilled resources;
- Lack of funding for dedicated energy staff;
- Absence of a coordinated and holistic approach at the federal and provincial levels of government;
- Lack of information about funding sources, including First Nations' eligibility to access existing funding sources;
- Lack of flexibility in terms of delivery timetables and performance criteria in existing programs.

"In order to address and improve the social determinants of health in our communities, we need to give our youth stability and the promise of a better life. Any long-term plan about energy conservation needs to start in the home, and this home should be a place of comfort and safety, not cold, damp and mouldy."

Deputy Grand Chief **Derek Fox**, Nishnawbe Aski Nation

Energy Affordability

While energy affordability might seem to be a natural reason to practice energy conservation, some First Nations people said that since the delivery charge was removed from electricity bills for on-reserve customers, the urgency to learn about, and practice, energy conservation at home had actually diminished.

This is not to say there is no interest in learning how to become more energy efficient in these communities, simply that it may be challenging to make energy efficiency top-of-mind.

Other participants in the engagement process said that notwithstanding the delivery charge credit, energy is still expensive. The only option for many northern remote communities is diesel – an expensive fuel source that has a negative impact on the environment. By reducing their use of diesel, these communities can reduce the associated costs as well as the associated environmental impacts.

The IESO also heard that for many Métis citizens, and First Nations people living off-reserve, the cost of electricity is of concern. The IESO sees an opportunity to increase awareness for the Ontario Electricity Support Program (OESP) as a way of helping Indigenous people across Ontario manage their electricity costs.

About the Ontario Electricity Support Program

The Ontario Electricity Support Program (OESP) lowers electricity bills for lower- income households. The OESP provides a monthly credit to eligible customers based on household income and household size. And, the credits are applied directly to eligible customers' bills.

Demographics: Opportunities for Capacity Building

Statistics Canada data provide a glimpse into the untapped potential among First Nations and Métis people in Ontario. They have a strong desire to tackle their energy efficiency challenges themselves, on their own terms, provided they have greater access to suitable education and capacity building programs.

A stronger focus on energy conservation at the primary school level would have a beneficial spill-over effect because the information children bring home from school is often shared with extended family at home. Equally, educating youth would have a similar snowball effect because as integral members of the "sharing economy", young people have learned how to build online communities and share their knowledge on social media.

Energy conservation knowledge is empowering, and with the right information, many community representatives indicated they see the potential for greater employment and economic development opportunities.

The following data support the notion that there is untapped potential across First Nations and Métis people in Ontario for building a strong foundation for conservation awareness and practice. Unless otherwise stated, the source of the following information is Statistics Canada's 2016 census:

- Ontario was home to 236,680 First Nations people, 120,585 Métis, with another 13,270 respondents reporting other Aboriginal identities (7,540) or more than one Aboriginal identity (5,730).
- From 2006 to 2011, Canada's First Nations population increased by 42.5 per cent, and Ontario's grew by 32 per cent (2011 National Household Survey).
- In 2016, the average age of Canada's Indigenous people was 30.6 years compared to the national average age of 41 years.
- One in four (26 per cent) First Nations people and 11 per cent of Métis live in homes in need of major repairs, compared to six per cent of the non-Aboriginal population.
- Over 40 per cent of people living on-reserve lived in homes needing major repairs, compared to 14 per cent for off-reserve First Nations people.
- Approximately 28 per cent of people who identified as First Nations in Ontario (2016) had low-income status.

> *"We should be teaching our school children about possible career choices in the energy sector. This includes giving them more information about energy efficiency, conservation and renewables. They'll bring that information home and share it with their family. What they learn in school helps the next generation, and also helps us to become more energy independent. As a new energy coordinator, I'd like the IESO to help with this kind of information."*
>
> **Becky Big Canoe**, Chippewas of Georgina Island First Nation

Feedback from Regional, Community and Council Meetings

In preparing this report, four regional and two community meetings were conducted, in addition to the Indigenous Community Energy Symposium in Toronto in October 2017, a public webinar in December 2017 and a meeting with the Métis Nation of Ontario (MNO) and fifteen MNO Councils.

Feedback from these engagements is included below. It is divided into three sections:

- Programs
- Education/Capacity Building
- Partnerships

Programs

Participants at all meetings raised the following common concerns based on their experience with Save on Energy, and other conservation programs:

On-reserve program availability

There is currently no consistency in the availability of conservation programming across First Nations communities. Different communities have access to different programs, and some have no access whatsoever.

- Eighty-eight communities are served by Hydro One, which offers the First Nations Conservation Program in communities that did not participate in the Aboriginal Conservation Program (ACP). Thirty-eight of these communities participated in the ACP.
- Nine First Nations communities are served by other local distribution companies (LDCs). Of these, the First Nations-owned utilities Attawapiskat Power Corp., Kashechewan Power Corp. and Fort Albany Power Corp. deliver a small business and a residential conservation program specifically designed for First Nations communities and delivered by Conservation on the Coast. The remaining six communities have access to the province-wide suite of Save on Energy programs which are not specifically designed for First Nation communities.
- Fifteen First Nations communities are served by Hydro One Remote Communities, which offers a mail-in rebate conservation program.
- Ten First Nations communities are served by Independent Power Authorities, and, as such, are not currently eligible for province-wide conservation programs.
- Eleven First Nations are not served by an LDC or Independent Power Authority as they are currently in the process of building their communities or do not yet have a land base.

A description of all available programs is included in the Appendices section (see page 15).

Program promotion

Many participants said they were unaware of the Save on Energy programs, particularly programs for homeowners. They wanted to know more about these programs, as well as others that could help them lower their electricity costs. If they had heard about the Save on Energy residential programs, they weren't sure if, or how, these programs applied to them.

Some participants said they were aware of the Save on Energy residential and business programs, but felt they were ineligible because program descriptions do not refer specifically to Indigenous people.

For the Retrofit program specifically, several participants said they were not aware they were eligible because on-reserve community buildings such as arenas, pumping stations and community centres (which are typically energy- intensive) are not specifically mentioned in the program description, and they were not certain if a First Nation community would be considered a "business" under the program.

This feedback is consistent with what the IESO heard from Métis leadership with respect to Métis Council offices.

Similarly, several First Nation participants said they were not aware of the New Home Construction program, or if they qualified, because the program rules don't refer specifically to on-reserve housing.

For the above-noted programs, participants commented the IESO could be more effective in promoting Save on Energy programming to First Nations and Métis.

For existing Save on Energy programs, and when new energy conservation programs are developed specifically for First Nations and Métis, participants suggested that promotional messaging should be consistent with the cultural values of First Nations and Métis people. Rather than focusing on managing costs, for example, participants suggested that messaging should focus on "not taking more than you need."

Program branding

Participants recommended that any new program designed specifically for First Nations and Métis be branded as a community program not as a Save on Energy program. Several participants cited the Five Nations Energy Inc. as an example of this preferred type of community-branded programming (see page 19). One energy coordinator suggested that if the IESO supplied templates for newsletters, or other educational materials, they might be more effective if they allowed for communities to brand them with their own First Nations' or Métis Council names and logos rather than exclusively as Save on Energy collateral.

Program funding

Some participants suggested that having a dedicated funding amount for each First Nations community would be more equitable than having a global budget for all First Nations. A dedicated amount of funding would also be preferable to having communities "compete" against each other for a finite amount of program funding.

Participants also indicated the process for applying to various programs (those offered by the IESO as well as other agencies) can be burdensome. As a remedy, participants suggested the IESO streamline and integrate the process for applying to multiple programs by using a "one-stop-shop" approach. Further to this, if the IESO were to develop new energy conservation programming specifically for on-reserve First Nations communities, participants asked that they not be targeted to specific income levels because in their opinion, this approach divides the community.

Program effectiveness

Participants suggested the IESO should set specific savings targets for First Nations communities, which LDCs would work towards together with First Nations communities. This would lead to more targeted programs, and alleviate the access issues noted earlier, particularly in remote communities where transportation costs are high and the construction season is quite short.

Participants also asked the IESO to review all Indigenous-based programs to be sure there are clear metrics and success measures.

Another common theme amongst participants was the need to consider the unique circumstances of Indigenous communities in both program design and program delivery. In reviewing and developing programs that support Indigenous communities, participants encouraged the IESO to pay close attention to program start and stop dates. They said there is often insufficient time between receiving approval for funding and implementation deadlines to actually get the work done.

Participants also reminded the IESO to consider the time of year during which programs are being implemented. Ice roads, hunting season or other seasonal issues can make participation, and the availability of materials, challenging.

Including Indigenous people in both aspects – program design and delivery – would lead to more successful programs, hopefully with better outcomes.

> *"One of the most important things we learned about marketing energy conservation to Indigenous communities was that traditional means of promotion, such as direct mail, didn't always work. What did work was engaging with the communities in person to better understand their unique situations and needs and hiring local delivery agents from within Indigenous communities."*
>
> **Margaret Nuttall**, **Caroline Knight**, **Cara-Lynne Wade** and **Tina Nicholson**, Union Gas

Education/Capacity Building

Education and capacity building were discussed in depth at all meetings. Depending on the community, there are different views on what would be required in order to achieve higher energy conservation results.

Some communities are much further along in their implementation of energy conservation initiatives than others, and some have more experience and a better understanding of how the energy system works, including knowledge of how to access funding. There was general agreement that education is a key priority. The following feedback was provided:

First Nations band staff resources are stretched

In many First Nations communities, employees who work on energy-related initiatives split their time between several portfolios, some with little day-to-day support. Priorities are regularly shuffled, and this often results in projects not being completed. Participants suggested that if there were more resources, First Nations communities could achieve more measurable success in their conservation efforts. Some participants also suggested that regional energy managers might be more effective than relying on one single resource in each community.

Some participants said their communities have energy plans in place but need support when it comes to implementation. They receive proposals from various vendors and would prefer to work with vendors they know, preferably with First Nations vendors, but this is not always possible. Many participants said they were not sure how to evaluate proposals from vendors, and that many community members didn't trust unknown vendors to come into their homes. As a result, projects get dropped. Also, several participants said it was quite difficult for them to find qualified contractors in remote northern communities.

There is also a lack of home energy data in many on-reserve communities. Without this basic information, many participants agreed it is difficult to plan and therefore to implement energy conservation initiatives.

Knowledge transfer

A common theme throughout the engagement process was the lack of knowledge transfer by First Nations communities and Métis Councils. Participants agreed that working in isolation was inefficient, and that a collaborative approach between Indigenous communities would be more effective in delivering energy savings.

Providing a mechanism that would enable First Nations band staff and Métis Council members working on energy-related initiatives to network in person with one another – at workshops and conferences – was seen as a positive way to promote greater knowledge transfer. Other options included using social media such as Facebook to share information.

Some participants said that having better access to the IESO's technical staff would be beneficial. Knowing the right people to contact at the IESO for a critique of community energy plan findings, for example, would be useful. Such access to IESO staff would also help to build capacity within the community, rather than retaining an external consultant to do the same work.

As some communities are further along on their path to energy efficiency and/or energy independence than others, participants suggested that funding for mentorships or internships that allow them to share resources between communities would be helpful. Instead of reinventing the wheel, this type of knowledge transfer among Indigenous communities would be cost-effective and would also help bridge the training gap that some participants said was a barrier to greater uptake of energy conservation initiatives.

Educational materials

Participants noted there is a lack of quality educational materials, and that having a broad array of such materials for school children, homeowners, community residents and businesses should be a priority.

In most First Nations communities, there is limited funding for a full-time energy coordinator and insufficient time available for them to do their job effectively. In communities with energy coordinators, some are hired on short-term contracts. Some are experienced communicators; others are not. To help community energy coordinators (and others) raise awareness of energy conservation opportunities in their communities, there was more or less unanimous agreement that conservation-related educational materials from a trusted source would be beneficial. Participants also indicated that having contractors first learn how to engage with their communities in a positive way, and getting to know the community by partnering with someone from the community, might encourage homeowners to allow contractors into their homes more readily.

"It would be great if our leadership was more aware of where energy conservation could take our community and why it's important. Energy conservation leads to energy independence, more control and more self-reliance from energy companies."

Participant from Vaughan Regional Meeting

Community members of Bkejwanong Territory participated in workshops discussing topics such as community energy planning, energy conservation and renewable energy development. The workshops were held by TREC Education, with funding from the IESO Education and Capacity Building Support Program.

Partnerships

Housing stock – and the need to develop partnerships to improve it – was one of the most talked about issues at the IESO's meetings. The following feedback was provided:

Existing First Nations housing stock makes energy conservation challenging:

Participants said that in many cases, on-reserve houses were in such a state of disrepair that it made no sense to undertake energy retrofits. Mould created by inadequate insulation and ventilation is a common occurrence in First Nations communities across Ontario, as is overcrowding. In many communities, the lack of proper insulation and weather-stripping contributes to poor air quality, and this in turn, can lead to health issues.

Participants encouraged the IESO to reach out to organizations such as Canada Mortgage and Housing Corporation (CMHC), and other government agencies such as Green Ontario Fund, to work together to address these issues. Participants also strongly suggested that a process for building energy efficiency standards into the blueprints of on-reserve housing, rather than continuing in a cycle of inefficient retrofitting of poor housing stock, would be helpful.

At the London regional meeting, participants talked about current building practices and suggested they are poorly aligned with how people in many First Nations communities actually live. This feedback is further supported by data showing that in some remote First Nations communities, 96 per cent of households surveyed use wood as the primary heating source. Based on this input, participants seemed ready for the IESO to play a greater role in discussions about building practices that balance how First Nations people actually live with current energy-efficient technology.

Vendors and installers don't show homeowners how equipment works:

Participants said that in some cases homeowners are not shown how installed devices (such as programmable thermostats) work once they are installed. This can lead to damaged equipment or quite simply to homeowners' decision not to use these installed devices. In some cases, participants also said it was difficult to get new energy efficient appliances serviced, even with a warranty. Participants asked if the IESO could help them to address these issues.

Distributed energy and net metering

Participants wanted to know more about how to access funding for renewable energy equipment and/or microgrids. They asked if the IESO could partner with financial institutions, or other agencies, to advise them about how to plan financially for these types of small- to medium-sized projects; for large projects, they were interested in knowing how to obtain loan guarantees.

About GreenON

Funded through proceeds from Ontario's carbon market, the Green Ontario Fund is a not-for-profit provincial agency tasked with reducing greenhouse gas pollution in buildings and industry to help meet Ontario's emission reduction targets. Through programs and rebates the Green Ontario Fund helps people and businesses take climate action into their own hands.

Implementation: Moving Forward

This report marks the beginning of a long-term process. Based on the feedback received during the engagement process, there is considerable work to be done, and the recommendations for moving the process ahead are detailed below. Going forward, the guiding principle will be to keep the energy efficiency conversation with First Nations and Métis alive. These discussions were extremely informative, and helpful, providing first-hand feedback about what is working, what's not, and what can be done to change and improve programming.

In submitting this report to the Minister of Energy, the IESO is fully committed to implementing the following action plan, working in collaboration with the Ministry of Energy and other ministries as required:

1. Change the program delivery model, through the Conservation First Framework, to improve access to programming for on-reserve First Nations communities, regardless of their location or connection to the electricity system.
2. Develop targeted promotions of Save on Energy programs for First Nations and Métis peoples.
3. Offer both on-reserve and off-reserve First Nations and Métis energy management support services that provide training, program information and technical expertise, as resources for energy efficiency initiatives.
4. Develop a directory that lists qualified vendors with experience working with First Nations and Métis. The listing would include each category of work that is required for delivering relevant programs for First Nations and Métis.
5. Launch an online portal for First Nations and Métis to share energy related information such as educational and marketing materials.
6. Launch a Joint Advisory Committee consisting of First Nations, Métis and energy leadership. This Committee will develop a plan of action for energy conservation and greenhouse gas emissions reduction in Indigenous communities through potential partnerships with LDCs, natural gas utilities, the Green Ontario Fund (GreenON), Canada Housing and Mortgage Corporation, the Ministry of Municipal Affairs and Housing, and the Ministry of Education.
7. Coordinate with GreenON to establish funding and develop programs that support First Nations and Métis where there are opportunities to reduce reliance on greenhouse gas emitting fuels.

> *"The key to getting more First Nations communities to participate in energy conservation is showing our administrators how energy savings benefit the community directly. The more energy a community can save, the more operational money there is available for the community to spend on other high priority needs."*
>
> **Michael Jacobs**, Cambium Aboriginal Inc.

Conclusion

Through the research and engagement process that formed the basis for this report, the IESO had the unique opportunity to see energy conservation through a very unique lens – one that focused on understanding the energy conservation challenges facing First Nations people in some of the province's most remote communities, as well as those issues affecting Indigenous people in less remote areas.

The feedback received was that consistent access must be a priority, that delivery protocols must be improved, that more information should be available, and that training within Indigenous communities is key.

Of all the input received, perhaps most striking was a shared desire to learn more about energy efficiency, to adopt an energy efficiency mindset and to practice energy conservation more routinely. There was pragmatism, coupled with unflinching determination, in this shared outlook.

The IESO is committed to working with First Nations communities, Métis Councils and their representatives to support the achievement of their energy efficiency goals, in the short term and the longer term. This commitment is fully aligned with the IESO's broader mandate of ensuring reliability for the province's energy system, as conservation has proven to be a low-cost and efficient way of reducing the province's longer-term energy needs as well as the need for costly investments in new generation and transmission infrastructure.

The IESO is also committed to understanding how to engage with Indigenous peoples about energy conservation, and then deliver energy conservation programming that bolsters their participation in these offerings.

The IESO will continue to listen, to engage, to course correct as necessary, and to move forward, all in the spirit of enabling the province's culture of conservation.

Appendices

In this section:

Energy Conservation Programs in Ontario

Other IESO Programs

IESO Resources

External Materials

Energy Conservation Programs in Ontario

The following energy conservation programs are currently available in Ontario:

First Nations Conservation Program
For First Nations that are customers of Hydro One Networks Inc., and have not participated in the previous Aboriginal Conservation Program, the First Nations Conservation Program offers energy-efficient upgrades (LED lights, power bars, water heating efficiency measures, appliance replacement, insulation, and more) to on-reserve homeowners and tenants in band-owned housing. Following an energy-efficiency assessment, supply and installation are done for appropriate upgrades, at no cost to homeowners or the community.

Conservation on the Coast
For First Nations community members who are customers of Attawapiskat Power, Fort Albany Power and Kashechewan Power, conservation programs similar to the Save on Energy Home Assistance Program and Small Business Lighting program are offered through Conservation on the Coast.

Home Energy Conservation Program: Enbridge
Helps homeowners of all home-heating types in the Enbridge service territory improve the energy efficiency of their home, lower their energy bills, receive up to $5,000 back, and reduce their home's greenhouse gas emissions.

Home Reno Rebate Program: Union Gas
With the Home Reno Rebate, customers are eligible for up to $5,000 cash back, plus additional electric appliance rebates, for energy-saving home improvements. This program is available to all eligible homeowners in the Union Gas program area, whether they heat their home with gas, electricity, oil, propane or wood.

Home Weatherization Program: Union Gas
Income eligible customers can receive free energy-saving home improvements.

Save on Energy: Home Assistance Program
Helps income-eligible homeowners and tenants to improve the energy efficiency of their homes through free home upgrades such as power bars, energy saving light bulbs and low-flow showerheads. Other items such as energy-efficient refrigerators, and appliances such as window air conditioners, programmable thermostats, weather-stripping and attic/basement insulation are also available. All devices and products provided under this program are directly installed in the home and are free of charge to participants.

Save on Energy: Small Business Lighting Program
This program helps small business owners manage their energy costs through turnkey installation of energy efficient lighting.

Eligibility

- Businesses with average annual demand of less than 100 kW
- Participants in the Power Saving Blitz from 2008-2010 and the Direct Install Lighting or Small Business Lighting from 2011-2015 are eligible to participate

Eligible businesses receive:

- Onsite lighting assessment of the facility at no cost
- Up to $2,000 towards energy efficient lighting upgrades
- Immediate lighting installation

Conservation and Renewable Energy (CaRE) Program
Hydro One Remote Communities offers the Conservation and Renewable Energy (CaRE) Program, which includes a household appliance mail-in rebate program, a commercial lighting retrofit program in existing buildings and a street-lighting retrofit program.

Affordability Fund Trust
The program is designed to help people who do not qualify for low-income conservation programs and who are unable to undertake energy efficiency improvements without support.

Other IESO Programs

Education and Capacity Building Program

The Education and Capacity Building Program (ECB) program – provides funding to support energy initiatives that provide education, build capacity and develop the skills of First Nations and Métis to participate in the energy sector. Eligible initiatives include staff training, education workshops and awareness campaigns. The ECB program will continue to support initiatives that help build local business skills, energy literacy and youth engagement. Up to $100,000 per initiative is available.

Energy Partnerships Program

Open to First Nations and Métis and includes:

- *Partnership Stream:* Funds the legal, technical and financial work required to assess and develop opportunities for participating in renewable energy and transmission projects. Up to $50,000 per community is available.
- *Project Development Stream:* Funding for costs associated with developing renewable energy projects such as obtaining regulatory approvals. Up to $250,000 per applicant is available.
- *Remote Stream:* Up to $500,000 per community is available for initiatives that reduce reliance on diesel fuel for the four remote First Nations that can't be feasibly connected to the transmission grid.

Aboriginal Community Energy Plan Program

The Aboriginal Community Energy Plan (ACEP) program supports First Nation and Métis communities in the development of comprehensive, long-term energy plans. A community energy plan helps to improve energy efficiency and reduce electricity consumption at the community level. It also helps communities consider opportunities for renewable energy solutions, and can promote a greater interest, awareness and understanding about energy planning.

Funding for community energy plans is available:

- Up to $90,000 to create a new community energy plan
- Up to $25,000 to update an existing plan
- For remote communities, an additional $5,000 for both streams.

Funds pay for costs directly related to projects that are considered necessary to complete the work, activities, and deliverables outlined in an approved proposal.

To date, the IESO has approved ACEPs from over 95 First Nation and Métis communities, including those communities shown in the map. (This map is interactive. See the different layers here.)

Save on Energy Training Programs

The IESO provides funding for various types of energy management training, through the Save on Energy program. Programs range from foundational courses in basic energy management to training required for industry certification and accreditation.

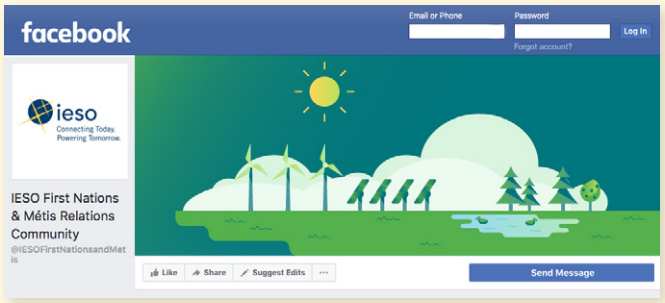
IESO Conservation Fund

The IESO Conservation Fund provides financial support for innovative electricity conservation technologies, practices, research, and programs that will help Ontario reach its long-term energy conservation goals. The IESO Conservation Fund has supported over 200 innovative conservation and demand management projects since its inception in 2005, shaping various incentive programs, training options, tools and products.

IESO Resources

IESO First Nations & Métis Relations on Facebook

Brings First Nations and Métis communities together to discuss ideas, resources, programs, and issues around energy in Ontario.



IESO Indigenous Energy Symposium Post-Event Report

More than 300 individuals attended this two-day conference, which brought together Ontario First Nations community and youth representatives, industry stakeholders and leading community energy experts with a common goal of sharing their learnings, building collaboration and promoting community energy planning across the province. The report identifies key themes, summarizes the discussions and presents a broader Commitment Plan for Indigenous communities that complements and supports the commitments made in the Ministry of Energy's Long-Term Energy Plan.

The Indigenous Energy Symposium was a collaboration between the IESO and the Ministry of Energy.

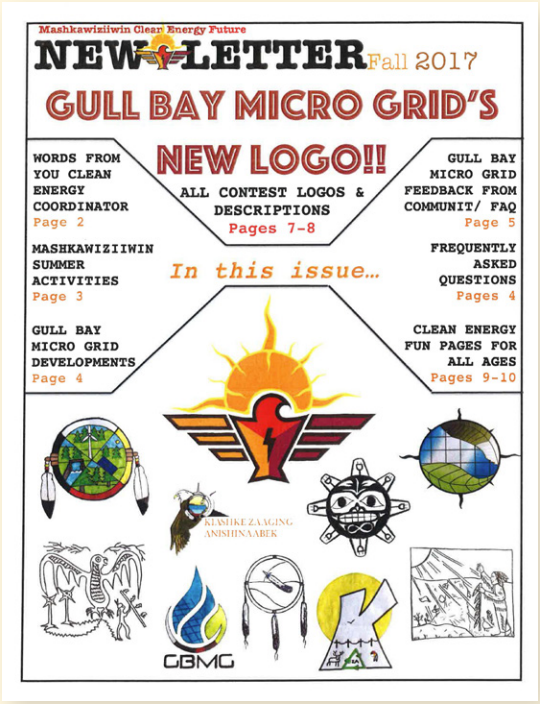
IESO Indigenous Relations webpage

Provides information on long-term energy planning, Indigenous community energy planning and other programs.

External Materials (samples)

Five Nations Energy Inc.'s Conservation Programming Materials

Fall 2017 Newsletter in Gull Bay First Nation



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Ontario

Executive Council of Ontario
Order in Council

On the recommendation of the undersigned, the Lieutenant Governor of Ontario, by and with the advice and concurrence of the Executive Council of Ontario, orders that:

Conseil exécutif de l'Ontario
Décret

Sur la recommandation de la personne soussignée, le lieutenant-gouverneur de l'Ontario, sur l'avis et avec le consentement du Conseil exécutif de l'Ontario, décrète ce qui suit :

WHEREAS the Minister of Energy, Northern Development and Mines (Minister) is committed to ensuring that Ontario has an affordable and reliable electricity system, while continuing to find efficiencies in the electricity sector;

AND WHEREAS it is desirable that the Independent Electricity System Operator (IESO) establish an interim electricity conservation and demand management (CDM) framework aimed at offering a suite of CDM programs centrally-delivered by the IESO;

AND WHEREAS the Minister may, with the approval of the Lieutenant Governor in Council, issue directives under subsection 25.32(5) of the *Electricity Act, 1998* that require the IESO to undertake any initiative or activity that relates to measures related to the conservation of electricity or the management of electricity demand;

NOW THEREFORE the Directive attached hereto is approved.

- - - - - - -

ATTENDU que le ministre de l'Énergie, du Développement du Nord et des Mines (le « ministre ») est résolu à faire en sorte que l'Ontario dispose d'un réseau électrique abordable et fiable tout en continuant de dégager des occasions de réaliser des gains en efficacité dans le secteur de l'électricité;

ATTENDU qu'il est souhaitable que la Société indépendante d'exploitation du réseau d'électricité (SIERE) établisse un cadre provisoire de conservation et de gestion de la demande (CGD) afin de proposer des programmes de CGD dont la mise en œuvre sera centralisée;

ATTENDU que le ministre peut, avec l'approbation du lieutenant-gouverneur en conseil, en vertu du paragraphe 25.32 (5) de la *Loi de 1998 sur l'électricité*, donner des directives exigeant que la SIERE lance des initiatives ou des activités portant sur des mesures de conservation de l'électricité ou de gestion de la demande en électricité;

PAR CONSÉQUENT, la directive ci-jointe est approuvée.

Recommended: Minister of Energy, Northern Development and Mines
Recommandé par : Le ministre de l'Énergie, du Développement du Nord et des Mines

Concurred: Chair of Cabinet
Appuyé par : Le président | la présidente du Conseil des ministres

Approved and Ordered:
Approuvé et décrété le : MAR 2 0 2019

Administrator of the Government
L'administratrice du gouvernement

MINISTER'S DIRECTIVE

TO: THE INDEPENDENT ELECTRICITY SYSTEM OPERATOR

I, Greg Rickford, Minister of Energy, Northern Development and Mines hereby direct the Independent Electricity System Operator (IESO) pursuant to subsection 25.32(5) of the *Electricity Act, 1998* (Act) in regard to electricity conservation and demand management (CDM) procurement initiatives, as follows:

BACKGROUND

Our government is committed to ensuring that Ontario has an affordable and reliable electricity system, while continuing to find efficiencies in the electricity sector.

As our government continues to explore cost-effective electricity CDM initiatives designed to meet Ontario's needs in the future, an interim framework will be established, ending on December 31, 2020, aimed at offering a suite of electricity CDM programs centrally-delivered through the IESO (IESO CDM Programs). In addition, there will be an opportunity for Local Distribution Companies (LDCs) to apply for limited funding from the IESO for cost-effective local programs (LDC CDM Programs).

While we shift from an LDC-led delivery approach to a central IESO-led approach in the interest of cost efficiency, the overall customer experience will be of paramount importance. We are committed to ensuring that there is a smooth transition between the two approaches and that there continues to be cost-effective CDM opportunities.

In addition to this Directive, I intend to issue a directive to the Ontario Energy Board (OEB) to provide the OEB with the authority to amend or remove licence conditions for LDCs related to CDM. I also intend to issue a companion directive to the IESO to discontinue the 2015-2020 Conservation First Framework (CFF) and the Industrial Accelerator Program.

DIRECTIVE

Therefore, in accordance with the authority I have pursuant to subsection 25.32(5) of the Act, I hereby direct the IESO to design, coordinate, deliver, and/or fund the delivery of electricity CDM programs, as appropriate, according to the following principles and requirements.

A. Principles

1. The IESO shall be directly responsible to deliver the IESO CDM Programs, utilizing procurement contracts in connection with those programs as required.
2. Electricity consumers connected to the IESO-controlled grid, and those connected to a distribution system will be eligible for the IESO CDM Programs. The IESO shall target the IESO CDM Programs to the following consumer segments:

- commercial, institutional and industrial consumers;
- low-income residential consumers; and
- on-reserve First Nation communities, including communities that are or are soon to be connected to the IESO's controlled grid.

3. The IESO shall implement the IESO CDM Programs targeting commercial, institutional and industrial consumers that demonstrate positive cost benefit benchmarks when considered jointly as a portfolio in accordance with the IESO's cost-effectiveness guidelines. For clarity, on-reserve First Nations and low-income programs will not be required to meet cost benefit benchmarks.
4. For commercial, institutional and industrial consumers, the IESO should prioritize the IESO CDM Programs which yield high reductions in electricity usage (e.g. Gigawatt hours) and peak demand reductions (e.g. Megawatts) in a cost-effective manner.
5. To the degree reasonably practicable, the IESO will coordinate the delivery of the IESO CDM Programs with entities delivering natural gas Demand Side Management.
6. The IESO shall make limited funds available for LDCs to apply to design and deliver cost-effective LDC CDM Programs that are not duplicative of the IESO CDM Programs. Eligible LDC CDM Programs may target residential, on-reserve First Nations, low income, commercial, institutional and industrial consumers. LDC CDM Programs targeting residential, commercial, institutional and industrial consumers shall demonstrate positive cost benefit benchmarks independently in accordance with the IESO's cost-effectiveness guidelines. For clarity, LDC CDM Programs targeting on-reserve First Nations communities and low-income consumers will not be required to meet cost benefit benchmarks.

B. Definition of CDM

1. For the purposes of the IESO CDM Programs and LDC CDM Programs, the IESO shall consider CDM to be inclusive of activities aimed at reducing electricity consumption and/or decreasing demand from the electricity grid. Examples of CDM include energy efficiency replacements whereby similar output is achieved with less electricity input and small scale (i.e., <10MW) behind the meter customer generation.

2. However, for the purposes of the IESO CDM Programs and LDC CDM Programs the IESO shall consider CDM to exclude those measures promoted through a different program or initiative undertaken by the Government of Ontario or the IESO, and behind the meter customer generation that uses fossil fuels purchased from or otherwise supplied by a third party as a primary fuel source.

C. Term and Limits of Funding

1. The IESO shall make the IESO CDM Programs available from April 1, 2019, or as soon as possible thereafter, to December 31, 2020 (Term) and no consumer applications to the IESO under the IESO CDM Programs or LDC applications to the IESO for LDC CDM Programs will be accepted or approved after the end of the Term.
2. The IESO shall not exceed a total budget of $353 million for the Term, which includes $27 million for any approved LDC CDM Programs as well as the $28M in central services costs and payments as described in section C.3.
3. The IESO will limit its central services costs and payments, which shall be inclusive of costs and payments for marketing, Evaluation, Measure and Verification (EM&V), compliance, capacity building and customer support, to $28 million for the Term.

D. Design and Delivery

1. Within 1 month of the issuance of this Directive, the IESO will deliver to the Ministry of Energy, Northern Development and Mines (Ministry) a CDM plan (Plan) for the Term, including details of the IESO CDM Programs that will be delivered, the estimated costs and expected results, and estimates of the budget for the LDC CDM Programs. The expected savings of electricity and the expected demand reductions will constitute the targets for the Term, which will respectively be known as the "electricity target" and "demand reduction target" (CDM Targets).
2. The IESO shall evaluate any electricity and demand savings achieved by the IESO CDM Programs and LDC CDM Programs based on the IESO's EM&V protocols in such frequency as the IESO considers appropriate.

E. Reporting

1. The IESO will report to the Ministry:
    a. Quarterly, by each IESO CDM Program and in aggregate: participation, electricity and demand savings, as well as forecasted participation, electricity and demand savings throughout the life of the IESO CDM Programs.
    b. Quarterly, financial reporting for payments disbursed and costs committed in the previous quarter and forecasted disbursements and commitments in throughout the life of the IESO CDM Programs.
    c. As required, lessons learned, upcoming issues, recommended program changes and proposed timelines for any changes.
    d. As required, any other information, as may be required by the Ministry.
2. The IESO shall continue to produce and publish annual reports detailing the overall progress of the IESO CDM Programs, LDC CDM Programs and annual incremental savings expected from provincial building codes and product standards.

F. Low-Income and on-reserve First Nations.

1. The IESO shall continue to fund and deliver the existing province-wide program, called the Home Assistance Program, targeted to low-income residential consumers on similar terms and in a similar manner as had been previously provided for under the CFF.
2. The IESO shall make best efforts to fund and deliver two local programs targeting on-reserve First Nations communities, where such programs are modeled, delivered and implemented on similar terms and in a similar manner as had been provided for under the First Nations Conservation Program and the Conservation on the Coast CDM Program.
3. The IESO shall design, fund and deliver an electricity conservation pilot program targeted at residential consumers and small businesses in on-reserve First Nations communities that are, or are soon to be, connected to the IESO-controlled grid.
4. Despite IESO CDM Programs and LDC CDM Programs targeting on-reserve First Nations and low-income consumers not being required to meet cost benefit benchmarks, the IESO shall nevertheless ensure that these programs are designed and delivered in as cost-effective a manner as is reasonably possible.

DIRECTIVE DU MINISTRE

DESTINATAIRE : LA SOCIÉTÉ INDÉPENDANTE D'EXPLOITATION DU RÉSEAU D'ÉLECTRICITÉ

Par la présente, je soussigné, Greg Rickford, ministre de l'Énergie, du Développement du Nord et des Mines, ordonne par la présente ce qui suit à la Société indépendante d'exploitation du réseau d'électricité (SIERE), en vertu du paragraphe 25.32 (5) de la *Loi de 1998 sur l'électricité* (la « Loi »), en ce qui concerne les initiatives d'acquisition en matière de conservation et de gestion de la demande (CGD) d'électricité :

CONTEXTE

Notre gouvernement est résolu à faire en sorte que l'Ontario ait un réseau d'électricité abordable et fiable tout en recherchant de nouveaux moyens de faire des gains d'efficacité dans le secteur de l'électricité.

Pendant que notre gouvernement continue d'étudier des initiatives de CGD d'électricité rentables conçues pour répondre aux besoins de l'Ontario dans l'avenir, il établira un cadre provisoire qui prendra fin le 31 décembre 2020 afin de proposer des programmes de CGD d'électricité mis en œuvre de manière centralisée par l'intermédiaire de la SIERE (les « programmes de CGD de la SIERE »). En outre, les sociétés de distribution locales (SDL) auront la possibilité de demander un modeste financement de la SIERE pour la prestation de programmes locaux rentables (les « programmes de CGD des SDL »).

Pendant que, dans un souci de rentabilité, nous passons de la prestation par les SDL à la prestation centralisée par la SIERE, l'expérience des consommateurs dans l'ensemble sera de la plus haute importance. Nous tenons à ce que la transition entre les deux se fasse en douceur et à ce qu'il y ait encore des possibilités de CGD rentables.

En plus de la présente directive, j'ai l'intention de donner à la Commission de l'énergie de l'Ontario (CEO) une directive qui lui donnera le pouvoir de modifier les conditions de délivrance de permis aux SDL ou de révoquer leur permis en ce qui concerne la CGD. J'ai également l'intention de donner une directive complémentaire enjoignant à la SIERE de mettre fin au Cadre stratégique de priorité à la conservation de l'énergie de 2015 à 2020 et au Programme d'accélération pour le secteur industriel.

DIRECTIVE

C'est pourquoi, par le pouvoir que me confère le paragraphe 25.32 (5) de la Loi, j'ordonne par la présente à la SIERE de concevoir, de coordonner, d'assurer ou de financer la prestation des programmes de CGD d'électricité, selon les besoins, en se conformant aux exigences et aux principes suivants.

A. Principes

1. La SIERE aura la responsabilité directe de mettre en œuvre les programmes de CGD de la SIERE au moyen de contrats d'acquisition en lien avec ces programmes, selon les nécessités.
2. Les consommateurs d'électricité reliés au réseau contrôlé par la SIERE et ceux reliés à un système de distribution seront admissibles aux programmes de CGD de la SIERE. Dans la mise en œuvre de ces programmes, la SIERE ciblera les segments de clientèle suivants :
    - les consommateurs commerciaux, institutionnels et industriels;
    - les consommateurs résidentiels ayant un faible revenu;
    - les populations des Premières Nations vivant dans les réserves, y compris celles qui sont reliées au réseau contrôlé par la SIERE ou qui le seront bientôt.
3. La SIERE mettra en œuvre les programmes de CGD qui ciblent les consommateurs commerciaux, institutionnels et industriels et qui démontrent un rendement coûts-profits positif lorsqu'ils sont pris conjointement en tant que portefeuille, conformément aux lignes directrices de la SIERE en matière de rentabilité. Par souci de clarté, les programmes qui ciblent les Premières Nations vivant dans les réserves et les consommateurs ayant un faible revenu n'ont pas à répondre aux exigences en matière de rendement coûts-profits.
4. En ce qui concerne les consommateurs commerciaux, institutionnels et industriels, la SIERE devrait accorder la priorité à ses programmes de CGD qui permettent de grosses réductions de la consommation d'électricité (p. ex. gigawattheures) et des réductions de la demande de pointe (p. ex. mégawatts) d'une manière rentable.
5. Dans la mesure où cela est réalisable, la SIERE coordonnera la prestation de ses programmes de CGD avec le concours de sociétés offrant des moyens d'effacement de consommation de gaz naturel.
6. La SIERE mettra un modeste financement à la disposition des SLD, qui s'en serviront pour concevoir et mettre en œuvre des programmes de CGD rentables qui ne doublonnent pas avec les siens. Les programmes de CGD de SLD admissibles peuvent cibler les consommateurs résidentiels, les populations des Premières Nations vivant dans des réserves, les consommateurs ayant un faible revenu, les consommateurs commerciaux, institutionnels et industriels. Les programmes de CGD des SLD ciblant les consommateurs résidentiels, commerciaux, institutionnels et industriels démontreront un rendement coûts-profits positif indépendamment, conformément aux lignes directrices de la SIERE en matière de rentabilité. Par souci de clarté, les programmes de CGD des SLD qui ciblent les populations des Premières Nations vivant dans les réserves et les consommateurs ayant un faible revenu n'ont pas à répondre aux exigences en matière de rendement coûts-profits.

B. Définition de conservation et gestion de la demande (CGD)

1. Aux fins des programmes de CGD de la SIERE et des SLD, la SIERE considérera que la CGD inclut les activités visant à faire baisser la consommation d'électricité ou la demande d'électricité. Entre autres activités de CGD, citons par exemple le recours aux remplacements favorisant un bon rendement énergétique, qui permettent d'obtenir une production semblable avec une consommation d'électricité moindre, et la génération d'électricité à petite échelle (c,-à-d. <10 MW) par les consommateurs.

2. Toutefois, aux fins des programmes de CGD de la SIERE et des SLD, la SIERE considérera que la CGD exclut les mesures soutenues grâce à une initiative ou un progamme différents lancés par le gouvernement de l'Ontario ou par elle-même et la génération d'électricité à petite échelle par les consommateurs à partir de combustibles fossiles achetés d'un tiers ou fournis par un tiers comme principale source d'énergie.

C. Période et limites du financement

1. La SIERE permettra l'accès à ses programmes de CGD du 1er avril 2019, ou dès que possible après cette date, jusqu'au 31 décembre 2020 (période). Aucune demande de consommateurs à la SIERE au titre des programmes de CGD de la SIERE ni aucune demande de SLD à la SIERE au titre des programmes de CGD des SLD ne seront acceptées ou approuvées après la conclusion de cette période.
2. La SIERE ne dépassera pas le budget total de 353 millions $ pour la période, qui comprend 27 millions $ pour les programmes de CGD des SLD approuvés et 28 millions $ pour les couts et paiements relatifs aux services centraux, comme le prévoit l'article C.3.
3. La SIERE limitera à 28 millions $ pour la période ses coûts et paiements relatifs aux services centraux, qui comprendront les coûts et paiements relatifs au marketing, à l'évaluation, à la mesure et à la vérification, à la conformité, au renforcement des capacités et à l'aide aux consommateurs.

D. Conception et prestation

1. Dans le mois suivant l'émission de la présente directive, la SIERE présentera au ministère de l'Énergie, du Développement du Nord et des Mines (le « ministère ») un plan de CGD (le « plan ») pour la période comprenant en détails les programmes de CGD de la SIERE qui seront mis en œuvre, l'estimation de leurs coûts, les résultats attendus et le budget prévu pour les programmes de CGD des SDL. Les économies d'électricité et les réductions de la demande attendues constitueront les objectifs pour la période et seront appelés respectivement « objectif d'économie d'électricité » et « objectif de réduction de la demande » (objectifs de CGD).
2. La SIERE évaluera toute économie d'électricité et toute réduction de la demande réalisées grâce à ses programmes de CGD et ceux des SLD en se fondant sur ses

protocoles d'évaluation, de mesure et de vérification et aussi souvent qu'elle le juge utile.

E. Reddition de comptes

1. La SIERE fera rapport au ministère :
   a. chaque trimestre, pour tous ses programmes de CGD, individuellement et dans leur ensemble, sur la participation, sur les économies d'électricité, sur les réductions de la demande et sur les prévisions de participation, d'économies d'électricité et de réductions de la demande pour toute la durée de ces programmes;
   b. chaque trimestre, sur les paiements et les coûts engagés au trimestre précédent et sur les prévisions de paiements et d'engagements pour toute la durée de ses programmes de CGD;
   c. selon les nécessités, sur les leçons apprises, les enjeux à venir, les modifications de programmes recommandées et les calendriers de modification proposés;
   d. selon les nécessités, de tout autre renseignement exigé du ministère.
2. La SIERE continuera de produire et de rendre publics des rapports annuels présentant en détails l'état d'avancement général de ses programmes de CGD, de ceux des SLD et des économies supplémentaires annuelles attendues des codes du bâtiment et des normes relatives aux produits de la province.

F. Consommateurs ayant un faible revenu et Premières Nations vivant dans les réserves

1. La SIERE continuera de financer et de mettre en œuvre le programme provincial existant appelé Programme des services à domicile, qui cible les consommateurs résidentiels ayant un faible revenu, selon des conditions et d'une manière semblables à ce qui se faisait sous le Cadre stratégique de priorité à la conservation de l'énergie.
2. La SIERE fera de son mieux pour financer et mettre en œuvre deux programmes locaux ciblant les populations des Premières Nations vivant dans les réserves, où de tels programmes seront conçus, offerts et mis en œuvre selon des conditions et d'une manière semblables à ce qui se faisait avec le Programme de conservation destiné aux Premières Nations et le Conservation on the Coast CDM Program.
3. La SIERE concevra, financera et mettra en œuvre un programme pilote de conservation de l'électricité ciblant les consommateurs résidentiels et les petites entreprises des Premières Nations vivant dans les réserves qui sont reliées au réseau qu'elle contrôle ou qui le seront bientôt.

4. S'il n'est pas nécessaire que les programmes de CGD de la SIERE et des SLD ciblant les Premières Nations vivant dans les réserves et les consommateurs ayant un faible revenu n'aient pas à répondre à des exigences de rendement coûts-profits, la SIERE veillera néanmoins à ce que ces programmes soient conçus et mis en œuvre de manière aussi rentable que possible.

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OSEA INTERROGATORY 6

(ISSUE 5.1) OSEA IR 6

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1 (Management Discussion and Analysis)

Preamble: In the Management Discussion and Analysis Tab of the 2019 IESO Regulatory Scorecard, the IESO lists its initiatives from the 2017 Long Term Energy Plan.

Key Initiative 4 for 2018 is to "Identify potential obstacles to fair competition for energy storage and where appropriate, propose mitigation strategies – By the end of 2018, engage to identify obstacles and develop mitigation strategies on obstacles that are found to be inappropriate, report on obstacles and mitigation strategies."

a) When does the IESO intend on completing this initiative?

b) What progress has IESO made in identifying obstacles for fair competition for energy storage and developing mitigation strategies?

c) What are the results of this work?

d) What steps remain to be completed in 2019 regarding this initiative?

RESPONSE

a) b) and c)
The IESO completed this initiative with the release of its report, "Removing Obstacles for Storage Resources in Ontario", (provided as Attachment 1 to this response) which recommends solutions to address the primary barriers preventing the fair competition of energy storage resources. The report was published on December 19, 2018 and was developed with substantial input from the Energy Storage Advisory Group (ESAG) – a group of over 40 organizations with an interest in energy storage.

d) As communicated to the ESAG at the February 2019 meeting (materials are available on IESO's website), IESO is currently devleoping a work plan to address those barriers within the IESO's scope of accountability. The IESO and OEB are working to coordinate their efforts in this area. The IESO expects to focus its work with ESAG for the remainder of 2019 on the implementation of the work plan.

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Removing Obstacles for Storage Resources in Ontario

December 19, 2018

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EXECUTIVE SUMMARY

Background

Given the proliferation of distributed energy resources (DERs), including energy storage, and the growing role they are poised to play in maintaining system reliability and enabling customer resiliency, system operators are exploring ways to integrate these resources into their systems.

According to Bloomberg New Energy Finance, the global energy storage market will double six times between 2016 and 2030, rising to a total of 125 gigawatts. This is similar to the solar industry's expansion between 2000 and 2015, when solar share, as a percentage of total generation, doubled seven times.

When Ontario's current electricity markets, supporting tools and processes, and regulatory frameworks were created, the widespread adoption of storage technologies (aside from large-scale pumped hydro) was not contemplated and many of the storage technologies available today were unknown.

The emergence of new energy storage technologies has changed the paradigm in a sector that has traditionally been operated with conventional resources that act as a load or a generator but not both. As a result, storage facilities are facing obstacles that limit both their ability to compete to provide services that they are otherwise capable of delivering, and to integrate into wholesale electricity markets and systems.

As Ontario moves to a more competitive and technology-neutral approach to acquiring products and services, energy storage resources need to be able to compete in the delivery of market services and be effectively integrated into the system to ensure their potential value is realized to achieve the best cost and reliability outcomes for ratepayers.

IESO Committed to Supporting New Technologies

Enabling innovation and competition of newer technologies is central to the Independent Electricity System Operator's (IESO's) innovation and efficiency agenda. Because energy storage can deliver multiple capabilities – both as a load and as a generator – supporting further

integration of these resources into the electricity system is essential to sector evolution and modernization.

Moving with the U.S.

As the IESO focuses on eliminating barriers to the participation of energy storage in the electricity markets in Ontario, the U.S. Federal Energy Regulatory Commission (FERC) is making similar moves. In February 2018, FERC issued order no. 841, requiring independent system operators (ISOs) and regional transmission organizations (RTOs) to level the playing field. The order requires each ISO and RTO to revise its tariff to establish a participation model for storage resources, and implement a compliance plan by the end of 2019.

Evolving Role of Energy Storage

Despite current obstacles, energy storage is not new to Ontario's electricity system. For more than six decades, the Sir Adam Beck Pump Generating Station has been helping the IESO maintain reliability in the province through its storage of water from the Niagara River.

In 2012, the IESO launched the Alternate Technologies for Regulation pilot program and procured six megawatts of capacity from two storage facilities to provide regulation service that maintains second-by-second balance on the grid. Both of those facilities came online in 2014.

Two years later, the IESO expanded its portfolio with two procurements (Phase 1 and Phase 2 Energy Storage Programs) for an additional 50 MW of energy storage from approximately 20 different projects. These projects are providing the IESO with more information on both the reliability services that energy storage solutions can provide and the value of these solutions in Ontario.

Creation of the Energy Storage Advisory Group

In April 2018, the IESO established the Energy Storage Advisory Group (ESAG) to advise, support and assist the IESO in evolving policy, rules, processes and tools to better enable the integration of storage resources within the current structure of the IESO-administered markets.

The objectives of the ESAG are to:

- Support the IESO's work to identify obstacles to fair competition for energy storage resources, in Market Rules, industry codes, and regulations, and propose mitigating strategies, where appropriate;
- Provide input to the IESO's work plan and/or list of priorities to address storage-related issues and opportunities within the current IESO-administered markets, including tools and operational arrangements; and
- Advise, consult and coordinate discussions on issues which may affect storage participation in the existing IESO-administered markets.

This report focuses on the identified obstacles and mitigating strategies to address these barriers and help ensure fair competition of energy storage resources in the market.

Developing Mitigating Strategies

The IESO has developed, with consideration of feedback from ESAG,[1] mitigating strategies to deal with obstacles that warranted further action and relate to the IESO Market Rules, OEB Codes, or legislation and regulations. Criteria were developed, reviewed by the ESAG, and applied to an inventory of obstacles to determine which of them met these conditions.

Recommendations

- Review and amend Market Rules
- Review the Ontario Energy Board Codes
- Consider energy storage in Ontario legislation and regulations
- Consider the market-efficiency impact of applying wholesale uplift charges
- Review the application of transmission and distribution charges
- Clarify the use of forecast revenues from distribution and transmission rates as an offset to connection costs
- Provide a clearer framework for including storage assets in rate base
- Address the incentive for distributors to favour capital investments
- Develop guidance for storage resources providing multiple services to different entities
- Review the application of the gross revenue charge

[1] All public comments and feedback provided by ESAG members are published on the ESAG webpage on the IESO's website. In addition, the IESO reviewed all public feedback at ESAG meetings and described how it was considered. The presentations reviewing the feedback are also available on the ESAG webpage.

- Review the RRRP program surcharge
- Clarify the resources that transmitters and distributors can own and operate

The organizations responsible for these recommendations include the IESO, the OEB and the Ministry of Energy, Northern Development and Mines.

The IESO is committed to leveraging the ESAG as a forum to pursue solutions to the identified barriers that fall under its jurisdiction.

To encourage implementation of recommendations across the responsible organizations, the OEB and the Ministry of Energy, Northern Development and Mines are welcome to leverage the ESAG forum to continue discussions on items related to their respective mandates.

INTRODUCTION

Background

At any given point in time on the electricity grid, power supply and demand must be equal. Adjustments are made constantly to accommodate for predictable changes like human behaviour and unpredictable changes like equipment failure. Energy storage technologies are allowing electricity to be stored and re-injected back into the grid when it is needed, helping maintain that important balance of supply and demand and ensuring a reliable grid.

However, when the electricity markets opened in 2002, widespread adoption of distributed energy resources (DERs), including energy storage, was not contemplated (except for large-scale pumped hydro). The market's system tools and processes created at that time supported the participation of conventional resources. As a result, storage facilities are facing obstacles that limit both their ability to to provide services that they are otherwise capable of delivering and to integrate into wholesale electricity markets and systems.

As Ontario moves to a more competitive and technology-neutral approach to acquiring products and services, and as the role of storage in Ontario continues to grow, these resources need to be able to compete in the delivery of market services and be effectively integrated into the system to ensure that the potential value is realized.

IESO Committed to Supporting New Technologies

Enabling innovation and competition of newer technologies is central to the Independent Electricity System Operator's (IESO's) innovation and efficiency agenda. Identifying, understanding and removing barriers to new technologies will help enable the innovation of these participants.

Because energy storage can deliver multiple capabilities – both as a load and as a generator – supporting further integration of these resources into the electricity system is essential to sector evolution and modernization.

Creation of the Energy Storage Advisory Group

In April 2018, the IESO established the Energy Storage Advisory Group (ESAG) to advise, support and assist the IESO in evolving policy, rules, processes and tools to better enable the integration of storage resources within the current structure of the IESO-administered market.

The objectives of the ESAG are to:

- Support the IESO's work to identify obstacles to fair competition for energy storage resources;
- Provide input to the IESO's work plan and/or list of priorities to address storage related issues and opportunities; and
- Advise, consult and coordinate discussions on issues which may affect storage participation in the existing IESO-administered markets.

Moving Forward

The recommendations in this report are an important step in removing the barriers facing energy storage resources in Ontario. However, there is still more work to be done by the sector, including the Ontario Energy Board (OEB) and the Ministry of Energy, Northern Development and Mines.

As an IESO advisory body, the ESAG will continue to play a key role in helping to implement report recommendations that are within the IESO's mandate through ongoing discussions in 2019.

The recommendations in this report are expected to be used as one input to the OEB's initiatives to: identify regulatory reforms for distributed energy resources (DERs), such as storage; and, encourage utilities to strengthen their focus on long-term value and least-cost solutions.[2] Through this OEB-led work, dialogue related to a number of the recommendations included in this report is expected to continue.

[2] As described in the OEB's 2018-2021 Business Plan

Recommendations

The ESAG examined many different barriers to fair competition of storage resources within the current market structure. The complete inventory can be found on the ESAG page on the IESO website.[3]

The IESO has developed, with feedback from the ESAG, strategies for mitigating obstacles in the inventory that relate to Market Rules, OEB Codes, legislation and regulations, based on the criteria described in Appendix 1.

The recommendations fall into two categories. The first addresses lack of clarity in Market Rules, OEB Codes, and legislation and regulations related to energy storage resources, while the second deals with specific concerns within the Market Rules, OEB Codes, Policy and Guidance, and legislation and regulations, or any combination thereof.

LACK OF CLARITY IN MARKET RULES, OEB CODES, AND LEGISLATION AND REGULATIONS

With often no reference to energy storage in the Market Rules, OEB Codes, and legislation and regulation, all parties are left to interpret how the existing rules apply. Because storage resources act as both a load and a generator, the intended application and interpretation of existing rules for loads and generators is often unclear. This can create confusion and inefficient outcomes.

To remedy these concerns, this report recommends

- The IESO review and amend its Market Rules;
- The OEB review its relevant Codes; and
- The Government of Ontario consider energy storage in Ontario legislation and regulations.

[3] http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Energy-Storage-Advisory-Group

Review and Amend the IESO Market Rules

Energy storage is not specifically identified in the IESO's Market Rules. For example, rules regarding prudential requirements, facility registration, metering, operational rules, settlement, ancillary services and reliability requirements do not address storage. Further, software tools used for market administration and resource dispatch better support market participants that are loads or generators; these tools do not always effectively represent resources that can serve as both. Most notably, this includes the dispatch scheduling optimization (DSO) engine, which is used to determine optimal dispatch instructions through consideration of a number of future dispatch intervals. The DSO helps to avoid excessive cycling of resources, as well as unpredictable dispatch, assisting in the maintenance of reliability and efficiency of the grid.

Recommendation

The IESO should review and amend its Market Rules, where possible, to clarify the participation of storage resources in IESO-administered markets.

This lack of clarity in the Market Rules is a systemic issue related to other obstacles facing energy storage resources explored by ESAG, including the:

- Inability of energy storage to participate in the IESO operating reserve (OR) market;
- Inability to optimize regulation service in the IESO-administered market from energy storage facilities;
- Inability of the IESO dispatch scheduling optimization (DSO) engine to model energy storage functionality;
- Absence of mechanisms to enable energy storage facilities to accrue revenues by offering multiple, non-overlapping services; and
- Lack of clarity with respect to storage in the interconnection process.

A Note on the Implementation of this Recommendation

A key part of implementing this recommendation is a plan to ensure fair treatment of energy storage facilities with respect to other types of market participants. This plan will be influenced by the continued work of the IESO's ESAG, as well as learnings from the IESO's energy storage competitive procurements.

Any proposed amendments to the IESO Market Rules need to be directionally consistent with the changes considered as part of the market renewal initiatives.

As Market Rules are reviewed, in the short-term consideration should be given to providing:

- Clarification of performance requirements for inverter-based technologies (per the standards that are being or have been developed by the Canadian Standards Association), as well as the party responsible for initiating the connection assessment process; and
- Guidance on how to operate under the existing Market Rules, including the process for submitting dispatch data and responding to dispatch instructions, where applicable.

Review the Ontario Energy Board Codes

Energy storage resources are not specifically referenced in OEB Codes, such as the Transmission and Distribution System Codes and the Retail Settlement Code. These Codes set out the obligations of distributors and transmitters and, among other things, provide the rules regarding connection of customers, as well as the economic evaluation of connections and expansions.

Because storage is not specifically identified in these Codes, sector participants, including transmitters and distributors, apply the existing regulatory framework to storage-related proposals, creating the risk of inconsistency.

Recommendations

- The OEB should review its Codes to consider energy storage participation and its regulatory framework, including processes and requirements for connections. This work may be undertaken in the context of broader initiatives outlined in the OEB's Business Plan, such as the initiative to enable DERs.
- Pending a comprehensive review of its Codes, the OEB could provide information on how to interpret the existing requirements in the Codes with respect to energy storage resources.

Consider Energy Storage in Ontario Legislation and Regulations

In many cases, there is no clear role and/or definition of energy storage in Ontario legislation and regulation. While the government recently amended Ontario Regulation 429/04 A*djustments Under Section 25.33 of the Act* to address energy storage, other regulations – such as Ontario

Regulation 124/02 *Taxes and Charges on Hydro-Electric Generating Stations,* as well as Ontario Regulation 442/01 *Rural or Remote Electricity Rate Protection* – are left open to interpretation.

Recommendation

The Government of Ontario should consider the role of energy storage both as part of any new legislation and regulations or amendments to existing legislation and regulation and within Ontario Regulations 124/02 and 442/01, which refer to the gross revenue charge and rural and remote rate protection plan surcharge.

SPECIFIC CONCERNS WITH MARKET RULES, OEB CODES, POLICY AND GUIDANCE, AND LEGISLATION AND REGULATION

Concerns identified by ESAG with respect to specific content covered by the IESO Market Rules, OEB Codes, Policy and Guidance, and legislation and regulation (and combinations thereof) are addressed in the following mitigating strategies:

1. IESO Market Rules
- Consider the market-efficiency impact of applying wholesale uplift charges

2. OEB Codes, Policy and Guidance
- Review the application of transmission and distribution charges
- Clarify the use of forecast revenues from distribution and transmission rates as an offset to connection costs
- Provide a clearer framework for including storage assets in rate base
- Address the incentive for distributors to favour capital investments

3. IESO Market Rules and OEB Codes, Policy and Guidance
- Develop guidance for storage resources providing multiple services to different entities

4. Legislation and Regulations
- Review the application of the gross revenue charge
- Review the application of the RRRP program surcharge

- Clarify the resources that transmitters and distributors can own and operate

Section 1 - IESO Market Rules

Consider the Market-Efficiency Impact of Applying Wholesale Uplift Charges

Currently, uplift charges are used to recover the costs associated with such items as cost guarantees, ancillary services and reliability expenses. As part of operating the market, the IESO calculates uplift charges and allocates them to market participants on their withdrawals of electricity.

Storage resources withdrawing electricity to charge their facilities are required to pay wholesale uplifts according to their consumption, much like a traditional load. The storage community has indicated that this may result in inefficient market outcomes if the storage facilities recover these costs through the market when providing a wholesale market service. For example, stakeholders noted that market inefficiencies could result if the application of the uplifts prevented a storage facility from being economic to dispatch and this resulted in higher total costs to the system.

The IESO believes that it is appropriate for storage resources to pay wholesale uplifts from the perspective of consistency with how other market participants are charged, as well as fairness in terms of paying for the services from which they benefit. However, more discussion is required to understand the impact on market efficiency.

Recommendation

The IESO should lead further discussions to consider the potential impacts to market efficiency resulting from the application of uplift charges. These discussions should be coordinated with design changes as part of the IESO's market renewal initiatives.

Section 2 – OEB Codes, Policy and Guidance

Review Application of Transmission and Distribution Charges

Without a specific rate class for energy storage resources, transmitters and distributors must interpret the existing framework to determine the applicability of transmission and distribution

charges to energy storage resources. This issue means that energy storage resources are generally treated as loads for the purposes of the application of these charges.

The storage community also expressed concern with respect to gross load billing for the line and transformation connection components of the transmission charges. Specifically, the concern is that storage resources experience a lower threshold for triggering gross load billing than embedded renewable resources. This issue has been raised as part of a live proceeding before the OEB EB-2017-0049 and continues to be monitored by the sector.

Transmission and distribution charges are the jurisdiction of the OEB. Given the complexity of this issue, and its linkages to the regulatory framework, the IESO recommends that further dialogue on these challenges take place.

Recommendation

As the application of transmission and distribution charges is a complex and multi-faceted problem that involves cost allocation and rate design, the OEB should lead further discussions on this issue.

A Note on the Implementation of this Recommendation

The OEB will be considering the application of charges, as well as rate design, as part of the initiatives outlined in its 2018-2021 Business Plan to identify regulatory reforms needed to facilitate the integration of distributed energy resources, including storage.

Clarify the Use of Forecast Revenues from Distribution and Transmission Rates as an Offset to Connection Costs

Because energy storage resources are often treated as loads, they are subject to transmission and distribution charges based on their withdrawals of electricity. In some cases, these revenues are not considered when determining capital cost contributions related to new or expanded connections, as per section 3.2.1 of the Distribution System Code (DSC) and section 6.3 of the Transmission System Code (TSC). This issue has resulted in inconsistent treatment of energy storage as it relates to the provisions of the DSC and TSC.

Recommendations

- To the extent that there is an inconsistent application of the DSC and TSC for energy storage facilities when it comes to connection costs, the OEB should provide clarification on the intention and expected application of these provisions.
- The OEB should also ensure stakeholders are aware of the process for filing complaints regarding incorrect application of rules.

Provide a Clearer Framework for Including Storage Assets in Rate Base

Regulated utilities now have more potential cost-effective options for meeting their distribution or transmission needs, including storage. Distributors and transmitters are more practiced in the process for cost recovery of "poles and wires" solutions through the rate base, while there is less experience in the inclusion of other types of cost-effective assets in the rate base. While some distributors have already included storage in rate base, more clarity is required on how a distributor or transmitter can include a cost-effective storage asset in its rate base.

Recommendation

With new potential cost-effective options to meet needs, the OEB should provide the sector with greater clarity on how to include options such as cost-effective energy storage in the rate base.

A Note on the Implementation of this Recommendation

The OEB's Guidelines for Electricity Distributor Conservation and Demand Management discuss how distributors can apply to recover the costs of storage in rates if the need for capital investment is deferred or displaced. In addition, discussions on facilitating the use of DERs, such as storage, as alternatives to "poles and wires" are expected to continue as part of the OEB initiative to move to a regulatory framework that would allow utilities to strengthen their focus on long-term value and least- cost solutions.

Address the Incentive for Distributors to Favour Capital Investments

Under the current regulatory framework, distributors may be incented to pursue their own capital investments over third-party solutions to provide a distribution service. This is not only because distributors earn a return on capital but not on operating expenses, through which third-party solutions would be financed, but also because distributors have a legal

responsibility to maintain the safety and reliability of their systems and relying on a third-party solution to meet those obligations may be perceived as riskier.

Recommendation

The OEB should consider emerging alternatives for service provision, such as energy storage, in its planned review of utility remuneration.

Section 3 –IESO Market Rules and OEB Codes, Guidance and Policy

Develop Guidance for Storage Resources Providing Multiple Services to Different Entities

Currently, there are limited means to enable energy storage facilities to accrue revenues from offering multiple, non-overlapping services. While they have the potential to provide services behind-the-meter, at the distribution and transmission levels, and to the wholesale markets, existing frameworks are not conducive to optimizing the services they can provide.

Recommendations

- Recognizing that storage can provide services behind-the-meter and at the distribution and transmission levels, the OEB should develop guidance on providing multiple services to different entities.
- The IESO should lead discussions with the storage community to better understand the breadth of wholesale market services that energy storage could provide and how to integrate this into the current IESO-administered markets.
- Given the interconnected nature of these recommendations, the IESO suggests that further discussions should include engagement with the ESAG.

A Note on the Implementation of this Recommendation

The OEB has identified the need to appropriately compensate the multiple value streams that DERs, such as storage, can provide as part of its broader initiative to enable DERs.

Section 4 – Legislation and Regulation

Review the Application of the Gross Revenue Charge

Hydro-electric generating facilities pay taxes and charges calculated on their gross revenue, as required through Ontario Regulation 124/02.

There are three parts to this gross revenue charge (GRC):

- Property tax portion payable to the Minister of Finance
- Property tax portion payable to the Ontario Electricity Financial Corporation, and
- Water rental charge portion payable to the Minister of Finance.

These charges are applied to pumped hydro facilities when they withdraw electricity from the grid to operate the facility's pumps, much like a load. The storage community has indicated that the application of the gross revenue charge may not be appropriate as the stored electricity is returned to the grid.

Recommendation

Since GRC has tax policy and other considerations, the Ministry of Energy, Northern Development and Mines and the Ministry of Finance should lead further dialogue and review of the application of the GRC to pumped hydro storage.

Review the Application of the RRRP Program Surcharge

The Rural and Remote Rate Protection (RRRP) program, required by *Ontario Regulation 442/01*, is a surcharge applied to all electricity consumers. Funds collected are provided to some LDCs to help offset the cost of providing service to consumers in rural and remote areas.

Storage facilities are subject to this surcharge on their withdrawals, similar to a load. The storage community has indicated that the application of the RRRP charge may not be appropriate as the stored electricity is returned to the grid.

Recommendation

Given that this charge deals with government programs and policy, the Ministry of Energy, Northern Development and Mines should lead further dialogue and review of the appropriateness of applying the Rural and Remote Rate Protection surcharge to storage.

Clarify the Resources that Transmitters and Distributors can Own and Operate

Section 71 (3) of the OEB Act identifies the types of resources that distributors can own and operate, including energy storage. Stakeholders have observed that a similar provision is not included in the act for transmitters.

It was also noted that there is clarity required around how Section 71(3) of the act relates to Section 80 of the act, which refers to the requirement to notify the OEB of generation ownership by transmitters and distributors. The IESO notes that a licensed entity could approach the OEB to request clarity on the relationship between these two provisions of the act, if it so required.

Recommendation

The Ministry of Energy, Northern Development and Mines should give consideration to creating a similar provision for transmitters as that in Section 71(3) of the OEB Act provides in respect of distributors.

NEXT STEPS

The IESO, with the input of ESAG members, has completed an important step in addressing barriers facing energy storage by categorizing and evaluating obstacles and, where appropriate, identifying mitigating solutions.

The ESAG has an enduring role and its focus will now shift to implementing the mitigating strategies within the IESO's mandate.

Specifically, in 2019, the ESAG will focus on creating and implementing a plan to ensure consistent treatment of energy storage facilities and inform IESO Market Rule amendment proposals through discussions of[4] the:

- Integration of storage into wholesale market products and regulation service; and
- Interface between the wholesale market and distribution-connected storage.

The IESO welcomes the OEB and others to use the ESAG as a forum to continue discussions on barriers related to their mandates, where feasible and appropriate. The IESO recognizes that further work regarding many of the recommendations related to items within the OEB's

[4] As discussed in the "Future ESAG Issues Scope" materials at the November 6, 2018 meeting, available at: http://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Engagements/Energy-Storage-Advisory-Group

mandate will be conducted as part of its initiatives to facilitate DERs and address the remuneration of utilities. The scope of these initiatives is broader than issues pertaining solely to energy storage and a broader set of stakeholders must be engaged. The IESO encourages members of the ESAG to participate in the OEB's consultations on these initiatives as well. To the extent that this work addresses a barrier identified through ESAG or is related to IESO initiatives, ESAG members have expressed an interest to have a common forum for these discussions.

While the focus of this work is on the current structure of the market, the IESO also encourages ESAG members to participate directly in the future market vision as part of the market renewal initiatives.

CONCLUSION

With the growth of energy storage resources that can play a significant role in supporting system reliability, the sector must work together to enable fair competition when these resources are technically able to deliver these services.

The IESO, with the input of ESAG members, has taken an important step in unlocking opportunities for storage resources. Obstacles have been identified and mitigating strategies, where appropriate, have been developed to ensure that storage resources can be integrated into the market and can compete in the delivery of services, where technically feasible.

Because the current electricity market, supporting tools and processes, and regulatory frameworks were created before widespread adoption of distributed energy resources, including storage, many of the barriers identified in this report stem from a lack of clarity with respect to how storage should participate in the Market Rules, OEB Codes, and legislation and regulation.

Addressing obstacles to fair competition of energy storage resources requires further collaboration and ongoing dialogue among stakeholders in the electricity sector, including new and existing market participants, regulators and those that establish public policy.

The IESO is committed to its role enabling competition of energy storage in the delivery of services. To that end, it will continue to leverage the ESAG to support the implementation of the IESO-centred recommendations outlined in this report.

Appendix 1 – Criterion for Determining Obstacles

Is storage prevented from, or burdened in, competing with other technologies in the delivery of services that they are otherwise capable of providing?

The following test questions can be used to help assess issues for which the answer to the main criterion is not clear:

- Are Ontario's electricity Market Rules, Codes, and regulations able to accommodate the evolution and competition of new technologies, such as storage resources?

- Is the treatment of storage resources with respect to regulatory and market charges consistent with the intent of those charges?

OSEA INTERROGATORY 7

(ISSUE 5.1) OSEA IR 7

INTERROGATORY

Reference: Exhibit C, Tab 1, Schedule 1, Attachment 1 (Management Discussion and Analysis)

Preamble: In the Management Discussion and Analysis Tab of the 2019 IESO Regulatory Scorecard, the IESO lists its initiatives from the 2017 Long Term Energy Plan.

Key Initiative 5 for 2018 is to "Identify options for pilot projects that evaluate using electricity to create hydrogen - By the end of 2018, undertake market research, draft and issue a request for expression of interest and identify options for pilot projects."

a) The IESO notes that this initiative was re-prioritized in 2018.

   i. When does the IESO intend on completing this initiative?

   ii. Why was this initiative re-prioritized?

b) What progress has IESO made in identifying options for pilot projects that evaluate using electricity to create hydrogen?

c) Has the IESO taken any of the steps listed above, i.e. undertake market research, draft and issue a request for expression of interest and identify options for pilot projects?

   i. If so, what are the results?

   ii. If not, why not? When does IESO expect to complete the steps listed above?

d) Has the IESO undertaken any feasibility studies on using electricity to create hydrogen?

RESPONSE

a) The development of pilot projects that evaluate the use of electricity to create hydrogen has been put on hold while the IESO focuses its efforts on a number of priority initiatives, including the Market Renewal Program (MRP) which will improve the efficiency of the IESO administered markets and the Transitional Capacity Auction which will provide a mechanism to meet Ontario's incremental capacity needs prior to

implementation of the MRP. The IESO does not currently have a timeline for the completion of this initiative.

b) and c)

On April 12, 2018 the IESO held a webinar on a draft request for expressions of interest (RFEI). The RFEI would have sought to understand and identify different power to gas technologies and their potential applications, as well as their associated technical and operational characteristics and potential benefits and challenges from an electricity system perspective. The final RFEI was not issued, however, as the IESO put the initiative on hold. The IESO does not currently have a timeline for the completion of this initiative. It should be noted that LTEP did not include provisions for any actual funding or implementation of any projects.

d) Under the Phase 1 Energy Storage Procurement, the IESO contracted Hydrogenics Corp. to deliver grid reliability services through a power to gas facility. The project was commissioned in 2018, and is part of an ongoing research program that will last three years allowing the IESO to evaluate the facility's performance over time in terms of availability, reliability, and accuracy in responding to dispatch.

OSEA INTERROGATORY 8

(ISSUE 5.1) OSEA IR 8

INTERROGATORY

Reference: Exhibit A-2-2, Tab 1, Schedule 1, page 12 (IESO's 2019-2021 Business Plan)

Preamble: The IESO states in its 2019-2021 Business Plan that the IESO anticipated delivering to the OEB its third-party access implementation plan regarding smart meter data by the end of 2018.

a) Has the IESO delivered this plan to the OEB? If not, when does the IESO intend to submit it?

b) Please provide a copy of the plan.

RESPONSE

While the IESO is designated as the Smart Metering Entity (SME) the *Electricity Act, 1998* and *Ontario Energy Board Act, 1998* set out that the SME requires OEB approval of any fees it charges. On December 4, 2018 the SME filed an application to charge market prices for Third Party Access to smart meter data held by the SME (OEB file no. EB-2018-0316), which is currently in the Argument phase[1].

[1] The complete record is available on the OEB's website at: http://www.rds.oeb.ca/HPECMWebDrawer/Record?q=CaseNumber=eb-2018-0316&sortBy=recRegisteredOn-&pageSize=400

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OSEA INTERROGATORY 9

(ISSUE 5.1) OSEA IR 9

INTERROGATORY

Reference: IESO's "Indigenous Conservation Programming: A New Approach" report dated March 2018.

Preamble: The IESO states in the above report at page 12 that "Participants wanted to know more about how to access funding for renewable energy equipment and/or microgrids. They asked if the IESO could partner with financial institutions, or other agencies to advise them about how to plan financially for these types of small-to medium-sized projects; for large projects, they were interested in knowing how to obtain loan guarantees."

a) What engagement did the IESO have with participants in response to these inquiries about renewables, distributed energy and net metering?

b) What initiatives is the IESO undertaking or planning to undertake in response to these inquiries?

c) If there are written materials provided to participants on this subject, please provide same.

RESPONSE

a) The IESO engages regularly with stakeholders and other groups, including Indigenous communities, both formally and informally. Feedback received through these engagements has revealed that many Indigenous communities have an interest in renewables and other forms of distributed power. The IESO engages directly with communities that have expressed interest in these types of projects to better understand the goals that communities wish to achieve, and the conditions that may impact the ability to pursue such projects. The IESO also provides funding support for Indigenous communities that wish to pursue innovative energy projects.

b) With respect to Indigenous groups, the IESO continues to deliver Energy Support Programs that provide funding for First Nation and Métis communities to develop and implement community energy plans, build local capacity in the energy sector, and either lead or become involved in energy projects, which could include renewable energy generation.

c) Per the response to question a), no written materials were provided on this subject.

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OSEA INTERROGATORY 10

(ISSUE 5.1) OSEA IR 10

INTERROGATORY

Reference: Exhibit A, Tab 3, Schedule 1 (IESO's 2018 Annual Report).

Preamble: The IESO states in its 2018 Annual Report at page 7 that "in 2018 the IESO struck an Energy Storage Advisory Group, which identified barriers to the fair competition of energy storage in the province's electricity markets. The resulting report – *Removing Obstacles for Storage Resources in Ontario* – outlined a series of recommendations for electricity market, regulatory and policy change aimed at establishing a level playing field for this increasingly important and versatile resource."

a) How are the IESO and its Energy Storage Advisory Group implementing the recommendations set out in the IESO's *Removing Obstacles for Storage Resources in Ontario* report?

b) What is the timing for these steps to be taken to implement these recommendations?

RESPONSE

a) and b)

Please see the response to OSEA Interrogatory 6, at Exhibit I, Tab 5.1, Schedule 5.06.

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SEC INTERROGATORY 13

1.1-SEC-13

INTERROGATORY

[Ex. C-1-1] With respect to the new Operational Effectiveness Measure:

a. Please explain why this is the most appropriate metric to assess the IESO's market assessment and compliance activities.

b. Please provide a list of all other matrices that were considered and the rationale for why they were not chosen.

c. Please provide further details regarding the 'risk based assessment of market events' and what is considered a 'highest impact' market event. Please provide a copy of any document that outlines the risk assessment.

RESPONSE

a. The metric is informed by a procedural effectiveness objective. The IESO cannot predict the number of threshold market events, but can measure performance of certain steps within its control once a threshold event is identified. The metric drives timeliness in how the IESO (MACD) identifies a market event, performs a preliminary risk based assessment, and makes a decision on whether or not to advance to the next stage of the process. The performance measurement metric ensures MACD is monitoring and escalating the highest impact events for decision in a time sensitive manner, to ensure conscious timely consideration of the most important issues. This performance measurement metric relies on escalation of the process through various levels of the organization from analysts to senior leadership.

b. When developing the performance measurement metric, the IESO (MACD) also considered: the timeline for investigations; the response time to self-reports; the percentage of planned Reliability Standards Audits completed; the percentage of cases completed without dispute; and, the percentage of full time headcount to budgeted headcount. Ultimately, the IESO (MACD) determined that the performance metric should be premised on the highest impact market events, to focus procedural integrity and risk mitigation on high impact market events.

c. To preserve the integrity of investigative techniques and enforcement efficacy, the IESO (MACD) does not make public a definitive description of what will and will not

comprise a high impact market event. Also, given the inherent and evolving complexity of electricity markets, the definition must necessarily be broad and adaptive to capture foreseeable and unforeseeable events.

However, in general terms, the assessment of what comprises a high impact market event is governed by factors set out in the market rules such as: the frequency or repeat occurrence by a single market participant or multiple market participants; the impact to the market, whether monetary or otherwise; the impact to reliability; the scope of harm caused to other market participants; whether the offending conduct was deliberate or inadvertent and the degree to which corresponding risks were mitigated.

OEB STAFF INTERROGATORY 21

5.0 Commitments from Previous OEB Decisions

5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

Staff IR #21

INTERROGATORY

Reference: Exhibit C-2-1, Attachment 1, Tab 3, Schedule 1 Pgs. 6 of 15

Preamble:

Non-Executive Total Remuneration Review completed provided the following finding:

> Overall, the IESO'S compensation program, on a total remuneration basis, is positioned 11%, 22% and 18% above the market 50 percentile for the energy, public and private sector peer groups. Positioning above the 50' percentile on a total remuneration basis is primarily a result of the high employer provided value of pension plans in place at the IESO for PWU and the Society represented jobs. The non-bargaining group is below the market competitive range of the energy peer group at -7% of the 50th percentile and within the market competitive range of the public and private sector peer groups at 5% and -1% respectively.

Questions:

a) Has there been a cost of living adjustment applied to any of the peer groups for those located outside of the GTA?
b) If not, would this adjustment result in a reduction in the gap for total remuneration between the IESO and the three peer groups?
c) Given that the total remuneration gap between the IESO and peer groups is primarily driven by the IESO pension plans in place for the PWU and Society, what steps/initiatives could the IESO investigate to bring its pension plan remuneration in line with its peer groups?

d) Has the IESO considered moving the IESO Pension Plan into a larger or different plan, such as the OPB, that could potentially reduce the IESO's pension liability?

RESPONSE

a) Market rates in the Mercer study do not reflect any adjustments for cost of living.

b) A study of cost-of-living in the various comparator organization regions was not conducted as part of the Mercer study. Without an additional study on the cost of living being completed, it is unclear what impact on any gap would the adjustment would result in.

c) In 2016, the IESO negotiated significant plan changes with the Society that will be invoked in 2025. These changes, as outlined below, better align the IESO with its peer group comparators in the energy sector. Successor organizations of Ontario Hydro made essentially the same changes that also become effective in 2025.

These changes include:

i. The earnings component in the pension calculation will change from using the highest 3 years of earnings for an employee to the highest 5 years' earnings; and,

ii. The age plus service criteria for eligibility for an unreduced pension will increase from a factor of 82 to 85 points.

Additionally, Society employee pension contribution levels increased from what would have been 5% below YMPE and 7% above YMPE to 8% below/10% above as of January 1, 2018 (partially offset by 2% lump sum payments to 2033).

The IESO will continue its efforts to control pension costs in future collective bargaining meetings.

d) Since 2008, the IESO has considered and conducted several due diligence efforts regarding moving pension investments to a larger pension plan investment entity to potentially better optimize IESO pension's investments management. In terms of the IESO pension plan's design and terms any changes would need to be dealt with through collective bargaining. The IESO continues to monitor its pension investment and plan design to seek better economic improvements.

ENERGY PROBE INTERROGATORY 18

Issue 5.2 Is the Total Compensation Study (Mercer) for represented and non-represented staff appropriate?

INTERROGATORY

EP-18

Reference.: Exhibit C, Tab 4, Schedule 1 Mercer Compensation Study Page 3 ff.

Preamble: "*On an overall organization basis, the IESO'S total remuneration, including the value of all cash compensation, benefit and pension plans is positioned 11%, 22% and 18% above the market 50th percentile for the energy, public and private sector peer groups respectively. Positioning above the 50th percentile on a total remuneration basis is primarily a result of the high employer provided* value of pension plans in place at the IESO for PWU and the Society represented jobs. "

a) Does the IESO agree with the Mercer Findings? If so, please indicate so in the Table below. If not, please Comment regarding IESOs disagreement. (provide added notes/comments if insufficient space)

b) What actions will the IESO take to bring Compensation and Benefits to the Median? Please list in the following Table. (provide additional notes if insufficient space)

RESPONSE

Mercer Finding	IESO Comment	Actions IESO will take
IESO'S total remuneration, including compensation, benefit and pension plans is positioned 11%, 22% and 18% above energy, public and private sector peer groups	The IESO agrees with this finding and notes that target total cash compensation is positioned at 0%, 11% and 5% above energy, public and private sector peer groups, respectively. On a total cash basis, IESO is aligned with the energy sector, which is its main peer group. Note that percentages are deemed within market if they are	Pension changes have been negotiated for the represented groups, effective 2025, which will align the IESO overall closer to its peers. Changes are outlined in OEB Staff Interrogatory 13 b), at Exhibit I, Tab 1.3, Exhibit 1.13.

	within + or – 5%.	
Represented jobs are positioned between 15% to 34% above the market 50th percentile (salary) relative to the public and private sector peer groups.	The IESO agrees with these findings but contends that it primarily competes within the energy sector labour market and must offer compensation packages comparable to those in its sector. Note that the IESO does not provide short-term incentives (i.e. bonuses). Although the IESO does not provide short-term incentives, a target total cash compensation comparison is more relevant than a base salary comparison due to the prevalence of short-term incentives across peer groups. Target total cash compensation positioning for the represented groups is positioned 6% to 26% above the market 50th percentile relative to the public and private peer groups. More specifically, Society represented staff are positioned 12% and 6% above the public and private sectors, respectively; PWU represented staff are positioned 23% and 26%.	Compensation for the IESO's represented employee groups will continue to be measured against those in the energy sector. Increasing employee pension contributions and cost-saving pension plan proposals will be tabled by the IESO in future collective bargaining sessions. Its challenge is that the largest employee group is represented by the Society. In the absence of a negotiated agreement, the Parties are bound to participate in interest arbitration.

	above the public and private sectors, respectively.	
When compared to the private and public sector, the IESO provides a top quartile active benefits plan to its PWU employee group.	IESO agrees with these findings; the PWU Active Benefits plan is positioned above the 75th percentile of both private and public sector peer groups. PWU is also aligned to the 50th percentile for the energy group which is the primary comparator.	Similar to the comments provided above, the current level of benefits provided to PWU staff have been collectively bargained and are closely aligned with PWU employees at other sector employers. Nevertheless, the IESO will continue to seek cost savings in the benefit plan. For example, in the last agreement the PWU received only minimal benefit improvements, while the IESO secured significant improvements to the pension plan.
Short-term incentive levels are highest amongst non-unionized jobs in the energy sector	IESO agrees with this finding and notes that short-term incentive levels are also elevated amongst the non-unionized jobs in the private sector peer group.	IESO will continue to measure its competitiveness on a target total cash compensation basis.

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SUP INTERROGATORY 2

Issue 5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

INTERROGATORY

5.2 Society#2

Reference: Exhibit C-4-1, Attachment 1, Page 3, For the Energy Sector Peer Group,

> *"Organizations were selected considering the comparability of their operations and relative size of revenues when compared to the IESO, resulting in a peer group primarily consisting of other market operators, energy utilities and local distribution companies"*

a) (i) Which companies in the Energy Sector Comparator Companies list (Exhibit C-2-1, Attachment 1, Appendix A, Page 9) are primarily independent electricity system operators like IESO? (ii) What proportion do these companies represent of the total companies included in the Energy Sector Comparator Companies list?

b) (i) Which companies in the Energy Sector Comparator Companies list have a role as independent electricity system operators in addition to other electricity industry roles such as transmitter, distributor, generator etc. (ii) What proportion do these companies represent of the total companies included in the Energy Sector Comparator Companies list? (iii) What proportion of the employees in these companies are employed by their companies' in their independent electricity system operator unit?

c) Based on a) and b) above, what proportion of the total employees sampled in the Mercer study are employed in an independent electricity system operator unit?

MERCER RESPONSE

The following response was provided by Mercer Canada Limited:

a) The Alberta Electricity System Operator is primarily an independent electricity system operator. This is the only other independent electricity system operator in Canada. It represents 1 of 23 organizations included in the Energy Sector Comparators list.

b) The role of an "independent" electricity system operator is primarily applicable to the Alberta and Ontario markets.

c) The information to answer this question is not available.

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SUP INTERROGATORY 3

Issue 5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

INTERROGATORY

5.2 Society#3

Reference: Exhibit C-4-1, Attachment 1, Page 2 states

> *"Mercer considers compensation levels to be within a 'competitive range' if they fall within 10% of the target market positioning on a position-by-position basis (where you have a smaller sample size and higher variability in observations) and 5% on an overall organization basis (where you have a larger sample size and smaller variability in observations) when compared to target positioning (e.g., the 50th percentile). "*

a) Please provide a definition of what is regarded as a competitive range by Mercer.

b) How is the "competitive range" applied by Mercer and by Mercer's clients?

MERCER RESPONSE

The following response was provided by Mercer Canada Limited:

a) On a position basis, we consider a competitive range to be within 10% of the target market positioning (e.g., the 50th percentile). On an organization basis, we consider a market competitive range to be within 5% of the target positioning.

b) The competitive range is applied to the target market positioning (e.g., the 50th percentile) to draw conclusions regarding the positioning of compensation on a job and/or organization basis.

c) Please refer to Exhibit C-4-1, Attachment 1, page 3 for the Energy Sector Peer Group.

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SUP INTERROGATORY 4

Issue 5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

INTERROGATORY

5.2 Society#4

Reference: Exhibit A-3-1, Page 29 of 42 , Filed March 28, 2019.

(in thousands of Canadian dollars) (as at September 30)	2018 Pension Benefits	2017 Pension Benefits	2018 Other Benefits	2017 Other Benefits
	$	$	$	$
Employer contribution/other benefit payments	13,052	13,500	2,727	2,472
Plan participants' contributions	7,468	6,253	-	-
Benefits paid	26,051	25,457	2,727	2,472

The most recent actuarial valuation of the IESO registered pension plan for regulatory funding purposes was completed as at January 1, 2017.

a) Pension Plan participants contributions increased from $6.253M in 2017 to $7.468M in 2018, or a 20% increase. Does the Mercer study take into account the full impact of the substantial increase in employee pension contributions in 2018?

b) Is the basis of the Mercer study the same actuarial valuation referenced above i.e. an actuarial valuation completed as at January 1, 2017?

c) Are the pension costs in this 2019 revenue requirement application also based upon the same actuarial valuation completed as at January 1, 2017?

d) (i) When will a new actuarial valuation of the IESO pension plan be prepared? (ii) which IESO annual revenue requirement application before the OEB will reflect this next pension valuation?

e) Please provide the funded status of the IESO pension plan on a going concern and funded status basis as of January 1, 2018 and January 1, 2019.

RESPONSE

a) & b)

The Mercer study is not based on the IESO's actuarial valuations.

c) Yes.

d) (i)The next required valuation date is January 1, 2020.

(ii) It will be included in the revenue requirement for 2021.

e)

	Jan 1, 2018	Jan 1, 2019
Solvency	104.2%	100.1%
Going Concern	101.0%	98.3%

SUP INTERROGATORY 5

Issue 5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

INTERROGATORY

5.2 Society#5

Reference: Exhibit C-4-1, Attachment 1, pp3-4 "Methodology" section

a) Did Mercer send out compensation surveys to each peer company or use existing Mercer "Database" data?

b) If surveys were sent out to peer group companies, how many companies did not complete the survey? What percentage does this number represent of those who completed the survey?

c) If existing Mercer "Database" data was used, please (i) explain why, and (ii) explain the validity of the results if peer group companies were not able to determine which of their positions mapped to the IESO defined positions included in the survey.

MERCER RESPONSE

The following response was provided by Mercer Canada Limited:

a) Both approaches were used.

b) Five organizations did not share data requested by the survey. Approximately 18% of invited organizations did not share data requested by the survey; 82% of invited organizations shared data.

c) Data was leveraged from Mercer's Benchmark Database (MBD) to supplement data collected from targeted peer organizations. Following standard compensation survey practice, peer organizations matched their jobs to the MBD jobs based on job content. Mercer reviewed the IESO job descriptions and matched the IESO jobs to the MBD jobs, therefore, the MBD job description provides the common ground for mapping peer organization jobs to IESO jobs.

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SUP INTERROGATORY 6

Issue 5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

INTERROGATORY

5.2 Society#6

Reference: Exhibit C-4-1, Attachment 1, p4 "Methodology" section

> *"All compensation data is reflective of the most recently available data as of the completion of the analysis, and is presented effective for 2018."*

a) What was the date of the IESO compensation data which was used in the study e.g. as of 20171231 or as of 20180331 etc..

b) (i) Does the date of all the peer group compensation data match that of IESO? (ii) If not, why not and how does this impact the validity of the study results. And what proportion does the mismatched data represent of the total data gathered?

MERCER RESPONSE

The following response was provided by Mercer Canada Limited:

a) IESO provided the data to Mercer on May 28, 2018.

b) (i) & (ii) All survey information used by Mercer was the most recent available at the time of the study. The survey data collected is effective May 1, 2018. The data sourced from Mercer's Benchmark Database is effective April 1, 2017. This data was adjusted by the expected value of increases to bring it to May 1, 2018 levels. Based on the above approach, all market data are effective as of the same date and therefore, there are no "mismatched data".

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SUP INTERROGATORY 7

Issue 5.2 Is the Total Compensation Study for represented and non-represented staff appropriate?

INTERROGATORY

5.2 Society#7

Reference: Exhibit C-4-1, Attachment 1, pp1 "Executive Summary" section

> *"In conducting the compensation analysis, Mercer worked with the IESO to identify benchmark positions to compare to market that represent a valid cross sample of the organization's functions and levels. The breadth of benchmark positions selected is within the range of 50% to 75% of employees considered best practice when benchmarking on an organization basis. The benchmarking includes positions that represent approximately 52% of employees at the IESO."*

So best practice when benchmarking is within a range of 50% to 75% of employees.

a) The Mercer analysis only "includes 55 of the 136 (40%) management and professional employees" [Reference Exhibit C-4-1, Attachment 1, p4". This falls about 20% below Mercer's best practice range lower limit. Please explain: (i) why a non-best practice number of management employees were included in the sample, and (ii) what impact this has on the validity of the Mercer study results for this category of employees as well as the overall results.

b) Approximately 52% of IESO employees were included in the survey, which is marginally within the lower threshold of the best practice range of 50 to 75% of employees. Please explain: (i) why a larger number of IESO employees were not included in the sample, and (ii) how the certainty of the study results improve with progressively larger samples of the total employees i.e. 50% versus 55% versus 60%.

c) Did Mercer or IESO management initially propose which Society and PWU positions were to be included in the study? Please outline how and why this initial proposal was modified to land on the positions included in the study.

d) What steps does Mercer take in these sorts of studies to ensure that there is not inadvertent bias in the positions being benchmarked to ensure that the study results will not be biased i.e. the client company has not chosen positions which may result in its median compensation for represented positions being higher or lower than they otherwise would be.

e) Further to part d) above, what steps did Mercer take in this IESO study to ensure that the IESO median results were not biased.

f) Please compare the Mercer Compensation Benchmarking Study results for IESO to the 2018 actual median compensation data for Society and PWU staff as provided earlier in answer to **1.2 Society#1 part e)** and explain the differences. As necessary, separate the results for benefits and pension costs in order to provide this explanation.

MERCER RESPONSE

The following response was provided by Mercer Canada Limited:

a) & b)

As a result of the unique nature of IESO's operations, the organization includes many jobs that are not commonly found in other organizations, or are single incumbent positions. This reduces the number of positions, and the number of employees those positions relate to, that can be accurately matched to market. The results for the management group and the IESO organization are valid as each of the job grades are represented by relevant market data for positions that have comparators in the market. Certainty of the study results may improve, or may not improve, based on larger sample sizes, depending on the quality of market comparators that could be sustained.

c) Mercer Response: Mercer selected the initial sample of jobs to be included based on the following criteria:

- Size of employee population in position (positions with higher employee populations were favored)
- Good matches on the basis of responsibilities and qualifications were available within available market surveys
- Sufficient representation across salary grades (to ensure the various levels of work are considered)

This sample of jobs was reviewed with IESO and modifications to the listing were made to ensure that similar jobs in the same grade were not included and unique/hybrid jobs where matching to the market would be of poor quality were not included. This approach ensures efficient and reliable data gathering.

d) By selecting a cross-section of positions across departments and pay levels within the organization.

e) Please see the response to c) above.

f) A comparison of actual median compensation to market was not conducted as part of the Mercer study.

SEC INTERROGATORY 14

1.1-SEC-14

INTERROGATORY

[Exhibit C-4-1, Attach 1] With respect to the Mercer *Non-Executive Remuneration Study*:

a. SEC notes that Mercer has conducted similar studies recently for Toronto Hydro (EB-2018-0165 Ex. 4A, Tab 4, Schedule 5] and Hydro One [EB-2017-0049. Exhibit C1, Tab 2, Schedule, Attach 5; Updated Compensation Study, filed April 20 2018]. Each of these studies uses different methodologies. Please explain the difference between the methodologies and the rationale for method selected for the IESO.

b. For each category of IESO employees (non-management, PWU, and Society), please provide the total number of employees IESO employs and the total number that were benchmarked.

c. What years is the IESO and peer group data from?

d. Please explain in detail the source of the IESO data used in the study. For example, does it reflect actual compensation paid in the previous years for employees? If it represents a salary band for a given unionized position, does it reflect to the mid-point of the range?

e. Does Mercer believe that the peer group categorization is the most appropriate for the purposes of benchmarking IESO's non-management compensation? If not, please explain what changes would lead to a more appropriate comparison.

f. [p.8] Please explain why one department of the Federal government (Treasury Board of Canada Secretariat) was included in the benchmarking data and not the entire Federal public service as was done for the Ontario public service.

g. [Appendix A] Please explain why no other Provincial Government besides Ontario was included in the study.

h. [Appendix A] For each peer group organization, please provide the number of positions that were included in the study broken down into each of the three categories (non-management, Society, PWU).

i. [Appendix C] Please provide a revised version of the summary table to show how the IESO compares against: a) the Energy Sector peer group; and b) Public and Private (non-energy sector) peer groups.

j. [Appendix C] For each group and grade, please provide: a) the number of the IESO positions (i.e. number employees who held the relevant positions at the time of the study), and b) the number of positions included in each peer group category.

MERCER RESPONSE

The following responses were provided by Mercer Canada Limited:

a. The premise of the question is incorrect. The overall methodology followed for the Toronto Hydro and Hydro One studies is aligned with the methodology followed for the IESO study. The only difference to note is that the Hydro One study assessed actual compensation levels rather than the compensation structure. Assessing compensation competitiveness using the compensation structure reduces the variation that can be introduced by actual salaries, which are impacted by factors such as length of service and/or individual performance.

b. The question states "non-management, PWU, and Society", for purposes of our response, it is assumed that this should read "management (i.e, non-executive), PWU, and Society".

The below table outlines the total employee count and number of employee benchmarked for each employee group:

Employee Group	Total Employee Count	Employees Benchmarked
Management	136	55
Society	571	314
PWU	75	39

c. IESO and Energy Sector Comparator data is from 2018. Mercer Benchmark Database data is from 2017 and has been adjusted to bring it to 2018 levels.

d. The IESO data presented in the study is reflective of the IESO job rate for each salary band, which considers target compensation for a fully competent employee. Job rate reflects the midpoint for management jobs, maximum for PWU jobs and either maximum (MP4, MP5 and MP6) or step 5 (MP2 and MP3) for Society jobs.

e. Yes, we believe that the peer group categorization is appropriate as it reflects the different talent markets that the IESO competes with for the attraction and retention of employees.

f. Comparators reflect those organizations that participate in Mercer's surveys

g. Ontario is IESO's primary market for talent for the non-utility specific jobs, therefore, the Broader Public Sector Comparator group has a predominantly Ontario-focus.

h. In order to protect the confidentiality of organizations sharing compensation data with Mercer, the study does not report on how many jobs for which each organization has provided data.

i. The study did not include this breakdown. Energy sector comparators are included in the appropriate public and private sector peer groups based on ownership structure.

j. a) The table below summarizes the number of IESO positions within the study, and number of employees that those positions represent, for each employee group.

Employee Group	Number of Positions	Number of Employees
Non-Executive Management	39	55
Society	74	314
Power Workers	19	39

b) The Mercer study reflects market results for each of the peer groups for all benchmarked positions where there is sufficient market data.

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SEC INTERROGATORY 15

1.1-SEC-15

INTERROGATORY

[Exhibit C-4-1, Attach 1] With respect to the Mercer *Non-Executive Remuneration Study*:

a. Please provide the IESO's views on the results of the Mercer *Non-Executive Remuneration Study*:

b. Please explain how the IESO plans to move total remuneration closer to market median.

RESPONSE

a. Please see the response to Energy Probe Interrogatory 18, at Exhibit I, Tab 5.2, Schedule 4.18.

b. Please see the response to OEB Staff Interrogatory 13, at Exhibit I, Tab 1.3, Schedule 1.13.

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OEB STAFF INTERROGATORY 22

5.0 Commitments from Previous OEB Decisions

5.3 Has the IESO adequately described the division of responsibilities between the IESO and Hydro One Networks Inc. with respect to Transmission Losses?

Staff IR #22

INTERROGATORY

Reference: Exhibit C, Tab 5, Schedule 1 Pgs. 3 of 5

Preamble:

In its application the IESO states:

> After a preferred alternative has been selected, Hydro One (or the applicable transmitter) is responsible for the design, specification, and installation of equipment to implement the recommended solution. During the implementation, Hydro One considers the industry best practices such as: use of lower loss conductors and transformers, conductor bundling, insulator hardware systems to improve corona losses, and insulator assemblies and structure configurations to improve insulation losses, as noted in the EPRI report.

Questions:

a) Does the IESO provide comments/feedback to Hydro One on the design, specification, and installation of equipment to implement recommended solutions to ensure transmission losses are minimized?
b) Which organization (the IESO or Hydro One) has the final say on how a recommended solution is implemented?

RESPONSE

a) As noted in the IESO's application, the planning process involves conducting assessments to determine transmission system needs, and evaluates various mitigating solutions to identify a recommended solution based on a number of factors such as

reliability, feasibility, flexibility, customer preference, and cost effectiveness, including transmission losses.

Once a recommended solution is identified, Hydro One (or the applicable transmitter) is solely responsible for the design and construction of its transmission facilities, including equipment specifications which impact losses. Beyond the identification of the recommended solution, the IESO does not provide additional comments/feedback to Hydro One (or the applicable transmitter) on the design and construction of its transmission facilities specifically to ensure transmission losses are minimized as loss reduction from equipment specifications is expected to be immaterial on system level losses.

b) Hydro One (or the applicable transmitter) is responsible for the development and implementation of projects based on recommended solutions identified as part of the planning process. Implementation of projects is subject to obtaining all required regulatory approvals, including those from the OEB.

SUP INTERROGATORY 8

Issue 5.3 Has the IESO adequately described the division of responsibilities between the IESO and Hydro One Networks Inc. with respect to Transmission Losses?

INTERROGATORY

5.3 Society#8

Reference: Exhibit C Tab 5 Schedule 1 p4

> *"An initial step in the planning process involves conducting an assessment to determine transmission system needs. After the needs are identified, various mitigating solutions are developed and further assessed. Once a set of feasible options have been determined, the options are analyzed based on a number of factors such as reliability, feasibility, flexibility, customer preference,* ***and cost effectiveness, including transmission losse****s. A preferred alternative is then selected as the recommended solution. "*

a) After implementation of the preferred alternative do either or both of IESO and Hydro One do empirical and engineering assessments of how effective the preferred alternative is in terms of reducing transmission losses?

b) Please provide one such assessment.

c) If such assessments are not done, please explain why.

RESPONSE

a) The IESO does not carry out empirical and engineering assessments of how effective the preferred alternative is in reducing transmission losses once implemented.

b) Not applicable.

c) As described in the Electric Power Research Institute's Hydro One Transmission Losses Report ("the EPRI Report") assessments on the effectiveness of the preferred alternative in reducing transmission losses are not conducted once the project is implemented because the primary driver of transmission investments is adequacy and reliability of supply and not mitigation of transmission losses.

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