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IESO Regulatory Scorecard

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Prepared for:
Independent Electricity System Operator

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EXECUTIVE SUMMARY

The Ontario Energy Board Decision and Order EB-2015-0275, Independent Electricity System Operator, *Application for approval of 2016 revenue requirement, expenditures and fees* approved the Settlement Proposal in which the IESO agreed ”to consult with intervenors to develop a scorecard for filing in its next Revenue Requirement Submission”. The IESO retained Elenchus as its expert to assist with this process.

The work completed by Elenchus included:

- conducting research on corporate balanced scorecard best practices;
- reviewing the metrics used by comparable entities;
- facilitating a stakeholder consultation process;
- examining the relevance of the approach and principles underpinning the OEB’s Distributor Scorecard; and
- examining the relevance of the IESO’s Corporate Performance Measures for inclusion in the IESOs Regulatory Scorecard.

With respect to corporate balanced scorecard best practices, while the purpose of a corporate scorecard differs from the purpose of a scorecard for regulatory purposes, an adapted version of the identified best practices is relevant for the development of the IESO’s Regulatory Scorecard. The adapted version suggested by Elenchus is:

- start by aligning the regulatory metrics with the functions that are funded by the regulated fees, linking each measure to regulatory objectives, in order to be a tool for evaluating the proposed expenditure and revenue requirement;
- illustrate a balanced view, including the various priorities including both short and long-term objectives;
- associate regulatory measures with controllable outcomes of the IESO across the entire organization or individual departments;
- adapt to changing external and internal environments and continually improve the metrics; and
- design meaningful metrics to measure operational progress and illustrate trends in operational efficiency.

It became apparent during the stakeholder process that there are two schools of thought regarding the appropriate scope of the Scorecard. For purposes of this report, they have been labelled as (i) the **IESO Cost Effectiveness View** which focuses on metrics that the Board and intervenors can use in evaluating the IESO’s proposed expenditure and revenue requirement and (ii) the **System View** which would also include metrics that relate to the high-level oversight role of the IESO with respect to Ontario’s electricity system. The essential difference is that the System View implies

that metrics for outcomes that are important to customers but are not controlled by the IESO would be included in the Scorecard. Elenchus concluded that there is merit in both views; however, the most practical approach to implementing the System View would be to create a reporting system that clearly differentiates between (a) the metrics implied by the IESO Cost Effectiveness View and (b) the additional metrics implied by the System View. Only the metrics consistent with the IESO Cost Effectiveness View would be used in assessing its revenue requirement. See Elenchus Conclusion #1 in section 4.3.

In reviewing the OEB Distributor Scorecard, Elenchus concluded it would be helpful to maintain a consistent design, to the extent practical, and it would be relevant to include measures that are analogous to outcomes related to three of the four categories of Performance Outcomes that are included in the OEB Distributor Scorecard. The excluded Outcome is Financial Performance since financial ratios are not relevant to the IESO. See Elenchus Conclusions #2 through #7 in section 2.2.

Elenchus engaged the stakeholders in a detailed review of the relevance of the ten IESO 2017 Corporate Performance Measures (CPMs) as a basis for measures to be adapted for the IESO Regulatory Scorecard. Based on this review, Elenchus has concluded that there are variants of six CPMs that are suitable as Scorecard measures. This review reinforced several of the measures related to the OEB Distributor Scorecard review and suggested an additional measure. See Elenchus Conclusions #8 in section 2.3

The IESO participated as a stakeholder in this process. Elenchus and the other stakeholders invited the IESO to develop a draft Regulatory Scorecard, which was circulated to the other stakeholders for comment. The IESO draft Regulatory Scorecard was developed with reference to participating stakeholder feedback, direction on scorecard best practices, and using the 2017 CPMs as a starting point. It is attached as Appendix D of this report. See Elenchus Conclusions #9 through #12 in section 3.

Elenchus' twelve specific conclusions which include the recommended metrics appear throughout the report and are repeated within the Conclusions and Recommendations section at subsection 4.3. An illustrative version of the IESO Regulatory Scorecard that Elenchus recommends appears on the next page.

PROPOSED IESO REGULATORY SCORECARD (ILLUSTRATIVE)

Performance Outcomes	Performance Categories	Measure	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	20xx Target	Target met unmet (3)	5-year trend (4)
Stakeholder Responsiveness	Stakeholder Satisfaction	Satisfaction with the engagement process		65%				xx%		
Operational Effectiveness	Reliability	Compliance with NERC high risk reliability standards	Yes	Yes				Yes		
	Planning	Timely implementation of key IRRP recommendations	NA	xx/30	xx/44			xx/yy (or %)		
		Timely implementation of key LTEP project milestones	NA	xx/yy				xx/yy (or %)		
	Cost Control	Variance from the OEB-approved revenue requirement	+/-%	+/-%				0.0%		
		Total Expenses/TWh (3-yr rolling average) (1)	$/TWh	$/TWh				$/TWh		
	Contract Management	Resources Required for Capacity Contracts Management (2)	#/FTE	#/FTE				#/FTE		
			GW/FTE	GW/FTE				GW/FTE		
	IESO Administered Markets									
	Settlements Operations	Unqualified biennual Settlements Operations CSAE 3416 audit	Yes	--				Yes		
	Market Dispatch	Number of high or medium risk observations in the biennual Dispatch Scheduling Optimizer review	--	0				0		
	Projects	Market Renewal Initiative proceeding according to the schedule and budget						Yes		
Public Policy Responsiveness	Conservation	Annual reporting of portfolio cost ($/kWh)	$/kWh	$/kWh				$/kWh		
		Achievement of 2020 energy savings target milestones (TWh)	TWh	TWh				TWh		

Notes:

1. IESO to begin 3-year rolling average reporting with 2018, for 3 years after IESO-OPA merged on January 1, 2015.
2. IESO to develop a process for identifying the resources required for contract management functions. Reporting to commencing with the 2018 fiscal year.
3. Target met/unmet could be colour coded, similar to the OEB Distributor Scorecard.
4. The five-year trend could be shown graphical, similar to the OEB Distributor Scorecard.

1 INTRODUCTION

The Ontario Energy Board (OEB) issued Decision and Order EB-2015-0275, Independent Electricity System Operator, *Application for approval of 2016 revenue requirement, expenditures and fees* on December 1, 2016 (2016 Decision). The Decision approved the Settlement Proposal filed on September 7, 2016. With respect issue 6.2, the Settlement Proposal stated:

> *The IESO agrees to consult with intervenors to develop a scorecard for filing in its next Revenue Requirement Submission filed with the Board. It is intended that this scorecard will be a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement. The IESO will engage an expert to assist with this work.*

Acting on this agreement, the IESO issued a Request for Proposals for IESO Scorecard Development (IESO RFP 104) dated November 23, 2016.

Elenchus[1] was the successful respondent to this RFP.

1.1 THE ELENCHUS APPROACH TO THE PROJECT

In the proposal, Elenchus outlined its approach to the project as follows:

> *The purpose of IESO's Scorecard Development project is to develop a scorecard that is appropriate for purposes of the IESO's Fees Applications to the OEB. This purpose is related to, but distinct from, the purpose of the IESO existing internal scorecard. The specific OEB-related purpose of this IESO regulatory scorecard is important both to the process that is most appropriate to use in developing it and to the actual performance measures that it will contain.*
>
> *Unlike an internal scorecard that is primarily a management tool, a regulatory scorecard must be considered appropriate by the OEB and ideally is endorsed by stakeholders. As a result, supporting research on best practices is an important step that complements stakeholder engagement in the development of the measures to be included. In addition, it will be important to use the principles and priorities that underpin the OEB's Distributor Scorecard as a reference point that can be used in designing the IESO's Scorecard. For example, to the extent feasible, it will be desirable to mirror the four pillars of the OEB Scorecard with relevant pillars for the IESO's regulatory Scorecard.*

[1] See the Elenchus website at www.elenchus.ca for information on the firm and the qualifications of the lead consultant, John Todd. All aspects of this project were conducted by John Todd or were performed under his direction.

> *In addition, IESO's regulatory Scorecard should consist of measures that are relevant not only to the IESO's roles and responsibilities, but also to the OEB's mandate with respect to the IESO. It is notable that the OEB's Distributor Scorecard does not include employee safety. While this factor is a very important performance measure for all distributors, the issue of worker safety is the responsibility of other regulatory authorities and is therefore not an OEB regulatory issue. There may be analogous issues that may be important elements of the IESO's internal scorecard that are not relevant for the IESO's regulatory Scorecard to be included in OEB filings.*

Consistent with this stated approach, Elenchus has:

- conducted research on corporate balanced scorecard best practices (see Appendix A);
- reviewed the performance measures of other system operators (Appendix B);
- facilitated a stakeholder consultation process to ensure that Elenchus understands the perspectives of the various stakeholders, including the IESO (see section 2.1);
- examined the relevance of the approach and principles underpinning the OEB's Distributor Scorecard (see section 2.2); and
- examined the relevance of the IESO's Corporate Performance Measures for inclusion in the IESOs Regulatory Scorecard (see section 2.3).

This report represents the observations and conclusions of Elenchus regarding a regulatory scorecard that would be appropriate for the IESO based on our assessment of the IESO's circumstances, the insights gained from the supporting research and the observation and feedback of the stakeholders that contributed to the process.[2]

1.2 IDENTIFYING APPROPRIATE SCORECARD METRICS (BEST PRACTICES)

Elenchus' review of corporate balanced scorecard (BSC[3]) best practices[4] provides relevant guidance for identifying metrics that may be appropriate to adopt for the IESO Regulatory Scorecard. Through this review, we identified some of the practical challenges that should be addressed not only in identifying appropriate metrics but also

[2] See Appendix C for a list of participants.

[3] For clarity, the acronym "BSC" is the standard acronym used in the literature for a Balanced Scorecard. We refer to "corporate" BSC in this report to distinguish it from a Regulatory Scorecard.

[4] See Appendix A.

in using available metrics as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."[5]

The Elenchus review of scorecard best practices necessarily focused on corporate balanced scorecard best practices, not regulatory scorecard best practices. There does not appear to be any generally accepted best practices for regulatory scorecards, particularly not in the context of system operators. Furthermore, Elenchus notes that the IESO's regulatory regime is unique in North America. Elenchus' survey of system operators (SOs) shows that there is no other SO that has a separate administration fee that is charged to users of the grid. The costs of other SOs are recovered as an integral part of the transmission fees that they are responsible for; hence, the fees are not subject to separate regulatory review and approval. In general, the metrics that other system operators report on relate to technical transmission system performance metrics. This approach is consistent with the role that other system operators generally have in planning and contracting for transmission facilities as well as administering their local electricity markets. In contrast, the IESO is not the responsible authority for transmission rates or for initiating investment in new transmission assets.

It is also important to recognize that corporate balanced scorecards are explicitly intended to be used as management, not regulatory, tools. The identified best practices for BSCs include[6] the following.

- Start by aligning the BSC to the business strategy and planning processes, linking each measure to strategic objectives, in order to be a tool for managing and achieving the strategy.
- Illustrate a balanced view, including: financial and non-financial measures; short and long-term.
- Cascade strategy and progress using the BSC from the corporate level across the entire organization to each department, teams and ultimately to individual employees so that they see how their daily actions support BSC goal achievement.
- Align reward and recognition programs to the BSC goals and measures.
- Adapt to changing external and internal environments and continually improve the BSC.
- Design meaningful metrics to measure strategy progress.

Although these best practice guidelines relate specifically to scorecards that are intended to be used as a management tool for ensuring that all employees are working

[5] Settlement Proposal filed on September 7, 2016, issue 6.2, as quoted above. This phrase from the Settlement Proposal is repeated throughout the report without additional footnoting.

[6] See Appendix A. This overview of Corporate Balanced Scorecard best practices includes comments on the difference in emphasis between private and public sector scorecards.

toward common and intended goals that support the corporate strategic plans, it is useful to consider how they can be adapted to be relevant to the development of an IESO scorecard to be used for regulatory purposes.

Elenchus has used the following adaptation of these best practices to guide its thinking, to the extent practical, for the current project.

- Start by aligning the regulatory metrics with the functions that are funded by the regulated fees, linking each measure to regulatory objectives, in order to be a tool for evaluating the proposed expenditure and revenue requirement.
- Illustrate a balanced view, including the various priorities including both short and long-term objectives.
- Associate regulatory measures with controllable outcomes of the IESO across the entire organization or individual departments.
- Adapt to changing external and internal environments and continually improve the metrics.
- Design meaningful metrics to measure operational progress and illustrate trends in operational efficiency.

The best practices that relate to the internal organizational use of a BSC (i.e., cascading and aligning rewards and recognition) are not directly relevant for a regulatory scorecard. However, an analogous concept that is appropriate for a regulatory scorecard is that it should focus on outcomes that are both (i) consistent with regulatory goals and (ii) are within the control of the IESO. Based on these guiding principles, the scorecard should provide relevant guidance to the IESO that encourages results that are consistent with regulatory objectives and relate to a set of outcomes that can be used as a "tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement"). The application of this guiding principle should recognize the reality that the IESO's fees are very small compared to the benefits to market participants and electricity customers that derive from the IESO's activities and the costs they bear in relation to the IESO-administered market, the IESO administered CDM programs and the planning activities that the IESO facilitates and monitors; hence the IESO's cost effectiveness cannot be measured in terms direct costs and discrete "outputs". However, the extent of the IESO's control over the outcomes for electricity consumers and market participants is generally limited, amorphous and complex.[7] Consequently, linking accountability to market performance must be undertaken with caution.

[7] As one stakeholder pointed out, however, some IESO activities, such as the development of CDM programs have a significant and relative direct impact on outcomes for electricity consumers.

Elenchus also notes that given the OEB's limited mandate in regulating the IESO's fees, it is reasonable to expect that while there may be overlap between the IESO CPMs and relevant regulatory scorecard measures, they may differ significantly.

Elenchus notes that the IESO CPMs have been developed primarily for internal management purposes. As such they are closely linked to the IESO's Strategic Plan and not to the goal of providing measures to assist the OEB and stakeholders in assessing its revenue requirement; hence, the CPMs are more closely aligned to the corporate BSC best practices than they are to the proposed IESO Regulatory Scorecard measures.

Elenchus also notes that while the literature on BSC best practices does not explicitly identify the need for the entity to have control over the function being measured, this additional "principle" appears to be implicit in the best practices. There is a clear linkage between outcomes and accountability, implying that it would not be a logical to measure performance related to an outcome that is beyond the control of the organization as a whole or the teams or individuals with cascading measures assigned to them.

1.3 THE PURPOSE OF THE IESO'S REGULATORY SCORECARD

An essential preliminary step in developing the IESO's Regulatory Scorecard is to establish a clear statement of its purpose. Elenchus notes that this project was initiated in response to section 6.2 of the Settlement Proposal (quoted above) which states: "It is intended that this scorecard will be a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." Nevertheless, it quickly became apparent through the consultation with stakeholders that there are two schools of thought as to the scope of the metrics that are relevant for this purpose.

IESO Cost Effectiveness View: A Scorecard that is consistent with this view would be comprised of metrics for outcomes for which the IESO is responsible and that relate directly to the IESO's costs that are recovered through the IESO Fee. Put differently, the Scorecard would focus on measures that are indicators of the cost effectiveness of IESO activities. Elenchus has interpreted this view to suggest that it is not appropriate to measure outcomes that cannot be used to assess the prudence of the IESO's revenue requirement; hence, outcomes that the IESO cannot control need not be measured.

System view: A Scorecard that reflects this view would include metrics that relate to the high-level oversight role of the IESO. This view implies that market or system metrics are relevant to the assessment of the IESO's revenue requirement as long as the IESO has some degree of influence, direct or indirect, over the outcome being measured. Relevant measures under this view would include metrics of the overall performance of the power system. Under this view, the

IESO need not have primary accountability for all of the outcomes included in the Scorecard.

Stakeholders adhering to the IESO Cost Effectiveness View, including the IESO, suggested that including metrics that cannot be used as evidence that the IESO's budget is being used prudently, or not, are not relevant given the purpose of the Scorecard as stated in the Settlement Proposal. In this view, if the IESO cannot be held accountable for an outcome, there is no reason for including it on the Scorecard. As one stakeholder observed, the Minister approves the IESO's business plan which sets out what the IESO is doing; the Fees Application can only address whether it is doing so efficiently and effectively.

An adherent to the Cost Effectiveness View suggested that since the IESO's budget can be broken down by business unit and department[8] cost-effectiveness metrics could be developed using output measures for specific business units and departments. Elenchus revisited the activities of each business unit and department based on its previous cost allocation work (brief descriptions of each business unit and department's responsibilities were included in the evidence cited in footnote 8) and concluded that quantifiable output measures are not available for most of IESO's departments. It was suggested that the recommended metrics for conservation and contract management seem to align with selected departments providing the best available cost-effectiveness metrics on the basis of individual departments.

In contrast, supporters of the System View argued that metrics relate to the overall trend in outcomes that matter to end use customers, such as transmission system reliability, etc. should be included in the scorecard. They observed that the IESO fees make up a small portion of the money paid by consumers of electricity service, yet the IESO's activities have an impact on the overall cost and cost effectiveness of the power system, which is determined by the investments made by all generators, transmitters and distributors and the operations of all of the entities that make up the Ontario power system. Hence, there may be relevant metrics that are important to consider although they are not directly related to IESO fees.

Advocates of the System View made the observation that metrics for improvements in reliability could be based on an assessment of the costs and benefits of specific investment and operational decisions that have an impact on overall reliability. Ideally, a societal approached to the measure of the benefits would reflect customer impacts such as lost production, lost exports, etc.

[8] These departments were used to functionally-classify the IESO's costs for purposes of the cost allocation model previously developed by Elenchus (Elenchus Research Associates, *Cost Allocation and Rate Design for the 2016 IESO Usage Fee*, 18 January 2016).

The IESO countered with the view that it would not be appropriate to establish metrics for regulatory purposes that relate to aspects of electricity system performance that it does not control. While the IESO has a role in the planning processes that determine the extent of improvements in reliability, it is not the decision maker on these projects, nor does it manage the investments. Implementing metrics for these outcomes would imply a level of accountability that does not exist.

Most stakeholders acknowledged the limited control the IESO has over the performance metrics that are implied by the System View.[9] Nevertheless, some were concerned that there is no other forum for addressing these legitimate concerns. For this reason, some stakeholders took the position that it is desirable to have metrics of this type reported by the IESO even if the IESO could not be held accountable for the outcomes and the metrics could not be used as a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement.

In Elenchus' view, while metrics that are not useful as tools for evaluating the IESO's fees appear to be outside the scope of this process based on the wording in section 6.2 of the Settlement Proposal, this stakeholder concern deserves consideration by the IESO and the OEB. Some stakeholders suggested that an appropriate response may be for the IESO to provide additional metrics that would track how the Ontario electricity system is performing over time for informational purposes. As an alternative, it was suggested that another entity, such as the OEB, could collect and publish aggregate market data related to losses and reliability, as well as more specific data such as congestion constraints on transmission lines and interties where the information is not already provided among IESO market operations reports. Elenchus notes that while measures related to congestion management are reported by US ISO/RTOs, they are also responsible for managing congestion management within their markets. The observation suggests that IESO Regulatory Scorecard measures might reasonably be limited to outcomes over which the IESO exercises control and the if other measures are considered relevant and valuable information, then the most appropriate approach may be for the OEB to ensure that they are reported in some other way.

In Elenchus' understanding of these conflicting views, the difference of opinion is based in part on different views of how the Scorecard will be used. If the Scorecard is used specifically to assess the reasonableness of the IESO's expenditures and revenue requirement, the IESO Cost Effectiveness View would seem to be more appropriate. Nevertheless, to the extent that the IESO may be able to help the Board and intervenors gain improved insight into societally desirable goals related to the overall performance and cost-effectiveness of the Ontario power system, the reporting of system measures may be appropriate. Such reporting, however, may have to be limited to information that

[9] However, views diverged on the degree of control and accountability associated with some outcomes.

is readily available to the IESO and disclosure could be through means other than the Scorecard (e.g., on the IESO website, which already provides extensive market data).

Elenchus Conclusion #1: There is merit in both views of the appropriate scope of metrics to be reported. However, the most practical approach to implementing the System View would be to create reporting systems that clearly differentiates between (a) the metrics implied by the IESO Cost Effectiveness View and (b) the additional metrics implied by the System View. Only the metrics consistent with the IESO Cost Effectiveness View would be included in the Regulatory Scorecard and used in assessing the IESO's revenue requirement. Since the IESO would not be responsible or accountable for the additional metrics related to the System View, these measures would be reported through a mechanism other than the Scorecard. These additional measures would not be used to assess the reasonableness of the IESO's revenue requirement although they may provide insight that assists government, regulators, the industry and stakeholders to identify areas where performance could be improved through better planning, collaboration and other means. There is no reason to expect the IESO to be responsible for publishing these additional system metrics unless it is in the best position to access the data on which particular metrics are based.

2 DEVELOPMENT OF REGULATORY SCORECARD MEASURES

Elenchus has referenced two primary "touchstones" in identifying potentially relevant measures to include in the IESO Regulatory Scorecard:

- The OEB's Electricity Distributor Scorecard[10]
- IESO 2017 Corporate Performance Measures[11]

Elenchus also conducted meetings and one-on-one discussions with interested stakeholders, including IESO staff, to obtain their views on the relevance of the metrics included in these touchstones. The insights gained from each of these touchstones are summarized in this section of the report.

The Elenchus reviews of best practices for BSCs and the metrics used by other system operators (see section 1.2 and Appendices A and B) were also used for reference in the discussions with intervenors and for the development of Elenchus' recommendations.

[10] A description of the OEB Scorecard Performance Measures can be found on the OEB website at: http://www.ontarioenergyboard.ca/oeb/_Documents/scorecard/Scorecard_Performance_Measure_Descriptions.pdf

[11] See http://ieso.ca/Documents/consult/sac/SAC-20170201-Performance-Measures.pdf

2.1 THE STAKEHOLDER ENGAGEMENT PROCESS

Approach

Elenchus facilitated two stakeholder sessions during which Elenchus shared its perspective on the development of appropriate IESO measures and listened to the feedback and comments of the stakeholders. The IESO participated throughout the process as one of the stakeholders. Elenchus also conducted one-on-one calls with each of the participating organizations and invited written comments.

The meetings were conducted on a without-prejudice basis; hence, the comments presented below do not document the views of stakeholders. They represent a distillation of the views of stakeholders as Elenchus understands them. Stakeholders will be commenting on the report in subsequent stages of the process.

IESO staff participated in both stakeholder sessions. They heard the concerns of stakeholders first hand and shared their views on the metrics that would be appropriate to implement. In addition, given the challenges the group faced in developing measures that would address the concerns of stakeholders in a practical way, the IESO agreed to develop a draft Scorecard for review and comment by the other stakeholders. To assist with this process, Elenchus met with the IESO staff that were tasked with developing the proposed metrics. The resulting draft Scorecard was circulated by Elenchus for stakeholder comment. The suggested metrics are discussed in section 3 below.

The IESO's draft Regulatory Scorecard is reproduced as Appendix D. Elenchus used the IESO's draft Scorecard and the comments of Stakeholders as primary input for the conclusions and recommendations presented in the final section of this report.

Observations

Elenchus noted throughout the process that it was not clear to any participant (including both Elenchus and the IESO) what the "right" measures should be for a Regulatory Scorecard. It therefore seems unavoidable that there will have to be a period of time during which the metrics will evolve based on experience gained in using the Scorecard to evaluate the IESO's proposed expenditure and revenue requirement. There will inevitably be a learning curve.

Recognizing this concern, stakeholder suggestions for the scorecard included the following suggestions.

- The IESO should implement what is practical for the 2017 Fees Application (i.e., practical metrics will require credible/auditable and readily data, historical trends recognizing that that IESO and Ontario Power Authority merged on January 1, 2015, meaningful targets, etc.) and possibly identify areas where further work is required by the IESO and stakeholders to develop additional measures.

- The initial Regulatory Scorecard should be viewed as a relevant benchmark to be used for future IESO revenue requirement applications, but further refinement should be expected to enhance its usefulness over time.
- Metrics should be feasible immediately for IESO costs, resources, overall system costs, customer engagement – these are metrics for controllable items. But it is not evident what measure would appropriately reflect the impact of directives and short-term initiatives (e.g., priority change initiatives) on the IESO's costs.
- Acknowledgement that adoption of a Regulatory Scorecard measure implies that the IESO would be accountable for the outcomes. Accountability implies control; but incomplete control does not imply the absence of any accountability.
- There is a desire among some stakeholders for the IESO to find ways to provide a better understanding of the IESO's roles/functions with clearer links to costs.

2.2 THE OEB DISTRIBUTOR SCORECARD

The OEB's Electricity Distributor Scorecard was established through a process that culminated in the EB-2010-0379 Report of the Board, *Performance Measurement for Electricity Distributors: A Scorecard Approach* dated March 5, 2014. The purpose of the Scorecard, as stated at pages i – ii of the Report, was as follows:

> *The Scorecard is designed to track and show an individual distributor's performance gains over a period of time and at a point in time. Furthermore, the Scorecard will be published and made available in the public domain. Therefore, it needs to be relevant and meaningful to all, including customers. The Scorecard will allow customers to gain a better sense of how well their distributor is performing. Over time, this approach will also let customers see how their distributor compares to others.*

Although the OEB's Electricity Distributor Scorecard was adopted primarily as a document to be published independently from rate filings, Elenchus identified it as a potentially relevant reference for the development of the IESO Regulatory Scorecard. The basic design parameters of the Distributor Scorecard provide relevant guidance in examining an approach that is appropriate for the IESO Regulatory Scorecard.

The basic design parameters of the Distributor Scorecard are:

- it identifies four "Performance Measures";
- the Performance Measures are broken down into nine Performance Categories;
- 23 Measure are identified within those categories;
- five years of historic data are presented;
- the five-year trend (up or down) is shown, where relevant;
- colour coding is used to indicate whether the target is met or not; and
- a target is shown for measures that have a target.

While most of the 23 Measures that are included in the OEB's Distributor Scorecard are not directly relevant for the IESO, Elenchus recommends utilizing its basic approach and design concepts for the IESO Regulatory Scorecard.

Three of the four high level Performance Outcomes identified in the OEB Distributor Scorecard and many of the nine subsidiary Performance Categories appear to have conceptual relevance for the IESO as noted in the ensuing discussion

The **Customer Focus** Performance Outcome includes two Performance Categories.

- **Service Quality:** The measures of Service Quality include such metrics as Services and Scheduled Appointments Met On Time. The IESO does not provide services directly to the general electricity customer base; hence, this type of Service Quality measure is not relevant for the IESO Regulatory Scorecard. The IESO's "customers" are most directly the market participants and less directly electricity consumers in general. These stakeholders have the opportunity for substantial direct input through the IESO's stakeholder processes, with satisfaction that can be measured as illustrated in the next point.
- **Customer Satisfaction:** The IESO conducts numerous stakeholder engagement processes that encompass both market participants and a wide range of other stakeholders with an interest in the functioning of the Ontario electricity market. The IESO assesses stakeholder satisfaction (which is analogous to customer satisfaction) by means of an annual stakeholder satisfaction survey conducted by a third party. The results of this survey would be appropriate to include in the IESO Regulatory Scorecard.

Elenchus Conclusion #2 – Customer/Stakeholder Focus: A measure that is analogous to these categories of the Distributor Scorecard is Stakeholder Satisfaction as measured by the IESO's third-party surveys of stakeholder satisfaction with the IESO's engagement processes. This measure is appropriate to include in the toolbox for evaluating the IESO's revenue requirement.

The **Operational Effectiveness** Performance Outcome includes four Performance Categories.

- **Safety**: The measures included in the Safety Category on the Distributor Scorecard include public awareness, compliance with Regulation 22/04 and frequency of electrical incidents. The IESO does not own, maintain or operate electrical assets; hence, this Performance Category is not relevant for the IESO.
- **System Reliability:** Some stakeholders (i.e., those adopting the System View) consider an overall measure of system reliability to be an appropriate metric for assessing the IESO's revenue requirement. The IESO, however, believes that it should not be held accountable for overall system reliability, or other system

performance outcomes, since it does not own or operate the assets that determine reliability. Reliability is an appropriate category for the Distributor Scorecard but its use should be limited to entities that own and operate distribution and transmission assets. The IESO's reliability responsibility is primarily related to compliance with applicable reliability standards and criteria.

- **Asset Management:** The Integrated Regional Resource Planning (IRRP) process is the closest analogy for the IESO to the distribution system plans of distributors. The asset management measure that is included in the Distributor Scorecard is distribution system plan implementation. Elenchus notes, however, that while the IESO is responsible for leading and coordinating the IRRP process, which is important to optimizing planning to improve reliability, minimize system losses and manage total costs, the IESO does not control the implementation of IRRP recommendations. It can, however, influence the industry's commitment to adhering to the IRRPs. Hence, it appears reasonable to Elenchus to include a measure that tracks the timely implementation of IRRP recommendations in the IESO Scorecard. In doing so, it will be appropriate to acknowledge that it is the participating distributors and transmitters that are directly responsible for implementation. This would provide an incentive for the IESO to do everything it can to ensure that IRRPs recommendations are implemented on a timely basis. Furthermore, since the IESO would then be expected to provide transparent explanations of incomplete or late implementation of the IRRP recommendations to the OEB, this measure would also provide motivation to the parties to the IRRPs to complete their commitments on a timely basis.
- **Cost Control:** The IESO and stakeholders agreed that although cost control in the context the IESO differs from cost control as a performance measure for distributors, it is important to identify analogous measures for the IESO. For the IESO, however, there does not appear to be any practical measure that is comparable to the distributor Efficiency Assessment. The challenge is that there are no clear measures of output or workload that can be treated as a fundamental cost driver (analogous to the number of distribution customers or km of line). In addition, unlike the Ontario distribution sector, there is only one system operator; hence, cost comparisons are not feasible. In the context of the IESO's revenue requirement applications, the most relevant metric appears to be the total budget, which could be tracked over time in real terms (i.e., adjusted for inflation). It would be most appropriate to assess variances from the approved budget. It may also be useful to report the three- or five-year rolling average of total expenses per TWh. The factors driving year-over-year changes are a primary consideration in the review before the OEB of the IESO's revenue requirement applications.

Elenchus Conclusion #3 – Operational Effectiveness: Appropriate measures that address relevant IESO outcomes that are analogous to the distributors' Operational Effectiveness Performance Outcome (Cost Control) measures are (i) variance from the OEB-approved revenue requirement and (ii) three-year rolling average of total expenses per TWh.

The **Public Policy Responsiveness** Performance Outcome includes two Categories.

- **Conservation and Demand Management:** Although the IESO's responsibilities for Ontario's CDM programs differ from the role of distributors, measuring CDM outcomes related to IESO's responsibilities is a reasonable consideration in assessing the IESO's revenue requirement. The IESO has proposed two measures related to Conservation Outcomes that appear to be supported by the stakeholders. (See section 3.7).
- **Connection of Renewable Generation**: Like distributors, the IESO has a role in the approval and connection process for renewable generation. At the present time, however, with the FIT and microFIT programs winding up, an appropriate metric that tracks the timeliness of approvals in the coming years should relate to the IESO's future role with respect to renewable generation. Its role, if any, in the context of net metering is not yet clear.

Elenchus Conclusion #4 – Appropriate measures that addresses relevant IESO performance issues that are analogous to the distributors' Public Policy Responsiveness Performance Outcome are conservation measures that the IESO's has included in its proposed Regulatory Scorecard. Those measures are currently reported by the IESO as CPM #6. The specific metrics would be (i) LDC conservation programs undertaken within 4 cents/kWh; (ii) LDC and direct-connect customer program progress is in line with achieving the 2020 energy savings target of 8.7 TWh, with 50% (3.5 TWh) of 7 TWh Conservation First target forecasted to be achieved and 46% (0.78 TWh) of the 1.7 TWh Industrial Accelerator Program (IAP) target contracted by the end of 2017. Appropriate annual milestones consistent with these long-term targets should be identified for reporting in the Scorecard.

The **Financial Performance** Outcome includes one Performance Category.

- **Financial Ratios**: The IESO's structure is not conducive to measures that monitor financial ratios. The IESO is an agency that operates on a non-profit basis. While it does own some capital assets, its operations are not like the capital-intensive operations of distributors. It has no need to maintain a capital structure or financial ratios (debt equity ratio, interest coverage etc.) that enables it to access the capital markets in order to finance future capital investments.

Elenchus Conclusion #5 – Financial Performance: A Financial Performance measure analogous to the Distributor Scorecard is not relevant to the IESO's performance; hence, no measures of this type have been recommended by either Elenchus, the IESO or stakeholders.

The OEB Distributor Scorecard has additional design features that would be appropriate to adopt for the IESO Regulatory Scorecard.

- Five years of historic data should be reported when available. At the present time, the full data series are not available for the recommended measures as a result of the OPA/IESO merger on January 1, 2015, or in some cases because the related underlying policy or activities did not exist. Once a set of measures have been approved, the IESO will be able to commence tracking the results so that the number of historic years reported can increase to five by 2020 across all measures. Given the timing of the merger, it is unlikely that the IESO will be able to include the 2015 fiscal year in the Regulatory Scorecard that is ultimately adopted, although the 2015 year appears in the Proposed IESO Regulatory Scorecard that is included in this report for illustrative purposes.
- For each measure that has a relevant target, the target, the trend, and whether the target is met/not met should be reported.

Elenchus Conclusions #6: Regarding design considerations for the IESO Regulatory Scorecard, consistency with the Distributor Scorecard has merit. In particular, it would be reasonable to report 5 years of historic data and the trend direction as applicable where historical data are available. (Elenchus notes that historical data are currently limited due to the merger of the OPA with the IESO.) It is also appropriate to include a relevant target for the future and performance versus target results for past years for measures where targets can be meaningfully established.

An important feature of the Distributor Scorecard is the Management Discussion and Analysis (MD&A). The reported metrics are very concise indicators of outcomes that are related to very complex operational activities. Appropriate explanations of the drivers that affect the reported metrics will be equally important in the context of the IESO Regulatory Scorecard for assisting the Board and stakeholders to interpret the metrics in assessing the IESO's expenditures and revenue requirement.

Elenchus Conclusion #7: It will be important for the IESO Regulatory Scorecard to be supported by a thorough Management Discussion and Analysis (MD&A) of the reported metrics.

2.3 THE IESO'S CORPORATE PERFORMANCE MEASURES

Elenchus identified the IESO's Corporate Performance Measures (CPMs) as an additional relevant reference for identifying appropriate Regulatory Scorecard metrics although they were not designed to address the needs of stakeholders in the regulatory process associated with the IESO's annual fees application. The CPMs serve a different purpose than the Regulatory Scorecard measures. Nevertheless, it is reasonable to expect that there should be consistency and compatibility between the IESO's internal CPMs and its Regulatory Scorecard measures. The relevance of the CPMs for the Scorecard was the primary focus of one of the stakeholder sessions. Elenchus comments below on the applicability of each 2017 CPM as a Regulatory Scorecard measure based on that discussion. Where a modification would make a CPM more appropriate as a Regulatory Scorecard measure, adaptations that Elenchus considers relevant are also presented.

During the stakeholder sessions, the 2017 IESO CPMs were generally acknowledged by stakeholders to be the most relevant starting point for the IESO's Scorecard, however:

- there was no expectation that all CPMs would be appropriate as Regulatory Scorecard measures, and
- there was no expectation that the CPMs include all relevant Scorecard measures.

As Elenchus noted to the stakeholders, the IESO CPMs are identified and tracked on an annual basis so as to reflect current strategic objectives and goals for the year. The IESO's strategic objectives may evolve from year to year. In contrast, Regulatory Scorecard metrics can be expected to reflect on-going regulatory priorities, often with longer term trends being more important than yearly performance. The Regulatory Scorecard places an emphasis on monitoring key outcomes that are important for assessing the overall level of expenditures; whereas the IESO CPMs are more reflective of current priorities.

Elenchus notes that the IESO has adopted updated CPMs since the IESO's merger with the OPA.[12] It is Elenchus' understanding that the IESO developed the CPMs specifically for internal management purposes and that it reviews and updates the CPMs annually based on its Business Plan. Consequently, the measures directly reflect the IESO's current Business Plan.

[12] IESO 2017 CPMs http://ieso.ca/Documents/consult/sac/SAC-20170201-Performance-Measures.pdf

CPM #1: The IESO executes its strategic plan

As a regulatory measure, it would be more appropriate to recast this measure in the context of its budget. On this basis, annual Scorecard reporting would include an indicator of the trend in total expenditures (e.g., three-year rolling average of the approved budget as well as the variance between actual and approved expenditures for historic years, starting with 2015 upon the merger of the IESO and OPA.

See the Cost Control measure in Elenchus Conclusion #3 which recommends these metrics.

CPM #2: Ontario's electricity service is reliable

The 2017 CPM is "100% compliance to North American Electricity Reliability Corporation high violation risk factor reliability standard requirements (including audit requirements)." Although this metric relates directly to the reliability responsibilities of the IESO, some stakeholders do not see this as a reliability measure that is relevant to Ontario electricity consumers and other market participants. To some stakeholders, traditional measures of system reliability such as SAIDI and SAIFI would be more relevant. As discussed earlier in the report, the relevance of this measure for assessing the IESO's revenue requirement is questionable since the IESO does not own and operate the assets that determine the reliability trend over time, nor does it have authority to make the relevant investment decisions. Consequently, while the measure is of both interest and concern to stakeholders, Elenchus does not see how reliability measures beyond this CPM can be used as "be a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."

Consistent with the discussion of the possible inclusion of measures of the performance of the power system (the System View), appropriate reliability measures could be included as an information reporting item if the IESO is the most appropriate entity to provide a measure of the overall reliability of the Ontario grid. In doing so, the IESO would not be held accountable for overall grid reliability in the context of justifying its costs; however, the information would serve as a useful demonstration of how well the overall policy, planning and regulatory regime for the grid is functioning.

CPM #2 is the best available measure of reliability for inclusion in the IESO Regulatory Scorecard. See Elenchus Conclusions #1 and #9.

CPM #3: The provincial power system is well planned

The IESO coordinates regional power system planning through the Integrated Regional Resource Planning process. The 2017 Target for this CPM is:

> *Implementation of key recommendations in regional and bulk system power plans is on track according to their suggested timelines[1] to meet the Ontario resource and*

transmission assessment criteria and support the planning and management of the provincial power system, whereby:

- *100% of the 44 key recommendations for 2017 are progressing on track for the 15 Integrated Regional Resource Plans*
- *100% of the five priority and key transmission projects in Northwest Ontario from provincial plan(s) (2013 Long Term Energy Plan) are progressing on track, along with associated milestones with timelines in 2017*

Consistent with this target, the corresponding outcome for the IESO's Regulatory Scorecard would be:

- the number of the key recommendations for each historic year that are progressing on track for the Integrated Regional Resource Plans, and
- the number of the key projects identified in the most recent Long Term Energy Plan that are progressing on track, along with associated milestones with timelines in each historic year.

Elenchus notes that the IESO is concerned that it would not be appropriate to use a measure along these lines as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement" since it does not control the processes or investments that result in the implementation of IRRP recommendations or the LTEP projects. Inclusion could imply a degree of accountability that does not exist. The IESO has therefore proposed as a Regulatory Scorecard measure the "number of key recommendations from the IRRPs". Intervenors observed that the number of key recommendations does not address either the effectiveness or the efficiency of the IESO in fulfilling its role with respect to the IRRPs.

Elenchus also notes that if the progress of the plans is tracked, the explanation of any underperformance (i.e., actual progress below the target) is almost certain to relate to the actions, or inactions, of entities other than the IESO. From a procedural perspective, the responsible entities would not normally be party to the IESO revenue requirement proceeding and as a result would not be able to provide an explanation. This reality has two implications.

- First, detailed reporting on the progress of IRRP recommendations and LTEP priorities in the context of the IESO's Regulatory Scorecard could be seen as unfair to the distributors and transmitters that are actually responsible for implementation of the projects being tracked.
- Second, the results may be of limited assistance as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."

Nevertheless, no better measure of outcomes in relation to the IESO's responsibilities with respect to planning of the provincial power system has been identified. Elenchus notes that distributors face similar challenges with respect to the OEB's Distributor Scorecard: performance with respect to the many measures that can only be interpreted in light of the Management Discussion and Analysis.

Elenchus recommends the adoption of a measure for the Regulatory Scorecard that is consistent with the IESO's current CPM (that is, timely implementation of key IRRP recommendations and key LTEP project milestones), while also cautioning all parties to ensure that results are used appropriately as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."

See the Planning measure in Elenchus Conclusion #10 which recommends this metric.

CPM #4: Operations are well co-ordinated with LDC partners

The stated 2017 Target for this CPM is "One major LDC is actively engaged in two-way communication by end of 2017, including sharing of operational data to support coordinated and consistent operation decision making; discussion underway with additional two LDCs."

In Elenchus' view, while this is a reasonable internal CPM reflecting one of the IESO's current strategic priorities, it is difficult to see how tracking this outcome could be useful as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." This activity will not be significant in the context of the IESO overall revenue requirement.

Elenchus notes that neither the IESO nor the other stakeholders have proposed the adoption of this CPM or a related measure as a Regulatory Scorecard measure.

CPM #5: Cybersecurity leadership is demonstrated across the sector

The stated 2017 Target for this CPM is:

> *Cybersecurity excellence is promoted by:*
>
> - *The objectives contained in the 2016 – 2017 cybersecurity forum work plan are accomplished*
> - *Supporting the OEB objectives for completion of standards development by the end of 2017*
> - *Increasing the IESO's internal cybersecurity capabilities by implementing an advanced malware technology solution that is designed to improve our capability to detect and deter new and complex cyber-attacks and completing cybersecurity process enhancements by Q1 2017*

In Elenchus' view, while this is a reasonable internal CPM reflecting one of the IESO's current strategic priorities, it is difficult to see how tracking this outcome could be useful as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." This activity will not be significant in the context of the IESO overall revenue requirement.

Elenchus notes that neither the IESO nor the other stakeholders have proposed the adoption of this CPM or a related measure as a Regulatory Scorecard measure.

CPM #6: The electricity market is efficiently delivered

The stated 2017 Target for this CPM is:

> *The IESO continues to focus on price efficient outcomes via:*
>
> - *Design and development of a renewed market structure project built on stakeholder input that lays the foundation for improved price efficiencies, operability, transparency and innovation includes:*
> - *A robust, well stakeholdered cost/ benefit analysis completed by end of Q1, 2017*
> - *Well attended, at a minimum, quarterly meetings (including information sessions) with stakeholders to discuss, review and educate stakeholders on high level market design elements*
> - *A detailed project plan developed by the end of Q3 which defines project scope (detailed design work to be undertaken), schedule and cost (including internal/external resourcing requirements)*
> - *A project level risk assessment and Key Performance Indicators completed by end of Q3*
> - *Directed procurements (FIT and microFIT) are completed through transparent, consistent and efficient processes with posted standard contract, rules and prices. The processes are validated by a Fairness Commissioner to be executed with consistency and integrity. The costs are at or below the government's cost projections included in the 2013 LTEP*
> - *Cost-effective delivery of LDC conservation programs undertaken within 4 cents/kWh. LDC and direct-connect customer program progress is in line with achieving the 2020 energy savings target of 8.7 TWh, with 50% (3.5 TWh) of 7 TWh Conservation First target forecasted to be achieved and 46% (0.78 TWh) of the 1.7 TWh Industrial Accelerator Program (IAP) target contracted by the end of 2017*

In Elenchus' view, this CPM is central to "evaluating the IESO's proposed expenditure and revenue requirement." To be a useful "tool for the Board and intervenors to use" in

this evaluation, however, it would be helpful to separate it into its three components, thereby creating three separate measures for the IESO Regulatory Scorecard:

- **Market Renewal Project progress (i.e., proceeding on time and on budget).** Tracking an individual project would not normally be appropriate as a scorecard measure; however, in Elenchus view, the Market Renewal Project is of sufficient size in terms of the IESO's total expenses, duration, and the expected outcomes are of sufficient importance to the Ontario market, that it is appropriate as a Regulatory Scorecard measure until completion. It is appropriate for a measure related to this project to be included as a "tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." There may be other projects in the future that merit similar inclusion in the Regulatory Scorecard.

  Some stakeholders have suggested more specific "on budget" metrics than the Yes/No metric proposed by the IESO for market renewal project. The comments implied that it would be helpful in evaluating the IESO's overall revenue requirement to separate out the costs associated with the Market Renewal Project so that the year-over-year trend in the IESO's "core" costs could be identified without this confounding factor. Having separated out the Market Renewal Project costs, project specific efficiency measures could be adopted related to O&M (e.g., FTEs and contractor/consulting costs) and CapEx. The metrics would compare the actual to the projected costs contained in the approved Plan. Ideally, the Business Case benefits/outcomes would be included and reported on at least a qualitative basis. It would be helpful for the IESO to comment on any concerns it may have with adopting more detailed cost-effectiveness metrics for the Market Renewal Project.

Elenchus Conclusion #8: Market Renewal Project progress (i.e., proceeding on time and on budget) would be an appropriate Scorecard measure. There may be other projects in the future that merit similar inclusion in the IESO's Regulatory Scorecard.

- **Procurement proceeding in accordance with target timing and budget.** With the termination of the FIT and microFIT programs, it is not clear at this time whether there is an appropriate procurement measure that could be included in the IESO Regulatory Scorecard in the coming years. Nevertheless, the IESO should undertake to provide a measure related to future procurement activities if determined to be relevant as a "tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."
- **Cost-effective delivery of conservation programs.** As long as CDM remains a priority for the IESO, a measure of cost-effective delivery will be appropriate for the Scorecard. In using this measure as part of the "tool for the Board and

intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement" it will be important to recognize that the IESO is responsible for administering conservation programs but not directly responsible for program delivery.

Elenchus notes that the IESO has proposed the adoption of measures related to the Market Renewal Project and conservation as Regulatory Scorecard measures. See section 3, below. This measure is also identified in Elenchus Conclusion #4.

CPM #7: The marketplace for electricity is innovative and competitive

The stated 2017 Target for this CPM is:

> *Broader, competitive and more innovative sector participation is enabled by end of 2017 through:*
>
> - *Formal mid-term review of Conservation First Framework and Industrial Accelerator Program has been initiated by June 1, 2017 and on track to be completed no later than June 1, 2018*
> - *At least $50M (3%) of the Conservation First Framework Conservation and Demand Management Plan budget committed to full deployment of innovative new programs*
> - *The demand response (DR) auction enables the participation of a broad range of participants, including residential DR by the end of 2017, and meets the objectives of the DR working group*
> - *The SME will enhance the value of electricity data by expanding the type of access to smart meter data received by the IESO's systems*

In Elenchus' view, while this is a reasonable internal CPM reflecting one of the IESO's current strategic priorities, it is difficult to see how tracking a related outcome such as a measure of the innovativeness and competitiveness of the marketplace for electricity could be measured in the context of a Regulatory Scorecard. The CPM simply measures inputs; hence, it would not be useful as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."

Elenchus notes that neither the IESO nor the other stakeholders have proposed the adoption of this CPM or related measures as a Regulatory Scorecard measure.

CPM #8: Stakeholders and communities are confident with the engagement process for making informed decisions

The stated 2017 target for this CPM is "2% improvement in satisfaction with the engagement process is achieved from the 2016 customer satisfaction survey baseline of 65%; demonstrating continuous improvement in the IESO's consideration of stakeholder input in its decisions."

In Elenchus' view, this CPM would be useful to adopt as a Regulatory Scorecard measure that would be used as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." The IESO has proposed to adopt this CPM as a Regulatory Scorecard measure. See section 3, below.

The merged IESO conducted its first stakeholder engagement survey in 2016, which provides a baseline result; hence, prior historical results are not available to report. In future years, the survey results could be reported annually to produce a metric that would provide a meaningful trend with relevant interim targets.

See the Stakeholder Satisfaction comments in Elenchus Conclusion #2 which recommends this metric.

CPM #9: IESO employees are engaged

The stated 2017 Target for this CPM is "A two point increase in employee engagement is achieved from the baseline of 71% set in 2016 and all business units successfully implement their action plans resulting from the survey."

In Elenchus' view, while this CPM is an important metric for management, employee engagement is not an outcome that would be useful as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." Employee engagement is more likely to be important to management in terms of achieving its target with respect to the other Regulatory Scorecard measures.

Elenchus notes that neither the IESO nor the other stakeholders have proposed the adoption of this CPM or a related measure as a Regulatory Scorecard measure.

CPM #10: IESO resources are utilized effectively and efficiently

The stated 2017 target for this CPM is:

> *Expanded operational capacity is realized by:*
>
> - *All priorities in 2017 are being achieved within the IESO's approved budget*
> - *80% of priority change initiatives progressing according to their approved business case, on time and budget and completed projects meeting all of their defined business objectives*
> - *100% of the Operations Readiness Initiatives (ORI) progressing according to their approved business case, meeting all of their defined business objectives to achieve a headcount reduction of six FTEs by end of 2018*

This CPM was generally recognized by stakeholders as a key metric to use as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement for evaluating the revenue requirement." It was noted, however,

that for purposes of the Regulatory Scorecard it would be appropriate to modify the language to compare actual expenditures in past years to the approved budgets.

Some stakeholders also suggested that a more detailed breakdown that links specific budgeted expenditures to specific outcomes would be desirable. However, no stakeholder, including the IESO, identified any outcomes that have associated measures of cost-effectiveness for the IESO on a total budget basis that is practical. In the view of Elenchus, the responsibilities of the IESO are not conducive to quantitative measurement of its outputs in terms of total costs per a single measure of output analogous to the indicators used for LDCs such as MWh, customers served and kilometers of line. The measures recommended by Elenchus include more specific cost effectiveness measures based on the costs specific quantifiable outputs (see the contract management and conservation measures).

Stakeholders advanced several suggestions for more specific measures, including:

- tracking staffing levels by business unit relative to some measure of output (but methods of quantifying the outputs have not been identified);
- tracking average compensation per employee;
- tracking cost on the basis of some functional disaggregation of the IESO's activities by some means other than business unit (discussions between Elenchus and the IESO did not result in the any practical way to do this); and
- measuring of productivity in one or more specific areas, for example IT dollars per staff, or the number of procurement contracts per staff (Elenchus and IESO staff were unable to identify meaningful productivity or efficiency measures for either department or activities since there is very little standardization of the IESO's work products).

Elenchus notes that the IESO has proposed to adopt Regulatory Scorecard measures that compare the total budget to actual resources used. See section 3, below. Also see the Cost Control measures in Elenchus Conclusion #3 which recommends two metrics.

3 IESO PROPOSED MEASURES

In response to input provided through the stakeholder process facilitated by Elenchus, the IESO agreed to established an internal Working Group that was tasked with developing practical and appropriate measures for the Regulatory Scorecard.

The criteria the IESO used for developing these measures were as follows.

- Being responsive to the concerns of stakeholders as indicated by section 6.2 of the Proposed Settlement.
- Being responsive to the comments Elenchus received through the stakeholder meetings and one-on-one discussions.

- Must use currently available data to report on the proposed measures.
- Must be able to trend.
- Must represent broad functions of the IESO.
- Must apply generally recognized best practices for corporate scorecards.

The IESO Working Group developed a proposed Regulatory Scorecard that is presented in Appendix D. It includes the following seven measures.

- Reliability
- Planning
- IESO Administered Markets
- Contract Management
- Stakeholder Engagement
- Conservation
- Resource use

This section comments on these proposed measures based on Elenchus review of the OEB distributor scorecard, corporate BSC best practices, and the comments on stakeholders on the IESO's 2017 CPMs as well as their general comments.

3.1 RELIABILITY

The IESO's proposed reliability measure is whether the IESO is compliant with North American Electric Reliability Corporation (NERC) high risk reliability standards (i.e. high Violation Risk Factor (VRF) standards). This measure is similar to one of the IESO's 2017 CPMs.

There appears to be broad recognition that this measure reports on an outcome that is extremely important for the IESO. Failure to maintain compliance with high risk NERC standards would be a serious shortcoming that could be relevant to assessing whether the IESO is using its revenue requirement effectively.

One stakeholder observed, however, that Yes/No metrics are of limited value as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." Elenchus concurs with this view generally, but suggests that the concern is most appropriately applied the Scorecard overall. As is the case with the OEB Distributor Scorecard, quantitative metrics may not be appropriate for every category of outcomes. In the case of this important metric, there does not appear to be any meaningful approach other than to report the outcome as Yes or No.

With respect to the performance of the grid in terms of reliability from the perspective of electricity customers and other users of the grid (for example to wheel power), there is merit in encouraging an appropriate entity within the Province to report traditional reliability measures such as SAIDI and SAIFI for the system as a whole and perhaps

also on key local grid components such as critical transmission lines and heavily used interties. The IESO may not be the entity that is best positioned to provide this information.[13]

Elenchus Conclusion #9: It would be appropriate to adopt as a Regulatory Scorecard measure of reliability the metric proposed by the IESO: compliance with the NERC high risk reliability standards.

3.2 PLANNING

The IESO's proposed planning measure is the number of key recommendations in Integrated Regional Resource Plans. This measure is similar to one of the IESO's 2017 CPMs – CPM #3.

As stated in the discussion of CPM #3 in section 2.3 "Elenchus recommends the adoption of the more detailed reporting consistent with the IESO's current CPM". Specifically, timely implementation of key IRRP recommendations and key LTEP project milestones is recommended, while also cautioning all parties to ensure that results are used appropriately as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement." This recommendation reflects the comments of several stakeholders that suggested that a metric that provides only the number of recommendation would not be of assistance in assessing the reasonableness of the IESO's revenue requirement.

Elenchus Conclusion #10: It would be appropriate to adopt as a Regulatory Scorecard measure of planning the metric proposed by the IESO: timely implementation of key IRRP recommendations and key LTEP project milestones.

3.3 IESO ADMINISTERED MARKETS

The IESO has proposed two measures related to its performance in relation to the IESO Administered Markets.

Market Renewal Program[14]: The market renewal initiative is proceeding according to the schedule and budget. Annual reporting would compare actual progress against the annual schedule and budget throughout the duration of the initiative. This measure is similar to one of the IESO's 2017 CPMs.

[13] A stakeholder noted that there are guidelines that may be relevant resulting from the OEB System Reliability Working Groups and Board Staff Report regarding how metrics should be measured and reported.

[14] The Market Renewal Initiative is expected to commence in 2017.

Stakeholder views on the inclusion of a metric for the Market Renewal Initiative in the Scorecard were mixed. One did not consider it to be a useful metric because the initiative is short-lived. As noted in the discussion of CPM #6 in section 2.4 above, Elenchus considers it to be appropriate to include major initiatives on the Scorecard until they have been completed. Other major initiatives may be added in the future.

Elenchus notes that this type of measure would not be appropriate on the Distributor Scorecard since their scorecard is generic and is used by all OEB regulated distributors. In contrast, the IESO Regulatory Scorecard is exclusive to the IESO. Progress on this major initiative appears to Elenchus to be a useful component of the toolkit "for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement."

See Elenchus Conclusion #8.

IESO Administered Market: Tracking of the IESO's performance is done through reporting on the results of the:

- audit of Settlement Operations according to the Market Rules Chapter 9 6.17 ("Settlements Audit"); and
- review of the Dispatch Scheduling Optimizer according to Market Rule Chapter 7 4.2.4 ("DSO Review").

These biennial independent reports are produced in alternating years. The relevant targets are:

- Settlements Audit: Unqualified auditor's report under CSAE 3416 (controls were suitably designed and operated effectively)
- DSO review: No high or medium risk observations on the Review Report under CICA section 8600

Although these measures are not included in the IESO's 2017 CPMs, they appear to be the best available measures of the IESO's performance with respect to its core responsibilities. Performance in these areas is relevant to the effectiveness of its activities and hence the reasonableness of its revenue requirement.

One stakeholder also suggested that one or more metrics pertaining to compliance with the market rules would be of greater value. The IESO, however, is concerned that it would be difficult to do so without violating confidentiality rules around investigations and disclosure of outcomes. Given the complexity of investigations and the nature of settlements, classifying the outcomes would be problematic.

Based on discussions with IESO Staff with respect to this concern, Elenchus agrees that more detailed reporting on investigations would not be helpful in assessing the IESO's revenue requirement and it would risk violating confidentiality.

Elenchus Conclusion #11: Public reporting of the results of (i) the biennial audit of Settlement Operations and (ii) the biennial review of the Dispatch Scheduling Optimizer as part of the Scorecard would be relevant to the review of the IESO's revenue requirement by the Board and stakeholders.

3.4 CONTRACT MANAGEMENT

The IESO has proposed two measures related to contract management: the capacity value in MW, and the number of capacity contracts managed by the IESO. In response to the views of other stakeholders, the IESO examined the practicality of developing a productivity measure such as the cost per contract managed or contracts managed per full-time equivalent (FTE) staff resources. The IESO concluded that a productivity measure along these lines is not practical because of the complexity and wide range of staff resources that contribute to the overall contract management process.

Like other effort-based measures, some stakeholders expressed the view that reporting only the number and capacity value of contracts will not provide insight into whether contract management is being conducted efficiently or effectively. Elenchus shares this concern while recognizing that it will be challenging to develop a measure that is a meaningful indicator of contract management productivity.

Although the contract management function is not carried out entirely by a discrete group within the IESO that allows for clearly attributable resources to be identified to create a comprehensive measure of the resources required per capacity contract managed, or per GW managed under the capacity contracts, it may be feasible to develop a simplified measure that can be used as a relevant benchmark for tracking capacity contract management productivity on an actual versus target basis.

For example, it may be possible to identify key resources that are the primary resources engaged in capacity contract management. For a metric along these lines, it should be practical to establish a consistent target and report on actual results versus the target. This metric could be used to assess the trend over time, with an explanation being expected in the MD&A commenting on the trend over the five-year period that will ultimately be reported.[15]

[15] In comments on the draft Elenchus report, a stakeholder suggested that it would be desirable for the IESO to consider ways in which the current difficulties with providing a more comprehensive measure of contract management costs could be addressed and resolved.

Elenchus Conclusion #12: The contract management metric proposed by the IESO would be relevant to the review of its revenue requirement. However, it would be preferable for the IESO to develop a benchmark measure of the resources required to perform its contract management function. The goal would be to report, as early as the 2018 fiscal year, two measures of the resources required: (i) the number of capacity contracts per FTE required to manage them, and (ii) capacity value in MW per FTE. These measures need not be comprehensive, but would capture the primary resources that can be tracked consistently from year to year.

3.5 STAKEHOLDER ENGAGEMENT

With respect to stakeholder engagement, the IESO has proposed as a measure the satisfaction with the engagement process according to the third party conducted customer satisfaction survey.

No stakeholder expressed concerns with this metric other than its wording.

See the Stakeholder Satisfaction measure in Elenchus Conclusion #2 which recommends this metric.

3.6 CONSERVATION

The IESO has proposed two measures related to conservation programs performance that are similar to 2017 CPMs:

- cost-effective delivery of LDC and direct-connect customer conservation programs undertaken within 4 cents/kWh, the portfolio cost/kWh.
- LDC and direct-connect customer conservation program progress is in line with achieving the 2020 energy savings target of 8.7 TWh. Annual reporting of progress towards 2020 target based on independent verified results (7 TWh target for LDCs and 1.7 TWh target for direct-connect customers).

Together these metrics would show whether adequate progress is being made toward the conservation targets that have been established by the Province. To implement this metric, it would be appropriate to identify consistent annual milestones that would serve as year by year targets. The IESO noted that no annual milestones have been mandated by the Province.

Stakeholders appear to be generally supportive of this metric for conservation although one suggested that the Total Resource Cost (TRC) would be a better metric.

Elenchus notes that the targets that have been set by the Province establish quantitative targets for 2020 and 2032. Elenchus suggests that reasonable annual

milestones should be identifiable that are consistent with appropriate progress toward these targets. These milestones would serve as relevant annual targets for measuring progress of conservation programs toward the 2020 and 2032 targets. The IESO has noted that interim conservation targets may be derived from aggregate LDC CDM plans and internal forecasts.

One stakeholder has suggested that transmission losses should be included in the IESO Regulatory Scorecard for the following reasons.

- Transmission losses cost ratepayers hundreds of millions of dollars each year.
- Transmission loss reductions are a form of conservation. Losses must be actively managed to comply with the government's Conservation First policy.
- The IESO has a significant level of control over transmission losses. For example, the IESO can reduce loses through measures such as generation dispatch, generation siting, voltage control, operational management of the electricity system, directing Hydro One to make capital investments to reduce losses, and so on. The IESO has at least as much control over transmission losses as other OEB-regulated entities have over other scorecard metrics that they are expected to measure and manage (e.g. LDCs and reliability).
- If the scorecard contains cost control metrics, the IESO may have an incentive to underinvest in transmission loss reduction measures so as to improve its cost control results. A transmission loss metric is needed to counterbalance a cost control metric and align the IESO's incentives with the interests of consumers.

This stakeholder suggested a potential metric being "the total cost of transmission system energy losses to ratepayers".

Elenchus notes that there is currently no accepted methodology for calculating this metric. Nevertheless, since system losses are important to Ontario's electricity users it is reasonable to suggest that a comprehensive metric would be a useful indicator of the performance of the industry with respect to optimizing the various types of investment and grid management opportunities that impact on transmission system losses. Further, it may be noted that responsibility for developing and annually producing a metric along these lines could be shared with transmission owners/operators.

It may be reasonable to give further consideration to including a measure of the cost efficiency of transmission losses in the IESO scorecard in the future. Factors to consider include the degree of control that the IESO has over transmission losses and the division of responsibilities between the IESO and transmission owner/operators. In addition, further work would be needed to develop an acceptable methodology for calculating transmission loss metrics that factors in cost optimization.

See the Conservation measures identified in Elenchus Conclusion #4.

3.7 RESOURCE USE

With respect to resource use, the IESO has proposed as a measure of whether the business plan is executed within its approved budget. This measure is similar to a 2017 CPM and is reported on a Yes/No basis.

In the view of Elenchus, as a Regulatory Scorecard measure, it would be more appropriate to adopt the percentage variance from forecast as the metric. The amount of the variance from forecast, whether positive or negative, will assist the Board and stakeholders to assess the reasonableness of the IESO's requested revenue requirement, taking into account historic variances and the reason for the past variances. This view was also reflected in the comments of the stakeholders.

See the Cost Control measures identified in Elenchus Conclusion #3.

4 CONCLUSION AND RECOMMENDATIONS

4.1 CONCLUSIONS ON THE OVERALL APPROACH

Scope of the Regulatory Scorecard: As discussed in section 1.3 above, two views of the appropriate scope of the Regulatory Scorecard were advanced by stakeholders. These are referred to as the IESO Cost Effectiveness View and the System View. Elenchus is of the view that while it may be appropriate to identify measures that are consistent with both views, it will be necessary to identifying clearly, and report separately, any measures that go beyond the IESO Cost Effectiveness View. To reiterate the comment made on this point in section 1.3, measures that are appropriate only within the System View will not be useful in assessing the reasonableness of the IESO's revenue requirement.

The reason for drawing this distinction between the two types of metrics is that the best practices for corporate scorecards limit performance measures for a corporation and any group within that corporation to outcomes over which they have significant control and can reasonably be held accountable. Applying corporate balanced scorecard best practices to the development of the IESO's Regulatory Scorecard implies that the measures that should be used as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement" should be limited to the IESO Cost Effectiveness View.

Nevertheless, Elenchus recognizes that there may be merit in ensuring that there is a separate mechanism, outside the scope of the IESO's Regulatory Scorecard, for providing relevant performance benchmarks for the Ontario electricity market. Such information would inform stakeholders, the government, distributors, transmitters, regulators and the IESO on areas where it could be productive to seek policies or

processes for improving the performance on Ontario's electrical system. This information should be reported by the entity that is best positioned to provide it, which may well be Hydro One, the Ministry of Energy and/or the OEB rather than the IESO.

Reporting Data for Prior Years: The established practice for the OEB's Distributor Scorecard that five years of historical results be reported when available would be reasonable to adopt for the IESO's Regulatory Scorecard. Elenchus notes that in the case of the Distributor Scorecard, it was not expected that historical data would be developed in the initial years if a distributor had not been tracking it. Similarly, the IESO should not be expected to provide information for years before the IESO/OPA merger, and information in the first year after the merger (2015) may also not be suitable to include as historic comparators. Even if the information is available, historic metrics from 2015, when the organization was in transition, are unlikely to be comparable to the current metrics.

Establishing Targets for the Test Year: The established practice for the OEB's Distributor Scorecard that targets be identified where appropriate would be reasonable to adopt for the IESO's Regulatory Scorecard. As with the Distributor Scorecard, not all of the IESO Regulatory Scorecard measures are amenable to establishing targets.

Performance versus Targets: As is the case with Distributor Scorecard results, performance below the pre-established target should not be considered to be an unequivocal demonstration of underperformance; rather it highlights an area that merits examination to determine whether or not corrective action is required. In most areas, the annual results are not entirely within the control of the IESO. Some metrics are highly controllable, but the IESO has only limited control over other metrics that are relevant to the assessment of its revenue requirement. Judgement will be needed to determine the implications of the IESO Regulatory Scorecard in the context of the IESO revenue requirement application. For example, a result that is below the target may indicate either that funding was insufficient or that the budget was not used efficiently. The results could also be the result of events that are completely outside the control of the IESO and have no implications in terms of the IESO revenue requirement for the test year. This observation highlights the importance of using the IESO Regulatory Scorecard as "a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement" within the context of a thorough Management Discussion and Analysis (MD&A) that provides context and insight into the factors causing the observed outcomes reported in the Scorecard.

4.2 RECOMMENDED REPORTING METHOD

It is expected that the IESO Regulatory Scorecard will be filed annually as part of the IESO Fees Application. Elenchus recommends that it be included as an exhibit in the evidence so that each measure can be explained and the results put into context. The evidence would be similar to the Management Discussion and Analysis (MD&A) that is an integral part of the OEB's Distributor Scorecard explaining the differences in the year-over-year trending.

Elenchus notes that the Distributor Scorecard has been highly standardized in order to facilitate comparisons among distributors activities and performance through time and they are intended primarily for use in a cost of service application. On the other hand, the IESO Regulatory Scorecard is "intended as a tool for the Board and intervenors to use in evaluating the IESO's proposed expenditure and revenue requirement". In the view of Elenchus, this difference in use implies that it will be more appropriate in the case of the IESO Regulatory Scorecard to expect that it will be adapted when appropriate to ensure that it reflects any changes to the mandate of the IESO which will undoubtedly continue to evolve as it has in past years as government policies change.

A further consideration in the future evolution of the Scorecard should be stakeholder input based on their experience in using it in the context of future IESO Revenue Requirement Applications.

4.3 SPECIFIC CONCLUSIONS AND RECOMMENDED METRICS

Elenchus Conclusion #1: There is merit in both views of the appropriate scope of metrics to be reported. However, the most practical approach to implementing the System View would be to create reporting systems that clearly differentiates between (a) the metrics implied by the IESO Cost Effectiveness View and (b) the additional metrics implied by the System View. Only the metrics consistent with the IESO Cost Effectiveness View would be included in the Regulatory Scorecard and used in assessing the IESO's revenue requirement. Since the IESO would not be responsible or accountable for the additional metrics related to the System View, these measures would be reported through a mechanism other than the Scorecard. These additional measures would not be used to assess the reasonableness of the IESO's revenue requirement although they may provide insight that assists government, regulators, the industry and stakeholders to identify areas where performance could be improved through better planning, collaboration and other means. There is no reason to expect the IESO to be responsible for publishing these additional system metrics unless it is in the best position to access the data on which particular metrics are based.

Elenchus Conclusion #2 – Customer/Stakeholder Focus: A measure that is analogous to these categories of the Distributor Scorecard is Stakeholder

Satisfaction as measured by the IESO's third-party surveys of stakeholder satisfaction with the IESO's engagement processes. This measure is appropriate to include in the toolbox for evaluating the IESO's revenue requirement.

Elenchus Conclusion #3 – Operational Effectiveness: Appropriate measures that address relevant IESO outcomes that are analogous to the distributors' Operational Effectiveness Performance Outcome (Cost Control) measures are (i) variance from the OEB-approved revenue requirement and (ii) three-year rolling average of total expenses per TWh.

Elenchus Conclusion #4 – Public Policy Responsiveness: Appropriate measures that addresses relevant IESO performance issues that are analogous to the distributors' Public Policy Responsiveness Performance Outcome are conservation measures that the IESO's has included in its proposed Regulatory Scorecard. Those measures are currently reported by the IESO as CPM #6. The specific metrics would be (i) LDC conservation programs undertaken within 4 cents/kWh; (ii) LDC and direct-connect customer program progress is in line with achieving the 2020 energy savings target of 8.7 TWh, with 50% (3.5 TWh) of 7 TWh Conservation First target forecasted to be achieved and 46% (0.78 TWh) of the 1.7 TWh Industrial Accelerator Program (IAP) target contracted by the end of 2017. Appropriate annual milestones consistent with these long-term targets should be identified for reporting in the Scorecard.

Elenchus Conclusion #5 – Financial Performance: A Financial Performance measure analogous to the Distributor Scorecard is not relevant to the IESO's performance; hence, no measures of this type have been recommended by either Elenchus, the IESO or stakeholders.

Elenchus Conclusions #6: Regarding design considerations for the IESO Regulatory Scorecard, consistency with the Distributor Scorecard has merit. In particular, it would be reasonable to report 5 years of historic data and the trend direction as applicable where historical data are available. (Elenchus notes that historical data are currently limited due to the merger of the OPA with the IESO.) It is also appropriate to include a relevant target for the future and performance versus target results for past years for measures where targets can be meaningfully established.

Elenchus Conclusion #7: It will be important for the IESO Regulatory Scorecard to be supported by a thorough Management Discussion and Analysis (MD&A) of the reported metrics.

Elenchus Conclusion #8: Market Renewal Project progress (i.e., proceeding on time and on budget) would be an appropriate Scorecard measure. There may be other projects in the future that merit similar inclusion in the IESO's Regulatory Scorecard.

Elenchus Conclusion #9: It would be appropriate to adopt as a Regulatory Scorecard measure of reliability the metric proposed by the IESO: compliance with the NERC high risk reliability standards.

Elenchus Conclusion #10: It would be appropriate to adopt as a Regulatory Scorecard measure of planning the metric proposed by the IESO: timely implementation of key IRRP recommendations and key LTEP project milestones.

Elenchus Conclusion #11: Public reporting of the results of (i) the biennial audit of Settlement Operations and (ii) the biennial review of the Dispatch Scheduling Optimizer as part of the Scorecard would be relevant to the review of the IESO's revenue requirement by the Board and stakeholders.

Elenchus Conclusion #12: The contract management metric proposed by the IESO would be relevant to the review of its revenue requirement. However, it would be preferable for the IESO to develop a benchmark measure of the resources required to perform its contract management function. The goal would be to report, as early as the 2018 fiscal year, two measures of the resources required: (i) the number of capacity contracts per FTE required to manage them, and (ii) capacity value in MW per FTE. These measures need not be comprehensive, but would capture the primary resources that can be tracked consistently from year to year.

4.4 ILLUSTRATIVE IESO REGULATORY SCORECARD

Elenchus has prepared a draft Proposed IESO Regulatory Scorecard which is presented on the next page. It should be noted that:

- The Scorecard is provided for illustrative purposes only;
- The years shown are 2015 – 2019 in order to illustrate that it should eventually be feasible to include 5 years of historical (actual) results i.e., for the 2020 test year and thereafter);
- The year 20xx is intended to represent the test year.
- Depending on the timing of future IESO filings, the Regulatory Scorecard may not have final values to report in the preceding year;
- Measures for which a target is not relevant would be indicated by None as the target;
- For measures that do not have a target, the "met/unmet" result is not relevant;
- Results that are not available are indicated by N.A. (not available), for example, in the case of measures that are produced in a biennial basis; and
- Key IRRP recommendations to be completed in any year may related to IRRPs in more than one previous year since it is the completion dates that are tracked (this measure could be reported as completed/scheduled or as a percentage.

PROPOSED IESO REGULATORY SCORECARD (ILLUSTRATIVE)

Performance Outcomes	Performance Categories	Measure	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	20xx Target	Target met unmet (3)	5-year trend (4)
Stakeholder Responsiveness	Stakeholder Satisfaction	Satisfaction with the engagement process		65%				xx%		
Operational Effectiveness	Reliability	Compliance with NERC high risk reliability standards	Yes	Yes				Yes		
	Planning	Timely implementation of key IRRP recommendations	NA	xx/30	xx/44			xx/yy (or %)		
		Timely implementation of key LTEP project milestones	NA	xx/yy				xx/yy (or %)		
	Cost Control	Variance from the OEB-approved revenue requirement	+/-%	+/-%				0.0%		
		Total Expenses/TWh (3-yr rolling average) (1)	$/TWh	$/TWh				$/TWh		
	Contract Management	Resources Required for Capacity Contracts Management (2)	#/FTE	#/FTE				#/FTE		
			GW/FTE	GW/FTE				GW/FTE		
	IESO Administered Markets									
	Settlements Operations	Unqualified biennual Settlements Operations CSAE 3416 audit	Yes	--				Yes		
	Market Dispatch	Number of high or medium risk observations in the biennual Dispatch Scheduling Optimizer review	--	0				0		
	Projects	Market Renewal Initiative proceeding according to the schedule and budget						Yes		
Public Policy Responsiveness	Conservation	Annual reporting of portfolio cost ($/kWh)	$/kWh	$/kWh				$/kWh		
		Achievement of 2020 energy savings target milestones (TWh)	TWh	TWh				TWh		

Notes:

1. IESO to begin 3-year rolling average reporting with 2018, for 3 years after IESO-OPA merged on January 1, 2015.
2. IESO to develop a process for identifying the resources required for contract management functions. Reporting to commencing with the 2018 fiscal year.
3. Target met/unmet could be colour coded, similar to the OEB Distributor Scorecard.
4. The five-year trend could be shown graphical, similar to the OEB Distributor Scorecard.

Appendix A:

Corporate Balanced Scorecard Best Practices

Elenchus survey of corporate balanced scorecard best practices included more than a dozen significant international sources. While this survey covered only a small sample of the extensive literature available on the topic. Elenchus believes that the summary provided is very representative of the broader literature.[16]

The broadly recognized best practices in the implementation of a corporate balanced scorecard in the private sector include:

- Start by aligning the BSC to the business strategy and planning processes, linking each measure to strategic objectives, in order to be a tool for managing and achieving the strategy
- Illustrate a balanced view, including: financial and non-financial measures; short and long-term
- Cascade strategy and progress using the BSC from the corporate level across the entire organization to each department, teams and ultimately to individual employees so that they see how their daily actions support BSC goal achievement
    - Implement it like a change management initiative and not just a tool
    - Gain executive leaders buy-in: involved, committed and convinced of the benefits, their role in owning it as an ongoing management process and accountability for results
    - Involve employees: train and involve them in BSC design, implementation, and continuous improvement, so they understand and buy-in to their role and accountability
    - Use a common framework to measure and manage performance across the organization
    - Use common terminology to communicate strategy, progress, and to run the organization
    - Communicate results routinely and widely across the organization
    - Integrate the BSC into management processes to make it “how we operate”

[16] Chris Hatley, who was responsible for the survey, gained extensive experience related to corporate balanced scorecards in his previous role as the PwC Canada National Leader of Talent Management, Learning and Development.

    - Build a culture of open dialogue and continuous improvement that celebrates success and encourages collaboration to identify and address poor performance early
- Align to reward and recognition programs to the BSC goals and measures
- Adapt to changing external and internal environments and continually improve the BSC
- Design meaningful metrics to measure strategy progress
    - Keep it simple: focus on core operations, what matters most for success, and measures that can be readily understood
    - Limit the number of measures best for your organization
        - Use enough measures to provide a complete big picture that focuses on the important matters, without the distraction of unnecessary measures
        - May range from two measures for each quadrant (typically four quadrants) to in excess of 20 in total;
        - If necessary, start with more and then cull the less effective measures
    - Design relevant metrics that reflect the nature of the strategic objective and provide relevant information to the users
    - Measure output quantity and quality, not just the effort expended
    - Provide reliable and objective data/information with clear documentation so that measurement processes and results are verifiable and accurate
    - Use cost effective metrics regarding collection, analysis and reporting
    - Use clear unambiguous metrics, indicators, and descriptions
    - Compare results over time
    - Set targets and thresholds
    - Compare to external benchmarks, where appropriate

Private vs Public Sector Balanced Scorecard Design Considerations

Many private sector businesses use a balanced scorecard (BSC) design that is generally based on the four quadrants introduced by Robert S. Kaplan and David P. Norton in their 1992 *Harvard Business Review* article “The Balanced Scorecard – Measures that Drive Performance” (Kaplan & Norton, 1992). Those four quadrants or perspectives are:

- Financial

- Customer
- Internal business; and
- Innovation and learning.

In the 2010 *Harvard Business Review* Working Paper "Conceptual Foundations of the Balanced Scorecard" (Kaplan 2010), Robert S. Kaplan commented on extending the BSC to non-profit and public sector enterprises (NPSEs). He states:

> *"Since financial success is not their primary objective, NPSEs cannot use the standard architecture of the Balanced Scorecard strategy map where financial objectives are the ultimate, high-level outcomes to be achieved. NPSEs generally place an objective related to their social impact and mission.... The measured improvement in an NPSE's social impact objective may take years to become noticeable, which is why the measures in the other perspectives provide the short- to intermediate-term targets and feedback necessary for year-to-year control and accountability.*
>
> *One additional modification is required to expand the customer perspective. Donors or taxpayers provide the financial resources—they pay for the service—while another group, the citizens and beneficiaries, receive the service. Both constituents and resource suppliers should be the placed at the top of an NPSE strategy map."*

In general, NPSEs often measure their success by how effectively and efficiently they meet the needs of their stakeholders. It is also not unusual for NPSEs to place their mission at the top of their BSC and the financial performance measures at the bottom.

References for Corporate Balanced Scorecard Best Practices

Accounts Commission for Scotland, *The Measures of Success: Developing a Balanced Scorecard to Measure Performance*, June 1998, pp. 17-18

Arveson, P., *Translating Performance Metrics from the Private to the Public Sector*, Balanced Scorecard Institute, 1999

Balanced Scorecard Review, *BSC in Utilities Sector*, The KPI Institute Pty. Ltd., 2009-2014

Buytendijk, F., *Zen and the Art of the Balanced Scorecard*, Oracle, 2008

De Flander, J., *Balanced Scorecard: 28 Advanced Balanced Scorecard Tips!*, jeroen-de-flander.com, 2016

Kaplan, R.S. and Norton, D.P., *The Balanced Scorecard – Measures that Drive Performance*, Harvard Business Review, January-February 1992

Kaplan, R.S. and Norton, D.P., *Putting the Balanced Scorecard to Work*, Harvard Business Review, September-October 1993

Kaplan, R.S., *The Balanced Scorecard for Public-Sector Organizations*, Harvard Business School Publishing, 1999

Kaplan, R.S., *Conceptual Foundations of the Balanced Scorecard*, Working Paper 10-074, Harvard Business School Publishing, 2010, pp. 23

Mackay, A., *A Practitioner's Guide to the Balanced Scorecard*, The Chartered Institute of Management Accountants, June 2005

Richardson, S., *Balanced Scorecard: Best Practices and 10 Most Common Mistakes*, Trissa Consulting, 2011

Savkin, A., *Balanced Scorecard in Non-profit and Government Organizations*, Balanced Scorecard Designer, 2016

Zairi, M. and Jarrar, Y., *Best Practice for Implementing the Balanced Scorecard*, European Centre for Best Practice Management, 2010

Appendix B:

Metrics Used by Other US and Canadian System Operators

The following table presents the reported metrics of seven North American Independent System Operators (ISO's) and Regional Transmission Organizations (RTO's).

1. Alberta Electric System Operator (AESO)
2. California ISO (CAISO)
3. ISO New England (ISO NE)
4. Midcontinent ISO (formerly Midwest ISO) (MISO)
5. New York ISO (NYISO)
6. PJM Interconnection (PJM)
7. Southwest Power Pool (SPP)

The US ISO's and RTO's report a standard set of metrics, with only minor differences; hence, a single listing is provided below.

Agency	Metric
AESO[17]	Reserve Margin Metric *A comparison of generation supply and demand; a calculation of the firm generation capacity at the time of system peak that is in excess of the system annual peak demand, expressed as a percentage of the system peak.*
	Supply Cushion Metric *The difference between the daily available firm supply minus daily peak demand; refines the Reserve Margin calculation by using the daily system peak rather than annual and incorporates planned outages.*
	Two Year Probability of Supply Adequacy Shortfall Metric *A probabilistic assessment of encountering a supply shortfall over the next two years; builds on the Supply Cushion Metric by incorporating the probability of wind production, forced generation outages, and generation derates into the calculation of hourly firm supply.*
	New Generation Projects and Retirements Metric *A summary of generation at various stages of development in Alberta; information on prospective generation additions/retirements provides context for the future Alberta market.*

[17] AESO metrics are from the February 2017 edition of the Long-Term Adequacy Metrics, available at: https://www.aeso.ca/download/listedfiles/Long-term-adequacy-metrics-February-2017.pdf

CAISO **ISO NE** **MISO** **NYISO** **PJM** **SPP**[18,19]	Bulk Power System Reliability	Dispatch Operations *Measured by: a) Balance Authority Ace Limit (BAAL) or CPS 1 (Control Performance Standard) and CPS 2*
		Load Forecast Accuracy *Measured by actual load as a percentage variance from forecasted load (separate metrics for peak and valley).*
		Wind Forecasting Accuracy *Minimizing the Mean Absolute Error (MAE) between actual wind availability and forecasted wind availability.*
		Unscheduled Flows *Measuring the MWhrs of unscheduled flows by regional interface; determining the monthly average hourly integrated and highest hourly value for the full year; removing barriers to create more efficient interregional trading.*
		Transmission Outage Coordination *Minimizing system outages, measured by the percentage of: a) >200kV planned outages of 5 days or more that are submitted to the ISO/RO at least 1 month prior to the outage commencement; b) >200kV outages cancelled by ISO/RTO after having been previously approved; c) planned outages studied in the respective ISO/RTO tariff/manual established timeframes; d) >200kV outages (planned and unplanned) with less than 2 days notice*
		Transmission Planning *Assuring long-term adequacy of reliability, measured by: a) Number of facilities approved to be constructed for reliability purposes; b) Percentage of approved construction on schedule and completed; c) Performance of Order 890 Planning Process*

[18] FERC-Jurisdictional data has been extracted from the 2010 ISO/RTO Metrics Report, available at: http://www.isorto.org/Documents/Report/2010IRCMetricsReport_2005-2009.pdf

[19] All expanded descriptions/summaries of FERC-jurisdictional ISOs/RTOs have been retrieved from the NYISO 2010 Metrics Presentation, available at: http://www.nyiso.com/public/webdocs/markets_operations/committees/mc/meeting_materials/2010-01-20/Agenda_06_012010_ISO_Metrics_Presentation_for_MC.pdf

	Coordinated Wholesale Power Markets	Generation Interconnection *Measured by: a) Processing time for requests; b) Actual reserve margins compared to planned reserve margins; c) Demand response capacity as a percentage of total installed capacity*
		Interconnection/ Transmission Service Requests *Measured by a) The number of requests; b) Number of studies completed; c) Average aging of incomplete studies; d) Average time for completed studies*
		Special Protection Schemes
	Organizational Effectiveness	Market Competitiveness
		Market Pricing
		Unconstrained Energy Portion of System Marginal Cost
		Energy Market Price Convergence
		Congestion Management *Measured by: a) Congestion changes per MWh of load served; b) Percentage of congestion dollars hedged through RTO-administered congestion management markets*
		Resources
		Fuel Diversity
		Renewable Resources *Measured by the amount of renewable MWs as a percentage of total energy.*
		ISO/RTO Administrative Costs
		Customer Satisfaction *Measured by the percentage of satisfied customers.*
		Billing Controls

Appendix C:
List of Participating Stakeholders and Parties

The following individuals and organizations participated in one or both of the Stakeholder Sessions that were facilitated by Elenchus, either as active participants or as observers. Participation was without prejudice and did not include an opportunity to comment on the final version of the report. This report is not intended to reflect all views expressed by stakeholders and does not limit the right of any party to provide additional comments in the future.

Elenchus notes that there may be stakeholders with an interest in the IESO Regulatory Scorecard that did not participate in the two stakeholder sessions and/or did not provide comments on the draft Elenchus report.

David Barrett	Independent Electric System Operator
Frédéric Bélanger	Hydro Quebec
Andrew Blair	Power Workers Union
Bohdan Dumka	The Society of Energy Professionals
Kent Elson	Environmental Defence
Marion Fraser	Ontario Sustainable Energy Association
Mark Garner	Vulnerable Energy Consumers Coalition
Chris Graham	The Society of Energy Professionals
David MacIntosh	Energy Probe
Adrian Pye	Independent Electric System Operator
Mark Rubenstein	School Energy Coalition
Tam Wagner	Independent Electric System Operator
Saba Zadeh	Ontario Power Generation
Vincent Cooney (Observer)	Ontario Energy Board
Ben Bosch (Observer)	Ontario Energy Board

IESO REGULATORY SCORECARD – DRAFT STRAW MODEL

Measure	CPM Based	Description	2015	2016	2017	Management Discussion and Analysis (MD&A) (Note)
Reliability	Yes CPM 2	Compliant with North American Electric Reliability Corporation (NERC) high risk reliability standards (i.e. high Violation Risk Factor (VRF) standards).[i]	Yes	Yes		
Planning	Yes CPM 3	Number of key recommendations in Integrated Regional Resource Plans.[ii]	30	44		
IESO Administered Markets	Yes CPM 6	The market renewal initiative is proceeding according to the schedule and budget. Annual reporting against the annual schedule and budget throughout the duration of the initiative.[iii]	NA	NA		
			NA	NA		
	No	Unqualified biennial Settlements audit found that controls were suitably designed and operated effectively.[iv]	Unqualified	NA		
		No high or medium risk observations in the biennial Dispatch Scheduling Optimizer review.[v]	NA	No high or med risk obs		
Contract Management	No	Annual reporting of number of capacity contracts managed by the IESO and capacity value in MW.[vi]	25,663	*28,031* *2016 Q3*		
			23,379 MW^	*27,187 MW* *2016 Q3*		

Stakeholder Engagement	Yes CPM 8	Annual reporting of % satisfaction with the engagement process according to third party conducted customer satisfaction survey.[vii]	NA*	65%		
Conservation	Yes CPM 6	Annual reporting of portfolio cost/kWh: Cost-effective delivery of LDC and direct-connect customer conservation programs undertaken within 4 cents/kWh.[viii]	$0.035/kWh	*$0.031/kWh* *(illustrative)*		
	Yes CPM 6	LDC and direct-connect customer conservation program progress is in line with achieving the 2020 energy savings target of 8.7 TWh: Annual reporting of progress towards 2020 target based on independent verified results (7 TWh target for LDCs and 1.7 TWh target for direct-connect customers).[ix]	1.17TWh	*2.5TWh* *(illustrative)*		
Resource use	Yes CPM 10	The IESO's business plan is executed within its approved budget.	Yes	Yes		

Note: MD&A will explain changes from year-to-year including conditions that led to the changes and will refer to published source materials, as applicable.

[i] Reliability standards define the reliability requirements for planning and operating the power system and are implemented according to the arrangements set out in the Memoranda of Understanding between (1) IESO, NERC and NPCC and (2) Ontario Energy Board, NERC and NPCC.

Compliance with NERC standards ensures reliability of the IESO-controlled grid and interconnectivity to the power grid in North America - to which Ontario is connected through Quebec, Manitoba, New York, Michigan and Minnesota. Being

connected to these power systems not only strengthens reliability, it also provides access to electricity markets in neighbouring jurisdictions. Compliance to the NERC standards also ensures that we can continue to serve load in Ontario reliably by mitigating the risk of severe events such as wide area black outs.

NERC reliability standards and NPCC criteria are mandatory and enforceable through the IESO Market Rules. The IESO is the sole entity in Ontario accountable to NERC and NPCC for compliance with reliability standards and criteria. The IESO must be able to demonstrate continuous compliance as it is subject to a rigorous compliance framework.

Reliability risks are assessed within a violation risk factor matrix. Violation Risk Factors (VRF) indicate the potential reliability impact of violating a standard requirement. Each requirement is assigned a VRF of High, Medium, or Lower.

Failure to comply with these standards may result in material financial penalties (up to $1M) and non-monetary sanctions including limitations on activities, functions, operations, or placement of the violator's name on a reliability watch list of major violators. Under Ontario's compliance framework, compliance (including sanctions) is administered by the IESO's Market Assessment and Compliance Division.

[ii] Consistent with the IESO's mission of "Powering a reliable and sustainable energy future for Ontario", the IESO plans for the economic and timely availability of resources (including conservation, small scale distributed energy resources, large scale generation and transmission facilities) such that electricity is available to Ontario consumers where and when they need it. This requires the development and implementation of plans which:

- Implement government policy direction outlined in Ontario's - Long Term Energy Plan (LTEP),
- Are designed to meet industry accepted standards of customer reliability and service quality with respect to generation availability and the availability of the transmission delivery system, and
- Consider impacts on the cost of electricity, impacts on the environment and input from communities, customers and stakeholders.

Regional system planning is a continual process, with electricity reliability evaluated at a minimum every five years in each of the 21 electricity regions across the province. Regional planning looks at each region's unique needs and considers conservation, generation, transmission and distribution, and innovative resources to meet these needs. Throughout the regional planning process, the IESO works with the relevant municipalities, Indigenous communities, local distribution companies (LDCs), and the transmitter to ensure regional issues and requirements are effectively integrated into the

electricity planning processes. Each Integrated Regional Resource Plan (IRRP) identifies cost-effective recommendations that cover a 5 to 20 year planning horizon. The first IRRPs were completed in 2015.

The IESO is responsible to monitor and to provide oversight on the implementation plans related to the recommendations; implementation is the responsibility of the relevant transmitter, LDCs, municipalities and Indigenous communities. The number of recommendations represents the number of active key recommendations the IESO is monitoring and providing oversight over at the start of the year.

[iii] The Market Renewal Initiative is a significant, multi-year project the IESO is undertaking that includes evolving the wholesale energy market and introducing capacity auctions to competitively and efficiently procure resources, while continuing to meet emerging operability challenges. The project will foster increased transparency, flexibility and competition in the electricity marketplace with opportunities for broader participation from both suppliers and consumers, providing significant value for Ontario`s ratepayers and better addressing the ongoing changes across the sector.

The scope for the project will include improvements to the way we schedule energy, procure supply resources, and manage variability. The benefits case, expected to be complete by the end of Q1 2017, will examine the potential scale of these benefits and the associated costs. The analysis draws on past Ontario studies and the experience of other jurisdictions that have gone through similar market redesign processes.

[iv] Settlement Operations

The IESO is committed to producing accurate, complete and timely settlements statements and invoices to our Market Participants. The activities underlying the settlement processes are constantly monitored and reviewed for improvement opportunities.

In accordance with the Market Rules Chapter 9, section 6.17, the IESO commissions an independent review of controls in place for its Settlement Operations (Bid to Bill) every two years. The objective of the audit conducted under the Canadian Standard for Assurance Engagements (CSAE 3416) standard is to test the suitability of the design and operating effectiveness of the controls described to achieve the related control objectives for the IESO's settlement processes and procedures. The review is intended to provide Market Participants and their auditors with an overview of the controls surrounding the IESO's Settlement Operations and underlying information system environment that may be relevant to Market Participant's internal controls as they relate to an audit of financial statements.

[v] Review of Dispatch Scheduling Optimizer (DSO)
IESO is responsible for ensuring that the dispatch of generation and allocation of reserves be managed to maintain the power flows on transmission facilities within security and operational limits in the most efficient manner. Market efficiency and system security require the solution of a constrained optimization problem: minimizing the cost of generation and reserves, subject to meeting required demand and security constraints. The IESO has modeled such a dispatch algorithm into the Dispatch and Scheduling Optimization tool, "the DSO tool", to determine the most efficient dispatch of resources subject to the constraints for secure operation of the grid.

In accordance with Market Rule Chapter 7, section 4.2.4, IESO commissions an independent review of the operation and application of the dispatch algorithm and related dispatch processes and procedures at least once every two calendar years. The objective of review conducted under Reviews of Compliance with Agreements and Regulations (Section 8600 of CPA Canada Handbook) is to test compliance with applicable market rules and to determine the need for improvements in the related dispatch processes and procedures in meeting the objectives of the market rules and/or the mathematical representation of the electricity system or the solution procedures which form part of the market clearing logic.

[vi] Source 2015: Contracted Supply Report, Table 1 http://ieso.ca/-/media/files/ieso/document-library/contracted-electricity-supply/progress-report-contracted-supply-q42015.pdf

Source 2016: Contracted Supply Report, Table 1, Q3 http://ieso.ca/-/media/files/ieso/document-library/contracted-electricity-supply/progress-report-contracted-supply-q32016.pdf

The IESO is responsible for, among other things, activities related to contracting for the procurement of electricity supply including the management of this contract portfolio and compliance oversight of these contracted resources.

[vii] 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.

The IESO measures stakeholder satisfaction with its engagement process to ensure that it is facilitating stakeholder dialogue in a manner that stakeholders feel is allowing them to contribute in a timely and meaningful way. It does so by conducting an annual survey of its Stakeholder Advisory Committee as well as an annual survey of a larger number of

stakeholders from across the sector. The stakeholder satisfaction score is an amalgamation of results contained within these surveys. The survey is conducted by an independent third-party.

The first engagement survey for the merged IESO provided a baseline for 2016 that can be tracked and improved on over time.

[viii] Source 2015: Final Verified results persistent to 2020 http://www.ieso.ca/power-data/conservation-overview/conservation-reports

2016 results persistent to 2020, will be finalized by Q3 2017
Conservation First Framework - Cost-effective delivery within 4 cents/kWh.
IESO is committed to Ontario's vision to invest in conservation first, before new generation, where cost-effective. The IESO evaluates the success of its conservation programs by looking at the performance of the entire portfolio. The levelized unit energy costs (LUEC) is a standard cost effectiveness test that normalized the cost incurred by the program administrator (customer incentives and program administrative costs) per unit of energy savings. LUEC provides a basis for not only comparing Conservation and Demand Management (CDM) measures, program or portfolios with each other, but also for comparing CDM to the cost of supply-side resources. Final annual cost effectiveness results are published on the IESO website in Q3 of the following year.

[ix] Source 2015: Final Verified results persistent to 2020 http://www.ieso.ca/power-data/conservation-overview/conservation-reports

2016 Preliminary unverified reported results persistent to 2020, will be finalized by Q3 2017
Conservation First Framework - Progress towards conservation target
The 2013 Long Term Energy Plan includes a conservation target of 30 terawatt-hours (TWh) in reduced electricity consumption by 2032. To stay on track for this long term target, 8.7 TWh of savings has been committed to be achieved between 2015 and 2020 through programs enabled by the Conservation First Framework beginning in 2015. Of the total target, 7 TWh will be delivered through collaborations with LDCs across the province. The remaining 1.7 TWh will come from the group of large transmission connected consumers through the IESO's Industrial Accelerator Program.