Cost Allocation and Rate Design for the 2016 IESO Usage Fee (Updated with 2016 Financial Details)

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Table of Contents

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1 OVERVIEW

The Ontario Power Authority ("OPA") was merged with the Independent Electricity System Operator ("IESO") effective January 1, 2015. An issue to be considered as a result of the merger is the development of the usage fee that will be adopted for recovering the revenue requirement of the new IESO.

The IESO has retained Elenchus Research Associates, Inc. ("Elenchus") to review the design of the existing OPA and IESO usage fees which were designed to recover the revenue requirements of the separate organizations and to examine options for recovering the revenue requirement of the new IESO.

Both entities previously recovered their OEB regulated revenue requirements primarily through usage fees that were charged on an energy (i.e., per MWh) basis. Although the same billing factor was used by the two agencies, the usage fees differ in two important respects.

- The existing IESO usage fee is charged on a gross load basis (i.e., including load served by generation that is embedded in the Ontario distribution system), whereas the OPA usage fee is charged on the basis of net load.
- The existing IESO usage fee is charged to both domestic and export customers, whereas the existing OPA usage fee is charged only to domestic customers.[1]

Section 2 of this evidence reviews the relevant Ontario Energy Board ("OEB") decisions, highlighting the basis of the differences in the design of the existing usage fees.

Section 3 discusses the gross versus net billing issue and recommends that the new IESO fee should be billed on the basis of gross load. The reasoning that supported the change from net to gross billing for the former IESO usage fee in EB-2013-0381 is equally applicable to the portion of the new IESO revenue requirement that corresponds

[1] The terms domestic and export customers are generally used to refer to what might be described more accurately as domestic and export energy volumes. Some market participants are billed for both domestic and export volumes and are, in effect, both domestic and export customers of the IESO. Elenchus has retained this terminology for consistency with the terminology of past proceedings.

to costs that were previously included in the OPA revenue requirement. The OPA may well have adopted the IESO's approach and re-established consistency between the usage fees of the two agencies if they had not been merged.

It is therefore recommended that the 2016 IESO usage fee be billed on the basis of AQEW + SQEW + EG as defined in section 3.

Section 4 discusses two options for addressing the difference between the two usage fees in terms of their applicability to export customers. The options are:

1. treat all customers as a single class with a common usage fee; or
2. define two customer classes (domestic and export) that would pay different usage fees.

The key considerations in assessing these options are the principles of administrative simplicity and equity, where equity is indicated by the level of the actual or implicit revenue-to-cost ratios of the classes under each option.

With respect to the justification for differentiating the usage fee that is applied to domestic and export customers, it is noted that the revenue to cost ratios for the separate classes if a single usage fee is adopted would be 97.88% and 119.32% for the domestic and export classes, respectively. Using a revenue-to-cost ratio range of 80% to 120%, which is the Board-approved range for the rates of most distribution customer classes, it can be concluded that the uniform rate would be deemed to be equitable for both classes of customers. Rates within a Board approved range are not considered to be either under-collecting or over-collecting the causal costs related to a customer class, given the degree of uncertainty inherent in cost allocation and the degree of judgment required to accommodate other ratemaking principles.

Section 5 provides an overview of the cost allocation model that has been developed by Elenchus as a basis for determining the causal costs associated with domestic and export customers. Section 6 contains the report's conclusions and recommendations.

This report updates the version dated 18 January 2016 which contained revenue to cost ratio results based on the IESO's 2015 financial information.

2 BACKGROUND

2.1 THE CURRENT OPA USAGE FEE

The OPA's last approved usage fee of $0.439/MWh has been in effect since January 1, 2014. It was approved by the OEB in Decision and Order EB-2013-0326 dated November 6, 2014.[2] The 2014 usage fee was reduced from the usage fee of $0.551/MWh which had been in effect since January 1, 2010.[3] The OPA's usage fee continues to be collected on the basis of the net energy withdrawals, which excludes embedded generation.

The OPA usage fee is not charged to export customers. In its 2011 fees application, EB-2010-0279, the OPA sought OEB approval to recover its usage fees from export customers in addition to Ontario customers. This proposal was not accepted by the OEB. The OEB's reasons for not approving this change were set out in its July 8, 2011 Decision and Order. The reasons indicated that further analysis and consultation would be required to support a usage fee that would be appropriate for export customers.

> ***Board Findings***
>
> *The Board will not approve the OPA's proposal to recover the 2011 usage fee from export customers for a number of reasons.*
>
> *First, the Board is of the view that the mandate of the OPA is not comparable to that of the IESO. Even the most cursory examination of the relevant sections of the Electricity Act is illustrative of the distinct nature of the two organizations. Section 5(1)(e) of the Electricity Act, which sets out the objects of the IESO, clearly states that the IESO is to work with the responsible authorities outside Ontario to co-ordinate the IESO's activities with their activities. In contrast, section 25.2(1) which is the section of the Electricity Act that describes the objects of the OPA, expresses the OPA's fundamental responsibilities as being "for Ontario" and "in Ontario".*
>
> *Second, the Board is not convinced that, in executing its objectives pursuant to the Electricity Act that the OPA creates benefits for export customers in the manner asserted by the parties supporting the extension of the fee to exporters. In particular, by engaging in power system planning that meets the reliability and self-sufficiency goals of the government of Ontario, the OPA's activities have the*

[2] The OEB also approved in Decision and Order EB-2013-0326 the OPA's proposal to hold its other fees, for registrations and applications, constant.

[3] The OPA's 2010 usage fee was approved in Decision and Order EB-2009-0347 dated April 27, 2010.

> *consequence of creating potential export capability. It does not necessarily follow that this "unintended" consequence is a benefit for which exporters should pay. The Board is also reticent to create the linkage that necessarily follows this argument, which is because exporters "pay for this benefit" the OPA is obligated to engage in system planning in a manner that ensures export capability exists.*
>
> *Third, the Board agrees with the submissions of parties that the proposed fee has not been supported by empirical evidence. The OPA proposal rests primarily on the IESO example, and a rather cursory benefits analysis. The extension of fees to market participants should generally be conducted on a firm empirical and principled basis. There is no such basis in the evidence before the Board. In this case, if the OPA intends to reintroduce this approach in this or a future expenditure and revenue requirement and fees case, it should be prepared to demonstrate a coherent rationale, quite possibly based on an allocation study, as suggested by Mr. Todd from Elenchus.*
>
> *Finally, the Board notes that the OPA did not undertake any meaningful or substantive consultation with stakeholders regarding this proposal. Should the OPA choose to re-introduce this approach now or in the future, the Board expects the OPA to have engaged the stakeholder community in a relevant and substantive manner and will require that evidence of this consultation be filed in conjunction with the associated revenue requirement and fees application.*[4]

As the OEB's Decision and Order notes[5], the proposed change would have made the OPA's cost recovery consistent with the IESO's cost recovery which was, and continues to be, from domestic and export customers.

2.2 THE CURRENT IESO USAGE FEE

The IESO's 2014 usage fee of $0.803/MWh has been in effect since January 1, 2014. It was approved by the OEB in Decision and Order EB-2013-0381 dated May 22, 2014.[6] The 2014 usage fee was a reduction from the interim usage fee of $0.822/MWh for 2012 and 2013 which was made firm by Decision and Order EB-2013-0381.[7] The IESO's usage fee is charged to both domestic and export customers.

[4] Ontario Energy Board, Decision and Order, EB-2010-0279, pages 16-17.

[5] Ibid, page 15.

[6] The OEB also approved in Decision and Order EB-2013-0381 the continuation of the IESO's $1000 application fee.

[7] The OPA's 2010 usage fee was approved in Decision and Order EB-2009-0347 dated April 27, 2010.

The OEB also approved the IESO's proposal to calculate its 2014 usage fee based on total energy withdrawals, including an amount equal to the output from embedded generation. In its Decision and Order, the OEB noted that:

> *Currently, distributors collect IESO usage fees from all of their customers based on their total loads but then only remit to the IESO based on the distributor net load which is reduced by embedded generation. The amount of embedded generation is expected to continue to increase in materiality. The IESO submits that the proposed change in methodology more fairly reflects the changing nature of the grid, including the need for the IESO to establish and maintain visibility of embedded generation and to forecast its impact on bulk system requirements.*[8]

In contrast, as noted above, the OPA's usage fee continues to be collected on the basis of the net energy withdrawals, excluding the output from embedded generation.

2.3 INTEGRATING THE FORMER OPA AND IESO USAGE FEES

In light of the merger of the IESO and the OPA, it is appropriate to consider merging the two usage fees into a single fee schedule. Given the differences between the two usage fees identified above, it is necessary to address the appropriate approach to dealing with the identified differences. Specifically, in this report consideration is given to whether the OPA portion of the new IESO fee should be:

- charged on the basis of net load or on the basis of gross load which would facilitate the adoption of a single usage fee for the new IESO, and
- charged to export customers in whole or in part, and if in part, how the usage fee differential for domestic and export customers should be determined.

It is evident that a fully integrated IESO usage fee would avoid complexity. However, it is also evident that a fully integrated usage fee would shift responsibility for the IESO costs among market participants and end use customers. The key consideration is whether a fully integrated usage fee would result in equitable treatment among the various types of customers that benefit from the restructured IESO role in the Ontario electricity market.

These issues are examined in sections 3 and 4.

[8] Ontario Energy Board, Decision and Order, EB-2013-0381, page 3.

2.4 ADDITIONAL ISSUES RELATED TO RECOVERING ADMINISTRATIVE COSTS

The assignment given to Elenchus by the IESO was to develop a cost allocation model that would allocate the IESO's costs in a manner consistent with standard regulatory cost allocation principles and practices, in particular the principle of cost causality. In conducting this work, Elenchus has observed that the IESO's costs that are recovered through its Usage Fee consist largely of costs that would be treated as operational overhead or administrative and general (A&G) costs in the cost allocation models that are typically used by regulated electric utilities for their rate setting processes.

These costs are not viewed as costs that are directly caused by customers in the process of providing service. The causal relationship is far less direct than the capacity of a distribution system or the customer service support provided by a call centre. As a result, A&G costs are commonly allocated essentially as an overhead to other operating and capital costs that are caused more directly by customers.

The NARUC Electric Utility Cost Allocation Manual[9] discusses Classification and Allocation of Common and General Plant Investments and Administrative and General Expenses in Chapter 8, a three-page chapter. The discussion of A&G expenses states:

> *Administrative and general expenses include Accounts 920 through 935 and are allocated with an approach similar to that utilized for general plant. One methodology, the two-factor approach, allocates the administrative and general expense accounts on the basis of the sum of the other operating and maintenance expenses (excluding fuel and purchased power).*
>
> *A more detailed methodology classifies the administrative and general expense accounts into three major components: those that are labor related; those which are plant related; and those which require special analysis for assignment or the application of the beneficiality criteria for assignment.*

The IESO has no "other operating and maintenance expenses" to use as a basis for deriving cost factors for the A&G allocation. However, if the Ontario electricity system were examined on a holistic basis, analogous to an integrated utility which is the implicit model addressed by the NARUC Manual, the IESO's A&G cost could be allocated on the basis of allocation factors that correspond to the allocation of other O&M costs.

[9] National Association of Regulatory Utility Commissioners (January 1992) *Electric Utility Cost Allocation Manual*.

Given that the model we have developed does not include those other system O&M costs, we have allocated the IESO's costs to the domestic and export classes based on a presumed causal relationship for departments that are directly involved in operating the market. Support functions for these departments are then allocated in a manner similar to the usual treatment of A&G costs as outlined in the NARUC Manual.

Elenchus acknowledges that this approach is somewhat non-standard and as a result the revenue-to-cost ratios that are calculated may not be as indicative of a true causal relationship as can be achieved in the typical utility cost allocation model. However, we believe that the results are the best indicator available for allocating costs in a manner consistent with the IESO's existing MWh based Usage Fee. Alternate fee designs would require quite different approaches to allocating the IESO's costs.

3 CHARGING THE NEW IESO FEE BASED ON GROSS LOAD

The rationale for collecting the former IESO usage fee on the basis of total energy withdrawals, including an amount equal to the output from embedded generation, was presented in my evidence that was included in the material filed by the IESO in support of its 2014 fees application.[10] The essence of the rationale appears in the Conclusion and Recommendation section of that evidence.

> ***5. Conclusion and Recommendation***
>
> *It is recommended that the billing determinant for the IESO fee be changed from net to gross billing. The gross billing approach would be implemented by using as the charge determinant for AQEW+SQEW plus the embedded generation reported by distributors to the IESO on a monthly basis.*
>
> *The recommended approach would be more equitable in that all customers would then pay the same effective rate for the IESO administration fee, regardless of the proportion of embedded generation within the service territory of their distributor. While the dollar value of the existing inequity is relatively small, the cost of correcting the inequity is immaterial; hence, cost is not an impediment to adopting the change.*

[10] EB-2013-0381, Exhibit B, Tab 4, Schedule 1 (Review of IESO Fees Billing Determinant, Evidence of John Todd, October 2013)

> *The proposed change in the billing determinant is independent of the changes in the IESO's revenue requirement and volume forecast; hence it is revenue neutral for both electricity consumers and LDCs. From the perspective of the IESO, the impact of the proposed change in the billing determinant is that there will be a lower charge that is applied to a larger volume with the total revenue being unchanged. From the LDCs perspective, they will recover from customers only the amount remitted for the IESO Administration Fee; hence, the variances between the amount paid to the IESO and the amount collected from customers will be reduced. As a result, the amounts flowing into account 1580 ($RVSA_{WMS}$) related to an over-collection of the fee will be reduced.*
>
> *The only stakeholders financially impacted by the proposed change will be the end-use customers who will all pay the same effective kWh-based fee if the change is implemented, rather than paying an effective rate that is affected by the amount of embedded generation in their LDC's service area. The average effective fee paid by customers will not change, although customers served by LDCs with above average embedded generation as a percentage of load will experience a slight increase in the effective fee they pay since they currently pay less than the average fee, while those served by LDCs with comparatively less embedded generation will pay a slightly lower effective rate, since they are currently paying an above average effective rate.*

In my opinion, the rationale for including embedded generation in the charge determinant for the IESO's 2016 usage fees applies equally to both the former OPA component of the new IESO charge and the former IESO component. In particular:

- charging on the basis of net load is an historical anomaly in both cases, with the original implementation having taken place at a time when there was very little embedded generation;
- at the time charging on the basis of net load was introduced, neither the IESO nor the OPA had access to reliable information on embedded generation;
- the inconsistency between the basis on which distributors collect the usage fees from customers (gross load) and the payment to the IESO prior to 2014 and to the OPA since its inception (net load) is the same in both cases; and
- the impact of a change for the OPA portion of the usage fee would be essentially the same as the impacts previously identified in the case of the IESO.

Furthermore, for the newly merged entity, it will be administratively simpler as well as more understandable to all affected parties if the billing determinant used for the entire new IESO usage fee is consistent.

The most appropriate approach to developing the IESO usage fee for 2016 would be to charge it on the basis a single charge determinant. That is, the 2016 net revenue requirement for the IESO would be recovered by charging all domestic and export customers (i.e., market participants) a fee based on a charge determinant defined as AQEW+SQEW + EG, where:

- AQEW is the allocated quantity of energy withdrawn from the IESO-controlled grid;
- SQEW is the scheduled quantity of exports withdrawn from the IESO-controlled grid; and
- EG is the embedded generation reported by distributors to the IESO on a monthly basis.

4 CHARGING THE NEW IESO FEE TO EXPORT CUSTOMERS

Two rate design options for the 2016 IESO usage fee would be consistent with past OEB decisions on the OPA and IESO fees.

Option #1: One standard fee to be charged to all domestic and export customers

Option #2: Separate usage fees for domestic and export customers that reflect differences in their allocated costs

4.1 A SINGLE STANDARD USAGE FEE FOR DOMESTIC AND EXPORT CUSTOMERS

In light of the concerns raised previously with respect to charging the OPA fee to export customers, it is evident that implementing a single standard IESO fee for domestic and export customers would be inequitable if it resulted in a level of cost recovery from export customers that is not consistent with cost causality principles. With respect to the OPA portion of the merged revenue requirement, this approach would implicitly

implement the methodology that was not accepted by the OEB when it was proposed by the OPA in its 2011 fees application, EB-2010-0279.

Based on the OEB's Decision and Order in that proceeding, which is quoted above, it would not be appropriate for this approach to be implemented unless it can be shown analytically that there is not a significant difference in the causal costs associated with domestic and export customers if viewed as distinct customer classes. The analysis contained in section 4.3 addresses this concern.

4.2 TWO CUSTOMER CLASSES WITH A DIFFERENTIATED USAGE FEE

Consistent with the issues addressed in OEB Decision and Order EB-2010-0279, an option for the new IESO usage fee would be to establish separate usage fees for domestic and export customers based on their fully allocated costs. This approach would be similar to the standard rate setting process used by OEB-regulated distributors for determining the rates for their customer classes.

4.3 ANALYSIS OF THE STANDARD VS DIFFERENTIATED FEE OPTIONS

Elenchus has developed a cost allocation model for the IESO that treats domestic and export customers as two customer classes and allocates the total revenue requirement of the merged IESO to those classes using a fully allocated costing methodology. This IESO cost allocation model is methodologically consistent with the OEB-approved model that allocates the costs of electricity distributors to their customer classes. The model is described in section 5, below.

The results of this cost allocation methodology using the IESO's 2016 budget are presented in Table 1 which shows the allocated cost of each potential "class" of service (Domestic and Export if separate classes are established and Combined if there is a single usage fee). The table also shows the corresponding MWh of each class based on the proposed billing determinant described in section 3 (i.e., AQEW + SQEW + EG). The Class-Specific Usage Fees column shows the rates that would correspond to each class having a revenue-to-cost (R/C) ratio of 100% along with the rates that would result in R/C ratios of 80% to 120%. The Common Usage Fee column shows the revenue-to-

cost ratios that would result if a single standard rate per MWh were used for both domestic and export customers.

Table 1: Usage Fees and Revenue-to-Cost Ratios for Domestic, Export and Combined Customer Classes, with Different and Common Usage Fees

	Allocated Costs	MWh	Class-Specific Usage Fees			Common Usage Fee	
			100% RCR	80% RCR	120% RCR	Rate	R/C Ratio
Domestic	$164,124,456	140,190,875	$ 1.1707	$ 0.9366	$ 1.4049	$1.1459	97.88%
Export	$18,007,515	18,751,536	$ 0.9603	$ 0.7683	$ 1.1524	$1.1459	119.32%
Combined	$182,131,970	158,942,411	$ 1.1459			$1.1459	100.00%

A central consideration in assessing whether it is equitable to treat two groups of customers that are distinguishable, such as domestic and export customers, as a single class for rate setting purposes is whether the rates that they would be charged if they are separate classes differ significantly from the uniform rate. If their rates would not differ significantly, treating them as separate classes would result in unnecessary complexity in the rate setting process and in the resulting rate structure. The standard approach to assessing rate equity is on the basis of revenue-to-cost (R/C) ratios.

The range of acceptable R/C ratios for electricity distributors is set out in the OEB's March 31, 2011 Report, on Cost Allocation, section 2.9.4. Table 1 (page 36) of that Report sets out the acceptable ranges by customer class. The Report's table is replicated below.

If the OEB were to adopt an R/C ratio range of 80% to 120% for the IESO's usage fee, it would follow that a single standard usage fee ($1.1459) would be considered equitable if it is within the range bracketed by the 80% and 120% R/C ratio for each class. As Table 1 shows, the standard usage fee is within this range for both classes.

Table 2: Revenue-to-Cost Ratio Ranges

SERVICE CLASS	RANGE
Residential	85 to 115%
General Service < 50 kW	80 to 120%
General Service 50 to 4,999 kW	80 to 120%
Large User	85 to 115%
Unmetered Scattered Load	80 to 120%
Street Lighting	70 to 120%[11]
Sentinel Lighting	80 to 120%

Another way to look at this issue is to determine the R/C ratio of the classes if both are charged the same rate. The "Rate" column under the "Common Usage Fee" heading in Table 1 is determined by dividing the total revenue requirement of the IESO by the billing determinant for the combined class (i.e., the total MWh of domestic plus export customers). The R/C ratio values are determined by dividing the revenue of each class (Rate x MWh) by their allocated costs. If the resulting R/C ratios are equitable, it would lend support to treating domestic and export customers as a single class and charging a uniform usage fee to all customers. On the other hand, if either R/C ratio is outside of the OEB-approved range, then it may justify establishing separate domestic and export classes for purposes of the IESO usage fee.

A decision on whether to establish separate domestic and export rate classes may also involve balancing the goal of equity with other objectives such as simplicity and the cost of supporting a more complex rate structure. In particular, if the dollar impact on any group of customers is small, it may justify adopting a single usage fee for all customers despite R/C ratios that might otherwise be considered inequitable.

[11] In addition, in the Board's recent Review of Cost Allocation Policy for Unmetered Loads OEB File No. EB-2012-0383, the revenue-to-cost ratio for the Street Lighting Class was changed to 80% to 120%. See Issuance of New Cost Allocation Policy for Street Lighting Rate Class dated June 12, 2015.

5 OVERVIEW OF THE IESO COST ALLOCATION MODEL

The cost allocation model that Elenchus has developed for the IESO is based on cost causality and follows the traditional three steps of a cost allocation methodology.

Based on interviews with IESO staff to determine the activities performed by all departments, Elenchus undertook a functional-classification of the IESO's revenue requirement based on how each identified function is performed for (i) the exclusive benefit of domestic customers, (ii) the exclusive benefit of export customers, or (iii) for the benefit of both domestic and export customers.

The functionally-classified costs are allocated to two "customer classes", or types of service: domestic and export. These classes are analogous to the customer classes served by distributors in that they are easily identifiable and "cause", or benefit from, the transmission system and therefore the activities/services of the IESO in different ways. For purposes of determining cost causality, the domestic class can be thought of as the in-province end-use customers who ultimate pay the IESO usage fee that is embedded in their monthly bills.

The IESO's 2016 forecast revenue requirement and 2015 year-end assets were used as the basis for the cost allocation model presented in this updated evidence.

5.1 FUNCTIONAL-CATEGORIZATION[12]

Consistent with the previous evidence dated 15 January 2016, the IESO's expenses have been functionally-categorized by business unit and department (the top two levels of the organizational management structure). Using this approach, the IESO's accounting data can be incorporated directly into the cost allocation model. Departments are functionally-categorized based on the function they perform so that costs can be allocated based on the classes that cause those costs to be incurred.

[12] The classification/categorization step, that is normally used in cost allocation models for integrated or distribution utilities (e.g., demand-related, energy-related and customer-related) is not relevant in the case of the IESO. The functionalization and classification/categorization steps have been combined to identify cost categories that are then allocated using the identified allocators.

The following seven business units account for most of the IESO's costs:

- Market and Resource Development
- Conservation and Corporate Relations
- Information and Technology Services
- Planning, Law, and Aboriginal Relations
- Corporate Services
- Market and System Operations
- Market Assessment and Compliance Division ("MACD")

The remaining costs require additional functional-classes to be identified for cost allocation purposes:

- CEO (Office, NERC Membership, Audit)
- Others (Amortization, Interest, Uncleared Salary)

Each department within each business unit was identified as a separate functional-category. Descriptions of the functions performed by each department are provided below, along with each department's 2016 budget figure and the allocator used for allocating its costs. The allocators are described in section 5.2. The details are also summarized in the Allocation Detail Worksheet that appears as Appendix A.

5.1.1 CEO (OFFICE, NERC MEMBERSHIP, AUDIT)

CEO Office

The CEO's Office provides overall management of the IESO.

Budget: $1,189,152

Allocation method: Total Other OM&A

NERC Membership

The Electricity Act sets the IESO's objectives including Object 6 (d) which requires participation in the development by any standards authority of criteria and standards relating to the reliability of the integrated power system. The Act defines a "standards

authority" as the North American Electric Reliability Corporation or any successor thereof, or any other agency designated by regulation that approves standards or criteria applicable in and outside Ontario for the reliability of transmission systems.

Budget: $3,976,613

Allocation method: 50:50 split between domestic and export

Internal Audit

Internal Audit (IA) provides independent, objective assurance and consulting services designed to add value and improve the IESO operations. IA contributes towards the accomplishment of the IESO objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes throughout the organization

Budget: $1,638,709

Allocation method: Total Other OM&A

5.1.2 Market and System Operations

Market and System Operations is responsible for the operational planning and assessment functions, managing the short-term operation of Ontario's competitive wholesale electricity market, and directing the operation of the IESO-controlled grid. It is organized in two divisions - Power System Assessments and Market Operations with three departments each. A seventh department reports directly to the VP, Operations Change Initiatives. The three departments of Power System Assessments are System Performance, Reliability Assessments, and Connections and Registrations. The three departments of Market Operations are Operational Effectiveness, System Operations, and Market Forecast and Integration.

Vice President Office

The VP's Office provides overall management of the business unit.

Budget: $1,588,319

Allocation method: Sum of allocated costs of the department

System Performance

System Performance provides a large variety of power system analysis services, most notably the operating security limits used in all operational timeframes. System Performance also develops and maintains the online and offline system models and tools used in power system analysis studies.

Budget: $5,599,744

Allocation method: Domestic and export in proportion to energy (TWh)

Reliability Assessments

Reliability Assessments is responsible to meet the IESO's NERC and NPCC reliability standard obligation for mid to long-term reliability assessments. This includes demand forecasts, resource adequacy assessments and performing system-wide transmission assessments. Although these activities relate directly to NERC and NPCC membership requirements, they also ensure overall system reliability for domestic customers.

Budget: $3,282,505

Allocation method: Domestic and export in proportion to energy (TWh)

Connections and Registrations

Connections & Registrations performs reliability assessments, performance validation and registration activities for all new and modified connections that connect to the IESO Controlled Grid and/or participate in the IESO Administered Markets.

Budget: $4,441,271

Allocation method: Domestic and export in proportion to energy (TWh)

Operational Effectiveness

Operational Effectiveness assesses power system events, develops processes and documentation for executing tasks in Market Operations, supports Market and System Operations compliance with reliability standards, maintains Operating Agreements with Ontario transmitters and neighboring system operators, maintains ancillary service contracts with market participants and prepares power system emergency plans.

Budget: $3,876,907

Allocation method: Domestic and export in proportion to energy (TWh)

System Operations

System Operations Department (SOD) is responsible for real-time operations. SOD staff direct the reliable operations of the Ontario power system within system capabilities, and operate the Ontario electricity market to efficiently select resources (both generation and dispatchable load resources within Ontario plus economic imports from and exports to neighboring jurisdictions) to balance supply and demand and prepare data – including market prices and resource schedules – for settlement.

Budget: $11,499,273

Allocation method: Domestic and export in proportion to energy (TWh)

Market Forecast and Integration

Market Forecasts and Integration (MFI) is responsible for the period 2-30 days in advance of each trade date. MFI staff assesses and approve Market Participant requests to remove equipment from service for maintenance (~15,000 requests annually), assess near-term resource adequacy requirements and publish reports detailing the state of the power system, allowing market participants to plan their operations. Each day MFI staff also prepare the daily Operating Plan to be executed by System Operations for the next day's operation, which includes forecasts of electricity demand and the output of variable generators in the province (both wind and solar), and a schedule of resources committed to satisfy next day electricity demand. MFI staff also delivers an extensive amount of training within Market Operations to on-board new staff and to provide continuing education, allowing Market Operations to meet requirements of reliability standards bodies.

Budget: $2,662,253

Allocation method: Domestic and export in proportion to energy (TWh)

Operations Change Initiatives

Operations Change Initiatives is a project management office leading and supporting change initiatives impacting the business unit and liaising with other business units on capital programs and business planning.

Budget: $1,184,258

Allocation method: Domestic and export in proportion to energy (TWh)

5.1.3 MARKET AND RESOURCE DEVELOPMENT

Vice President Office

The VP's Office provides overall management of the business unit.

Budget: $1,224,063

Allocation method: Sum of allocated costs of the department

Contract Management

The Contract Management group is responsible for managing contracts resulting from the IESO's electricity supply procurements, as well as demand-side management and load management initiatives. As of Q2 2015, the IESO had approximately 23,217 MW of electricity supply capacity under contract. This group is responsible for the fulfillment of the IESO's obligations under these contracts, including financial settlement, enforcement of supplier's obligations under these procurement contracts, data collection, analysis and reporting on the contracts. This group also manages the various energy support programs under the Green Energy and Green Economy Act, 2009.

Budget: $9,101,459

Allocation method: Domestic class only

Renewables Procurement

The Renewables Procurement group is responsible for procuring electricity supply from renewable resources undertaken in response to directives received from the Minister of Energy. The group provides analysis and policy advice to the government, designs,

implements, and executes procurement programs and initiatives, and interacts with stakeholders for all renewable generation technologies as well as energy storage. A key focus of the group continues to be the design and administration of the FIT and microFIT programs. However, the group is also responsible for other procurement activities, such as the design and implementation of competitive procurements (e.g., Large Renewable Procurement), and the negotiation of bilateral contracts for renewable energy, including opportunities to secure renewable generation from other jurisdictions.

Budget: $3,477,961

Allocation method: Domestic class only

Clean Energy Procurement

The Clean Energy Procurement group is responsible for procuring supply from clean energy resources undertaken in response to directives from the Minister of Energy. The group's primary focus is the design and implementation of procurements for natural gas-fired generation, including combined-cycle, simple-cycle, and combined heat and power ("CHP"). Procurements also include supply from other sources, such as energy recovery projects, energy from waste ("EFW") projects, coal-fired facilities converted to natural gas, and the procurement of load management services. Clean Energy Procurement also provides strategic, analytical and research support to groups within the Market and Resource Development as well as at the organizational level.

Budget: $1,910,054

Allocation method: Domestic class only

Policy and Analysis

This group has merged with the Clean Energy Procurement and Contract Management groups. Consequently, it does not appear as a separate functional-category in the updated 2016 cost allocation model.

Markets

The Markets group is responsible for the development of the IESO administered markets (IAM) and supports the advancement of sector policies that promote the IESO's

market principles. The IAM includes participation from dispatchable and non-dispatchable generation and loads, as well as traders importing and exporting power on the interties. The primary focus of the group is to improve the ability of the IAM to deliver system reliability efficiently, by encouraging competition, innovation and enabling informed decisions by all participants through transparent and efficient price signals. The group works with internal and external stakeholders in the development of potential changes and through the market rule amendment process that governs market design and participation. The group also provides quantitative analysis and research that supports market development and other sector policy initiatives.

Budget: $4,668,610

Allocation method: Domestic and export in proportion to energy (TWh)

5.1.4 CONSERVATION AND CORPORATE RELATIONS

Vice President Office

The VP's Office provides overall management of the business unit.

Budget: $906,519

Allocation method: Sum of allocated costs of the departments

Conservation Performance

The Conservation Performance group is responsible for verification and validation of energy and demand savings and cost effectiveness analysis of conservation programs delivered to direct or transmission-connected customers and to distribution-connected or LDC customers. The group also manages the review and approval of LDC CDM Plans and the LDC-led business cases for new conservation programs and pilots. The group provides sector-based (residential, commercial /institutional and industrial) engineering support specific to program design, program applications and other technical matters. A key mandate of the group is the assessment of conservation potential through the Achievable Potential Study and other market research studies on customer, channel, partner and brand engagement with conservation programs.

Budget: $3,398,470

Allocation method: Domestic class only

Business Development

The Business Development group is responsible for engaging the marketplace in energy conservation activities and managing relationships with key stakeholders (LDC's and channel partners) and customers to help grow capability across the province. The group provides strategic guidance on key conservation messaging and helps build awareness through its customer outreach activities. Business development is also responsible for delivering conservation solutions to direct connected customers.

Budget: $2,647,841

Allocation method: Domestic class only

Strategic Engagement and Innovation

The Strategic Engagement & Innovation group is responsible for functions crossing the company. The group is responsible for government affairs and issues management, managing relationships with municipal governments, facilitating Local Advisory Committees to support system planning and broader public engagement, and support demand side innovation through the Conservation Fund. The group works closely with the Stakeholder and Public Affairs group to coordinate the IESO’s activities.

Budget: $2,125,675

Allocation method: Domestic and export in proportion to energy (TWh)

Program Delivery and Partner Services

The Program Delivery & Partner Services group is responsible for managing the division's budget requirements, qualifying payment requests, developing and managing of contracts, co-ordinate internal audits and compliance tests, all internal and external reporting of achievements and spending of our program and services and managing the delivery of all the conservation programs with our partners.

Budget: $2,180,165

Allocation method: Domestic class only

Stakeholder and Public Affairs

The Stakeholders and Public Affairs group is responsible for media relations, employee communications, editorial services, executive speeches and presentations, French translation, the IESO's corporate websites and social media accounts, conservation marketing and the saveONenergy brand, the Stakeholder Advisory Committee, stakeholder engagement framework, customer education, market training and outreach and support to customers and market participants. These responsibilities stretch across all functions of the IESO.

Budget: $5,341,349

Allocation method: Domestic and export in proportion to energy (TWh)

Marketing

This department has merged with the Stakeholder and Public Affairs department described above. Consequently, it does not appear as a separate category to be allocated in the updated 2016 cost allocation model.

5.1.5 INFORMATION AND TECHNOLOGY SERVICES

Vice President Office

The VP's Office provides overall management of the business unit.

Budget: $1,011,151

Allocation method: Sum of allocated costs of the departments

Information Technology Services supports the IESO's existing business applications and infrastructure, provides internal customer service relating to the IESO's IT systems, and develops solutions to respond to changing business needs. All departments provide broad-based support to all other IESO business units and departments.

This business unit includes the following departments:

- Organizational Governance ($3,701,929)
- Business Solutions and Business Analysis ($12,175,768)

- Technology Support ($15,642,927)
- Solutions (Adelaide) ($637,841)
- IT Operations ($2,266,992)
- Facilities ($8,636,858)

Allocation method: Total Other OM&A

5.1.6 PLANNING, LAW, AND ABORIGINAL RELATIONS

Vice President Office

The VP's Office provides overall management of the business unit.

Budget: $1,168,340

Allocation method: Sum of allocated costs of the departments

General Counsel

The Legal Services group (General Counsel) provides legal advice and guidance on a full range of legal matters including: compliance with all relevant laws and market rules, dispute resolution/litigation support, development & management of contracts, procurement processes for the full range of IESO activities, including conservation programs and generation supply procurements, the development of market rules and programs. It also provides governance and logistical support for the Board of Directors to ensure effective and timely decision-making, and manages requests to the organization under the Freedom of Information and Protection of Privacy Act.

Budget: $4,378,174

Allocation method: Domestic and export in proportion to energy (TWh)

Regulatory Affairs

The Regulatory Affairs group is responsible for monitoring ongoing issues and managing IESO applications to/filings with multiple bodies, including the Ontario Energy Board (OEB), the National Energy Board (NEB), the North American Electric Reliability Corporation (NERC), the U.S. Federal Energy Regulatory Commissions (FERC) and the

Northeast Power Coordinating Council (NPCC). Regulatory Affairs manages the IESO's annual revenue requirement submission with the OEB, as well as the IESO's participation in applications before, and any rules, standard, policies, or codes proposed by, the regulatory bodies listed above.

Budget: $2,186,249

Allocation method: Domestic and export in proportion to energy (TWh)

Board

The Legal Services group (Board) provides governance and logistical support for the Board of Directors to ensure effective and timely decision making.

Budget: $715,210

Allocation method: Domestic and export in proportion to energy (TWh)

First Nations and Metis Relations

The First Nations and Métis Relations group ("FNMR") is responsible for developing and maintaining the IESO's relationship with First Nations and Métis communities across the province. The IESO works to support the participation of Aboriginal communities in renewable energy through targeted incentives and initiatives.

The IESO also works to raise awareness and encourage Aboriginal community participation in IESO procurement processes, funding programs, and regional and long-term energy planning initiatives. At times, the First Nations and Métis Relations group is responsible for carrying out the procedural aspects of any duty to consult with Aboriginal communities as identified by the Crown.

Budget: $898,421

Allocation method: Domestic class only

Transmission Integration

The responsibilities of the transmission integration group include regional integrated planning, bulk transmission planning, associated community and stakeholder outreaches and providing support to procurements undertaken by the IESO through

performing assessments and testing of connections availability. While the work of transmission integration can benefit all customer groups, especially work on or that directly benefits interconnections, it is primarily performed to benefit Ontario consumers.

Budget: $2,538,417

Allocation method: Domestic class only

Resource Integration

The Resource Integration group is uniquely responsible in Ontario for developing integrated power system plans to meet the projected electricity service requirements for Ontario customers at both the regional and provincial levels. Its plans provide advice to the government to help develop the Long Term Energy Plan and to guide program and capital investment decisions for new initiatives in the market, transmission, conservation and supply resources. The group focuses on the supply aspects of the plan and the integration of market, conservation, supply and transmission considerations to meet Ontario electricity needs. The Power System Planning Division works closely with other areas of the IESO to develop and implement initiatives.

Budget: $2,082,323

Allocation method: Domestic class only

Demand and Conservation Planning

Demand and Conservation Planning (formerly Conservation Integration) develops estimates of electricity demand and conservation resources for the near, mid and long term. Demand and conservation estimates provide context for the development of supply and transmission plans, support regional planning and support the development of demand management programs. Near term forecasts support the development of the 18 Month Outlook.

Budget: $1,271,096

Allocation method: Domestic class only

5.1.7 CORPORATE SERVICES

Vice President Office

The VP's Office provides overall management of the business unit.

Budget: $412,624

Allocation method: Sum of allocated costs of the departments

Corporate Controller

The Corporate Controller's Department manages and is responsible for asset stewardship, controls and transaction processing at the IESO. This includes ensuring that financial resources are used effectively and that appropriate corporate policies and procedures are deployed in the areas of corporate accounting and reporting, market accounting and reporting, procurement and payroll. The activities carried out by the Corporate Controller's Department relate to ensuring appropriate controls exist and are implemented to validate the IESO's management of public funds. The functional responsibilities for this group are as follows:

- transaction processing, accounting and financial reporting for both the Corporation and the Market;
- tax compliance and reporting;
- monitoring and review of internal controls, as applicable;
- payroll; and
- procurement.

Budget: $3,465,121

Allocation method: Domestic and export in proportion to energy (TWh)

Financial Planning and Analysis

The Financial Planning & Analysis (FP&A) group supports decision making and strategy development through leading budgeting and business planning, providing timely and quality analysis, implementing performance metrics and overseeing a risk framework to

identify and mitigate risks to the business. FP&A assists other business units to deliver their initiatives by providing value-added analysis and strategic decision support. FP&A also provides financial reporting (i.e., monthly, quarterly and annual) as well as special purpose reports (e.g. Board of Directors, Province of Ontario).

Budget: $1,431,913

Allocation method: Total Other OM&A

Treasury and Pension Operations

The Treasury and Pension Operations group manages and is responsible for the IESO's overall treasury related activities (liquidity, debt), the external insurance risk programs, the IESO markets' credit risk framework, and the IESO pension plan's investments.

Budget: $1,704,218

Allocation method: Total Other OM&A

Human Resources

The Human Resources group provides leadership, systems, policies and processes to achieve the organizational goals of attracting, developing, engaging and retaining skilled individuals.

The Human Resources group provides ongoing and effective support for recruitment and selection, performance management, conflict facilitation, labour relations, resolution of legal and employee relations issues, and employee communications.

Working with senior management assists with the implementation of actions to increase individual, group and organizational effectiveness, such as learning and development initiatives, career planning, talent review and succession management planning, and group effectiveness facilitation.

Budget: $3,969,532

Allocation method: Total Other OM&A

Settlements

IESO settlements oversees and reconciles more than $14 billion in funds from the electricity market by collecting funds from buyers; transferring funds to sellers; collecting transmission tariffs; as well as settling the transmission rights market.

Budget: $5,537,837

Allocation method: Domestic and export in proportion to energy (TWh)

5.1.8 Market Assessment and Compliance Division

The Market Assessment & Compliance Division (MACD) is responsible for investigating and determining whether market participants are compliant with the IESO market rules. MACD oversees activities and conduct in the electricity market through monitoring for anomalous outcomes and the investigation of potential breaches of the rules, which include North American reliability standards. MACD conducts enforcement of the rules in order to foster compliance and deter non-compliance. Market participants who breach the market rules may be subject to sanctions if appropriate. In addition, MACD performs audits and other reviews that can lead to the recovery of payments received by market participants. MACD also works with other IESO business units on market participant communications, education and training to promote compliance. Through its work to improve compliance with the market rules and reliability standards MACD's work benefits all market participants and end use customers.

Budget: $3,662,309

Allocation method: Domestic and export in proportion to energy (TWh)

5.1.9 Other (Amortization, Interest, Uncleared Salary)

Amortization

Amortization is the standard expensing of all capital assets. IESO assets and amortization are not tracked by department; hence, they cannot be functionally-classified in detail. Elenchus notes that the pre-merged (December January 1, 2015)

asset balances show that 94% of the total assets were former IESO assets. Former IESO assets would be allocated on the basis of TWh.

Budget: $17,500,000

Allocation method: Domestic and export in proportion to energy (TWh)[13]

Interest

The IESO revenue requirement does not include a weighted average cost of capital applied to rate base. Interest included in the IESO's revenue requirement is actual interest on net funding required to finance capital investments and working capital, net of accumulated surplus and other sources of funding.

Budget: $1,017,873

Allocation method: Domestic and export in proportion to energy (TWh)[14]

Uncleared Salaries

"Uncleared salary" is an accounting label that is carried over from the legacy IESO financial systems. The amount is made up essentially equally of two items: provision for workforce harmonization post-merger (job mapping and pension-related costs) and amounts related to pension, expensed in the year arising from to IESO's adoption of public sector accounting standards:

Budget: $6,197,679

Allocation method: Total Other OM&A

[13] Elenchus used the 2014 yearend breakdown of former IESO and former OPA assets to derive the weighted average of former IESO assets allocated on TWH and former OPA allocated on Other OM&A. See Appendix B. This calculation indicates that the TWh allocator is a reasonable proxy for this more detailed derivation of an Amortization allocator based on 2014 asset values. As of 2015, the breakdown between former OPA and former IESO assets is not maintained in the accounts.

[14] See footnote 13.

5.2 ALLOCATION

Allocation is the final step in any cost allocation model. It is the step that assigns costs to customer classes on the basis of the cost causality principle. In the case of the IESO, costs (functional-categories) are caused by domestic and/or export customers.

Shared expenses relate to functions that are necessary to serve both domestic and export customers, including the operation of the market and overall operation of the IESO. These expenses are essentially fixed and are required regardless of throughput. However, the size of the business units is influenced by the scale of the overall electricity market in Ontario. Further, it is reasonable to view the benefit that is derived by participants in the market as being proportionate to the volume of energy transmitted. For that reason, where a service is used by all customers the cost is normally considered to be energy related and costs are allocated on the basis of TWhs.

The IESO does not undertake any activities solely for the benefit of export customers.

Some functions exist primarily or exclusively for the benefit of domestic customers. All of the costs of these functions are allocated to domestic customers. As detailed in the preceding section, these include the entire Market and Resource Development business unit, as well as selected departments within the business units of Conservation and Corporate Relations, and Planning, Law, and Aboriginal Relations.

Activities dedicated to domestic customers are activities that would not be required if the transmission system were used only to wheel power into, out of, or through the province. Hence, the activities are caused by, or benefit, only the domestic customers. For example, renewable and clean energy procurement is undertaken in accordance with government policy and is therefore considered to be “caused” by in-province (i.e., domestic) consumers. The primary beneficiaries are Ontario residents. These activities may generate indirect benefits for export customers, but no consideration is given to export customers and their ability to enjoy the benefit of these activities. Put simply, there is no causal relationship between the wheeling of power through Ontario and the cost incurred due to clean energy and renewable procurement.

The cost of groups that functionally support the rest of the organization are allocated to the classes in the same proportion as the costs of the direct market support functions are allocated (i.e., Other OM&A). This allocation is used for the CEO Office, Information and Technology Services and three of the five groups within Corporate Services (Financial Planning & Analysis, Treasury & Pension and Human Resources).

The costs related to NERC membership and Reliability Assessments are caused in large part, but not exclusively to maintain Ontario's export capability. These costs are allocated on a 50:50 basis to export and domestic customers.

Appendix A shows the allocators used for each functional-category. The derivation of each allocator appearing in the Appendix is described below.

5.2.1 PRIMARY ALLOCATORS

In the IESO cost allocation model, the allocation of energy related costs is based on the terawatt-hours of energy transmitted. Based on the forecasted 2016 Gross TWh – inclusive of embedded generation, the Terawatt-Hour Allocator allocates 88.2% of costs Domestic customers and 11.8% of costs to Export customers.

None of the IESO costs are allocated on the basis of demand. Unlike the transmission system itself, all of the IESO costs are most logically associated with (or caused by) the energy throughput of customers.

The individual customer-related costs (billing of market participants) are not significant. These costs are not allocated based on the number of customers in each class as they typically are in distribution cost allocation models.[15]

Table 3 presents the primary allocators used in the 2016 IESO cost allocation model.

[15] Each market participant receives one bill that includes the fees related to both domestic and export activity. Some generators handle their exports through a separate company that is also a market participant, so each entity would receive a separate bill for the IESO fees.

Table 3: Primary Allocators Used in the IESO Cost Allocation Model

	Total	Domestic	Export
Dedicated to Domestic	100.00%	100.00%	0.00%
TWh	100.00%	88.20%	11.80%
Equal Halves	100.00%	50.00%	50.00%

5.2.2 COMPOSITE ALLOCATORS

A composite allocator for each business unit is derived based on the departmental allocated costs of that business unit. The VP's office for each business unit is then allocated on the basis of its respective composite allocator.

Table 4 presents the composite allocators used in the 2016 IESO cost allocation model.

Table 4: Composite Allocators

	Total	Domestic	Export
Market and System Operations	100.00%	88.20%	11.80%
Market and Resource Development	100.00%	97.13%	2.87%
Conservation and Corporate Relations	100.00%	94.39%	5.61%
Information and Technology Services	100.00%	90.33%	9.67%
Planning, Law and Aboriginal Relations	100.00%	93.90%	6.10%
Corporate Services	100.00%	89.14%	10.86%

5.3 COST ALLOCATION RESULTS

The resulting revenue responsibility and revenue to cost ratios are detailed in Table 5.

Table 5: Cost Allocation Results

	Total	Domestic	Export
Revenue, dollars	**$182,131,970**	**$160,644,602**	**$21,487,369**
Revenue, percent	**100.00%**	**88.20%**	**11.80%**
Revenue Requirement, dollars	**$182,131,970**	**$164,124,456**	**$18,007,515**
Revenue Requirement, percent	**100.00%**	**90.11%**	**9.89%**
MWh	**158,942,411**	**140,190,875**	**18,751,536**
Allocated Cost per MWh	**$1.1459**	**$1.1707**	**$0.9603**
Revenue to Cost Ratio at $1.1459/MWh	**100.00%**	**97.88%**	**119.32%**

Table 5 shows that approximately 90% of the total revenue requirement is allocated to the domestic throughput. The domestic throughput is close to 88% of the total throughput. Since the percentage of the revenue requirement (costs) allocated to the domestic throughput is slightly greater than the percentage of volume attributable to domestic throughput, when the same fee is assumed for both domestic and export throughput, the resulting domestic revenue to cost ratio is less than 100% and the export revenue to cost ratio is greater than 100%.

The export variance from 100% is larger than the domestic variance because the export volume is about one-eighth of the domestic volume. Since the dollar values of the variances from 100% are identical, the percentage variances differ by a factor of approximately nine.

6 CONCLUSIONS AND RECOMMENDATIONS

The reasoning that supported the change from net to gross billing for the former IESO usage fee in EB-2013-0381 is equally applicable to the portion of the new IESO revenue requirement that corresponds to costs that were previously included in the OPA revenue requirement. It is therefore recommended that the new IESO usage fee be billed on the basis of AQEW + SQEW + EG as defined in section 3, above.

With respect to the justification for differentiating the usage fee that is applied to domestic and export customers, it is noted that the revenue to cost ratios for the separate classes if a single usage fee is adopted would be 97.88% and 119.32% for the domestic and export classes, respectively. If the OEB-approved revenue-to-cost ratio range that is used for most electricity distribution customer classes (i.e., 80% to 120%) is approved for the IESO, the uniform rate would be deemed to be equitable for both the domestic and export classes of customers. Rates within a Board approved range are not considered to be either under-collecting or over-collecting the causal costs related to a customer class, given the degree of uncertainty inherent in cost allocation and other rate making principles.

1

Appendix A: Allocation Detail Worksheet

Accounts	2015 Budget	2016 Budget	Difference	Change	Allocator Used
CEO	**6,773,156**	**6,804,474**	**31,318**	**0.46%**	
CEO Office	1,440,412	1,189,152	-251,260	-21.13%	O&M
CEO Office - NERC Membership	3,898,640	3,976,613	77,973	2.00%	HALF
Internal Audit	1,434,104	1,638,709	204,605	14.27%	O&M
Market and System Operations	**35,267,944**	**34,134,530**	**-1,133,414**	**-3.32%**	
VP Office	1,407,935	1,588,319	180,384	12.81%	MSO
System Performance	6,198,803	5,599,744	-599,059	-10.70%	TWh
Reliability Assessments	3,634,163	3,282,505	-351,658	-10.71%	TWh
Connections & Registration	4,987,700	4,441,271	-546,429	-12.30%	TWh
Operational Effectiveness	3,634,964	3,876,907	241,943	6.66%	TWh
System Operations	11,891,779	11,499,273	-392,506	-3.41%	TWh
Market Forecasts & Integration	2,602,330	2,662,253	59,923	2.30%	TWh
Operations Change Initiatives	910,270	1,184,258	273,988	30.10%	TWh
Market and Resource Development	**19,315,098**	**20,382,147**	**1,067,049**	**5.52%**	
VP Office	1,228,410	1,224,063	-4,347	-0.36%	MRD
Contract Management	7,245,981	9,101,459	1,855,478	25.61%	DOM
Renewable Procurement	2,661,529	3,477,961	816,432	30.68%	DOM
Clean Energy Procurement	1,224,622	1,910,054	685,432	55.97%	DOM
Policy & Analysis	1,455,035	0	-1,455,035	-100%	DOM
Markets	5,499,521	4,668,610	-830,911	-17.80%	TWh
Conservation and Corporate Relations	**17,571,654**	**16,600,019**	**- 971,635**	**-5.85%**	
VP Office	764,142	906,519	142,377	18.63%	CCR
Conservation Performance	4,091,445	3,398,470	-692,975	-20.39%	DOM
Business Development	2,389,847	2,647,841	257,994	10.80%	DOM
Strategic Engagement & Innovation	3,218,911	2,125,675	-1,093,236	-51.43%	TWh
Program Delivery & Partner Services	2,058,304	2,180,165	121,861	5.92%	DOM
Stakeholders & Public Affairs	4,520,581	5,341,349	820,768	18.16%	TWh
Marketing	528,424	0	-528,424	-100%	TWh
Information and Technology Services	**44,250,058**	**44,073,466**	**-176,592**	**-0.40%**	
VP Office	1,033,559	1,011,151	-22,408	-2.22%	ITS
Organizational Governance	3,638,288	3,701,929	63,641	1.75%	O&M
Business Solutions + Business Analysis	11,622,249	12,175,768	553,519	4.76%	O&M
Technology Support*	15,875,082	15,642,927	-232,155	-1.48%	O&M
Solutions (Adelaide)*	563,825	637,841	74,016	13.13%	O&M
IT Operations	2,346,315	2,266,992	-79,323	-3.50%	O&M
Facilities	9,170,740	8,636,858	-533,882	-6.18%	O&M

Planning, Law and Aboriginal Relations	**15,037,219**	**15,238,230**	**201,011**	**1.34%**	
VP Office	1,318,290	1,168,340	-149,950	-12.83%	PLAR
General Counsel	4,194,831	4,378,174	183,343	4.37%	TWh
Regulatory Affairs	3,267,802	2,186,249	-1,081,553	-49.47%	TWh
Board	715,210	715,210	0	0.00%	TWh
First Nations & Metis Relations	807,900	898,421	90,521	11.20%	DOM
Transmission Integration	2,025,408	2,538,417	513,009	25.33%	DOM
Resource Integration	2,360,010	2,082,323	-277,687	-13.34%	DOM
Conservation Integration	347,768	1,271,096	923,328	265.50%	DOM
Corporate Services	**16,350,900**	**16,521,245**	**170,345**	**1.04%**	
VP Office	549,954	412,624	-137,330	-33.28%	CS
Corporate Controller	3,294,988	3,465,121	170,133	5.16%	TWh
Financial Planning & Analysis	1,401,192	1,431,913	30,721	2.19%	O&M
Treasury & Pension Operations	1,663,835	1,704,218	40,383	2.43%	O&M
Human Resources	4,161,455	3,969,532	-191,923	-4.83%	O&M
Settlements	5,279,476	5,537,837	258,361	4.89%	TWh
MACD	3,612,410	3,662,309	49,899	1.38%	TWh
Others (IESO Corp Adj+Int+Amort)	**26,712,493**	**24,715,552**	**-1,996,941**	**-8.08%**	
Amortization	18,699,757	17,500,000	-1,199,757	-6.86%	TWh
Interest	1,284,000	1,017,873	-266,127	-26.15%	TWh
Uncleared salary	6,728,736	6,197,679	-531,057	-8.57%	O&M
Total Expenses	**184,890,933**	**182,131,970**	**-2,758,963**	**-1.51%**	

Description of Allocators

Allocator	Description
Simple Allocators	
DOM	Allocated to Domestic
TWh	Terawatt Hours
HALF	50% Domestic, 50% Export
Composite Allocators	
CCR	Conservation and Corporate Relations
CS	Corporate Services
ITS	Information and Technology Services
MRD	Market and Resource Development
MSO	Market and System Operations
O&M	O&M (i.e., direct department expenses)
PLAR	Planning, Law and Aboriginal Relations

1 Note: The allocator values are provided in the Cost Allocation model, worksheet “Allocators”. The
2 Allocated account balances are provided in the same model, worksheet “Summary by Class & Accounts”.

Appendix B: Asset Allocation Test

Assets

Accounts	2016 Budget	Allocator Used
IESO (Assets)		
Assets	52,281,000	TWh
Market systems & applications	278,458,000	TWh
Infrastructure & other assets	60,180,000	TWh
Assets Under Construction	23,268,000	TWh
Accumulated Amortization	(321,042,000)	Assets
Net Fixed Assets	**93,145,000**	

Note: The IESO does not have a Rate Base similar to rate regulated utilities. Fixed Assets are allocated to test the assumption that TWh is a sensible allocator for Interest and Amortization.

The IESO no longer maintains a split of assets formerly owned by the IESO and formerly owned by the OPA. Therefore, presently the most appropriate allocator to be applied to all assets is TWh.

The last year for which assets were divided into former IESO and former OPA pre-integration was 2014. The IESO's 2014 year-end data supported the concept that whether interest expense and amortization expense are allocated on the basis of TWh as proposed or based on the underlying assets makes no difference. The Elenchus evidence dated 15 January 2016 concluded that TWh was a reasonable approximation of an asset-based allocation.

Allocator Comparison

	Domestic	Export
Net Assets Allocated as Above	$82,156,040	$10,988,960
Resulting Allocator	88.20%	11.80%
TWh Allocator	88.20%	11.80%

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