

1 **COST ALLOCATION STUDY**

2 In the OEB-approved Settlement Proposal for the IESO's 2017 Revenue Requirement  
3 Submission (EB-2017-0150), under Issue 1.0: Revenue Requirement, Operating Costs and  
4 Capital Spending, the IESO agreed to:

- 5 • *Conduct a corporate cost allocation study on the charges associated with staff and services*  
6 *the IESO provides to third parties, such as the Ontario Climate Change Solutions*  
7 *Deployment Corporation ("OCCSCD") and the Smart Metering Entity; and*
- 8 • *File this corporate cost allocation study with its next Revenue Requirement Submission.*

9 BDR North America Inc. ("BDR") was the successful proponent, procured through a  
10 competitive Request for Proposal process, to undertake this work. This work has been  
11 completed and BDR provided the IESO with a final report on July 16, 2018. The IESO has  
12 filed the report with the OEB as a part of this proceeding and provided a copy to each  
13 intervenor and to OEB staff.

14 In their report, BDR concluded:

- 15 1. The IESO's use of detailed tracking of time use by employees on tasks and the  
16 allocation of vendor costs that directly serve a non-core function represents the most  
17 complete and accurate approach possible for these types of costs.
- 18 2. The IESO's use of the time tracking system to allocate total employee compensation  
19 costs (salary, pension and benefits) to non-core functions reflect cost causation, and  
20 are therefore in accordance with accepted principles of cost allocation.
- 21 3. Non-core functions that make significant use of procurement, accounts receivable,  
22 legal communications or regulatory services are coded to the non-core functions in  
23 the time system which is consistent with accepted principle of cost allocation.

1 4. Management time and certain time in other supporting functions, are not allocated  
2 to non-core functions. This understates the costs that the IESO incurs on their behalf  
3 on a fully allocated basis. BDR recommends as a general practice that the IESO move  
4 in the direction of including an allocation based on cost causality to non-core  
5 functions, with the following exceptions:

- 6 a) Given that GreenON is being closed down over the next several months and that  
7 the current practice includes an allocation of support function costs, no changes  
8 should be made in the allocation approach being used for GreenON; and  
9 b) In cases where the non-core function has paid for a facility, resource or asset on a  
10 directly assigned basis and does not also use similar resources for which it has  
11 not paid directly, that non-core function should be carefully excluded from  
12 allocation of costs of the facilities or resources that it does not share.

13 BDR also makes the following recommendations:

14 **GreenON**

15 Therefore, in view of the fact that GreenON's activity is being phased out over the next  
16 few months, BDR considers it reasonable that no change be made in current practice  
17 with respect to GreenON.

18 **Smart Metering Entity ("SME")**

19 In BDR's view, the incremental cost approach taken for SME is not appropriate. The  
20 approach has the result of overstating the costs of the IESO's core functions and  
21 understating the costs of the SME functions.

22 Instead, the SME should be responsible for its fully-allocated costs. Specifically, the  
23 SME should receive appropriate allocations of supporting costs, including HR, IT and  
24 Payroll. Since staff time in these functions is not coded by the time system to client  
25 functions, a non-time-based allocator, such as the FTE method explained in Section 4.2  
26 should be used.

1        **Market Renewal**

2        In BDR's view, the approach taken supports the purpose of the allocation and is  
3        therefore justified on that basis.

4        The IESO accepts BDR's recommendations and will move to include an allocation based on  
5        cost causality to non-core functions as recommended by BDR. Specifically, the IESO will  
6        assign the SME appropriate allocations of supporting costs, including HR, IT and Payroll.  
7        With regards to management time, the IESO commits to allocate costs associated with  
8        senior decision-makers to non-core functions. As recommended by BDR, the IESO will  
9        examine options other than detailed tracking of senior decision-makers' time, including the  
10       methodology recommended by BDR.

11       The IESO will be examining the additional costs, if any, that it will charge to non-core  
12       functions based on BDR's recommendations.

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*Report on  
Methodology for the  
Allocation of Shared Costs  
To Certain Identified Activities*

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*Submitted To The  
Independent Electricity  
System Operator  
July 16, 2018*

**BDR**

*BDR NorthAmerica Inc.  
34 King Street East  
Suite 600  
Toronto, ON M5C 2X8  
416-807-3332*

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
<b>1 INTRODUCTION.....</b>	<b>5</b>
1.1 BACKGROUND.....	5
1.2 PURPOSE AND CONCEPTUAL BASIS OF THIS REVIEW.....	6
1.3 SCOPE .....	6
<b>2 METHODOLOGY .....</b>	<b>7</b>
<b>3 ANALYSIS .....</b>	<b>8</b>
3.1 SELECTION OF THE CLIENT FUNCTIONS.....	8
3.2 DESCRIPTION OF CLIENT FUNCTIONS AND SERVICES RECEIVED .....	9
3.2.1 <i>GreenON Programs</i> .....	9
3.2.2 <i>Smart Metering Entity (“SME”)</i> .....	11
3.2.3 <i>Market Renewal Program (“Market Renewal” or “MRP”)</i> .....	12
3.3 SERVICES PROVIDED BY FUNCTION.....	13
3.3.1 <i>Services Overview</i> .....	13
3.3.2 <i>IESO’s Timekeeping System</i> .....	14
3.3.3 <i>Human Resources (“HR”)</i> .....	14
3.3.4 <i>Information Technology</i> .....	15
3.3.5 <i>Finance</i> .....	16
3.3.6 <i>Legal</i> .....	17
3.3.7 <i>Buildings and Facilities</i> .....	17
3.3.8 <i>Regulatory Affairs</i> .....	17
3.4 SUMMARY OF SERVICES USED AND ALLOCATION APPROACH BY CLIENT FUNCTION .....	18
<b>4 CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>19</b>
4.1 GENERAL CONCLUSIONS AS TO DIFFERENCES IN APPROACH TAKEN FOR DIFFERENT CLIENT FUNCTIONS.....	19
4.1.1 <i>GreenON</i> .....	19
4.1.2 <i>Smart Meter Entity</i> .....	20
4.1.3 <i>Market Renewal</i> .....	21
4.2 CONCLUSIONS AND RECOMMENDATIONS AS TO SPECIFIC COST ELEMENTS.....	21
4.2.1 <i>General Principle</i> .....	21
4.2.2 <i>Coded Time (Other than Senior Management)</i> .....	22
4.2.3 <i>Management Time</i> .....	22
4.2.4 <i>Human Resources Support</i> .....	23
4.2.5 <i>Information Technology</i> .....	24
4.2.5.1 <i>Staff Time</i> .....	24
4.2.5.2 <i>Workstation Hardware and Software</i> .....	25
4.2.5.3 <i>Corporate Systems</i> .....	25
4.2.6 <i>Finance and Administration</i> .....	26
4.2.6.1 <i>Accounts Payable</i> .....	26
4.2.6.2 <i>Accounts Receivable</i> .....	26
4.2.6.3 <i>Payroll</i> .....	27
4.2.6.4 <i>Procurement</i> .....	27
4.2.7 <i>Communications and Stakeholder Engagement</i> .....	27
4.2.8 <i>Office Facilities, Furniture and Equipment</i> .....	28
4.2.9 <i>OEB Costs</i> .....	28

## EXECUTIVE SUMMARY

As the system operator for Ontario's electricity grid, the IESO also provides certain non-core services to third parties. As part of the OEB-approved settlement agreement reached between the IESO and parties in the IESO's application for approval of 2017 expenditures, revenue requirement and usage fees, the IESO agreed to conduct a corporate cost allocation study on the charges associated with staff and other resources used to provide those non-core services.

The IESO retained BDR NorthAmerica Inc. ("BDR") in February 2018 to prepare the independent study of the IESO's corporate cost allocation methodology required by the settlement agreement. This Report sets out the scope, methodology, findings and recommendations resulting from BDR's review. Through review of documents and interviews with IESO staff, BDR gathered information as to the nature of the non-core services, the services provided to them by the IESO, the resources used, and how the level of usage or other measure of cost causation is now being tracked. BDR then assessed these approaches, and made recommendations where applicable to retain or refine the methodology.

For purposes of this study, IESO staff identified non-core Client Functions that receive services from and/or share resources with the functions of the IESO performing activities supported by usage fees, which included:

- GreenON Fund ("GreenON") supported by the Ontario Climate Change Solutions Deployment Corporation ("OCCSDC");
- Smart Metering Entity ("SME"), and
- Market Renewal Program ("Market Renewal")<sup>1</sup>.

Recommendations for each of the non-core client functions are consistent where appropriate but also reflect the differences in these functions and the services they use. GreenON recommendations reflect the closure of the programs following the June 2018 provincial election and change of government. Recommendations for the SME reflect the expectation that the SME will continue as part of the IESO for the foreseeable future. Recommendations for Market Renewal reflect the fact that this program is funded by the IESO's usage fees, but costs are allocated to facilitate management control and transparency of costs to the OEB and stakeholders.

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<sup>1</sup> Unlike GreenON and the SME, the Market Renewal Program is supported by the IESO's usage fees. However, it has been included as a client function for this study because it is a special program with dedicated staff, and the IESO, for purposes of internal management and review by the OEB, has committed to separately identify the costs associated with the program.

The non-core functions have access to and may use, each to a different degree, the following resources that are either direct resources of the IESO or third party services procured and made available by the IESO:

- Dedicated employees<sup>2</sup>;
- Specialists as needed on a tracked time basis<sup>3</sup>;
- Human Resources (“HR”) services, including recruitment, training, and other corporate programs;
- Information Technology (“IT”) services, including individual workstation hardware and software, corporate systems and systems specific to the needs of the individual non-core function;
- Financial Services, including accounts payable and receivable, payroll, financial records and statement preparation, and procurement;
- Internal legal services;
- Office facilities, furniture and equipment; and
- Third party services as required for the function.

In addition, the SME uses the services of the IESO’s specialist Regulatory staff, and benefits from sharing the costs of the Ontario Energy Board with the IESO’s core functions. The SME and Market Renewal both use the IESO’s Communications department for activities related to stakeholder engagement.

The majority of costs that the non-core functions incur are either for third party services that can be clearly identified as to benefitting the non-core functions and directly assigned, or for the time of IESO staff identified through a time record system as specific to the non-core functions. Allocations for tracked hours include both salary and “burdens” (benefits and pension costs). Since these can be specifically identified as to the function that cause them, allocations of tracked time are effectively a direct assignment, just as third party cost are.

***These assignments of cost reflect cost causation, and are therefore in accordance with accepted principles of cost allocation.***

In no case is any senior management time tracked in the system to specific non-core functions. BDR was advised that the justification for this approach is that senior management and the Board of Directors would not typically have any direct involvement in the client functions. ***BDR believes that senior decision-makers represent a cost, and***

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<sup>2</sup> For purposes of this Report, a “dedicated employee” is an IESO employee holding a position that involves all or most of the work being for the specific non-core function.

<sup>3</sup> For purposes of this Report, a “specialist as needed” is an employee whose position is not in, or primarily for the specific non-core function, but who performs work on request, such as a project basis. For example, GreenON has a complement of employees dedicated to it, but might, or may have before the program closed, used resources in the IESO’s Conservation department to assist with projects.



*provide value to all business activities, and that therefore some component of such costs are appropriately included in the fully allocated costs of those activities. Such an allocation, if adopted by the IESO, could reasonably be applied to Market Renewal and the SME. Given that GreenON is being phased out, BDR does not recommend that a similar allocation be applied to GreenON.*

HR, most corporate IT, and payroll are all services provided by the core IESO that is for the benefit of all FTE's equally. Currently, the cost of HR, most corporate IT, and payroll are not time-tracked to specific non-core functions. ***BDR considers that number of employees, or FTEs, represent a key factor in cost causation for these services. Therefore BDR recommends that the IESO adopt this methodology in the case of the non-core client functions that do not currently receive an allocation, when and as a move is made to a fully-allocated cost approach.***

For Market Renewal, the purchased costs of direct-use hardware have been directly charged. Incremental cost of other assets is charged.

Non-core functions that make significant use of procurement, accounts receivable, legal, communications or regulatory services are allocated the costs as time is coded to the activities in the time system. ***As for all other coded time, BDR considers this method highly accurate and consistent with accepted principle of cost allocation.***

For GreenON, office space is allocated using an FTE approach, consistent with the approach used for other supporting costs. For the SME and Market Renewal, a cost is directly assigned, given that they occupy a facility separate from the work location of most other IESO staff.

***BDR considers the difference in methods to be appropriate given the different approaches by which space is made available to these three non-core functions.***

***Overall, BDR's high level conclusions are as follows:***

- ***The detailed tracking of time use by employees on tasks that directly serve a non-core function represents the most complete and accurate approach possible for this type of cost.***
- ***Management time and certain time in other supporting functions are not allocated to non-core functions. This understates the costs that the IESO incurs on their behalf on a fully allocated basis. BDR recommends as a general practice that the IESO move in the direction of including an allocation based on cost causality to non-core functions, with the following exceptions:***
  - ***Given that GreenON is being closed down over the next several months and that the current practice includes an allocation of support function costs, no changes should be made in the allocation approach being used for GreenON; and***

- *In cases where the non-core function has paid for a facility, resource or asset on a directly assigned basis and does not also use similar resources for which it has not paid directly, that non-core function should be carefully excluded from allocation of costs of the facilities or resources that it does not share.*

## 1 INTRODUCTION

### 1.1 *Background*

As the system operator for Ontario's electricity grid, the IESO ensures there is enough power to meet the province's energy needs in real time while also planning and securing energy for the future. The IESO is a not-for-profit corporate entity established in the *Electricity Act, 1998*. The IESO's operating licenses and usage fees are regulated by the Ontario Energy Board ("OEB"). For purposes of this Report, the term "usage fees" means the usage fees approved by the OEB to recover the costs of the IESO's core functions as the system operator.

The IESO usage fees are based on a regulated revenue requirement approved by the OEB and are intended to recover only the costs to provide specific monopoly services. As with any rate regulated service provider, the regulator has a mandate to ensure that the regulated fees and charges recover only the costs of providing those services. Therefore, if a regulated entity such as the IESO uses its staff, systems, assets or other resources to provide other services, the fairly determined cost of providing the other services must be deducted from the revenue requirement used in determining the charges for the regulated services. The service provider can then recover the costs allocated to these other services through appropriate separate mechanisms.

In addition to its services as the system operator, the IESO provides certain other services which include but are not limited to its activities as the Smart Metering Entity ("SME") and the implementation of the GreenON program for the Ontario Climate Change Solutions Deployment Corporation ("OCCSDC"). As part of the OEB-approved settlement agreement reached between the IESO and parties in the IESO's application for approval of 2017 expenditures, revenue requirement and usage fees, the IESO agreed to conduct a corporate cost allocation study on the charges associated with staff and services the IESO provides to third parties, such as the SME and the OCCSDC.

The IESO retained BDR NorthAmerica Inc. ("BDR") in February 2018 to prepare the independent study of the IESO's corporate cost allocation methodology required by the settlement agreement. This Report sets out the scope, methodology, findings and recommendations resulting from BDR's review.

## ***1.2 Purpose and Conceptual Basis of this Review***

The purpose of the required corporate cost allocation study is to recommend a methodology for the allocation of the costs of IESO resources that are providing services to specified non-core functions.

Because sharing of resources and transfer pricing potentially offer a regulated entity an opportunity to transfer value from regulated ratepayers to unregulated service customers or shareholders, regulators and stakeholders typically scrutinize the cost allocation/transfer pricing methodology when there is an effect on the regulated revenue requirement and usage fees. For this reason, the OEB has issued its Affiliate Relationships Code for Electricity Transmitters and Distributors (“ARC”) to govern transfer pricing for goods and services between regulated electricity transmitters and distributors and their shareholders or unregulated business affiliates. In performing this study, BDR has used approaches and methodologies consistent with the ARC, which requires “fully allocated cost” to be the basis of the pricing of shared services, unless market pricing applies.

According to the ARC, where there is no competitive market to determine the value of the services, or where the services are defined by the regulator as being outside the scope of market pricing (“shared corporate services”), the cost of the services is determined by allocation. The allocation methodology is generally required by regulators to be supported by accepted cost allocation principles including, but not limited to, the principle that allocation should reflect causation of the cost. This principle is accepted by the OEB, as well as widely by other regulators, and is intended to avoid undue cross-subsidization.

Although the ARC was not drafted for specific application to the IESO, the principles of the ARC are understood to reflect the OEB’s policy in respect to similar resource sharing arrangements, and are therefore expected to be acceptable to the OEB and stakeholders in this context.

## ***1.3 Scope***

The scope of work for the study as initially defined included:

- Review the IESO Business Plan, Annual Report, Revenue Requirement and Usage Fee Methodology and other year-end financial documents as deemed relevant by the IESO.
- Review IESO cost drivers including: compensation & benefits, professional and consulting fees, operating and administration costs, amortization and interest fees.
- Review business units’ 2017 actual and forecasted spends.

- Review the GreenON program and the SME for corporate drivers and current cost allocation methodology.
- Review and report on the IESO's current cost allocation methodology and advise on best practises from similar entities.
- Develop cost allocation guiding principles based on best practises and applicability to the IESO.
- Outline the development and application of a potentially modified cost allocation strategy (revised methodology) based on the above mentioned guiding principles.
- Prepare a report to be included in the IESO's next revenue requirement submission to the OEB (this document).

BDR's mandate in this assignment was restricted to a review of the methodology for sharing services and costs between the IESO's mandated activities (the "core" activities) and non-core activities. BDR did not:

- Complete an independent audit of activities, business processes, operational records or accounting information provided by the IESO, or
- Perform any research to determine a market based price for shared services, or
- Review the need for any services or the reasonableness of the costs incurred.

## 2 METHODOLOGY

For this study, BDR adopted a research and analysis approach that has served well in similar assignments for regulated energy utilities in Canada.

We first reviewed documents provided by IESO staff to gain a general understanding of the organization, the core services, and the types and scope of the non-core activities that share resources with the core services. Such documents included the IESO Business Plan, Annual Report, Revenue Requirement and Usage Fee Methodology<sup>4</sup> and other year-end financial documents as deemed relevant by the IESO.

The next phase consisted of a series of interviews with members of IESO staff responsible for the non-core activities, referred to in this Report as the "Client Functions" because they are clients of the IESO for the services. The discussion provided BDR with an understanding of these activities, the shared and direct resources provided to it, and the basis on which, to the understanding of these staff, their cost centres are currently responsible for the costs of shared services received.

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<sup>4</sup> BDR's review of the Usage Fee Methodology was restricted to determining whether any cost allocation methodologies or principles of that Methodology should or would limit the choice of approaches to the allocation of costs to non-core activities. BDR determined that there were no such limitations.

Discussions with the non-core Client Functions resulted in a list of the types of resources and services being shared. Staff then arranged interviews by conference call for BDR with knowledgeable representatives of each of the functional departments *providing services*. These interviewees provided BDR with descriptions of the exact nature of what was being provided, what resources were being used, and whether and how the level of usage or other measure of cost causation is now being tracked.

Following these interviews, BDR documented these findings for review with IESO staff for accuracy and completeness. BDR then made an assessment of the existing approaches with a focus on:

- (a) Consistency of the method with the cost causation approach to cost allocation;
- (b) Consistency of the method in terms of application across the non-core recipients;  
and
- (c) The quality of the data and/or data collection mechanisms supporting the existing allocation.

BDR documented its assessment and developed the recommendations included in this report.

### **3 ANALYSIS**

#### **3.1 *Selection of the Client Functions***

For purposes of this study, IESO staff identified non-core Client Functions that receive services from and/or share resources with the functions of the IESO performing activities supported by usage fees, which included:

- GreenON Fund (“GreenON” supported by the OCCSDC)
- Smart Metering Entity (“SME”), and
- Market Renewal Program (“Market Renewal”).

Of these, only the Market Renewal Program is supported by the IESO’s usage fees. However, it has been included as a client function for this study because it is a special program with dedicated staff, and the IESO, for purposes of internal management and review by the OEB, has committed to separately identify the costs associated with the program.

In order to provide a basis for determining whether the supporting fees are adequate to ensure that these functions are not subsidized by the usage fees, this study includes a review of the allocation of costs to these specific activities.

The following sections of this Report provide a description of each of these non-core client functions, and of the services they share with or receive from the resources of the IESO.

## **3.2 *Description of Client Functions and Services Received***

### **3.2.1 GreenON Programs**

GreenON programs are funded by the Province of Ontario through the OCCSDC from the proceeds of the province's cap and trade auctions. These programs are designed to reduce greenhouse gas emissions by providing incentives for residential and commercial building owners to install energy-saving technology and make improvements. The IESO's work in this area focused only on residential programs and included free installation of smart thermostats and rebates for smart thermostats, air-source heat pumps, ground-source heat pumps, insulation and windows.

Following the June 2018 provincial election and change of government, the IESO's GreenON programs have closed. However, free installation of smart thermostats will continue through August for appointments booked before the program close date. Rebates for measures installed by October 31, 2018 will be honoured, and rebates for smart thermostats may be submitted until July 31, 2018.

The IESO has two agreements with the OCCSDC to provide services to support GreenON: one to develop and maintain a GreenON website and provide call centre services, and secondly to design and implement GreenON residential programs. Each of these agreements has a unique code in the IESO's timekeeping system. Most staff providing a service to GreenON charge time to only one of these codes, so the time coding requirements are very clear. It should be noted that specific activities under these agreements have activity codes that are used for invoicing and billing purposes.

The call centre service provided for in the agreement to GreenON, along with other IESO programs (Save on Energy programs and the MicroFit program) with 18 call center staff dedicated to the GreenON programs, and another five to eight for the other programs. These staff members are employees of the call centre vendor and are located at the vendor's office. The resources that provide the service are therefore not shared IESO resources. The number of calls and emails for each of the various IESO programs are tracked by the vendor and invoiced to the IESO accordingly. Costs related to GreenON are therefore specifically identified and directly assigned to GreenON.

GreenON programs have been supported by a mix of dedicated full-time staff as well as IESO shared resources. IESO staff designed and managed the programs, using third-party vendors for program delivery. IESO staff time is captured by the IESO's timekeeping system while program vendors invoice the IESO for their program-specific

activities. In general, the IESO's GreenON team receives core services from the IESO on an as-needed basis.

The IESO shared services used by GreenON include:

- Conservation - evaluation, measurement and verification ("EM&V") of the various GreenON programs is currently on hold. Work in this area is managed by staff in the Conservation department who record their time using the IESO's timekeeping system. The actual EM&V was to be performed by a third-party vendor following a procurement process.
- Compliance - compliance activities for GreenON programs are currently on hold. Work in this area is managed by staff in the Conservation department who record their time using the IESO's timekeeping system. Compliance work/auditing was being performed by a third-party vendor who had been procured by the IESO prior to being put on hold. The vendor monitors all costs by individual program and provides the IESO with invoices for their services that are specific to each program.
- Legal - legal support for GreenON work was outsourced to an external law firm with oversight by a dedicated IESO staff lawyer. IESO legal staff time is charged to the project and the services of external legal counsel are tracked through invoices to the IESO. These costs are then invoiced by the IESO to the OCCSDC.
- Information Technology (IT) - IESO employees dedicated to the GreenON program are issued a standard laptop, leased by the IESO on the same basis as is done for employees in core functions, and loaded with a standard suite of software. IT also provides hardware and software support (help ticket service). Several staff members in the GreenON programs are also provided cell phones issued from the IT department. IT and office facility charges are recovered through an overhead charge using hourly rates.
- Finance - prepares budgets, and performs other tasks with the time charged directly to the program through the time and reporting system. Time is tracked and allocated to the program by Accounts Receivable in the creation of invoices to OCCSDC. Services are provided by Accounts Payable but the support time is minimal. The Accounts Payable department does not record time spent on processing invoices for specific functions.
- Procurement - procurement services are provided by IESO procurement staff whose time is tracked using the IESO's timekeeping system. Procurement services are minimal as the programs wind down.

### 3.2.2 Smart Metering Entity (“SME”)

The SME maintains and operates the province’s smart meter data repository that processes, stores and protects electricity consumption data used for consumer billing by Ontario’s local distribution companies (“LDCs”). The SME is physically located at a site that is separate from the majority of the IESO. The office space is rented, and the cost is identified and directly attributed to SME.

The SME utilizes the following IESO shared services:

- Regulatory - the regulatory department leads and manages the SME’s filings with the OEB, including fees applications, the annual cost report and license renewal. The regulatory department is also involved in the SME’s 3<sup>rd</sup> Party Access Initiative, which will provide other entities with access to data collected by the SME. The IESO timesheet system is used to track the time spent on SME. The IESO also allocates a portion of the costs it is assessed by the OEB to the SME.
- Information Technology (“IT”) - the IT department issues SME staff a standard laptop or desktop computer loaded with the standard suite of software and provides hardware and software support. Several staff in the SME department are also provided cell phones issued from the IT department. In addition to the standard suite of software, the SME also requires several dedicated hardware and software systems such as the Meter Data Management Repository (“MDM/R”) System, Service Now and Data Mart. These systems are provided and supported by third-party vendors. The capitalized and operating costs associated with these dedicated hardware and software systems are both identifiable in the IESO accounting systems and directly allocated to the SME program.
- Legal - the SME utilizes both internal and external legal counsel. Services include legal support related to procurements, agreements and contracts, and regulatory filings. Internal services are provided mainly by a designated individual but others may also provide services. The IESO timesheet system is used to track internal legal costs, and external legal council is tracked through invoices directly charged to SME.
- Communications - The SME communicates extensively to external stakeholders in the industry and specifically to the LDCs that receive its services. The communication department services are utilized for external communications such as webinars and the costs are charged directly to the SME function. The time for Communication staff is recorded in the IESO timesheet system.



- Finance - the Finance department prepares the SME financial statements required for the OEB. The IESO timesheet system tracks the level of effort provided by Finance department staff. The Finance department also provides Accounts Payable services but the support time is minimal. The Accounts Payable department does not record time spent on processing invoices for specific functions. At present, the SME's Accounts Receivable function consists of an OEB approved fee per smart meter per month to LDCs, which is invoiced monthly along with charges for the IESO's core services. Work to support the SME's charges to users is automated in the market settlement system.
- Procurement - the Procurement department issues Requests for Proposals ("RFP's") and Requests for Vendors of Record ("RVOR") on behalf of SME. The cost for the various RFP's and RVOR's are tracked and charged directly to SME using the IESO timesheet entry system. While most procurements are specific and directly charged to SME, there are situations where procurements and the associated costs are shared. The Procurement department also provides office supplies. Certain services are provided by pre-selected Vendors of Record. Costs of those processes for services specific to the SME are identified.

### **3.2.3 Market Renewal Program ( "Market Renewal" or "MRP")**

The MRP includes several initiatives designed to improve the way electricity is priced, scheduled and acquired to improve reliability, efficiency and transparency. The costs for this program are expected to be significant and are tracked separately to other IESO business activities.

The program is staffed by existing IESO employees, external resources and consultants. IESO staff members are rotated into the project on a full-time basis if more that 75% of their time is needed on the project. There are IESO staff roles that support the program from outside of the MRP resource pool and they charge their time to the program accordingly. The IESO timesheet system is used to track the time spent on MRP. External resources are either hired as fulltime employees or on a contract basis for temporary positions. Full time employees (e.g. project managers) will be re-assigned once the program ends. Consultants are also being utilized and are directly invoiced to the project.

The MRP department operates from an office location that is separate from most other IESO departments. Office equipment has also been purchased specifically for this project.

MRP utilizes IESO shared services from the following departments:

**BDR**

- Human Resources (HR) - The Market Renewal Program had significant support needs from the recruitment department during program startup and agreed to pay for an additional contract staff to help with resourcing. The additional contract staff has been used in the initial staffing phase of the program. Any additional recruitment support will be provided through the same recruitment process as the rest of the organization, without allocated cost to the program.
- Information Technology (IT) - standard issue laptop or desktop computers and software were purchased by the program and issued to each employee. The implementation stage of MRP will require the procurement of new systems or modifying existing systems to run the electricity markets. The incremental implementation costs will be captured within the program. Once the systems are in place operating costs will be considered business as usual and will be funded by the core IESO.
- Legal - external council is directly charged to program. Internal legal resources support the MRP group and all time is charged to the program through the time and reporting system.
- Communications - stakeholder engagement is critical to the future success of the MRP. Communication costs have been incurred for facilities rental and catering which have been directly charged to the MRP program. IESO Communications staff does charge time to MRP.
- Finance - prepares budgets, and performs other tasks with the time charged directly to the program through the time and reporting system.
- Procurement - bound by rules for government procurements and the costs are tracked by the requesting department. Consultants engaged for MRP are sourced and contracted by the IESO procurement group. IESO procurement staff charges their time for large procurement projects.

### **3.3 *Services Provided by Function***

#### **3.3.1 Services Overview**

The most important shared resource provided by the IESO to its non-core client functions is the time and expertise of staff. Services to these clients are provided by a combination of fully-dedicated IESO staff, and IESO staff whose time is shared between the IESO's core functions and the client functions.

All IESO staff up to the level of Manager, but excluding Managers that are directly assigned to a function, enter their time use into a system, coded by program, project or department to which the time is being dedicated. This means that, with certain exceptions documented in this report, the time of individuals spent on the client functions by employees other than those who are fully-dedicated is recorded and identified. The system allows all payroll related costs, including regular and overtime pay, benefits, etc. to be fully accounted for by activity.

In this situation, where the cost causation variable is employee time, a full record identifying the employee's time use is the ideal basis for the allocation of the cost. In BDR's experience and opinion therefore, the IESO has in place all that it needs to support the allocation of these costs.

For example, a specialist in some other department may be called on to assist the non-core client dedicated team in performing a specific study. In this case, the specialist codes the time spent to the code for that specific work, so that the cost can be allocated to the non-core client function. IESO staff using the system, and in the Payroll area responsible for administering the system, confirmed to BDR that this system is well developed and is being used as intended.

The main part of the review documented in this report therefore addresses two further components of the costs of services provided to the non-core clients:

- (a) Costs of employee-provided services that are not time-coded directly to the clients; and
- (b) Costs of shared resources other than employee time.

### **3.3.2 IESO's Timekeeping System**

The IESO's timekeeping system keeps track of staff time on an hourly basis. Effort is taken to ensure that time is allocated to project work and for IESO functions that are funded outside of the IESO usage fee. Management time is tracked to specific programs if they are designated resources. Executive time is focused on strategy and guidance and their time is not allocated to any specific programs.

As part of the timekeeping process, compensation costs related to staff benefits and pension are allocated based on hours charged to specific programs and functions. This ensures that the full compensation cost of an employee is being compensated by the funding source of that activity.

### **3.3.3 Human Resources ("HR")**

For recruitment, the related staff group has 3 permanent and 2 contract full time resources, but will also use the services of agencies for external recruitments.

Cost of external recruitment services is a line item on the HR budget, and the costs are currently not charged back to the department for which the recruitment is made. Time worked by internal staff for business-as-usual recruitment (whether for replacement staff or new positions) is not coded to the department for which the recruitment occurs.

GreenON and the Market Renewal Program required the addition of dedicated staff. For GreenON, the IESO staff time related to the recruitments was considered incremental to ordinary business needs, and therefore received a code in the time system. The Market Renewal Program had significant support needs from the recruitment department during program startup and agreed to pay for an additional contract staff to help with resourcing. The additional contract staff has been used in the initial staffing phase of the program. Any additional recruitment support will be provided through the same recruitment process as the rest of the organization, without allocated cost to the program.

The training function at the IESO can be split into 2 categories; (1) corporate training offered by the HR learning & development function; and (2) Employee requested training.

Corporate training offered by HR is to develop core IESO competencies as well as targeting management to develop management and leadership competencies. These training programs are funded from the learning and development budget and no costs are allocated back to the business.

Employee requested training is usually functionally or technically specific to the work that the employee does. These costs are approved and paid for by the requesting employee's home department.

BDR was advised that any other HR functions are treated as corporate programs, with value that cannot be directly identified with work functions or programs and provides a shared value to all.

### **3.3.4 Information Technology**

#### **(a) Workstation Hardware**

Each employee throughout the IESO receives a desktop or laptop computer as determined by the user department management. It is the general practice of the IESO that workstation hardware is leased; however, a decision was made to purchase outright computers for staff in the MRP, and to charge the purchase costs directly to MRP.

(b) Workstation Software

Workstation hardware is provided to users loaded with a standard suite of software that includes MS Office™, management and security software and some open source tools. Specialized software tools are also provided subject to request and approval, relevant to the work duties of any individual. Specialized software, such as project management or design tools, are therefore on the computers of some employees but not others.

Desktop software is procured on the basis of an annual fee. This applies to the computers purchased for the MRP, as well as to all leased computers.

(c) Corporate Systems

The IESO maintains certain central systems that are accessed by employees from their work stations through a link. Examples are the corporate financial system, human resources information system, and payroll system.

BDR notes that hardware and software associated with the IESO's control centre is considered as a core resource, and no part of these costs is allocated to the client functions.

**3.3.5 Finance**

(a) Payroll

- The IESO's Corporate Controller confirmed that the cost of payroll administration is the same for all employees.
- BDR considers the cost causation driver for payroll to be number of employees, and therefore recommends that the costs of the payroll function, including related systems and external services if any, be allocated per employee and to the clients by employee time.

(b) Accounts Receivable

- GreenON - the finance department charges staff time to the creation of invoices to the OCCSDC.
- SME - the accounts receivable from LDCs for the SME are added to the usage fee invoice that the IESO issues to all LDCs. The amount is fixed each month and the invoices are generated automatically through the market invoice process.
- Market Renewal - This function is funded by the IESO usage fees, and thus has no separate accounts receivable.

(c) Accounts Payable

- GreenON - the IESO processes payables for work contracted out in respect of the services that IESO provides. No charge is made to GreenON related to this, and the time is not tracked.
- SME - activity related to accounts payable is minimal, and time is not tracked.
- Market Renewal - activity related to accounts payable is minimal, and time is not tracked.

(d) Procurement

- GreenON - The IESO handles competitive procurements related to the services provided by the IESO to GreenON. Time is coded by procurement staff to these activities.
- SME - costs have been tracked and charges made only in respect of a large and complex procurement, not in the ordinary course of business.
- Market Renewal - costs have been tracked and charges made only in respect of a large and complex procurement, not in the ordinary course of business.

### 3.3.6 Legal

Internal legal time is charged to clients by time code. Invoices for external legal services are recorded directly to the client function.

### 3.3.7 Buildings and Facilities

The GreenON function operates from the IESO's rented facility in Toronto. A portion of the rent for this facility is allocated to the overhead rates in the charge out rate of the IESO to GreenON.

The SME and Market Renewal occupy a separately leased facility and are directly assigned that cost for its operations.

### 3.3.8 Regulatory Affairs

The regulatory affairs department leads and manages the SME's filings with the OEB, including the proposed expenditures, revenue requirement and fees applications, the annual cost report and the license renewal. The regulatory department is also involved in the SME's 3<sup>rd</sup> Party Access Initiative which will provide other entities with access to data collected by the SME. The IESO timesheet system is used to track the time spent on SME. The IESO also allocates a portion of the costs it is assessed by the OEB to the SME.

Report on Methodology for the  
Allocation of Shared Costs  
To Certain Identified Activities  
Page 18

**3.4 Summary of Services Used and Allocation Approach by Client Function**

The following table summarizes the services or resources used and the allocation approach applied to each Client Function.

**Part A – Time-Based Resources**

	Smart Meter Entity	GreenON	Market Renewal Program
<b>TIME SPENT, RECORDED BY TIME TRACKING SYSTEM</b>			
<b>Dedicated Complement of Client Functions</b>			
(a) Time Coded to Client Function	Time Spent (see note)		
(b) Time Coded to Core	If any, not included in allocation		
<b>Shared Staff in Other Accounting Units</b>			
(a) Time of Specialists Outside Client Departments	Time Spent (see note)		
(b) Time in Specified Supporting Departments			
(i) Human Resources			
Recruitment	Not Included	Time Spent (see note) for Start-Up Recruitments	Staff time not included; cost for additional contract resource to help with recruitment demand is being expensed to MRP.
Training, Employee Requested	Costs Directly Charged to Home Department		
Training, Corporate	Not Allocated		
Corporate-wide HR Programs other than Training	Not Allocated		
(ii) Information and Communications Technology			
Provision of workstation hardware, software and corporate system access at workstations (administrative)	Not Allocated		
User problem response ("help desk")	Not Allocated		
Support for corporate systems	Not Allocated		
(iii) Finance and Administration			
Accounts Payable	Negligible, not tracked		
Accounts Receivable	Negligible, not tracked	Time Spent (see note)	Not Applicable
Payroll	Not Allocated		
Preparation of Financial Statements and Budgets	Time Spent (see note)		
Procurement	Large Procurements - Time Spent (see note) Small Procurements Not Tracked or Allocated		
(iv) Communications	Time Spent (see note)		
<b>TIME SPENT, NOT TRACKED</b>			
Senior Management (excluded from time reporting system)	Not Allocated		
Board of Directors	Not Allocated		

*Note: All charges for time spent are at a rate that includes salary and "burden" (cost of benefits and pension).*

**Part B – Other Resources**

			Smart Meter Entity	GreenON	Market Renewal Program
<b>RESOURCES OTHER THAN TIME</b>					
		Workstation hardware and related peripherals (leased)	Lease cost specifically identified and charged	Lease cost specifically identified and charged	Purchased for program and direct charged
		Workstation software (by license)	Lease cost specifically identified and charged	Lease cost specifically identified and charged	Purchased for program and direct charged
		Corporate software	Not Allocated		
		Special Purpose Software	Directly Assigned		
		Office Space, Leased Premises	Separate facility, directly assigned	Rent assigned by FTE basis	Separate facility, directly assigned
		Furniture and equipment	Purchase cost expensed to function		
		Cost of capital on allocated fixed assets	Relevant to Directly Assigned Assets Only		
<b>THIRD PARTY COSTS</b>					
		Externally Procured Goods and Services	Directly assigned		
		OEB Costs	Allocated based on relative revenue	Not Applicable	Not Applicable

**4 CONCLUSIONS AND RECOMMENDATIONS**

**4.1 *General Conclusions as to Differences in Approach Taken for Different Client Functions***

This section addresses the considerations pertaining to the nature and mandate of each of the client functions in determining the related costs, and the effect of the relationship of the client function to the IESO’s core business on the choices the IESO has made in the allocation of costs. Because each client function is unique in terms of the IESO’s mandate in performing the function, different decisions have been made as to the appropriate costs to be allocated to them and the methodology for allocation. These considerations were raised in discussion with IESO staff, and inform the recommendations in this report.

**4.1.1 GreenON**

The IESO’s relationship with GreenON was defined under specific agreements with the OCCSDC. Most of the services are provided using both dedicated and shared staff, for whom time-related costs are determined by time tracking, and also by vendors whose costs are directly assigned. At start-up, the costs of recruitment of staff for GreenON were considered incremental to the IESO’s ordinary business needs, and therefore



received a code in the time system. IESO employees dedicated to the GreenON program are issued a standard laptop, leased by the IESO on the same basis as is done for employees in core functions.

Charges from the IESO to GreenON are made on the basis of the hours coded to staff in the time system. When the IESO commenced provision of services to GreenON, a charge-out rate was determined, taking into account the burdened hourly compensation of internal staff<sup>5</sup> and an estimate of the associated costs of software licenses, corporate systems, office rent and office equipment. The rate does not include any provision for the services of HR, payroll, and routine IT support. The time of HR staff associated with recruitment for start-up of GreenON was charged to the program as time worked through the time reporting system, and not included in the charge-out rate.

Direct costs invoiced by vendors are invoiced on a pass-through basis and are not included in the hourly charge-out rate.

***On this basis, BDR concludes that except for the costs of on-going HR, payroll, and routine IT, which are minor in comparison to the total costs, the IESO's costs to provide services to GreenON are being recovered on an approximate basis by the fee structure. As mentioned previously, agreements exist that address the service relationship and fee arrangement between the IESO and GreenON.***

***Therefore, in view of the fact that GreenON's activity is being phased out over the next few months, BDR considers it reasonable that no change be made in current practice with respect to GreenON.***

#### **4.1.2 Smart Meter Entity**

At the present time, cost is not allocated to SME for supporting services such as Human Resources, IT, or Finance that are not clearly identifiable and incremental.

Unlike the other non-core functions, the SME is allocated an interest cost for its net capital.

***In BDR's view, the incremental cost approach taken for SME is not appropriate. The approach has the result of overstating the costs of the IESO's core functions and understating the costs of the SME functions.***

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<sup>5</sup> Salary, benefits and pension costs.

*Instead, the SME should be responsible for its fully-allocated costs. Specifically, the SME should receive appropriate allocations of supporting costs, including HR, IT and Payroll. Since staff time in these functions is not coded by the time system to client functions, a non-time-based allocator, such as the FTE method explained in Section 4.2 should be used.*

#### **4.1.3 Market Renewal**

An incremental approach has been taken to allocation of costs to Market Renewal, including not allocating certain support costs. In addition, exceptions have been made to costing practice by purchasing outright computers and software for this function and charging it directly, rather than providing these resources on a shared corporate basis. The result is that allocations to Market Renewal deviate from a fully-allocated cost approach.

In discussions with IESO staff, BDR has clarified that Market Renewal is funded through the IESO's usage fees, and that therefore the allocation of costs to it do not affect how the IESO's costs are recovered from consumers. Allocations are being made primarily so that the costs of the program can be tracked for management and decision-making purposes.

*In BDR's view, the approach taken supports the purpose of the allocation and is therefore justified on that basis.*

## **4.2 Conclusions and Recommendations as to Specific Cost Elements**

### **4.2.1 General Principle**

In this section, BDR has evaluated the approach used to allocate specific types of costs, using as a standard principles of cost allocation which are widely accepted for regulated entities. Specifically, these principles require that the allocation approach be rooted in cost causation. For example, costs of postage are caused by the volume of mail sent, and costs of vehicle fuel are caused by distance driven. Where the causation relationship is not as clear as in these examples, the allocation can be based on indirect causal relationships, identified by judgment. An example of this might be the cost of computer workstation hardware and software, which is a fixed cost per workstation, and for which the need might be driven by multiple projects and uses.

In its evaluation of the methods used by the IESO, BDR has considered approaches used by utilities and accepted by stakeholders in Ontario and Québec to allocate the costs of shared resources between a core (regulated) activity and non-core activities, which may take place either within the regulated business or in an affiliate corporation.

#### 4.2.2 Coded Time (Other than Senior Management)

For all staff working in directly identified activities supporting a client function, whether the staff are dedicated to the function and within the function as a “home department”, or whether they are staff of other departments responding to support requests, time is coded to the non-core client function (or to a specific project of the non-core client function) by the employees using the IESO’s timesheets system.

Clearly the causal factor for costs of salaries and burden is time worked by the employees. While alternative methods, including estimation and also indirect allocations, are used in the absence of good data, the data on time spent from a compulsory recording-keeping system applicable to all activities of all employees is the best possible basis for allocation of compensation costs. Such data is available for all but the most senior management level of the IESO. BDR was assured that the data is complete and the level of accuracy of reporting is very high.

The quality of data for employee time is of the highest importance in this case, since time is the major resource shared between the IESO core functions and the client functions.

***BDR concludes that direct time to the non-core client functions is allocated by the IESO in accordance with accepted principles of cost allocation, and that the methodology makes use of high quality data.***

***Costs of time include the costs of salary and “burden”, which means benefits and pension costs. This is an appropriate treatment of these costs, since all are causally related to time spent.***

#### 4.2.3 Management Time

BDR was advised by IESO staff that time at the Manager level is assigned to a function to the degree that the Manager is dedicated to that function and works directly on the relevant tasks for separate cost recovery.

The time of senior management and Board of Directors is not coded through the time system, and is not recovered in the client functions through any type of allocation (i.e., all of the costs are recovered through usage fees).

BDR was advised that the justification for this approach is that senior management and the Board of Directors would not typically have any direct involvement in the client functions.

BDR accepts the IESO staff’s information that senior decision-makers spend little or no time on activities that could be directly identified with the client functions. Furthermore,

BDR appreciates the difficulties entailed in maintaining function-related time records for senior decision-makers. BDR's experience in similar assignments has shown that senior decision-makers change from one activity to another as often as every several minutes, which would make their time use difficult to track, even if their time did include directly identifiable involvement with the client functions. Typically senior decision-makers perform tasks that provide value on a shared basis to all the activities of the business.

***BDR believes that senior decision-makers represent a cost, and provide value to all business activities, and that therefore some component of such costs are appropriately included in the fully allocated costs of those activities.***

Therefore, in corporate cost allocation studies previously performed (for distribution utilities with significant non-core or affiliate business activities), BDR worked with the utility staff to identify a reasonable way to include those costs. In some of BDR's previous studies, senior management were able to estimate time spent providing value to non-core or affiliate activities, for use as the basis of an allocation, with the relative allocation of executive time being applied also to the Board of Directors. It does not appear that such an estimate is available for the IESO.

In that case, a possible approach is to make an allocation based on a measure of the relative activity level in core and non-core functions, based on the assumption that the business activity is a driver of cost, and therefore an appropriate allocator of any cost supporting the activity. Possible relative activity estimates, which would be available without additional research or analysis, would be total relative other cost inputs or relative allocated staff time (direct and indirect).

***Such an allocation, if adopted by the IESO, could reasonably be applied to Market Renewal and the SME. Given that GreenON is being phased out, BDR does not recommend that a similar allocation be applied to GreenON.***

#### **4.2.4 Human Resources Support**

Time of the HR staff is not coded to specific non-core client functions, and therefore cannot be identified as being directly causally related. Each employee over the course of his or her career with IESO receives services for recruitment, termination, and the administration and delivery of various corporate programs. While the needs of specific employees and functions for these services vary over time, the capability exists for use when needed, and is sized to serve the whole organization. Since employees may move from one function to another within the IESO over their careers, it would not be appropriate to treat any individual's one-time use of a HR service as being caused by the employee's department or function at the time.

As a result, a widely used approach to the allocation of HR services is to base the allocation on the direct FTEs (“full time equivalent”) level of staffing used by the client function. The method is simple, and does not require any data that is not collected in the ordinary course of business. . The non-core functions either do not receive an allocation, or are charged only for identified incremental activities.

***BDR recommends that the IESO adopt this methodology in the case of the other non-core client functions when and as a move is made to a fully-allocated cost approach. Given that GreenON is being phased out, BDR does not recommend that a similar allocation be applied to GreenON.***

#### **4.2.5 Information Technology**

##### **4.2.5.1 Staff Time**

Except for work related to special purpose software projects and time-coded to such projects, staff IT time is considered a corporate resource in the same manner as HR, and is coded to the core function.

Time coded to the core function includes:

- Work on special projects or systems that may or may not have value to non-core functions; and
- Work of making available and supporting workstation hardware and software and certain corporate systems that are available to and used by all employees.

***BDR recommends that the activities of IT staff be reviewed to identify core projects that do not provide benefit to non-core functions, so that the estimated hours associated with these can be excluded from a general allocation to non-core functions.***

For activities in support of hardware, software and systems used by all employees, a widely used approach is to base the allocation on direct FTEs (level of staffing). This reflects the fact that while the requirements of a specific employee for support may vary over time, the capacity of this function is used by all employees over time as they work, and overall costs are determined by the combined needs of all staff.

The method is simple, and does not require any data that is not collected in the ordinary course of business. This is the approach applied by the IESO in its charge-out rates to GreenON. At present, the other non-core functions either do not receive an allocation, or are charged only for identified incremental activities.

***BDR considers that the FTE approach is consistent with accepted principles of cost allocation when applied to the cost of services that support every employee, and is appropriately applied in the case of GreenON. BDR recommends that the IESO adopt this methodology in the case of the non-core client functions when and as a move is made to a fully-allocated cost approach.***

#### **4.2.5.2 Workstation Hardware and Software**

These costs consist of annual licensing fees for software and in the cases of GreenON and the SME, lease costs for equipment.

For the SME, actual cost of assigned workstation equipment is charged to the function, but no allocation is made for software or shared corporate resources. For GreenON, the hourly charge-out rate includes an estimate of the associated costs.

***BDR recommends that the FTE approach be used for software for the SME, as and when the IESO moves to a fully-allocated approach in this client function. Continuation of the current process of charges for specifically identified workstation hardware is consistent with the accepted principles of cost allocation (essentially a direct assignment); however an FTE approach would also be acceptable in BDR's opinion, if the IESO chose to adopt this practice for all non-core functions.***

***BDR considers the current approach acceptable for the remaining duration of GreenON.***

For Market Renewal, workstation equipment was purchased outright for the program and directly charged.

***Having already incurred purchase costs, Market Renewal should not have to absorb annualized costs.***

***Recognizing that Market Renewal has funded its workstations directly, BDR recommends that in applying an FTE factor for allocation to other non-core functions, FTEs for Market Renewal are appropriately excluded in the denominator.***

#### **4.2.5.3 Corporate Systems**

Corporate Systems include the systems that support management, administration and reporting throughout the organization and include the financial and accounting systems, the human resources information system (HRIS), payroll system, etc.

*In order to ensure a consistent allocation approach for these costs, which are now not allocated to non-core functions, BDR recommends that the costs of each system be assigned for allocation purposes to the organizational department supported by the system: the financial system to the Finance department, the HRIS to the HR department, etc. Each of the related system costs would then be allocated to non-core functions using the same methodology recommended for the other costs of the related organizational department.*

#### **4.2.6 Finance and Administration**

##### **4.2.6.1 Accounts Payable**

IESO staff in this function process invoices related to GreenON, SME and Market Renewal, which are very small in number in comparison to the rest of the core IESO.

IESO staff advised BDR that the time spent is negligible; therefore this can be considered a time-based allocation, with time spent estimated at zero.

*BDR therefore considers that the client functions receive a time-based allocation of costs. Since time is the causal variable and the time spent is negligible, BDR considers that the methodologies used are consistent with accepted principles of cost allocation.*

##### **4.2.6.2 Accounts Receivable**

IESO staff in this function invoice users on behalf of each of the non-core client functions, as needed.

In the case of SME the invoicing is automated through the market invoicing system. No allocation of cost is currently being made for this function.

*Since the process is automated and requires no identifiable activity, BDR considers it reasonable at this time to exclude Accounts Receivable from an allocation of costs to the SME.*

Market Renewal is funded by the IESO usage fee, and does not have independent receivables.

The IESO staff that prepares the invoices in respect of the GreenON program record their time within the time reporting system, which is recovered from through the GreenON charge out rate.

*BDR therefore considers that GreenON receives a time-based allocation of cost which is consistent with cost allocation methodologies.*

#### 4.2.6.3 Payroll

BDR confirmed with IESO staff that payroll resources have capacity to serve the entire organization, and that there is no difference in the effort or cost associated with payroll for different employees.

*In BDR's view, this cost is causally related to the number of employees. The use of an FTE allocation as contrasted with staff complement in the client function would permit the numerator to consist of fully assigned employees in the non-core function plus the aggregate shared FTEs of any employees in other functions who charge time to the non-core function. BDR considers this a desirable refinement to the methodology if it can be done without significant data collection and analysis.*

*BDR recommends that an FTE approach be used for non-core functions, as and when the IESO moves to a fully allocated approach.*

#### 4.2.6.4 Procurement

In all functions, Procurement staff record time if a large and significant work effort is required. For routine procurements of shared supplies, no time is recorded and no allocations are made.

In BDR's experience, a staff with a large volume and changing mix of procurements, most of which are for supplies shared across the organization, would be unlikely to be able to estimate the value of its shared time to individual functions. In our prior studies, procurement has been variously allocated using value of supplies procured, number of purchase orders, etc. as proxies, but supplies and purchase orders can be as difficult to identify with a client function as time, given that so much of what is procured is for shared use.

*BDR therefore considers that the identification and direct charging of large procurements is a reasonable approach under the circumstances. To support full costing, in the absence of any usable causation-based allocator, an FTE allocation would be appropriate for the cost of small procurements on the assumption that all employees use a relatively equal share of the supplies being procured, or an allocator could be developed based on management judgment.*

#### 4.2.7 Communications and Stakeholder Engagement

Of the non-core client functions, Market Renewal and SME make significant use of the Communications function as a resource, and are charged for this on a time code basis.



***BDR recommends that use of Communications resources be reviewed from time to time to ensure that a zero cost allocation remains appropriate.***

#### **4.2.8 Office Facilities, Furniture and Equipment**

SME and Market Renewal occupy facilities separate from those occupied by the IESO's core staff, and the costs are directly assigned to the SME and Market Renewal. In the case of GreenON, an allocation of office space cost is made as part of the fees charged.

***BDR considers direct assignment to be consistent with accepted principles of cost allocation.***

An FTE allocation as used for GreenON reflects an assumption that total space requirements are caused by the number of employees. ***Therefore BDR considers this approach to reflect cost causation, and to be consistent with accepted principles of cost allocation.***

In the case of office furniture and equipment, the cost is expensed directly to the function when purchased.

***BDR considers this treatment to be a direct assignment, and therefore consistent with accepted principles of cost allocation.***

#### **4.2.9 OEB Costs**

OEB costs are relevant only to the regulated business units, which are the IESO core activity and SME. The OEB's charges to the IESO do not separate charges incurred on behalf of IESO core activities and those incurred with respect to the SME. The IESO has no direct information as to the resources used by the OEB in its various regulatory activities.

For this allocation, therefore, the IESO must use some proxy or judgment-based factor, and the IESO has chosen relative revenues.

***BDR considers that, in the absence of better information as to the relative complexity and level of effort associated with regulation of the two entities, relative revenues represents a reasonable factor for the allocation.***

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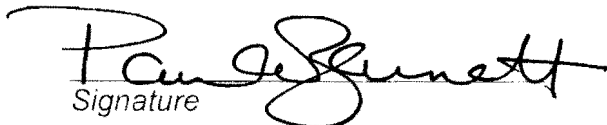
**FORM A**

Proceeding: ... **EB-2018-0143** .....

**ACKNOWLEDGMENT OF EXPERT'S DUTY**

1. My name is ...**Paula Zarnett**...*(name)*. I live at ...**Toronto**... *(city)*. in the ...**Province**...*(province/state)* of ...**Ontario**.....
2. I have been engaged by or on behalf of the **Independent Electricity System Operator** (name of party/parties) to provide evidence in relation to the above-noted proceeding before the Ontario Energy Board.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
  - (a) to provide opinion evidence that is fair, objective and non-partisan;
  - (b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
  - (c) to provide such additional assistance as the Board may reasonably require, to determine a matter in issue.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date ....**July 16, 2018**....

  
Signature

**PAULA ZARNETT**

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Paula Zarnett has more than 30 years broadly based experience specializing in regulatory compliance, regulated tariffs and pricing issues for electricity and gas utilities. She has been responsible for design and implementation of a wide variety of innovative rates including time of use, both for large industrial and for residential customers, curtailment incentives, and special rates for retention of water heating loads. She has performed cost allocation studies for utilities serving customers with electricity, natural gas and steam, including a one-year, cross-functional study for a major electric distribution utility.

Following a series of rate and cost allocation specialist positions in both the electricity and natural gas sectors, she was promoted to the position of Manager of Marketing and Energy Management at Toronto Hydro, the electric distribution utility serving Toronto, Canada. There, her responsibilities included all rate and regulatory issues, customer research including load research and forecasting, and customer program design with a focus on conservation and demand management.

In her consulting practice, Paula provides a variety of advisory and analytical services to clients facing the challenges of both traditional and restructured energy markets, with a focus on issues impacted by regulatory policy and process. Her work includes business case and project feasibility analysis, cost allocations and pricing designs, energy sector mergers and acquisitions, and expert testimony before regulators. She is a skilled hands-on analyst and facilitator of cross-functional project teams. She was an instructor in Cost Allocation and Rate Design at CAMPUT's Energy Regulation Course, 2006, 2007 and 2008, and in 2014 delivered a two-day seminar on these subjects to the New Brunswick Energy and Utilities Board. She has been accepted as an expert witness in cost allocation in New Brunswick, Québec and Ontario.

She has performed assignments for clients in North America, China, Ghana, and Barbados.

**SELECTED EXPERIENCE BY SUBJECT AREA**

(INCLUDES PROJECTS UNDERTAKEN AS A CONSULTANT, AND IN THE COURSE OF RESPONSIBILITIES WITHIN ORGANIZATIONS)

*Shared and Corporate Cost Allocation*

**Gazifère** – study to allocate shared costs between regulated and unregulated businesses (to Régie de l'Énergie, jointly with Elenchus)

**Greater Sudbury Hydro** – study to allocate costs of services purchased from affiliate (OEB)

**Bluewater Power** – study to allocate costs of services provided to and purchased from affiliates (OEB)

**Kingston Hydro** – study to review transfer pricing methodologies and allocation of shared costs for services provided by non-regulated affiliates. (OEB)

**FortisOntario** – Five studies to allocate corporate and shared costs among regulated and non-regulated affiliates (OEB)

**EnWin Utilities** – study to allocate corporate and shared costs among corporate affiliates (OEB)

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**Oakville Hydro Electricity Distribution Inc.** – study to allocate shared corporate costs and the costs of services provided to and by unregulated affiliates.

*Rate Designs and Pricing Studies*

**Municipal Utilities of New Brunswick** – advised the municipal utilities and participated on their behalf in stakeholder sessions related to a rate design approval application by New Brunswick Power (Matter 357)

**Canadian Federation of Independent Business** -- Advised and represented CFIB in stakeholder processes of the Ontario Energy Board to design electricity distribution rates applicable to all sizes of non-residential metered customers

**Saint John Energy** – comprehensive recommendations to re-align rates to customer classes based on results of cost allocation study

**IGPC Ethanol Inc.** – supported the intervention of this industrial consumer in the rate application of its gas supplier, Natural Resource Gas

**Rogers Cable and Communications Inc.** – representation at Ontario Energy Board staff consultation process with regard to rate designs for Ontario's electric distribution utilities; development of policy and position documents, attendance at stakeholder meetings, analysis in support of positions on rate design for General Service classification and unmetered scattered loads; distribution cost allocation stakeholder process and 2006 distribution rate handbook.

**City of Markham (Ontario)** – recommendations for restructuring water and wastewater rates

**Oklahoma Gas and Electric** – review of results of residential time of use rate pilot including estimation of impact of the rate design on total customer consumption and peak hour consumption (load shifting).

**Summerside Electric/City of Summerside** – advisory and analysis service with regard to proposals of Maritime Electric for an Open Access Transmission Tariff.

**Nova Scotia Department of Energy** – advisory and analysis services to support intervention in Nova Scotia Power's request to the regulator for approval of a fuel adjustment mechanism.

**BC Hydro** – assisted a staff team in development of a Phase I report on long-term rate strategy; research on rate designs in several North American jurisdictions.

**Energy East (RGE and NYSEG)** – analysis as to the potential value of load shifting which might take place as result of rate-driven (time of use or critical peak pricing) programs supported by universal interval metering in the State of New York; regulatory precedents as to cost recovery for advanced metering and meter reading technology

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**East China Grid Company** – advice in developing and simulating an unbundled electricity distribution tariff for Shanghai Municipal and four provincial electric power companies

**British Columbia Ministry of Energy and Mines** – advisory and due diligence services with regard to recommendations by the British Columbia Utilities Commission for implementation of proposed Heritage Contract and stepped rates to wholesale and industrial customers.

**Perth-Andover Electric Light Commission** – long-term rate strategy and detailed bundled retail rate designs for all electricity consumer classifications.

**Volta River Authority (Ghana)** – development of tariff structure and preliminary rates for open access use of the national electric transmission system in Ghana.

**Enwave District Energy Limited** – determination of appropriate customer classification and pricing design alternatives for a district steam system in a context of competitive electricity and gas markets and wider service choices for existing and potential customers.

**Toronto Hydro** – development and initial implementation of time of use rates for residential and large industrial customers; development of pricing strategies and policies for all customer classes.

**Toronto Hydro** – development of all customer rate designs, implementation strategy, and preparation of annual submissions for approval of the rates. Managed a team of specialists in the preparation of associated detailed studies, load forecasts and load research.

**ICG Utilities** – coordinated preparation of applications, supporting materials, and other aspects of regulatory process for regional gas utility managements, as member of a head office specialist team; provided expert technical services in rate design, cost allocation, and working capital allowance determination (lead-lag)

*Testimony before Regulators*

**ORAL:**

**Gazifère** – study to allocate shared costs between regulated and unregulated businesses (to Régie de l’Energie, jointly with Elenchus)

**Toronto Hydro-Electric System** – Testified before the Ontario Energy Board in support of the allocated costs of service to customers that are individually metered suites in multi-unit residential buildings.

**Saint John Energy** – Testified before the New Brunswick Public Utilities Board in support of intervention in the Cost Allocation and Rate Design application of New Brunswick Power Distribution and Customer Service Corp.

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**Rogers Cable and Communication Inc.** – Testified before Ontario Energy Board in support of consensus for treatment of certain unmetered electricity loads in the development of guidelines for electricity distribution rates.

**ICG Utilities** testified in three hearings before British Columbia regulator on the subject of lead-lag studies.

**WRITTEN ONLY:**

**Essex Power, Bluewater Power and Niagara-on-the-Lake Hydro** – expert testimony in support of intervention in the application to the Ontario Energy Board for approval of an acquisition by Hydro One Networks Inc. of Norfolk Power

**Greater Sudbury Hydro** – study to allocate costs of services purchased from affiliate (OEB)

**Bluewater Power** – study to allocate costs of services provided to and purchased from affiliates (OEB)

**Kingston Hydro** – study to review transfer pricing methodologies and allocation of shared costs for services provided by non-regulated affiliates. (OEB)

**FortisOntario** – Five studies to allocate corporate and shared costs among regulated and non-regulated affiliates (OEB)

**EnWin Utilities** – study to allocate corporate and shared costs among corporate affiliates (OEB)

**Ontario Power Authority** – model development and analysis in support of evaluation of a potential generation, transmission and demand response alternatives in York Region; report in support of generation alternative to the Ontario Energy Board.

*Customer Class Cost Allocation  
and Load Research*

**Municipal Utilities of New Brunswick** – advised the municipal utilities in their intervention in the application to NBEUB of NB Power, for approval of cost allocation methodology; assignment includes participation at preliminary stakeholder meetings on methodology; review and analysis of all filed material, assistance in development of interrogatories, advice on position and strategy for the intervention, work with legal counsel in developing cross examination of applicant and intervenor witnesses. (Matter 271)

Also supported interventions by the municipal utilities, specifically related to issues of cost allocation, in NB Power's General Rate Application Matters 272, 336 and Matter 375 (current)

Also advised the municipal utilities in cost allocation and rate design hearings at NBEUB in 2005 and 2007; testified on their behalf before NBEUB on cost allocation in 2005.

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**Electricity Distributors Association** – advice, analysis, and representation at stakeholder processes with regard to proposed allocation by Hydro One Transmission of costs related to proposed new transmission facilities in southwestern Ontario

**New Brunswick Energy and Utilities Board** – prepared and presented a two day seminar on customer class cost allocation and selected rate design issues.

**Rogers Cable and Communications Inc.** – represented this consumer stakeholder in a regulator-driven process to resolve issues in regulator-mandated methodology for the allocation of costs to street lighting and other unmetered loads

**Toronto Hydro-Electric System** – Study to allocate the cost of service to customers that are individually metered suites in multi-unit residential buildings.

**Rogers Cable and Communications Inc.** – represented a consumer stakeholder in a regulator-sponsored stakeholder process to determine a cost allocation methodology and analysis approach for information filings by all electric distribution utilities in Ontario.

**Perth-Andover Electric Light Commission** – study to allocate the bundled costs of electricity service to customer classes and assess the impacts on cost allocation of changes to the wholesale rate structure.

**Saint John Energy** – three (3) studies to allocate the bundled costs of electricity service to customer classes; one of these studies included analysis of metered system load profiles and publicly available typical customer profiles to develop demand allocation factors (third study including load research data analysis completed 2015).

**Enwave District Energy Limited** – study to allocate costs of service for a district steam system as a basis for pricing redesign; study included analysis of detailed time-related customer consumption data as a basis for allocation of costs, as well as operating and financial data.

**Toronto Hydro** – planning and execution of customer load research projects, including deployment of research metering, load data analysis and related customer research and surveys.

**Toronto Hydro** – coordination of first comprehensive cost of service study, a one-year cross-functional project, including in-depth data collection, selection of allocation methodologies and development of computer-based analytical tools. Led subsequent updates and refinements to the study.

**ICG Utilities Ltd.** – fully allocated cost of service studies for natural gas distribution systems in Manitoba and Alberta, including data analysis and development of computer-based analytical framework.

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**Ontario Energy Board** – cross-jurisdictional review and assessment of regulatory approaches to the issue of farm stray voltage across North-America

**Ontario Energy Board** – comparison of heritage contracts and similar arrangements in leading jurisdictions

**Ontario Energy Board** – identification of appropriate roles and responsibilities for the OEB under alternative industry and market structure scenarios, including default supply arrangements

**Barbados Public Utilities Board** – study to recommend procedures, rules and systems for oversight of the natural gas sector by a new regulatory agency.

**Toronto Hydro** – testimony in public hearings before the Ontario Energy Board on subjects of wholesale and retail rate policy and electricity market development; advised management in strategy related to regulatory compliance and industry regulatory issues.

**Electricity Distributors Association** -- analysis of cash flow patterns of electricity distribution utilities in Ontario reflecting customer payment patterns and market settlement requirements

**Electricity Distributors Association** – study to determine the financial benefit to municipalities of ownership of local distribution companies (LDCs).

**National Grid Co.** -- Assessment and overview report on regulatory framework and issues in Ontario.

**Bruce Power** – Assessment and overview on industry structure, generation and transmission capacity, pricing and issues in New Brunswick

**CMS Energy** – report on Ontario electricity industry structure, market, and regulatory environment, in support of decision to respond to RFP for new generation in the province

**New Brunswick Municipal Electric Utilities Association** – cross jurisdictional survey with respect to policy as to regulation of municipal utilities and rural cooperatives.

## CAREER HISTORY

*2001 – Present*

**BDR** – consultant specializing in rate designs, cost and financial analysis, business planning and mergers and acquisitions in the energy sector

*1998 – 2001*

**In association with Acres Management Consulting** – consultant specializing in rate designs, cost and financial analysis, business planning and energy market restructuring issues.

1995 – 1998	<b>Toronto Hydro</b> – Manager, Marketing and Energy Management
1993 – 1995	<b>Toronto Hydro</b> – Special Assistant to the General Manager (responsible for organizational performance improvement initiatives)
1986 – 1992	<b>Toronto Hydro</b> – Supervisor of Rates and Cost Analysis
1984 – 1986	<b>Toronto Hydro</b> – Senior Rate Analyst
1981 – 1984	<b>ICG Utilities Ltd.</b> – Coordinator, Rate Administration
1979 – 1981	<b>H. Zinder &amp; Associates Canada Ltd.</b> , Senior Analyst

### **EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS**

<i>Degrees and Designations</i>	CPA, CMA (Manitoba) University of Calgary, Masters of Business Administration (Finance) University of Toronto, Bachelor of Arts (Hon), Anthropology
<i>Professional Association</i>	Chartered Professional Accountants of Manitoba (CPA Manitoba)
<i>Continuing Professional Development</i>	Queens University School of Business, Marketing Program Queens University School of Business, Sales Management Program Society of Management Accountants of Canada—Customer Profitability Analysis Society of Management Accountants of Canada—Strategic Cost Management Society of Management Accountants – Auditing I

### **PROFESSIONAL INVOLVEMENT**

<i>Teaching, Training ,and Industry Committees</i>	Instructor in Cost Allocation and Rate Design for Annual Energy Regulation Course, CAMPUT (Canadian Association of Members of Public Utility Tribunals) 2006, 2007, 2008. Member and Vice-Chair, Electricity Distributors Association Commercial Members Steering Committee (2007 to 2014) Member – Ontario Energy Board Cost Allocation Working Group (2003 and 2005-6) Member – Ontario Energy Board Working Group on Cost Allocation for Unmetered Electricity Loads (2012-2013) Member – Municipal Electric Association Cost of Service Sub-Committee (1986-1988)
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