

**BOMA INTERROGATORY #37**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

Reference: Exhibit B, Tab 2, Schedule 1, Page 2 of 11: "To integrate conservation, the division develops conservation forecasts that include assessment of the impacts of codes and standards, incentive-driven efficiency programs and rate designs. Current conservation performance is also integrated to inform updates to conservation plans. PSP will support the development of conservation reports."

37) Please file a table indicating the amount of conservation from codes and standards that have been allocated towards the achievement of the provincial conservation target from 2005 to 2013, and estimates for 2014, 2015 and 2016. What is the source for this data? Has the OPA done any research to determine the actual impact of codes and standards? If so, please file the results of this research.

**RESPONSE**

The estimated electricity savings from codes and standards are provided below for the years 2006-2016. The OPA does not have this information for its inaugural year.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Energy Savings (TWh)	0.0	0.1	0.2	0.3	0.5	1.0	1.6	1.8	1.8	2.1	2.5

Electricity savings from codes and standards are estimated by the OPA on an end-use basis; an accepted industry practice. Specifically, for each end use that is affected by improved building codes and equipment standards, electricity savings are calculated based on the difference between a baseline technology and the efficiency level resulting from the implementation of the codes and standards. The total savings across all affected end-uses represents the savings from codes and standards. The OPA considers the impact of regulations in place since 2005 and of regulations that are expected to be in place in the future.

Although to date the OPA has not undertaken a codes and standards evaluation to formally assess impacts, the OPA plans to launch such an evaluation in the coming months to further refine our understanding of their effects.

1 **BOMA INTERROGATORY #38**

2 **Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

3 **INTERROGATORY**

4 Reference: Exhibit B, Tab 2, Schedule 1, Page 5 of 11: "As Ontario's conservation  
5 delivery framework evolves, the division will provide advice and planning input on  
6 implementation, target setting and integration of conservation as a first resource at the  
7 provincial and regional level. Key initiatives in support of these activities include  
8 maintaining assessments of the cost effectiveness of conservation, and developing  
9 long-term conservation plans.

10 38) Please provide the avoided costs used to assess the cost effectiveness of  
11 conservation from 2005 to 2014 and the estimated avoided costs used for 2015 and  
12 2016.

13 **RESPONSE**

14 The avoided costs used to assess the cost effectiveness of conservation programs  
15 implemented between 2005 and 2014 are shown in Table 1 on the following page. The  
16 estimated avoided costs that have been developed for 2015 and 2016 conservation  
17 programs are shown in Table 2 on page 3 of this exhibit.



**Table 2:** Estimated avoided costs updated in 2014. These costs are being finalized and intended for use in 2015 and 2016 cost effectiveness assessments. The final avoided costs will be published with the official Conservation Framework.

Year	Avoided Cost of Energy Production 2014\$/MWh by TOU Period								Avoided Capacity Costs 2014\$/kW-yr		
	Summer			Winter			Shoulder		At System Peak		
	On-Peak	Mid-Peak	Off-Peak	On-Peak	Mid-Peak	Off-Peak	Mid-Peak	Off-Peak	Generation	Transmission	Distribution
2015	\$46.53	\$43.38	\$37.76	\$33.65	\$38.83	\$31.87	\$47.55	\$40.77	-	\$3.83	\$4.73
2016	\$36.08	\$31.88	\$31.81	\$31.39	\$36.65	\$29.55	\$42.24	\$35.94	-	\$3.83	\$4.73
2017	\$40.97	\$34.96	\$28.72	\$27.98	\$38.38	\$30.74	\$38.39	\$33.51	\$162.15	\$3.83	\$4.73
2018	\$41.97	\$35.82	\$32.69	\$25.14	\$36.66	\$29.75	\$31.77	\$26.98	\$162.15	\$3.83	\$4.73
2019	\$40.71	\$38.57	\$34.37	\$37.43	\$43.06	\$34.67	\$36.72	\$32.90	\$162.15	\$3.83	\$4.73
2020	\$39.88	\$36.86	\$34.93	\$36.75	\$41.06	\$33.80	\$33.89	\$31.23	\$162.15	\$3.83	\$4.73
2021	\$47.28	\$45.16	\$44.50	\$43.91	\$48.41	\$44.82	\$40.19	\$38.99	\$162.15	\$3.83	\$4.73
2022	\$48.33	\$47.47	\$45.76	\$42.48	\$46.39	\$43.93	\$40.97	\$39.27	\$162.15	\$3.83	\$4.73
2023	\$42.94	\$42.84	\$42.41	\$41.86	\$46.18	\$42.58	\$35.85	\$33.64	\$162.15	\$3.83	\$4.73
2024	\$43.28	\$42.02	\$40.73	\$41.90	\$46.17	\$41.61	\$34.45	\$32.84	\$162.15	\$3.83	\$4.73
2025	\$44.37	\$43.42	\$42.15	\$40.28	\$43.89	\$39.21	\$36.29	\$36.05	\$162.15	\$3.83	\$4.73
2026	\$41.26	\$40.08	\$39.69	\$39.77	\$44.01	\$38.82	\$34.52	\$32.62	\$162.15	\$3.83	\$4.73
2027	\$44.01	\$41.72	\$41.89	\$39.32	\$42.89	\$38.96	\$41.17	\$39.10	\$162.15	\$3.83	\$4.73
2028	\$43.82	\$42.88	\$40.20	\$41.56	\$45.57	\$40.75	\$36.94	\$33.86	\$162.15	\$3.83	\$4.73
2029	\$45.32	\$43.69	\$41.06	\$40.96	\$44.43	\$40.30	\$39.97	\$39.19	\$162.15	\$3.83	\$4.73
2030	\$44.18	\$43.17	\$41.25	\$42.10	\$45.83	\$39.88	\$36.33	\$34.50	\$162.15	\$3.83	\$4.73
2031	\$43.53	\$42.40	\$40.04	\$40.95	\$43.95	\$38.57	\$38.45	\$37.29	\$162.15	\$3.83	\$4.73
2032	\$41.96	\$40.90	\$39.24	\$40.56	\$43.38	\$38.15	\$36.42	\$33.61	\$162.15	\$3.83	\$4.73
2033	\$41.96	\$40.90	\$39.24	\$40.56	\$43.38	\$38.15	\$36.42	\$33.61	\$162.15	\$3.83	\$4.73
2034	\$41.96	\$40.90	\$39.24	\$40.56	\$43.38	\$38.15	\$36.42	\$33.61	\$162.15	\$3.83	\$4.73

1 **BOMA INTERROGATORY #39**

2 **Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

3 **INTERROGATORY**

4 Reference: Exhibit B, Tab 2, Schedule 1, Page 5 of 11: "As Ontario's conservation delivery  
5 framework evolves, the division will provide advice and planning input on implementation,  
6 target setting and integration of conservation as a first resource at the provincial and  
7 regional level. Key initiatives in support of these activities include maintaining assessments  
8 of the cost effectiveness of conservation, and developing long-term conservation plans.

9 39) How did the government's decision with respect to defer nuclear new build affect the  
10 cost effectiveness?

11 **RESPONSE**

12 The development of avoided costs used for cost effectiveness did not consider the decision  
13 to defer nuclear new build specifically. The avoided costs were developed based on the  
14 collection of decisions reflected in the 2013 LTEP.

1 **BOMA INTERROGATORY #40**

2 **Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

3 **INTERROGATORY**

4 Reference: Exhibit B, Tab 2, Schedule 1, Page 5 of 11: "As Ontario's conservation delivery  
5 framework evolves, the division will provide advice and planning input on implementation,  
6 target setting and integration of conservation as a first resource at the provincial and  
7 regional level. Key initiatives in support of these activities include maintaining assessments  
8 of the cost effectiveness of conservation, and developing long-term conservation plans.

9 40) How are avoided costs determined for regional planning?

10 **RESPONSE**

11 For regional planning, first, the provincial avoided cost is used to assess cost effectiveness,  
12 and then, a region's specific characteristics and factors are considered for the feasibility and  
13 effectiveness of additional conservation resources. These factors may include the local  
14 supply/demand balance and investment requirements to address local constraints.

**CME INTERROGATORY #2**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

Ref: 2011-2013 Business Plan. Exhibit A-2-1; Exhibit B, Tab 2, Schedule 1, Page 1 of 11

Issue 2.1

CME 2

CME wishes to have a better understanding of the extent to which the OPA's Power System Planning Division considers estimated overall electricity prices and total bills for Ontario customers when developing plans for Ontario and when providing advice to government on the status and outlook for electricity service. To this end, please provide the following additional information:

(a) Does the Power System Planning Division provide a future outlook, or otherwise estimate overall electricity prices and total bills that Ontario customers will likely pay as a result of the plans it develops for Ontario? If so, please describe the internal and/or external resources that the OPA uses and the methods those resources supply to develop such forward looking estimates. If not, please explain why the OPA would not consider future electricity prices and the total bills Ontario consumers will likely pay when developing plans for Ontario and providing advice to government on the status and outlook for electricity service.

(b) At Exhibit B-2-1, Page 1 OPA confirms that the Power System Planning Division develops plans for Ontario, an ongoing process that supports the implementation of government policies, directives and goals, and provides advice to government on the status and outlook for electricity service. CME wishes to better understand the advice that the Power System Planning Division has given to government on the outlook for electricity service. Please produce the advice provided to government on the outlook of electricity prices. If not, please provide an explanation as to why the outlook for electricity prices would not be considered by the Power System Planning Division.

(c) What studies, if any, has the Power System Planning Division commissioned or conducted, either internally or externally, to assess the ability of various sectors in Ontario's economy, and in particular the manufacturing sector, to withstand electricity price increases? If any such studies have been undertaken, please produce those studies. If not, please provide an explanation as to why the Power System Planning Division has not considered such information in developing plans for Ontario.

(d) Are the electricity prices paid by manufacturers that compete with Ontario manufacturers and are located in neighbouring jurisdictions or in other areas of North

America or elsewhere in the world taken into account by the OPA in developing Ontario's power system plan? If so, please describe the internal and external resources of the OPA used to undertake such an assessment, and produce any written reports, memoranda, or PowerPoints addressing this issue.

## RESPONSE

a) The Power System Planning Division does produce different forecasts of electricity prices by sector. Electricity price forecasts are a component of the advice provided to government on plans and options to meet electricity system requirements. These prices are also used in the downstream analysis related to forecasts of electricity consumption, as it is assumed that energy prices will have an influence on the choice of appliances or equipment purchased and installed. The forecast tracks equipment and building stocks over time and simulates technology acquisition in the economy. Equipment stock changes because of new additions as well as by the replacement of retired equipment at the end of its lifespan. The choice of which equipment is bought and installed is influenced by the energy costs to operate the equipment as well as the initial capital cost at purchase. In addition to this longer term price response, short term behavioural responses to prices, that reflect changes in how equipment is used (without changing the equipment itself), are assessed.

For upstream issues, such as the level of industrial output which drives equipment purchases, PSP relies on independent economic forecasts, industry intelligence where available as well as increments or decrements associated with specific plant additions or shut downs. The OPA itself has not carried out a quantitative analysis of the impact of electricity prices on the weighted cost of goods and services and factors of production. These factors typically would be considered in GDP analysis which the OPA obtains from independent third parties.

b) In developing advice to government on plans for electricity service and on options to meet requirements, the OPA outlines projections of outcomes such as adequacy, reliability, cost and emissions. In the development of the 2013 LTEP, the OPA provided analytical support to the government's decision making. An example of the advice provided on costs and prices for the supply mix selected by the government for 2013 LTEP can be found on the OPA's website at <http://www.powerauthority.on.ca/power-planning/long-term-energy-plan-2013> in module 4: Cost of Electricity Service.

c) The OPA has not undertaken studies to "assess the ability of various sectors in Ontario's economy, and in particular the manufacturing sector, to withstand electricity price increases." With reference to the manufacturing sector, the OPA relies on independent economic forecasts, industry intelligence where available as well as increments or decrements associated with specific plant additions or shutdowns. It is assumed that the independent economic forecasts have considered many factors of industrial competitiveness in the development of their forecasts.

- 1 d) The OPA does not explicitly factor the prices paid by manufacturers in competing
- 2 jurisdictions into its plans. As stated, the OPA relies on independent economic
- 3 forecasts of industrial output to develop its plans. It is assumed that the independent
- 4 economic forecasts have considered factors related to industrial competitiveness in the
- 5 development of their forecasts.

### **SEC INTERROGATORY #3**

**Issue 2.1** Is the Operating Budget for \$5,749 thousand allocated to Goal 2 reasonable?

#### **INTERROGATORY**

2.1-SEC-3

[B1-2-1/p.7] Please complete the following table.

Major Cost Category	2011 Board Approved	2011 Actual	2012 Actual	2013 Actual	2014 Budget
Compensation & Benefits					
Professional & Consulting Fees					
Conservation/Technology Funds					
Operation and Administration Expenses					
<b>Total Operation Costs Before Allocation</b>					
Shared Services Allocation Expenses					
<b>Total Operating Costs After Allocation</b>					

#### **RESPONSE**

The table, as requested for the Power System Planning division, is as follows:

**Goal 2 (Power Systems Planning)**  
**2011 Board-approved Budget, 2011 Actual, 2012 Actual, 2013 Actual and 2014 Budget**  
**(\$'000)**

Major Cost Category	2011 Budget Board-approved	2011 Actual	2012 Actual	2013 Actual	2014 Budget
Compensation & Benefits	4,876	5,229	4,916	4,961	4,971
Professional & Consulting Fees	874	782	225	14	385
Operating & Administration Expenses	320	157	174	267	393
<b>Total Operating Costs Before Allocation</b>	<b>6,070</b>	<b>6,168</b>	<b>5,314</b>	<b>5,242</b>	<b>5,749</b>
Shared Services Allocated Expenses	9,327	8,263	7,621	7,518	7,531
<b>Total Operating Costs After Allocation</b>	<b>15,397</b>	<b>14,431</b>	<b>12,935</b>	<b>12,760</b>	<b>13,280</b>

**VECC INTERROGATORY #9**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

**2.1-VECC-9**

Reference: B1/T2/S1/pg.7 & D/T2/S1

- a) Please explain the increase in the Professional and Consulting fees as between 2013 actuals and 2014 forecast.
- b) Please list all proposed consulting /professional projects and the forecast cost which are contemplated in the 2014 budget.
- c) Please provide the consulting and professional fees for 2012.

**RESPONSE**

- a) Please refer to D-2-2, Pages 2 and 3 for the analysis of the increase in Power System Planning Professional and Consulting fees between 2013 actual and 2014 forecast.
- b) Please see below for a list of consulting/professional projects forecasted in 2014:

<b>GOAL 2 - POWER SYSTEM PLANNING - Project Costs (000s) 2014</b>	
Load Forecasting Support	83
Planning Studies	212
Corporate Support	89
<b>Total Project Expenditures</b>	<b>\$ 385</b>

- c) The Goal 2 Professional and Consulting fees for 2012 were \$225 thousand.

**VECC INTERROGATORY #10**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

2.1-VECC-10

Reference: B/T2/S1/pg.2

a) Please provide the budget for 2014 for each of the key work areas – demand forecasting/resource integration.

**RESPONSE**

Please see below for the breakdown of the 2014 budget by demand forecasting and resource integration.

Major Cost Category (000s)	2014	
	Budget	
Load/Demand Forecasting	\$	83
Resource Integration	\$	64

\*Includes Professional and Consulting and Operating & Administration

**VECC INTERROGATORY #11**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

2.1-VECC-11

Reference: B/T2/S1/pg.1-6

a) Please provide a breakdown of the 2014 budget estimates for the four initiatives being undertaken by this division.

**RESPONSE**

Provided below is a breakdown of the 2014 budget estimates by functional area.

Major Cost Category - Functional Area	2014 Budget
VP Office	\$ 5,406
Resource Integration	\$ 64
Transmission Integration	\$ 196
Conservation Integration	\$ 83
<b>Total</b>	<b>\$ 5,749</b>

The VP Office includes all Compensation & Benefit expenditures for the Power System Planning division.

**VECC INTERROGATORY #12**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

2.1-VECC-12

Reference: B/T2/S1 & C/T2/S1/pg.5

- a) Please provide the FTEs allocated to the Power System Planning division for 2011, 2012, 2013 and 2014.

**RESPONSE**

Please see below for the FTEs allocated to the Power System Planning division for the period from 2011 to 2014.

Goal 2 - Power System Planning	2011	2012	2013	2014
Total	42	37	35	36

**VECC INTERROGATORY #13**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

**2.1-VECC-13**

Reference: A-4-1 Updated

- a) Please provide the total compensation costs of this division for executive positions (i.e. Directors reporting to and including VP Power System Planning) and as shown in Exhibit A-4-1 Updated.
- b) Please provide the number of FTEs reporting to each of the 5 Directors under the VP position.
- c) Please explain why there are two Directors of Transmission and Integration.

**RESPONSE**

- a) Please note that the OPA defines executive positions as the CEO and Vice Presidents.

Please see below for the total compensation costs for the Vice President of Power System Planning and the PSP Directors.

<b>Goal 2 - Power System Planning FTEs</b>	<b>2014</b>
<b>Total Compensation VP &amp; Directors (000's)</b>	<b>\$1,521</b>

- b) Please see below for a listing of number of FTEs by Director.

<b>Goal 2 - Power System Planning FTEs</b>	<b>2014</b>
<b>Director - Transmission Integration</b>	<b>9</b>
<b>Director - Transmission Integration</b>	<b>8</b>
<b>Director - Resource Integration</b>	<b>5</b>
<b>Director - Resource Integration</b>	<b>6</b>
<b>Director - Conservation Integration</b>	<b>6</b>
<b>Total</b>	<b>34</b>

- c) The two Directors of Transmission Integration within the Power System Planning division are each responsible for overseeing transmission system planning for

1 different geographic regions of the province. The scope of work includes bulk  
2 system planning; regional planning; the integration of conservation, transmission and  
3 distributed generation projects; processes confirming connection capacity for  
4 renewable and clean energy resources; and engagement with Stakeholders and  
5 consultation with Aboriginal Groups. In addition, and in support of other entities  
6 applications, Transmission Integration is responsible for developing and defending  
7 evidence on the need and rationale for power system infrastructure requiring Ontario  
8 Energy Board and/or Environmental Assessment approvals. The broad geography,  
9 scope and scale of work coupled with the flat organizational structure (where  
10 planning analysts, planners and senior planners report directly to Directors, because  
11 the Manager level is not used) requires two Directors of Transmission Integration.

**ENERGY PROBE INTERROGATORY #9**

**Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

**INTERROGATORY**

**2.1-Energy Probe-9**

Ref: Exhibit B, Tab 2, Schedule 1, Page 7

**Preamble:**

Please provide the specific outcomes related to the 2014 budget such as Regional Studies Completed. Where possible please provide quantitative longer term outcomes such as transmission capacity/kilometers of line, Demand Response and CDM Gwh and Peak savings. Relate these outcomes to the Goals of the Conservation and as applicable, other groups at OPA.

**RESPONSE**

The OPA leads the Integrated Regional Resource Planning ("IRRP") process under the OEB's Renewed Regulatory Framework for Electricity in accordance with the OPA's amended license. The outcome of the IRRP process is an electricity service plan that integrates elements of conservation and demand management, distributed generation, transmission, and/or distribution investments to meet regional needs in the near-term and medium-term periods, while considering longer-term context and options. Experience with the IRRP process so far indicates that Conservation and distributed generation can supply part of the future demand growth in local areas and thus, can reduce the need for infrastructure expansion.

In 2014, the OPA anticipates completing IRRPs for the Central Toronto, Kitchener-Waterloo-Cambridge-Guelph, Brant, and North of Dryden areas.

The outcomes of the IRRP process are not measured by the metrics requested in the interrogatory. The process of planning identifies needs and requirements that are then implemented by the appropriate stakeholder, including the OPA, a transmitter, or local distribution company.

The goals of other divisions within the OPA, such as Conservation and Electricity Resources, relate to the outcomes of the IRRP process where implementation of IRRP recommendations require Conservation planning, measurement and verification, or procurements.

1 **AMPCO INTERROGATORY #7**

2 **Issue 2.1** Is the Operating Budget of \$5,749 thousand allocated to Goal 2 reasonable?

3 **INTERROGATORY**

4 2.1-AMPCO-7

5 Ref: B-2-1

6 a) Please explain the government's open data initiative.

7 **RESPONSE**

8 The Government of Ontario's open data initiative, as part of the Premier's commitment  
9 to open government, is an ongoing discussion on how to make information easier to  
10 find, understand and use, and accessible to the citizens of Ontario. More information on  
11 the open data initiative can be found on the Government of Ontario's website at:  
12 <https://www.ontario.ca/government/open-government>.