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1 # CAPITAL BUDGET – SUPPORT SERVICES

2

3 **1.0   PURPOSE**

4 This evidence provides an overview of the capital expenditures by OPG's Support Services

5 groups for the historical years, bridge year, and the test period. It also provides period-over-

6 period changes in these expenditures.

7

8 **2.0   OVERVIEW OF SUPPORT SERVICES CAPITAL EXPENDITURES**

9 Exhibit D3-1-1 Table 1 represents capital expenditures of Support Services groups that

10 impact rate base or the asset service fee. Capital expenditures increase from $22.2M to

11 $25.0M over the test period and these annual amounts are lower than the $40.2M

12 expenditure in 2015. Explanations for the changes are provided in section 3. A listing of

13 capital projects is provided in Ex. D3-1-2.

14

15 The capital expenditures by OPG's Support Services groups for the regulated facilities are

16 from the Information Technology ("IT") and Real Estate groups within the Business and

17 Administrative Services ("BAS") business unit. BAS projects follow OPG governance and

18 processes as set out in Ex. A2-2-1 Attachment 4.

19

20 The capital budget available for a given period is established through the business planning

21 process. It is based on an assessment of the needs of the business units in order to sustain

22 the reliability, availability, and performance of existing assets and services, as well as to

23 meet changing regulatory requirements, and to improve overall business value.

24

25 Business units may request the addition of higher priority out-of-plan projects driven by

26 changing priorities. For IT projects, the IT group's capacity to deliver projects and the

27 business unit's ability to absorb the business process changes associated with the capital

28 project are also considered.

29

30 Once capital projects are completed, the resulting assets are declared in-service. Details on

31 in-service additions are provided in Ex. D3-1-2 Tables 1 through 5. In the case where the

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1 assets can be directly assigned to either hydroelectric or nuclear, they are declared as in-

2 service additions to the rate base for the respective business units. If the assets cannot be

3 directly assigned because they are utilized by multiple groups, they are held centrally, and

4 the regulated businesses are charged a service fee for the use of these assets (see Ex. F3-

5 2-1).

6

7 **3.0 PERIOD-OVER-PERIOD VARIANCES**

8 Period-over-period comparisons of capital expenditures by OPG's Support Services groups

9 are presented in Ex. D3-1-1 Table 2.

10

11 **3.1 PERIOD-OVER-PERIOD CHANGES – TEST YEARS**

12 2017 Plan versus 2016 Budget ($22.2M versus $36.2M)

13 Capital costs in 2017 are lower than 2016 mainly due to the completion of major projects in

14 2016, such as the mainframe and storage purchases, Microsoft Windows Server Upgrade,

15 Radio Communication Lifecycle Program, SAP Upgrade Project, North American Electric

16 Reliability Corporation ("NERC") Critical Infrastructure Protection Project and the

17 replacement of an emergency generator in 2016. This reduction is partially offset by the

18 execution of the SharePoint Upgrade Project in 2017.

19

20 2018 Plan versus 2017 Plan ($28.5M versus $22.2M)

21 Capital costs in 2018 are higher than 2017 mainly due to the implementation of projects in

22 2018, including the Nuclear Canadian Standards Association Compliance Program, Tempus

23 Lifecycle Upgrade Project, Resource Outage Management System Replatforming and the

24 OPG Cyber Security Program and Nuclear Foundation Architecture ("FA") implementation

25 Project.

26

27 2019 Plan versus 2018 Plan ($25.0M versus $28.5M)

28 Capital costs in 2019 are lower than 2018 mainly due to the completion of the projects

29 implemented in 2018 as noted above, partially offset by the introduction of Asset Suite

30 Upgrade Project, Energy Market Application Refresh Program and NERC Compliance

31 Program.

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1

2 <u>2020 Plan versus 2019 Plan ($25.0M versus $25.0M)</u>

3 Capital costs remain the same from 2019 to 2020.

4

5 <u>2021 Plan versus 2020 Plan ($25.0M versus $25.0M)</u>

6 Capital costs remain the same from 2020 to 2021.

7

8 **3.2   PERIOD-OVER-PERIOD CHANGES – BRIDGE YEAR**

9 <u>2016 Budget versus 2015 Actual ($36.2M versus $40.2M)</u>

10 Capital costs in 2016 are lower than 2015 mainly due to the near completion of the

11 Enterprise Systems Consolidation Project, mainframe and storage purchases and the

12 Revenue Accounting and Reporting Project in 2015. This reduction is partially offset by the

13 structural rehabilitation of roads, bridges, and roofs at nuclear sites by Real Estate and the

14 execution of Microsoft Windows Server Upgrade and SAP Upgrade Project by IT in 2016.

15

16 **3.3   PERIOD-OVER-PERIOD CHANGES – HISTORICAL YEARS**

17 <u>2015 Actual versus 2015 OEB-Approved ($40.2M versus $30.7M)</u>

18 Capital costs in 2015 actual were higher than the OEB-approved amount mainly due to the

19 purchase of mainframe and storage equipment, the replacement of an emergency generator

20 and the execution of the NERC Critical Infrastructure Protection Project in 2015.

21

22 <u>2015 Actual versus 2014 Actual ($40.2M versus $40.1M)</u>

23 Capital costs were relatively stable from 2014 to 2015.

24

25 <u>2014 Actual versus 2014 OEB-Approved ($40.1M versus $43.9M)</u>

26 Capital costs were lower than the 2014 OEB-approved amount primarily because, upon

27 further assessment in line with OPG's capitalization policy and practices, the costs incurred

28 for the Windows 7 Network and Desktop Upgrade Project were expensed to OM&A rather

29 than capitalized. As a result, OM&A project costs for 2014 for IT were higher by a

30 corresponding amount, as reflected in Ex. F3-1-1 Table 7.

31

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1 <u>2014 Actual versus 2013 Actual ($40.1M versus $31.2M)</u>

2 Capital costs in 2014 were higher than 2013 mainly due to accelerated expenditures for the

3 execution phase of the Enterprise Systems Consolidation Project and the implementation of

4 the Business Planning System Project.

5

6 <u>2013 Actual versus 2013 Budget ($31.2M versus $31.4M)</u>

7 Actual capital costs in 2013 were relatively stable compared to the budget.

Numbers may not add due to rounding.

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Table 1
Capital Expenditures Summary - Support Services ($M)
(Capital Expenditures in Support Services Impacting Rate Base or the Asset Service Fee)

Line No.	Support Services	2013 Actual	2014 Actual	2015 Actual	2016 Budget	2017 Plan	2018 Plan	2019 Plan	2020 Plan	2021 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	IT	23.2	33.5	34.2	23.9	14.5	20.5	17.0	17.0	17.0
2	Real Estate	8.0	6.6	6.0	12.3	7.7	8.0	8.0	8.0	8.0
3	Total	31.2	40.1	40.2	36.2	22.2	28.5	25.0	25.0	25.0

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Numbers may not add due to rounding.

Table 2
Comparison of Capital Expenditures - Support Services ($M)
(Capital Expenditures in Support Services Impacting Rate Base or the Asset Service Fee)

Line No.	Business	2013 Budget	(c)-(a) Change	2013 Actual	(g)-(c) Change	2014 OEB Approved	(g)-(e) Change	2014 Actual	(k)-(g) Change	2015 OEB Approved	(k)-(i) Change	2015 Actual
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	IT	23.4	(0.2)	23.2	10.3	38.9	(5.4)	33.5	0.7	25.7	8.5	34.2
2	Real Estate	8.0	(0.0)	8.0	(1.4)	5.0	1.6	6.6	(0.6)	5.0	1.0	6.0
3	Total	31.4	(0.2)	31.2	8.9	43.9	(3.8)	40.1	0.1	30.7	9.5	40.2

Line No.	Business	2015 Actual	(c)-(a) Change	2016 Budget	(e)-(c) Change	2017 Plan	(g)-(e) Change	2018 Plan	(i)-(g) Change	2019 Plan	(k)-(i) Change	2020 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
4	IT	34.2	(10.3)	23.9	(9.4)	14.5	6.0	20.5	(3.5)	17.0	0.0	17.0
5	Real Estate	6.0	6.3	12.3	(4.6)	7.7	0.3	8.0	0.0	8.0	0.0	8.0
6	Total	40.2	(4.0)	36.2	(14.0)	22.2	6.3	28.5	(3.5)	25.0	0.0	25.0

Line No.	Business	2020 Plan	(c)-(a) Change	2021 Plan
		(a)	(b)	(c)
7	IT	17.0	0.0	17.0
8	Real Estate	8.0	0.0	8.0
9	Total	25.0	0.0	25.0

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1   **CAPITAL PROJECTS – SUPPORT SERVICES**

2

3   **1.0   PURPOSE**

4   This evidence provides descriptions and listings of capital projects, business case

5   summaries, and in-service additions for Support Services' projects that support the regulated

6   facilities. These capital projects form part of the test period capital budgets presented in Ex.

7   D3-1-1.

8

9   **2.0   CAPITAL PROJECTS LISTING**

10   OPG has used a tiered structure for reporting all capital projects. Information is presented for

11   projects which have budgeted expenditures during the 2017 to 2021 test period or in-service

12   amounts during 2016 to 2021.

13

14   The following information is provided for capital projects being undertaken by OPG's

15   corporate groups:

16   • Tier 1: For projects with a total cost of $20M or greater, summary level information is

17   provided in Ex. D3-1-2 Table 1.

18   • Tier 2: For projects with a total cost of $5M to $20M, summary level information is

19   provided in Ex. D3-1-2 Table 2.

20   • Tier 3: For projects with a total cost of less than $5M, aggregated information is provided

21   in Ex. D3-1-2 Table 3.

22

23   **Tier 1 Capital Projects**

24   There are no new Tier 1 capital projects with costs greater than $20M in the test period.

25

26   There is one Tier 1 capital project, the Enterprise System Consolidation project undertaken

27   by IT, which was reported in EB-2013-0321 with an approved project estimate of $48.6M.

28   The Enterprise Systems Consolidation project allowed OPG to move to one major resource

29   planning/asset management system, Passport. Passport has been adopted as the standard

30   for supporting Plant Operations across OPG, while SAP, OPG's other system, has been

31   scaled down to support Finance and People & Culture. The project delivered a single IT

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1   solution across OPG for both financial and time reporting by consolidating time entry for all

2   employees and consolidating financial data into one reporting platform.

3

4   The actual spend for this project was $51.8M and the summary information is provided in Ex.

5   D3-1-2 Table 1. The Business Case Summary is provided as Attachment 1. It is also listed in

6   Ex. D3-1-2 Table 6.

7

8   **Tier 2 Capital Projects**

9   Exhibit D3-1-2 Table 2 presents twelve Tier 2 projects that are being undertaken by the IT

10 and Real Estate groups.

11

12 Asset Suite Upgrade is a sustaining project for an enterprise resource management system

13 used to support work management processes including materials management and plant

14 maintenance across OPG. This project starts in 2019 and is expected to be completed by

15 2021 with an estimated cost of $17.2M.

16

17 The Microsoft Windows Server Upgrade is a sustaining project to support OPG's applications

18 and services as part of the OPG's asset lifecycle plan. This project started in 2015 and is

19 forecasted to be completed by 2016 with an estimated cost of $9.3M.

20

21 OPG Cyber Security Program is a regulatory program to detect and prevent unauthorized

22 access to the network. It includes the implementation of several IT security technologies

23 across OPG and strengthens its security program. The project started in 2015 and is

24 anticipated to be completed by 2021 with an estimated cost of $8.7M.

25

26 Mainframe Purchase is a sustaining project for OPG to acquire two new mainframes as part

27 of the IT asset lifecycle plan. The project started in 2015 and is anticipated to be completed

28 by 2016 with an estimated cost of $7.0M.

29

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1   Storage Purchase is a sustaining project to enable OPG to acquire new storage equipment
2   as part of the IT asset lifecycle plan. The project started in 2015 and is expected to be
3   completed by 2016 with a cost estimate of $6.1M.
4
5   Tempus Lifecycle Upgrade is a sustaining project with the objective to upgrade the existing
6   Tempus software application to a current supported version. The project is expected to start
7   in 2018 with an estimated cost of $5.2M.
8
9   Energy Market Application Refresh Program is a sustaining project with the objective to
10   upgrade a number of applications that support business activities from trading to outage
11   management. Many of these custom built applications are at the end of life with respect to
12   technology or vendor support. This project is expected to start in 2019 and is anticipated to
13   be completed in 2021 with an estimated cost of $5.0M.
14
15   The Emergency Generator Replacement is a sustaining project to remove the original diesel
16   generator at OPG's Head Office – 700 University Avenue. The project started in 2015 and is
17   anticipated to be completed by 2016 with an estimated cost of $6.5M.
18
19   Nuclear Cyber Security is a regulatory project to mitigate cyber security risks at each nuclear
20   site to comply with Canadian Standard Association N290.7 Cyber Security Standard. This
21   project has an estimated cost of $6.5M and is expected to start in 2018 and to be completed
22   by 2021.
23
24   The Wireless Radio Communication Program is a regulatory project to restructure the
25   integrated digital enhanced network for vendor support in order to provide wireless voice
26   communication systems at the nuclear sites. This project started in 2015 and is projected to
27   be completed by 2016 with an estimated cost of $5.9M.
28
29   Darlington Nuclear Generating Station Site Road and Bridge Repair and Rehabilitation is a
30   sustaining project to conduct repairs at the Holt Road and Park Road bridges at the

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1   Darlington site. This project started in 2016 and is projected to be completed by 2017 with an

2   estimated cost of $5.0M.

3

4   **Tier 3 Capital Projects**

5   Exhibit D3-1-2 Table 3 provides aggregated information for Tier 3 projects with a cost less

6   than $5M.

7

8   IT projects include: the SAP Upgrade, Curator Replacement Project, Mobile Electronics Work

9   Package Project, and Nuclear Foundation Architecture Implementation.

10

11   Real Estate projects include: electrical service enhancements, building enhancements,

12   cooling system and roofing replacement, and energy saving projects.

13

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1   **ATTACHMENTS**

2

3   Attachment 1:   Enterprise Systems Consolidation Project – Recommendation for

4   Submission to the Board of Directors, May 16, 2013.

ONTARIO POWER GENERATION

Recommendation for Submission to the Board of Directors

May 16, 2013

ENTERPRISE SYSTEMS CONSOLIDATION PROJECT

EXECUTIVE SUMMARY:

The purpose of this submission is to request approval of a full release of funds for the Enterprise Systems Consolidation project. Funding for this project has been included in the Business and Administrative Services (BAS) Business Plan. The in-service date for this project is January 31, 2015.

The business objectives of the project are to address the inefficiencies resulting from having disparate processes and information technology (IT) systems for supporting plant work and material management, time reporting, cost management, financial reporting, and accounts payable processing. Additional details are provided in Appendix A.

A total of $10 million has been released to date for project initiation and definition phase work.

The project is currently requesting a full release of $57.5 million to complete the execution phase of the project. This includes $7 million of management reserve. This will bring the total project release to $67.5 million including the project expenditures to date. A further $7.5 million is budgeted by the lines of businesses to provide direct project support, bringing the total cost of the project to $75 million.

RECOMMENDATION:

That the Board of Directors approves a full release of $57.5 million to complete the execution phase for the Enterprise Systems Consolidation project. This will bring the total project release to $67.5 million.

Recommended by:

Scott Martin
Senior Vice President, Business and Administrative Services

Approved for Submission to the Board of Directors:

Tom Mitchell
President and Chief Executive Officer

This Board memorandum was reviewed and approved for submission to the Board of Directors by the Risk Oversight Committee on May 15, 2013.

Enterprise Systems Consolidation Project

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APPENDIX A

1. Background

- OPG is currently in the 3rd quartile in IT cost performance relative to industry peers on a $/GWh basis due to OPG's declining generation and shrinking market share.
- OPG launched the Information Management Transformation (IMT) Program in 2010 to improve OPG's IT cost performance to 2nd quartile.
- The IMT Executable Plan has identified the Enterprise Systems as an area of significant opportunity for improving business productivity and reducing IT costs.
- The Enterprise Systems Consolidation Project will eliminate duplications and streamline systems and processes for plant work and material management, time reporting, cost management, financial reporting and accounts payable.
- Business Transformation requires this project to be placed in service as early as possible in 2015 in order to realize its IT-supported head count reduction targets in Business and Administrative Services (10), People and Culture (2), and Finance (37).
- The in-service date of the new systems must be synchronized with the financial year end (i.e. on a calendar year). January 2015 represents the first available opportunity for a system change over. The next opportunity will be January 2016. The project impact of missing January 2015 and having to extend the project in-service date by one year is estimated to be $6.8 million.

2. Program Objectives

- The purpose of the Enterprise Systems Consolidation project is to address the inefficiencies resulting from having disparate processes and IT systems across the organization for supporting plant work and material management, time reporting, cost management, financial reporting and accounts payables. The project will:
    - Eliminate duplications in Enterprise Systems and reduce IT operating costs;
    - Enable headcount reductions planned under Business Transformation by standardizing systems and process and improving business process efficiency;
    - Improve information quality by reducing IT system complexity; and
    - Streamline the IT platform creating a scalable and adaptable architecture that can better respond to business changes.

- The Enterprise Systems Consolidation Project is comprised of four integrated work streams:
    - ***Plant Work and Material Management System –*** Consolidates two plant work and material management systems (SAP and Ventyx Asset Suite) into one, utilizing ABB-Ventyx Asset Suite
    - ***Time Reporting System –*** Consolidates two time reporting systems (SAP and Tempus) into one, utilizing an enhanced Tempus application
    - ***Financial Reporting System*** – Consolidates multiple financial reporting systems supported by two account code structures into one, utilizing a common account code structure and SAP Business Intelligence
    - ***Accounts Payable System*** – Consolidates two accounts payable systems (Reedsoft and Ariba) into one, utilizing the Ariba solution

    SAP will continue to be used as it is today for managing the remaining finance and human resources processes.

Enterprise Systems Consolidation Project

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3. Economic Assessment

- Current project cost estimate is $67.5 million ($75 million when $7.5 million of line of business project support costs are included)
- Expected saving in OM&A is $14.3 million/year (including the head count reduction savings)
- Expected reduction in head count is 49 FTE
- Expected NPV is $25 million

4. Project Funding

- A total of $10 million has been released (and spent) to date for project initiation and definition phase work
- The project is currently requesting a full release of $57.5 million to complete the execution phase of the project bringing the total project release to $67.5 million
- In addition, a further $7.5 million in line of business project support is required bringing overall project cost to $75 million
- The total estimated project cost for the Enterprise Systems Consolidation project is included within the BAS business plan and the line of business project support is included within the respective lines of business
- On-going costs and savings have been identified and are included in the economic assessment

K$	LTD	2013	2014	2015	2016	2017	2018	Future	Total
Currently Released	10,000								10,000
Requested Now		22,900	25,600	9,000					57,500
Future Required									0
Total Project Costs - IT	10,000	22,900	25,600	9,000					67,500
Total Project Costs - Business Units		3,200	4,000	300	0	0	0	0	7,500
Total Project Cost	0	26,100	29,600	9,300	0	0	0	0	75,000
Ongoing Costs		(1,800)	(3,000)	(14,300)	(14,300)	(14,300)	(14,300)	(85,800)	(147,800)
Grand Total	10,000	24,300	26,600	(5,000)	(14,300)	(14,300)	(14,300)	(85,800)	(72,800)

Enterprise Systems Consolidation Project

5. Risk Assessment

Risk Class	Description of Risk**	Risk Management Strategy	Post-Mitigation Probability	Post-Mitigation Impact
Cost	The cost estimate fails to capture the complete price of implementation	**Clearly define** the requirements and enter into fixed price contracts where feasible and increase contingency and management reserve to address high risk work scope based on Price Waterhouse Coopers (PWC) assessment	Low	Medium
Scope	The scope defined for the initiative may "creep" driven from other high priority initiatives (e.g. Business Transformation)	**Tightly manage** scope leveraging governance bodies and formal change control (i.e. institute a formal Change Control Board to manage change requests)	Medium	Medium
Schedule	The project schedule is tight and delays could impact on the target delivery date	**Clearly define** interdependencies in schedules ensuring all dependencies, including those related to Business Transformation initiatives, are managed and critical path activities are identified	Medium	High
Resources	Lack of availability of dedicated business resources during project execution may negatively affect the quality and timing of the deliverable	**Complete resource planning** with affected business units and ensure appropriate level of budgeting in respective business plans for backfilling of resources if required	Medium	High
Resources	Lack of availability of business resources due to conflicting demands	**Align objectives** of the Enterprise Systems Consolidation project with critical business initiatives (e.g. the Business Transformation program) and jointly prioritize initiatives and resource demands	Medium	High
Quality / Performance	Lack of business ownership resulting in the initiative being viewed as a "low priority" putting the execution phase at risk	**Institute** a strong project governance model **Ensure** Management performance incentives are aligned with the objectives of the project	Low	Medium
Quality / Performance	Insufficient focus on Change Management may result in a lack of 'buy-in' for the initiative	**Document** a formal Change Management plan and execution strategy and ensure there is adequate budget set aside in the project plan to support key change management activities	Medium	Medium

*****Risks identified by OPG Internal Audit and External Assessment (Price Waterhouse Coopers - PWC) have been included*

Numbers may not add due to rounding.

Table 1
Capital Project Listing - Support Services
(Capital Projects in Support Services Impacting Rate Base or the Asset Service Fee)
Projects ≥ $20M Total Project Cost[1]

Line No.	Project Name	Project Summary Ref. No.	Category	Project Start Date	Final In-Service Date	Total Project Cost[2] ($M)	In-Service 2016 ($M)	In-Service 2017 ($M)	In-Service 2018 ($M)	In-Service 2019 ($M)	In-Service 2020 ($M)	In-Service 2021 ($M)	2013 Actual	2014 Actual	2015 Actual	2016 Budget	2017 Plan	2018 Plan	2019 Plan	2020 Plan	2021 Plan
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)
	COMPLETED PROJECTS LISTED IN EB-2013-0321																				
	IT - Common																				
1	Enterprise Systems Consolidation Project	ICIFI043	Value	Jul-12	Mar-16	51.8	5.5	0.0	0.0	0.0	0.0	0.0	16.6	20.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0
	NEW PROJECTS NOT LISTED IN EB-2013-0321																				
2	No projects																				
3	**Subtotal**					51.8	5.5	0.0	0.0	0.0	0.0	0.0	16.6	20.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0
4	**Total Facility Projects**					51.8	5.5	0.0	0.0	0.0	0.0	0.0	16.6	20.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0

Notes:
1 Projects with expenditures during Test Period OR In-Service amounts in Bridge or Test Period and Completed/Deferred projects (from EB-2013-0321 or subsequent).
2 Total Project Costs reflect BCS amounts (balance to be released) or the actual costs for completed projects.

Table 2
Capital Project Listing - Support Services
(Capital Projects in Support Services Impacting Rate Base or the Asset Service Fee)
Projects $5M - $20M Total Project Cost[1]

Line No.	Project Name	Category	Project Description	Start Date	Final In-Service Date	Total Project Cost[2] ($M)	In-Service 2016 ($M)	In-Service 2017 ($M)	In-Service 2018 ($M)	In-Service 2019 ($M)	In-Service 2020 ($M)	In-Service 2021 ($M)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
	COMPLETED/DEFERRED PROJECTS FROM EB-2013-0321											
	IT - Common											
1	Windows 7 Network and Desktop Upgrade	Sustaining	The business objective of this project is to upgrade the Window 7 desktop application system as part of the sustaining lifecycle upgrade of the assets. It was determined that this project was not eligible for capitalization and was therefore expensed	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	**Subtotal**					0.0	0.0	0.0	0.0	0.0	0.0	0.0
	NEW PROJECTS NOT IN EB-2013-0321											
	IT - Common											
3	Asset Suite Upgrade	Sustaining	To upgrade the Asset Suite application system used to support work management processes including materials management, plant maintenance, and project system across OPG.	Jul-19	Dec-21	17.2	0.0	0.0	0.0	3.2	7.0	7.0
4	MS Windows Server Upgrade	Sustaining	To upgrade Microsoft Windows Server infrastructure that support OPG's applications and services due to the end of the support lifecycle for the current infrastructure.	Jul-15	Dec-16	9.3	6.1	0.0	0.0	0.0	0.0	0.0
5	OPG Cyber Security Program	Regulatory	To accelerate and strengthen the Cyber Security program. The program will enable OPG to detect attempts and prevent access to its corporate network by individuals using unauthorized devices and includes the implementation of several IT security technologies at OPG.	Nov-15	Dec-21	8.7	1.2	0.0	1.5	2.0	2.0	2.0
6	Mainframe Purchase	Sustaining	The business objective for this project is for OPG to obtain ownership of mainframe assets, which were near the end of their economic life, to gain operational efficiencies.	Dec-15	Dec-16	7.0	7.0	0.0	0.0	0.0	0.0	0.0
7	Storage Purchase	Sustaining	The business objective for this project is for OPG to obtain ownership of storage equipment to gain operational efficiencies.	Dec-15	Dec-16	6.1	6.1	0.0	0.0	0.0	0.0	0.0
8	Tempus Lifecycle Upgrade	Sustaining	The business objective for this project is to upgrade the Tempus time reporting system at the end of its lifecycle.	Jun-18	Dec-19	5.2	0.0	0.0	2.0	3.2	0.0	0.0
9	Energy Market Application Refresh Program	Sustaining	The objective of the project is to review the application suite within Commercial Operations ensuring critical applications can be sustained effectively and reduce risks to the organization for having dated, unsupported tools.	Jul-19	Dec-21	5.0	0.0	0.0	0.0	1.0	2.0	2.0
10	**Subtotal**					58.5	20.4	0.0	3.5	9.4	11.0	11.0
	Real Estate - Common											
11	Emergency Generator Replacement (Size & TSSA Compliance)	Sustaining	Removal of the original Diesel Generator that has surpassed its original life expectancy and commissioning of a new generator.	Sep-15	Jun-16	6.5	3.5	0.0	0.0	0.0	0.0	0.0
12	**Subtotal**					6.5	3.5	0.0	0.0	0.0	0.0	0.0
	IT - Rate Base											
13	Cyber Security – CSA N290.7 Compliance	Regulatory	The business objective of this project is to mitigate cyber security risks at each Nuclear station by complying with CNSC Action Items 2008-13-05 and 2008-04-08, addressing vulnerabilities of Critical Cyber Assets (CCA) identified in a self-assessment, complying with CSA N290.7 Cyber Security Standard and implementing a sustaining OPG Nuclear Cyber Security Program to mitigate the cyber security risks.	Jun-18	Dec-21	6.5	0.0	0.0	3.5	0.0	0.0	0.0
14	Radio Communication Program	Regulatory	Provide OPG's Nuclear Security and Operations staff with wireless communications as the current IDEN radio system used by Nuclear Operations will be no longer supported by the service provider by the end of 2015.	Jul-15	Dec-16	5.9	5.9	0.0	0.0	0.0	0.0	0.0
15	**Subtotal**					12.4	5.9	0.0	3.5	0.0	0.0	0.0
	Real Estate - Rate Base											
16	Darlington Nuclear Generating Station Site Park Road & Holt Road Bridge Repair & Rehabilitation	Sustaining	Conduct repairs at the Holt Road and Park Road bridges at the Darlington Nuclear Generating Station Site.	Jan-16	Dec-17	5.0	0.0	5.0	0.0	0.0	0.0	0.0
17	**Subtotal**					5.0	0.0	5.0	0.0	0.0	0.0	0.0
18	**Total Facility Projects**					82.4	29.8	5.0	7.0	9.4	11.0	11.0

Notes:
1   Projects with expenditures during Test Period OR In-Service amounts in Bridge or Test Period AND Completed/Deferred projects (from EB-2013-0321 or subsequent).
2   Total Project Costs reflect BCS amounts (balance to be released) or the actual costs for completed projects.

Table 3
Capital Project Listing - Support Services
(Capital Projects in Support Services Impacting Rate Base or the Asset Service Fee)
Projects < $5M Total Project Cost[1]

Line No.	Project Description	Number of Projects	Total Project Cost ($M)	Average Cost Of All Projects ($M)	In-Service 2016 ($M)	In-Service 2017 ($M)	In-Service 2018 ($M)	In-Service 2019 ($M)	In-Service 2020 ($M)	In-Service 2021 ($M)
		(a)	(b)	(c)	(g)	(h)	(i)	(j)	(k)	(l)
1	**IT - Rate Base**	13	19.4	1.5	3.0	2.5	10.3	0.0	0.0	0.0
2	**IT - Asset Service Fee**	23	35.7	1.6	15.1	7.1	8.2	7.6	6.0	6.0
3	**Real Estate - Rate Base**	18	29.8	1.7	5.1	0.6	5.0	5.0	5.0	5.0
4	**Real Estate - Asset Service Fee**	24	13.5	0.6	3.7	2.0	3.0	3.0	3.0	3.0
5	**Total**	78	98.4	1.3	26.9	12.2	26.5	15.6	14.0	14.0

Notes:
1 Projects with expenditures during Test Period.

Numbers may not add due to rounding.

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Table 4
Capital Project Listing - Support Services
In-Service Summary - All Capital Projects

Line No.	Project Description	Reference	In-Service 2016 ($M)	In-Service 2017 ($M)	In-Service 2018 ($M)	In-Service 2019 ($M)	In-Service 2020 ($M)	In-Service 2021 ($M)
			(a)	(b)	(c)	(d)	(e)	(f)
	Projects ≥ $20 M - Rate Base							
1	IT		0.0	0.0	0.0	0.0	0.0	0.0
	Projects ≥ $20 M - Asset Service Fee							
2	IT	D3-1-2 Table 1	5.5	0.0	0.0	0.0	0.0	0.0
	Projects $5M - $20M - Rate Base							
3	IT	D3-1-2 Table 2	5.9	0.0	3.5	0.0	0.0	0.0
4	Real Estate	D3-1-2 Table 2	0.0	5.0	0.0	0.0	0.0	0.0
	Projects $5M - $20M - Asset Service Fee							
5	IT	D3-1-2 Table 2	20.4	0.0	3.5	9.4	11.0	11.0
	Real Estate	D3-1-2 Table 2	3.5	0.0	0	0	0	0.0
	Projects < $5M - Rate Base							
6	IT	D3-1-2 Table 3	3.0	2.5	10.3	0.0	0.0	0.0
7	Real Estate	D3-1-2 Table 3	5.1	0.6	5.0	5.0	5.0	5.0
	Projects < $5M - Asset Service Fee							
8	IT	D3-1-2 Table 3	15.1	7.1	8.2	7.6	6.0	6.0
9	Real Estate	D3-1-2 Table 3	3.7	2.0	3.0	3.0	3.0	3.0
10	**Total Capital Project In-Service Amounts**		62.2	17.2	33.5	25.0	25.0	25.0

Numbers may not add due to rounding.

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Table 5
Comparison of In-Service Capital Additions - Support Services ($M)

Line No.	Business Unit	2013 Budget	(c)-(a) Change	2013 Actual	(g)-(c) Change	2014 OEB Approved	(g)-(e) Change	2014 Actual	(k)-(g) Change	2015 OEB Approved	(k)-(i) Change	2015 Actual
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	IT - Rate Base	7.6	(4.7)	2.8	(1.1)	2.0	(0.3)	1.7	1.1	6.8	(3.9)	2.9
2	IT - Asset Service Fee	4.9	2.6	7.5	(3.0)	16.1	(11.5)	4.6	50.2	52.7	2.0	54.7
3	Real Estate - Rate Base	1.0	(0.1)	0.9	(0.8)	0.6	(0.5)	0.1	(0.1)	0.5	(0.5)	0.0
4	Real Estate - Asset Service Fee	7.0	(2.9)	4.1	5.6	4.4	5.3	9.7	(6.8)	4.5	(1.6)	2.9
5	Minor Fixed Assets	2.3	(0.9)	1.4	(1.2)	1.8	(1.6)	0.2	1.4	1.8	(0.2)	1.6
6	Total Support Services	22.8	(6.1)	16.7	(0.5)	24.9	(8.6)	16.3	45.8	66.2	(4.1)	62.1

Line No.	Business Unit	2015 Actual	(c)-(a) Change	2016 Budget	(e)-(c) Change	2017 Plan	(g)-(e) Change	2018 Plan	(i)-(g) Change	2019 Plan	(k)-(i) Change	2020 Plan
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
7	IT - Rate Base	2.9	6.0	8.9	(6.4)	2.5	11.3	13.8	(13.8)	0.0	0.0	0.0
8	IT - Asset Service Fee	54.7	(13.7)	41.0	(33.9)	7.1	4.6	11.7	5.3	17.0	0.0	17.0
9	Real Estate - Rate Base	0.0	5.1	5.1	0.5	5.6	(0.6)	5.0	0.0	5.0	0.0	5.0
10	Real Estate - Asset Service Fee	2.9	4.3	7.2	(5.2)	2.0	1.0	3.0	0.0	3.0	0.0	3.0
11	Minor Fixed Assets	1.6	(0.4)	1.2	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
12	Total Support Services	62.1	1.3	63.4	(45.0)	18.4	16.3	34.7	(8.5)	26.2	0.0	26.2

Line No.	Business Unit	2020 Plan	(c)-(a) Change	2021 Plan
		(a)	(b)	(c)
13	IT - Rate Base	0.0	0.0	0.0
14	IT - Asset Service Fee	17.0	0.0	17.0
15	Real Estate - Rate Base	5.0	0.0	5.0
16	Real Estate - Asset Service Fee	3.0	0.0	3.0
17	Minor Fixed Assets	1.2	0.0	1.2
18	Total Support Services	26.2	0.0	26.2

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Table 6
Capital Projects - Support Services
Listing of Business Case Summaries Filed

Line No.	Project Number	Business Case Summary (BCS) Title	BCS Approval Date	Project Stage	BCS Status	BCS Status in EB-2013-0321
	(a)	(b)	(c)	(d)	(e)	(f)
1	ICIFI043	Enterprise Systems Consolidation Project	31/07/2012	Completed	Final	In-execution

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Table 7
Capital Projects - Support Services
Status of Projects $5M and Greater with 2014 and 2015 In-Service Dates in EB-2013-0321

Line No.	Project Number	Project Name	In-Service Date at Time of EB-2013-0321 Application	Project Stage at Time of EB-2013-0321 Application	Current Project Status	
					Project Status	Projected/Actual In-Service Date
	(a)	(b)	(c)	(d)	(e)	(f)
1	ICIIA077	Windows 7 Network and Desktop Upgrade	31/03/2014	Planning	Costs incurred for this project were expensed due to OPG's capitalization eligibility policy.	N/A