ALLOCATION OF SUPPORT SERVICES COSTS

1.0 PURPOSE

The purpose of this evidence is to describe the Support Services costs assigned and allocated to the nuclear business as well as the underpinning cost allocation methodology.

2.0 OVERVIEW

Support services costs assigned and allocated to the nuclear business unit are $448.9M, $437.2M, $442.7M, $445.0M, and $454.1M for the test period 2017 to 2021, as presented in Ex. F3-1-1 Table 3.

Support Services include Business and Administrative Services, Finance, People and Culture, Commercial Operations and Environment, and Corporate Centre. As centre-led organizations in OPG, Support Services provide support to the nuclear business. A description of Support Services is provided in section 3.

Support Services costs are either directly assigned or allocated to the regulated businesses. OPG directly assigns costs that are directly related to a business unit. For example, Support Services employees working at, and solely in support of, a business unit would be directly assigned to that business unit. Support Services costs that are associated with services utilized by more than one business unit are allocated based on appropriate cost drivers, which reflect cost causation or benefits received by the business unit. The methods of cost allocation are provided in section 5.

OPG's cost allocation methodology is the same as the methodology that was approved by the OEB in EB-2013-0321, EB-2010-0008 and EB-2007-0905. The methodology was reviewed in EB-2013-0321 (Ex. F5-5-1) by independent cost allocation expert HSG Group Inc. ("HSG"). HSG concluded that the methodology to assign and allocate costs met best practices and was consistent with cost allocation precedents established by the OEB, and that the allocated costs met the requirements of the OEB's "3-prong test".

3.0 SUPPORT SERVICES COSTS – TOTAL OM&A

Exhibit F3-1-1 Table 1 summarizes the total OPG Support Services costs over the 2013 to 2021 period. Support Services costs are relatively stable during the test period.

Support Services costs decrease over the 2013 to 2015 period that coincides with the implementation of a centre-led organization driven by the Business Transformation initiative. Support Services groups leveraged attrition by not replacing staff that retired, took advantage of economies of scale by consolidating staff that perform similar work, and streamlined processes.

In 2011, OPG commenced the Business Transformation initiative to improve its cost structure and to design a more efficient and effective organization. This initiative led to the creation of a centre-led organizational structure, reduced the number of OPG employees and introduced changes to eliminate work, improve processes and achieve efficiencies. The Business Transformation initiative is described further at Ex. A4-1-1 of OPG's evidence in EB-2013-0321. While Business Transformation has ended as a discrete initiative, efforts to continually improve and manage OPG's resources are embedded in day-to-day operations and business planning processes.

Only through continuous improvement and increased productivity will OPG be able to achieve the challenging targets set out in its Business Plan. For example, the Business Plan includes the initiatives for Business and Administrative Services ("BAS") to drive continuous improvement (see OPG's 2016-2018 Business Plan and three-year financial projection at Ex. A2-2-1 Attachment 1, Appendix 8 for further details).

In computing the nuclear payment amounts, OPG has applied a 0.3 per cent stretch factor to the revenue requirement resulting from the company's nuclear Base OM&A and Support Services costs allocated to the nuclear business (see Ex. A1-3-2). OPG's stretch factor proposal provides a meaningful performance incentive during the term of this Application. The proposed stretch reductions are in addition to efficiencies and performance improvements within the company's business planning processes.

Exhibit F3-1-1 Table 3 presents the Support Services costs assigned and allocated to nuclear over the historical, bridge, and test years. Performance initiatives incorporated into the business planning process and the corresponding performance and operational efficiency improvements are reflected in the forecast expenditures in this Application. The Support Services costs shown in this Exhibit do not reflect application of the stretch factor, which is shown separately in Ex. A1-3-2.

3.1 Business and Administrative Services

BAS manages the following functions: Information Technology, Real Estate, and Supply Chain. The BAS functions have not changed since EB-2013-0321.

Information Technology ("IT")

The IT group oversees OPG's information management and information technology needs. IT is accountable for the strategic planning, management and operations of all business and technical information systems, but does not support process computers that control plant systems and operations. IT also administers OPG's information management and governing documents framework.

Information technology services are provided through a combination of internal staff and an outsource service contract with New Horizon System Solutions ("NHSS"), owned by Capgemini. NHSS delivers application and infrastructure management services across OPG. OPG IT provides application management services to Commercial Operations due to the commercially sensitive nature of the applications, as well as specific infrastructure and application management services to staff at the hydroelectric sites.

Exhibit F3-1-1 Table 7 presents BAS costs that are assigned and allocated to nuclear over the historical, bridge, and test years. The costs related to NHSS services, which include Infrastructure Management, Application Maintenance, Data Centre Services, and Other Services, are explained in more detail below.

Infrastructure Management costs refer to volume-based costs for NHSS services such as network management for both data and voice, end-user services such as service desk management and desktop support, IT security, disaster recovery and business continuity planning.

Application Maintenance costs cover NHSS services for providing day-to-day support for OPG's business applications including: application maintenance and support, applications operations and monitoring, application upgrades, database and middleware support. IT also works closely with application owners to plan for patches and technical upgrades, life cycle planning, release management, testing and commissioning and overall demand management.

Data Centre Service costs are NHSS services related to the management of the mainframe and servers, storage and backup system, capacity planning and performance tuning, system operations and monitoring and IT facilities.

The Other Services, referred to in the tables, include NHSS fixed costs for services such as Account Management (contract governance), Service Management (incident, problem, asset and configuration management as well as operational and service level reporting), Commercial Operations Systems operations, monitoring and support.

The IT Support Costs identified in the tables refer to the cost of the internal IT support groups providing IT Service and Project Portfolio management, IT Enterprise Strategy and Architecture and IT Programming and Performance Management.

Real Estate

The Real Estate group provides centralized support services through three departments: Real Estate Services, Facilities and Projects, and Business Infrastructure Services.

Real Estate Services

On a corporate-wide basis, Real Estate Services acquires, manages and disposes of real estate rights and interests; manages all commercial leases; consults on municipal planning issues; maintains real estate and property documents; develops and implements accommodation strategies to meet space requirements outside the generating stations; and, provides property tax services for all property owned by OPG.

Facility and Projects

Facility and Projects provides property management services, space planning, furniture and facility project management; and company-wide fleet administration. In addition, emergency response services are provided for all facilities under its control, along with generating station support as requested.

Business Infrastructure Services

Business Infrastructure Services provides a suite of administrative services to OPG clients including: records management and storage; document processing; graphics and printing services; mail and courier service, audio/visual; office equipment and supplies; library services; Real Estate Services call centre; and administrative support for staff located at OPG Head Office, Pickering, and Darlington, as well as other nuclear groups located at certain facilities in Durham Region.

Real Estate OM&A consists of costs to support these services, as well as costs of managing common real estate assets. The generation businesses are charged an asset service fee related to the use of these common assets (Ex. F3-2-1).

Exhibit F3-1-1 Tables 7 summarizes Real Estate costs assigned and allocated to nuclear over the historical, bridge, and test years.

Supply Chain

The Supply Chain group is responsible for procuring services and materials and managing contracts for OPG. Supply Chain focuses on maintaining integrity in the procurement process, delivering value for money and protecting OPG's assets. In addition, Supply Chain performs market analysis and develops long-term sourcing strategies for the supply of uranium.

Exhibit F3-1-1 Table 7 summarizes Supply Chain costs assigned and allocated to nuclear over the historical, bridge, and test years.

3.2 Finance

Finance provides strategic advice, services, and support in the areas of controllership, investment planning, treasury and fund management. On behalf of the company, it prepares financial statements and maintains accounting policies and procedures in accordance with U.S. Generally Accepted Accounting Principles.

Controllership

Controllership provides services directly to Nuclear, Hydroelectric, Thermal and Support Services groups. Staff are directly assigned to the business units and are located at the production sites they support. Controllership also provides shared financial services (e.g., accounting, processing of billings, accounts payables, business expenses, etc.), business planning and reporting, and income and commodity tax services.

Investment Planning

Investment Planning develops and evaluates major projects and strategic initiatives, develops guidelines for and provides advice on business cases and lifecycle plans; develops models combining engineering and financial aspects for evaluating business decisions and for valuing capital investments; and designs and conducts risk assessments.

Treasury and Fund Management

The Treasury group is responsible for cash management, financial exposure management and capital structure management. The Risk Management and Insurance department is responsible for OPG's insurance program, claims processing and contract reviews.

Fund Management has the responsibility for management and oversight of OPG's Nuclear Used Fuel Fund, Nuclear Decommissioning Fund, and OPG's Pension Fund. The investment management of these three funds has been outsourced to third party investment managers. Management and oversight of the three funds includes recommending the strategic asset mix of the funds, monitoring compliance with legislation and agreements, selection of investment managers, carrying out due diligence audits, and providing monitoring and oversight of the fund activities.

CFO Office

The CFO Office manages the Finance Business Unit.

Exhibit F3-1-1 Table 5 summarizes Finance costs assigned and allocated to nuclear over the historical, bridge and test years.

3.3 People and Culture

People and Culture ("P&C") enables OPG and its leaders to build a productive, engaged workforce with the right people, that have the right skills, in the right roles to achieve business results. The People and Culture function is responsible for labour relations, health and safety standards, compensation and benefits, training, talent management and succession planning. Its specific accountabilities by organization are described below:

Senior Vice President

The Senior VP leads the People and Culture business unit.

HR Business Partners

HR Business Partners provides strategic advice to the business and leads the implementation of P&C programs within a given business unit.

Total Rewards and Solutions Centre

The Total Rewards and Solutions Centre develops and manages the compensation and benefits program to achieve the company's business objectives and provides analytical support related to work force planning and P&C program management. This group also provides administrative support and services through the operation of an HR Service Centre and transaction processing related to payroll.

Health, Safety, Employee and Labour Relations

Health, Safety, Employee and Labour Relations develops and maintains a health and safety management system and manages all labour relations activities to ensure compliance with collective agreements, labour legislation, and to ensure policies for non-represented staff are applied in a manner consistent with the intent of the policies.

Talent Management and Business Change

Talent Management and Business Change takes steps to attract, develop and retain staff with the talents required to meet the company's needs and co-ordinates succession planning to ensure that critical skills and business knowledge are maintained and to ensure that corporate leadership requirements are met.

Learning and Development

The Learning and Development group develops and delivers training for OPG employees, ensuring all licensing and regulatory requirements are met and that OPG's workforce has the knowledge and skills required for safe and reliable operations.

Exhibit F3-1-1 Table 9 summarizes People and Culture costs allocated to nuclear over the historical, bridge, and test years.

3.4 Commercial Operations and Environment

Commercial Operations and Environment includes Commercial Contracts, Environment, Regulatory Affairs, Electricity Sales and Trading, and Integrated Revenue Planning sections.

OPG recently restructured Commercial Operations and Environment by transferring Commercial Contracts, Environment, Regulatory Affairs, Electricity Sales and Trading and Integrated Revenue Planning groups to different divisions within the organization. Despite changes in organizational structure and reporting relationships, OPG continues to present costs as if Commercial Operations and Environment remained intact. Presenting costs in this way allows for ease of comparability between historical, bridge and test years, provides continuity with previous filings and is consistent with the presentation in OPG's approved 2016-2018 Business Plan (Ex. A2-2-1 Attachment 1). The changes in organizational structure do not have a material impact on the costs forecast for the bridge year and test period and do not have an impact on the cost allocation methodology.

Commercial Contracts

Commercial Contracts includes Fuels, Commercial Services, and Bruce Lease Management departments. The Fuels department is responsible for the procurement and delivery of fuel (excluding uranium), sales of by-products, acquisition of emission allowances and credits, negotiation and contract management for generation and ancillary services with the Independent Electricity System Operator ("IESO"). Commercial Services markets and manages a program for the sale of isotopes and heavy water products, and services for existing and future applications. Bruce Lease Management Office manages contracts with Bruce Power.

Environment

Environment provides operational support to OPG plants and facilities to minimize environmental risks and impacts, reports on OPG's environmental performance, provides environmental assessment and specialist support and seeks opportunities for environmental leadership. The Environment Division supports OPG in a wide range of environmental subject areas, including aquatic and terrestrial biology, contaminated land and groundwater, radiological environmental management, air and water emissions, waste management, certificates of approval, spills management and legislative monitoring.

Regulatory Affairs

Regulatory Affairs is responsible for OPG's interactions with economic regulators. These include the OEB, IESO, the National Energy Board and other Canadian and U.S. regulators that have an impact on OPG's operations. Regulatory Affairs provides regulatory intelligence, strategy, and advice and also manages regulatory interactions to obtain approvals and outcomes that allow OPG to accomplish its business goals.

Electricity and Sales Trading

The Electricity Sales and Trading group co-ordinates the offering of OPG's generation into the IESO market to maximize OPG's net revenues by integrating and optimizing the generation portfolio and trading activities. This includes outage planning and strategies to optimize production based on market signals; managing generation risks; and engaging in interconnected market electricity trading.

Integrated Revenue Planning

Integrated Revenue Planning provides power market forecasts of OPG unit production, price, revenue, and gross profit margin for OPG units along with appropriate risk measures. This group includes Market Affairs which monitors, provides advice and analysis on potential changes to the market, responds to potential compliance and surveillance issues and provides support for OEB rate submissions.

Exhibit F3-1-1 Table 3 summarizes Commercial Operations and Environment costs allocated to nuclear over the historical, bridge, and test years.

3.5 Corporate Centre

The corporate centre includes: the Executive Office (Chairman, President and CEO offices); Corporate Executive Operations; Law; Corporate Relations and Communications; Corporate Business Development and Enterprise Risk Management; and Assurance.

OPG recently restructured Corporate Centre by transferring Law, Corporate Relations and Communications and Corporate Business Development and Enterprise Risk Management groups to different divisions within the organization. Despite the changes in organizational structure and reporting relationships, OPG continues to present costs as if Corporate Centre remained intact. Presenting costs in this way allows for ease of comparability between historical, bridge and test years, provides continuity with previous filings and is consistent with the presentation in OPG's approved 2016-2018 Business Plan (Ex. A2-2-1 Attachment 1). The changes in organizational structure do not have a material impact on the costs forecast for the bridge year and test period and do not have an impact on the cost allocation methodology.

<u>Executive Office</u>

The Executive Office is responsible for the overall management and strategy of the company.

<u>Corporate Executive Operations</u>

The Corporate Executive Operations function supports OPG's Board of Directors and the Executive Office, and interfaces between the OPG Board, management and OPG's shareholder.

<u>Law</u>

Law provides legal advice and services to support all business units across OPG, including support for various procurement activities and corporate and commercial matters. Law provides advice related to OPG's pension and nuclear funds; real estate; Bruce lease and related agreements and water resources; municipal approvals and land use planning; energy markets and regulatory matters, including the OEB payment amount application; environmental approvals and compliance; nuclear licensing; litigation; First Nations and Métis issues; freedom of information request; occupational health and safety compliance; and labour employment and privacy law.

Corporate Relations and Communications

Corporate Relations and Communications supports all of OPG's business units by directing the planning and delivery of communications and issue management advice, guidance and services to support the business units' ongoing efforts to earn and maintain the public franchise to operate facilities in Ontario. This includes the development of communications and issue management strategies to improve OPG's relations with host communities, and further their understanding of the company as a safe, reliable, environmentally responsible operator and steward of the Province's generating assets.

Corporate Business Development and Enterprise Risk Management

Corporate Business Development ("CBD") is responsible for developing and maintaining an integrated corporate business development strategy to assess and recommend new business opportunities; establish and maintain an integrated portfolio-based generation and site asset strategy; and develop and implement external and internal partnerships in support of the corporate strategy. CBD explores the concept and definition of major hydroelectric and thermal generation development projects as well as other business development initiatives. CBD also anticipates and develops strategies to deal with project opportunities and challenges.

Enterprise Risk Management provides a framework that enables the organization to effectively identify, assess, monitor, and report on the key strategic, emerging, external, operational, financial, and transactional risks to the Corporation's objectives.

Assurance

The Assurance group includes Internal Audit and Nuclear Oversight. Internal Audit provides independent, objective assurance of the organization's operations; evaluates the effectiveness of governance and controls; and, maintains a strategic audit plan which includes key risk audits, mandatory audits, cyclical audits, major project audits, contract audits and other audits and reviews. Nuclear Oversight provides assurance that the Nuclear Management System (a condition of OPG's operating license) is effectively implemented in accordance with OPG's charter.

Exhibit F3-1-1 Table 3 summarizes Corporate Centre costs allocated to nuclear over the historical, bridge, and test years.

4.0 BENCHMARKING STUDY

In the EB-2013-0321 Decision (p. 95), OPG was directed to undertake an independent benchmarking study of corporate support functions and costs given the significant changes resulting from the Business Transformation initiative. The Hackett Group ("Hackett") carried out an independent benchmarking study in respect of that direction, which is filed as Attachment 1 to this Exhibit.

The study benchmarked OPG against peers in 2010 (before the start of the Business Transformation initiative) and in 2014 to show results in a manner that facilitates a transparent comparison before and after the Business Transformation initiative. Corporate costs assigned and allocated to both nuclear and regulated hydroelectric businesses were included in the scope of the benchmarking study.

OPG followed Hackett's independent benchmark methodology to enable OPG's corporate support functions and costs to be benchmarked against peers on a comparable basis.

Hackett normalized OPG's corporate costs based on key demand drivers for each function. For IT, number of end users was used to benchmark costs per end user. For

HR, number of employees was used to benchmark costs per employee. For Finance and Executive and Corporate Services ("ECS"), revenues were used to benchmark costs as a percentage of revenues.

The benchmarking study found that OPG's regulated corporate function costs declined 10 per cent from 2010 to 2014 while total regulated OPG headcount declined 11 per cent. It also found that OPG's overall cost benchmark performance at the functional level improved between 2010 and 2014 while comparisons to peer benchmarks varied by function, as shown in Figure 1.

Figure 1: Summary of Corporate Cost Benchmarking Results

Line No.	Corporate Function	OPG 2010 (a)	OPG 2014 (b)	Peer (c)	OPG Improvement 2010 - 2014 (%) (d)
1	IT Cost per End User	$12,015	$9,541	$14,995	21%
2	HR Cost per Employee	$3,400	$3,375	$3,350	1%
3	Finance Cost as a Percent of Revenue	1.02%	0.75%	0.66%	26%
4	ECS Cost as a Percent of Revenue	3.39%	2.75%	1.07%	19%

As shown in Figure 1:

- OPG's IT cost per end user decreased between 2010 and 2014 by 21 per cent and was 36 per cent less than the peer benchmark
- OPG's HR cost per employee remained relatively flat between 2010 and 2014 and was in closer proximity to the peer benchmark
- OPG's Finance cost as a percentage of revenue significantly closed the gap to peer decreasing by approximately 26 per cent between 2010 and 2014.
- OPG's ECS cost as a percentage of revenue was reduced by approximately 19 per cent between 2010 and 2014. ECS is comprised of 11 diverse sub-categories.[1]

[1] The 11 sub-categories are: Administrative Services, Transportation Services, Real Estate and Facilities Management, Government Affairs, Legal (includes Regulatory Affairs), Quality Management, Risk

The most significant challenges were faced in the ECS areas of Risk Management and Environmental, Health and Safety; Procurement; and, Real Estate and Facilities Management. These were the ECS areas where OPG's costs were most significant and where the gap between OPG and peers was greatest.

OPG's costs associated with Risk Management and Environmental, Health and Safety, and Procurement continue to be driven by nuclear-specific requirements and commitment to upholding OPG's social license to operate. OPG's adherence to strict CNSC regulations and its robust safety and environmental programs are examples of key cost drivers in these areas. OPG's nuclear stations have well-established environmental monitoring programs that are designed to assess impacts on human health and the environment, demonstrate compliance with regulatory limits, validate the effectiveness of containment and effluent controls, and verify predictions made by environmental risk assessments. For example, in addition to all of the conventional environmental requirements, OPG conducts a radiological environmental monitoring program to assess, among other things, radiation exposure to members of the public from OPG's nuclear generating stations. The Procurement function must address the significant quality requirements for materials that are used in nuclear facilities. In addition, the cost of Procurement activities is affected by aging assets, parts obsolescence and the limited market availability of nuclear qualified suppliers. The majority of the utilities included in OPG's peer benchmarking group were not nuclear power producers and therefore do not have the same breadth of requirements as OPG in these areas.

OPG's Real Estate and Facilities Management costs continue to be driven by business requirements associated with the large number of nuclear and hydroelectric facilities and the geographic spread of the facilities across the province. As noted in Attachment 1 (p. 16), OPG's Real Estate and Facilities Management costs included all facility costs

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Management and Environmental, Health and Safety, Corporate Communications, Planning and Strategy, Executive Office and Procurement.

associated with its corporate regulated operations, including facility costs associated with IT, HR and Finance functions. Such facility costs were embedded in each particular function for OPG's peers. This limitation had an unfavourable impact on OPG's Real Estate and Facilities Management performance.

In addition, OPG's performance in relation to the peer benchmarks for each function is significantly influenced by its labour costs. This is also reflected in OPG's performance in the compensation benchmarking study carried out by Willis Towers Watson provided at Ex. F4-3-1 Attachment 2. As described in Ex. F4-3-1, OPG's regulated staff work in a predominantly unionized environment, with approximately 90 per cent of staff belonging to either the PWU or the Society. Given the extent of unionization, collective bargaining plays a dominant role in determining OPG's labour costs. Collective bargaining directly affects the wages and incentives provided to unionized employees, as well as the pensions and benefits they earn. Collective bargaining also has an indirect impact on the compensation provided to non-unionized positions because internal equity, career development and attracting experienced employees into management positions are important factors in workforce planning and development. As a result, OPG's performance in relation to the peer benchmarks in the Hackett study would be impacted to the extent that utilities in OPG's peer group are non-unionized and do not have the same collective bargaining requirements.

5.0 METHODS OF ALLOCATION

The cost allocation methodology is the same as was previously evaluated and accepted by the OEB in EB-2013-0321, EB-2010-0008 and EB-2007-0905. The cost allocation methodology uses two methods to distribute costs among the business units: direct assignment and allocation. In 2013, OPG's allocation methodology was also independently evaluated by HSG Group Inc and the report was filed to the OEB as part of EB-2013-0321 at Ex. F5-5-1.

5.1 Direct Assignment

Direct assignment is used when specific resources, both individual employees and specific cost items, used by a particular business unit can be reasonably established. There is specific identification of resources where there is a direct relationship between the costs incurred by a support group and the business unit that causes the costs to be incurred. Estimation of the resources used by the business unit may be based on current time estimates or historical activity.

5.2 Allocation

Allocations are used when more than one business unit uses a resource, but the portions of the resource that each uses cannot be directly established. In these cases, a cost driver is used to allocate the costs of the resource. A cost driver is a formula for sharing the cost of a resource among those who caused the cost to be incurred. There are two types of cost drivers: external and internal drivers. External drivers are based on data that are external to the allocation process. For example, computer hardware costs incurred by the IT group are allocated to business units based on the number of LAN ID's. Internal drivers are based on values computed as part of the cost allocation process. For example, a supervisor's salary may be allocated in proportion to the salaries of the people being supervised.

OPG continues to use three steps when allocating a department's costs:

- Step One – Specific Identification of Resources.
    - The costs of resources specifically identified to a business unit are assigned to it.
    - Labour costs associated with individuals who support only one business unit are assigned to it.
    - Non-labour costs directly caused by one business unit are assigned to it.

- Step Two – Estimation of Resources

The next step is to identify the resources in each department that directly support more than one business unit and to estimate the resources attributable to each business unit.

The costs of these resources are directly assigned to each business unit in proportion to the estimated time required by that business unit.

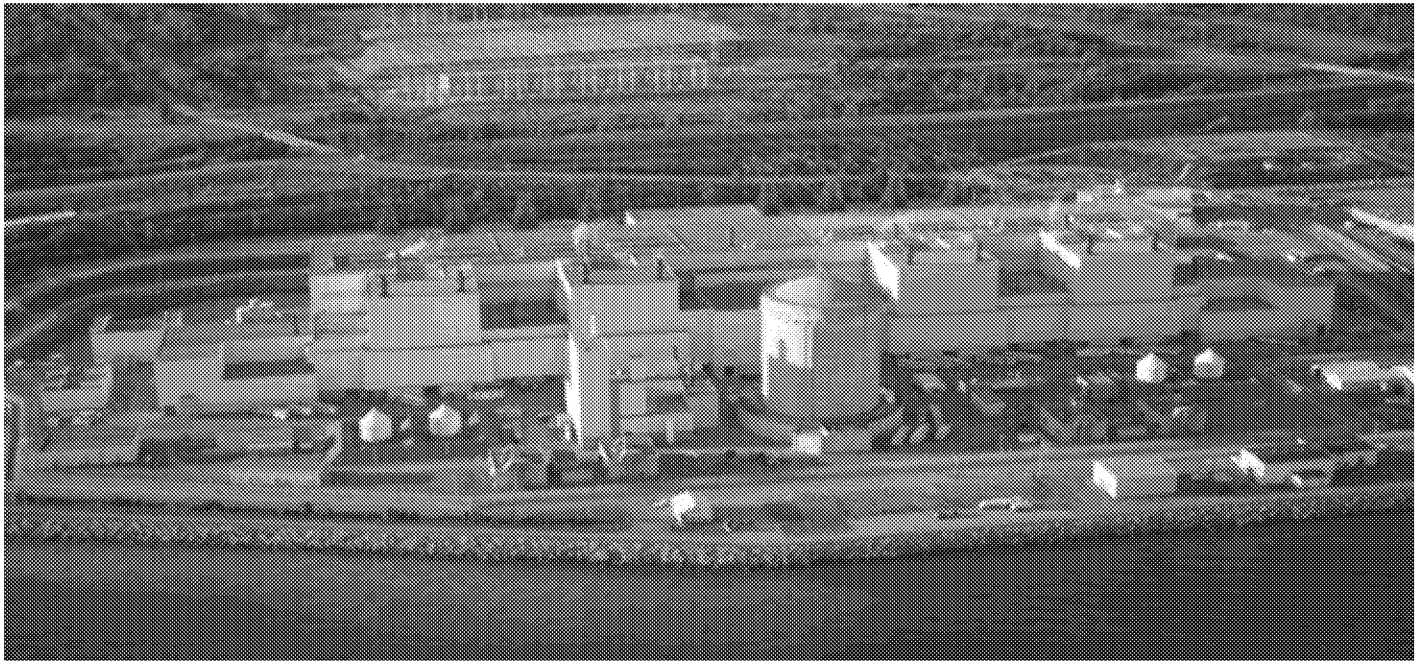
- Step Three – Assign Cost Drivers

OPG uses the appropriate standardized cost drivers for all remaining activities or expenses.

ATTACHMENTS

Attachment 1: Benchmarking Study of OPG's Corporate Support Functions and Costs prepared by The Hackett Group

Note: Attachment 1 is marked "Confidential", however, OPG has determined it to be non-confidential in its entirety.



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World Class Defined and Enabled

ONTARIO POWER GENERATION

Benchmarking Study of OPG's Corporate Support Functions and Costs

April 2016

CONFIDENTIAL

Contents

- Executive Summary
- Benchmark Objectives and Methodology
- Peer Overview
- Results
- Appendix

Executive Summary

Overview

- Ontario Power Generation (OPG) has engaged The Hackett Group to perform an independent benchmarking study of OPG's corporate support functions and costs
- Hackett leveraged its benchmarking and business process implementation expertise to deliver the following cost assessment to Peers for 2010 and 2014

General Observations

1. OPG's total corporate function costs declined 10% from 2010 to 2014 while total OPG headcount declined 11%
2. OPG's overall cost benchmark performance at the functional level improved between 2010 and 2014 while comparisons to peer benchmarks vary by function

The Hackett Group

Contents

- Executive Summary
- Benchmark Objectives and Methodology
- Peer Overview
- Results
- Appendix

Objectives in completing the benchmark

- Perform an independent benchmarking study of OPG's corporate support functions and costs. The results of this study will need to be shown in a manner that facilitates transparent comparison before and after OPG's Business Transformation initiative.
- This study is in response to the Ontario Energy Board's direction to OPG in its EB-2013-0321 Decision.

In 2011, OPG commenced the Business Transformation initiative to improve its cost structure and to design a more efficient and effective organization. This initiative led to the creation of a centre-led organizational structure, reduced the number of OPG employees and introduced changes to eliminate work, improve processes and achieve efficiencies. The Business Transformation Initiative is described further at Ex. A4-1-1 of OPG's EB-2013-0321 evidence.

Benchmark Methodology

Data Guidelines and Benchmark Scope

- Geographic Scope:
  - All OPG regulated operations
- Benchmark data collection period = Fiscal Year 2010 and 2014
- All data is represented in 2014 Canadian Dollars for comparison purposes
  - PPP (Purchasing Power Parity) was used to adjust the peer data from US to Canadian dollars
  - A 2%/year inflation rate was applied to the peer companies and OPG's 2010 costs/revenue to normalize the data to 2014 Canadian Dollars
- Out of Scope – The below items were not included in the benchmark to facilitate an apples to apples comparisons to the peer
  - All offices or operations of the unregulated portion of OPG
  - Direct functions of the Darlington Refurbishment Project
  - Integrated Revenue Planning, Electricity Sales & Trading, Commercial Contracts and Corporate Business Development
  - For Finance: Revenue cycle, Fund Management, nuclear-specific costs (e.g., nuclear insurance)
  - For Human Resources: Workforce Development Services (training)
  - For Executive and Corporate Services (ECS): Security, Cafeteria and Catering, Travel Services, Legal – Mergers and Acquisitions (M&A), nuclear-specific costs (e.g. nuclear facilities costs); Within Procurement, warehouse management & logistics and product development, design & support

Benchmark Comparisons

- **Peer Group –** represents the median of a custom group of companies in multiple industries that have similar size and business complexity to OPG

Normalization of Benchmark Data

- Data has been normalized based on the key demand drivers for each function:
  - Finance, ECS = Revenue ($4.237B in 2010 and $4.849B in 2014)
  - IT = End User Equivalents (11,011 in 2010, 12,267 in 2014)
  - HR = Employees (10,305 in 2010 and 9,292 in 2014)

Revenue: *External Revenue Only, intercompany revenue not included. OPG includes revenue associated with regulated operations only. OPG revenue is adjusted to account for revenue deferred to future periods and to include revenue in 2010 from newly regulated hydroelectric facilities to facilitate transparent comparison before and after OPG's Business Transformation initiative.*
Employees: *Full-time, part-time, seasonal, and contingent employees . OPG includes employees associated with regulated operations only.*
End User: *An individual (typically either an employee or contractor) that spends at least 10% of his or her time using a company provided, funded, supported computing device that is part of the company's IT infrastructure (i.e. desktops, laptops, hand held devices, etc.) to support his or her business function. The user must have direct access to internal applications / systems to execute specific transactions on behalf of the company. OPG includes end users associated with regulated operations only.*

The Hackett Group

Hackett has a robust and well-defined taxonomy

General & Administrative Scope (G&A)

Finance

- Accounts Payable; Travel & Expenses
- Credit, Customer Billing, Collections, Dispute Management, Credit Application
- General Ledger, Enterprise Consolidation, Intercompany & Cost Accounting, Fixed Assets, External Reporting
- Tax Management
- Cash, Capital & Risk Management
- Compliance Management
- Strategic Business Planning Support, Annual Planning, Forecasting, Business Performance Reporting
- Business Analysis
- Function Management

HR

- Health & Welfare, Pension & Savings, Compensation Administration
- Payroll, Time & Attendance
- Employee Data Mgmt. and HR Reporting, Compliance Management
- Recruiting & Staffing, Exit Process
- [illegible]
- Organization Design & Development, Employee Relations
- Labor Relations
- Total Rewards Planning
- Strategic Workforce Planning
- Function Management

IT

- IT Business Planning
- Enterprise Architecture Planning
- Emerging Technologies
- Infrastructure Development
- Application Development
- Quality Assurance
- Infrastructure Management
- End User Support
- Application Maintenance
- Risk and Function Management

Executive & Corporate Services (ECS)

- Administrative Services
- Travel and Transportation Services
- Real Estate & Facilities Management
- Government Affairs
- Legal
- Quality Management
- Risk, Environment Health and Safety, and Security Management
- Corporate Communications
- Planning and Strategy
- Executive Office
- Procurement

Hackett's process taxonomy is applied independent of OPG's organizational structure and functional reporting lines, thereby facilitating an "apples-to-apples" comparison

Functions in grey font were excluded from the benchmark

The Hackett Group

Contents

- Executive Summary
- Benchmark Objectives and Methodology
- Peer Overview
- Results
- Appendix

OPG Peer Group

Composite Peer Group
Ameren Corporation
American Water
Areva SA
Arizona Public Service Company
Black Hills Corporation
CMS Energy Corporation
Constellation Energy Resources, LLC
Contour Global Ltd.
ENMAX Corporation
Florida Power & Light Company
Lower Colorado River Authority
National Grid plc
NiSource Inc
NorthWestern Corporation
Pepco Holdings, Inc.
Public Service Energy Group
RRI Energy, Inc
SaskPower
We Energies

Peer Group Nuclear Operators: Ameren Corp, Areva, Arizona Public Service Company, Constellation Energy Resources, Florida Power and Light, Public Service Energy Group

The Hackett Group

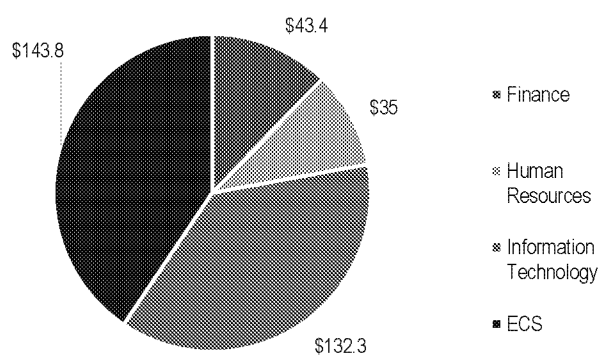
Contents

- Executive Summary
- Benchmark Objectives and Methodology
- Peer Overview
- Results
- Appendix

Overall costs declined 10% from 2010 to 2014 while headcount declined 11%. OPG's costs declined 12% in IT, 10% in HR, 16% in Finance and 7% in ECS

2010 Costs

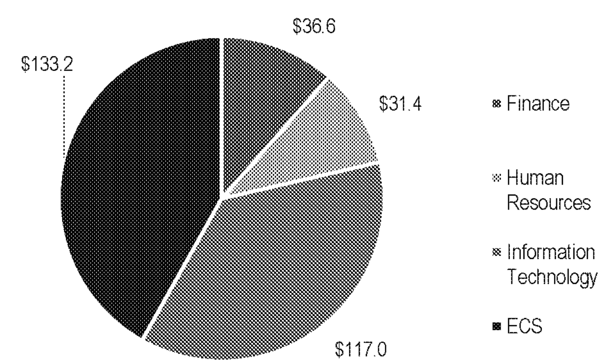
2010 Total Corporate Function Cost = $354.5 Million



2010 OPG Employees = 10,305

2014 Costs

2014 Total Corporate Function Cost = $318.2 Million



2014 OPG Employees = 9,292

*2010 costs have been adjusted for inflation

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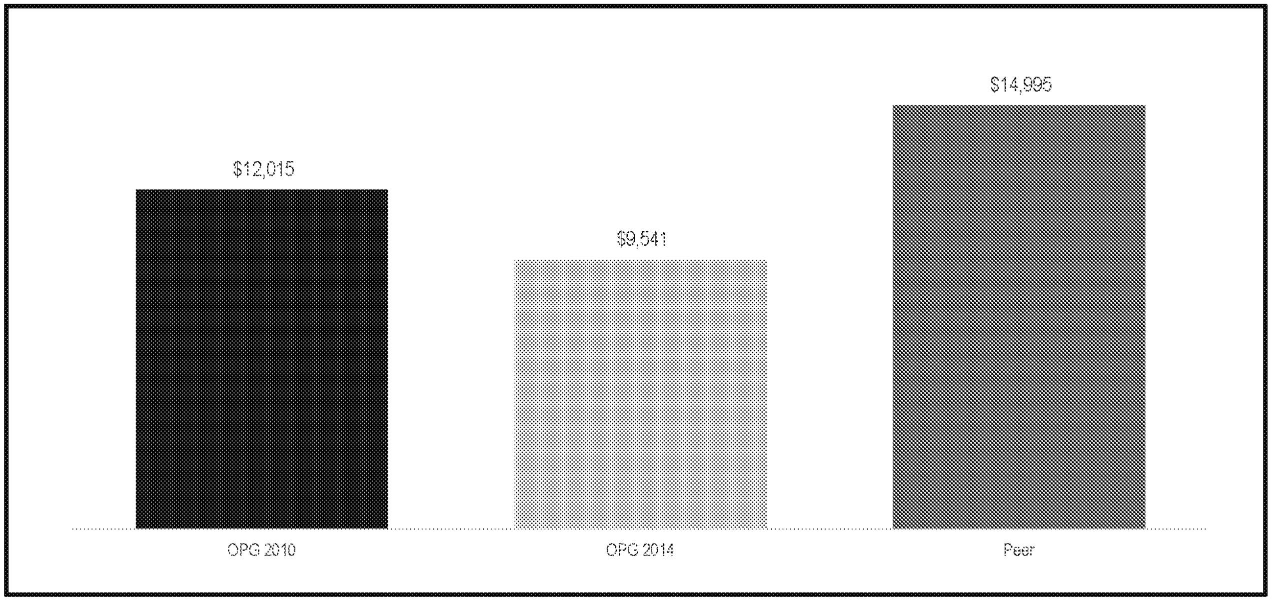
OPG IT Cost Per End User has decreased since 2010 and is 36% less than Peers

IT Cost Per End User



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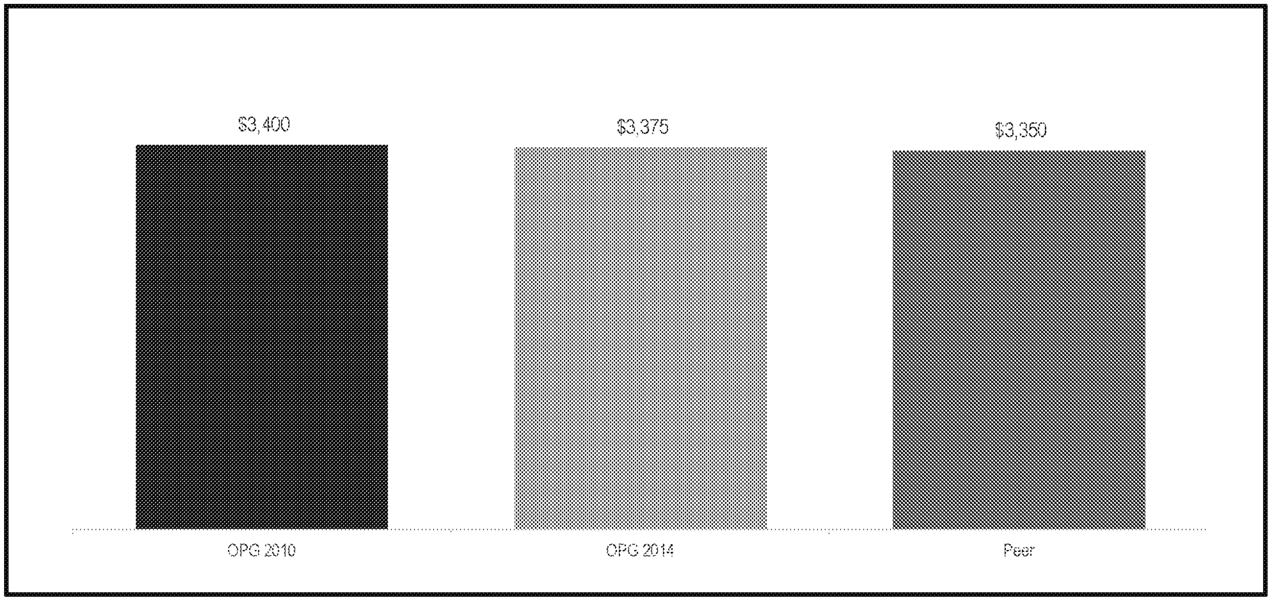
OPG HR Cost per Employee has remained relatively flat from 2010 to 2014 and is in closer proximity to peer

HR Cost per Employee



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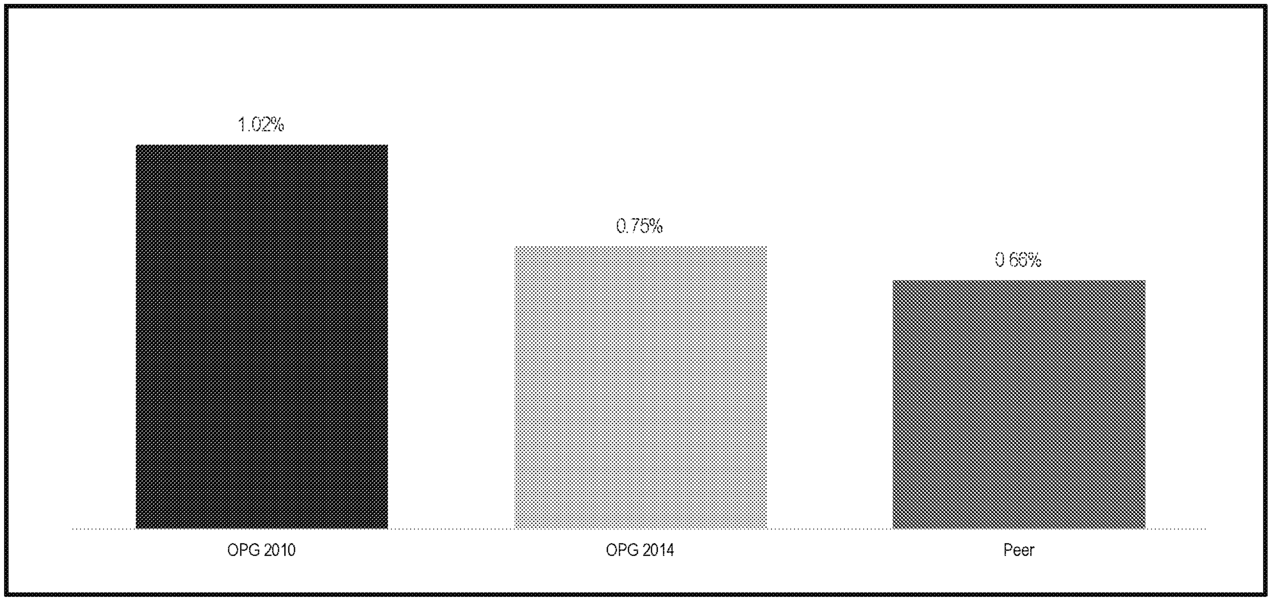
OPG Finance has significantly closed the gap to peer decreasing Finance cost as a Percent of Revenue 26% from 2010 to 2014

Finance Cost as a Percent of Revenue



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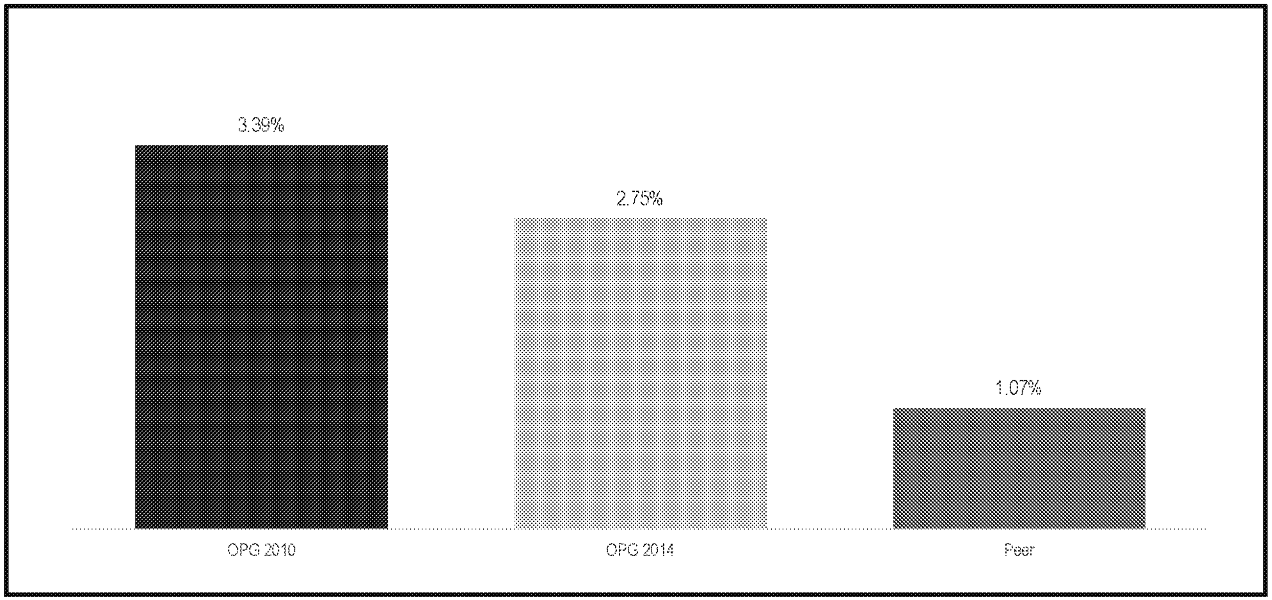
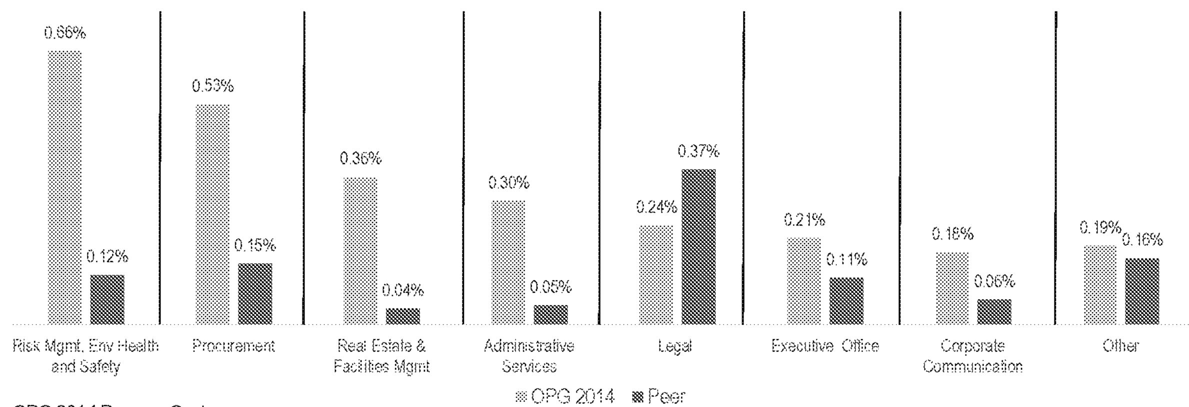
OPG ECS Cost as a Percent of Revenue has been reduced by approximately 19% but still has opportunities compared to the Peer

ECS Cost as a Percent of Revenue



OPG ECS has opportunities to peer especially in the areas of Risk Management and EHS, Procurement, and Real Estate

ECS Process Cost as a Percent of Revenue



OPG 2014 Process Costs:

Risk Management, Env. Health and Safety	Procurement	Real Estate & Facilities Management	Admin Services	Legal	Executive Office	Corporate Communication	Other
32.3	25.8	17.3	14.5	11.9	10.1	8.5	9.2

*Numbers may not sum due to rounding
*Real Estate and Facilities Management: OPG's cost for this sub-category includes all facility costs associated with corporate regulated operations including facility costs associated with IT, HR, and Finance functions. Such facility costs are embedded in each particular function for OPG's peer
*Other processes include: Transportation, Quality Management, Government Affairs, and Planning and Strategy

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Contents

- Executive Summary
- Benchmark Objectives and Methodology
- Peer Overview
- Results
- Appendix

About The Hackett Group

Profile & Mission

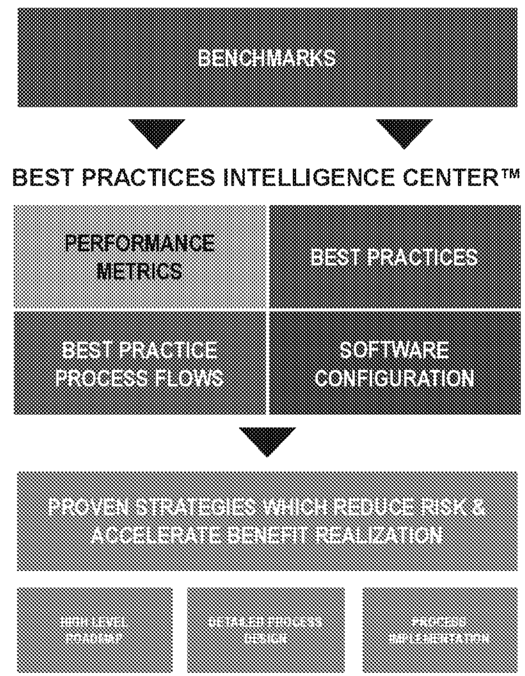
- The Hackett Group is an Intellectual Property based consultancy focusing on enabling General and Administrative performance improvement through leveraging our intellectual capital, based on over 7,500 benchmarks and performance studies
  - More than 20,000 performance metrics
  - More than 1,900 best practices
  - Best practice process flows and configuration guides

Approach

- We help clients to *measure* current performance compared to peers and World-class performers
- We *identify* project opportunities and develop a business case leading to an actionable roadmap, supported by a Transformation Management Office
- We *implement* recommended change and empower our clients to improve the organization, processes and the culture that enable agility, leading to sustainable growth

Results

- Sustainable performance improvement leading to an agile enterprise with lower costs, higher quality and better margins



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Numbers may not add due to rounding.

Table 1
Corporate Support & Administrative Groups - OPG ($M)

Line No.	Corporate Costs	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	**Business and Administrative Service[1]**	295.6	281.7	285.5	292.5	292.4	284.4	286.6	287.1	289.6
2	**Finance**	63.9	59.0	51.4	57.5	58.1	56.0	55.7	54.9	55.8
3	**People and Culture**	115.1	118.1	115.9	111.2	115.0	113.7	116.3	117.3	119.3
4	**Commercial Operations and Environment**	37.4	43.0	37.2	44.0	42.8	40.9	41.9	41.3	44.8
5	**Corporate Centre**	50.8	47.4	61.9	68.2	65.4	65.5	65.7	66.9	67.8
6	**Total**	562.8	549.2	551.9	573.4	573.7	560.5	566.2	567.5	577.3

Notes:
1 Business and Administrative Service costs exclude amounts captured in the Asset Service Fee.

Numbers may not add due to rounding.

Table 2

Allocation of Corporate Support & Administrative Costs - Regulated Hydroelectric ($M)

Intentionally left blank (See Ex. A1-3-1)

Numbers may not add due to rounding.

Table 3
Allocation of Corporate Support & Administrative Costs - Nuclear ($M)

Line No.	Corporate Group	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	**Business and Administrative Service**	246.6	227.2	231.0	245.0	246.1	239.1	241.0	242.3	246.1
2	**Finance**	46.3	44.4	35.6	40.2	41.5	39.4	39.0	38.8	39.9
3	**People and Culture**	91.6	98.2	95.8	92.4	96.2	95.3	97.8	98.5	100.5
4	**Commercial Operations and Environment**	14.7	19.5	16.8	20.4	20.2	18.9	19.9	19.6	21.8
5	**Corporate Centre**	29.2	26.9	39.6	44.3	44.9	44.5	45.0	45.8	45.8
6	**Total**	428.4	416.2	418.8	442.3	448.9	437.2	442.7	445.0	454.1

Numbers may not add due to rounding.

Table 4

Allocation of Finance Costs - Regulated Hydroelectric ($M)

Intentionally left blank (See Ex. A1-3-1)

Numbers may not add due to rounding.

Table 5
Allocation of Finance Costs - Nuclear ($M)

Line No.	Costs	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	**Controllership**	30.0	28.7	30.9	35.9	36.5	34.6	34.4	34.3	35.5
2	**Investment Planning**	2.9	2.3	1.0	1.2	1.2	1.1	1.2	0.9	0.7
3	**Assurance**[1]	8.4	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	**Treasury & Fund Management**	2.8	2.6	2.1	2.9	3.0	3.0	3.2	3.1	3.2
5	**CFO Office**	2.2	2.4	1.5	0.2	0.8	0.7	0.2	0.5	0.5
6	**Total**	46.3	44.4	35.6	40.2	41.5	39.4	39.0	38.8	39.9

Notes:
1 Moved to Corporate Centre during organizational change in 2015.

Numbers may not add due to rounding.

Table 6

Allocation of Business and Administrative Service Costs - Regulated Hydroelectric ($M)

Intentionally left blank (See Ex. A1-3-1)

Numbers may not add due to rounding.

Table 7
Allocation of Business and Administrative Service Costs - Nuclear ($M)

Line No.	Costs	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	**Infrastructure Management**	27.3	26.7	25.8	22.9	22.2	21.4	21.4	20.6	20.0
2	**Application Maintenance**	12.2	11.9	11.5	10.2	9.9	9.5	9.5	9.2	8.9
3	**Data Centre Services**	12.4	12.1	11.7	10.4	10.0	9.7	9.7	9.3	9.0
4	**Other Services**	4.0	3.9	3.8	3.3	3.2	3.1	3.1	3.0	2.9
5	**NHSS Base Costs**	55.9	54.6	52.7	46.8	45.3	43.7	43.7	42.1	40.8
6	**IT Support Costs**	35.9	36.6	37.3	41.8	43.7	42.6	42.3	42.7	43.2
7	**IT Costs (line 6 + line 7)**	91.8	91.2	90.0	88.6	89.0	86.3	86.0	84.8	84.0
8	**Supply Chain**	48.6	42.5	41.1	47.6	47.3	46.7	47.8	49.2	50.3
9	**Real Estate**	88.4	83.3	82.5	89.9	94.5	92.8	95.0	95.5	98.7
10	**OM&A Project Costs**	17.8	10.2	17.4	18.9	15.3	13.3	12.2	12.8	13.1
11	**Total**	246.6	227.2	231.0	245.0	246.1	239.1	241.0	242.3	246.1

Numbers may not add due to rounding.

Table 8

Allocation of People and Culture Costs - Regulated Hydroelectric ($M)

Intentionally left blank (See Ex. A1-3-1)

Numbers may not add due to rounding.

Filed: 2016-05-27
EB-2016-0152
Exhibit F3
Tab 1
Schedule 1
Table 9

Table 9
Allocation of People and Culture Costs - Nuclear ($M)

Line No.	Costs	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	**Business Partners**	4.1	3.7	3.2	3.2	3.4	3.5	3.5	3.5	3.6
2	**Total Rewards & Solutions**	9.3	10.0	10.1	10.2	10.5	10.4	10.6	10.8	11.0
3	**Heath & Safety Employee & Labour Relations**	11.4	12.0	10.5	11.2	12.0	11.7	11.7	12.2	12.8
4	**SVP Office**	6.2	7.2	5.4	3.7	4.0	4.4	4.8	4.8	5.0
5	**Talent Management & Business Change**	1.9	2.6	4.9	4.8	4.7	4.4	4.4	4.5	4.6
6	**Learning & Development**	58.7	62.7	61.7	59.3	61.6	60.9	62.8	62.7	63.5
7	**Total**	91.6	98.2	95.8	92.4	96.2	95.3	97.8	98.5	100.5