Assessment of cost allocation manual

Algonquin Power and Utilities Corporation

July 16, 2021

pwc

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Ms. Jill Schwartz
Director, Regulatory Shared Services
602 S Joplin Avenue
Joplin, Missouri 64818

Dear Ms. Schwartz:

Thank you for the opportunity to work with you and your team on this project to review the cost allocation manual and allocation process.

We have completed our interviews and meetings with your management team and have prepared this report to summarize observations arising from our meetings.

Please find enclosed our report assessing Algonquin Power and Utilities Corporation's methods for accumulating and allocating holding/service company costs.

Please do not hesitate to contact me ((802) 730-3364) or Alan Felsenthal ((312) 405-9581) should you have any questions or comments on this report.

Very truly yours,

Sean P. Riley
Partner

Alan D. Felsenthal
Managing Director

Table of contents

Scope of the report

At the request of Algonquin Power and Utilities Corporation ("APUC"), we have prepared this report to assess the processes used to capture and allocate holding/service company costs to its regulated and unregulated affiliates.

APUC's processes are included in their Cost Allocation Manual, V2017 Effective: January 1st, 2017 ("CAM").

Our process for completing this assessment included the following procedures:

1. Interviewing various APUC management representatives to obtain an understanding of the various activities performed, including the methodology utilized for excluding certain costs from allocation (primarily business development/acquisition activities) and the method of charging/allocating holding/service company costs to the individual affiliates.

2. Comparing the Company's allocation methodology to allocation methodologies of other United States utility holding/service companies as reported in their annual report to the Federal Energy Regulatory Commission ("FERC") on Form 60.

3. Reviewing documents and other available support issued by the various regulatory jurisdictions (Canada and United States) relating to allocated costs and recovery of such costs in the ratemaking process.

4. Testing a sample of transactions to determine that the allocation methodology set forth in the CAM was operating as described.

This report includes:

5. A description of the current process used to capture, assign and allocate APUC costs affiliates.

6. An assessment of the current process compared to the guidance provided by National Association of Regulatory Utility Commissioners ("NARUC") and FERC.

7. An assessment as to whether the processes for allocating holding/service company costs as described in the CAM are being followed.

Limitations & assumptions

Our work was performed on the basis that information provided to us was accurate and complete. Additionally, our engagement cannot be relied upon to disclose errors, irregularities, or illegal acts, including fraud that may exist.

Our Services were performed, and this Deliverable was prepared for the sole use and benefit of, and pursuant to a client relationship exclusively with, Liberty Utilities ("the Company"). PwC is providing no opinion, attestation or other form of assurance and disclaims any contractual or other responsibility to others based on their access to or use of the Deliverable. Accordingly, the information in this Deliverable may not be relied upon by anyone other than Client.

Qualifications of PwC

PricewaterhouseCoopers, which was formed in 1998 from a merger between Price Waterhouse and Coopers & Lybrand, has a long history in client services that dates back to the nineteenth century. Both firms originated in London during the mid-1800s. Today, we serve 26 industries, including the Power & Utilities industry. Our industry-focused services in the fields of assurance, tax, human resources, transactions, performance improvement, information technology and crisis management have helped resolve complex client and stakeholder issues worldwide. We also bring our knowledge and talent to help educational institutions, the federal government, non-profits, and international relief agencies to address their unique business issues.

Our U.S. firm, comprised of over 55,000 professionals, is organized around three core lines of service:

Assurance and Audit: Providing innovative, high quality, independent, and cost-effective services related to an organizations' financial control, regulatory reporting, shareholder value and technology needs;

Tax: Providing a wide range of innovative specialists' resources in three main areas: tax structuring, tax compliance and human resources; and

Advisory: Providing advice and assistance related to transactions, performance improvement, and crisis management based on long-term quality relationships with clients.

As a global network of firms, we share common standards, values, and policies, applying the same processes, systems, and approaches around the world.

PwC's power & utilities practice:

Nationally and globally, we are a leading provider of services in the utility industry. Our philosophy in serving the utility industry is to employ dedicated resources who focus on utility industry clients. This integrated practice demonstrates our commitment to the convergence of the utility industry and enables us to provide worldwide access to information through a variety of local resources. Our depth of resources and range of experience is enhanced by our strong base of utility clients. In the United States, we are the public accountants or consultants for more than 400 clients in the electric, gas, water, and renewable (clean) energy sectors.

Our power and utilities practice provides professional services to companies of many sizes, across many segments of the industry. We serve the needs of utility clients by employing more than 4,500 dedicated resources around the world. This provides our teams with an understanding of regulated and unregulated utility operations and services.

Our U.S. practice consists of more than 1,400 professionals serving clients in the electric, gas, water, and renewable energy sectors, including a dedicated utilities team within our National Office.

Complex accounting and regulatory support practice:

Within our Power and Utilities industry team, we have a highly specialized group, the Complex Accounting and Regulatory Solutions practice (CARS). Our CARS practice is dedicated to helping regulated companies in the energy and utilities industries manage their regulatory risk and solve complex accounting problems. Our seasoned team has deep experience working with regulated entities. The individuals in our CARS practice have many years of experience serving rate regulated entities (electric utilities, gas utilities, water utilities).

Executive summary

We were engaged to assess the company's process for capturing, assigning and allocating holding/service company costs incurred as described in the CAM as well as assess the CAM's compliance with guidance provided by the NARUC and the FERC. Our assessment addressed whether the allocations described in the CAM are based on cost-causative factors (direct charging, indirect attribution) or a multi-factor general allocator that are designed to prevent cross- subsidization (regulated versus unregulated affiliates, regulated electric versus regulated gas versus regulated water, United States versus Canada). In addition, we reviewed management's cost allocation workbooks to determine if the costs were allocated in accordance with the process stated in the CAM.

Based on completing these procedures and analyses, we determined the methodology for capturing holding/service company costs and allocating such costs to the Company's affiliates is reasonable, supportable and consistent with guidance promulgated by NARUC and FERC. The results of transaction testing found that the mechanics of the allocation process are working as designed.

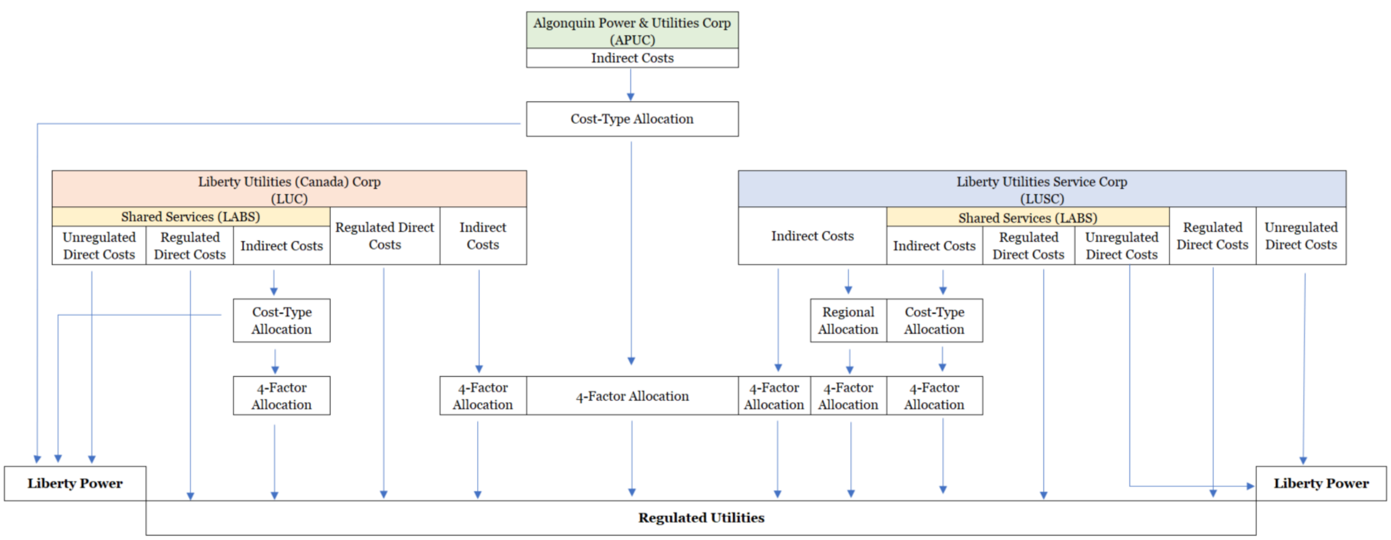
Procedures and observations

Background

Algonquin Power and Utilities Corporation ("APUC") is the ultimate parent holding company with both regulated and non-regulated entities. APUC is further organized into Liberty Utilities (Canada) Corporation ("LUC") and Liberty Utilities Service Corporation ("LUSC"). The primary distinction between LUC and LUSC is the geographical location of the related employees. Specifically, employees reporting to LUC are located in Canada and LUSC employees reside in the United States of America. The employee's location does not drive function and as such, these indirect costs are pooled for allocation to relevant entities. Both LUC and LUSC are further supported by a shared service company, Liberty Algonquin Business Services ("LABS").

As recommended by NARUC and FERC guidance, holding/service company costs are first directly charged to individual regulated or unregulated affiliates when an activity can be identified as relating to a specific affiliate or group of affiliates. Such direct-charged costs are removed from the indirect allocation pool.[1]

The majority of the remaining costs are allocated in two tiers. The first allocation is performed to divide the costs between regulated and nonregulated entities. This is performed based on the nature of the cost and allocated by cost-causative drivers or the modified Massachusetts method (weighting of several factors described in more detail in the Allocation Factors section). The second allocation is performed to further allocate the regulated costs among the regulated entities. At this point, these regulated costs are accumulated into one cost pool and allocated based on a modified Massachusetts Method general allocator as described in more detail within the Allocation Factors section. Note that both LUC and LUSC services are specific to regulated entities only so their costs are allocated through the general allocator only. Refer to the simplified corporate structure and visual allocation mapping below:



[1] See Guidelines for Cost Allocations and Affiliate Transactions, issued by the National Association of Regulatory Utility Commissioners and FERC Order 667, Repeal of the Public Utility Holding Company Act of 1935 and Enactment of the Public Utility Holding Company Act of 2005, 113 FERC ¶ 61,248.

Additionally, to provide background on each of the service companies, refer to the breakout of the fiscal 2020 direct charges and indirect charges as shown in the table below:

Company	Direct - regulated	Direct - unregulated	Indirect - regulated	Indirect - unregulated	Total costs
APUC	$ -	$ -	$ 18,049,595	$ 5,532,927	$ 23,582,521
LUC	$ 9,417,230	$ -	$ 5,766,158	$ -	$ 15,183,388
LUSC[2]	$ 16,461,390	$ 192,333	$ 23,730,840	$ -	$ 40,384,563
LABS[3]	$ 56,303,561	$ 5,007,501	$ 22,707,695	$ 4,394,112	$ 88,412,869
Total	**$ 82,182,181**	**$ 5,199,834**	**$ 70,254,288**	**9,927,039**	**$ 167,563,341**
% of Total Costs	**49%**	**3%**	**42%**	**6%**	**100%**

As noted above, costs are directly and indirectly charged at each company level to both the regulated business and unregulated business. In total, 52% of 2020 holding/service company costs were direct charged and 48% of 2020 allocable costs were indirectly charged. Of the $87,382,014 of direct charged costs, 94% were directly charged to the regulated business. Of the $80,181,327 of indirect costs, 88% were allocated to the regulated affiliates. Further, of the indirect shared services provided for the enterprise (APUC & LABS), 80% is allocated to the regulated utilities. LUC and LUSC do not allocate indirect costs to LP.

Management reviews the CAM on at least an annual basis to identify any needed updates. If there are changes in the business structure or other material events that impact allocation of costs, management will consider if updates to the CAM or the underlying allocation structure are necessary more frequently.

Reasonableness of cost pool to allocate

To assess the reasonableness of the cost pool to allocate, we performed various procedures to determine peer comparability and the necessity and benefit of such costs to the entity receiving such allocation.

Peer Comparability

We performed a preliminary analysis over peer comparability to assess how APUC, LUC and LUSC compare to other affiliate companies in terms of their percentage of direct vs. indirect billing of holding company/service company costs. Refer to Exhibit 1 for detailed analysis. We conducted interviews with holding/service company representatives to understand how both labor and non-labor costs are billed. Through these discussions, we understand that labor costs are recorded through employees charging their time. Employees are instructed to charge time to specific time codes set up for projects or entities. They understand that only time that cannot be directly billed is recorded to the general charge-code. Employees' time is also then subject to review by their supervisor who further assesses the appropriateness of the time charged. Non-labor costs are directed to the main billing contact who is responsible for assessing the charge for applicability to specific entities' or for general allocation. Again, the billing contact is instructed to direct charge where applicable.

As shown in the previous table, the three business units comprising the consolidated holding/service company allocation pool (APUC, LUC, LUSC) direct charged approximately 52% of the holding/service company pool in fiscal year 2020. To focus on the shared service companies, we also considered the percentage of direct cost charging from LUC and LUSC, calculating that over 60% of costs are direct charged. We observe that this is comparable with other U.S. companies as further discussed below. The percentage of direct charging varies each year depending on the specific activities

[2] LUSC includes costs from the East, Central and West regions as well as Libcorp cost pools.
[3] LABS includes employees in both Canada and the United States.

performed for/requested by the affiliates.

Peer data for fiscal year 2020 was not yet available. However, we were able to review the FERC Form 60's filed with the FERC for fiscal year 2019 (the most recent year that a full population is available as of the date of this report). The FERC Form 60 is the "Annual Report of Centralized Service Companies" required to be filed by all centralized utility service companies in the U.S. (that have not been granted a waiver), and although we recognize that APUC is not a service company, the distinction between holding company and service company activities is typically not significant and the FERC Form 60 data is the most widely representative data available to provide a sample of allocation methodologies that have been adopted across U.S. utilities. Each FERC Form 60 is required to include a schedule, "Schedule XVII - Analysis of Billing - Associate Companies," reporting direct billed and indirect billed costs. Through this analysis we determined that the mean of the percentage of direct cost charges as a percentage of total cost is 63% and the median is 67%. In fiscal year 2019, LUC and LUSC reported percentages greater than these amounts at 72% and 91%, respectively, suggesting a more comprehensive process for direct cost charging.

APUC's percentage was 25%, which is below the mean and median, but consistent with our understanding of the cost pool at the APUC level as it is the holding company and not a shared service company. Given the three companies consolidate into APUC, we also performed a calculation combining the three APUC business units and calculated direct billings of 81%, which is also higher than both the mean and median of other FERC Form 60 filers in 2019, suggesting more cost causative direct billing and smaller cost pools from which to indirectly allocate.

Necessity and Benefit

To elaborate on the Background section above, APUC is the ultimate corporate parent that provides financial and strategic management, corporate governance, and oversight of administrative and support services. The activities in this cost pool are a necessary part of being a publicly traded business, and are designed to complement, rather than duplicate, costs incurred at the subsidiaries. We noted in a review of the fiscal year 2019 reports of 44 utility service companies and past communications by the FERC and the NARUC that it is a common and widely accepted practice for North American utilities to allocate costs to regulated and non-regulated subsidiaries that are of a "corporate overhead" nature. Such costs include, but are not limited to, executive management, investor relations, internal audit and legal. In reviewing the CAM against the NARUC guidelines, we observed the nature of costs in the allocated pools follow this guidance.

LUC and LUSC also provide services to Liberty Utilities. As noted previously, both LUC and LUSC are supported by a centralized shared service company known as LABS that also provides business and corporate support services to the Company and its affiliates. It should be noted that LUC and LUSC only differ in their employee's geography with LUC employees residing in Canada and LUSC employees residing in the United States. Cost pools at LUC, LUSC and LABS relate to the following areas: information technology, human resources, training, facilities and building rent, environment, health, safety and security, procurement, executive and strategic management, technical services, utility planning as well as corporate services including: risk management, financial reporting, planning and administration, treasury, internal audit, external communications, legal costs and compliance.

Whether the costs are incurred by a service company or holding company does not affect the NARUC or FERC allocation guidance and, as a result, the approaches to identify allocable cost pools used by utility service companies such as LUC, LUSC and LABS are generally valid for APUC as well.

In understanding the types of costs included in each cost pool, we then considered the following qualitative and quantitative factors in assessing the reasonableness of the costs that are allocated to its subsidiaries:

1. Are the activities performed necessary for the Company's subsidiaries, and do they provide demonstrated benefits?

2. Are the costs duplicative in nature?

3. Are the costs similar in nature to costs that other utility holding companies have successfully recovered through rate cases in the U.S. and Canada?

To assess these questions, we conducted interviews with certain employees with knowledge of cost types making up each pool. We used a risk-based approach to determine which departments to interview, focusing primarily on the cost pools with larger balances. For those pools where interviews were not performed, we subjected such cost pools to our selection testing of source documents as well as comparative procedures against other companies filing FERC Form 60s. We also obtained the detailed listing of costs included within each company cost pool (APUC, LUC and, LUSC) and scanned the expenses making up those balances against the descriptions included within the CAM. Our primary observation is historically allocated costs are costs required to satisfy responsibilities to customers, shareholders, and regulators, and to enable effective corporate oversight.

For a selection of individual costs within each of the companies' pools, we requested the underlying source documents to review the related invoice(s) and/or calculation spreadsheet to further validate the appropriateness of its inclusion in the cost pool for allocation as well as the appropriate cost-type coding to the extent it is allocated by cost-type. Through these procedures, it was observed that the cost pools are reasonable and consistent with other U.S. companies.

In addition to assessing the costs included in the cost pool, our interviews with members of management also suggest that the Company has appropriately identified specific costs to exclude from the allocable cost pool (e.g., business development costs, retirement costs, meals and entertainment, foreign exchange gains and losses, and donations). Through interviews as well as review of the monthly allocations, we also noted that these costs are either processed through the allocation or removed from the pool prior to allocation to prevent the likelihood of subsidization by certain entities. During the fiscal year 2020, approximately $58M in costs were originally included within the cost pool for allocation, as they were not direct charged, and subsequently excluded and removed from the cost pool prior to allocation.

Beyond the cost pool exclusions, there is another process by which affiliates may challenge a charge that does not seem to directly benefit the entity. Two examples of this would be if a Canadian entity erroneously received a United States regulatory fee or if a gas company received an electric charge in error. In both cases, the receiving entity may challenge that billing to ensure necessity and benefit of costs allocated. In those instances, management has noted that these costs have historically been removed from those entities suggesting effective internal controls for identification and resolution of costs billed inappropriately.

A necessity and benefit analysis is summarized within Exhibit 2. In analyzing the cost pools that APUC, LUC and LUSC and its subsidiaries have historically allocated to its subsidiaries, we considered information obtained through interviews with management, review of internal records, and review of published data relating to other utility service/holding companies.

Role Clarity

APUC's services allow for access to the capital markets and provide for maximum expertise at lower costs. If the utilities did not have access to the services provided by APUC, LUC and LUSC they would be forced to incur associated costs for financing, capital investment, audits, taxes and other similar services on a stand-alone basis, which would substantially increase such costs. One overriding rationale supporting a service/holding company concept is the scope and scale; that is, rather than each affiliate having a certain individual or group provide services to the individual entity, a service/holding company can provide such services to a number of affiliates with the individual receiving an allocated portion of the service/holding company cost. Costs that may appear to overlap across APUC, LUC, LUSC and the local entity were further reviewed with findings summarized within Exhibit 4. Functions included within this analysis were reviewed based on higher cost balances and discussed with management to assess overlap and functionality. The costs included in the exhibit represent the largest balances with the potential for duplication. While, finance, legal and human resources are cost types for which services are both allocated and performed directly at the local entity, we did not identify any instances of redundancy through this exercise.

Allocation methodology

In addition to assessing the cost pool, we also reviewed the associated allocation factors as well as reperformed management allocation calculation to verify its compliance with the CAM.

Allocation factors

In past decisions and written communications, the regulators in the Company's jurisdictions have expressed the view that direct charging of service/holding company costs to specific entities, where supportable, is preferred. After direct charging, utility service/holding companies should first allocate costs by cost drivers with a cost-causative linkage to the respective cost pool where possible, and finally allocate the remainder of costs using a general factor. The percentage of direct charging will vary from year to year depending on the nature and size of projects and responses to requests from affiliates. As previously stated, the combined APUC, LUC and LUSC directly charged more than half of the holding/service company costs in fiscal year 2020 (more than 60% by the LUC and LUSC service companies) and, in 2019 (where peer information is available) at a higher level than its peers in fiscal year 2019. NARUC's cost allocation principles state that the general method for charging indirect costs should be on a fully allocated cost basis.

APUC

When APUC cannot identify indirect cost drivers for any of its functional areas, a "relevant proxy" as a general allocator for corporate overhead type costs is used. A general allocator is an acceptable approach under NARUC and FERC in order to fully distribute the costs in the cost pools. APUC's costs are organized into cost pools and are weighted through two levels of multi-factored allocations to ensure allocations across entities is appropriate.

Services at APUC are provided to both regulated and non-regulated companies. To first divide between the two, APUC allocates by cost-type and a related cost causative driver or a general allocator to avoid subsidization between regulated and non-regulated companies. The regulated cost pool is then subject to a four-factor general allocator, allocating costs based on a weighting of 40% customer count, 20% utility net plant, 20% non-labor expenses, and 20% labor expenses. This weighting has been determined by management to be most appropriate as to avoid vertically integrated utilities, owning their own generation facilities, from receiving exorbitant allocation. As such, the higher weighting on customer count results in a more equitable and representative distribution of the shared services costs.

LUC and LUSC

At LUC, indirect costs are allocated directly through the general allocator as costs are incurred in support of all regulated entities. At LUSC, costs are recorded based on the various region/group (East, Central, West, Libcorp, and LABS) and then subject to the four-factor methodology. Costs within the East, Central, and West regions are allocated only to the specific utilities within those regions. For example, in the East region costs are only allocated to Granite State, EnergyNorth, Georgia, New England Gas, New Brunswick Gas, St. Lawrence Gas, and Tinker Transmission. Costs within Libcorp are allocated to all utilities following the four-factor methodology with a nuance for energy procurement related costs. Any Libcorp costs related to Energy Procurement are not allocated to water companies. Costs within LABS are first allocated between regulated and nonregulated entities by cost pool percentage as shown in Exhibit 2, and then to the local utilities using the four-factor method.

Although FERC and U.S. state regulators do not have a specific set of rules on the development of a general allocation factor, they have been clear that they prefer a general allocator that incorporates the weighting of multiple factors. Additionally, Canadian regulators appear to also prefer a general allocator that weights multiple factors. This approach recognizes that there is not one perfect allocator and using a combination of factors reduces the subjectivity of using one individual measure as the basis for allocation. The Massachusetts method (or modified Massachusetts method) is the most widely used method of allocating corporate general costs that cannot be assigned a specific cost driver, and it has been widely accepted by the FERC, U.S. state and Canadian regulators. The original Massachusetts method involved the equal weighting of three factors: plant, revenues, and labor. The modified Massachusetts method includes variations of approach (e.g., gross margin as a substitute for revenue, O&M expense as a substitute for labor, etc.). In any event, a general allocation factor that includes some indicator of operations (expense) and capital investment (assets) is often accepted.

We also examined whether the costs are similar in nature to costs that other utility holding companies and/or service companies have historically allocated to their subsidiaries, see Exhibit 3. To aid in this analysis, we reviewed the fiscal year 2019 FERC Form 60s as noted above. Each FERC Form 60 is required to include a schedule, “Schedule XXI – Methods of Allocation,” that specifies all functions for which the service company is allocating costs, and a description of the method of allocation (we discuss methods of allocation later in this report). We analyzed the allocation factors within the FERC Form 60s of APUC’s peers based on the “comparator group” reported within the 2020 and 2019 Management Information Circular posted on the Company’s website. Through this exercise, we compared both the general allocator as well as cost causative factors by cost pools used by APUC allocators that have been accepted by the FERC and the New Brunswick Energy and Utilities Board, noting that the Company’s allocation methodology of utilizing a general allocator is consistent with its peers and there were no cost pools identified that would suggest the Company is an outlier.

Given the costs subject to this pool do not have an obvious cost-causative driver to allocate, this weighting is considered appropriate because, as stated above, to not weigh any one factor more than another. From analysis of the FERC Form 60s filed in 2019, we further verified that the use of a general allocator is common among the Company’s peers.

Mathematical accuracy

We obtained the monthly allocation files for each month during the fiscal year 2020 for each company (APUC, LUC, LUSC and LABS) and reviewed the files for consistency in calculations. Further, we selected two months at random to perform a detailed recalculation from the cost pool detail through the relevant allocations down to the final entity. Through these procedures, for the two-months subject to testing, we determined the costs are being allocated in accordance with the company’s CAM. Refer to the illustrative example below for further detail on the procedures performed.

Illustrative example - Cost allocator

Cost allocation factors are updated annually, and periodically throughout the year when changes to the business occur. The cost allocator calculation is completed for all four business units (APUC, LABS, LUC, and LUSC) within a single manual spreadsheet. During 2020, cost allocation factors were updated in April, June, and November. As such, in accordance with audit testing methodology for attribute testing, we determined it appropriate to test two months (April and November) of allocators and complete the procedures for all business units. Refer to the screenshot below for PwC’s testing over the APUC cost allocator for April:

APUC
April 2020 - March 2021 Allocation
as at April xx, 2020

	All Employees		O&M		Revenue		Net Plant		Oakville Employees	
	Headcount	%	USD	%	USD	%	USD	%	Headcount	%
LP (APCO)	176	7%	75,209	15%	240,692	20%	2,444,382	34%	90	29%
LU	2,266	93%	412,456	85%	980,770	80%	4,754,373	66%	219	71%
Total	2,442	100%	487,665	100%	1,221,462	100%	7,198,755	100%	309	100%
	-		-		-		-		-	
Legal Costs		33.333%		33.333%				33.333%		
Tax Services				33.333%		33.333%		33.333%		
Audit				33.333%		33.333%		33.333%		
Investor Relations				33.333%		33.333%		33.333%		
Director Fee & Insurance				33.333%		33.333%		33.333%		
Licenses, Fees, and Permits				33.333%		33.333%		33.333%		
Escrow & transfer Agent Fees				33.333%		33.333%		33.333%		
Other Professional Services				33.333%		33.333%		33.333%		
Office Administration Costs		50.00%								50.00%
Travel- CAM category is Other Other Professional Services.				33.333%		33.333%		33.333%		
Executive ~~Salaries~~ and Strategic Management				33.333%		33.333%		33.333%		

2020 Percentages				2019 Percentages				LU Comparison
Summary	APCO	LU	Total	Summary	APCO	LU	Total	
Legal Costs	18.9%	81.1%	100.00%	Legal Costs	17.9%	82.1%	100.00%	-1.0%
Tax Services	23.0%	77.0%	100.00%	Tax Services	21.5%	78.5%	100.00%	-1.5%
Audit	23.0%	77.0%	100.00%	Audit	21.5%	78.5%	100.00%	-1.5%
Investor Relations	23.0%	77.0%	100.00%	Investor Relations	21.5%	78.5%	100.00%	-1.5%
Director Fee & Insurance	23.0%	77.0%	100.00%	Director Fee & Insurance	21.5%	78.5%	100.00%	-1.5%
Licenses, Fees, and Permits	23.0%	77.0%	100.00%	Licenses & Fees	21.5%	78.5%	100.00%	-1.5%
Escrow & transfer Agent Fees	23.0%	77.0%	100.00%	Escrow transfer Agent	21.5%	78.5%	100.00%	-1.5%
Other Professional Services	23.0%	77.0%	100.00%	Other Professional	21.5%	78.5%	100.00%	-1.5%
Office Administration Costs	18.2%	81.8%	100.00%	Office Administration	17.4%	82.6%	100.00%	-0.8%
Travel- CAM category is Other Other Professional Services.	23.0%	77.0%	100.00%	Travel	21.5%	78.5%	100.00%	-1.5%
Executive and Strategic Management	23.0%	77.0%	100.00%	Executive Salaries	21.5%	78.5%	100.00%	-1.5%

As noted in the screenshot above, first we traced and agreed all inputs to the allocations to the original source data. Second, we recalculated the allocation percentage between the regulated and non- regulated business based on the initial inputs. Third, we traced and agreed the cost pool allocation to the CAM guidance. Finally, we recalculated the distinct cost pool allocator by applying the three-factor method as described in the methodology. We completed the same tie out and recalculation procedures on the cost allocator calculations for LABS, LUC, and LUSC, determining that the allocation factors are mathematically accurate.

Illustrative example - Cost pool calculation

Each month the cost allocators, calculated above, are applied to their cost pools to appropriately calculate their allocations. To determine if costs are allocated in accordance with the CAM, we recalculated the allocation of costs to all entities for two months. Refer to the screenshot below for our recalculation over APUC cost pool calculations and final allocation:

Per APUC Report - Consolidated

FX 1.3953

	Total from report	APCO %	APCO Allocation - CAD	LU %	LU Allocation - USD	LU Allocation In USD
Legal Costs	**$73,392.6**	18.9%	$ 19,315	81.1%	$ 59,549	$ 59,549
Tax Services	**$98,363.0**	23.0%	$ 31,605	77.0%	$ 75,712	$ 75,712
Audit	**$192,329.1**	23.0%	$ 61,796	77.0%	$ 148,040	$ 148,040
Investor Relations	**$577,138.1**	23.0%	$ 185,438	77.0%	$ 444,236	$ 444,236
Director Fee & Insurance	**$59,205.8**	23.0%	$ 19,023	77.0%	$ 45,572	$ 45,572
Licenses & Fees	**$94,317.9**	23.0%	$ 30,305	77.0%	$ 72,599	$ 72,599
Escrow transfer Agent	**$0.0**	23.0%	$ -	77.0%	$ -	$ -
Other Professional	**($1,209.2)**	23.0%	$ (389)	77.0%	$ (931)	$ (931)
Office Administration	**$28,086.1**	18.2%	$ 7,119	81.8%	$ 22,984	$ 22,984
Other Professional -Travel	**$45,449.9**	23.0%	$ 14,603	77.0%	$ 34,984	$ 34,984
Other Professional - Travel - Aircraft	**$276,870.5**	23.0%	$ 88,960	77.0%	$ 213,114	$ 213,114
Executive & Strategic Management - Salaries & Benefits	**$460,094.0**	23.0%	$ 147,831	77.0%	$ 354,145	$ 354,145
Total	$1,904,037.8		$ 605,607		$ 1,470,004	$ 1,470,004

	LW 8020	Calpeco 8800	GS 8830	EN 8840	Midstates Gas 8850	Midstates Water 8640	Midstates Sewer 8640	ARK 8606	Woodson-Hensley 8603
	7.53%	6.64%	4.60%	10.75%	6.97%	0.31%	0.08%	1.63%	0.04%
Legal Costs	$ 107	$ 207	$ (245)	$ 26	$ 67	$ 4	$ 1	$ 17	$ (3)
Tax Services	$ 137	$ 264	$ (312)	$ 33	$ 85	$ 5	$ 1	$ 21	$ (3)
Audit	$ 267	$ 515	$ (610)	$ 65	$ 166	$ 11	$ 3	$ 42	$ (7)
Investor Relations	$ 801	$1,546	$(1,831)	$ 196	$ 497	$ 32	$ 8	$ 125	$ (20)
Director Fee & Insurance	$ 82	$ 159	$ (188)	$ 20	$ 51	$ 3	$ 1	$ 13	$ (2)
Licenses & Fees	$ 131	$ 253	$ (299)	$ 32	$ 81	$ 5	$ 1	$ 20	$ (3)
Escrow transfer Agent	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Professional	$ (2)	$ (3)	$ 4	$ (0)	$ (1)	$ (0)	$ (0)	$ (0)	$ 0
Office Administration	$ 41	$ 80	$ (95)	$ 10	$ 26	$ 2	$ 0	$ 6	$ (1)
Other Professional -Travel	$ 63	$ 122	$ (144)	$ 15	$ 39	$ 2	$ 1	$ 10	$ (2)
Other Professional - Travel - Aircraft									
Executive & Strategic Management - Salaries & Benefits	$ 639	$1,233	$(1,459)	$ 156	$ 396	$ 25	$ 6	$ 99	$ (16)
	$ 2,267	$4,375	$(5,180)	$ 553	$ 1,405	$ 90	$ 22	$ 353	$ (57)

	Georgia 8862	NEG 8866	Whitehall Water 8608	Whitehall Sewer 8609	Park Water	Empire	NewBrunswick Gas	St Lawrence Gas	Tinker Transmission
	5.51%	6.15%	0.17%	0.21%	5.52%	39.41%	2.21%	2.22%	0.07%
Legal Costs	$ (14)	$ 36	$ (63)	$ 3	$ 27	$ (149)	$ 23	$ (27)	$ (16)
Tax Services	$ (17)	$ 45	$ (81)	$ 4	$ 35	$ (189)	$ 29	$ (35)	$ (21)
Audit	$ (34)	$ 88	$ (157)	$ 7	$ 68	$ (370)	$ 56	$ (68)	$ (41)
Investor Relations	$ (102)	$265	$ (473)	$ 21	$ 203	$(1,109)	$ 168	$ (204)	$ (123)
Director Fee & Insurance	$ (11)	$ 27	$ (48)	$ 2	$ 21	$ (114)	$ 17	$ (21)	$ (13)
Licenses & Fees	$ (17)	$ 43	$ (77)	$ 3	$ 33	$ (181)	$ 28	$ (33)	$ (20)
Escrow transfer Agent	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Professional	$ 0	$ (1)	$ 1	$ (0)	$ (0)	$ 2	$ (0)	$ 0	$ 0
Office Administration	$ (5)	$ 14	$ (24)	$ 1	$ 11	$ (57)	$ 9	$ (11)	$ (6)
Other Professional -Travel	$ (8)	$ 21	$ (37)	$ 2	$ 16	$ (87)	$ 13	$ (16)	$ (10)
Other Professional - Travel - Aircraft									
Executive & Strategic Management - Salaries & Benefits	$ (82)	$211	$ (377)	$ 17	$ 162	$ (884)	$ 134	$ (162)	$ (98)
	$ (290)	$750	$ (1,337)	$ 59	$ 575	$(3,138)	$ 476	$ (576)	$ (347)

As noted in the screenshot above, first we traced and agreed the cost pool bucketing to the source files. To assess the cost pool bucketing, we inspected 64 selections across the four business units and confirmed the cost pool was appropriate and that the expenditure was necessary and beneficial to each business unit for which it was ultimately allocated. Second, we traced and agreed the regulated vs. unregulated allocation percentages to the cost allocator described above. Third, we recalculated the dollar amount allocated to regulated vs. unregulated by applying the percentage to the cost pool buckets. Fourth, we traced and agreed the utility specific allocation to the four-factor methodology within the CAM. Finally, we recalculated the dollar amount allocated to each utility by applying the appropriate four factor allocation to each regulated cost pool bucket. We completed the same tie out and recalculation procedures on the cost pool calculations for LABS, LUC, and LUSC, determining that costs are allocated in accordance with the CAM.

Exhibit 1 – FERC Form 60 analysis – Direct charging percentages

Schedule XVII – Analysis of billing – Associate companies (Account 457)[4]

Company	Direct charges	Indirect charges	Total	% Direct
Allegheny Energy Service Corporation	(3,478,868)	0	(3,478,868)	100%
ATC Management Inc.	114,256,597	0	114,256,597	100%
Avangrid Service Company	215,445,184	0	215,445,184	100%
Columbia Pipeline Group Service Company	12,927,828	0	12,927,828	100%
National Grid Engineering & Survey, Inc.	62,724,377	111,955	62,836,332	100%
National Grid USA Service Company Inc.	2,679,362,707	39,549,266	2,718,911,973	99%
Entergy Nuclear Operations, Inc.	538,316,287	11,945,559	550,261,846	98%
Entergy Operations, Inc.	592,825,726	14,157,781	606,983,507	98%
Entergy Enterprises, Inc.	137,526,565	5,436,297	142,962,862	96%
Entergy Services, LLC	1,493,373,708	82,312,730	1,575,686,438	95%
Liberty Utilities Service Corp	**185,577,826**	**19,236,654**	**204,814,480**	**91%**
Ameren Services Company	438,304,912	66,277,755	504,582,667	87%
Southern Company Services, Inc.	1,641,635,744	266,203,999	1,907,839,743	86%
Southern Nuclear Operating Company, Inc.	872,884,799	150,090,430	1,022,975,229	85%
American Electric Power Service Corporation	1,395,321,358	263,838,026	1,659,159,384	84%
PPL EU Services Corporation	118,378,939	36,711,919	155,090,858	76%
Dominion Energy Southeast Services, Inc.	321,131,139	118,588,606	439,719,745	73%
Liberty Utilities (Canada) Corp.	**62,489,175**	**23,992,759**	**86,481,934**	**72%**
Alliant Energy Corporate Services, Inc.	219,475,201	98,350,743	317,825,944	69%
Duke Energy Business Services, LLC	2,492,153,525	1,242,623,655	3,734,777,180	67%
AES U.S. Services, LLC	82,321,803	41,619,490	123,941,293	66%
CenterPoint Energy Service Company, LLC	423,258,832	216,453,598	639,712,430	66%
Dominion Energy Services, Inc.	518,940,004	326,727,735	845,667,739	61%

[4] Source: "Schedule XVII - Analysis of Billing" - Associate Companies per the FERC Form 60's filed with the FERC for fiscal year 2019

Company	Direct charges	Indirect charges	Total	% Direct
GridLiance Management, LLC	12,085,046	9,419,192	21,504,238	56%
Xcel Energy Services Inc.	754,303,916	619,273,619	1,373,577,535	55%
Eversource Energy Service Company	417,811,235	464,890,694	882,701,929	47%
Unitil Service Corporation	28,680,426	33,453,185	62,133,611	46%
Exelon Business Services Company, LLC	840,951,644	1,063,651,695	1,904,603,339	44%
NiSource Corporate Services Company	198,658,714	265,830,801	464,489,515	43%
PPL Services Corporation	51,763,704	89,118,515	140,882,219	37%
FirstEnergy Service Company	318,454,007	591,305,053	909,759,060	35%
WEC Business Services LLC	186,529,804	464,906,991	651,436,795	29%
PHI Service Company	105,727,868	289,546,938	395,274,806	27%
LG&E and KU Services Company	91,447,624	252,903,989	344,351,613	27%
TECO Services, Inc.	22,150,108	65,564,577	87,714,685	25%
Algonquin Power & Utilities Corp.	**4,774,034**	**14,491,067**	**19,265,101**	**25%**
Sempra North American Infrastructure, LLC	29,809,865	92,018,710	121,828,575	24%
PNMR Services Company	32,978,879	102,332,822	135,311,701	24%
Black Hills Service Company, LLC	69,693,105	275,855,498	345,548,603	20%
Sempra Services Corporation	0	5,737,848	5,737,848	0%
Grand Total	**17,780,973,347**	**7,724,530,151**	**25,505,503,498**	**70%**
Mean				**63%**
Median				**67%**
APUC Consolidated	**252,841,035**	**57,720,480**	**310,561,515**	**81%**

Exhibit 2 – Necessity and benefits analysis of company costs

Necessity attributes:	Benefit attributes
1. Corporate governance	1. Reduce risk or avoid risk
2. Regulatory mandate	2. Increase employee productivity
3. Legal compliance	3. Provide management information
4. Management oversight	4. Enhance corporate performance
5. Corporate Operational execution	5. Increase reliability
6. Strategic planning	

Business Unit	Cost type	Are the activities performed necessary for the enterprise?	Do the activities provide demonstrated benefits?	Allocation methodology
APUC	Legal Costs[5]	1, 2, 3	1	Net Plant 33.3% Number of Employees 33.3% O&M 33.3%
APUC	Tax Services	3	1	Revenue 33.3% O&M 33.3% Net Plant 33.3%
APUC	Audit	2, 3	1, 5	Revenue 33.3% O&M 33.3% Net Plant 33.3%
APUC	Investor Relations	1, 6	1, 5	Revenue 33.3% O&M 33.3% Net Plant 33.3%
APUC	Director Fees and Insurance	1, 3, 4, 5, 6	1, 4, 5	Revenue 33.3% O&M 33.3% Net Plant 33.3%
APUC	Licenses, Fees and Permits	2, 3, 5	1, 5	Revenue 33.3% O&M 33.3% Net Plant 33.3%
APUC	Escrow and Transfer Agent Fees	3, 5	1, 5	Revenue 33.3% O&M 33.3%

[5] Refer to Exhibit 4 for analysis of costs that may appear to overlap across APUC, LUC, LUSC and the local entity

Business Unit	Cost type	Are the activities performed necessary for the enterprise?	Do the activities provide demonstrated benefits?	Allocation methodology
				Net Plant 33.3%
APUC	Other Professional Services	5, 6	4	Revenue 33.3% O&M 33.3% Net Plant 33.3%
APUC	Other Administration Costs	5	2	Oakville Employees 50% Total Employees 50%
APUC	Executive and Strategic Management	5, 6	1, 4	Revenue 33.3% O&M 33.3% Net Plant 33.3%
LABS	Information Technology	5	2, 3, 4, 5	Number of Employees 90% O&M 10%
LABS	Human Resources[5]	5	1, 3, 4, 5	Number of Employees 100%
LABS	Training	1, 2, 3, 5	1, 2, 4, 5	Number of Employees 100%
LABS	Facilities and Building Rent	5	4	Oakville Employees 100%
LABS	Environment, Health, Safety and Security	2, 3, 5	1, 5	Number of Employees 100%
LABS	Procurement	2, 5	1, 4, 5	O&M 50% Capital Expenditures 50%
LABS	Executive and Strategic Management	5, 6	1, 4	Revenue 33.3% O&M 33.3% Net Plant 33.3%
LABS	Technical Services	5	4	Net Plant 33.3% Revenue 33.3% O&M 33.3%
LABS	Utility Planning	2, 5	1, 4, 5	Net Plant 33.3% Revenue 33.3% O&M 33.3%
LABS	Risk Management	5	1, 5	Net Plant 33.3% Revenue 33.3% O&M 33.3%
LABS	Financial Reporting, Planning and Administration[5]	2, 3, 5, 6	1, 3, 4	Revenue 33.3% O&M 33.3% Net Plant 33.3%
LABS	Treasury[5]	3, 5, 6	1, 3, 4	Capital Expenditures 25% O&M 50% Net Plant 25%

Business Unit	Cost type	Are the activities performed necessary for the enterprise?	Do the activities provide demonstrated benefits?	Allocation methodology
LABS	Internal Audit	2, 3, 4	1, 3, 5	Net Plant 25% O&M 75%
LABS	External Communications			Total Employees 100%
LABS	Legal Costs[5]	3	1, 5	Net Plant 33.3% Number of Employees 33.3% O&M 33.3%
LABS	Compliance	1, 2, 3, 4	1, 3, 5	Revenue 33.3% O&M 33.3% Net Plant 33.3%
LUSC/LUC	Customer Care and Billing	5	4, 5	Four Factor Allocator
LUSC/LUC	IT/Tech Support	5	2, 3, 4, 5	Four Factor Allocator
LUSC/LUC	Human Resources[5]	5	1, 3, 4, 5	Four Factor Allocator
LUSC/LUC	Gas Control	2, 5	1, 3, 5	Four Factor Allocator
LUSC/LUC	Legal[5]	1, 2, 3	1	Four Factor Allocator
LUSC/LUC	Compliance	1, 2, 3, 4	1, 3, 5	Four Factor Allocator
LUSC/LUC	Regulatory & Government Relations	1, 2, 3	1, 5	Four Factor Allocator
LUSC/LUC	Environmental, Health, Safety and Security	2, 3, 5	1, 5	Four Factor Allocator
LUSC/LUC	Procurement	2, 5	1, 4, 5	Four Factor Allocator
LUSC/LUC	Operations	5	2, 4, 5	Four Factor Allocator
LUSC/LUC	Engineering; Dispatch and Control	5	2, 4, 5	Four Factor Allocator
LUSC/LUC	Outage Management	5	1, 2, 4, 5	Four Factor Allocator
LUSC/LUC	GIS/Mapping	5	3, 4, 5	Four Factor Allocator
LUSC/LUC	Vegetation Management	5	1, 5	Four Factor Allocator
LUSC/LUC	Energy Procurement	2, 5	1, 4, 5	Four Factor Allocator
LUSC/LUC	Accounting and Finance[5]	2, 3, 5, 6	1, 3, 4	Four Factor Allocator
LUSC/LUC	Managerial	1, 5, 6	1, 4, 5	Four Factor Allocator
LUSC/LUC	Utility Planning	2, 5	1, 4, 5	Four Factor Allocator
LUSC/LUC	Customer Communication	5	1, 5	Four Factor Allocator

Exhibit 3 – FERC form 60 analysis – General allocator methodology

Schedule XXI – Methods of allocation[6]

	Algonquin power & utilities Corp.	Liberty utilities (Canada) Corp.	Alliant energy corporate services, Inc.	CenterPoint energy service company, LLC	PNMR services company	Black hills corporation
4 Factor	Utilities (40% customer count, 20% utility net plant, 20% non-labor exp, 20% labor exp)	Utilities (40% customer count, 20% utility net plant, 20% non-labor exp, 20% labor exp)				
3 Factor	Legal Costs (33% Plant, 33% # of employees, 33% OM) Tax Services (33% Rev, 33% OM, 33% Plant) Audit (33% Rev, 33% OM, 33% Plant) Investor Relations (33% Rev, 33% OM, 33% Plant) Director Fees and Insurance (33% Rev, 33% OM, 33% Plant) Escrow and transfer Agent Fees (33% Rev, 33% OM, 33% Plant) Other Professional Services (33% Rev, 33% OM, 33% Plant) Executive and Strategic Management (33% Rev, 33% OM, 33% Plant)	Executive and Strategic Management (33% Rev, 33% OM, 33% Plant) Technical Services (33% Rev, 33% OM, 33% Plant) Utility Planning (33% Rev, 33% OM, 33% Plant) Risk Management (33% Rev, 33% OM, 33% Plant) Financial Reporting, Planning, and Administration (33% Rev, 33% OM, 33% Plant) Treasury (25% capex, 50% OM, 25% Plant) Legal Costs (33% # of employees, 33% OM, 33% Plant) Compliance (33% Rev, 33% OM, 33% Plant)	Legal costs (33% # of employees, 33% total assets, 33% op. revs) Taxes (33% # of employees, 33% total assets, 33% op. revs) Benefits (33% # of employees, 33% total assets, 33% op. revs) Planning (33% # of employees, 33% total assets, 33% op. revs) Materials management (materials, supplies, and services)	Asset Ratio Corporate Governance Costs (40% assets, 40% gross margin, 20% head count)	Utility Shared Services (Massachusetts methods)	Blended ratio (33% gross margin, 33% asset cost, 33%, payroll)

[6] Source: “Schedule XXI – Methods of Allocation” per the FERC Form 60’s filed with the FERC for fiscal year 2019

	Algonquin power & utilities Corp.	Liberty utilities (Canada) Corp.	Alliant energy corporate services, Inc.	CenterPoint energy service company, LLC	PNMR services company	Black hills corporation
2 Factor		IT (90% # of employees, 10% OM) Procurement (50% OM, 50% capex) Internal Audit (25% net plant, 75% OM)	Engineering and Construction (utility type and function)	Operating Expense ratio	Facilities and Building (Sq. footage and occupancy)	
1 Factor	Other Admin Costs (# of employees)	Human Resources (# of employees) Training (# of employees) Facilities and Building Rent (# of employees) Environment, Health, Safety, and Security (# of employees) External Communications (# of employees)	IT (# of employees) Transportation (# of employees) Human Resources (# of employees) Facilities and Building (# of employees) Power planning (volumes) Electric production admin (volumes) Electric and gas delivery admin (# of customers) Environmental affairs (volumes) Customer billing/payment processing (# of bills) Customer Service, Customer Assistance and Customer Relations (# of customers) Public and Community Affairs (# of employees or customers) Rates (# of customers) Electric System Maintenance (miles of distribution lines) Investor Relations (total assets) Insurance and Risk Management (Total assets) Internal audit (Op. Revs) Real Estate and Right of way (gross plant) Fuel (volumes) Gas Acquisition and dispatch (volumes) Accounting (Op. Revs) Other Admin (Op. Revs) Finance (Op. Revs)	Head Count Ratio w/retirees Head Count Ratio w/o retirees Head Count Ratio w/retirees and inactive employees Union Head Count Ratio Wellness Head Count Ratio Direct Labor Ratio Client Unit Usage Ratio Sq. Footage Ratio Cross-Charges	IT (# of employee's) Financial Systems (volume of transactions) A/P Admin and Maintenance (volume of transactions) Depreciation, Asset Retirement, clearing completed construction projects to plant, fixed asset software maintenance (depreciable assets) Work management system (transaction count) Benefits (# of employee's) Ethics (# of employee's) Governance (# of employee's) Payroll (# of employee's) People Services (# of employee's) Communications (# of employee's)	

Exhibit 4 – Delineation of roles and responsibilities

This exhibit shows our analysis of costs that may appear to overlap across APUC, LUC, LUSC and the local entity. As shown below, we did not identify any instances of redundancy through this exercise.

Cost pool	Shared service role (costs allocated from APUC, LUC, LUSC or LABS)	Local utility role
Finance	The Finance/Treasury organization ensures that regulated utilities meet audit standards and regulatory requirements, have strong financial and operational controls, and are recording financial transactions accurately and prudently. They receive inputs from the utilities to consolidate and manage intercompany billings. Finance/Treasury also coordinates financing for capital projects for the regulated utilities along with capital planning and related services.	Finance focuses on specific entity performance and reports to the centralized finance group.
Legal	Legal services oversees all general legal matters pertaining to all entities. These legal services include review of audited financial statements, annual information filings, Sedar filings, review of contracts, incorporation, tax issues of a legal nature, market compliance, and other legal issues.	Legal departments at the local utility level focus on specific rate cases or items relevant to the entity's jurisdictions.
Human Resources	The Human Resources functions include the management and oversight of training and development of employees, ensuring employees are provided healthy and safe work environments, and receive competitive salaries and benefits.	Human resource functions at the utility level are focused on activities such as hiring and employee- related matters specific to that entity.

Thank you

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