EXHIBIT 7 – COST ALLOCATION

Interrogatory 7-Staff-69

Revenue to Cost Ratio
Ref: Exhibit 7, Tab 2, Schedule 2, page 2

Preamble:

The 2023 Cost Allocation Study indicates the revenue-to-cost ratios for the Large Use and Street Lighting rate classes are below their respective minimum revenue-to-cost ratios. The total bill impacts for the Street Lighting rate class would exceed 10% so rates for the class are adjusted such that total bills increases are exactly 10% in 2023 and 2024, and a further increase in 2025 brings the class revenue-to-cost ratio to exactly 80%.

Question(s):

a) As scenarios, for the Street Lighting rate class please provide the total bill increases that would result from:
i. Leaving the revenue to cost ratio at the status quo level in 2023
ii. Increasing the revenue to cost ratio to 80% in 2023
b) Has Kingston Hydro considered other options for mitigating the bill impact other than reducing the revenue-to-cost ratio further below bottom of the policy range in 2023? Please describe any approaches considered and why they were rejected.

Response

a) The scenarios are provided below.

Scenario R/C		Fixed Rate	Variable Rate	Total Bill Increase
i.	72.7% (Status Quo)	$1.44	$16.4119	16.46%
ii.	80%	$1.59	$18.1619	21.16%

b) The majority of the Street Lighting bill impact is related to the Group 2 DVA rate rider. Kingston Hydro is proposing to recover most DVA balances over two years, and proposing to recover the LRAMVA balance over three years. Kingston Hydro considered further extending the rate rider recovery, however, bill impacts for all other classes are lower than 10% and extending recovery the Group 2 balance to three years would still require rate mitigation for the Street Lighting class. A rate mitigation deferral account was also considered, however, this would have created an additional administrative burden and Street Lighting is a relatively small class so phasing-in the rate increase does not significantly impact the revenues to come from other classes.

EXHIBIT 7 – COST ALLOCATION

Interrogatory 7-Staff-70

Weighing Factors

Ref: Exhibit 7, Tab 1, page 2

Preamble:

Kingston Hydro has updated weighting factors for Services, and Billing and Collecting.

Question(s):

a) Please provide derivations of the updated weighting factors.

Response

a) Derivations of the updated weighting factors Services, and Billing and Collecting are provided in Excel format as 7-Staff-70 Attachment 1. The Billing and Collecting customer numbers were revised to reflect 2021 actuals.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-34

Reference: Exhibit 7, Tab 1, Schedule 1, page 2

a) With respect to the Service Weighting (Table 1), what is the difference between the Service assets provided by KHC to the Street Light class and the USL class such that the former has a weighting of zero while the latter has weighting of 0.2?

Response

a) There is a difference in terms of customer responsibility to pay for Service assets. For the Street Light class, the customer is responsible for paying for the service drop and all maintenance and replacement associated with the service drop, as such, the weighting is zero whereas for the USL class this is not the case.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-35

Reference: Exhibit 7, Tab 1, Schedule 1, pages 2-3

a) Please provide a copy of the analysis performed to develop the weighting factors for Billing and Collecting.

b) Does KHC's offer e-billing to its customers? If yes, please provide the most current data as to the number of customers in each class that are on e-billing.

Response

a) Please see 7-Staff-70.

b) Yes, KHC offers e-billing to its customers. Most current data (September 2022) as to the number of customer accounts in each class that are on e-billing is as follows:

Rate Classification	**# Customers on e-Billing**
Residential	5,734
General Service < 50kW	433
General Service 50-4,999kW	65
Large Use	3
Unmetered Scattered Load	7
Street Lighting	0
Total	6,242

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-36

Reference: Cost Allocation Model, Tabs I6.2, I7.1 and I7.2
Exhibit 7, Tab 1, Schedule 1, page 4

a) Please explain why Tab I6.2 shows 300 GS>50 customer but Tab I7.1 only reports 289 meters for the same class.

b) On page 4 KHC notes that it has a Standby Power Rate classification. Please indicate the number of Standby customers and whether any of these customers (by rate class) have KHC owned metering on their generator(s).

i. If any of these customers have KHC-owned metering on their generators, please indicate whether these meters are included in the meter counts used in Tab I7.1 and the meter reading counts used in Tab I7.2.

Response

a) Please see Responses to OEB Staff Error Checking, Filed: 12 August 2022, Page 7 of 22, Kingston Hydro response to question #5. Tab I7.1 of the Cost Allocation Model filed with interrogatory responses includes 300 meters for the GS>50 kW class.

b) Kingston has two (2) institutional customers with load displacement generator settlement; one (1) Large Use and one(1) GS 50 to 4,999kW. Both have KHC owned metering on their generator(s).

i. No, the meters on their generators are not included in the meter counts.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-37

Reference: Exhibit 7, Cost Allocation Model, Tab I4 (BO Assets)

a) Please provide a schedule that compares the primary/secondary asset breakout in the current Application with that used in the utility's last COS Application for the following accounts: i) #1830, ii) #1835, iii) #1840 and iv) #1845. Please explain any material changes (i.e., greater than five percentage points).

Response

a) There are no changes in the breakout percentages used in Tab I4 BO Assets regarding primary/secondary assets for accounts 1830,1835,1840,1845.

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		2016	2017	2018	2019	2020	2023
Account	**Description**	**BREAK OUT (%)**	**BREAK OUT (%)**	**BREAK OUT (%)**	**BREAK OUT (%)**	**BREAK OUT (%)**	**BREAK OUT (%)**
1830-4	Poles, Towers and Fixtures - Primary	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
1830-5	Poles, Towers and Fixtures - Secondary	89.00%	89.00%	89.00%	89.00%	89.00%	89.00%
1835-4	Overhead Conductors and Devices - Primary	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
1835-5	Overhead Conductors and Devices - Secondary	79.00%	79.00%	79.00%	79.00%	79.00%	79.00%
1840-4	Underground Conduit - Primary	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
1840-5	Underground Conduit - Secondary	93.00%	93.00%	93.00%	93.00%	93.00%	93.00%
1845-4	Underground Conductors and Devices - Primary	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
1845-5	Underground Conductors and Devices - Secondary	95.40%	95.40%	95.40%	95.40%	95.40%	95.40%

2

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-38

Reference: Exhibit 7, Tab 2, Schedule 2, page 2

Preamble: The Application states:

"As described in Exhibit 8, the total bill impacts for the Street Lighting rate class would exceed 10% so rates for the class are adjusted such that total bills increases are exactly 10% in 2023 and 2024, and a further increase in 2025 brings the class revenue to cost ratio of exactly 80%. Overall, after adjustments to General Service < 50 kW, Large Use, and Street Lighting (including mitigation), there is a revenue deficiency."

a) Please provide the 2023 total bill impact for the Street Lighting class assuming: i) the Status Quo ratio of 72.73% in maintained and ii) the Revenue to Cost Ratio is increased to 80%.

b) How did KHC determine the R/C ratio for 2024 that would yield a 10% total bill impact?

c) What would be the resulting 2024 and 2025 Revenue to Cost ratios for the GS>50 class if: i) the Street Lighting ratios were adjusted as proposed but ii) the reduction in the GS<50 class ratio was phased-in over two years?

Response

a) Please see the response to 7-Staff-69, part a).

b) Total bill impacts for the Street Light class in 2024 were calculated with a bill impact table in which the 2023 proposed distribution rates were used as the "Current OEB-Approved" rates. All other values were held constant as all rate riders proposed to persist for at least 2 years. A distribution rate increase that resulted in a 10% total bill increase was determined with the GoalSeek function.

c) If the Street Lighting ratios were adjusted as proposed but the reduction in the GS<50 kW ratio was phased in over two years the ratio would be 117.43% in both 2024 and 2025. This is equal to the proposed 2025 ratio and if the value the keeps KHC revenue-neutral with Street Lights at 80%. Please note that if Street Light rates are phased in over 3 years and GS<50 kW rates are phased-in over 2 years there will be a revenue mismatch.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-39

Reference: Exhibit 7, Elenchus Report, page 4

Preamble: The Report states: "In its 2016-2020 Custom IR application, Kingston Hydro used the load profiles provided by Hydro One in its cost allocation models."

a) Please provide a version of the 2023 Cost Allocation Model where the load profiles are based on those provided by Hydro One.

Response

a) Please see 7-VECC-39 Attachment 1 in live excel format.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-40

Reference: Exhibit 7, Elenchus Report, pages 4 & 8

Preamble: The Report states (page 4):"Kingston Hydro has updated the load profiles for all rate classes."

The Report states (page 8): "The Street Light class is not weather sensitive and as such its loads are not weather-normalized. The USL hourly load was assumed to have a constant load."

a) How was the updated Street Light class load profile determined?

b) Was USL load assumed to be constant 24/7?

i. If yes, what was the basis for this assumption?

ii. If not, over what hours was the load assumed to be "constant" and why?

Response

a) The updated Street Light class load profile is based on the Street Lighting load profiles determined by Hydro One as part of the 2006 Cost Allocation Information Filing, scaled to 2023 test year consumption.

b) Yes.

i. Elenchus made this simplifying assumption as the demand of devices served by

this rate class generally do not change materially from hour to hour. The PLCC adjustment removes the majority of USL demand from NCP allocations so Elenchus advised that a more comprehensive analysis of USL demand profiles was not warranted.

ii. Not applicable.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-41

Reference: Exhibit 7, Elenchus Report, pages 6-7

Preamble: The Application states (page 6):

"The impact of HDDs and CDDs on hourly load is calculated with a regression of three years of actual hourly loads (2019 to 2021) on daily HDDs and CDDs. The regression results provide the estimated impact of a change in degree days on load."

The Application states (page 7):

"Actual 2019 hourly load is adjusted by calculating the difference between actual daily temperatures and the corresponding ranked typical daily temperature (as identified in Figure 2) and applying the regression coefficient to the difference. The year 2019 was selected as the base year to scale to avoid irregular consumption patterns in 2020 and 2021 caused by the COVID-19 pandemic that are expected to diminish by the 2023 Test Year."

a) Why is it appropriate use 2020 and 2021 data to determine the impact of HDDs and CDDs on hourly load but not use 2020 or 2021 for purposes of calculating the load profiles for each class, particularly when the regression model used to determine the impact of HDD and CDD on load includes variables to account for the impact of COVID (per pages 6-7)?

b) Please provide the results (i.e., the 2023 CP and NCP values) for each customer class based on: i) adjusted 2020 data and ii) adjusted 2021 data.

Response

a) The 2020 and 2021 data is used only for the purposes of deriving HDD and CDD coefficients used for weather-normalizing 2019 hourly demands. Despite the influence of COVID on demands, which are somewhat mitigated by the COVID HDD and COVID CDD variables, including 2020 and 2021 data provides a more timely and robust 3-year dataset to derive the weather normalization factors. Using 2020 or 2021 data hourly loads, with weather normalizing adjustments, as the basis for deriving CP and NCP figures would inappropriately include the impacts of lockdowns and COVID waves at different times of the year that should not be reflected in forecast data.

b) The results are provided in 7-VECC-41 Attachment 1 in live excel format.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-42

Reference: Exhibit 7, Elenchus Report, page 7

Preamble: The Report states (page 7, footnote 2):

"There are a total of 77 independent variables, however, the set of 72 for hourly HDD, hourly CDD and binary Hour variables have only three non-zero values in each observation. The values are 0 in each hour other than the HDD, CDD, and binary hour variables that correspond to the hour of the observation. This regression is similar to 24 regressions, one for each hour of the day."

a) Would the results be "exactly" the same if 24 separate regressions had been done – one for each hour of the day?

Response

a) The results would be almost the exact same if 24 separate regressions were run. If the trend, weekend, holiday, COVIDDHDD and COVIDCDD variables were excluded, then the results would be exactly the same if 24 separate regressions were run.

COST ALLOCATION (EXHIBIT 7)

Interrogatory 7.0-VECC-43

Reference: Exhibit 7, Elenchus Report, pages 6-7

Preamble: The Application states:

"There are 24 variables for each of HDD and CDD, equal to the actual degree days in the corresponding hour, and 0 in all other hours. A set of 24 binary variables, equal to 1 in the corresponding hour and 0 in all other hours; COVIDHDD and COVIDCDD variables equal to 0 in all days until March 16, 2020 and equal to the relevant HDD or CDD in each hour thereafter; a trend variable; a Weekend or Holiday binary variable; and a Summer binary variable are also included. The resulting coefficients reflect the impact of one HDD or CDD that considers different impacts depending on the hour of the day."

a) Please confirm that by using binary variables to account for the impact of weekends and holidays as opposed to weekdays on load the model implicitly assumes that the impact of a change in HDD or CDD value is the same on weekends and holidays as it is on weekdays. If confirmed, please explain why this "assumption" is reasonable? If not confirmed, please explain why not.

Response

a) Confirmed. This is a simplifying assumption to maintain a reasonable number of variables used in the regression. Separate HDD and CDD variables by weekday, weekend, and holiday would require 144 variables, plus the remaining 27 (or 28, depending on the class) variables used for a total of 171 (or 172) variables.