# EXHIBIT 7 – COST ALLOCATION

## 2018 Cost of Service

Cooperative Hydro Embrun Inc.
EB-2017-0035

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# 7.2 COST ALLOCATION STUDY REQUIREMENTS

## 7.2.1 OVERVIEW OF COST ALLOCATION

CHEI has prepared and is filing a cost allocation informational filing consistent with its understanding of the Directions and Policies in the Board's Reports of November 28, 2007 Application of Cost Allocation for Electricity Distributors, and March 31, 2011 Review of Electricity Distribution Cost Allocation Policy (EB-2010-0219) (the "Cost Allocation Reports") and all subsequent updates.

The main objectives of the original informational filing in 2006 were to provide information on any apparent cross-subsidization among a distributor's rate classifications and to support future rate applications. This information is updated to reflect new parameters and inputs and then used to adjust any cross-subsidization in the proposed rates.

**Previously Approved Cost Allocation Study (2014)**

The Previously Board Approved ratios are presented as a point of reference to the proposed 2018 ratios. As part of its last Cost of Service Rate Application, CHEI updated the cost allocation revenue to cost ratios with 2014 base revenue requirement information. The revenue to cost ratios from the 2014 application are presented below. CHEI notes that there have been no changes in its class composition since 2014. [1]

**Table 1 - Previously Approved Ratios (2014 COS)**

| ***Customer Class Name*** | **2014 Approved Revenue to Cost Ratio** |
|---|---|
| *Residential* | 0.96 |
| *General Service < 50 kW* | 1.20 |
| *General Service > 50 to 4999 kW* | 1.20 |
| *Sentinel Lights* | 1.20 |
| *Street Lighting* | 0.96 |

[1] MFR - New customer class or eliminated customer class - rationale and restatement of revenue requirement from previous CoS

**Proposed Cost Allocation Study (2018)**

The Cost Allocation Study for 2018 allocates the 2018 test year costs (i.e., the 2018 forecast revenue requirement) to the various customer classes using allocators that are based on the forecast class loads (kW and kWh) by class, customer counts, etc.

CHEI has used the most up to date (2017) OEB-approved Cost Allocation Model and followed the instructions and guidelines issued by the OEB to enter the 2018 data into this model.[2]

CHEI populated the information on Sheet I3, Trial Balance Data with the 2018 forecasted data, Target Net Income, PILs, interest on long term debt, and the targeted Revenue Requirement and Rate Base.

On Sheet I4, Break-out of Assets, CHEI updated the allocation of the accounts based on 2018 values.

In Sheet I5.1, Miscellaneous data, CHEI updated the deemed equity component of rate base, kilometer of roads in the service area, working capital allowance, the proportion of pole rental revenue from secondary poles, and the monthly service charges.

As instructed by the Board, in Sheet I5.2, Weighting Factors, CHEI has used LDC specific factors rather than continue to use OEB approved default factors. The utility has applied service and billing & collecting weightings for each customer classification.

These weightings are based on a review of time and costs incurred in servicing its customer classes; they are discussed further below:

[2] MFR - If Cost Allocation Model other than OEB model used - exclude LV, exclude DVA such as smart meters

**Table 2 - Weighting Factors**

| | 1 | 2 | 3 | 7 | 9 |
|---|---|---|---|---|---|
| | **Residential** | **GS <50** | **GS > 50 to 4999 kW** | **Street Light** | **Unmetered Scattered Load** |
| ***Insert Weighting Factor for Services Account 1855*** | 1.0 | 2.0 | 2.0 | | |
| ***Insert Weighting Factor for Billing and Collecting*** | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

CHEI notes that its weighting factors have not changed since its last cost of service.

## Proposed Services Weighting Factors[3]

**Residential**: the Services weighting factor was set to "1", per Cost Allocation instruction sheet.

**General Service less than 50 kW, General Service greater than 50 kW, Intermediate:** The proposed Services weighting factor of 2.0 reflects that these customers require greater capacity than do residential customers as well increased levels of planning and engineering from the 3rd party contractor.

**Street Lighting and Unmetered Scattered Load**: A Services weighting factor of 0 is proposed for both customer classes as the costs incurred to provide Services to USL are the responsibility of Rogers Cable and Services to Street Lighting is the responsibility of the Town of Embrun.

## Proposed Billing and Collecting Weighting Factors

**Residential**: The Billing weighting factor is set at "1", per Cost Allocation instruction sheet.

**General Service less than 50 kW**: the proposed Billing and Collecting weighting factor is also 1; the reason being that the utility spends the same amount of time and effort to bill a GS<50 as it does for the Residential Class.

[3] MFR - Description of weighting factors, and rationale for use of default values (if applicable)

**General Service greater than 50 kW**:

the proposed Billing and Collecting weighting factor is also 1; the reason being that the utility spends the same amount of time and effort to bill a GS>50 as it does for the Residential Class.

**Street Lighting:**

the proposed Billing and Collecting weighting factor is also 1; the reason being that the utility spends the same amount of time and effort to bill a Street Lighting customer as it does for the Residential Class.

**Unmetered Scattered Load**

the proposed Billing and Collecting weighting factor is also 1; the reason being that the utility spends the same amount of time and effort to bill a USL customer as it does for the Residential Class.

In Sheet I6.1 Revenue has been populated with the 2018 Test Year forecast data as well as existing rates.

Sheet I6.2 has been updated with the required Bad Debt and Late Payment revenue data as well as the number of customer/connection

CHEI updated the capital cost per meter information on Sheet I7.1 and the meter reading information on I7.2 to reflect its completed deployment of smart meters.

The data entered on sheet I8 reflects the findings of the 2004 hour by hour load data being scaled to be consistent with the 2018 load forecast and the inspection of the scaled data to identify the system peaks and class specific peaks. The original demand data study was contracted out to HONI by the OEB back in 2004 in advance of the 2006 EDR process. Over the past four years, the utility's regulatory consultant has reached out HONI's demand data experts multiple times in hopes of getting background information and training on the mechanics behind the demand data study of 2004. HONI has never returned the calls, and therefore, at this

time, CHEI does not have enough background information or capacity to update the demand data beyond the scaling. [4]

The scaled demand data is presented at the next page.

CHEI has completed its cost allocation study using the OEB's methodology. A live Excel version of 2017 cost allocation model has been filed along with this application. CHEI confirms that it has also populated sheets 11 and 12 of the Revenue Requirement Work Form. CHEI confirms that the inputs to the model are consistent with the test year load forecast, changes to customer classes and load profiles. [5]

[4] MFR - Explanation provided if a distributor is unable to update its load profiles and confirm that it intends to put plans in place to update its load profiles the next time a cost allocation model is filed

[5] MFR – Completed cost allocation study using the OEB-approved methodology or a comparable model must be filed reflecting future loads and costs and be supported by appropriate explanations and live Excel spreadsheets. Sheets 11 and 12 of the RRWF must also be completed. Live Excel version of 2017 cost allocation model will be filed (updated load profiles or scaled version of HONI CAIF). Model must be consistent with test year load forecast, changes to customer classes and load profiles.

## Table 3 - Load Profiles from 2010 CoS

| Customer Classes | | Total | 1 Residential | 2 GS <50 | 3 GS>50-Regular | 7 Street Light | 9 Unmetered Scattered Load |
|---|---|---|---|---|---|---|---|
| **CO-INCIDENT PEAK** | | | | | | | |
| **1 CP** | | | | | | | |
| Transformation CP | TCP1 | 7,103 | 5,145 | 794 | 1,060 | 94 | 10 |
| Bulk Delivery CP | BCP1 | 7,103 | 5,145 | 794 | 1,060 | 94 | 10 |
| Total Sytem CP | DCP1 | 7,103 | 5,145 | 794 | 1,060 | 94 | 10 |
| **4 CP** | | | | | | | |
| Transformation CP | TCP4 | 26,287 | 18,316 | 3,390 | 4,224 | 315 | 42 |
| Bulk Delivery CP | BCP4 | 26,287 | 18,316 | 3,390 | 4,224 | 315 | 42 |
| Total Sytem CP | DCP4 | 26,287 | 18,316 | 3,390 | 4,224 | 315 | 42 |
| **12 CP** | | | | | | | |
| Transformation CP | TCP12 | 64,956 | 45,979 | 8,760 | 9,373 | 715 | 129 |
| Bulk Delivery CP | BCP12 | 64,956 | 45,979 | 8,760 | 9,373 | 715 | 129 |
| Total Sytem CP | DCP12 | 64,956 | 45,979 | 8,760 | 9,373 | 715 | 129 |
| **NON CO_INCIDENT PEAK** | | | | | | | |
| **1 NCP** | | | | | | | |
| Classification NCP from Load Data Provider | DNCP1 | 7,896 | 5,497 | 1,060 | 1,209 | 118 | 12 |
| Primary NCP | PNCP1 | 7,896 | 5,497 | 1,060 | 1,209 | 118 | 12 |
| Line Transformer NCP | LTNCP1 | 7,896 | 5,497 | 1,060 | 1,209 | 118 | 12 |
| Secondary NCP | SNCP1 | 7,896 | 5,497 | 1,060 | 1,209 | 118 | 12 |
| **4 NCP** | | | | | | | |
| Classification NCP from Load Data Provider | DNCP4 | 29,020 | 19,904 | 4,016 | 4,655 | 399 | 46 |
| Primary NCP | PNCP4 | 29,020 | 19,904 | 4,016 | 4,655 | 399 | 46 |
| Line Transformer NCP | LTNCP4 | 29,020 | 19,904 | 4,016 | 4,655 | 399 | 46 |
| Secondary NCP | SNCP4 | 29,020 | 19,904 | 4,016 | 4,655 | 399 | 46 |
| **12 NCP** | | | | | | | |
| Classification NCP from Load Data Provider | DNCP12 | 70,511 | 47,874 | 10,681 | 10,726 | 1,101 | 129 |
| Primary NCP | PNCP12 | 70,511 | 47,874 | 10,681 | 10,726 | 1,101 | 129 |
| Line Transformer NCP | LTNCP12 | 70,511 | 47,874 | 10,681 | 10,726 | 1,101 | 129 |
| Secondary NCP | SNCP12 | 70,511 | 47,874 | 10,681 | 10,726 | 1,101 | 129 |

**Table 4 - Demand Data for 2018 Test Year (adjusted for 2018 Load Forecast)**

| Customer Classes | | Total | 1 Residential | 2 GS <50 | 3 GS > 50 to 4999 kW | 7 Street Light | 9 Unmetered Scattered Load |
|---|---|---|---|---|---|---|---|
| **CO-INCIDENT PEAK** | | | | | | | |
| **1 CP** | | | | | | | |
| Transformation CP | TCP1 | 6,838 | 4,984 | 812 | 941 | 92 | 10 |
| Bulk Delivery CP | BCP1 | 6,838 | 4,984 | 812 | 941 | 92 | 10 |
| Total Sytem CP | DCP1 | 6,838 | 4,984 | 812 | 941 | 92 | 10 |
| **4 CP** | | | | | | | |
| Transformation CP | TCP4 | 25,311 | 17,741 | 3,470 | 3,749 | 308 | 42 |
| Bulk Delivery CP | BCP4 | 25,311 | 17,741 | 3,470 | 3,749 | 308 | 42 |
| Total Sytem CP | DCP4 | 25,311 | 17,741 | 3,470 | 3,749 | 308 | 42 |
| **12 CP** | | | | | | | |
| Transformation CP | TCP12 | 62,666 | 44,536 | 8,982 | 8,320 | 700 | 129 |
| Bulk Delivery CP | BCP12 | 62,666 | 44,536 | 8,982 | 8,320 | 700 | 129 |
| Total Sytem CP | DCP12 | 62,666 | 44,536 | 8,982 | 8,320 | 700 | 129 |
| **NON CO_INCIDENT PEAK** | | | | | | | |
| **1 NCP** | | | | | | | |
| Classification NCP from Load Data Provider | DNCP1 | 7,376 | 5,118 | 1,083 | 1,072 | 92 | 12 |
| Primary NCP | PNCP1 | 7,376 | 5,118 | 1,083 | 1,072 | 92 | 12 |
| Line Transformer NCP | LTNCP1 | 7,376 | 5,118 | 1,083 | 1,072 | 92 | 12 |
| Secondary NCP | SNCP1 | 7,376 | 5,118 | 1,083 | 1,072 | 92 | 12 |
| **4 NCP** | | | | | | | |
| Classification NCP from Load Data Provider | DNCP4 | 27,952 | 19,279 | 4,104 | 4,132 | 391 | 46 |
| Primary NCP | PNCP4 | 27,952 | 19,279 | 4,104 | 4,132 | 391 | 46 |
| Line Transformer NCP | LTNCP4 | 27,952 | 19,279 | 4,104 | 4,132 | 391 | 46 |
| Secondary NCP | SNCP4 | 27,952 | 19,279 | 4,104 | 4,132 | 391 | 46 |
| **12 NCP** | | | | | | | |
| Classification NCP from Load Data Provider | DNCP12 | 68,029 | 46,372 | 10,930 | 9,520 | 1,078 | 129 |
| Primary NCP | PNCP12 | 68,029 | 46,372 | 10,930 | 9,520 | 1,078 | 129 |
| Line Transformer NCP | LTNCP12 | 68,029 | 46,372 | 10,930 | 9,520 | 1,078 | 129 |
| Secondary NCP | SNCP12 | 68,029 | 46,372 | 10,930 | 9,520 | 1,078 | 129 |

No Direct Allocations were entered on Sheet I9.

The revenue to cost ratios calculated on Sheet O1 of the Cost Allocation model updated for the 2018 Test Year are provided at the next page.

## Table 5 - Sheet I6-2 of the Cost Allocation Model[6]

| | | | 1 | 2 | 3 | 7 | 9 |
|---|---|---|---|---|---|---|---|
| | ID | Total | Residential | GS <50 | GS > 50 to 4999 kW | Street Light | Unmetered Scattered Load |
| **Billing Data** | | | | | | | |
| Bad Debt 3 Year Historical Average | BDHA | $5,145 | $5,145 | $0 | $0 | $0 | $0 |
| Late Payment 3 Year Historical Average | LPHA | $9,731 | $5,966 | $3,765 | | | |
| Number of Bills | CNB | 52,794 | 25,200 | 2,065 | 108 | 12 | 209 |
| Number of Devices | CDEV | | | | | | |
| Number of Connections (Unmetered) | CCON | 530 | | | | 530 | |
| Total Number of Customers | CCA | 2,300 | 2,100 | 172 | 9 | 1 | 17 |
| Bulk Customer Base | CCB | - | | | | | |
| Primary Customer Base | CCP | 2,299 | 2,100 | 172 | 9 | - | 17 |
| Line Transformer Customer Base | CCLT | 2,299 | 2,100 | 172 | 9 | - | 17 |
| Secondary Customer Base | CCS | 2,300 | 2,100 | 172 | 9 | 1 | 17 |
| Weighted - Services | CWCS | 2,462 | 2,100 | 344 | 18 | - | - |
| Weighted Meter -Capital | CWMC | 347,490 | 304,500 | 36,115 | 6,875 | - | - |
| Weighted Meter Reading | CWMR | 2,339 | 2,100 | - | 239 | - | - |
| Weighted Bills | CWNB | 27,594 | 25,200 | 2,065 | 108 | 12 | 209 |
| **Bad Debt Data** | | | **92.30%** | **7.70%** | | | |
| **Historic Year:** | 2014 | 5,473 | 5,473 | | | | |
| **Historic Year:** | 2015 | 5,001 | 5,001 | | | | |
| **Historic Year:** | 2016 | 4,960 | 4,960 | | | | |
| **Three-year average** | | **5,145** | **5,145** | **0** | **-** | **-** | **-** |

[6] MFR - Hard copy of sheets I-6, I-8, O-1 and O-2 (first page)

## Table 6 - Sheet I6-1 of the Cost Allocation Model[7]

| | |
|---|---|
| **Total kWhs from Load Forecast** | 30,999,887 |

| | |
|---|---|
| **Total kWs from Load Forecast** | 14,032 |

| | |
|---|---|
| **Deficiency/sufficiency ( RRWF 8. cell F51)** | -251,606 |

| | |
|---|---|
| **Miscellaneous Revenue (RRWF 5. cell F48)** | 41,289 |

| | | | 1 | 2 | 3 | 7 | 9 |
|---|---|---|---|---|---|---|---|
| | **ID** | **Total** | **Residential** | **GS <50** | **GS > 50 to 4999 kW** | **Street Light** | **Unmetered Scattered Load** |
| **Billing Data** | | | | | | | |
| Forecast kWh | **CEN** | 29,963,504 | 21,616,344 | 5,043,563 | 2,827,501 | 393,969 | 82,127 |
| Forecast kW | **CDEM** | 13,339 | | | 12,736 | 603 | |
| Forecast kW, included in CDEM, of customers receiving line transformer allowance | | - | | | | | |
| Optional - Forecast kWh, included in CEN, from customers that receive a line transformation allowance on a kWh basis. In most cases, this will not be applicable and will be left blank. | | - | | | | | |
| KWh excluding KWh from Wholesale Market Participants | **CEN EWMP** | 29,963,504 | 21,616,344 | 5,043,563 | 2,827,501 | 393,969 | 82,127 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Existing Monthly Charge | | | $21.87 | $17.90 | $199.45 | $1.99 | $21.16 |
| Existing Distribution kWh Rate | | | $0.0072 | $0.0148 | | | $0.0055 |
| Existing Distribution kW Rate | | | | | $3.6957 | $8.0867 | |
| Existing TOA Rate | | | | | | | |
| Additional Charges | | | | | | | |
| | | | $21.87 | $17.90 | $199.45 | $1.99 | $21.16 |
| Distribution Revenue from Rates | | $909,378 | $706,762 | $111,615 | $68,609 | $17,526 | $4,868 |
| Transformer Ownership Allowance | | $0 | $0 | $0 | $0 | $0 | $0 |
| Net Class Revenue | **CREV** | $909,378 | $706,762 | $111,615 | $68,609 | $17,526 | $4,868 |

[7] MFR - Hard copy of sheets I-6, I-8, O-1 and O-2 (first page)

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## Table 7 - Sheet O-1 of the Cost Allocation Model[8]

| | Total | 1 Residential | 2 GS <50 | 3 GS > 50 to 4999 kW | 7 Street Light | 9 Unmetered Scattered Load |
|---|---|---|---|---|---|---|
| Distribution Revenue at Existing Rates | $909,378 | $706,762 | $111,615 | $68,609 | $17,526 | $4,868 |
| Miscellaneous Revenue (mi) | $28,789 | $22,026 | $5,899 | $362 | $399 | $103 |
| | Miscellaneous Revenue Input equals Output | | | | | |
| **Total Revenue at Existing Rates** | **$938,168** | **$728,788** | **$117,514** | **$68,971** | **$17,925** | **$4,970** |
| Factor required to recover deficiency (1 + D) | 1.2183 | | | | | |
| Distribution Revenue at Status Quo Rates | $1,107,885 | $861,040 | $135,979 | $83,586 | $21,351 | $5,930 |
| Miscellaneous Revenue (mi) | $28,789 | $22,026 | $5,899 | $362 | $399 | $103 |
| **Total Revenue at Status Quo Rates** | **$1,136,675** | **$883,066** | **$141,878** | **$83,947** | **$21,751** | **$6,033** |
| **Expenses** | | | | | | |
| Distribution Costs (di) | $71,164 | $52,923 | $9,675 | $5,523 | $2,895 | $148 |
| Customer Related Costs (cu) | $232,790 | $209,753 | $16,416 | $879 | $4,098 | $1,644 |
| General and Administration (ad) | $418,017 | $360,734 | $36,115 | $9,063 | $9,658 | $2,446 |
| Depreciation and Amortization (dep) | $165,121 | $126,287 | $21,719 | $11,470 | $5,344 | $301 |
| PILs (INPUT) | $4,630 | $3,438 | $651 | $394 | $140 | $8 |
| Interest | $79,719 | $59,194 | $11,203 | $6,779 | $2,409 | $133 |
| **Total Expenses** | **$971,441** | **$812,330** | **$95,779** | **$34,108** | **$24,545** | **$4,680** |
| **Direct Allocation** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| Allocated Net Income (NI) | $165,233 | $122,692 | $23,221 | $14,051 | $4,994 | $276 |
| **Revenue Requirement (includes NI)** | $1,136,675 | $935,021 | $118,999 | $48,159 | $29,538 | $4,957 |
| | Revenue Requirement Input equals Output | | | | | |
| **Rate Base Calculation** | | | | | | |
| **Net Assets** | | | | | | |
| Distribution Plant - Gross | $7,723,918 | $5,794,866 | $1,054,408 | $598,978 | $261,067 | $14,598 |
| General Plant - Gross | $242,773 | $181,462 | $33,606 | $19,434 | $7,836 | $435 |
| Accumulated Depreciation | ($1,881,045) | ($1,422,138) | ($247,943) | ($136,773) | ($70,205) | ($3,987) |
| Capital Contribution | ($1,750,647) | ($1,335,135) | ($230,937) | ($113,163) | ($67,615) | ($3,797) |
| **Total Net Plant** | **$4,334,999** | **$3,219,055** | **$609,135** | **$368,477** | **$131,083** | **$7,250** |
| **Directly Allocated Net Fixed Assets** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| Cost of Power (COP) | $4,209,043 | $3,040,884 | $706,479 | $395,145 | $55,057 | $11,477 |

[8] MFR - Hard copy of sheets I-6, I-8, O-1 and O-2 (first page)

| | | | | | | |
|---|---|---|---|---|---|---|
| OM&A Expenses | **$721,971** | $623,411 | $62,206 | $15,465 | $16,651 | $4,239 |
| Directly Allocated Expenses | **$0** | $0 | $0 | $0 | $0 | $0 |
| ***Subtotal*** | ***$4,931,014*** | ***$3,664,295*** | ***$768,685*** | ***$410,610*** | ***$71,709*** | ***$15,716*** |
| **Working Capital** | **$369,826** | **$274,822** | **$57,651** | **$30,796** | **$5,378** | **$1,179** |
| **Total Rate Base** | **$4,704,825** | **$3,493,877** | **$666,786** | **$399,273** | **$136,461** | **$8,428** |
| | **Rate Base Input equals Output** | | | | | |
| **Equity Component of Rate Base** | **$1,881,930** | **$1,397,551** | **$266,714** | **$159,709** | **$54,584** | **$3,371** |
| **Net Income on Allocated Assets** | **$165,233** | **$70,736** | **$46,099** | **$49,840** | **($2,794)** | **$1,352** |
| **Net Income on Direct Allocation Assets** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| **Net Income** | **$165,233** | **$70,736** | **$46,099** | **$49,840** | **($2,794)** | **$1,352** |
| **RATIOS ANALYSIS** | | | | | | |
| **REVENUE TO EXPENSES STATUS QUO%** | **100.00%** | **94.44%** | **119.23%** | **174.31%** | **73.64%** | **121.71%** |
| EXISTING REVENUE MINUS ALLOCATED COSTS | **($198,507)** | ($206,233) | ($1,485) | $20,812 | ($11,613) | $14 |
| | **Deficiency Input equals Output** | | | | | |
| STATUS QUO REVENUE MINUS ALLOCATED COSTS | **$0** | ($51,955) | $22,879 | $35,788 | ($7,788) | $1,076 |
| RETURN ON EQUITY COMPONENT OF RATE BASE | 8.78% | 5.06% | 17.28% | 31.21% | -5.12% | 40.12% |

**Table 8 - Sheet O-2 of the Cost Allocation Model[9]**

| | | 1 | 2 | 3 | 7 | 9 |
|---|---|---|---|---|---|---|
| **Summary** | | **Residential** | **GS <50** | **GS > 50 to 4999 kW** | **Street Light** | **Unmetered Scattered Load** |
| **Customer Unit Cost per month - Avoided Cost** | | $8.86 | $7.59 | $14.44 | $0.63 | $7.79 |
| | | | | | | |
| **Customer Unit Cost per month - Directly Related** | | $19.69 | $18.52 | $25.71 | $1.52 | $18.54 |
| **Customer Unit Cost per month - Minimum System with PLCC Adjustment** | | $23.26 | $21.68 | $28.94 | $4.08 | $19.83 |
| **Existing Approved Fixed Charge** | | $21.87 | $17.90 | $199.45 | $1.99 | $21.16 |

[9] MFR - Hard copy of sheets I-6, I-8, O-1 and O-2 (first page)

# 7.3 CLASS REVENUE REQUIREMENTS

## 7.3.1 CLASS REVENUE ANALYSIS

Table 9 below shows the results of the cost allocation updated 2018 study. These results are used to compare and analyze the distribution costs under each option and help the utility determine its 2018 proposed ratios.

**Table 9 - Results of the Cost Allocation Study**

***Cost Allocation Results*** **REVENUE ALLOCATION (sheet O1)**

| ***Customer Class Name*** | **Service Rev Req (row40)** | | **Misc. Revenue (mi) (row19)** | | **Base Rev Req** | | **Rev2Cost Expenses %** |
|---|---|---|---|---|---|---|---|
| *Residential* | 935,021 | 82.26% | 22,026 | 76.51% | 912,995 | 82.41% | 101.79% |
| *General Service < 50 kW* | 118,999 | 10.47% | 5,899 | 20.49% | 113,100 | 10.21% | 54.08% |
| *General Service > 50 to 4999 kW* | 48,159 | 4.24% | 362 | 1.26% | 47,797 | 4.31% | 188.16% |
| *Unmetered Scattered Load* | 4,957 | 0.44% | 103 | 0.36% | 4,854 | 0.44% | 131.26% |
| *Street Lighting* | 29,538 | 2.60% | 399 | 1.39% | 29,139 | 2.63% | 79.40% |
| ***TOTAL*** | 1,136,675 | 100.00% | 28,789 | 100.00% | 1,107,885 | 100.00% | |

Table 10 below shows the allocation percentage and base revenue requirement allocation under existing rates, cost allocation results and proposed 2018 proposed allocation.

**Table 10- Base Revenue Requirement Under 3 Scenarios**

| | Proposed Base Revenue Requirement % | | | | | |
|---|---|---|---|---|---|---|
| ***Customer Class Name*** | **Cost Allocation Results** | | **Existing Rates** | | **Proposed Allocation** | |
| *Residential* | 82.41% | 912,995 | 83.92% | 929,723 | 81.76% | 905,860 |
| *General Service < 50 kW* | 10.21% | 113,100 | 5.28% | 58,452 | 9.13% | 101,117 |
| *General Service > 50 to 4999 kW* | 4.31% | 47,797 | 8.15% | 90,253 | 6.49% | 71,906 |
| *Unmetered Scattered Load* | 0.44% | 4,854 | 0.58% | 6,403 | 0.53% | 5,847 |
| *Street Lighting* | 2.63% | 29,139 | 2.08% | 23,054 | 2.09% | 23,154 |
| ***TOTAL*** | 100.00% | 1,107,885 | 100.00% | 1,107,885 | 100.00% | 1,107,885 |

Table 11 below shows the revenue offset allocation which resulted from Cost Allocation Study (Sheet O1).

**Table 11 - Revenue Offset Allocation as per Cost Allocation Study**

| | Revenue Offsets | |
|---|---|---|
| ***Customer Class Name*** | **%** | **$** |
| *Residential* | 76.51% | 22,026 |
| *General Service < 50 kW* | 20.49% | 5,899 |
| *General Service > 50 to 4999 kW* | 1.26% | 362 |
| *Unmetered Scattered Load* | 0.36% | 103 |
| *Street Lighting* | 1.39% | 399 |
| ***TOTAL*** | **100.00%** | **28,789** |

Table 12 shows the allocation of the service revenue requirement under the same three scenarios.

**Table 12 - Service Revenue Requirement Under 3 Scenarios**

| | Service Revenue Requirement $ | | |
|---|---|---|---|
| ***Customer Class Name*** | **Existing Rates** | **Cost Allocation** | **Proposed Allocation** |
| *Residential* | 951,749 | 935,021 | 927,887 |
| *General Service < 50 kW* | 64,351 | 118,999 | 107,017 |
| *General Service > 50 to 4999 kW* | 90,615 | 48,159 | 72,267 |
| *Unmetered Scattered Load* | 6,506 | 4,957 | 5,950 |
| *Street Lighting* | 23,454 | 29,538 | 23,554 |
| ***TOTAL*** | 1,136,675 | 1,136,675 | 1,136,675 |

# 7.4 REVENUE-TO-COST RATIOS

## 7.4.1 COST ALLOCATION RESULTS AND ANALYSIS

Table 14 at the next page shows Appendix 2-P of the Board Appendices while Table 13 below shows the utility's proposed rartios. The Appendix provides information on previously approved ratios and proposed ratios. The section following Appendix 2-P addresses the method and logic used to update the ratios from the Cost Allocation study to the proposed ratios.

**Table 13 – Proposed Revenue Allocation**

| | | | | | Target Range | |
|---|---|---|---|---|---|---|
| ***Customer Class Name*** | **Calculated R/C Ratio** | **Proposed R/C Ratio** | **Variance** | | **Floor** | **Celiling** |
| *Residential* | 0.94 | 0.99 | -0.05 | | 0.85 | 1.15 |
| *General Service < 50 kW* | 1.19 | 0.90 | 0.29 | | 0.80 | 1.20 |
| *General Service > 50 to 4999 kW* | 1.74 | 1.50 | 0.24 | | 0.80 | 1.20 |
| *Unmetered Scattered Load* | 1.22 | 1.20 | 0.02 | | 0.80 | 1.20 |
| *Street Lighting* | 0.74 | 0.80 | -0.06 | | 0.80 | 1.20 |

## Table 14 - OEB Appendix 2-P

| A) Allocated Costs | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Classes** | **Costs Allocated from Previous Study** | **%** | **Costs Allocated in Test Year Study (Column 7A)** | % | |
| **Residential** | $687,249.00 | 77.36% | $935,021.16 | 82.26% | |
| **General Service < 50 kW** | $107,690.00 | 12.12% | $118,999.47 | 10.47% | |
| **General Service > 50 to 4999 kW** | $69,528.00 | 7.83% | $48,159.11 | 4.24% | |
| **Unmetered Scattered Load** | $5,498.00 | 0.62% | $4,956.65 | 0.44% | |
| **Street Lighting** | $18,461.00 | 2.08% | $29,538.31 | 2.60% | |
| | | 0.00% | | 0.00% | |
| **Total** | $888,426.00 | 100.00% | $1,136,674.71 | 100.00% | |

| B) Calculated Class Revenues | | | | | |
|---|---|---|---|---|---|
| | | (from CA - O1 row 18) | | | |
| | | **Column 7B** | **Column 7C** | **Column 7D** | **Column 7E** |
| **Classes (same as previous table)** | | **Load Forecast (LF) X current approved rates** | **L.F. X current approved rates X (1 + d)** | **LF X proposed rates** | **Miscellaneous Revenue** |
| | | | | | |
| **Residential** | | $1,061,717.54 | $929,722.80 | $905,860.48 | $22,026.16 |
| **General Service < 50 kW** | | $315,830.88 | $58,451.95 | $101,117.41 | $5,899.41 |
| **General Service > 50 to 4999 kW** | | $395,641.47 | $90,253.05 | $71,905.61 | $361.67 |
| **Unmetered Scattered Load** | | $19,399.10 | $6,403.14 | $5,847.45 | $102.84 |
| **Street Lighting** | | $64,219.76 | $23,054.32 | $23,154.31 | $399.36 |
| | | | | | |
| **Total** | | $1,856,808.75 | $1,107,885.26 | $1,107,885.26 | $28,789.45 |

| C) Rebalancing Revenue-to-Cost (R/C) Ratios | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Class** | | **Previously Approved Ratios** | **Status Quo Ratios** | **Proposed Ratios** | **Policy Range** |
| | | **Most Recent Year:** | **(7C + 7E) / (7A)** | **(7D + 7E) / (7A)** | |
| | | **2014** | | | |
| | | **%** | **%** | **%** | **%** |
| **Residential** | | 107.00 | 101.79 | 99.24 | 85 - 115 |
| **General Service < 50 kW** | | 88.00 | 54.08 | 89.93 | 80 - 120 |

| | | | | | |
|---|---|---|---|---|---|
| **General Service > 50 to 4999 kW** | | 103.00 | 188.16 | 150.06 | 80 - 120 |
| **Unmetered Scattered Load** | | 70.00 | 131.26 | 120.05 | 80 - 120 |
| **Street Lighting** | | 70.00 | 79.40 | 79.74 | 85 - 115 |

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| **D) Proposed Revenue-to-Cost Ratios** | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Class** | | **Proposed Revenue-to-Cost Ratios** | | | **Policy Range** |
| | | **2017** | **2018** | **2019** | |
| | | **%** | **%** | **%** | **%** |
| **Residential** | | 99.24 | | | 85 - 115 |
| **General Service < 50 kW** | | 89.93 | | | 80 - 120 |
| **General Service > 50 to 4999 kW** | | 150.06 | 120.00 | | 80 - 120 |
| **Unmetered Scattered Load** | | 120.05 | | | 80 - 120 |
| **Street Lighting** | | 79.74 | | | 85 - 115 |
| | | | | | |

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3 **Table 15** below shows the utility's proposed Revenue to Cost reallocation based on an analysis
4 of the proposed results from the Cost Allocation Study vs. the Board imposed floor and ceiling
5 ranges.

6 **Table 15 – 2018 Allocation**

| | | | | Target Range | |
|---|---|---|---|---|---|
| ***Customer Class Name*** | **Calculated R/C Ratio** | **Proposed R/C Ratio** | **Variance** | **Floor** | **Ceiling** |
| *Residential* | 1.02 | 0.99 | 0.03 | 0.85 | 1.15 |
| *General Service < 50 kW* | 0.54 | 0.90 | -0.36 | 0.80 | 1.20 |
| *General Service > 50 to 4999 kW* | 1.88 | 1.50 | 0.38 | 0.80 | 1.20 |
| *Unmetered Scattered Load* | 1.31 | 1.20 | 0.11 | 0.80 | 1.20 |
| *Street Lighting* | 0.79 | 0.80 | -0.01 | 0.80 | 1.15 |

7 * Ratios highlighted in pink fell outside of the floor to ceiling range.

The proposed Revenue to Cost ratio is adjusted by changing the allocation percentage for each class. The utility reviews and assesses the bill impacts for each class before adjusting the Revenue to Cost ratios. [10]

CHEI proposes to decrease the ratio for the Residential class from 1.02% to 0.99%. The General Service <50kW class which is being highly subsidized by other class is proposed to move from 0.54 to 0.90. CHEI understands that the general rule is that the utility should only adjust the ratio up to the ceiling, however, this slightly higher allocation is being proposed to alleviate the pressure on the Residential class whose revenues have gone up higher than other classes. At its current rates, the General Service>50kW is slightly over-recovering revenues in comparison to its allocated costs. Since the calculated ratio of 1.88 is higher than the ceiling of 1.50%, adjusting it down to the ceiling is being proposed.

The calculated ratio for the USL class fell above the imposed upper limit (ceiling) of 1.20% therefore, the utility proposes to bring it back down to the ceiling from 1.31. The Street Lighting ratio fell slightly below the floor therefore CHEI proposes to bring it up to at 0.80.[11] The proposed cost re-allocation results in the shortfall allocation shown in the table below.

**Table 16 Table of Shortfall reallocation**

| ***Customer Class Name*** | **Shortfall Reconciliation** |
|---|---|
| *Residential* | $28,050.6 |
| *General Service < 50 kW* | -$42,839.8 |
| *General Service > 50 to 4999 kW* | $18,300 |
| *Unmetered Scattered Load* | 545.2 |
| *Street Lighting* | -$295.4 |

[10] MFR - To support a proposal to rebalance rates, the distributor must provide information on the revenue by class that would apply if all rates were changed by a uniform percentage. Ratios must be compared with the ratios that will result from the rates being proposed by the distributor.
[11] MFR - Confirmation of communication with unmetered load customers when proposing changes to the level of the rates and charges or the introduction of new rates and charges

For further details about the class specific bill impacts, please refer to Exhibit 8. CHEI confirms that is has communicated its proposed rates and bill impacts to its Street Lighting and USL customers and that it did not receive any comments and feedback on the issue. [12][13]

CHEI is not a Host Distributor therefore evidence of consultation with embedded distributors is not applicable. The utility does not have unique circumstances which justify specific MicroFit rates and the utility is not seeking Standby Rates in this application. [14] [15] [16]

[12] MFR - If R:C ratios outside deadband based on model - distributors must include cost allocation proposal to bring them within the OEB-approved ranges. In making any such adjustments, distributors should address potential mitigation measures if the impact of the adjustments on the rates of any particular class or classes is significant.
[13] MFR - Unmetered Loads (including Street Lighting) - Confirmation of communication with unmetered load customers when proposing changes to the level of the rates and charges or the introduction of new rates and charges
[14] MFR - Host Distributor - evidence of consultation with embedded Dx
[15]MFR - microFIT - if the applicant believes that it has unique circumstances which would justify a certain rate, appropriate documentation must be provided
[16] MFR - Standby Rates - if seeking approval on final basis, provide evidence that affected customers have been advised. If seeking changes to standby charges, provide rationale and evidence that affected customer have been advised.