## EXHIBIT 7 - COST ALLOCATION

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L 2013 Updated Cost Allocation Study

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## COST ALLOCATION OVERVIEW:

## Introduction:

On September 29, 2006, the Board issued its directions on Cost Allocation Methodology for Electricity Distributors (the "Directions"). On November 15, 2006, the Board issued the Cost Allocation Information Filing Guidelines for Electricity Distributors ("the Guidelines"), the Cost Allocation Model (the "Model") and User Instructions (the "Instructions") for the Model. PDI prepared a cost allocation information filing consistent with PDI's understanding of the Directions, the Guidelines, the Model and the Instructions.

One of the main objectives of the filing was to provide information on any apparent crosssubsidization among a distributor's rate classifications. It was felt that this would give an indication of cross-subsidization from one class to another and this information would be useful as a tool in future rate applications.

In PDI’s 2009 Cost of Service Application (EB-2008-0241), the results of the original cost allocation information filing were updated as recommended by VECC and approved by the Board to exclude "costs" and "revenues" associated with transformer ownership allowance. The results of this updated study were used as a basis for PDI to reallocate distribution revenues across customer classes to address the issue of cross-subsidization. In the 2010 IRM Application, EB-2009-0241, PDI adjusted its revenue-to-cost ratios in accordance with the Board's findings in the 2009 Cost of Service Application.

On September 2, 2010, the Board began a proceeding, EB-2010-0219, with the mandate to review and revise the existing Cost Allocation policy as needed. On March 31, 2011, the Report of the Board was released in relation to EB-2010-0219. In the letter accompanying the report, the Board indicated that a Working Group would be formed to revise the original Cost Allocation Model to address the revision highlighted in the March 31st Board Report. On August 5, 2011, the Board released the new Cost Allocation model and instructed 2012 Cost of Service filers to use the revised model in their applications. On June 28, 2012, the Board released a revised Cost Allocation model to be used by 2013 Cost of Service filers in their applications.

Table 7-1 Service Weighting Factors - Services (Account 1855)

| Rate Class | Factor |
| :--- | :---: |
| Residential | 1.00 |
| General Service $<50 \mathrm{~kW}$ | 6.61 |
| General Service $>50 \mathrm{~kW}$ | 41.30 |
| Large User | 0.0 |
| Street Lighting | 0.0 |
| Sentinel Lighting | 0.0 |
| Unmetered Scattered Load | 0.32 |

In the March $31^{\text {st }}$ Board Report, the Board stated that "default weighting factors should now be utilized only in exceptional circumstances". Distributors are therefore now expected to develop their own weighting factors.

For the purposes of this Application, PDI has used the 2013 version of the cost allocation model and submitted the revised cost allocation study to reflect 2013 test year costs, customer numbers and demand values. The 2013 demand values are based on the weather normalized load forecast used to design rates. PDI has developed weighting factors as outlined below based on discussions with staff experienced in the subject area.

Table 7-2 Billing and Collection Weighting Factors (Accounts 5315 - 5340, except 5335)

| Rate Class | Factor |
| :--- | :---: |
| Residential | 1.00 |
| General Service $<50 \mathrm{~kW}$ | 0.87 |
| General Service $>50 \mathrm{~kW}$ | 0.93 |
| Large User | 0.74 |
| Street Lighting | 0.62 |
| Sentinel Lighting | 0.82 |
| Unmetered Scattered Load | 0.82 |


| Meter Type | Installation Cost per Meter |
| :--- | :---: |
| Smart Meter - Residential | $\$ 87$ |
| Smart Meter - General Service $<50 \mathrm{~kW}$ | $\$ 304$ |
| Demand with IT | $\$ 2,170$ |
| Demand with IT and Interval Capability - Secondary | $\$ 2,500$ |
| Demand with IT and Interval Capability - Primary | $\$ 10,000$ |

Table 7-4 Meter Reading Weighting Factor (Sheet I7.2)

| Meter Type | Factor |
| :--- | :---: |
| Residential | 1.00 |
| General Service $<50 \mathrm{~kW}$ | 1.00 |
| General Service $>50 \mathrm{~kW}$ | 1.00 |
| Large User | 1.00 |

## SUMMARY OF RESULTS AND PROPOSED CHANGES:

The data used in the updated cost allocation study is consistent with PDI's cost data that supports the proposed 2013 revenue requirement outlined in this Application. Consistent with the Guidelines, PDI’s assets were broken out into primary and secondary distribution functions using the proportions assumed in the original cost allocation study. The breakout of assets, capital contributions, depreciation, accumulated depreciation, customer data and load data by primary, line transformer and secondary categories were developed from the best data available to PDI, its engineering records, and its customer and financial information systems. The cost allocation study has been included in Appendix L.

Capital contributions, depreciation and accumulated depreciation by USoA are consistent with the information provided in the 2013 continuity statement shown in Exhibit 2. The rate class customer data used in the updated cost allocation study is consistent with the 2013 customer forecast outlined in Exhibit 3. For the Street Lighting class, the number of connections reflects the actual number of connections of the street light system to PDI's distribution system. The load profiles for all rate class are the same as those used in the original information filing but have been scaled to match the 2013 load forecast. The following table outlines the scaling factors used by rate class.

Table 7-5 Load Profile Scaling Percentages

| Rate Class | 2004 Weather <br> Normal <br> Values used <br> in Original <br> Filing <br> (kWh) | $\mathbf{2 0 1 3}$ <br> Weather <br> Normal <br> Values <br> (KWh) | Scaling <br> Factor |
| :--- | :---: | :---: | :---: |
| Residential | $303,594,227$ | $294,240,107$ | $96.9 \%$ |
| General Service < 50 kW | $130,550,090$ | $112,158,205$ | $85.9 \%$ |
| General Service > 50 kW | $330,877,467$ | $350,715,605$ | $106.0 \%$ |
| Large User | $65,153,441$ | $53,896,862$ | $82.7 \%$ |
| Street Lighting | $6,312,677$ | $5,413,675$ | $85.8 \%$ |
| Sentinel Lighting | $\mathbf{1 , 1 1 9 , 8 8 4}$ | 697,744 | $62.3 \%$ |
| Unmetered Scattered Load | $2,529,936$ | $1,632,744$ | $64.5 \%$ |
| Total | $\mathbf{8 4 0 , 1 3 7 , 7 2 2}$ | $\mathbf{8 1 8 , 7 5 4 , 9 4 2}$ | $\mathbf{9 7 . 5 \%}$ |

The allocated cost by rate class from the original cost allocation study and the 2013 updated study are provided in the following Table 7-6.

Table 7-6 Allocated Cost (Appendix 2-P)

| Rate Class | 2009 Board <br> Approved <br> Cost <br> Allocation <br> Study | $\$ 7,560,833$ | $55.2 \%$ | $\$ 10,471,540$ |
| :--- | :---: | :---: | :---: | :---: |
| Residential | Cost <br> Allocated <br> the 2013 <br> Study | $64.3 \%$ |  |  |
| General Service < 50 kW | $\$ 2,308,444$ | $16.9 \%$ | $\$ 2,395,636$ | $14.7 \%$ |
| General Service > 50 kW | $\$ 262,708$ | $1.9 \%$ | $\$ 261,368$ | $1.6 \%$ |
| Large User | $\$ 711,183$ | $5.2 \%$ | $\$ 469,886$ | $2.9 \%$ |
| Street Lighting | $\$ 64,016$ | $0.5 \%$ | $\$ 29,022$ | $0.2 \%$ |
| Sentinel Lighting | $\$ 371,354$ | $2.7 \%$ | $\$ 49,437$ | $0.3 \%$ |
| Unmetered Scattered Load | $\$ 13,697,890$ | $100.0 \%$ | $\$ 16,291,837$ | $100.0 \%$ |
| Total |  | $\$ 2,614,948$ | $16.1 \%$ |  |

The results of a cost allocation study are typically presented in the form of revenue-to-cost ratios. The ratio is shown by rate classification and is the percentage of distribution revenue collected by rate classification compared to the costs allocated to the classification. The percentage identifies the rate classifications that are being subsidized and those that are over-contributing. A percentage of less than $100 \%$ means the rate classification is under-contributing and is being subsidized by other classes of customers. A percentage of greater than $100 \%$ indicates the rate classification is over-contributing and is subsidizing other classes of customers.

In the March 31, 2011 Report of the Board on Cost Allocation released in relation to EB-20100219, the Board established what it considered to be the appropriate ranges of revenue-to-cost ratios. Those are summarized in Table 7-7 below. In addition, Table 7-7 provides the revenue-to-cost ratios from: PDI’s approved 2010 approved rate application (EB-2009-0241); the updated 2013 cost allocation study and the proposed 2013 to 2015 ratios.

PDI is proposing in this Application to re-align its revenue-to-cost ratios by adjusting the allocation of revenue to the General Service $>50 \mathrm{~kW}$, Sentinel Lighting and USL rate classes in order to be within the Board's target range In addition, an adjustment is made to increase the ratio for Residential classes in order to maintain revenue neutrality.

The table below summarizes the proposed changes to the revenue-to-cost ratios.

Table 7-7 Changes in Revenue-to-Cost Ratios by Customer Class

| Class | 2010 Board <br> Approved | 2013 <br> Updated <br> Cost | 2013 <br> Proposed <br> Ratios | 2014 <br> Proposed <br> Ratios | 2015 <br> Proposed <br> Ratios | Board Targets <br> Min to Max |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Residential | $103.35 \%$ | $87.53 \%$ | $93.07 \%$ | $93.07 \%$ | $93.07 \%$ | $85.0 \%$ | $115.0 \%$ |
| General Service < 50 kW | $100.60 \%$ | $106.02 \%$ | $106.02 \%$ | $106.02 \%$ | $106.02 \%$ | $80.0 \%$ | $120.0 \%$ |
| General Service >50 kW | $103.35 \%$ | $129.76 \%$ | $120.00 \%$ | $120.00 \%$ | $120.00 \%$ | $80.0 \%$ | $120.0 \%$ |
| Large User | $85.00 \%$ | $101.01 \%$ | $101.01 \%$ | $101.01 \%$ | $101.01 \%$ | $85.0 \%$ | $115.0 \%$ |
| Street Lighting | $70.00 \%$ | $120.64 \%$ | $120.00 \%$ | $120.00 \%$ | $120.00 \%$ | $70.0 \%$ | $120.0 \%$ |
| Sentinel Lighting | $70.00 \%$ | $194.14 \%$ | $120.00 \%$ | $120.00 \%$ | $120.00 \%$ | $80.0 \%$ | $120.0 \%$ |
| Unmetered Scattered Load | $80.00 \%$ | $618.24 \%$ | $120.00 \%$ | $120.00 \%$ | $120.00 \%$ | $80.0 \%$ | $120.0 \%$ |

7 Table 7-8 Calculated Class Revenue (Appendix 2-P)

| Class | 2013 Base <br> Revenue at <br> Existing <br> Rates | 2013 Proposed <br> Base Revenue <br> Allocated at <br> Existing Rates <br> Proportion | 2013 <br> Proposed <br> Base <br> Revenue | Miscellaneous <br> Revenue |
| :--- | :---: | :---: | :---: | :---: |
| Residential | $\$ 7,952,109$ | $\$ 8,285,511$ | $\$ 8,811,682$ | $\$ 880,426$ |
| General Service $<\mathbf{5 0} \mathbf{k W}$ | $\$ 2,282,022$ | $\$ 2,377,699$ | $\$ 2,377,699$ | $\$ 162,061$ |
| General Service > 50 kW | $\$ 3,107,588$ | $\$ 3,237,878$ | $\$ 2,982,566$ | $\$ 155,371$ |
| Large User | $\$ 235,212$ | $\$ 245,073$ | $\$ 245,073$ | $\$ 18,943$ |
| Street Lighting | $\$ 505,234$ | $\$ 526,417$ | $\$ 523,393$ | $\$ 40,470$ |
| Sentinel Lighting | $\$ 51,688$ | $\$ 53,855$ | $\$ 32,338$ | $\$ 2,489$ |
| Unmetered Scattered Load | $\$ 290,236$ | $\$ 302,404$ | $\$ 56,086$ | $\$ 3,239$ |
| Total | $\$ 14,424,089$ | $\$ 15,028,837$ | $\$ 15,028,837$ | $\$ 1,263,000$ |

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## Appendix L

## Cost Allocation Model

Pages I.6, I.8, O.1, O. 2

Sheet I6.1 Revenue Worksheet -

| Total kWhs from Load Forecast | $818,754,942$ |
| :---: | ---: |
|  |  |
| Total kWs from Load Forecast |  |
|  |  |
| Deficiency from RRWF |  |
| Miscellaneous Revenue |  |


| Billing Data |  |  | 1 | 2 | 3 | 6 | 7 | 8 | 9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ID | Total | Residential | General Service < 50 kW | General Service $>50 \mathrm{~kW}$ | Large Use $>5 \mathrm{MW}$ | Street Lighting | Sentinel Lighting | Unmetered Scattered Load |
|  |  |  |  |  |  |  |  |  |  |
| Forecast kWh | CEN | 818,754,942 | 294,240,107 | 112,158,205 | 350,715,605 | 53,896,862 | 5,413,675 | 697,744 | 1,632,744 |
| Forecast kW | CDEM | 992.456 |  |  | 862,025 | 113,561 | 14,877 | 1,993 |  |
| Forecast kW, included in CDEM, of customers receiving line transformer allowance |  | 250,411 |  |  | 250,411 |  |  |  |  |
| 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 | 818,754,942 | 294,240,107 | 112,158,205 | 350,715,605 | 53,896,862 | 5,413,675 | 697,744 | 1,632,744 |
| kWh - 30 year weather normalized amount | Click here to Enter Data | 818,754,942 | 294,240,107 | 112,158,205 | 350,715,605 | 53,896,862 | 5.413,675 | 697,744 | 1,632,744 |
| Existing Monthly Charge |  |  | \$11.91 | \$29.90 | \$247.49 | \$6,311.79 | \$3.16 | \$3.73 | \$11.10 |
| Existing Distribution kWh Rate |  |  | \$0.0116 | \$0.0090 |  |  |  |  | \$0.1464 |
| Existing Distribution kW Rate |  |  |  |  | \$2.4354 | \$0.7373 | \$13.1880 | \$17.8300 |  |
| Existing TFOA Rate |  |  |  |  | \$0.60 |  |  |  |  |
| Additional Charges |  |  |  |  |  |  |  |  |  |
| Distribution Revenue from Rates |  | \$14,574,335 | \$7,952,109 | \$2,282,022 | \$3,257,835 | \$235,212 | \$505,234 | \$51,688 | \$290,236 |
| Transformer Ownership Allowance |  | \$150,246 | \$0 | \$0 | \$150,246 | S0 | \$0 | S0 | \$0 |
| Net Class Revenue | CREV | \$14.424,089 | \$7,952,109 | \$2,282,022 | \$3,107,588 | \$235,212 | \$505,234 | \$51,688 | \$290,236 |
| Data Mismatch Analysis Revenue with 30 year weather normalized kWh |  |  |  |  |  |  |  |  |  |
|  |  | 14,424,089 | 7,952,109 | 2,282,022 | 3,107,588 | 235,212 | 505,234 | 51,688 | 290,236 |


| Weather Normalized Data from Hydro One | Total | Residential | $\begin{array}{\|c\|} \hline \text { General Service } \\ <50 \mathrm{~kW} \end{array}$ | $\begin{gathered} \text { General Service } \\ >50 \mathrm{~kW} \end{gathered}$ | Large Use $>5$ MW | Street Lighting | Sentinel <br> Lighting | Unmetered Scattered Load |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| kWh - 30 year weather normalized amount | 818,754,942 | 294,240,107 | 112,158,205 | 350,715,605 | 53,896,862 | 5,413,675 | 697,744 | 1,632,744 |
| Loss Factor |  | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

## 2013 Cost Allocation Model

Sheet I6.2 Customer Data Worksheet -

| Billing Data |  |  | 1 | 2 | 3 | 6 | 7 | 8 | 9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ID | Total | Residential | $\begin{gathered} \text { General } \\ \text { Service }<50 \mathrm{~kW} \end{gathered}$ | $\begin{gathered} \text { General } \\ \text { Service > } 50 \mathrm{~kW} \end{gathered}$ | Large Use $>5 \mathrm{MW}$ | Street Lighting | Sentinel Lighting | Unmetered Scattered Load |
|  |  |  |  |  |  |  |  |  |  |
| Bad Debt 3 Year Historical Average | BDHA | \$184,606 | \$138,057 | \$14,097 | \$32,451 | \$0 | \$0 | \$0 | \$0 |
| Late Payment 3 Year Historical Average | LPHA | \$200,000 | \$134,687 | \$30,515 | \$30,684 | \$4,114 |  |  |  |
| Number of Bills | CNB | 430,289 | 381,102 | 42,562 | 4,681 | 24 | 48 | 1,776 | 96 |
| Number of Devices |  |  |  |  |  |  | 8,150 | 361 | 384 |
| Number of Connections (Unmetered) | CCON | 8.682 |  |  |  |  | 8,150 | 148 | 384 |
| Total Number of Customers | CCA | 35,697 | 31,758 | 3,547 | 390 | 2 |  |  |  |
| Bulk Customer Base | CCB |  |  |  |  |  |  |  |  |
| Primary Customer Base | CCP | 35,697 | 31,758 | 3,547 | 390 | 2 |  |  |  |
| Line Transformer Customer Base | CCLT | 35,643 | 31,758 | 3,511 | 374 |  |  |  |  |
| Secondary Customer Base | CCS | 31,226 | 29,712 | 1,514 |  |  |  |  |  |
| Weighted - Services | CWCS | 39,843 | 29,712 | 10,008 | - | - | - | - | 123 |
| Weighted Meter-Capital | CWMC | 4,917,792 | 2,762,989 | 1,078,233 | 1,056,570 | 20,000 | - | - | - |
|  | CWMR | 35,697 | 31,758 | 3,547 | 390 | 2 |  | - |  |
| Weighted Meter Reading Weighted Bills | CWNB | 424,066 | 381,102 | 37,029 | 4,353 | 18 | 30 | 1,456 | 79 |

## Bad Debt Data

| Historic Year: | 2009 | 232,960 | 143,978 | 2,003 | 86,979 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Historic Year: | 2010 | 165,761 | 139,328 | 19,987 | 6,446 |  |  |  |
| Historic Year: | 2011 | 155,097 | 130,866 | 20,302 | 3,929 |  |  |  |
| Three-year average |  | 184,606 | 138,057 | 14,097 | 32,451 | - | - | - |

## 2013 Cost Allocation Model

## Sheet I8 Demand Data Worksheet .




## 2013 Cost Allocation Model

## Sheet OI Revenue to Cost Summary Worksheet -



## 2013 Cost Allocation Model



## 2013 Cost Allocation Model

## Sheet 02 Monthly Fixed Charge Min. © Max. Worksheet -

Output sheet showing minimum and maximum level for Monthly Fixed Charge

## Summary

Customer Unit Cost per month - Avoided Cost
Customer Unit Cost per month - Directly Related
Customer Unit Cost per month - Minimum System
with PLCC Adjustment
Existing Approved Fixed Charg

| 1 | 2 | 3 | 6 | 7 | 8 | 9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Residential | General <br> Service $<50 \mathrm{~kW}$ | General <br> Service $>50 \mathrm{~kW}$ | Large Use <br> $>5 M W$ | Street Lighting | Sentinel <br> Lighting | Unmetered <br> Scattered Load |
| $\$ 5.90$ | $\$ 9.11$ | $\$ 49.45$ | $\$ 7.24$ | $\$ 0.00$ | $\$ 3.75$ | $\$ 0.06$ |
| $\$ 8.96$ | $\$ 12.71$ | $\$ 62.51$ | $\$ 47.68$ | $\$ 0.00$ | $\$ 5.98$ | $\$ 0.11$ |
| $\$ 16.76$ | $\$ 25.91$ | $\$ 86.31$ | $\$ 188.22$ | $\$ 4.78$ | $\$ 9.83$ | $\$ 4.27$ |
| $\$ 11.91$ | $\$ 29.90$ | $\$ 247.49$ | $\$ 6.311 .79$ | $\$ 3.16$ | $\$ 3.73$ | $\$ 11.10$ |

