

## UNDERTAKING J14.2

### Undertaking

To reconcile PWU Exhibit K13.4 for rate base for year.

### Response

This undertaking had two parts. Part (a) was to provide reconciliation between the CWIP amounts for 2011-2012 shown in interrogatory L-14-004 (which underlines the analysis presented in Ex. K13.4) and CWIP cost for the test period of \$37.9 M given in Ex. D2-T2-S2, Table 1. Part (b) was to recalculate the table in L-14-004 without two of the simplifying assumptions used to originally generate it, namely the rounding to the nearest \$10M and the use of the opening capital balance amount as the rate base amount for the year in question.

Part (a):

Chart 1, below, shows a comparison of the calculation of figures for the two exhibits.

**Chart 1**

| <b>Comparison of Figures used for Revenue Requirement Calculation in Ex D2 and Economic Analysis in Ex L-14-4</b> |                                 |       |                          |       |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------|-------|--------------------------|-------|
| in M\$                                                                                                            | Ex D2 T2 S2 Table 1             |       | Ex L-14-4                |       |
|                                                                                                                   | Revenue Requirement Calculation |       | Economic Analysis        |       |
|                                                                                                                   | 2011                            | 2012  | 2011                     | 2012  |
| Rate Base                                                                                                         |                                 |       |                          |       |
| Opening                                                                                                           | 72.9                            | 178.1 | 72.9                     | 178.1 |
|                                                                                                                   | Additions occur mid-yr          |       | Additions occur yr-end   |       |
| Additions                                                                                                         | 105.2                           | 255.8 | 105.2                    | 255.8 |
| Closing                                                                                                           | 178.1                           | 433.9 | 178.1                    | 433.9 |
|                                                                                                                   | Average Amounts                 |       | Opening Balances         |       |
| Rate Base Amount Used                                                                                             | 125.5                           | 306.0 | 72.9                     | 178.1 |
| WACC                                                                                                              | 7.56%                           | 7.59% | 7.56%                    | 7.59% |
| Carrying Charges                                                                                                  | 9.5                             | 23.2  | 5.5                      | 13.5  |
|                                                                                                                   |                                 |       | Rounded to nearest \$10M |       |
| Pre-Tax Rev Requirement                                                                                           | 9.5                             | 23.2  | 10.0                     | 10.0  |
|                                                                                                                   |                                 |       |                          |       |
| Income Tax                                                                                                        | 1.6                             | 3.6   | Income Taxes Excluded    |       |
|                                                                                                                   |                                 |       |                          |       |
| Rev Requirement Impact                                                                                            | 11.1                            | 26.8  | 10.0                     | 10.0  |

The reconciliation between the two exhibits is shown in Chart 2, below. The "Effect of using average rate base vs. opening balances" figures in Chart 2 are the differences

between the Ex D2-T2-S2, Table 1 and L-14-004 figures on the "Carrying Charges" line in Chart 1.

**Chart 2**  
**Reconciliation of Economic Analysis in L-14-004 with**  
**Revenue Requirement Impact in Ex. D2-T2-S2, Table 1 (\$M)**

|                                                         | 2011        | 2012        | Test Period |
|---------------------------------------------------------|-------------|-------------|-------------|
| <b>Economic Analysis values per L-14-004</b>            | <b>10.0</b> | <b>10.0</b> | <b>20.0</b> |
| Remove effect of rounding to nearest \$10M              | (4.5)       | 3.5         | (1.0)       |
| Effect of using avg rate base vs. opening balances      | 4.0         | 9.7         | 13.7        |
| Include income tax effect                               | 1.6         | 3.6         | 5.2         |
| <b>Revenue Requirement Impact per D2-T2-S2, Table 1</b> | <b>11.1</b> | <b>26.8</b> | <b>37.9</b> |

Part (b):

A restatement of Table 1 of L-14-004 removing the two simplifying assumptions noted above is provided as Attachment 1.

As explained previously, the analysis presented in the original L-14-004 (which underlies Exhibit K13.4) was meant to show the NPV impact of CWIP versus the current regulatory treatment, over the life of the project. In this illustrative analysis, some simplifying assumptions were made (i.e., to exclude taxes, to exclude common costs, to use the opening capital balance amount for the rate base for the year in question and to round the annual figures to the nearest \$10M.)

The analysis used the same gross plant opening and closing balances and was based on the same expenditures: \$72.9M in 2010, \$105.2M in 2011 and \$255.M in 2012 as the more precise calculation given in Exhibit D2-T2-S2 Table1. OPG used as the discount rate the WACC for 2012 (7.59%) Tax was excluded in the analysis to keep things simple. The figures in the economic analysis were also rounded to avoid giving the appearance of precision and accuracy over a 40+ year study period.

As can be seen from the restated Table 1 attached, even after removing the two simplifying assumptions, the concern about potential for a significant rate shock in 2020 under the current regulatory methodology remains.

Restated L-14-004 Table 1  
Costs Recovered from Ratepayers  
under Proposed CWIP and Current Regulatory Treatment  
for 2 Illustrative Project Cost Examples  
(in \$ millions)

| Line No. | Year       | Col.1<br>OPG's<br>CWIP<br>Proposal | Col.2<br>Current<br>Regulatory<br>Treatment | Col.3<br>OPG's<br>CWIP<br>Proposal | Col.4<br>Current<br>Regulatory<br>Treatment |
|----------|------------|------------------------------------|---------------------------------------------|------------------------------------|---------------------------------------------|
|          |            | \$6B project cost example          |                                             | \$10B project cost example         |                                             |
| 1        | 2011       | 9                                  | -                                           | 9                                  | -                                           |
| 2        | 2012       | 23                                 | -                                           | 23                                 | -                                           |
| 3        | 2013       | 42                                 | -                                           | 48                                 | -                                           |
| 4        | 2014       | 61                                 | -                                           | 81                                 | -                                           |
| 5        | 2015       | 79                                 | -                                           | 112                                | -                                           |
| 6        | 2016       | 97                                 | -                                           | 143                                | -                                           |
| 7        | 2017       | 129                                | -                                           | 198                                | -                                           |
| 8        | 2018       | 187                                | -                                           | 297                                | -                                           |
| 9        | 2019       | 257                                | -                                           | 418                                | -                                           |
| 10       | 2020       | 415                                | 357                                         | 679                                | 561                                         |
| 11       | 2021       | 530                                | 526                                         | 877                                | 851                                         |
| 12       | 2022       | 592                                | 513                                         | 984                                | 831                                         |
| 13       | 2023       | 686                                | 683                                         | 1,146                              | 1,124                                       |
| 14       | 2024       | 742                                | 853                                         | 1,242                              | 1,416                                       |
| 15       | 2025       | 723                                | 831                                         | 1,212                              | 1,381                                       |
| 16       | 2026       | 705                                | 810                                         | 1,181                              | 1,346                                       |
| 17       | 2027       | 687                                | 789                                         | 1,150                              | 1,311                                       |
| 18       | 2028       | 668                                | 768                                         | 1,119                              | 1,276                                       |
| 19       | 2029       | 650                                | 747                                         | 1,089                              | 1,241                                       |
| 20       | 2030       | 632                                | 726                                         | 1,058                              | 1,206                                       |
| 21       | 2031       | 613                                | 705                                         | 1,027                              | 1,171                                       |
| 22       | 2032       | 595                                | 683                                         | 997                                | 1,135                                       |
| 23       | 2033       | 576                                | 662                                         | 966                                | 1,100                                       |
| 24       | 2034       | 558                                | 641                                         | 935                                | 1,065                                       |
| 25       | 2035       | 540                                | 620                                         | 904                                | 1,030                                       |
| 26       | 2036       | 521                                | 599                                         | 874                                | 995                                         |
| 27       | 2037       | 503                                | 578                                         | 843                                | 960                                         |
| 28       | 2038       | 485                                | 556                                         | 812                                | 925                                         |
| 29       | 2039       | 466                                | 535                                         | 782                                | 890                                         |
| 30       | 2040       | 448                                | 514                                         | 751                                | 855                                         |
| 31       | 2041       | 430                                | 493                                         | 720                                | 820                                         |
| 32       | 2042       | 411                                | 472                                         | 689                                | 785                                         |
| 33       | 2043       | 393                                | 451                                         | 659                                | 750                                         |
| 34       | 2044       | 374                                | 430                                         | 628                                | 714                                         |
| 35       | 2045       | 356                                | 408                                         | 597                                | 679                                         |
| 36       | 2046       | 338                                | 387                                         | 566                                | 644                                         |
| 37       | 2047       | 319                                | 366                                         | 536                                | 609                                         |
| 38       | 2048       | 301                                | 345                                         | 505                                | 574                                         |
| 39       | 2049       | 283                                | 324                                         | 474                                | 539                                         |
| 40       | 2050       | 180                                | 197                                         | 308                                | 337                                         |
| 41       | 2051       | 120                                | 131                                         | 206                                | 225                                         |
| 42       | 2052       | 112                                | 123                                         | 192                                | 210                                         |
| 43       | 2053       | 55                                 | 60                                          | 95                                 | 103                                         |
| 44       | Total      | 16,892                             | 17,882                                      | 28,135                             | 29,660                                      |
| 45       | PV* @ 7.6% | 3,490                              | 3,295                                       | 5,742                              | 5,443                                       |

\* PV results are in 2009 \$ millions