

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PHILADELPHIA GAS :  
WORKS FOR WAIVER OF PROVISIONS :  
OF ACT 11 TO INCREASE THE :  
DISTRIBUTION SYSTEM IMPROVEMENT :  
CHARGE CAP AND TO PERMIT :  
LEVELIZATION OF DSIC CHARGES :

Docket No. P-2015-2501500

*Direct Testimony and Exhibits of*

ROBERT D. KNECHT

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:

DSIC

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## DIRECT TESTIMONY OF ROBERT D. KNECHT

1 **Q. Mr. Knecht, please state your name and briefly describe your qualifications.**

2 A. My name is Robert D. Knecht. I am a Principal of Industrial Economics, Incorporated  
3 (“IEc”), a consulting firm located at 2067 Massachusetts Avenue, Cambridge, MA  
4 02140. I specialize in the economic analysis of basic industries. As part of my  
5 consulting practice, I have prepared analyses and expert testimony in the field of  
6 regulatory economics on a variety of topics. I obtained a B.S. degree in Economics from  
7 the Massachusetts Institute of Technology in 1978, and a M.S. degree in Management  
8 from the Sloan School of Management at M.I.T. in 1982, with concentrations in applied  
9 economics and finance. I am appearing in this proceeding on behalf of the Pennsylvania  
10 Office of Small Business Advocate (“OSBA”). I have participated in a variety of  
11 regulatory proceedings involving the Philadelphia Gas Works (“PGW” or “the  
12 Company”) over the past 14 years. My résumé and a listing of the expert testimony that I  
13 have filed in utility regulatory proceedings during the past five years are attached in  
14 Exhibit IEc-1.

15 **Q. Please summarize the Company’s proposal in this proceeding.**

16 A. Under its current Long Term Infrastructure Improvement Plan (“LTIIP”), PGW will  
17 replace its cast iron gas distribution mains over the next 86 years, and its unprotected  
18 steel mains over an undefined period of time.<sup>1</sup> In response to a Pennsylvania Public  
19 Utility Commission (“Commission”) Staff Report dated April 21, 2015 (“Staff Report”),  
20 the Company proposes to accelerate the replacement of mains, such that cast iron mains  
21 would be replaced over the next 48 years and unprotected steel mains over the next 66  
22 years.<sup>2</sup>

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<sup>1</sup> See attachment to OSBA-I-6. Note that the original LTIIP would replace nearly 86 percent of cast iron mains footage over the next 48 years. All referenced interrogatory responses are attached as Exhibit IEc-4.

<sup>2</sup> OSBA-I-6.

1 To finance this acceleration, the Company requests that the Commission approve various  
2 modifications to the Distribution System Improvement Charge (“DSIC”) mechanism.  
3 Specifically, the Company requests that:

- 4 • The cap on the DSIC charge be increased from 5.0 percent of distribution  
5 revenues to 10.0 percent of distribution revenues;<sup>3</sup>
- 6 • Interest on over-collections not be credited to ratepayers;
- 7 • The cost basis for the DSIC percentage be an annual forecast of DSIC-  
8 eligible costs rather than the current method which relies on quarterly actual  
9 DSIC-eligible expenditures.

10 PGW indicates that these proposed changes to the DSIC mechanism represent the  
11 primary recommendations of the Staff Report.

12 All three of these changes represent substantial departures from established precedent for  
13 DSIC mechanisms for natural gas distribution companies (“NGDCs”) in Pennsylvania.  
14 Moreover, this proposal is being evaluated in an accelerated proceeding, making a  
15 thorough financial evaluation of the proposal problematic. My analysis and  
16 recommendations are therefore based on the limited information available to me at this  
17 time.

18 **Q. What additional investment costs will the Company incur related to the proposed**  
19 **acceleration of mains replacement?**

20 A. As detailed in OSBA-I-2, the Company estimates that it will incur an additional \$11.0  
21 million per year in mains replacement capital costs, and \$4.0 million per year in services  
22 cost, beginning in mid-year 2016. However, as detailed in the Company’s financial  
23 analysis presented in OSBA-I-2, some \$2.2 to \$2.4 million of the increase in capital  
24 expenditures represents a shift of expenditures from annual expense to capital resulting

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<sup>3</sup> PGW describes this modification as an increase in the cap from 5.0 percent to 7.5 percent to accommodate cost increases and a further increase to 10.0 percent to accommodate reconciliation variances. However, as discussed further below, the mechanics of PGW’s reconciliation mechanism allow it to roll forward all unrecovered DSIC-eligible expenditures for future recovery through the reconciliation component of the DSIC. As such, the practical impact of the Company’s proposal is to increase the DSIC cap to 10.0 percent.

1 from a higher capitalization rate for PGW's labor and O&M costs, without any increase  
2 in expenditures. Thus, the net effect on cash flow of the additional expenditures is  
3 approximately \$12.7 million per year.

4 PGW proposes that \$11.0 million of that increase be paid through the modifications to  
5 the DSIC, and the balance be financed by long-term debt.<sup>4</sup>

6 **Q. Do you agree with the Company's proposal to accelerate the replacement of cast  
7 iron and unprotected steel mains?**

8 A. I do. In fact, PGW should pursue opportunities for an even more rapid acceleration of the  
9 replacement program, to the extent it can be logistically accomplished in the confines a  
10 major urban area.<sup>5</sup> The existing plan, which involves replacing cast iron mains over the  
11 next 86 years, is unreasonable and potentially unsafe.<sup>6</sup> I am advised by OSBA counsel  
12 that OSBA fully supports this acceleration of the obsolete mains replacement. To the  
13 extent that the Company would be unwilling or unable to accelerate its mains  
14 replacement program without the proposed changes to the DSIC mechanism, both I and  
15 the OSBA believe that public safety considerations trump the ratepayer impact.<sup>7</sup> Thus, if  
16 the Commission concludes that the only way it can persuade PGW to promptly accelerate  
17 its mains replacement is through modifying its DSIC, the DSIC should be modified.

18 **Q. Do you agree with the Company's proposals to modify the caps and other provisions  
19 of the Distribution System Improvement Charge ("DSIC") in order to finance the  
20 acceleration of mains replacement?**

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<sup>4</sup> OSBA-I-2.

<sup>5</sup> See OSBA-I-10.

<sup>6</sup> Leaks from cast iron mains have been reported by the press as a factor in at least two natural gas explosions in Philadelphia over the past five years. See [http://articles.philly.com/2011-12-16/news/30524786\\_1\\_utility-workers-philadelphia-gas-works-explosion](http://articles.philly.com/2011-12-16/news/30524786_1_utility-workers-philadelphia-gas-works-explosion) and <http://6abc.com/news/gas-explosion-forces-residents-out-of-apt-in-chestnut-hill/519455/>.

<sup>7</sup> PGW indicates that it would pursue other options for funding the acceleration of mains replacement, including a base rates increase, if its DSIC proposals are rejected. It is certainly possible, however, that this would result in a significant delay. See OSBA-I-4.

1 A. I do not. A review of the Company's financial projections provided in response to  
2 OSBA-I-2 indicates that the Company should be able to readily finance the necessary  
3 increase in expenditures using internally generated funds and temporary financing  
4 mechanisms without incurring any deterioration in its financial ratios, at least until the  
5 Company's anticipated base rate increase goes into effect in fiscal year 2018.<sup>8</sup> In  
6 contrast, the basic financial implications of the Company's proposals in this proceeding  
7 are a substantial improvement in the financial position of the Company, and a significant  
8 gain for the shareholder.<sup>9</sup>

9 I therefore conclude that there is simply no need to race through this accelerated  
10 proceeding and make significant changes to the Pennsylvania DSIC precedents in order  
11 to allow PGW to accelerate its increase in ratepayer-financed equity.

12 **Q. What are the financial implications of the Company's proposal?**

13 A. In its response to OSBA-I-2, the Company provided financial projections based on (a) the  
14 current replacement plan with the 5.0% DSIC cap and (b) the proposed changes to the  
15 replacement plan and the DSIC mechanism, for fiscal years 2015 to 2021. Table IEC-1  
16 below provides a comparison of those financial forecasts for various key financial  
17 indicators. Because PGW proposes to impose base rate increases in 2018 and 2021,  
18 values are shown for the historical FY 2015, FY 2017, and FY 2021.<sup>10</sup>

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<sup>8</sup> The Company's response to OSBA-I-2 indicates that PGW anticipates an additional \$40 million per year beginning in FY 2018 related to a rate increase or cost reduction. I assume that if PGW has, in fact, identified cost reductions of the \$40 million per year magnitude, it would implement those reductions without delay prior to FY 2018. See, for example, PICGUG-I-4.

<sup>9</sup> It would not be unreasonable for the Company to include interest charges for this incremental debt in its DSIC, subject to the 5.0 percent cap. Section 1357(c) of the Public Utility Code appears to contemplate debt financing of DSIC-eligible investments by city-owned utilities.

<sup>10</sup> PGW's forecast indicates a revenue increase or cost reduction of \$40 million beginning in FY 2018 and an additional gain of \$20 million in FY 2021.

Table IEC-1 Financial Implications of PGW Proposal (Acceleration Plus DSIC)						
	FY 2015		FY 2017			FY 2021
	Estimate		Current	Proposed		Current Proposed
City Equity	\$454		\$547	\$566		\$836 \$903
YE Cash Balance	\$106		\$99	\$96		\$144 \$133
Net Income	\$64.4		\$64.0	\$76.4		\$95.3 \$106.9
Debt to Capital Ratio	68.4%		67.4%	66.6%		54.4% 52.5%
Interest Coverage Ratio	2.2		2.1	2.3		2.9 3.2
Debt Service Coverage	1.73		1.85	1.99		1.84 1.96

Note: Debt service coverage and net income are before \$18 mm city fee.  
Source: OSBA-I-2

1 As shown in Table IEC-1, even without the proposed changes to the DSIC, the Company  
2 proposes to aggressively build up its ratepayer-financed equity, rising from \$454 million  
3 at FYE 2015 to \$836 million at FYE 2021. Beyond the gains to the shareholder, the  
4 Company's other financial indicators show a similar story, with significant forecast  
5 improvements in net income, debt to capital ratios, and debt service coverage ratios.

6 Table IEC-1 also shows that the impact of the acceleration of mains replacement with the  
7 proposed DSIC changes would result in an even greater improvement in PGW's financial  
8 status. By 2021, the DSIC changes will add an additional \$67 million to city equity,  
9 further reduce the debt ratio, and further improve financial coverage ratios. From a  
10 financial perspective, the Company's proposal in this proceeding has the appearance of a  
11 program designed to benefit the shareholder, rather than an effort to sensibly finance a  
12 mains replacement program.

13 **Q. How does this forecast comport with the recent financial performance of the**  
14 **Company?**

1 A. The current plan is a continuation and, in fact, acceleration of the substantial  
 2 improvement in the financial position of the Company that has been achieved since the  
 3 last base rates proceeding. Table IEC-2 below compares the financial position of the  
 4 Company at the end of FY 2009 (just prior to the last base rates proceeding) and the end  
 5 of FY 2015.

Table IEC-2 PGW Balance Sheet Summary \$ millions			
	2009	2015 (e)	Change
<b>Assets</b>			
Current Assets	249	257	8
Net Utility Plant	1,076	1,238	162
Non-Current Assets	306	234	(72)
<b>Total Assets</b>	<b>1,632</b>	<b>1,730</b>	<b>98</b>
<b>Liabilities/Equity</b>			
Current Liabilities	134	95	(39)
Other Liabilities	140	197	57
Long-Term Debt	1,114	983	(131)
Equity	244	454	210
<b>Total L/E</b>	<b>1,632</b>	<b>1,730</b>	<b>98</b>
Equity/LT Capital	18%	32%	
Source: PGW Basic Financial Statements 2010 and 2009, OSBA-I-2.			

6 As shown in Table IEC-2, ratepayers have already paid for an increase in city equity from  
 7 \$244 million at the end of FY 2009 to \$454 million in FY 2015. In addition to that build-  
 8 up of shareholder equity, ratepayers have provided sufficient cash to allow PGW to  
 9 resume paying an annual \$18 million city fee in FY 2012.

10 Thus, all told, from 2009 to 2021, even before the proposed changes to the DSIC, the  
 11 Company expects to use ratepayers to increase city equity by some \$590 million, while  
 12 paying dividends to the city of an additional \$180 million. With the proposed changes to  
 13 the DSIC in the current proceeding, the ratepayer contribution to the shareholder simply  
 14 gets larger.

1 **Q. What would be the financial impact on the Company if it simply accelerated its**  
2 **mains replacement program without modifying the DSIC?**

3 A. The Company could implement such a change with no negative financial impact relative  
4 to either its current position or even with respect to its improved position under its current  
5 plan, at least until rates are carefully reset in the planned base rates proceeding. To  
6 provide a rough approximation of the impact, I developed a variation on the financial  
7 forecasts provided by the Company in OSBA-I-2, which is attached as Exhibit IEc-2. In  
8 preparing that analysis, I took the Company's financial forecast based on the proposed  
9 DSIC changes (what the Company calls Scenario 2) and I substituted the lower revenues  
10 based on the existing DSIC (from Scenario 1). Because the Company anticipates a rate  
11 increase in FY 2018, I deemed that it was unnecessary to develop a full forecast beyond  
12 FY 2017.<sup>11</sup> I then determined the changes necessary to short term financing that would  
13 maintain the cash balances in the Company's forecast. As shown in Exhibit IEc-2, the  
14 only necessary changes were an increase in temporary financing of about \$8 million in  
15 FY 2016 and \$10 million in FY 2017, which would be repaid in FY 2018. A summary of  
16 the financial implications of this alternative is shown in Table IEc-3 below.

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<sup>11</sup> Even if the FY 2018 rate increase remains at the PGW forecast levels, my rough calculations over the entire 2016 to 2021 forecast period suggest that PGW could simply finance the additional capital spending through debt, while continuing to improve its current financial condition, albeit a little less aggressively than under its current plan.

Table IEC-3				
Financial Implications of Accelerated Mains Replacement with No DSIC Changes				
	FY 2015		FY 2017	
	Estimated		Current LTIP	Accelerated Investment
City Equity	\$454		\$547	\$549
YE Cash Balance	\$106		\$98	\$98
Net Income	\$64.4		\$64.0	\$65.0
Debt to Capital Ratio	68.4%		67.4%	67.3%
Interest Coverage Ratio	2.2		2.1	2.1
Debt Service Coverage	1.73		1.85	1.87
Note: Debt service coverage and net income are before \$18 mm city fee.				
Source: OSBA-I-2, Exhibit IEC-2				

1 As shown, if PGW were to simply finance the accelerated mains investment over the next  
2 two years using short-term debt, it would experience no material negative impact in its  
3 financial position relative to its current forecast. Moreover, the Company's financial  
4 position would be stronger at the end of 2017 than it is today.

5 **Q. Does your analysis represent the only means by which PGW could finance the**  
6 **acceleration of its mains replacement program?**

7 A. No. My example merely illustrates that the acceleration could be accomplished through  
8 short-term debt increases with no negative impact on the Company's financial statements.  
9 This approach is generally consistent with one of the suggestions in the Staff Report for  
10 financing the acceleration, which states:

11 *PGW's financial health has improved considerably since coming under the*  
12 *Commission's jurisdiction in 2000. Its debt-to total-capital ratio is projected*  
13 *to continue to improve, and its interest-coverage ratio appears well above two*  
14 *times, which is above the Company's 1.5-times requirement. For the reasons*  
15 *expressed below, it is Staff's position that PGW, as a municipally owned*  
16 *utility, can operate at a much higher debt-to-total-capital ratio than an*  
17 *investor-owned utility; perhaps as high as a long-term debt to total capital*

1                   *ratio of 70 percent. Accordingly, PGW should explore issuing new debt to*  
2                   *fund an aggressive pipeline replacement program.*

3           The Company could undoubtedly develop a number of different options for near-term  
4           financing of increased mains replacement capital. Moreover, the Staff Report offers  
5           several other options for financing, including:

- 6           • Reducing the city fee payments;
- 7           • Better cash management;
- 8           • Cost reductions from reorganization;
- 9           • Cost reductions from improved operations.

10   **Q.    In its petition at pages 5, 17 and 18, the Company indicates that its pay-as-you-go**  
11   **approach to charging DSIC based on cash expenditures is less expensive for**  
12   **ratepayers than the alternative. Do you agree?**

13   **A.    No.**<sup>12</sup> When evaluated from the perspective of the ratepayer, the present value of costs  
14    incurred by ratepayers under a pay-as-you go scheme is much higher than the present  
15    value of costs if the expansion were to be financed in whole or in part by PGW debt. As  
16    a municipally-owned utility, PGW has access to low cost debt capital. In contrast, the  
17    cost of capital for PGW's residential and (especially) small business customers is likely  
18    to be considerably higher. The economic essence of PGW's DSIC pay-as-you-go  
19    approach is that ratepayers are asked to provide the 100 percent of the financing for the  
20    long-term DSIC-eligible assets. Thus, ratepayers incur their own capital costs on the  
21    financing that they provide to PGW (in the form of mortgage rates, personal loan interest,  
22    lost savings interest, additional credit card debt, high-priced commercial loans to  
23    businesses), in exchange for allowing PGW to avoid paying relatively low interest

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<sup>12</sup> The Staff Report makes a similar error at page 38. It implicitly assumes that ratepayers have a zero cost of capital, and that they are equally well off making a payment of \$1 today or \$1 40 years hence.

1 charges. Moreover, as the DSIC revenues essentially match the capital expenditures, the  
2 DSIC mechanism is essentially a dollar for dollar pass-through to city equity.<sup>13</sup>

3 **Q. In other proceedings, the Company has indicated that ratepayers benefit from**  
4 **increased city equity because it serves to reduce the need for rate cases. Do you**  
5 **agree?**

6 A. No, for several reasons. First, since the last base rates case, the Company's financial  
7 position is substantially improved. Given the Company's forecast for a continuation of  
8 the large build-up in equity, it is certainly possible that a base rates case at this time  
9 would lead to a base rate reduction rather than an increase. Moreover, even if a rate  
10 increase would be granted, I believe there would be a substantial benefit in conducting a  
11 thorough evaluation of whether the current ratepayer contributions to city equity are  
12 excessive, particularly in light of the much improved financial status of PGW.

13 Second, the Company's argument ignores the fact that the Company is proposing that  
14 ratepayers finance the expansion. As I indicated earlier, the Company is asking  
15 ratepayers to contribute the capital up front, rather than charging ratepayers for the use of  
16 that capital over the life of the asset. As the Company's cost of capital is far lower than  
17 that for small businesses or residential customers, ratepayers would be much better off if  
18 PGW financed the investment than if they are called upon to do so. Thus, ideally, PGW  
19 should maximize debt financing of investments, subject to the constraint that it is  
20 financially stable. Such an assessment would be better made in a careful base rates  
21 proceeding than an accelerated DSIC proceeding.

22 Third, in the last base rates case, the Company was over-recovering allocated costs from  
23 small business customers. For both economic efficiency and basic fairness reasons, it is  
24 reasonable to regularly move rates more into line with allocated costs. Applying an  
25 across-the-board DSIC charge likely does not reflect the cost of service. As such, I am  
26 advised by OSBA counsel that the Company's proposed approach of avoiding or

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<sup>13</sup> It should be noted that the DSIC mechanisms for rate-of-return regulated utilities implicitly assumes that DSIC-eligible investments are financed using a mixture of debt and equity. PGW's DSIC mechanism, as currently administered, finances DSIC investments entirely through ratepayer provided equity.

1           deferring a base rates case through the use of an expanded DSIC may not be consistent  
2           with the legal principles established in the Commonwealth Court's *Lloyd* decision.

3   **Q.   How does the Company's cash flow method for the DSIC differ from that of rate of**  
4   **return regulated utilities with respect to costs reflected in base rates?**

5   A.   One of the objectives of the DSIC mechanism is to compensate utilities for replacement  
6   capital costs they incur beyond those that are reflected in base rates. Thus, for rate of  
7   return regulated utilities, the DSIC only applies to costs associated with plant that was not  
8   included in the utility's test year revenue requirement. The comparable policy that  
9   should apply for a cash flow regulated utility is that the DSIC should only be collected  
10   for replacement capital expenditures that exceed the replacement capital expenditures  
11   anticipated in the most recent base rates proceeding.

12           In PGW's case, the Company assumes that the cost of replacing 18 miles of cast iron  
13           mains each year is reflected in base rates, and that all costs associated with replacements  
14           beyond that amount are not. However, PGW's most recent base rates case in 2010 was  
15           resolved by settlement. In light of the substantial increases in shareholder equity  
16           achieved by the Company over the past few years, it is certainly possible that some  
17           replacement capital spending beyond the 18 miles per year base level was anticipated by  
18           the parties in reaching that settlement.<sup>14</sup> Moreover, if there are periods where the  
19           Company does not achieve its base level of cast iron mains replacement, the rates reflect  
20           costs that are not being incurred. Thus, there is at least some possibility that PGW's  
21           DSIC is double-charging ratepayers for cash costs already reflected in base rates.

22   **Q.   In its Petition at pages 19-20, the Company indicates that, due to the lumpy and**  
23   **seasonal nature of both its capital spending and its distribution revenues, it is**  
24   **unable to recover all DSIC-eligible costs. In particular, in OSBA-I-8, the Company**  
25   **indicates that it is unable to recover some \$3.6 million in capital expenditures that**  
26   **would otherwise be DSIC-eligible. Is the Company correct?**

27   A.   No. The Company's DSIC reconciliation mechanism allows it to include all DSIC-  
28   eligible costs in the reconciliation calculation, regardless of whether the DSIC percentage

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<sup>14</sup> See OSBA-I-8.

1 rate is capped for any particular quarter. Thus, PGW is able to “roll forward” DSIC costs  
2 that are not recovered due to the 5 percent cap in any particular quarter for future  
3 recovery. The only constraint is that the 5 percent cap cannot be exceeded, much in the  
4 way the 5 percent cap applies to other utilities.

5 A history of PGW’s DSIC revenues and costs is shown in Exhibit IEC-3. As shown in  
6 that exhibit, the Company’s DSIC-eligible costs in its filings for the third and fourth  
7 quarter of 2014 (\$5.7 million and \$7.8 million respectively) exceeded five percent of the  
8 average quarterly revenue, and therefore resulted in a capped DSIC rate of 5.0 percent for  
9 those quarters. Nevertheless, the Company carried forward those entire amounts for  
10 potential recovery in 2015, subject to the 5.0 percent cap.

11 From the DSIC’s inception in July 2013 through December 2014, the Company has  
12 incurred \$27.3 million in DSIC-eligible costs, and it has recovered \$25.9 million in DSIC  
13 revenues. The \$1.3 million difference is reflected in the current “E-Factor” for the DSIC,  
14 and is being recovered over the April 2015 to March 2016 period. As shown in Exhibit  
15 IEC-3, the reconciliation amount of \$334,768 included in the filings for the second and  
16 third quarters of 2015 each reflect one-quarter of the \$1.3 million variance at year-end  
17 2014.

18 Thus, at least as currently administered, the quarterly nature of the Company’s DSIC  
19 mechanism does not cause any limitation in the Company’s ability to recover DSIC-  
20 eligible investments – it is only the 5.0 percent cap on the DSIC charge that causes the  
21 constraint.

22 In addition, because the Company rolls forward all DSIC-eligible investments in its  
23 calculation of the reconciliation amount, the Company’s proposal in this proceeding will  
24 effectively result in a 10.0 percentage cap on the DSIC rate. If, for example, the  
25 Company spends 10 percent of its revenue on DSIC-eligible investments in the first year  
26 of the new mechanism, it will presumably only recover 7.5 percent of revenues in first  
27 year DSIC charges. However, the entire shortfall will remain in the reconciliation  
28 account at year-end, and will presumably be added to the DSIC charge in the second year

1 under the Company's proposal. Thus, the effective cap on the DSIC charge under the  
2 Company's proposal is 10.0 percent, not 7.5 percent.

3 **Q. Also in its Petition at pages 19 to 20, the Company indicates that the quarterly DSIC**  
4 **method results in significant variations in the DSIC percentage rate. Do you agree?**

5 A. I do, albeit with a caveat. For a regulated rate of return utility, the DSIC percentage tends  
6 to experience relatively modest percentage increases from quarter to quarter, because it is  
7 based on return and depreciation on *cumulative* DSIC-eligible capital expenditures since  
8 the last base rates case. In general, as the DSIC-eligible capital grows, so does the DSIC  
9 percentage charge. Because the DSIC expenses are only a relatively small percentage of  
10 the capital expenditures, the change from quarter to quarter is relatively modest.

11 In PGW's cash flow method, the quarter to quarter variability is high for two reasons.  
12 First, the variability is high because PGW uses a cash flow approach rather than an  
13 annual revenue requirement approach. Regardless of how the percentages are calculated,  
14 the cash flow approach will generally be more variable. Second, as PGW correctly  
15 indicates, using only a single historical quarter as the cost basis will produce more  
16 variability than using a longer period, due to the seasonal nature of capital spending.

17 **Q. Do you agree with PGW's proposal to base the DSIC on a levelized annual forecast**  
18 **of DSIC-eligible expenditures?**

19 A. I disagree that the DSIC rate should be set based on a *forecast* of capital spending rather  
20 than actual spending. However, I agree that it is reasonable for the Commission to  
21 consider whether the DSIC mechanism can be modified in order to result in more stable  
22 DSIC charges.

23 The Commission's rules regarding the DSIC mechanism are designed to compensate  
24 utilities for costs actually incurred. Setting the DSIC based on forecast capital  
25 expenditures would require ratepayers to provide financing for PGW investments before  
26 they are actually made, and would reduce PGW's incentive to actually make those  
27 investments. Also, modifying the DSIC mechanism for PGW may set a precedent for  
28 other regulated utilities in Pennsylvania, who could demand similar prospective treatment  
29 for DSIC-eligible property. Further, I am advised by counsel that PGW's proposal to use

1 forecast costs may violate Section 1357(a)(2) of Act 11. Finally, the Commission has  
2 already considered the annual forecast approach for PGW and rejected it.<sup>15</sup>

3 To the extent that the Commission is concerned about the instability of PGW's DSIC  
4 percentage, I recommend that the percentage calculation be based on an annualized  
5 assessment, but using four quarters of actual historical DSIC-eligible capital spending  
6 rather than forecast spending. This approach will be as effective as using annual forecast  
7 capital expenditures in reducing rate volatility, without violating the basic principle that  
8 DSIC charges should reflect only the actual costs incurred. While I am not an attorney, it  
9 does not appear that the use of historical annualized costs would violate the provisions of  
10 Section 1357(a) of Act 11.

11 **Q. What is your view with respect to the Company's proposal that it be exempt from**  
12 **paying interest on over-collections?**

13 A. In general, basic fairness considerations imply that, if interest is paid to ratepayers on  
14 over-collections, interest should be earned by the utility on under-collections. Ideally, the  
15 interest rate on over-collections would reflect the cost of capital for the ratepayers, and  
16 the interest rate on under-collections would reflect the cost of capital for the utility. Both  
17 rates should reflect current market conditions, as well as reflecting the relatively short-  
18 term nature of the financing. Since PGW does not earn interest on under-collections, a  
19 reasonable equity argument can be made that it should not be required to pay interest on  
20 over-collections.

21 Nevertheless, the Commission clearly decided that Pennsylvania utilities should only pay  
22 interest on over-collections in the DSIC mechanism. PGW has not explained why its  
23 circumstances are sufficiently different than those faced by other Pennsylvania utilities to  
24 justify a policy difference. As such, The Company's request will likely set a precedent  
25 and other Pennsylvania utilities will request similar treatment.

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<sup>15</sup> Opinion and Order, Pennsylvania Public Utility Commission, Docket No. P-2012-2337737, entered April 4, 2013, page 29; Order, Docket No. P-2012-2337737, entered May 9, 2013, pages 5-6.

1           Moreover, as a practical matter, eliminating the interest payment for over-collections is  
2           not likely to have a material impact on PGW. As the Company admits, it has not  
3           incurred any interest costs on DSIC over-collections to date.<sup>16</sup> Because the Company's  
4           reconciliation mechanism carries forward all DSIC-eligible costs that are not recovered  
5           due to the DSIC percentage cap, it is likely that the Company will generally be in a net  
6           under-collection position.

7   **Q.    Does this conclude your direct testimony?**

8   **A.    Yes, it does.**

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<sup>16</sup> See OSBA-I-9. Note also that, as shown in Exhibit IEC-3, if interest credits/charges were accumulated monthly, PGW would have been obligated to make an interest credit to ratepayers for CY 2014. However, under the specific provisions of the DSIC tariff, no credit was due.

**EXHIBIT IEc-1**

**RÉSUMÉ AND EXPERT TESTIMONY LIST**

**FOR**

**ROBERT D. KNECHT**

**EXHIBIT IEc-2**

**ALTERNATIVE PGW FINANCIAL FORECAST**

**MAINS REPLACEMENT ACCELERATION  
WITH NO DSIC CHANGES**

**EXHIBIT IEc-3**

**SUMMARY OF PGW DSIC FILINGS**

**EXHIBIT IEc-4**

**REFERENCED INTERROGATORY RESPONSES**

**OSBA-I-2\***

**OSBA-I-3**

**OSBA-I-4**

**OSBA-I-6\***

**OSBA-I-8**

**OSBA-I-9**

**OSBA-I-10**

**PICGUG-I-4**

Note: The PGW responses appear to cite to the incorrect docket.

- \* The responses copied in this exhibit exclude printouts of the MS Excel file attachments, but these electronic attachments to the responses are incorporated into this exhibit by reference.

**EXHIBIT IEc-1**

**RÉSUMÉ AND EXPERT TESTIMONY LIST**

**FOR**

**ROBERT D. KNECHT**



INDUSTRIAL ECONOMICS. INCORPORATED

## ROBERT D. KNECHT

Robert D. Knecht specializes in the practical application of economics, finance and management theory to issues facing public and private sector clients. Mr. Knecht has more than thirty years of consulting experience, focusing primarily on the energy, metals, and mining industries. He has consulted to industry, law firms, and government clients, both in the U.S. and internationally. He has participated in strategic and business planning studies, project evaluations, litigation and regulatory proceedings and policy analyses. His practice currently focuses primarily on utility regulation, and he has provided analysis and expert testimony in numerous U.S. and Canadian jurisdictions. Mr. Knecht also served as Treasurer of IEc from 1996 through 2010, and was responsible for the firm's accounting, finance and tax planning, as well as administration of the firm's retirement plans, during that period.

Mr. Knecht's consulting assignments include the following projects:

- For the Pennsylvania Office of Small Business Advocate, Mr. Knecht provides analysis and expert testimony in industry restructuring, base rates and purchased energy cost proceedings involving electric, steam and natural gas distribution utilities. Mr. Knecht has analyzed the economics and financial issues of electric industry restructuring, stranded cost determination, fair rate of return, claimed utility expenses, cost allocation methods and rate design issues.
- For industrial customers in Québec, Mr. Knecht has prepared economic analysis and expert testimony in regulatory proceedings regarding cost allocation, compliance with legislative requirements for cross-subsidization, and rate design.
- For the New Brunswick Public Intervenor, Mr. Knecht has prepared expert testimony regarding electric and gas utilities, on various regulatory issues, including revenue requirements, amortization methods, system expansion economics, cost allocation, and rate design
- For independent power producers and industrial customers in Alberta, Mr. Knecht has provided analysis and expert testimony in a variety of electric industry proceedings, including industry restructuring, cost unbundling, stranded cost recovery, transmission rate design, cost allocation and rate design.
- *As a participant on various international teams of experts, Mr. Knecht has prepared the economic and financial analysis for industry restructuring studies involving the steel and iron ore industries in Venezuela, Poland, and Nigeria.*
- For the U.S. Department of Justice and for several private sector clients, Mr. Knecht has prepared analyses of economic damages in a variety of litigation matters, including ERISA discrimination, breach of contract, fraudulent conveyance, natural resource damages and anti-trust cases.
- Mr. Knecht participates in numerous projects with colleagues at IEc preparing economic and environmental analyses associated with energy and utility industries for the U.S. Environmental Protection Agency and other private and public entities.

Mr. Knecht holds a M.S. in Management from the Sloan School of Management at M.I.T., with concentrations in applied economics and finance. He also holds a B.S. in Economics from M.I.T. Prior to joining Industrial Economics as a principal in 1989, Mr. Knecht worked for seven years as an economic and management consultant at Marshall Bartlett, Incorporated. He also worked for two years as an economist in the Energy Group of Data Resources, Incorporated.

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## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
R-2014-2456648	Pennsylvania Public Utility Commission	Peoples TWP LLP	March 2015	Pennsylvania Office of Small Business Advocate	Load balancing rates, reconciliation
R-3867-2013	Régie de l'énergie, Québec	Société en commandite Gaz Métro	March 2015	l'Association des Consommateurs de Gaz	Distribution cost allocation
R-3888-2014	Régie de l'énergie, Québec	Hydro Québec TransÉnergie	December 2014	AQCIE/CIFQ	Transmission customer contribution policy
R-2014-2428744 R-2014-2428742	Pennsylvania Public Utility Commission	Pennsylvania Power Company, West Penn Power Company	November 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
M-2014-2430781	Pennsylvania Public Utility Commission	PPL Electric Utilities	October 2014	Pennsylvania Office of Small Business Advocate	Smart meter procurement, rate design
Matter No. 253	New Brunswick Energy & Utilities Board	Energy Gas New Brunswick	September 2014	New Brunswick Public Intervenor	Financial review, investment prudence, revenue requirement, cost allocation, rate design, market-based pricing.
P-2014-2417907	Pennsylvania Public Utility Commission	PPL Electric Utilities	July 2014	Pennsylvania Office of Small Business Advocate	Default service procurement, class eligibility, reconciliation
R-2014-2406274	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2014-2407345	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2014	Pennsylvania Office of Small Business Advocate	Customer contribution policy, alternative financing mechanism
R-2014-2408268	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2014	Pennsylvania Office of Small Business Advocate	Gas procurement sharing mechanism, cost allocation
R-2014-2397237	Pennsylvania Public Utility Commission	Pike County Light & Power (Electric)	April 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design

## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
R-2014-2397353	Pennsylvania Public Utility Commission	Pike County Light & Power (Gas)	April 2014	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation
R-2014-2399598	Pennsylvania Public Utility Commission	Peoples TW Phillips	March 2014	Pennsylvania Office of Small Business Advocate	Gas procurement, design day demand, cost allocation rate design, retainage
P-2013-2389572 (Remand)	Pennsylvania Public Utility Commission	PPL Electric Utilities	February 2014	Pennsylvania Office of Small Business Advocate	Time of use rates, net metering rates
Matter 225	New Brunswick Energy & Utilities Board	Energy Gas New Brunswick	January 2014	New Brunswick Public Intervenor	Financial review, investment prudence, revenue requirement, cost allocation, rate design, market-based pricing.
P-2013-2391368, P-2013-2391372, P-2013-2391375, P-2013-2391378	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Pennsylvania Power, West Penn Power	January 2014	Pennsylvania Office of Small Business Advocate	Default service procurement, cost allocation, rate design
Matter No. 214	New Brunswick Energy & Utilities Board	Generic	November 2013	New Brunswick Public Intervenor	Maximum retail margins for motor fuel and residential heating oil.
Matter No. 171	New Brunswick Energy & Utilities Board	New Brunswick Power	September 2013	New Brunswick Public Intervenor	Amortization method for deferral costs associated with refurbishing Point Lepreau Generating Station
C-2013-2367475	Pennsylvania Public Utility Commission	PPL Electric Utilities	August 2013	Pennsylvania Office of Small Business Advocate	Forecasting and reconciliation of default service electric costs and revenues.
P-2011-2277868, I-2012-2320323	Pennsylvania Public Utility Commission	Generic	August 2013	Pennsylvania Office of Small Business Advocate	Ratemaking treatment for customers in overlapping NGDC service territories ("gas-on-gas").

## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
P-2013-2356232	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas, UGI Utilities (Gas Division)	July 2013	Pennsylvania Office of Small Business Advocate	Program design, cost recovery and rate design for alternative system expansion financing pilot program ("GET Gas")
R-2013-2355886	Pennsylvania Public Utility Commission	Peoples TWP LLC	July 2013	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2013-2361764, R-2013-2361763, R-2013-2361771	Pennsylvania Public Utility Commission	UGI Central Penn Gas, UGI Penn Natural Gas, UGI Utilities (Gas Division)	July 2013	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas.
R-2013-2341604	Pennsylvania Public Utility Commission	Peoples TWP	March 2013	Pennsylvania Office of Small Business Advocate	Retainage rates, design day demand forecast, allocation of demand costs, recovery of other gas costs
R-2013-2341534	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2013	Pennsylvania Office of Small Business Advocate	Unaccounted for gas, retainage.
R-2012-2333993	Pennsylvania Public Utility Commission	Philadelphia Gas Works	February 2013	Pennsylvania Office of Small Business Advocate	Gas purchase cost unbundling, uncollectible cost unbundling
R-2012-2321748	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	January 2013	Pennsylvania Office of Small Business Advocate	Cost of capital, cost allocation, revenue allocation, gas procurement cost unbundling, rate design
R-2012-2327529	Pennsylvania Public Utility Commission	Peoples TWP	December 2012	Pennsylvania Office of Small Business Advocate	Gas purchase cost unbundling, price to compare
R-2012-2314235 R-2012-2314224 R-2012-2314247	Pennsylvania Public Utility Commission	UGI Utilities Gas Division UGI Penn Natural Gas UGI Central Penn Gas	October 2012	Pennsylvania Office of Small Business Advocate	Gas purchase cost unbundling, reconciliation, migration rider
P-2012-2302074	Pennsylvania Public Utility Commission	PPL Electric Utilities	July 2012	Pennsylvania Office of Small Business Advocate	Default service procurement, rate design, reconciliation, working capital cost treatment.

## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
Matter No. 178	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	July 2012	NB Public Intervenor	System expansion economic test, test year revenue requirement, cost allocation, rate design, treatment of stranded costs.
R-2012-2290597	Pennsylvania Public Utility Commission	PPL Electric Utilities	June 2012	Pennsylvania Office of Small Business Advocate	Cost allocation, revenue allocation, rate design
R-2012-2293303	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2012	Pennsylvania Office of Small Business Advocate	Treatment of pipeline credits
AUC ID #1633	Alberta Utilities Commission	Alberta Electric System Operator	April 2012	Powerex, Northpoint Energy Solutions, Cargill	Economic efficiency issues for allocation of constrained transmission capacity.
R-2012-2286447	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2012	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas retainage, reconciliation
R-2012-2281465	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2012	Pennsylvania Office of Small Business Advocate	Unaccounted-for gas retainage, gas price procurement and hedging
R-2011-2273539	Pennsylvania Public Utility Commission	Peoples TWP	March 2012	Pennsylvania Office of Small Business Advocate	Design day demand methodology
P-2011-2273650 P-2011-2273668 P-2011-2273669 P-2011-2273670	Pennsylvania Public Utility Commission	Metropolitan Edison, Pennsylvania Electric, Penn Power, West Penn Power	February 2012	Pennsylvania Office of Small Business Advocate	Default service procurement, retail market enhancement, rate design.
R-2011-2264771	Pennsylvania Public Utility Commission	PPL Electric Utilities	January 2012	Pennsylvania Office of Small Business Advocate	TOU Rates
P-2011-2256365	Pennsylvania Public Utility Commission	PPL Electric Utilities	November 2011	Pennsylvania Office of Small Business Advocate	Default service reconciliation

## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
Matter No. 132	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	October 2011	New Brunswick Public Intervenor	Revenue requirement, cost forecasting, system expansion economic test, regulatory deferral test, filing requirements.
R-2010-2161694 on Remand	Pennsylvania Public Utility Commission	PPL Electric Utilities	August 2011	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, purchase of receivables
R-2011-2238943, R-2011-2238943, R-2011-2238949,	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division), UGI Central Penn Gas UGI Penn Natural Gas	July 2011	Pennsylvania Office of Small Business Advocate	Design day demand, mandatory capacity assignment, sharing mechanisms
C-2011-2245906, M-2011-2243137	Pennsylvania Public Utility Commission	PPL Electric Utilities	July 2011	Pennsylvania Office of Small Business Advocate	Reconciliation of default service costs and revenues
P-2011-2218683, P-2011-2224781	Pennsylvania Public Utility Commission	West Penn Power Company	April, May 2011	Pennsylvania Office of Small Business Advocate	Critical peak pricing, time-of-use pricing
R-2010-2214415	Pennsylvania Public Utility Commission	UGI Central Penn Gas	April 2011	Pennsylvania Office of Small Business Advocate	Equity cost of capital, cost allocation, revenue allocation, non-residential rate design, EE&C cross-subsidies and cost recovery, natural gas vehicle subsidies
R-2010-2215623, R-2010-2201974	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	April 2011	Pennsylvania Office of Small Business Advocate	Cost of equity capital, cost allocation, revenue allocation, BTU adjustment mechanism, rate design, DSIC
NBEUB 2010-017	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	April 2011	New Brunswick Public Intervenor	Cost- and market-based ratemaking, transition mechanism
M-2010-2210316	Pennsylvania Public Utility Commission	UGI Utilities, Electric Division	March 2011	Pennsylvania Office of Small Business Advocate	Energy efficiency plan cost recovery, conservation development rider
A-2010-2213893, et al.	Pennsylvania Public Utility Commission	UGI Penn Natural Gas	February 2011	Pennsylvania Office of Small Business Advocate	Asset valuation, reasonableness of proposed affiliate transaction

## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
M-2009-2123944	Pennsylvania Public Utility Commission	PECO	January 2011	Pennsylvania Office of Small Business Advocate	Dynamic pricing cost allocation and rate design
NBEUB 2010-007	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	December 2010	New Brunswick Public Intervenor	Allowable costs, O&M capitalization policy, expansion cost effectiveness, incentive mechanisms
R-3740-2010	Régie de l'énergie, Québec	Hydro Québec Distribution	December 2010	AQCIE/CIFQ	Pension cost reconciliation, cross-subsidies, rate design
P-2010-2158084	Pennsylvania Public Utility Commission	West Penn Power Company	November 2010	Pennsylvania Office of Small Business Advocate	Transmission service charge, reconciliation timing
P-2010-2194652	Pennsylvania Public Utility Commission	Pike County Light & Power	November 2010	Pennsylvania Office of Small Business Advocate	Electric default service procurement, customer education
A-2010-2176520, A-2010-2176732	Pennsylvania Public Utility Commission	Allegheny Power/FirstEnergy Corporation	September 2010	Pennsylvania Office of Small Business Advocate	Implications of proposed merger for default service
App. No. 1605961, Proceeding ID 530	Alberta Utilities Commission	Alberta Electric System Operator	August 2010	BC Hydro	Transmission rate design
R-2010-2167797	Pennsylvania Public Utility Commission	T.W. Phillips Gas & Oil Company	July 2010	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, purchase of receivables, rate of return
R-2010-2172933, R-2010-2172922, R-2010-2172928	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division), UGI Central Penn Gas UGI Penn Natural Gas	July 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs, unaccounted-for gas, retainage
NBEUB 2010-002	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	June 2010	New Brunswick Public Intervenor	Cost allocation, rate design, deferral costs
R-2010-2161694	Pennsylvania Public Utility Commission	PPL Electric Utilities	June 2010	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, purchase of receivables

## EXPERT TESTIMONY SUBMITTED IN REGULATORY PROCEEDINGS: 2010 TO 2015

DOCKET #	REGULATOR	UTILITY	DATE	CLIENT	TOPICS
R-2010-2161920	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	June 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs, retainage rates, gas price forecasting
R-2009-2149262	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	May 2010	Pennsylvania Office of Small Business Advocate	Cost allocation, rate design, rate of return
P-2009-2145498	Pennsylvania Public Utility Commission	UGI Utilities (Gas Division)	April 2010	Pennsylvania Office of Small Business Advocate	Merchant function charge, purchase of receivables
R-2010-2157062	Pennsylvania Public Utility Commission	Philadelphia Gas Works	April 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs
NBEUB 2009-017	New Brunswick Energy & Utilities Board	Enbridge Gas New Brunswick	March 2010	New Brunswick Public Intervenor	Cost allocation, deferral costs
R-2009-2139884	Pennsylvania Public Utility Commission	Philadelphia Gas Works	March 2010	Pennsylvania Office of Small Business Advocate	Revenue requirement, cost allocation, rate design, DSM program
R-2010-2150861	Pennsylvania Public Utility Commission	National Fuel Gas Distribution	March 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs
R-2009-2145441	Pennsylvania Public Utility Commission	T.W. Phillips Gas & Oil Company	March 2010	Pennsylvania Office of Small Business Advocate	Purchased gas costs, unaccounted-for gas, retainage
P-2010-2099333	Pennsylvania Public Utility Commission	Columbia Gas of Pennsylvania	February 2010	Pennsylvania Office of Small Business Advocate	Purchase of receivables

*Note: Dates shown reflect submission date for direct testimony.*

**EXHIBIT IEc-2**

**ALTERNATIVE PGW FINANCIAL FORECAST**

**MAINS REPLACEMENT ACCELERATION  
WITH NO DSIC CHANGES**

EXHIBIT IEC-2  
 PHILADELPHIA GAS WORKS: STATEMENT OF INCOME  
 (DOLLARS IN THOUSANDS)  
 SCENARIO #3 - Accelerated Replacement, 5% DSIC

LINE NO.	ESTIMATE 2014-15	BUDGET 2015-16	FORECAST 2016-17	FORECAST 2017-18	FORECAST 2018-19	FORECAST 2019-20	FORECAST 2019-21	LINE NO.
<b>OPERATING REVENUES</b>								
1	30,527	26,240	27,534	26,616	25,225	23,830	22,448	1
2	39,673	43,494	46,085	49,322	51,419	53,154	54,720	2
3	635,059	573,751	591,204	612,994	618,940	625,225	632,192	3
4	0	0	0	40,000	40,000	40,000	60,000	4
5	-14,960	5,952	5,926	0	0	0	0	5
6	-431	-196	134	102	42	28	73	6
7	689,868	649,241	670,883	729,034	735,626	742,237	769,433	7
8	8,215	8,431	8,515	8,600	8,686	8,773	8,861	8
9	12,464	11,616	13,699	13,809	13,908	14,004	14,109	9
10	20,679	20,047	22,214	22,409	22,594	22,777	22,970	10
11	710,547	669,288	693,097	751,443	758,220	765,014	792,403	11
<b>OPERATING EXPENSES</b>								
12	260,594	220,857	233,283	245,779	251,513	257,501	263,925	12
13	10	10	10	10	10	10	10	13
14	260,604	220,867	233,293	245,789	251,523	257,511	263,935	14
15	449,943	448,421	459,804	505,654	506,697	507,503	528,468	15
16	17,530	15,853	16,809	17,127	17,516	17,826	18,207	16
17	37,664	39,057	39,745	40,720	41,684	42,506	43,349	17
18	36,880	38,073	38,899	39,634	40,495	41,207	42,032	18
19	3,152	3,406	3,403	3,471	3,550	3,611	3,684	19
20	12,556	13,011	13,047	13,349	13,685	13,932	14,210	20
21	8,145	8,298	8,398	8,580	8,767	8,933	9,112	21
22	37,873	35,002	35,178	36,808	37,090	37,231	38,132	22
23	4,415	4,392	4,408	4,501	4,600	4,684	4,775	23
24	55,449	58,651	58,856	59,430	60,273	61,285	62,421	24
25	10,455	10,956	4,580	4,387	4,705	4,538	4,538	25
26	0	-185	685	769	854	940	1,030	26
27	51,176	56,409	61,303	66,412	71,691	76,996	82,216	27
28	0	0	0	195	3,308	935	985	28
29	-9,922	-10,838	-11,693	-12,370	-13,075	-13,736	-14,449	29
30	-9,044	-12,285	-11,418	-11,581	-11,857	-11,367	-11,767	30
<i>Amortization of Restructuring Costs</i>								
31	21,986	23,871	23,726	23,566	23,281	23,123	22,859	31
32	7,801	7,875	8,071	8,273	8,479	8,648	8,822	32
33	11,167	5,445	3,386	1,218	0	0	0	33
<i>BT Lite Costs</i>								
<i>BT Building Consolidation - Cost / Savings</i>								
34	-1,754	-1,191	0	0	0	0	0	34
35	295,529	295,800	297,383	304,489	315,046	321,292	330,156	35
36	45,400	46,654	47,942	49,336	50,840	50,813	50,835	36
37	2,500	2,600	2,600	2,600	2,600	2,600	2,600	37
38	-6,010	-6,231	-6,475	-6,706	-6,868	-7,154	-6,986	38
39	41,890	43,023	44,067	45,230	46,572	46,259	46,449	39
39	337,419	338,823	341,450	349,719	361,618	367,551	376,605	39
40	598,023	559,690	574,743	595,508	613,141	625,062	640,540	40
41	112,524	109,598	118,354	155,935	145,079	139,952	151,863	41
42	3,619	3,687	5,007	4,635	4,313	4,723	4,541	42
43	116,143	113,285	123,361	160,570	149,392	144,675	156,404	43
44	<b>INTEREST</b>							
45	44,316	42,584	53,240	49,875	47,443	49,932	47,557	45
46	4,369	1,311	1,459	-1,417	-1,081	-701	-415	46
47	-656	-891	-766	-781	-748	-723	-750	47
48	3,703	4,814	4,401	3,985	3,670	3,354	3,063	48
49	51,732	47,818	58,334	51,662	49,284	51,862	49,455	49
50	64,411	65,467	65,027	108,908	100,108	92,813	106,949	50
51	18,000	18,000	18,000	18,000	18,000	18,000	18,000	51
52	46,411	47,467	47,027	90,908	82,108	74,813	88,949	52

PHILADELPHIA GAS WORKS  
CASH FLOW STATEMENT  
(DOLLARS IN THOUSANDS)  
SCENARIO #3 - Accelerated Replacement, 5% DSIC

<u>LINE NO.</u>	<u>ESTIMATE</u>	<u>BUDGET</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>LINE NO.</u>	
	<u>2014-15</u>	<u>2015-16</u>	<u>2016-17</u>	<u>2017-18</u>	<u>2018-19</u>	<u>2019-20</u>	<u>2019-21</u>		
<b>SOURCES</b>									
1	Net Income	64,411	65,467	65,027	108,908	100,108	92,813	106,949	1
2	Depreciation & Amortization	47,405	46,734	48,095	49,424	50,947	50,975	50,997	2
3	Earnings on Restricted Funds Withdrawal/(No Wit	-487	-1,098	-2,363	-1,906	433	-1,870	-885	3
	Elimination of Accrued Interest on Refunded Debt	0	0	0	0	0	0	0	
	Equity Bond / Debt Reduction	0	0	0	0	0	0	0	
4	Procds from Bond Refunding - Cost of Issuance	507	0	0	0	0	0	0	4
5	Increased/(Decreased) Other Assets/Liabilities	2,586	-12,153	-14,867	-21,565	-18,241	-22,900	-9,151	5
6	Available From Operations	<u>114,422</u>	<u>98,950</u>	<u>95,892</u>	<u>134,861</u>	<u>133,247</u>	<u>119,018</u>	<u>147,910</u>	6
7	Drawdown of Bond Proceeds	0	0	51,999	53,946	46,864	44,591	47,971	7
	Grant Income	0	0	0	0	0	0	0	
	Lease Funds Debt Service	0	0	0	0	0	0	0	
8	Capitalized Interest	0	0	0	0	0	0	0	8
9	Release of Sinking Fund Asset	0	0	0	0	0	0	0	9
10	Rel. of Bond Proceeds to Pay Temp. Fin.	0	0	78,600	0	0	0	0	10
11	Temporary Financing	<u>30,000</u>	<u>56,600</u>	<u>10,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	11
12	TOTAL SOURCES	<u>144,422</u>	<u>155,550</u>	<u>236,491</u>	<u>188,807</u>	<u>180,111</u>	<u>163,609</u>	<u>195,881</u>	12
<b>USES</b>									
13	Net Construction Expenditures	90,327	110,752	107,659	109,762	105,129	101,615	105,348	13
14	Funded Debt Reduction:								14
15	Revenue Bonds	54,190	48,655	46,100	52,375	51,905	52,795	59,870	15
	Revenue Bond Subordinate Debt	0	0	0	0	0	0	0	
	Capital Lease	0	0	0	0	0	0	0	
	Equity Bond Contribution/ Debt Reduction	0	0	0	0	0	0	0	
16	Temporary Financing Repayment	0	0	78,600	18,000	0	0	0	16
17	Distribution of Earnings	18,000	18,000	18,000	18,000	18,000	18,000	18,000	17
	Additions To (Reductions of)								
18	Non-Cash Working Capital	<u>-18,497</u>	<u>-14,687</u>	<u>-11,701</u>	<u>-3,585</u>	<u>-2,929</u>	<u>-7,682</u>	<u>-5,353</u>	18
19	Cash Needs	144,020	162,720	228,658	194,552	172,105	164,728	177,865	19
20	Cash Surplus (Shortfall)	402	-7,170	-2,167	-5,745	8,006	-1,119	18,016	20
21	TOTAL USES	<u>144,422</u>	<u>155,550</u>	<u>236,491</u>	<u>188,807</u>	<u>180,111</u>	<u>163,609</u>	<u>195,881</u>	21
22	Cash - Beginning of Period	105,734	106,136	8,966	96,799	91,054	99,060	97,941	22
23	Cash - Surplus (Shortfall)	402	-7,170	-2,167	-5,745	8,006	-1,119	18,016	23
24	ENDING CASH	<u>106,136</u>	<u>98,966</u>	<u>6,799</u>	<u>91,054</u>	<u>99,060</u>	<u>97,941</u>	<u>115,958</u>	24
25	Outstanding Comm Paper - Working Capital	0	0	0	0	0	0	0	25
26	Outstanding Comm Paper - Capital Projects	30,000	86,600	18,000	0	0	0	0	26
27	DSIC Revenue	14,743	27,116	32,660	32,816	32,930	33,024	33,129	27
28	Internally Generated Funds	35,584	27,036	23,000	23,000	25,335	24,000	24,248	28
29	Total IGF + Incremental DSIC Revenue	50,327	54,152	55,660	55,816	58,265	57,024	57,377	29

**PHILADELPHIA GAS WORKS**  
**DEBT SERVICE COVERAGE**  
**(DOLLARS IN THOUSANDS)**  
**SCENARIO #3 - Accelerated Replacement, 5% DSIC**

<u>LINE NO.</u>	<u>ESTIMATE 2014-15</u>	<u>BUDGET 2015-16</u>	<u>FORECAST 2016-17</u>	<u>FORECAST 2017-18</u>	<u>FORECAST 2018-19</u>	<u>FORECAST 2019-20</u>	<u>FORECAST 2019-21</u>	<u>LINE NO.</u>
<b>FUNDS PROVIDED</b>								
1	689,868	649,241	670,883	729,034	735,626	742,237	769,433	1
2	20,679	20,047	22,214	22,409	22,594	22,777	22,970	2
3	<u>710,547</u>	<u>669,288</u>	<u>693,097</u>	<u>751,443</u>	<u>758,220</u>	<u>765,014</u>	<u>792,403</u>	3
4	3,132	2,589	2,644	2,729	4,746	2,853	3,656	4
5	0	0	0	0	0	0	0	5
6	<u>656</u>	<u>891</u>	<u>766</u>	<u>781</u>	<u>748</u>	<u>723</u>	<u>750</u>	6
7	<u>714,335</u>	<u>672,768</u>	<u>696,507</u>	<u>754,953</u>	<u>763,714</u>	<u>768,590</u>	<u>796,809</u>	7
<b>FUNDS APPLIED</b>								
8	260,604	220,867	233,293	245,789	251,523	257,511	263,935	8
9	<u>337,419</u>	<u>338,823</u>	<u>341,450</u>	<u>349,719</u>	<u>361,618</u>	<u>367,551</u>	<u>376,605</u>	9
10	<u>598,023</u>	<u>559,690</u>	<u>574,743</u>	<u>595,508</u>	<u>613,141</u>	<u>625,062</u>	<u>640,540</u>	10
11	<u>48,973</u>	<u>50,082</u>	<u>51,619</u>	<u>53,024</u>	<u>54,549</u>	<u>54,525</u>	<u>54,605</u>	11
12	<u>549,050</u>	<u>509,608</u>	<u>523,124</u>	<u>542,484</u>	<u>558,592</u>	<u>570,537</u>	<u>585,935</u>	12
13	165,285	163,160	173,383	212,469	205,122	198,053	210,874	13
14	4,161	0	0	0	0	0	0	14
15	40	0	0	0	0	0	0	15
16	<u>161,124</u>	<u>163,160</u>	<u>173,383</u>	<u>212,469</u>	<u>205,122</u>	<u>198,053</u>	<u>210,874</u>	16
17	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	17
18	<u>161,124</u>	<u>163,160</u>	<u>173,383</u>	<u>212,469</u>	<u>205,122</u>	<u>198,053</u>	<u>210,874</u>	18
19	93,159	91,175	92,587	102,628	99,739	100,651	107,792	19
20	<u>0</u>	<u>1,917</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	20
21	<u>93,159</u>	<u>93,092</u>	<u>92,587</u>	<u>102,628</u>	<u>99,739</u>	<u>100,651</u>	<u>107,792</u>	21
22	1.73	1.75	1.87	2.07	2.06	1.97	1.96	22
23	1.58	1.56	1.68	1.89	1.88	1.79	1.79	23
24	67,965	70,068	80,796	109,841	105,383	97,402	103,082	24

**EXHIBIT IEC-2  
PHILADELPHIA GAS WORKS BALANCE SHEET  
(DOLLARS IN THOUSANDS)  
SCENARIO #3 - Accelerated Replacement, 5% DSIC**

	233,921	257,514							
LINE NO.	ESTIMATE	BUDGET	FORECAST	FORECAST	FORECAST	FORECAST	FORECAST	FORECAST	LINE NO.
	<u>8/31/15</u>	<u>8/31/16</u>	<u>8/31/17</u>	<u>8/31/18</u>	<u>8/31/19</u>	<u>8/31/20</u>	<u>8/31/21</u>		
<b>ASSETS</b>									
1	Utility Plant Net	1,238,479	1,302,577	1,362,294	1,422,720	1,477,009	1,527,811	1,582,324	1
2	Sinking Fund Reserve	106,393	107,463	124,781	126,035	127,301	135,077	136,434	2
3	Capital Improvement Fund			101,916	48,593		48,473		3
4	Capital Expenditures								4
	Workers' Compensation Fund								
5	& Health Insurance Escrow	5,822	5,850	5,881	5,910	5,939	5,969	5,999	5
6	Cash	106,136	98,966	96,799	91,054	99,060	97,941	115,958	6
	Accounts Receivable:								
7	Gas	194,806	188,523	183,849	181,814	180,061	178,584	178,216	7
8	Other	4,527	4,443	3,650	3,150	2,650	2,151	1,650	8
9	Accrued Gas Revenues	6,872	6,676	6,810	6,912	6,954	6,982	7,055	9
10	Reserve for Uncollectible	-110,207	-111,373	-112,948	-116,706	-120,746	-124,927	-130,009	10
11	Total Accounts Receivable:	95,998	88,269	81,361	75,170	68,919	62,790	56,912	11
12	Materials & Supplies	54,896	57,776	60,748	62,658	63,886	65,931	67,150	12
13	Other Current Assets	484	534	500	480	460	450	450	13
14	Deferred Debits	10,679	2,833	3,124	3,144	3,054	2,963	2,885	14
15	Unamortized Bond Issuance Expense	3,473	3,181	5,273	4,882	4,509	5,103	4,710	15
16	Unamortized Loss on Reacquired Debt	38,512	33,698	29,298	25,313	21,643	18,288	15,225	16
17	Deferred Environmental	28,792	28,792	28,792	28,597	25,289	24,354	23,369	17
18	Other Assets	40,250	38,052	36,037	37,252	38,444	39,611	40,875	18
19	<b>TOTAL ASSETS</b>	<u>1,729,914</u>	<u>1,767,991</u>	<u>1,936,804</u>	<u>1,931,808</u>	<u>1,935,513</u>	<u>2,034,761</u>	<u>2,052,291</u>	19
<b>EQUITY &amp; LIABILITIES</b>									
20	City Equity	454,346	501,813	548,840	639,748	721,856	796,669	885,618	20
21	Revenue Bonds	939,395	890,740	1,094,640	1,042,265	990,360	1,037,565	977,695	21
	TECA Accretions								
22	Unamortized Discount	-2,270	-2,035	-1,814	-1,608	-1,416	-1,238	-1,072	22
23	Unamortized Premium	45,778	40,516	35,640	31,146	27,017	23,241	19,782	23
24	Long Term Debt	982,903	929,221	1,128,466	1,071,803	1,015,961	1,059,568	996,405	24
25	Notes Payable	30,000	86,600	18,000					25
	City Loan								
26	Accounts Payable	57,007	59,825	60,631	60,560	60,547	61,005	61,417	26
27	Customer Deposits	2,500	2,500	2,525	2,550	2,575	2,600	2,625	27
28	Other Current Liabilities	5,682	5,173	5,204	5,235	5,268	5,300	5,311	28
29	Deferred Credits	3,308	2,405	3,139	4,628	2,246	2,287	2,278	29
30	Accrued Interest	11,862	11,591	17,508	17,130	16,738	18,814	18,449	30
31	Accrued Taxes & Wages	4,527	5,535	6,043	4,251	4,776	5,640	6,182	31
32	Accrued Distribution to City	3,000	3,000	3,000	3,000	3,000	3,000	3,000	32
33	Other Liabilities	174,679	160,328	143,448	122,903	102,546	79,878	71,006	33
34	<b>TOTAL EQUITY &amp; LIABILITIES</b>	<u>1,729,914</u>	<u>1,767,991</u>	<u>1,936,804</u>	<u>1,931,808</u>	<u>1,935,513</u>	<u>2,034,761</u>	<u>2,052,291</u>	34
587									
		ESTIMATE	BUDGET	FORECAST	FORECAST	FORECAST	FORECAST	FORECAST	
	<b>CAPITALIZATION</b>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>	<u>FY2020</u>	<u>FY2021</u>	
35	Total Capitalization	1,437,249	1,431,034	1,677,306	1,711,551	1,737,817	1,856,237	1,882,023	35
36	Total Long Term Debt	982,903	929,221	1,128,466	1,071,803	1,015,961	1,059,568	996,405	36
37	Debt to Capital Ratio	68.4%	64.9%	67.3%	62.6%	58.5%	57.1%	52.9%	37
38	Debt to Equity Ratio	216%	185%	206%	168%	141%	133%	113%	38

**EXHIBIT IEc-2  
PHILADELPHIA GAS WORKS  
(DOLLARS IN THOUSANDS)  
DIFFERENCE Between SCENARIO 3 and SCENARIO 2**

<u>LINE NO.</u>	<u>ESTIMATE 2014-15</u>	<u>BUDGET 2015-16</u>	<u>FORECAST 2016-17</u>	<u>FORECAST 2017-18</u>	<u>FORECAST 2018-19</u>	<u>FORECAST 2019-20</u>	<u>FORECAST 2019-21</u>	<u>LINE NO.</u>
<b>OPERATING REVENUES</b>								
1	0	-191	-351	0	0	0	0	1
2	0	-378	-798	0	0	0	0	2
3	0	-4,931	-9,851	0	0	0	0	3
4	0	0	0	0	0	0	0	4
5	0	0	0	0	0	0	0	5
6	0	0	0	0	0	0	0	6
7	0	-5,500	-11,000	0	0	0	0	7
8	0	0	0	0	0	0	0	8
9	0	0	0	0	0	0	0	9
10	0	0	0	0	0	0	0	10
11	0	-5,500	-11,000	0	0	0	0	11
<b>OPERATING EXPENSES</b>								
12	0	0	0	0	0	0	0	12
13	0	0	0	0	0	0	0	13
14	0	0	0	0	0	0	0	14
15	0	-5,500	-11,000	0	0	0	0	15
16	0	0	0	0	0	0	0	16
17	0	0	0	0	0	0	0	17
18	0	0	0	0	0	0	0	18
19	0	0	0	0	0	0	0	19
20	0	0	0	0	0	0	0	20
21	0	0	0	0	0	0	0	21
22	0	-214	-447	0	0	0	0	22
23	0	0	0	0	0	0	0	23
24	0	0	0	0	0	0	0	24
25	0	0	0	0	0	0	0	25
26	0	0	0	0	0	0	0	26
27	0	0	0	0	0	0	0	27
28	0	0	0	0	0	0	0	28
29	0	0	0	0	0	0	0	29
30	0	0	0	0	0	0	0	30
Amortization of Restructuring Costs								
31	0	0	0	0	0	0	0	31
32	0	0	0	0	0	0	0	32
33	0	0	0	0	0	0	0	33
BT Lite Costs								
BT Building Consolidation - Cost / (Savings)								
34	0	0	0	0	0	0	0	34
35	0	-214	-447	0	0	0	0	35
36	0	0	0	0	0	0	0	36
37	0	0	0	0	0	0	0	37
38	0	0	0	0	0	0	0	38
39	0	-214	-447	0	0	0	0	39
40	0	-214	-447	0	0	0	0	40
41	0	-5,286	-10,553	0	0	0	0	41
42	0	0	0	0	0	0	0	42
43	0	-5,286	-10,553	0	0	0	0	43
44	<b>INTEREST</b>							
45	0	335	836	0	0	0	0	45
46	0	0	0	0	0	0	0	46
47	0	0	0	0	0	0	0	47
48	0	0	0	0	0	0	0	48
49	0	335	836	0	0	0	0	49
50	0	-5,621	-11,389	0	0	0	0	50
51	0	0	0	0	0	0	0	51
52	0	-5,621	-11,389	0	0	0	0	52

**PHILADELPHIA GAS WORKS**  
**CASH FLOW STATEMENT**  
**(DOLLARS IN THOUSANDS)**  
**DIFFERENCE Between SCENARIO 3 and SCENARIO 2**

<u>LINE NO.</u>	<u>ESTIMATE</u>	<u>BUDGET</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>FORECAST</u>	<u>LINE NO.</u>
	<u>2014-15</u>	<u>2015-16</u>	<u>2016-17</u>	<u>2017-18</u>	<u>2018-19</u>	<u>2019-20</u>	<u>2019-21</u>	
<b>SOURCES</b>								
1	Net Income	0	-5,621	-11,389	0	0	0	1
2	Depreciation & Amortization	0	0	0	0	0	0	2
3	Earnings on Restricted Funds Withdrawal/(Net)	0	0	0	0	0	0	3
	Elimination of Accrued Interest on Refunded I	0	0	0	0	0	0	
	Equity Bond / Debt Reduction	0	0	0	0	0	0	
4	Proceeds from Bond Refunding to Pay Cost of	0	0	0	0	0	0	4
5	Increased/(Decreased) Other Assets/Liabilities	0	0	0	0	0	0	5
6	Available From Operations	0	-5,621	-11,389	0	0	0	6
7	Drawdown of Bond Proceeds	0	0	0	0	0	0	7
	Grant Income	0	0	0	0	0	0	
	Lease Funds Debt Service	0	0	0	0	0	0	
8	Capitalized Interest	0	0	0	0	0	0	8
9	Release of Sinking Fund Asset	0	0	0	0	0	0	9
10	Rel. of Bond Proceeds to Pay Temp. Fin.	0	0	0	0	0	0	10
11	Temporary Financing	0	8,000	10,000	0	0	0	11
12	<b>TOTAL SOURCES</b>	<b>0</b>	<b>2,379</b>	<b>-1,389</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>USES</b>								
13	Net Construction Expenditures	0	0	0	0	0	0	13
14	Funded Debt Reduction:							14
15	Revenue Bonds	0	0	0	0	0	0	15
	Revenue Bond Subordinate Debt	0	0	0	0	0	0	
	Capital Lease	0	0	0	0	0	0	
	Equity Bond Contribution/ Debt Reduction	0	0	0	0	0	0	
16	Temporary Financing Repayment	0	0	0	18,000	0	0	16
17	Distribution of Earnings	0	0	0	0	0	0	17
	Additions To (Reductions of)							
18	Non-Cash Working Capital	0	0	0	0	0	0	18
19	Cash Needs	0	0	0	18,000	0	0	19
20	Cash Surplus (Shortfall)	0	2,379	-1,389	-18,000	0	0	20
21	<b>TOTAL USES</b>	<b>0</b>	<b>2,379</b>	<b>-1,389</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>
22	Cash - Beginning of Period	0	0	2,379	990	-17,010	-17,010	22
23	Cash - Surplus (Shortfall)	0	2,379	-1,389	-18,000	0	0	23
24	<b>ENDING CASH</b>	<b>0</b>	<b>2,379</b>	<b>990</b>	<b>-17,010</b>	<b>-17,010</b>	<b>-17,010</b>	<b>24</b>
25	Outstanding Comm Paper - Working Capital	0	0	0	0	0	0	25
26	Outstanding Comm Paper - Capital Projects	0	8,000	18,000	0	0	0	26
27	DSIC Revenue	0	0	0	0	0	0	27
28	Internally Generated Funds	0	-8,000	0	0	0	0	28
29	Total IGF + Incremental DSIC Revenue	0	-8,000	0	0	0	0	29

**PHILADELPHIA GAS WORKS**  
**DEBT SERVICE COVERAGE**  
**(DOLLARS IN THOUSANDS)**  
**DIFFERENCE Between SCENARIO 3 and SCENARIO 2**

<u>LINE NO.</u>	<u>ESTIMATE</u> <u>2014-15</u>	<u>BUDGET</u> <u>2015-16</u>	<u>FORECAST</u> <u>2016-17</u>	<u>FORECAST</u> <u>2017-18</u>	<u>FORECAST</u> <u>2018-19</u>	<u>FORECAST</u> <u>2019-20</u>	<u>FORECAST</u> <u>2019-21</u>	<u>LINE NO.</u>
<b>FUNDS PROVIDED</b>								
1	0	-5,500	-11,000	0	0	0	0	1
2	0	0	0	0	0	0	0	2
3	0	-5,500	-11,000	0	0	0	0	3
4	0	0	0	0	0	0	0	4
5	0	0	0	0	0	0	0	5
6	0	0	0	0	0	0	0	6
7	0	-5,500	-11,000	0	0	0	0	7
<b>FUNDS APPLIED</b>								
8	0	0	0	0	0	0	0	8
9	0	-214	-447	0	0	0	0	9
10	0	-214	-447	0	0	0	0	10
11	0	0	0	0	0	0	0	11
12	0	-214	-447	0	0	0	0	12
13	0	-5,286	-10,553	0	0	0	0	13
14	0	0	0	0	0	0	0	14
15	0	0	0	0	0	0	0	15
16	0	-5,286	-10,553	0	0	0	0	16
17	0	0	0	0	0	0	0	17
18	0	-5,286	-10,553	0	0	0	0	18
19	0	0	0	0	0	0	0	19
20	0	0	0	0	0	0	0	20
21	0	0	0	0	0	0	0	21
22	0	0	0	0	0	0	0	22
23	0	0	0	0	0	0	0	23
24	0	-5,286	-10,553	0	0	0	0	24

**EXHIBIT IEc-3**

**SUMMARY OF PGW DSIC FILINGS**

## Exhibit IEC-3

## Summary of PGW DSIC Filings

Quarterly Filing	Month	Recoverable Costs	DSIC Revenue Billied	DSIC Revenue Related to Recon	Over/(Under) Collection	Months	Interest Rate	Interest	Recoverable Costs	Annual Reconciliation	Quarterly Revenues	Percent
CY13 Q3	Jul-13	1,262,448	238,646		-1,023,802	15	5.00%	-63,988				
	Aug-13	1,262,448	442,329		-820,119	14	5.50%	-52,624	3,787,345	0	125,387,087	3.02%
	Sep-13	1,262,448	473,982		-788,466	13	5.75%	-49,115				
CY13 Q4	Oct-13	1,646,528	631,215		-1,015,313	12	5.75%	-58,380				
	Nov-13	1,646,528	1,374,992		-271,536	11	6.00%	-14,934	4,939,583	0	119,311,376	4.14%
	Dec-13	<u>1,646,528</u>	<u>2,440,437</u>		<u>793,909</u>	<u>10</u>	<u>5.75%</u>	<u>38,041</u>				
<b>Total CY 2013</b>		<b>8,726,928</b>	<b>5,601,601</b>	<b>0</b>	<b>-3,125,327</b>			<b>-201,000</b>	<b>8,726,928</b>		<b>244,698,463</b>	<b>3.57%</b>
CY14 Q1	Jan-14	1,692,096	3,329,041	0	1,636,945	21	5.75%	164,718				
	Feb-14	1,692,096	3,799,835	0	2,107,739	20	6.00%	210,774	5,076,289	0	116,961,476	4.34%
	Mar-14	1,692,096	3,338,292	0	1,646,196	19	6.25%	162,905				
	Apr-14	0	1,628,220	1,628,220	0	18	5.75%	0				
CY14 Q2	May-14	0	656,230	656,230	0	17	5.75%	0	0	3,125,326	120,206,937	2.60%
	Jun-14	0	442,690	442,690	0	16	5.75%	0				
CY14 Q3	Jul-14	1,895,060	571,895	76,767	-1,399,932	15	5.50%	-96,245				
	Aug-14	1,895,060	698,803	93,802	-1,290,059	14	5.50%	-82,779	5,685,180	781,332	110,384,402	5.00%
	Sep-14	1,895,060	722,636	97,001	-1,269,425	13	5.50%	-75,637				
CY14 Q4	Oct-14	2,591,705	812,714	115,052	-1,894,043	12	5.25%	-99,437				
	Nov-14	2,591,705	1,517,663	214,849	-1,288,891	11	5.50%	-64,982	7,775,115	781,332	110,384,402	5.00%
	Dec-14	<u>2,591,705</u>	<u>2,804,822</u>	<u>397,066</u>	<u>-183,949</u>	<u>10</u>	<u>5.25%</u>	<u>-8,048</u>				
<b>Total CY 2014</b>		<b>18,536,584</b>	<b>20,322,841</b>	<b>3,721,677</b>	<b>-1,935,420</b>			<b>111,269</b>	<b>18,536,584</b>		<b>457,937,217</b>	<b>4.05%</b>
<b>Total CY 2013/14</b>		<b>27,263,512</b>	<b>25,924,442</b>		<b>-1,339,070</b>			<b>-89,731</b>	<b>27,374,781</b>		<b>702,635,680</b>	<b>3.90%</b>
CY15 Q1	Jan-15	786,761			-786,761	21		0				
	Feb-15	786,761			-786,761	20		0	2,360,282	0	105,515,104	2.24%
	Mar-15	786,761			-786,761	19		0				
	Apr-15	644,033			-644,033	18		0				
CY15 Q2	May-15	644,033			-644,033	17		0	1,932,098	334,768	108,441,578	2.09%
	Jun-15	644,033			-644,033	16		0				
	Jul-15	503,955			-503,955	15		0				
CY15 Q3	Aug-15	503,955			-503,955	14		0	1,511,865	334,767	112,434,382	1.64%
	Sep-15	503,955			-503,955	13		0				

## Notes:

- 1) PGW responses appear to have inadvertently omitted the Q3 2014 filing. Certain values are estimated.
- 2) PGW did not provide actual revenue values for CY 2015.
- 3) It is not clear why the reconciliation value for Q2 2014 was set at the total CY 2013 under-collection, rather than one-fourth that amount.

Sources: OSBA-I-8 attachments.

**EXHIBIT IEc-4**

**REFERENCED INTERROGATORY RESPONSES**

**OSBA-I-2\***

**OSBA-I-3**

**OSBA-I-4**

**OSBA-I-6\***

**OSBA-I-8**

**OSBA-I-9**

**OSBA-I-10**

**PICGUG-I-4**

Note: The PGW responses appear to cite to the incorrect docket.

\* The responses copied in this exhibit exclude printouts of the MS Excel file attachments, but these electronic attachments to the responses are incorporated into this exhibit by reference.

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

**Question OSBA-Set 1-2:** Reference Petition footnote 31, pages 13-14:

- a. In MS Excel electronic format, please provide PGW's long-term financial forecast (income statement, balance sheet, cash flow statements, etc.), both under existing rates and with the proposed changes to the DSIC. Please provide the forecast for the maximum duration prepared by PGW, but no less than five years. Please include supporting workpapers for the derivation of the revenue forecast, including any and all assumptions regarding future base rates increases.

**Response Provided By:** Joseph F. Golden, Jr. Executive Vice President & Acting Chief Financial Officer

**Response:** See included files titled: (1) *OSBA Set 1-2 PGW Financial Statements – FY2016 Budget & 5YR Forecast.xlsx*; and, (2) *OSBA Set 1-2 PGW FY2016 & 5YR Forecast Footnotes.doc*. There are two different financial forecasts (Scenario #1 includes financial statements assuming a 5.0% DSIC Surcharge, Scenario #2 includes financial statements assuming a 7.5% DSIC surcharge) including a list of general assumptions and revenue information by customer class.

*Note: The attachments, in native format, are available through ESCM's Share File system at: <https://eckertseamans.sharefile.com/ffo31f965-c355-40b3-911a-eb371f555073>*

**Philadelphia Gas Works  
Fiscal Year 2016  
Adjustments & Assumptions**

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**General Assumptions:**

- a) The FY 2016 Budget Year reflects six months of both capital expenditures (CAPEX) and natural gas revenues associated with increasing the DSIC surcharge from 5.0% to 7.5%.
- b) The FY 2017 through FY 2021 Forecast periods reflects an entire twelve-month period of both CAPEX and natural gas revenues associated with increasing the DSIC surcharge from 5.0% to 7.5%.
- c) CAPEX is anticipated to increase by \$7,500,000 in the FY 2016 Budget Year and \$15,000,000 in the FY 2017 through FY 2021 Forecast periods.
  - FY 2016 - \$5,500,000 to replace mains and \$2,000,000 to replace services.
  - FY 2017-21 - \$11,000,000 to replace mains and \$4,000,000 to replace services.
- d) The accelerated main replacement program is anticipated to be funded through the DSIC surcharge; whereas, the incremental increase of the replacement of services associated with such a program is projected to be funded through PGW's long-term debt financing program.

**Income Statement:**

- e) Non- heating revenue is anticipated to increase by approximately \$200,000 in the FY 2016 Budget Year and \$300,000 each year of the Forecast period, reflecting the impact of increasing the DSIC surcharge from 5.0% to 7.5%.
- f) Firm transportation revenue is anticipated to increase by approximately \$400,000 in the FY 2016 Budget Year and \$700,000 each year of the Forecast period, reflecting the impact of increasing the DSIC surcharge from 5.0% to 7.5%.
- g) Heating revenue is anticipated to increase by approximately \$5,000,000 in the FY 2016 Budget Year and \$10,000,000 each year of the Forecast periods, reflecting the impact of increasing the DSIC surcharge from 5.0% to 7.5%.
- h) Bad Debt is expected to increase by approximately \$200,000 in the FY 2016 Budget Year and \$400,000 each year of the Forecast periods reflecting an increase in delinquent customer accounts.

**Philadelphia Gas Works  
Fiscal Year 2016  
Adjustments & Assumptions**

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- i) The allocation of employee related fringe benefits to capital projects is anticipated to increase by \$400,000 each year of the Forecast periods reflecting an increase of PGW labor being charged to capital work orders.
- j) The allocated costs for Capitalized Administrative and General Charges are anticipated to increase as capital spending is projected to increase by approximately \$7,500,000 in the FY 2016 Budget Year and \$15,000,000 each year of the Forecast periods.
- k) Depreciation is projected to accumulate as follows:
  - FY 2016 Budget - \$150,000
  - FY 2017 Forecast - \$451,000 (\$301,000 + FY 2016)
  - FY 2018 Forecast - \$752,000 (\$301,000 + FY 2017)
  - FY 2019 Forecast - \$1,053,000 (\$301,000 + FY 2018)
  - FY 2020 Forecast - \$1,354,000 (\$301,000 + FY 2019)
  - FY 2021 Forecast - \$1,655,000 (\$301,000 + FY 2020)

**Cash Flow Statement:**

- l) Net income is projected to increase by approximately \$7,000,000 in the FY 2016 Budget Year and \$12,000,000 each year of the Forecast periods reflecting increased earnings.
- m) However, the increase in net earnings was more than offset by a \$7,500,000 and \$15,000,000 increase in capital construction expenditures projected in the FY 2016 Budget Year and FY 2017 through FY 2012 Forecast periods, respectively.
- n) Depreciation and amortization, as a result of the aforementioned increase in capital construction expenditures, is projected to increase by approximately \$301,000 on an accumulated basis each year of the forecast periods.
- o) PGW's ending cash balance is projected to decrease in the FY 2021 Forecast period by approximately \$11,000,000 reflecting increased CAPEX beyond the increased DSIC surcharge.

**Philadelphia Gas Works  
Fiscal Year 2016  
Adjustments & Assumptions**

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**Debt Service Coverage:**

- p) *PGW's debt service coverage rate is projected to increase by approximately 12 to 14 basis points each year of the Forecast periods reflecting a \$12,000,000 increase of total funds available to cover debt service. The increase reflects the impact of increasing the DSIC surcharge from 5.0% to 7.5%.*

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

**Question OSBA-Set 1-3:** Reference Petition, page 11:

- a. To the extent available, in MS Excel electronic format, please provide a complete mains investment history for PGW of annual investment by year, by mains type (cast iron, bare steel, cathodically protected steel, coated steel, plastic, other), segregated between new and replacement pipe, by pipe diameter (if available), and showing both footage installed and cost of installation.

**Response Provided By:** Dan Furtek – Director, Resource Management

**Response:**

**Main Replacement – all materials and diameters**

Fiscal Year	Total Cost	Footage	Mileage
2006	\$14,996,714	106,733	20.21
2007	\$14,826,849	98,620	18.68
2008	\$16,617,135	103,722	19.64
2009	\$10,994,164	45,908	8.69
2010	\$16,932,371	114,348	21.66
2011	\$19,289,874	103,221	19.55
2012	\$23,897,668	122,642	23.23
2013	\$28,856,196	111,513	21.12
2014	\$38,166,660	159,545	30.22
2015*	\$37,708,024	162,594	30.79

\*Total spending for FY 2015 is preliminary

**Main Additions – all materials and diameters**

Fiscal Year	Total Cost	Footage	Mileage
2006	\$3,618,573	43,732	8.28
2007	\$2,140,102	32,953	6.24
2008	\$3,062,229	31,908	6.04
2009	\$3,595,026	37,663	7.13
2010	\$2,111,592	24,259	4.59
2011	\$2,447,948	42,395	8.03
2012	\$2,841,128	23,595	4.47
2013	\$3,078,506	43,739	8.28
2014	\$3,283,302	27,441	5.20
2015*	\$2,781,497	28,219	5.34

\*Total spending for FY 2015 is preliminary

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

**Question OSBA-Set 1-4:** Reference PGW Statement No. 1 at page 10 lines 2 to 8:

- a. Is it PGW's position that it will not accelerate mains replacement if its DSIC proposals are not approved in this proceeding?
- b. If your response to part (a) is in any way affirmative, please explain fully why PGW is unwilling or unable to use other sources of funds for mains replacement, including but not limited to those that could be obtained through a base rates filing, for meeting reasonable and prudent mains replacement needs.

**Response Provided By:** Joseph F. Golden, Jr. Executive Vice President & Acting Chief Financial Officer

**Response:**

a. It is not PGW's position that it will not accelerate mains replacement if its DSIC proposals are not approved in this proceeding. PGW has filed this petition to levelize and annualize its DSIC structure to (i) improve rate stability, provide a more predictable bill for customers, (ii) provide more predictable cash flow for PGW, even with seasonal variations, and (iii) is consistent with the way in which PGW accounts for its other major automatic adjustment clause – the Gas Cost Rate. If PGW's request for an increase in its DSIC was denied by the Commission it would consider whether it could fund a further acceleration of cast iron main replacement via a base rate increase. PGW would have to conclude that any such base rate funding could be structured to avoid imposing additional financial risk on the Company and be sufficiently robust that acceleration would not have a negative effect on PGW's cash flow. PGW will consider other sources of funds for mains replacement should this DSIC petition be denied. PGW would then have to submit for approval to various agencies, as necessary, including the PFMC Board, the Philadelphia Gas Commission, the Finance Director of the City of Philadelphia, and ultimately to Philadelphia City Council. Should the determination that one of the other sources of funds requires a base rate increase, PGW would also seek PUC approval.

b. See Response to a.

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

**Question OSBA-Set 1-6:** Reference PGW Statement No. 1, page 10, line 6;  
Petition at paragraph 21:

- a. In MS Excel electronic format, please provide all analyses supporting the referenced reduction in the time to replace all cast iron mains from 86 to 48 years, with all supporting documents and workpapers.
- b. Please provide PGW's estimate of mains replacement costs per mile used in the analysis provided in part (a) and the basis therefor. Please also explain any material differences between PGW's estimate and the 2013 and 2014 values reported in the Staff Report (pages 30-31) of \$1,464,734 per mile and \$1,314,051 per mile respectively.
- c. Please provide the comparable calculation for the reduction in the time to replace all cast iron mains/services and unprotected steel mains/services, with all supporting calculations and workpapers.

**Response Provided By:** Dan Murray – SVP Customer Affairs & Operations

**Response:**

- a. PGW's approved Long Term Infrastructure Improvement Plan (LTIIIP) filed in 2013; as set forth an 88 year timeline for the removal of all cast iron main. Two years into that plan, the timeline stands at 86 years. The three factors that result in the decreased timeline to replace all cast iron mains in PGW's current DSIC petition are as follows:
  - a) The DSIC is calculated as a % of non-fuel revenue. The 2013 LTIIIP filing assumed a consistent, annual DSIC funding level of \$22M (5% of non-fuel revenue in 2013) for the duration of the Plan. PGW's current DSIC petition assumes a 5% revenue increase every 5 years, starting in 2018. As a result, by maintaining the annual DSIC funding level at 7.5% of non-fuel revenue, the available DSIC funding will increase in line with revenue increases for the duration of the Plan.
  - b) The cost per linear foot assumption for 10" & 12" cast iron decreased significantly in PGW's current DSIC petition compared to the 2013 LTIIIP

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

filing. It should be noted that prior to 2013, PGW focused primarily on the replacement of 8" and smaller cast iron as part of its main replacement program. Since 2013, PGW continues to gain more actual cost experience with 10" and 12" cast iron and as such, has been able to modify the cost assumptions.

- c) The annual inflation assumption decreased 0.5% in PGW's current DSIC petition compared to the 2013 LTIP filing.

The enclosed excel spreadsheet titled *OSBA Set 1-6 V2.xls* shows the projected available funding (both DSIC and non DSIC) and the associated total removal of cast iron on an annual basis. It should be noted that the order in which specific diameters of cast iron will be removed will be determined by PGW's on-going review and analysis of its Distribution Integrity Management Program ("DIMP").

- b. See the enclosed excel spreadsheet for PGW's cost per mile estimates for each diameter of cast iron main, by year (including inflation).

The cost per mile figures for 2013 and 2014 in the Staff Report were derived from the specific work that was performed in those respective years. Cost per mile estimates vary significantly based on the diameter of cast iron main that is being replaced. The work completed in 2013 and 2014 did not reflect the profile of all cast iron in PGW's system. For example, in 2014, 84.4% of the cast iron replaced was 8" or smaller and 15.6% was larger than 8" cast iron main. However, PGW's current inventory of cast iron main is 80.5% 8" or smaller and 19.5% larger than 8". Therefore, the annual cast iron cost per mile will vary based on the ratio of the various diameters of main that are replaced.

- c. The enclosed excel spreadsheet shows the projected timeline for removal of all cast iron main and unprotected steel main based on the projected available funding (both DSIC and non DSIC). It should be noted that the order in which specific diameters of cast iron and steel will be replaced will be determined by PGW's on-going review and analysis of its DIMP.

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

**Question OSBA-Set 1-8:** Reference PGW Statement No. 2, page 8:

- a. For each quarter shown in the referenced table, in MS Excel electronic format with formulae intact, please provide all supporting calculations for the percentages, including but not necessarily limited to:
  - i. Total DSIC eligible investments by cost category, including any in excess of the 5% cap;
  - ii. Amount of the DSIC-eligible investments deemed to be already recovered in base rates;
  - iii. Calculation of quarterly revenues on which the percentages were based, with supporting detail.
- b. Please specify the total amount of DSIC-eligible investment that PGW was unable to recover through the DSIC as a result of the 5 percent cap over this period. Please include supporting calculations.

**Response Provided By:** Kenneth Dybalski - Director, Gas Planning & Rates

**Response:**

a. i. & a. iii. Please see the quarterly DSIC Filings in the enclosed Excel spreadsheets listed below:

<i>OSBA Set 1-8 DSIC Filing 1-1-14.xls</i>
<i>OSBA Set 1-8 DSIC filing 1-1-15.xls</i>
<i>OSBA Set 1-8 DSIC Filing 4-1-14 Revised 3-31-14</i>
<i>OSBA Set 1-8 DSIC Filing 4-1-15.xls</i>
<i>OSBA Set 1-8 DSIC Filing 7-1-13 Final.xls</i>
<i>OSBA Set 1-8 DSIC Filing 7-1-14.xls</i>
<i>OSBA Set 1-8 DSIC Filing 7-1-15.xls</i>
<i>OSBA Set 1-8 DSIC Filing 10-1-13.xls</i>
<i>OSBA Set 1-8 DSIC Filing 10-1-14.xls</i>

- a. ii. None of the DSIC-eligible investments have been already recovered in base rates.
- b. The total amount of DSIC-eligible investment that PGW was unable to recover through the quarterly DSIC as a result of the 5 percent cap was \$3,682,997. Please see Excel file titled *OSBA Set 1-8b DSIC Filing 10-1-14.xls*.

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

**Question OSBA-Set 1-9:** Reference PGW Statement No. 2, page 14:

- a. For each historical quarter in which the DSIC has been in effect, please specify the interest rates that have applied to over- and under-collections of PGW's DSIC, and the basis therefor.
- b. For the history of PGW's DSIC, please detail the total interest costs incurred by PGW associated with rate over-collections, with supporting workpapers.

**Response Provided By:** Kenneth Dybalski - Director, Gas Planning & Rates

- Response:**
- a. Please see DSIC reconciliations for 2013 and 2014 in the Excel file titled *OSBA Set 1-9 2013 Reconciliation.xls*. The interest rate is the Maximum Lawful Rate of Interest for Residential Mortgages for the month as posted in the Pennsylvania Bulletin.
  - b. PGW has not incurred any DSIC related interest costs for 2013 or 2014 as PGW has not had an over-collection in either 2013 and 2014.

**RESPONSE TO OFFICE OF SMALL BUSINESS ADVOCATE**  
**DATA REQUEST REGARDING PETITION OF PHILADELPHIA GAS WORKS**  
**FOR WAIVER OF PROVISIONS OF ACT 11 TO INCREASE THE**  
**DISTRIBUTION SYSTEM IMPROVEMENT CHARGE CAP AND TO PERMIT**  
**LEVELIZATION OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

- Question OSBA-Set 1-10:** Reference Petition at page 3:
- a. Please compare PGW's proposal to replace its cast iron and unprotected steel mains over a 65 year period with the plans of other U.S. NGDCs.
  - b. Has the Company considered a more aggressive program of mains replacement? If so, please explain why it has been rejected.

**Response Provided By:** Dan Furtek – Director, Resource Management

- Response:**
- a. PGW does not have detailed information regarding the proposed replacement plans of other U.S. NGDCs; therefore no comparison can be made.

**Response Provided By:** Dan Murray – SVP Customer Affairs and Operations

- Response:**
- b. As stated in on pages 14-15 of my testimony (PGW St. No. 1), PGW will continue to review its DSIC-financed main replacement program from year to year to determine whether it would be prudent to request additional increases in its DSIC spending. PGW has elected to begin with an increase of 2.5% in excess of the initial cap in order to gain experience with an expedited program. PGW has not previously engaged in this level of annual construction and, before moving to even more aggressive levels, it needs to be able to assess a number of factors, including the effect on commerce, traffic congestion, and noise, especially in the more congested areas of the City, and the availability of qualified contractors to perform the work. Once it gains this data it will consider whether it would be prudent to accelerate the pace of its main replacement even further.

**RESPONSE TO PHILADELPHIA INDUSTRIAL AND COMMERCIAL GAS  
USER GROUP'S INTERROGATORIES – SET I  
REGARDING PETITION OF PHILADELPHIA GAS WORKS FOR WAIVER OF  
PROVISIONS OF ACT 11 TO INCREASE THE DISTRIBUTION SYSTEM  
IMPROVEMENT CHARGE CAP AND TO PERMIT LEVELIZATION  
OF DSIC CHARGES  
DOCKET NO. R-2015-2501500**

**Question PICGUG Set I-4:** Reference PUC Staff Report, page 7, paragraph 2, which notes that consolidation of "warehouses, meter shops, field services and fleet operations" could result in "potential annual savings of up to \$5 million" for PGW.

- a. Please confirm whether PGW considered the above recommendation prior to filing the DSIC Waiver Petition.
- b. If PICGUG-I-4(a) is answered in the affirmative, please provide a summary of the status of PGW's review and consideration of the PUC's recommendation, including any internal analysis or projections of potential savings.
- c. If PICGUG-I-4(a) is answered in the negative, please explain why all or part of the recommendation was not considered.

**Response Provided By:** William Gallagher, Vice President Budget and Strategic Development

**Response:**

- a. PGW considered this and each of the recommendations for funding acceleration of main replacement contained in the PUC Staff Report.
- b. The Staff Report's reference is to a plan to attempt to consolidate certain buildings currently used by PGW for operations, thereby reducing annual leasing and or operations and maintenance expense (net of the capital and other costs of the consolidation). PGW presently recovers the cost of maintaining its buildings in its base rates, last set in 2009. Funding the cost of main replacement via a specific base rate cost reduction opportunity is neither feasible nor appropriate for several reasons: 1) First, it would be inappropriate to focus on one potential reduction in O&M expenses that has the potential to decrease expenses compared to levels in PGW's last base rate case without considering the scores of other expenses that have increased since that time. Since PGW's last base rate case in 2009, it has experienced significant increases in a variety of expenses, including wages and benefits, health insurance, pension expense. Accordingly, if PGW were able to realize savings from building consolidation those savings would be needed to offset other expense increases and provide PGW with an opportunity to realize the cash flow, coverage and other financial levels authorized by the PUC in its last base rate case. 2) Any initiative that relies on an ongoing reduction in expenses would be too uncertain to permit PGW to use it as a source of funding for a capital project. 3) In any event, the PGW building consolidation proposal is still in the study stage. Upon the completion of a study to verify

**RESPONSE TO PHILADELPHIA INDUSTRIAL AND COMMERCIAL GAS  
USER GROUP'S INTERROGATORIES – SET I  
REGARDING PETITION OF PHILADELPHIA GAS WORKS FOR WAIVER OF  
PROVISIONS OF ACT 11 TO INCREASE THE DISTRIBUTION SYSTEM  
IMPROVEMENT CHARGE CAP AND TO PERMIT LEVELIZATION  
OF DSIC CHARGES**  
**DOCKET NO. R-2015-2501500**

that the economic benefits of building consolidation exceed the costs, the results will be evaluated and a recommendation presented to the FPMC Board of Directors for their consideration. If the determination is made to proceed, PGW would initiate the process to seek the necessary approvals to commence the project.

c. N/A

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

PETITION OF PHILADELPHIA GAS :  
WORKS FOR WAIVER OF PROVISIONS :  
OF ACT 11 TO INCREASE THE :  
DISTRIBUTION SYSTEM IMPROVEMENT :  
CHARGE CAP AND TO PERMIT :  
LEVELIZATION OF DSIC CHARGES :

Docket No. P-2015-2501500

Surrebuttal Testimony and Exhibits of

ROBERT D. KNECHT

On Behalf of the

Pennsylvania Office of Small Business Advocate

Topics:  
DSIC

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Date Served: November 3, 2015

Date Submitted for the Record: \_\_\_\_\_

## SURREBUTTAL TESTIMONY OF ROBERT D. KNECHT

1 **Q. Mr. Knecht, please state your name and briefly describe your qualifications.**

2 A. My name is Robert D. Knecht. I submitted direct testimony and associated exhibits on  
3 behalf of the Pennsylvania Office of Small Business Advocate (“OSBA”) earlier in this  
4 proceeding, and my qualifications were detailed therein.

5 **Q. What is the purpose of this surrebuttal testimony?**

6 A. This surrebuttal testimony responds to the rebuttal testimony of Philadelphia Gas Works  
7 (“PGW” or “the Company”) witnesses Joseph R. Golden, Jr., Esq. (PGW Statement No.  
8 3-R) and Mr. Kenneth S. Dybalski (PGW Statement No. 2-R).

9 **Q. At page 3 Mr. Golden argues that, “[i]f the Legislature wanted to force public**  
10 **utilities, including PGW, to fund the accelerated replacement of their infrastructure**  
11 **via allowances in base rates there would have been no need to enact the DSIC**  
12 **mechanism.” Is this relevant to your direct testimony or conclusions?**

13 A. No. I agree that the DSIC mechanism is designed to recover infrastructure replacement  
14 costs that are not reflected in base rates, and I did not propose that PGW’s DSIC be  
15 eliminated in favor of base rate recovery of all DSIC-eligible costs. The issue in this  
16 proceeding is not whether it is appropriate to allow recovery of mains replacement costs  
17 in a DSIC; the issue is whether PGW had demonstrated that the legislated restriction on  
18 the maximum DSIC rate will preclude PGW from providing safe and reliable service. To  
19 Mr. Golden’s point about the intent of Act 11, I would think that if the Legislature had  
20 intended to allow utilities to recover all infrastructure replacement costs regardless of  
21 ratepayer impact or the utility’s financial condition, it would not have established  
22 restrictions on the magnitude of the DSIC charge.

23 As a number of witnesses have observed in this proceeding, granting a waiver of these  
24 restrictions requires a demonstration that the waiver is necessary for the Company be able

1 to “ensure and maintain adequate, efficient, safe, reliable and reasonable service.”<sup>1</sup> As  
2 such, I am advised by OSBA’s counsel that PGW bears the burden of demonstrating that  
3 it has no more reasonable options for financing the acceleration of mains replacement  
4 until its next base rates proceeding other than through the requested waivers.

5 **Q. At page 4, Mr. Golden indicates that the Commission generally intends that the**  
6 **DSIC be a simple mechanism, which does not revisit issues decided in previous base**  
7 **rates cases. Do you agree?**

8 A. I agree with Mr. Golden that the Commission intends that normal operation of the DSIC  
9 should indeed be a simple matter. However, in this proceeding, PGW is proposing a  
10 substantial departure from normal DSIC operation. In that light, it is my understanding  
11 that PGW has a burden to demonstrate that the requested waivers from standard DSIC  
12 operation are necessary to provide efficient, safe, reliable and reasonable service, and I do  
13 not believe that such a demonstration is a simple matter. PGW is asking for a waiver of a  
14 statutory provision, and it should be required to credibly demonstrate that such a waiver  
15 is necessary.

16 I would be very concerned if the Commission adopted a policy in this proceeding which  
17 would allow any utility to simply petition the Commission for a waiver of the 5 percent  
18 DSIC limit on the grounds of financial distress, without requiring that utility to provide a  
19 detailed financial demonstration that the waiver is necessary.

20 **Q. At page 3, Mr. Golden argues that “. . . it is not appropriate to single out one or a**  
21 **handful of those items as a source of funding for additional capital improvements**  
22 **without considering the myriad of cost items that have gone up (or have emerged)**  
23 **since PGW’s last base rates case.” Is this a valid criticism of your analysis?**

24 A. No, it is not. In fact, it is a criticism of PGW’s presentation in this proceeding.

25 In Exhibit IEC-2 of my direct testimony, I presented a detailed forecast of the Company’s  
26 financial condition based on the assumption that increased spending on mains  
27 replacement would be financed by increased borrowings. As this exhibit was derived

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<sup>1</sup> Act 11, § 1358(a)(1).

1 directly from the Company's own financial forecasts, my analysis explicitly considers all  
2 of the myriad changes since the Company's last base rates case. Moreover, despite Mr.  
3 Golden's negative assessment of the Company's financial situation in his rebuttal  
4 testimony, the Company's own financial forecasts depict a company that has substantially  
5 improved its financial position over the past six years, and fully expects to be able to  
6 continue to do so, with or without a waiver of the 5 percent cap on its DSIC rate.

7 In contrast, the Company offered no financial analysis in support of its claims of financial  
8 distress. The only financial forecasts provided were requested by OSBA in discovery.  
9 As such, it is PGW that has failed to recognize all the changes that have occurred since  
10 the last base rates proceeding. Moreover, without any such analysis, I am advised by  
11 OSBA counsel that PGW has not met its burden to justify a waiver of the DSIC upper  
12 limit.

13 **Q. At page 4, Mr. Golden states that your direct testimony “. . . fails to recognize that**  
14 **using some \$11 million from PGW's existing base rates to fund these additional**  
15 **capital improvements would erode its financial indicators to unacceptable levels.”**  
16 **Is this accurate?**

17 A. No. This statement is incorrect in two ways. First, in the detailed financial forecast  
18 presented in Exhibit IEC-2 of my direct testimony, I acknowledged that additional  
19 borrowing would be necessary to maintain necessary cash balances. Second, as also  
20 demonstrated in Exhibit IEC-2, I explicitly evaluated the impact of my recommendations  
21 on PGW's financial ratios, and I demonstrated that the future levels remained superior to  
22 PGW's current situation.

23 In contrast, I note that Mr. Golden offers no analysis showing how a relatively small  
24 amount of near-term financing would cause the Company's financial indicators to decline  
25 to “unacceptable levels.”

26 **Q. At page 5, Mr. Golden goes on to argue that your proposal would cause the**  
27 **Company's year-end cash balances to decline to unacceptable levels, thereby**  
28 **endangering the Company's improved bond ratings. Is this accurate?**

1 A. No, it is not. Although Mr. Golden provides no detailed analysis, he appears to have  
2 concluded that I propose that the additional \$11 million be simply taken out of the  
3 Company's cash balance. This is simply wrong. As detailed in Exhibit IEc-2, I  
4 recognized that some near term financing would be necessary. I also demonstrate in  
5 detail that, with this very modest financing, the Company's year-end cash balances would  
6 not deteriorate in any meaningful way.

7 **Q. At page 7, Mr. Golden argues that the Company's commercial paper program is**  
8 **designed as working capital financing, although it has been used to temporarily**  
9 **finance capital projects. He also argues that it is not designed to “. . . permanently**  
10 **fund capital improvements.” Is this a legitimate complaint?**

11 A. No. I have not proposed that short-term financing be used to “. . . permanently fund  
12 capital improvements.” As explicitly shown in Exhibit IEc-2, my analysis showed a need  
13 only for the use of short-term financing in 2016 and 2017, until the Company's forecast  
14 base rate increase goes into effect. Moreover, if the Company's commercial paper  
15 program is insufficient to raise the relatively small amount of capital needed, the  
16 Company should be able to temporarily increase longer-term debt. As stated at page 7 of  
17 my direct testimony and detailed in Exhibit IEc-2, the additional financing needed to  
18 maintain its financial ratios and cash balances is about \$18 million over the next two  
19 years. This contrasts with the Company's year-end 2015 long-term debt balance of \$940  
20 million and city equity of \$454 million.

21 Unfortunately, Mr. Golden attempts to paint my proposals as a permanent financing  
22 strategy. This picture is inconsistent with the very nature of the DSIC mechanism. The  
23 DSIC is designed to compensate utilities for costs incurred in between rate cases related  
24 to infrastructure improvements. The DSIC mechanism explicitly anticipates that DSIC-  
25 eligible capital will be rolled into rate base and base rates in the next base rates  
26 proceeding. Thus, the key question for the Commission in this proceeding is not whether  
27 the use of long-term debt is appropriate for permanent financing of the Company's long-  
28 term capital needs. The question is whether the Company has no reasonable short-term  
29 alternatives to finance the acceleration of mains replacement until the next base rates  
30 case.

1 **Q. At pages 7-8, Mr. Golden argues that PGW’s proposal to fund the additional mains**  
2 **replacement on a pay-as-you-go basis is explicitly authorized by Act 11, the**  
3 **Commission and PGW’s tariff. Is that correct?**

4 A. I am advised by counsel that it is. However, Act 11 states,

5 *For city natural gas distribution operations, recoverable costs shall be*  
6 *amounts reasonably expended or incurred to purchase and install eligible*  
7 *property and associated financing costs, if any, including debt service, debt*  
8 *service coverage and issuance costs.*<sup>2</sup> (emphasis added)

9 Thus, Act 11 clearly also anticipates that a city-owned gas distribution utility such as  
10 PGW might use debt financing for some or all of its DSIC-eligible expenditures. Thus,  
11 my recommendation that a combination of both debt financing and “pay-as-you-go”  
12 financing be used for PGW’s DSIC-eligible investments would appear to be fully  
13 consistent with the legislation.<sup>3</sup>

14 **Q. At page 8, Mr. Golden states, “Forcing PGW to take on additional debt to fund**  
15 **accelerated main replacement, thus raising its debt ratio again will risk its improved**  
16 **bond rating as well as pose a risk to its financial health.” Is that accurate?**

17 A. To the extent that Mr. Golden is attempting to claim that my proposal would cause an  
18 increase in the debt ratio, his statement is wrong. Once again, Mr. Golden offers no  
19 financial analysis in support of this assertion. In contrast, in my direct testimony and  
20 page 8 (Table IEC-3) and Exhibit IEC-2, I demonstrate that the impact of my proposal  
21 would result in continued improvement in the Company’s debt to capital ratio relative to  
22 fiscal year-end 2015 conditions.

23 **Q. At page 9, Mr. Golden asserts that you ignored the 1.5 interest coverage ratio**  
24 **minimum in your analysis. Is that correct?**

25 A. No. Interest coverage ratios are calculated in Exhibit IEC-2 and the ratios remain well  
26 above minimum levels.

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<sup>2</sup> Act 11, § 1357(c).

<sup>3</sup> It must also be noticed that, to a non-lawyer, the quoted section of Act 11 would appear to limit eligible costs to those related to amounts actually expended or incurred. As such, it is difficult for a layman to understand how PGW’s proposal to use forecast capital spending is consistent with the legislation.

1 Moreover, Mr. Golden incorrectly asserts that, due to this coverage ratio requirement, the  
2 effective interest costs on new debt related to mains acceleration would be 1.5 times the  
3 interest rate on that debt. That statement would only be true if PGW's current interest  
4 coverage ratio were at or below 1.5. As PGW's current interest coverage ratio is above  
5 that level, PGW does not need to charge ratepayers 1.5 times the actual interest cost  
6 incurred in order to continue to meet this requirement. This, also, is demonstrated in  
7 Exhibit IEc-2.

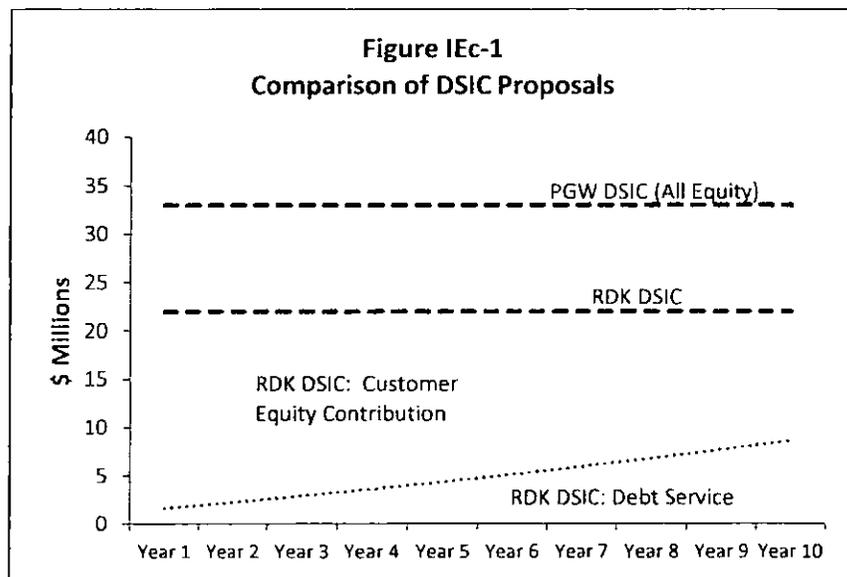
8 **Q. At page 10, Mr. Golden offers a graphic that purportedly compares the debt service**  
9 **payments with a pay-as-you-go approach. Is this an accurate representation of the**  
10 **implications of your proposal?**

11 A. Unfortunately, Mr. Golden presents no explanation, assumptions or supporting detail for  
12 his exhibit, making it difficult to rebut. Nevertheless, even a cursory review  
13 demonstrates that the exhibit is not consistent with my recommendation, in at least three  
14 respects. First, the exhibit appears to assume that I recommend that the entire \$33  
15 million in annual DSIC-eligible spending would be financed by debt. This is simply  
16 wrong. My recommendation is only that the additional \$11 million be financed by  
17 additional borrowing. Second, Mr. Golden's exhibit assumes that I am making a  
18 recommendation for financing for the next 19 years. As I explained earlier, my  
19 recommendation, like the DSIC mechanism itself, is intended to only apply until the next  
20 base rates case. Third, Mr. Golden's financing costs appear to be extremely high. For  
21 example, in 2023, Mr. Golden indicates that PGW would be incurring about \$33 million  
22 in financing costs on about \$250 million in investment (7.5 years at \$33 million per year),  
23 or 13.3 percent. As PGW's current average interest rate is about 4.5 percent, this value  
24 would appear to be excessive, even with a 1.5 times factor.

25 **Q. Can you provide a realistic demonstration of the impact of your proposal on debt**  
26 **service costs for PGW?**

27 A. Exhibit IEc-S1 provides such a demonstration. In preparing this demonstration, like Mr.  
28 Golden, I pretended that this approach represents a longer term plan, I pretended that the  
29 1.5 times interest coverage ratio is a binding constraint for the DSIC on a standalone  
30 basis, and I assumed that PGW's interest costs are 5 percent per year, above its current

1 average interest rate. Like Mr. Golden, I assume PGW will incur \$33 million per year in  
 2 DSIC-eligible capital expenditures, but I limit the DSIC to \$22 million per year  
 3 consistent with the current 5 percent cap. And like Mr. Golden, I prepared my evaluation  
 4 of this spending on a standalone basis. Figure IEC-1 below provides a comparison of my  
 5 proposal with the Company's proposal, based on the details provided in Exhibit IEC-S1.  
 6 As shown, the Company's proposal involves an annual equity contribution by ratepayers  
 7 of \$33 million per year. Under my proposal, the DSIC is set at \$22 million per year, it  
 8 consists primarily of an equity contribution in the beginning of the period, and it shows a  
 9 steadily increasing debt service requirement over the 10-year period.



10 At the outset, it is obvious that PGW cannot continue to incur \$33 million per year in  
 11 capital costs in perpetuity while only recovering \$22 million in revenues. However,  
 12 because the DSIC is designed as a short-term mechanism between rate cases, the correct  
 13 question is whether my proposed use of both debt and pay-as-you-go financing will cause  
 14 near-term harm to PGW's finances. The answer, as shown in Exhibit IEC-S1, is clearly  
 15 no.

16 Let me walk through this example. In Year 0, I assume conservatively that PGW needs  
 17 to borrow the \$33 million to finance Year 1 capital spending equal to that amount. In  
 18 Year 1, PGW earns \$22 million in revenues, and it incurs \$1.7 million in interest costs  
 19 (5% of the \$33 million borrowed) and some depreciation on the new plant. This

1 produces income of \$19.9 million in Year 1, and therefore \$19.9 million in equity. PGW  
2 would then be able to use its Year 1 cash income and depreciation to reduce the amount  
3 that it needs to borrow to finance the Year 2 capital spending. Thus, in the example, debt  
4 increases from \$33 million at Year 0 to \$45.7 million at the end of Year 1, as \$12.7  
5 additional debt is required to finance the portion of the \$33 million not met by  
6 income/depreciation.

7 For Year 1, PGW's interest coverage ratio for the DSIC is 13.1:1, obviously well above  
8 the 1.5:1 restriction in PGW's debt covenants. On a balance sheet basis at the end of  
9 Year 1, PGW would have financed the first two years' DSIC spending at 30%  
10 equity/70% debt, about the same as its current overall financial position. Moreover,  
11 PGW's year-end cash balance is strengthened by \$33 million. Thus, in Year 1, the DSIC  
12 program generally serves to improve PGW's financial situation on all of the criteria that  
13 Mr. Golden cites.

14 If we move on to Year 2, PGW expends an additional \$33 million in capital, and earns  
15 \$22 million in DSIC revenue. Income from the DSIC program declines to \$18.5 million,  
16 after 2.3 million in interest costs (5% times the \$45.7 million in debt at the end of Year 1)  
17 and depreciation of \$1.2 million. Interest coverage in Year 2 is at 9.1:1, the debt share of  
18 capital improves to 61%, and the year-end cash balance remains at \$33 million. At the  
19 end of Year 2, all financial indicators are substantially better than PGW's financial  
20 position excluding the DSIC.

21 For demonstration purposes, the example continues out beyond Year 2 to Year 10. In  
22 reality, however, PGW anticipates having a base rate increase in less than two years.  
23 Nevertheless, even when evaluated over the 10-year period, Exhibit IEc-S1 shows that  
24 the interest coverage ratio remains above 1.5:1, although by the end of the period it is  
25 down to 1.6:1. The debt to capital ratio declines to about 55% in Years 4 through 6, and  
26 then drifts back upward to 60% in Year 10, but remains consistently below PGW's  
27 current average. Thus, even after 10 years of operating at this level, the DSIC  
28 mechanism still serves to reduce PGW's financial leverage. Finally, given the very

1 conservative nature of the assumptions, the year-end cash balance remains at a positive  
2 \$33 million throughout the entire time period.

3 Thus, operating the DSIC as I recommended in my direct testimony will improve the  
4 Company's financial position relative to having no DSIC at all. Moreover, it would  
5 continue to do so long past the time that a base rates increase is anticipated.

6 **Q. At page 9 in footnote 10, Mr. Golden states, "For example, it isn't clear why the**  
7 **appropriate discount rate for ratepayers is not the after tax interest rate on a**  
8 **customer's mortgage, which would be around the same level as PGW's debt interest**  
9 **rate after costs of issuance etc." Do you agree?**

10 **A.** No. As Mr. Golden well knows, there is an enormous difference in risk between the  
11 interest cost on a home mortgage that is secured by real property and the cost of  
12 unsecured borrowing to pay utility bills. By hornbook finance theory, higher risk  
13 requires a higher return. The home mortgage interest rate cited by Mr. Golden is  
14 therefore too low.

15 In addition, Mr. Golden's reference to after tax mortgage costs at least suggests that Mr.  
16 Golden believes that the ratepayer cost of capital should be based on PGW ratepayers  
17 who (a) have home mortgages, (b) have unused mortgage credit available, and (c)  
18 itemize their home mortgage interest payments as deductions on their income taxes. I do  
19 not believe that such homeowners are sufficiently representative of PGW's residential  
20 and small business customer base to use for that purpose. Well-to-do homeowners that  
21 itemize deductions are more likely to be the types of customers who can *voluntarily*  
22 invest in PGW bonds. It must be recognized that, in addition to the well-to-do, PGW is  
23 implicitly requesting the Commission for approval to *require* its less affluent customers  
24 to provide 100 percent equity financing for its DSIC program. I am therefore concerned  
25 about the implications of the mandatory equity contributions for middle and lower  
26 income residential ratepayers and small businesses. I expect that many of these  
27 customers rent their homes or places of business, and do not have unused mortgage credit  
28 lines upon which they can rely. Many small businesses likely do not have access to  
29 financing at bank prime lending rates, and face considerably higher opportunity costs of

1 capital. Some less well-to-do residential ratepayers are likely carrying sub-prime home  
2 equity loans, relying on outstanding credit card debt, or even using payday loans. I  
3 therefore disagree with Mr. Golden that the ratepayer cost of capital is similar to that of  
4 PGW.

5 **Q. At page 9 in footnote 10, Mr. Golden goes on to state, “Moreover, in some years**  
6 **while the DSIC charge may increase, overall rates may decrease, due to reductions**  
7 **in gas or other costs. For that reason, applying a ‘time value’ analysis to these**  
8 **streams of payments would not appear to produce useful information.” Do you**  
9 **agree?**

10 **A.** No. Mr. Golden’s statement conflicts with the most basic principles of modern finance.  
11 Expending one dollar today is not the same as expending one dollar ten years from today.  
12 Earning one dollar today is not the same as earning one dollar ten years from today.  
13 While there can be reasonable debate about the correct value to use in measuring the cost  
14 of capital, I know of no financial analysts who would agree with Mr. Golden that the time  
15 value of money should be completely ignored when evaluating the difference between a  
16 near-term upfront payment and a long-term stream of payments.

17 **Q. At page 10, Mr. Golden claims that you “suggest that PGW should be required to**  
18 **request that the city of Philadelphia waive, or grant-back, some or all of the \$18**  
19 **million payment it receives from PGW.” Is that accurate?**

20 **A.** My testimony makes no such recommendation. My testimony indicates only that such an  
21 option was advanced in the Commission’s Staff Report. Mr. Golden’s subsequent  
22 assertion on page 11 of his rebuttal testimony that my suggestion is not consistent with  
23 the Commission’s ratemaking practice for PGW is also wrong.

24 **Q. At page 11, Mr. Golden states, “Some may view the \$18 million payment as the only**  
25 **return or payment the City receives from its ownership of the gas distribution**  
26 **system, funding the accelerated main replacement in this way would be similar to**  
27 **demanding that an investor owned utility fund distribution infrastructure**  
28 **investments solely from shareholder equity, without any ability to recover those**

1           **expenditures from ratepayers.” Recognizing that Mr. Golden cautiously did not**  
2           **advance this view as his own, do you agree with this statement?**

3    A.    Based on the information available to me at present, I do not. In the case of investor-  
4           owned utilities, the equity in the business has been provided by its owners. As such,  
5           those owners are generally entitled to a reasonable opportunity to earn a return of and on  
6           that investment, recognizing the relative risk of the investment. Allowing such a return to  
7           the City of Philadelphia from PGW ownership would only be comparable if the City had  
8           contributed the equity in the business. In my limited experience with PGW over the past  
9           15 years, I do not believe the City has made any such equity contributions. As I  
10          demonstrated in my direct testimony, the improvement in PGW’s financial condition over  
11          the past six years has resulted from ratepayer provided equity. Under the logic of Mr.  
12          Golden’s statement, the City of Philadelphia would appear to demand that ratepayers  
13          provide all of the equity needed by the Company to operate in a financially prudent  
14          manner, and would then require ratepayers to pay the City a return on the equity that the  
15          ratepayers themselves have contributed.

16                Nevertheless, it is certainly possible that, at some point in the past, the City has made a  
17                significant equity contribution to PGW that would justify an \$18 million annual fee. To  
18                the extent that PGW can document such an equity contribution, I would withdraw my  
19                objection to the referenced statement.

20    **Q.    At page 5 of his rebuttal testimony, Mr. Dybalski claims that it your testimony that**  
21           **PGW proposes a 10 percent cap on its DSIC charge is not constrained because the**  
22           **Company’s budget for accelerated mains replacement is capped at the \$33 million**  
23           **level. Is that reasonable?**

24    A.    No, it is not. To my knowledge, the Commission has no control over PGW’s capital  
25           spending budget. As such, the budget could presumably be increased. In addition, Mr.  
26           Golden’s testimony at page 13 indicates that the Company’s capital budget is “evolving”  
27           and would appear to give the Company some flexibility as to when its capital is spent.  
28           The basic unrebutted arithmetic fact is that, if the language proposed by PGW is adopted,  
29           PGW will be eligible to recover all expenditures up to 10 percent of distribution revenues

1 in each year. To my knowledge, whether the Company chooses to expend that amount is  
2 at the Company's discretion, and is not controlled by the Commission.

3 **Q. At page 5 Mr. Dybalski claims that the DSIC has, to-date, under-recovered DSIC-**  
4 **eligible costs by \$4.1 million, and he presents a table to that effect on page 6. Is that**  
5 **accurate?**

6 A. No. Mr. Dybalski's table incorrectly includes \$5.29 million in DSIC-eligible costs  
7 incurred by PGW during the July-September 2015 quarter. It is not surprising that these  
8 costs have not been recovered in the DSIC charge, since those costs may not be included  
9 in rates until October 2015. In reality, PGW earned \$34.26 million in DSIC revenue  
10 from July 2013 to September 2015. The comparable costs for that recovery period,  
11 namely those incurred from April 2013 to June 2015, were \$33.07 million. Thus, when  
12 costs and revenues are compared on the same basis, PGW has, in fact, over-recovered  
13 costs by some \$1.19 million. The attached Exhibit IEC-S2 is an updated summary of  
14 PGW's DSIC filings (originally presented in Exhibit IEC-3), which includes the revenue  
15 information provided in Mr. Dybalski's rebuttal testimony.

16 **Q. At page 9, Mr. Dybalski states that your proposal to reduce instability in the DSIC**  
17 **by using historical annual costs “. . . would not be appropriate because the historic**  
18 **DSIC revenue is set based on the level of DSIC spending in the prior year's period**  
19 **in which PGW's DSIC was not levelized.” Is that an accurate statement?**

20 A. No. The issue of making the DSIC charges more stable on a going-forward basis is not  
21 related to past ratemaking practice. I am advised by counsel that, by law, DSIC rates are  
22 set based on prior period actual expenditures. If those expenditures are based on only 3-  
23 months of capital spending, the DSIC charge is likely to be unstable, as the past  
24 experience demonstrates. If, however, those expenditures are based on a rolling 12-  
25 month average of capital spending, the DSIC charges are likely to be somewhat more  
26 stable.<sup>4</sup> Whether the DSIC charge in the prior periods was levelized or not is irrelevant to  
27 the rate stability issue, on a going forward basis.

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<sup>4</sup> As I indicated at page 13 of my direct testimony, due to the fundamental differences between a rate of return approach to the DSIC and a cash flow approach to the DSIC, the rate of return approach will necessarily be more stable.

1           Moreover, as was the case with Mr. Golden's rebuttal, Mr. Dybalski offers no analysis  
2           showing why he believes that a 12-month historical method is not more stable than a 3-  
3           month historical method. In my experience, it is common knowledge that longer  
4           reconciliation periods generally result in more stable rates.

5   **Q.   Does this conclude your surrebuttal testimony?**

6   **A.   Yes, it does.**

**EXHIBIT IEc-S1**

**DSIC ILLUSTRATIVE EXAMPLE**

## Exhibit IEC-S1

## Implications of Part Debt, Part Equity DSIC Mechanism

<i>Assumptions</i>											
Annual DSIC-Eligible Capital		33									
DSIC Revenue Limit		22									
Interest Rate		5.0%									
Depreciation Years		40									
	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>	<b>Year 8</b>	<b>Year 9</b>	<b>Year 10</b>
<b>Capital Spending</b>		33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
<b>Balance Sheet</b>											
Cash	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Gross Plant		33.0	66.0	99.0	132.0	165.0	198.0	231.0	264.0	297.0	330.0
Accumulated Depreciation		-0.4	-1.7	-3.7	-6.5	-10.3	-14.9	-20.2	-26.4	-33.4	-41.3
Net Plant		32.6	64.4	95.3	125.4	154.7	183.2	210.8	237.6	263.6	288.8
<b>Total Assets</b>		<b>65.6</b>	<b>97.4</b>	<b>128.3</b>	<b>158.4</b>	<b>187.7</b>	<b>216.2</b>	<b>243.8</b>	<b>270.6</b>	<b>296.6</b>	<b>321.8</b>
Equity		19.9	38.4	55.4	70.9	84.8	97.1	107.8	116.8	124.1	129.6
Debt	33.0	45.7	58.9	72.9	87.5	102.9	119.0	136.0	153.8	172.5	192.1
<b>Total Capital</b>	<b>33.0</b>	<b>65.6</b>	<b>97.4</b>	<b>128.3</b>	<b>158.4</b>	<b>187.7</b>	<b>216.2</b>	<b>243.8</b>	<b>270.6</b>	<b>296.6</b>	<b>321.8</b>
Debt Share	100%	70%	61%	57%	55%	55%	55%	56%	57%	58%	60%
<b>Income</b>											
DSIC Revenues		22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Less: Depreciation		-0.4	-1.2	-2.1	-2.9	-3.7	-4.5	-5.4	-6.2	-7.0	-7.8
Less: Interest		-1.7	-2.3	-2.9	-3.6	-4.4	-5.1	-6.0	-6.8	-7.7	-8.6
<b>Net Income</b>	<b>19.9</b>	<b>18.5</b>	<b>17.0</b>	<b>15.5</b>	<b>13.9</b>	<b>12.3</b>	<b>10.7</b>	<b>9.0</b>	<b>7.3</b>	<b>5.5</b>	
Interest Coverage Ratio		13.1	9.1	6.8	5.2	4.2	3.4	2.8	2.3	1.9	1.6
<b>Cash Flow</b>											
Income		19.9	18.5	17.0	15.5	13.9	12.3	10.7	9.0	7.3	5.5
Depreciation		0.4	1.2	2.1	2.9	3.7	4.5	5.4	6.2	7.0	7.8
Debt Financing	33.0	12.7	13.3	13.9	14.6	15.4	16.1	17.0	17.8	18.7	19.6
Capital Spending		-33.0	-33.0	-33.0	-33.0	-33.0	-33.0	-33.0	-33.0	-33.0	-33.0
<b>Total Cash Flow</b>	<b>33.0</b>	<b>0.0</b>									

**EXHIBIT IEc-S2**

**SUMMARY OF PGW DSIC FILINGS  
(UPDATED VERSION OF EXHIBIT IEc-3)**

Exhibit IEC-52 (Exhibit IEC-3 Updated)  
Summary of PGW DSIC Filings

Quarterly Filing	Month	Recoverable Costs	DSIC Revenue Billed	DSIC Revenue Related to Recon	Over/(Under) Collection	Months	Interest Rate	Interest	Recoverable Costs	Annual Reconciliation	Quarterly Revenues	Percent
CY13 Q3	Jul-13	1,262,448	238,646		-1,023,802	15	5.00%	-63,988				
	Aug-13	1,262,448	442,329		-820,119	14	5.50%	-52,624	3,787,345	0	125,387,087	3.02%
	Sep-13	1,262,448	473,982		-788,466	13	5.75%	-49,115				
CY13 Q4	Oct-13	1,646,528	631,215		-1,015,313	12	5.75%	-58,380				
	Nov-13	1,646,528	1,374,992		-271,536	11	6.00%	-14,934	4,939,583	0	119,311,376	4.14%
	Dec-13	<u>1,646,528</u>	<u>2,440,437</u>		<u>793,909</u>	<u>10</u>	<u>5.75%</u>	<u>38,041</u>				
<b>Total CY 2013</b>		<b>8,726,928</b>	<b>5,601,601</b>	<b>0</b>	<b>-3,125,327</b>			<b>-201,000</b>	<b>8,726,928</b>		<b>244,698,463</b>	<b>3.57%</b>
CY14 Q1	Jan-14	1,692,096	3,329,041	0	1,636,945	21	5.75%	164,718				
	Feb-14	1,692,096	3,799,835	0	2,107,739	20	6.00%	210,774	5,076,289	0	116,961,476	4.34%
	Mar-14	1,692,096	3,338,292	0	1,646,196	19	6.25%	162,905				
CY14 Q2	Apr-14	0	1,628,220	1,628,220	0	18	5.75%	0				
	May-14	0	656,230	656,230	0	17	5.75%	0	0	3,125,326	120,206,937	2.60%
	Jun-14	0	442,690	442,690	0	16	5.75%	0				
CY14 Q3	Jul-14	1,895,060	571,895	76,767	-1,399,932	15	5.50%	-96,245				
	Aug-14	1,895,060	698,803	93,802	-1,290,059	14	5.50%	-82,779	5,685,180	781,332	110,384,402	5.00%
	Sep-14	1,895,060	722,636	97,001	-1,269,425	13	5.50%	-75,637				
CY14 Q4	Oct-14	2,591,705	812,714	115,052	-1,894,043	12	5.25%	-99,437				
	Nov-14	2,591,705	1,517,663	214,849	-1,288,891	11	5.50%	-64,982	7,775,115	781,332	110,384,402	5.00%
	Dec-14	<u>2,591,705</u>	<u>2,804,822</u>	<u>397,066</u>	<u>-1,83,949</u>	<u>10</u>	<u>5.25%</u>	<u>-8,048</u>				
<b>Total CY 2014</b>		<b>18,536,584</b>	<b>20,322,841</b>	<b>3,721,677</b>	<b>-1,935,420</b>			<b>111,269</b>	<b>18,536,584</b>		<b>457,937,217</b>	<b>4.05%</b>
<b>Total CY 2013/14</b>		<b>27,263,512</b>	<b>25,924,442</b>		<b>-1,339,070</b>			<b>-89,731</b>	<b>27,263,512</b>		<b>702,635,680</b>	<b>3.88%</b>
CY15 Q1	Jan-15	786,761	2,419,579	NA	1,632,818	21	NA	NA				
	Feb-15	786,761	1,772,081	NA	985,320	20	NA	NA	2,360,282	0	105,515,104	2.24%
	Mar-15	786,761	1,655,303	NA	868,542	19	NA	NA				
CY15 Q2	Apr-15	644,033	983,528	NA	339,495	18	NA	NA				
	May-15	644,033	458,174	NA	-185,859	17	NA	NA	1,932,098	334,768	108,441,578	2.09%
	Jun-15	644,033	325,740	NA	-318,293	16	NA	NA				
CY15 Q3	Jul-15	<u>503,955</u>	<u>268,558</u>	<u>NA</u>	<u>-235,397</u>	<u>15</u>	<u>NA</u>	<u>NA</u>				
	Aug-15	<u>503,955</u>	<u>226,885</u>	<u>NA</u>	<u>-277,070</u>	<u>14</u>	<u>NA</u>	<u>NA</u>	1,511,865	334,767	112,434,382	1.64%
	Sep-15	<u>503,955</u>	<u>222,845</u>	<u>NA</u>	<u>-281,110</u>	<u>13</u>	<u>NA</u>	<u>NA</u>				
<b>Ytd CY 2015</b>		<b>5,804,245</b>	<b>8,332,693</b>	<b>0</b>	<b>2,528,448</b>				<b>5,804,245</b>	<b>669,535</b>	<b>326,391,064</b>	<b>0</b>
<b>Total</b>		<b>33,067,757</b>	<b>34,257,135</b>		<b>1,189,378</b>			<b>-89,731</b>	<b>33,067,757</b>	<b>669,535</b>	<b>1,029,026,744</b>	<b>0</b>

Notes:

- 1) PGW responses appear to have inadvertently omitted the Q3 2014 filing. Certain values are estimated.
- 2) PGW did not provide actual revenue values for CY 2015.
- 3) It is not clear why the reconciliation value for Q2 2014 was set at the total CY 2013 under-collection, rather than one-fourth that amount.

Sources: OSBA-1-8 attachments, PGW St. No. 2-R page 6.

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of Philadelphia Gas :  
Works for Waiver of Provisions :  
Of Act 11 to Increase the : Docket No. P-2015-2501500  
Distribution System Improvement :  
Charge Cap and to Permit :  
Levelization of DSIC Charges :

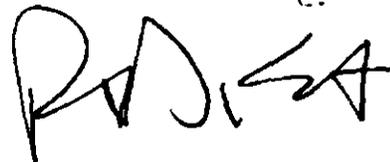
**VERIFICATION**

Reference: OSBA Statement No. 1  
Direct Testimony and Exhibits of Robert D. Knecht

OSBA Statement No. 2  
Surrebuttal Testimony and Exhibits of Robert D. Knecht

I, Robert D. Knecht, hereby state that the facts set forth in the above referenced statements are true and correct to the best of my knowledge information and belief and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities).

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November 4, 2015