S&P Global Ratings

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Philadelphia; Gas; Joint Criteria

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Credit Profile		
US$215.055 mil gas wks rev bnds ser 16TH A due 08/01/2050		
Long Term Rating	A/Stable	New
US$57.08 mil gas wks rev bnds ser 16TH B due 08/01/2040		
Long Term Rating	A/Stable	New

Rating Action

S&P Global Ratings assigned its 'A' rating to the city of Philadelphia's gas works (PGW) revenue and refunding bonds (1998 general ordinance), 16th series A&B. At the same time, S&P Global Ratings affirmed its 'A' long-term rating and underlying rating (SPUR) on PGW's outstanding parity debt, issued under the 1998 general ordinance. The outlook is stable.

S&P Global Ratings also affirmed its ratings on the following issues rated under our joint support criteria (low correlation):

- 'AA+/A-1+' rating on the 1998 ordinance, eighth series B&E bonds, jointly supported by a letter of credit from TD Bank N.A.;
- 'AA/A-1' rating on the 1998 ordinance, eighth series C bonds, jointly supported by a letter of credit from Barclays Bank PLC; and
- 'AA+/A-1+' rating on the 1998 ordinance, eighth series D bonds, jointly supported by a letter of credit from Royal Bank of Canada.

Securing the bonds is a pledge of gas works revenues net of operating expenses. The 16th series A bonds (about $215 million) will be used to fund capital needs of the gas system, while the 16th series B bonds (about $57 million) will refund the ninth series bonds. At fiscal year-end Aug. 31, 2019, PGW had $1.1 billion in debt outstanding.

Credit overview

The rating reflects our opinion of PGW's strong enterprise risk profile and very strong financial risk profile.

The strong enterprise risk profile reflects our view of PGW's:

- Strong operational and management assessment, highlighted by strong operational assets, environmental regulation and compliance, very strong management, policies and planning, and strong rate-setting practices;
- Very strong service area economic fundamentals, reflecting the stability provided by a broad and mostly residential revenue base of about 510,000 customer accounts with minimal customer concentration, partially offset by low income levels;
- Vulnerable market position, due to very high rates versus those of other regional providers and PGW's dependence on the Pennsylvania Public Utility Commission (the "PUC") for approval for base-rate increases, with a mixed history of support for filings, although this has improved recently. Also offsetting regulatory risk is our view of

PGW's credit-supportive rate structure that includes a number of dedicated surcharges that support capital improvements and other postemployment benefits, a weather-normalization adjustment that insulates margins from weather variability, and a gas cost rate adjustor that automatically passes on gas costs to ratepayers on a quarterly basis; and

- Extremely strong industry risk relative to other industries and sectors.

The very strong financial risk profile reflects our view of PGW's:

- Extremely strong coverage metrics, as evidenced by very robust coverage of fixed costs (debt service payments after the annual transfer to the city of Philadelphia's general fund) averaging 2.2x over fiscal years 2017-2019. Management estimates fixed cost coverage in fiscal years 2019-2024 in a range of 1.7x-2.2x under what we view as reasonable assumptions;
- Very strong liquidity and reserves, reflecting $124 million in unrestricted cash as of audited fiscal 2019 (measuring a strong 96 days of operating expenses), which management projects will remain near current levels. In addition, a $120 million commercial paper (CP) program the utility can use to provide working capital, as well as for capital purposes, bolsters liquidity to 189 days of operating expenses; and
- Highly vulnerable debt and liabilities position, suggested by a very high debt-to-capitalization ratio of 84% as of fiscal 2019, although projected to decline 64% by fiscal 2024, and with a large capital plan of $728 million over the next five years as PGW addresses its main-replacement program.

We have applied a one-notch holistic negative adjustment from the initial indicative rating to arrive at the final rating based on our view that PGW's debt burden is extremely high; and that its very large capital plan, above-average rates, and below-average income levels constrain financial flexibility.

The 1998 ordinance bonds, although rated as working-lien bonds, were subordinate to the closed senior-lien 1975 ordinance debt. They are effectively senior-lien obligations because the 1975 ordinance bonds have been refunded and the lien extinguished.

PGW is the largest U.S municipally owned gas utility, with 510,000 customers providing what we view as a diverse and stable revenue stream. Residential customers, which in our view provide a stable demand profile, account for 80% of revenue, chiefly for home heating purposes. Customer concentration is not a credit concern, as the 10 leading customers account for less than 3% of revenue.

Despite the COVID-19 moratorium on shut-offs, March 2020 billings and collections suggest that to date, there has been little impact from the COVID-19 pandemic, and we expect that this will continue due to a number of factors:

- PGW's sales are largely to residential customers for home heating purposes, which are less subject to demand variability than for commercial and industrial customers;
- Commercial and industrial customers generally procure gas supply from alternate providers, which reduces the impact from the pandemic-related shutdown;
- March is a shoulder month, when demand is generally low, and weather conditions were mild, making bills relatively more manageable. More significant impact would likely not be experienced until late 2020; and
- Natural gas prices have been low for an extended period, reducing the economic pressure that might otherwise

cause delinquent payment.

Pennsylvania ratepayers have the ability to choose their gas supplier. If gas is taken from a third-party supplier, the customer continues to take and pay for distribution service from PGW. We believe that in this way, PGW's margins aren't materially affected by whether a customer chooses a third-party supplier or elects to continue taking the fully bundled service.

The PUC is the approving body for PGW's base-rate requests. In February 2020, PGW filed for a $70 million base increase (10.5% increase in revenue), and management expects that the PUC will approve some portion of the request by November 2020, with the new rates taking effect in December 2020. Although relations with the PUC appear to have improved, there is a history of difficulty in getting base-rate increases approved in full. Although PGW is subject to rate regulation and does not benefit from the flexibility we typically associate with municipal utilities that have autonomous rate-setting authority, recent years' regulatory decisions provided rate relief that supports robust coverage metrics.

PGW's rates are significantly higher than those of other Pennsylvania utilities, due to several factors. Although PGW's rates are high relative to those of other providers, the fact that gas commodity costs are low has diminished the impact of the disparity.

In our view, the PGW management team is deep and experienced, and has adopted policies that have reduced operating and financial risk. These include the use of storage and liquefied natural gas (LNG) to shave peak demand, a purchased gas cost tracker, a weather-normalization clause that insulates margins from weather variability, the adoption of several cost trackers that ensure adequate funding for cast iron main replacement, and pension and other postemployment benefit funding.

Low collection rates had plagued PGW for several years, although this has improved over the past decade. We believe the improvement resulted from low natural gas prices and lower demand associated with generally warmer weather, driving down customer bills and reducing delinquencies.

We view PGW's coverage metrics as extremely strong, with fixed cost coverage (FCC)maintained at an average of 2.2x over the past three years (through fiscal 2019), even after the annual $18 million city transfer. PGW estimates FCC in a range of 1.7x-2.2x through 2024. In our opinion, PGW has a mutually interdependent relationship with the city. We understand that Philadelphia's general fund financial position has strengthened over the past several years, reducing the likelihood that the city would seek a higher level of support from PGW. However, as the recession extends and deepens, this remains a risk.

PGW had $244 million of liquidity available at Aug. 31, 2019, representing 189 days of operating expenses, which we view as very strong. However, we believe that PGW's debt and liabilities profile is highly vulnerable, as suggested by a debt-to-capitalization ratio of 84% as of fiscal 2019, although this is projected to decline to 64% by fiscal 2024, despite a $728 million capital plan that is expected to be 50% debt funded.

The stable outlook reflects our view that the utility will be able maintain its current rating despite the challenges presented by COVID-19. Specifically, we believe that the largely residential home heating demand profile and robust financial metrics provide an operating cushion.

Environmental, social and governance

S&P Global Ratings recently revised the outlook for the public utilities sector to negative from stable due to the COVID-19 pandemic (see "All U.S. Public Finance Sector Outlooks Are Now Negative," published April 1, 2020, on RatingsDirect).

PGW's environmental risks relate chiefly to its aging cast iron mains, but in our view, this is being addressed as part of a replacement program, which has been accelerated in recent years. In our view, PGW has applied appropriate measures to stem the spread of COVID-19 and protect the population's health and safety, which we view as a social risk under our environmental, social, and governance (ESG) factors.. Nevertheless, we believe that the utility's demand profile and robust financial metrics limit the budgetary challenges, and the risk to cash flows and liquidity. We view PGW's need to obtain approval for base-rate increases as a governance risk, but believe that the utility's robust financial metrics provide a cushion in the event of disallowances.

Stable Outlook

Downside scenario

As the pandemic spreads and the recession deepens, operating stress may grow and demand may decline or delinquencies increase. In our view, the economic contraction could challenge PGW's ability to gain approval for base rate increases, but we believe that downside rating pressure is limited given PGW's very robust coverage levels and myriad of available pass-through mechanisms.

Upside scenario

We do not anticipate raising the rating over the next two years because of the challenges and uncertainties presented by COVID-19. As the pandemic spreads and the attendant recession deepens, operating stress may increase, demand may decline, delinquencies may increase, and the general government may look to the utility to provide greater assistance in support of its operations--plugging revenue shortfalls or funding increased operating expenses. At this time, and in our view, these risks serve to constrain credit improvement. Other factors constraining credit improvement include limitations of the service area economy (highlighted by low income levels and above-average unemployment), high rates, substantial capital needs, and a heavy debt burden.

Credit Opinion

Enterprise Risk Profile: Strong

Operational Management Assessment (OMA) - Strong

PGW has access to two interstate natural gas pipelines--Spectra Energy and Transcontinental Gas Pipe Line Corp.--providing the utility with flexibility to procure favorable pricing. PGW is primarily a distribution gas utility, taking delivery at nine city gates. Storage capacity and LNG provide PGW the ability to shave costs during peak demand periods.

About half of supply is baseload, one-third is swing supply, 15% is through bundled offsite strategy, and about 5% is LNG. PGW has 16 gas supply contracts. The distribution system is comprised of approximately 3,020 miles of gas mains, a high proportion of which are cast iron. PGW's capital improvement plan--which measures more than $725 million --is centered on replacement of these cast iron mains over the next 40 years, at a cost of about $37 million per year. The cast iron main replacement program is funded with proceeds from a 7.5% distribution system improvement charge (DSIC) that was approved by the PUC. The 2020 base-rate request, if approved in full, would enable PGW to accelerate this program to 35 years, but given the potential pressures related to COVID-19, PGW may seek to defer replacements in the near term.

The PGW management team is deep and experienced, and has adopted policies that have reduced operating and financial risk. These include the use of storage and LNG to shave peak demand, a purchased gas cost tracker, a weather-normalization clause that insulates margins from weather variability, the adoption of several cost trackers that ensure adequate funding for cast main replacement (the DSIC), and pension and other postemployment benefit funding. PGW also targets 2x debt service coverage, which is above the 1.5x required under its rate covenant. Labor contracts were recently extended by two years (3.0% wage increases in May 2020 and May 2021, respectively), enhancing expense predictability. Pension funding is relatively solid at 69%, and PGW is making pension payments at about 10% above its annual required contribution, which is based on a 30-year, closed amortization funding. Transfers to the city's general fund are, by formal policy, a flat $18 million and would require city council approval to change, as well as approval of the PUC.

PGW must obtain PUC approval of base-rate increases, which serves as a potential credit limitation; however, in PGW's case, the regulator has approved a variety of surcharges and has shown greater support for base-rate increases, although we note that it still has not approved the full rate increase request filed by PGW. Base rates are regulated by the PUC, which is obligated to use the cash flow methodology to determine PGW's "just and reasonable" rates. Management has done a good job in recent years of improving communication and relations with the PUC, which has resulted in a better understanding of PGW's not-for-profit model and a better record of gaining approval for rate and surcharge requests. From 2000 (when the commission began regulating the utility's rates) to October 2008, the commission approved just 42% of the total amount of base-rate increases PGW requested, although all gas-cost rate adjustments (adjusted quarterly) have been received in full and on time. In 2017, the PUC approved 60% ($42 million) of the $70 million request for a base-rate increase.

Economic fundamentals – Very strong

PGW is the largest U.S municipally owned gas utility, with 510,000 customers providing what we view as a diverse and stable revenue stream. Residential customers, which in our view provide a stable demand profile, account for 80% of revenue, chiefly for home heating purposes. Customer concentration is not a credit concern, as the 10 leading customers account for less than 3% of revenue.

Pennsylvania ratepayers have the ability to choose their gas supplier. If gas is taken from a third-party supplier, the customer continues to take and pay for distribution service from PGW. We believe that in this way, PGW's margins aren't materially affected by whether a customer chooses a third-party supplier or elects to continue taking the fully bundled service. Almost all customer growth is unbundled commercial/industrial, with gas supplied by alternate suppliers.

Demographics are weak, but somewhat improved over the past couple of years with median household effective buying income at 77% of the national level (up from 74% in 2017). The utility historically did not shut off service for non-payment. In past years, when natural gas prices were high, PGW experienced low collection rates (in the mid-80% area) and high bad debt expense. Several years ago, PGW began a program of shutting off service for non-payment and placed liens on property tax bills, which coupled with declining gas prices, led to improved collection rates (at least 96% range for the past 10 years). Although there is now a moratorium on shut-offs in response to COVID-19, there has not been an impact on collection rates (for mid-March through April 10). Management attributes this to low gas prices and the fact that the period is in the shoulder month, with relatively low demand. However, as the COVID shutdown extends and as unemployment rates rise, there is heightened risk related to collections. We do not anticipate this risk will be realized unless the economic effects of COVID extend into the winter of 2020.

Philadelphia is the sixth-largest city in the U.S. in terms of population. It is in the Philadelphia-Camden-Wilmington metropolitan statistical area, which we consider broad and diverse. Philadelphia's economy is comparatively diverse, with strong health care and higher education sectors, with historically a more moderate employment growth base, and a higher unemployment rate.

Market position - Vulnerable

The PUC is the approving body for PGW's base-rate requests. Although relations with the PUC appear to have improved, there is a history of difficulty in getting base-rate increases approved in full; nevertheless, we believe that PGW has a recent history of getting approvals necessary to maintain robust financial metrics. We also note a good record of getting targeted surcharges approved.

In February 2020, PGW filed for a $70 million base increase (10.5% increase in revenue), and management expects that the PUC will approve some portion of the request by November 2020, with the new rates taking effect in December 2020. In 2017, PGW requested a $70 million base-rate increase, and after a settlement between PGW and interveners, the PUC approved a $42 million increase.

PGW's rates are significantly higher than those of other Pennsylvania utilities, due to several factors. These include: PGW's high delivery charge (partially a function of significant costs related to its gas main replacement program); the number and level of surcharges billed to the customers; a high number of low-income and senior citizens customers taking discounted gas (other customers shoulder the social program cost, as passed through in PGW's universal service charge); and high accumulated bad debt expense.

Although PGW's rates are high relative to those of other providers, the fact that gas commodity costs are low has diminished the impact of the disparity. We note that residential customers have generally not opted to switch to alternate gas suppliers, and that most commercial/industrial customers are already taking gas supply from alternate providers.

Although incomes have ticked up slightly, the change is not significant enough to warrant a change in the assessment, especially given the challenges and uncertainties associated with the COVID-19 pandemic and attendant steep economic decline. The presence of low incomes, combined with cost shifting among customer classes and rate regulation, warrants the adjustment, but the rate-regulation aspect is substantially tempered by a strong recent track record of cost recovery. Although PGW is subject to rate regulation and does not benefit from the flexibility we typically associate with municipal utilities that have autonomous rate-setting authority, recent years' regulatory decisions provided rate relief that supports robust coverage metrics. Moreover, the regulator has authorized the utility's use of several surcharges that support capital improvements and postemployment benefits. Also available to the utility are a weather-normalization adjustment that insulates margins from weather variability, and a gas cost rate adjustor that automatically passes on gas costs to ratepayers on a quarterly basis. In terms of the "disproportionate revenue shift between customer classes": PGW offers a number of programs to senior citizens and low-income customers; as a result overall system rates are very high--we have given negative consideration to the disproportionate shift in revenue-raising burden, which would impair future financial flexibility. ,A significant percentage of customers source gas supply from alternate suppliers.

Industry risk – Extremely strong

Consistent with "Methodology: Industry Risk", published Nov. 19, 2013, we consider industry risk for municipal retail electric and gas utilities covered under these criteria as very low, and therefore extremely strong as compared with other industries and sectors.

Financial Risk

Coverage metrics – Extremely strong

We view PGW's coverage metrics as extremely strong, with fixed cost coverage maintained at an average of 2.2x over the past three years (through fiscal 2019), with continued extremely strong fixed cost coverage forecast by management through 2025, even after the annual $18 million city transfer.

Coverage levels have improved steadily, and are at levels that we consider both supportive of the current rating and sustainable. S&P Global Ratings evaluates PGW's financial metrics assuming the annual $18 million city payment is made, treating it as an operating expense. PGW estimates FCC in a range of 1.7x-2.2x through 2024.

We believe the forecast relies on reasonable and conservative assumptions, as evidenced by relatively flat gas sales, modest interest earnings at 2% annually, and a 96% collection rate. While the forecast was prepared prior to the COVID-19 pandemic, we note that management does not believe that it will need to change as a result of COVID-19 or the recession, although it is monitoring developments carefully. Nevertheless, there is a risk that as the recession deepens, unemployment ticks up, and as the moratorium on shut-offs provides disincentive to timely payment, delinquencies may increase.

In our opinion, PGW has a mutually interdependent relationship with Philadelphia. Historically, the city received an $18 million annual payment from the utility, but with PGW facing cash flow problems, the city forgave the payment in 2004, and annually granted the payment back to the utility from 2005-2010. From fiscal years 2011-2019, Philadelphia has retained the payment, in part, in recognition of PGW's improved financial condition. We understand that the city's general fund financial position has strengthened over the past several years as well, reducing the likelihood that the city would seek a higher level of support from PGW. However, as the recession extends and deepens, this remains a risk.

Low collection rates had plagued PGW for several years, although this has improved over the past decade. We believe the improvement resulted from low natural gas prices and lower demand associated with generally warmer weather, driving down customer bills and reducing delinquencies. We also believe that the general improvement in collection rates has been, in part, due to stricter enforcement on delinquent accounts.

Liquidity and reserves – Very strong

PGW had $244 million of liquidity available at Aug. 31, 2019, representing 189 days of operating expenses. Unrestricted cash and investments were $124 million, while the utility had $120 million of available CP capacity that could be used for any working capital purpose. PGW does not plan to issue CP. PGW's financial forecast indicates liquidity is expected to range between 170 days and 191 days of expenses through 2024.

Debt and liabilities – Highly vulnerable

In our opinion, PGW's debt and liabilities is highly vulnerable, as suggested by a debt-to-capitalization ratio of 84% as of fiscal 2019, although projected to decline 64% by fiscal 2024, and with a large capital plan of $728 million that is expected to be 50% debt funded over the next five years. PGW plans to issue $325 million in bonds in 2024. A major component of capital spending is cast iron main replacement, which is currently expected to be completed by 2060.

Ratings Detail (As Of April 24, 2020)		
Philadelphia gas wks (1998 Gen Ordinance)		
Long Term Rating	A/Stable	Affirmed
Philadelphia gas wks rev rfdg bnds (1998 Gen Ordiance) ser 8TH C dtd 08/20/2009 due 08/01/2031		
Long Term Rating	AA/A-1	Affirmed
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas wks rev rfdg bnds (1998 Gen Ordiance) ser 8TH D due 08/01/2031		
Long Term Rating	AA+/A-1+	Affirmed
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas wks (AGM) (SEC MKT)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas wks (AGM) (SEC MKT)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas wks (AGM) (SEC MKT)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas wks (1998 General Ordinance) (AGM)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas (BAM) (SECMKT)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia gas (BAM) (SECMKT)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia JOINTCRIT		
Long Term Rating	AA+/A-1+	Affirmed
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia JOINTCRIT		
Long Term Rating	AA/A-1	Affirmed
Unenhanced Rating	A(SPUR)/Stable	Affirmed

Ratings Detail (As Of April 24, 2020) (cont.)		
Philadelphia JOINTCRIT		
Long Term Rating	AA+/A-1+	Affirmed
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia JOINTCRIT		
Long Term Rating	AA+/A-1+	Affirmed
Unenhanced Rating	A(SPUR)/Stable	Affirmed
Philadelphia (BAM)		
Unenhanced Rating	A(SPUR)/Stable	Affirmed

Many issues are enhanced by bond insurance.