

BEFORE THE PUBLIC SERVICE COMMISSION OF NEBRASKA

IN THE MATTER OF THE APPLICATION)
OF BLACK HILLS NEBRASKA GAS)
UTILITY COMPANY, LLC D/B/A BLACK)
HILLS ENERGY FOR APPROVAL ITS)
GAS HEDGE AGREEMENT WITH BLACK)
HILLS UTILITY HOLDINGS, INC.)

Application No. NG-0086

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DIRECT TESTIMONY

OF

ANDREW BUSHRA

ON BEHALF OF

CONSTELLATION NEWENERGY – GAS DIVISION, LLC

FEBRUARY 16, 2016

1 **Q1. WHAT IS YOUR NAME AND BUSINESS ADDRESS?**

2 **A1.** My name is Andrew Bushra. My business address is 1221 Lamar Street, Suite 850,
3 Houston, TX 77010.

4 **Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 **A2.** I am employed by Constellation NewEnergy, Inc. (“Constellation”) as Manager of the
6 Business Analytics & Strategy team. In the course of my employment, I work closely
7 with our affiliated entity, Constellation NewEnergy-Gas Division, LLC (“CNEG”).
8 CNEG is a wholly-owned indirect subsidiary of Exelon Corporation (“Exelon”). Exelon
9 subsidiaries provide competitive wholesale and retail electricity and gas supply and
10 energy management services nationwide.

11 **Q3. WHAT IS YOUR EDUCATIONAL BACKGROUND?**

12 **A3.** I have a Bachelor of Science in Financial Economics, Bachelor of Arts in Mathematics
13 and a Bachelor of Arts in Business Technology Administration from the University of
14 Maryland, Baltimore County. I also have a Master of Science in Finance from Johns
15 Hopkins University.

16 **Q4. CAN YOU DESCRIBE YOUR EMPLOYMENT HISTORY?**

17 **A4.** Yes, I have nine years in the energy industry with experience in competitive markets and
18 mergers & acquisitions (“M&A”). I started my career with Constellation as an Analyst in
19 the Commodities business where I was responsible for leading the financial/strategic
20 planning, valuation, and performance analysis of a portfolio of North American power
21 regions. I then joined the Corporate Strategy & Development group as an Associate
22 where I was responsible for originating, valuing and executing a broad array of
23 transactions including acquisitions of power plant assets, energy retailers, energy

1 technology investments and corporate transactions including the merger of Exelon
2 Corporation & Constellation. I then joined the Mass Markets business as a Principal
3 Analyst where I was the business lead for all energy retail M&A activities responsible for
4 valuation, management presentation and coordination of due diligence across support
5 functions. I was also responsible for assembling the business' long range plan with focus
6 on strategic planning and implementation, new market entry, process/system
7 development and improvements and the standardization of business metrics and
8 analytics. In 2015, I was promoted to Manager of Business Analytics & Strategy.

9 ***Q5. WHAT ARE YOUR RESPONSIBILITIES IN YOUR CURRENT POSITION WITH***
10 ***CONSTELLATION?***

11 ***A5.*** I am responsible for managing a team of four employees who analyze business data and
12 execute and develop various strategies based on data and business models. My
13 responsibilities include managing customer retention and customer satisfaction and
14 providing analytics that support marketing and sales effectiveness and operating
15 efficiencies.

16 ***Q6. HAVE YOU PREVIOUSLY TESTIFIED BEFORE A REGULATORY AGENCY?***

17 ***A6.*** No.

18 ***Q7. WHAT DOCUMENTS HAVE YOU REVIEWED IN THE PREPARATION OF YOUR***
19 ***TESTIMONY?***

20 ***A7.*** In this docket, I have reviewed the “Application of Black Hills/Nebraska Gas Utility
21 Company, LLC, d/b/a Black Hills Energy, for Approval of its Cost of Service Gas
22 (“COSG”) Hedge Agreement With Black Hills Utility Holding, Inc.” (“Application”) and

1 the related testimony in support thereof filed by Black Hills/Nebraska Gas Utility
2 Company LLC (“Company” or “Black Hills”) on September 30, 2015.

3 ***Q8. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?***

4 ***A8.*** The purpose of my testimony is to highlight CNEG’s concerns with Black Hill’s Cost of
5 Service Gas Company model (“COSGCO model”). CNEG understands that the model
6 was designed for a hypothetical program that was put together to demonstrate how the
7 customers would benefit from the Cost of Service Gas Program (“COSG”). However,
8 CNEG is concerned that the model and customer savings represented in current form are
9 based on inappropriate assumptions. The Net Present Value (“NPV”) outcome for
10 customers is highly sensitive to certain assumptions that current market conditions do not
11 support.

12 ***Q9. WHAT ANALYSIS DID YOU PERFORM?***

13 ***A9.*** I performed a detailed analysis of the COSGCO model including key assumption
14 sensitivity analysis. Leveraging my modeling background, I re-created the model
15 presented in Exhibit AC-2 to help evaluate various NPV sensitivities. I also reviewed the
16 assumptions used in the model and compared it to publicly available data such as the EIA
17 Annual Energy Outlook 2015 Report, Black Hills 2014 Annual Report, and Black Hills
18 2015 EEI Conference Presentation.

19 ***Q10. DO THE NUMBERS IN THIS RE-CREATED MODEL TIE OUT EXACTLY TO***
20 ***THE MODEL IN CARR EXHIBIT AC-2?***

21 ***A10.*** No, the numbers will not tie out exactly due to rounding, since the re-created model
22 leveraged inputs from a Black Hills pdf version and not an Excel file with the exact
23 inputs.

1 **Q11. WHAT ASSUMPTIONS DID YOU REVIEW?**

2 **A11.** I reviewed all the assumptions in the COSGCO model and focused primarily on the
3 following:

- 4 • Oil Price Forecast (line 155 in the Financial Model sheet)
- 5 • NGL Price Forecast (line 158 in the Financial Model sheet)
- 6 • Average Natural Gas Forecasted Price (line 43 in the Drivers & Assumptions sheet)
- 7 • Gas Production Costs (lines 50-55 in the Financial Model sheet)
- 8 • Gas Production Volume (line 5 in the Financial Model sheet)
- 9 • Capital Expenditure (line 14 in the Drivers & Assumptions sheet)

10 **Q12. WHAT DID YOU FIND AS IT RELATES TO THE OIL & NGL PRICE FORECAST?**

11 **A12.** Based on Black Hills' testimony, 100% of all associated oil and NGLs will be sold to the
12 market as a credit to the production cost of natural gas under the COSG program. The net
13 proceeds will be treated as a credit for the benefit of customers in the hedge adjustment
14 calculation.

15 I found that the COSG model is extremely sensitive to changes in the Oil and NGL
16 pricing assumptions since the revenue expected factors into the NPV calculation. Exhibit
17 AB-1 shows the average historical Oil and NGL prices that Black Hill's received (based
18 on the 2014 Annual Report since the 2015 Annual Report has not been published).

19 Exhibit AB-2 shows two sensitivities for NGL pricing assumptions at \$35/bbl (which is
20 the highest price received by Black Hills in the past 3 years) & \$40/bbl. The NPV
21 decreases by \$59 million & \$37 million respectively. In other words, when using
22 assumptions that more accurately track the most recent NGL pricing, the customer
23 savings is less than what the Company's model and assumptions indicate. In the first

1 scenario where the NGL price is \$35/bbl, the NPV changes from (\$46.7) million to \$13
2 million which represents no savings to the customers.

3 Exhibit AB-3 shows three sensitivities for Oil pricing assumptions at \$50/bbl, \$70/bbl &
4 \$90/bbl. The NPV decreases by \$27 million, \$14 million & \$0 million respectively.

5 Exhibit AB-4 shows historical crude oil pricing derived from Black Hill's Q4 2015
6 earnings call.

7 ***Q13. WHAT DID YOU FIND AS IT RELATES TO THE AVERAGE NATURAL GAS***
8 ***FORECASTED PRICE?***

9 ***A13.*** The Natural Gas forecast that Black Hills is using to compare its production costs against
10 is an average of EIA & claimed confidential long-term forecasts. In their testimony, they
11 mentioned that they are using a high case provided by EIA. However, there appears to be
12 a disconnect in the EIA numbers Black Hills utilized in their model compared to the EIA
13 Annual Energy Outlook 2015 report. Exhibit AB-5 shows the low, base and high cases
14 for natural gas pricing provided by EIA. NPV decreases by \$47 million, \$26 million and
15 \$14 million respectively. The calculations shown in Exhibit AB-6 assume no changes to
16 the claimed confidential long term forecast.

17 EIA publishes its outlook once a year. Natural gas prices are lower today than when EIA
18 last published in June of 2015. The next release date is June 2016.

19 ***Q14. WHAT HAPPENS TO THE NPV IF THE NATURAL GAS ASSUMPTIONS USED***
20 ***ONLY ASSUMES THE EIA FORECAST?***

21 ***A14.*** If the natural gas assumptions used only assume the EIA long term forecast, the NPV
22 decreases by \$83 million, \$51 million and \$25 million for the low, base and high cases

1 respectively. In this scenario, only the high case provided by EIA results in a negative
2 NPV.

3 ***Q15. WHAT DID YOU FIND AS IT RELATES TO THE GAS PRODUCTION COSTS?***

4 ***A15.*** In the 2014 annual report, Black Hills published its historical production costs in \$/Mcf.
5 Mcf is the total heat value of natural gas and oil expressed as a volume of natural gas i.e.
6 1 barrel of oil = 6 MCF of natural gas. In 2014, Black Hill's historical production cost
7 was \$3.29/Mcfe. See Exhibit AB-7.

8 Exhibit AB-8 shows the gas production costs in the COSGCO Model and how it
9 compares to production costs from 2012-2014. The production costs shown in their
10 annual report includes oil production costs which might skew the comparison to the
11 COSGCO model. However, as a scenario, if we use their 2014 production costs of
12 \$3.29/Mcfe, this decreases the NPV by \$106 million to \$60 million.

13 ***Q16. WHAT ARE YOUR CONCLUSIONS AS THEY RELATE TO THE COSGCO***
14 ***MODEL?***

15 ***A16.*** The Company offers the COSGCO Model as an illustrative mechanism to show the
16 inputs that will be used to assess the value of the COSG to Nebraska customers. While
17 the Company is clear that it selected hypothetical inputs for its modeling, it is natural for
18 regulators charged with protecting their constituents to look to the COSGCO Model for
19 indications of how those customers will be impacted. As filed by the Company, the only
20 thing that the COSGCO Model demonstrates is that the quality of its outputs is highly
21 sensitive to the quality and accuracy of the forecasts it uses as inputs. Market prices for
22 natural gas have declined over the past few months and the current model appears to have
23 favorable assumptions that do not reflect current market conditions. As filed, the

1 Company’s COSGCO Model does not show a net customer savings until 2023. Given the
2 sensitivities discussed here, it is likely that if net customer savings are realized, they will
3 be pushed farther into the future. If nothing else, it is clear that the positive customer
4 outcomes implied by the COSGCO Model require additional scrutiny.

5 ***Q17. DOES THIS CONCLUDE YOUR TESTIMONY?***

6 ***A17.*** Yes, reserving the right to comment further on statement and submissions submitted to
7 the Commission after this date.

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-1

OF

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**IN THE MATTER OF THE APPLICATION OF BLACK HILLS NEBRASKA GAS
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Exhibit 1

Average Price Received ^(a)	2014	2013	2012
Gas/Mcf	\$ 2.91	\$ 2.69	\$ 3.33
Oil/Bbl	\$ 79.39	\$ 89.34	\$ 83.27
NGL/Bbl	\$ 35.53	\$ 33.15	\$ 32.41

(a) Net of hedge settlement gains/losses

Source: Black Hills 2014 Annual Report

Exhibit 2

NGL			
<i>\$/bbl</i>	Black Hills (Base)	Scenario 1	Scenario 2
2016	\$36.92	\$35.00	\$40.00
2017	\$40.01	\$35.00	\$40.00
2018	\$42.95	\$35.00	\$40.00
2019	\$45.69	\$35.00	\$40.00
2020	\$47.59	\$35.00	\$40.00
2021	\$49.62	\$35.00	\$40.00
2022	\$51.67	\$35.00	\$40.00
2023	\$53.80	\$35.00	\$40.00
2024	\$56.02	\$35.00	\$40.00
2025	\$58.33	\$35.00	\$40.00
Δ to NPV (\$millions)		\$ 59	\$ 37
Updated NPV (\$millions)	\$ (46.7)	\$ 13	\$ (10)

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-3

OF

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Exhibit 3

Oil				
<i>\$/bbl</i>	Black Hills (Base)	Scenario 1	Scenario 2	Scenario 3
2016	\$67.14	\$50.00	\$70.00	\$90.00
2017	\$72.75	\$50.00	\$70.00	\$90.00
2018	\$78.09	\$50.00	\$70.00	\$90.00
2019	\$83.07	\$50.00	\$70.00	\$90.00
2020	\$86.53	\$50.00	\$70.00	\$90.00
2021	\$90.22	\$50.00	\$70.00	\$90.00
2022	\$93.94	\$50.00	\$70.00	\$90.00
2023	\$97.83	\$50.00	\$70.00	\$90.00
2024	\$101.85	\$50.00	\$70.00	\$90.00
2025	\$106.05	\$50.00	\$70.00	\$90.00
Δ to NPV (\$millions)		\$ 27	\$ 14	\$ 0
Updated NPV (\$millions)	\$ (46.7)	\$ (20)	\$ (33)	\$ (46)

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-4

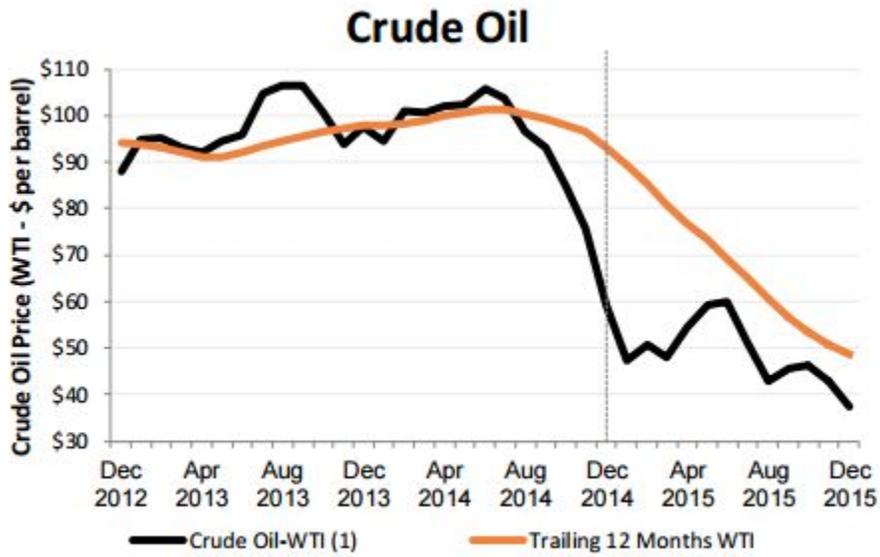
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Exhibit 4



(1) Commodity prices represent average daily close for the month

Source: Black Hills Q4'15 Earnings Call

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-5

OF

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APPLICATION NO. NG-0086

Exhibit 5

Natural Gas				
<i>\$/bbl</i>	Black Hills (Base)	EIA (Low Case)	EIA (Base Case)	EIA (High Case)
2016	\$3.82	\$3.85	\$3.70	\$3.35
2017	\$3.90	\$4.09	\$3.80	\$3.63
2018	\$4.09	\$4.23	\$4.21	\$3.94
2019	\$4.61	\$4.30	\$4.55	\$4.22
2020	\$5.07	\$4.30	\$4.88	\$4.61
2021	\$5.54	\$4.34	\$5.02	\$5.05
2022	\$5.79	\$4.38	\$5.09	\$5.41
2023	\$5.97	\$4.66	\$5.25	\$6.02
2024	\$6.25	\$4.85	\$5.35	\$6.39
2025	\$6.48	\$5.01	\$5.46	\$6.70
Δ to NPV (\$millions)		\$ 47	\$ 26	\$ 14
Updated NPV (\$millions)	\$ (46.7)	\$ -	\$ (21)	\$ (33)

Source: EIA Annual Energy Outlook 2015 report

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-6

OF

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APPLICATION NO. NG-0086

Exhibit 6

Natural Gas				
<i>\$/bbl</i>	Black Hills (Base)	EIA (Low Case)	EIA (Base Case)	EIA (High Case)
2016	\$3.82	\$3.85	\$3.70	\$3.35
2017	\$3.90	\$4.09	\$3.80	\$3.63
2018	\$4.09	\$4.23	\$4.21	\$3.94
2019	\$4.61	\$4.30	\$4.55	\$4.22
2020	\$5.07	\$4.30	\$4.88	\$4.61
2021	\$5.54	\$4.34	\$5.02	\$5.05
2022	\$5.79	\$4.38	\$5.09	\$5.41
2023	\$5.97	\$4.66	\$5.25	\$6.02
2024	\$6.25	\$4.85	\$5.35	\$6.39
2025	\$6.48	\$5.01	\$5.46	\$6.70
Δ to NPV (\$millions)		\$ 83	\$ 51	\$ 25
Updated NPV (\$millions)	\$ (46.7)	\$ 37	\$ 5	\$ (21)

Source: EIA Annual Energy Outlook 2015 report

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-7

OF

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Exhibit 7

	2014			
	LOE	Gathering, Compression, Processing and Transportation	Production Taxes	Total
San Juan	\$ 1.52	\$ 1.11	\$ 0.56	\$ 3.19
Piceance	0.31	3.74	0.38	4.43
Powder River	1.77	—	1.26	3.03
Williston	1.46	—	1.24	2.70
All other properties	1.43	—	0.43	1.86
Average	\$ 1.24	\$ 1.37	\$ 0.68	\$ 3.29

	2013			
	LOE	Gathering, Compression, Processing and Transportation	Production Taxes	Total
San Juan	\$ 1.33	\$ 0.96	\$ 0.45	\$ 2.74
Piceance	0.69	1.68	0.04	2.41
Powder River	1.66	—	1.18	2.84
Williston	1.06	—	1.38	2.44
All other properties	0.86	—	0.18	1.04
Average	\$ 1.22	\$ 0.66	\$ 0.60	\$ 2.48

	2012			
	LOE	Gathering, Compression, Processing and Transportation	Production Taxes	Total
San Juan	\$ 1.22	\$ 0.71	\$ 0.35	\$ 2.28
Piceance	0.30	1.29	0.17	1.76
Powder River	1.57	—	1.18	2.75
Williston	0.35	—	1.35	1.70
All other properties	1.91	—	0.34	2.25
Average	\$ 1.05	\$ 0.49	\$ 0.64	\$ 2.18

Source: Black Hills 2014 Annual Report

CONSTELLATION NEWENERGY-GAS DIVISION, LLC

EXHIBIT AB-8

OF

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Exhibit 8

