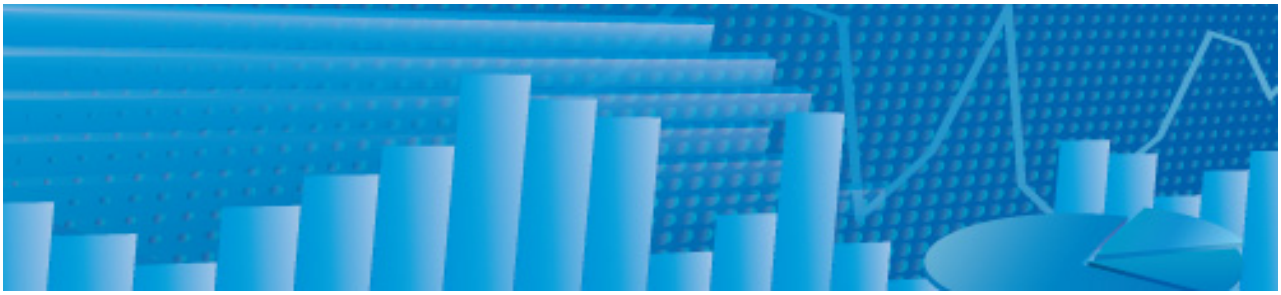
Fuel Price Forecast



Revised Fuel Price Forecasts for the Seventh Power Plan

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Executive Summary

The Council monitors its power planning assumptions on a regular basis to identify any significant changes that would affect its power plan. This revised forecast for fuel prices will be used to develop the Council's Seventh Power Plan for 2015 to 2035.

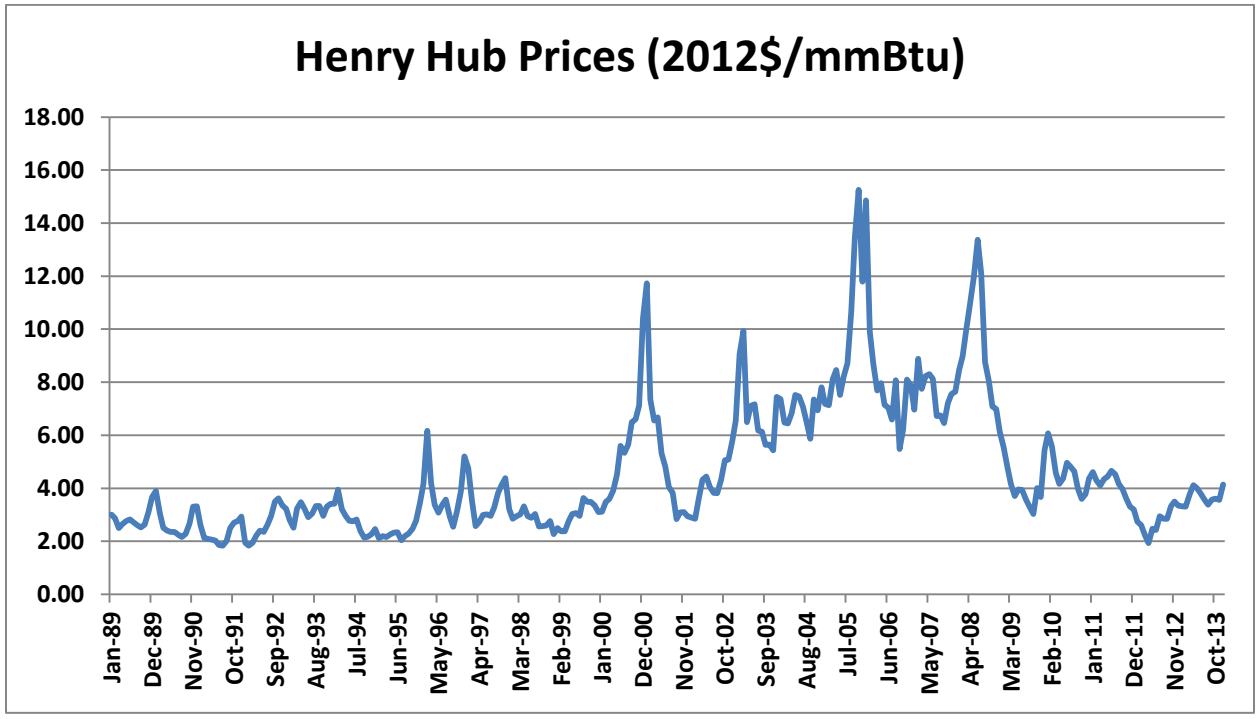
The natural gas price forecast is the most important fuel forecast for the plan, and it's also widely used by others in the region for their analyses. The projected price range for this fuel is broader, reflecting greater uncertainty about its future supply and demand. Unlike the natural gas price forecast, the oil and coal forecasts have little effect on the Council's power plan, and are also not used as much in the region.

Low natural gas prices would mean lower electricity prices, while high prices would mean higher wholesale prices for electricity. A more complete picture of how these fuel prices would play out will be tested during the development of the Seventh Power Plan.

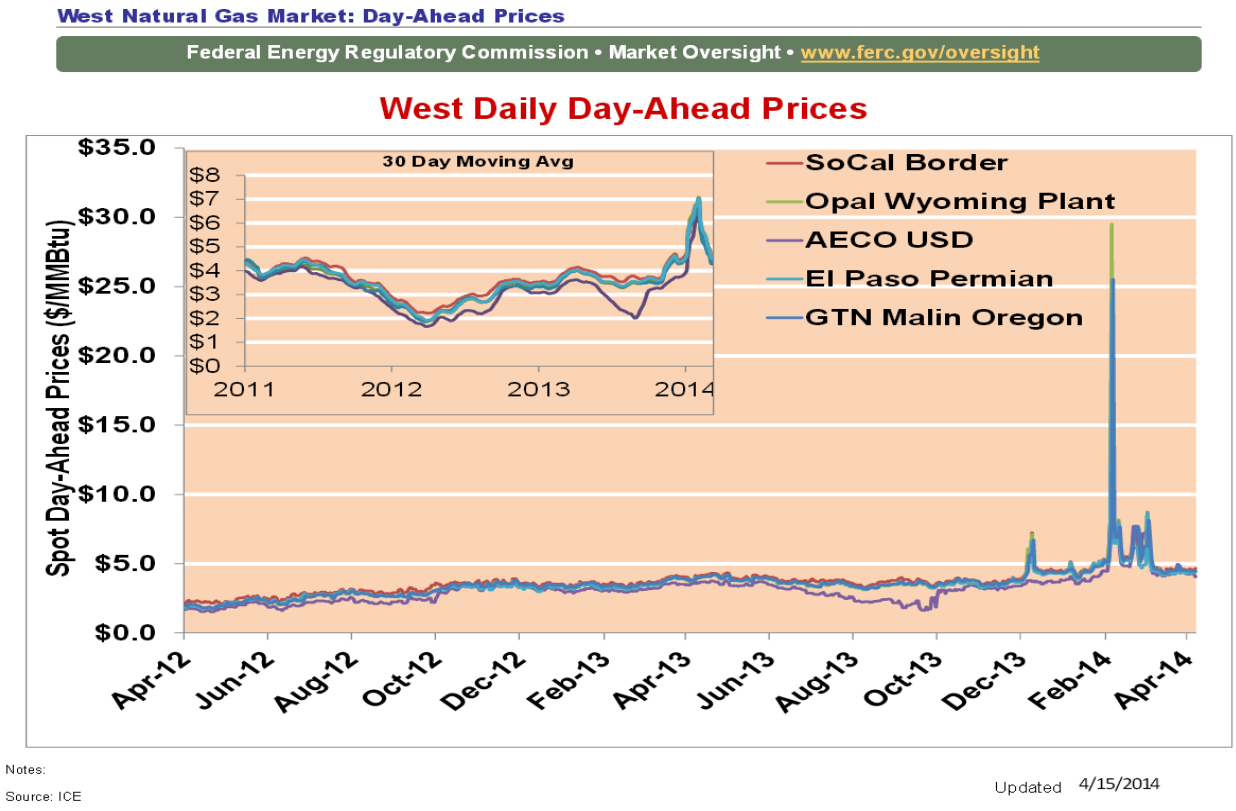
Background

Henry Hub natural gas prices fell to their lowest levels--$2 dollars per mmBtu--in 2012, the result of a milder winter and increasing supplies from shale gas. The low prices were temporary, however, as the price of natural gas in 2013 and first two quarters of 2014 have been in the $3.5-$4.5 dollars per mmBtu range, with a spike of $20-$30 dollars per mmBtu because of the extreme winter experienced in much of the country that year. Recently, the forward market for natural gas prices has tightened, due in part to higher demand from utilities, industrial customers, and the need to refill the storage inventory exhausted during the winter. Analysts are now expecting prices in the $3-$5 per mmBTU range for 2014-2015 at Henry Hub in constant 2012 dollars.

Historic Perspective: Natural Gas Prices at Henry Hub



Jump in Prices Feb 2014 source- FERC



Notes:

Source: ICE

Updated 4/15/2014

Data from regional and national organizations were used in developing this forecast, including the Energy Information Administration's Annual Energy Outlook 2014, the analyst reports from Natural Gas Week (Energy Intelligence), Avista, consulting company HIS-Global Insight, and the SNL Natural Gas forward price curves. The Council also polled its Natural Gas Advisory Committee for information and guidance. When comparing this forecast with others, it's advised to use 2012 constant dollars, the dollar value used in all Seventh Power Plan analysis.

2014 Natural Gas Price Forecast

In the past few years, working with the Natural Gas Advisory Committee, the Council has revised its range of natural gas prices downward. This year, the price range is broader, with a higher and lower range of prices. This reflects greater uncertainty about its future supply and demand. The Council uses a range of prices to reflect the differing views on the supply and demand for natural gas. The high price forecast reflects rapid economic growth in the U.S. and worldwide; opposition to hydraulic fracturing; aggressive regulation to limit carbon emissions, which would promote natural gas generation over coal; increased use of natural gas vehicles; increased demand for exports of liquefied natural gas from Canada and the United States; and increased demand from gas-to-liquid projects. In contrast, the low forecast reflects conditions that limit the demand for natural gas and promote the rapid development of supply.

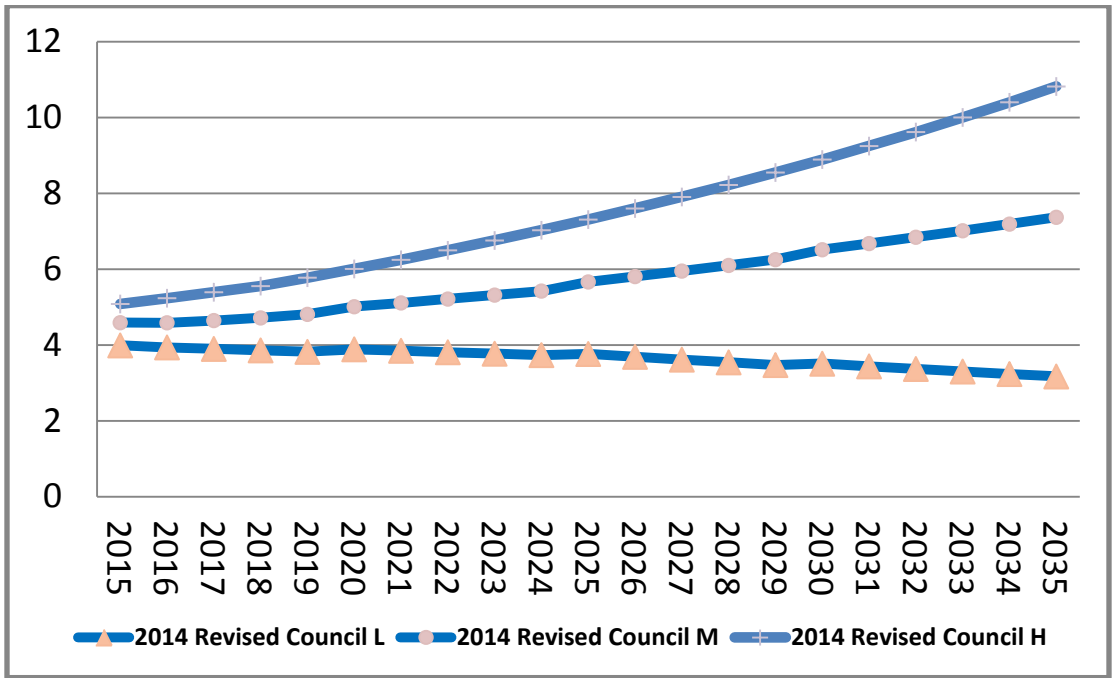
Proposed Natural Gas Price Projections at Henry Hub (2012$/mmBtu)

	Low	Medium	High
2013	3.7	3.7	3.7
2014	3.9	4.7	4.9
2015	4.0	4.6	5.1
2020	3.9	5.0	6.0
2025	3.8	5.7	7.3
2030	3.5	6.6	8.9
2035	3.2	7.4	10.8
Average 2015-2035	3.8	5.8	7.5

Implications for the Seventh Power Plan

Low natural gas prices correlate to lower electricity prices, and conversely, high natural gas prices would mean higher wholesale prices for electricity. A more complete picture of how these fuel prices would play out will be tested during the development of the Seventh Power Plan. Natural gas generation is already the fall-back resource in the current plan; renewables are limited by renewable portfolio requirements; and efficiency is constrained by assumed rates of penetration and development.

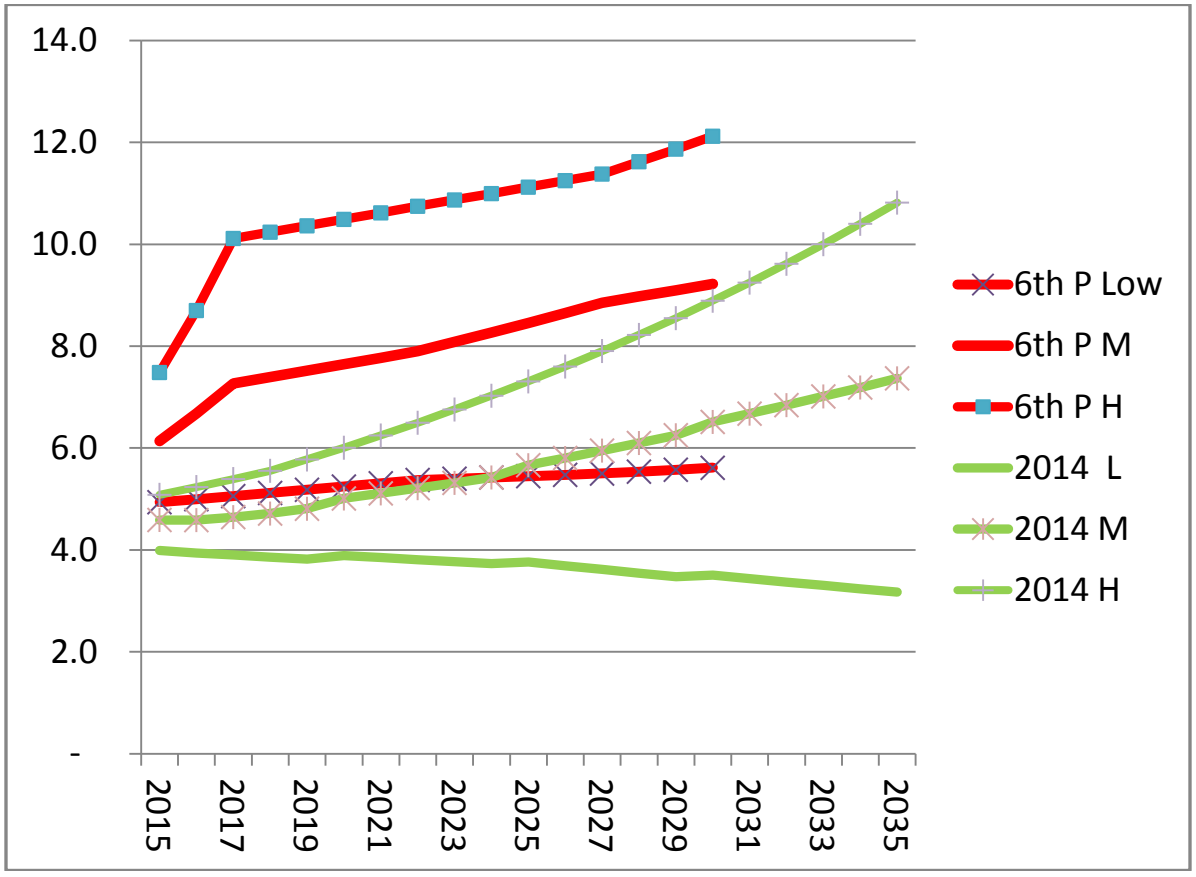
Proposed Natural Gas Prices at Henry Hub (constant 2012 dollars per mmBtu)



Comparing the Sixth Power Plan and 2014 Price Projections

The following figure shows the forecast prices used to develop the Sixth Power Plan and the draft 2014 forecast. Natural gas prices were significantly higher in the Sixth Power Plan. For example, by 2030 the plan's prices were in the $5.6-$12 range, while the new forecast puts the prices in the $3.5-$11 range.

Sixth Power Plan and Draft Natural Gas Price Forecasts
Henry Hub Cost $2012/mmBtu

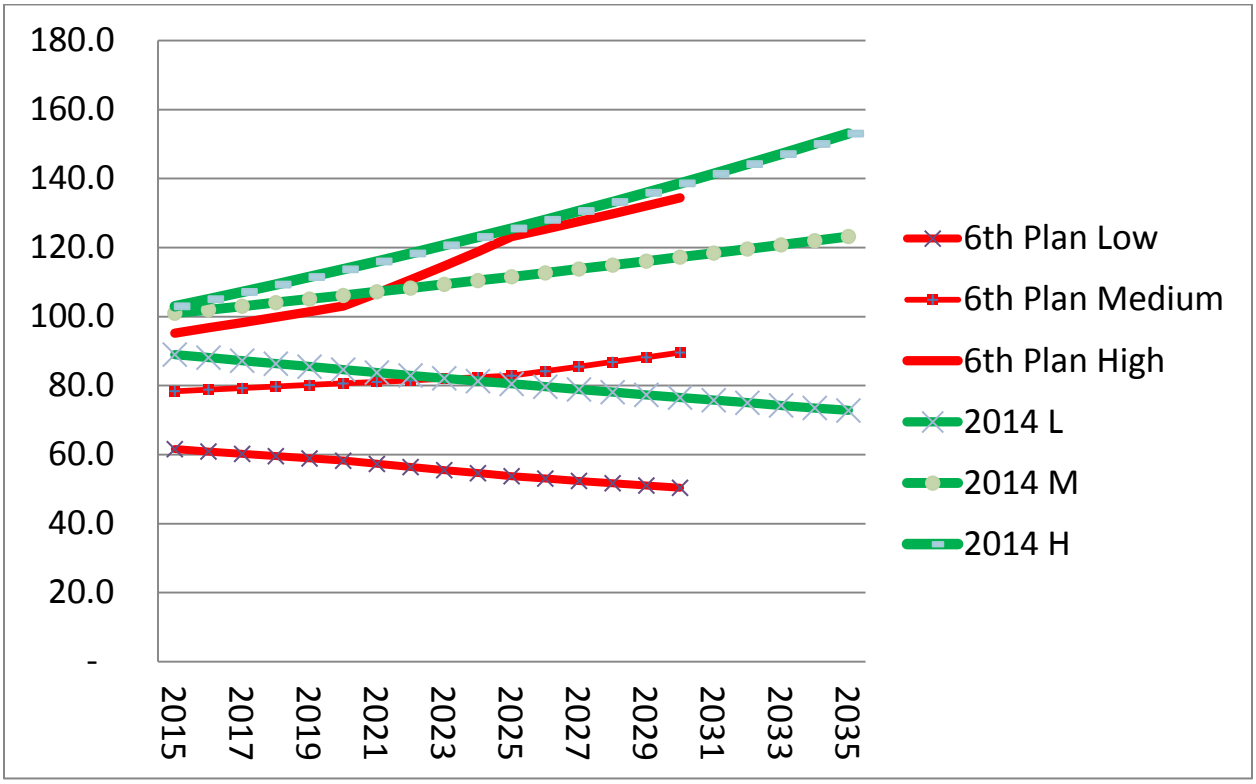


Oil Price Forecast

World oil prices have little effect on the Council's power plan because oil has, to a large degree, been relegated to a transportation fuel in the U.S. The primary effect might be on electric vehicle development, but that is largely determined by other factors relating to technology, consumer adoption, and infrastructure development. A big unknown at this time is the decision on removing the ban on crude oil exports from the United States.

Although the range of world oil prices hasn't changed as much as natural gas prices, the price levels have increased for the medium and low price forecasts. Compared to the Sixth Power Plan forecast, the high-range is slightly higher in the short-term, though not in the long-term.

Sixth Power Plan and Draft Oil Price Forecasts
Refiners Acquisition Cost $2012/barrel

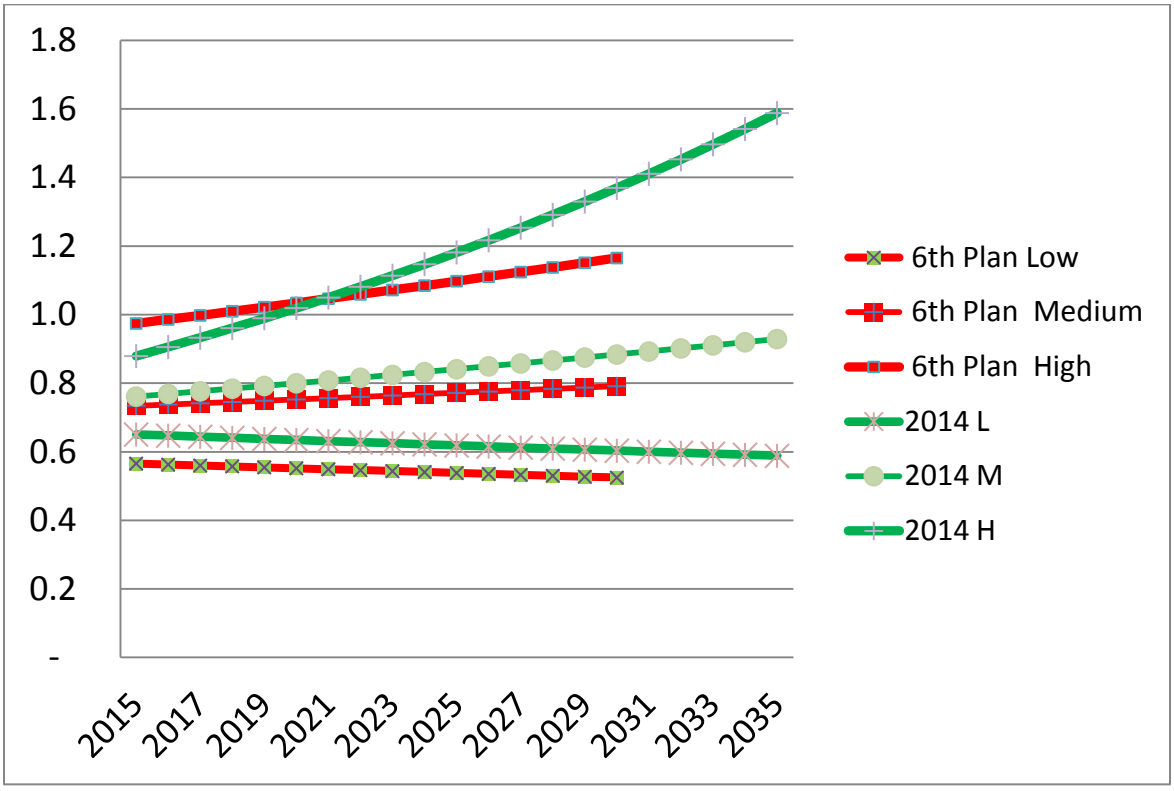


Coal Price Forecast

Like oil, coal prices have relatively little effect on the Council's power plan. They affect electricity market prices in relatively few hours and they affect the operating cost of existing coal-fired power plants. However, new coal development is unlikely and the Council's power plan reflects this.

The revised forecast incorporates 2013 actual prices and extends the long-term range. The long-term range of prices was increased to better reflect the uncertainty about global demand for U.S. coal; the accelerated pace of coal power plant closures; the continued decline in Powder River Basin production; and the increased cost of its transportation. The 2014 annual energy outlook puts the range of PRB coal price at $0.70-$3.2 in 2012$ per short tons. Unlike the natural gas price forecast, neither the oil nor the coal price forecasts are used extensively in the region.

Sixth Power Plan and Draft Coal Price Forecasts
Powder River Basin $2012/mmbtu



The following tables present the numeric values for the proposed:

Table 1: Range of natural gas price forecast: Henry Hub prices in constant 2012 dollars

Table 2: Range of refiners cost of acquisition for oil in constant 2012 dollars

Table 3: Range of cost of Powder River Basin coal in constant 2012 dollars

Table 4: Inflation adjustment factors to convert from constant 2012 dollars to nominal dollars.

Table 1: Proposed Natural Gas at Henry Hub Price Range ($2012/MMBTU)

	Low	Medium	High
2013	3.75	3.75	3.75
2014	3.89	4.73	4.94
2015	3.99	4.59	5.08
2016	3.94	4.59	5.24
2017	3.90	4.65	5.39
2018	3.86	4.72	5.55
2019	3.82	4.81	5.78
2020	3.89	5.01	6.01
2021	3.85	5.11	6.25
2022	3.81	5.21	6.50
2023	3.77	5.32	6.76
2024	3.73	5.42	7.03
2025	3.76	5.66	7.31
2026	3.69	5.81	7.60
2027	3.62	5.95	7.91
2028	3.54	6.10	8.22
2029	3.47	6.25	8.55
2030	3.51	6.51	8.89
2031	3.44	6.68	9.25
2032	3.37	6.84	9.62
2033	3.30	7.01	10.00
2034	3.24	7.19	10.40
2035	3.17	7.37	10.82

Table 2: Proposed Refiners Acquisition Cost ($2012/Barrel)

	Low	Medium	High
2013	99	99	99
2014	89	100	101
2015	89.0	101	103
2016	88.1	102	105
2017	87.2	103	107
2018	86.4	104	109
2019	85.5	105	111
2020	84.6	106	114
2021	83.8	107	116
2022	83.0	108	118
2023	82.1	109	121
2024	81.3	110	123
2025	80.5	112	126
2026	79.7	113	128
2027	78.9	114	131
2028	78.1	115	133
2029	77.3	116	136
2030	76.6	117	139
2031	75.8	118	141
2032	75.0	120	144
2033	74.3	121	147
2034	73.5	122	150
2035	72.8	123	153

Table 3: Proposed Powder River Basin Coal Price ($2012/mmBTU)

	Low	Medium	High
2015	0.65	0.76	0.88
2016	0.65	0.77	0.91
2017	0.64	0.78	0.93
2018	0.64	0.78	0.96
2019	0.64	0.79	0.99
2020	0.63	0.80	1.02
2021	0.63	0.81	1.05
2022	0.63	0.82	1.08
2023	0.62	0.82	1.11
2024	0.62	0.83	1.15
2025	0.62	0.84	1.18
2026	0.62	0.85	1.22
2027	0.61	0.86	1.25
2028	0.61	0.87	1.29
2029	0.61	0.88	1.33
2030	0.60	0.88	1.37
2031	0.60	0.89	1.41
2032	0.60	0.90	1.45
2033	0.59	0.91	1.50
2034	0.59	0.92	1.54
2035	0.59	0.93	1.59

Table 4: Conversion Factors

To change from constant 2012 dollars to nominal dollars, multiply the constant dollar prices by these factors

2012	1.00
2013	1.02
2014	1.03
2015	1.05
2016	1.07
2017	1.08
2018	1.10
2019	1.12
2020	1.14
2021	1.16
2022	1.18
2023	1.20
2024	1.22
2025	1.24
2026	1.26
2027	1.28
2028	1.31
2029	1.33
2030	1.35
2031	1.38
2032	1.40
2033	1.43
2034	1.45
2035	1.48

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