

WYOMING DEPARTMENT OF REVENUE
MINERAL TAX DIVISION

CAPITALIZATION RATE STUDY

MODIFIED NETBACK RATE OF RETURN

Production Year 2018

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CAPITALIZATION RATE STUDY

MODIFIED NETBACK RATE OF RETURN

INTRODUCTION

The capitalization rate applied to income is a means of estimating market value for properties. This capitalization rate reflects the relationship between one year's income or an annual average of several years' income and the corresponding capital value. This market value estimated by capitalizing an income is one indicator of what a willing buyer and a willing seller may consider a fair return on their investment in the open market.

The primary components of the capitalization rate are Debt, Preferred (if applicable), and Common Equity. The following data have been assembled to determine a rate of return for the Modified Netback valuation method.

The Mineral Tax Division develops its capitalization rates in accordance with WY Title 39-14-203(b)(vi)(E) and WY Title 39-14-201. As such, the capitalization rate used for all producers utilizing the Modified Netback method of valuation is derived from a calculation consisting of the highest ten producers of natural gas in the State of Wyoming.

SOURCES OF INFORMATION AND DATA

Source data used to compute the capitalization rates for the largest nine natural gas producers (production year 2018 only had nine producers with publically available data) was acquired from various sources:

- 1) Moody's Investor Service (February 27, 2019) and Standard & Poor's Record (February 27, 2019) provided bond ratings for the companies. In addition, the 2018 annual Debt Rates and Preferred Rates by industry grouping came from the same source.
- 2) Value Line provided statistical information. The data from Value Line included Betas, 2019 projected Annual Rates of Change in Earnings, Dividends, Book Value and Annual Total Return. Value Line also provided data for the calculation of the risk free (RF) rates; the specific weekly rates are detailed in Exhibit C of this report.
- 3) The required return on market (RM) came from the Duff & Phelps 2018 Valuation Handbook, "Guide to Cost of Capital" and is based on the arithmetic mean return realized on common stocks. This information source also supplied data used to develop the risk premium (RP) and firm size and adjustments.
- 4) The Wall Street Journal for January 2, 2019, was the source for stock prices for individual companies, as required in the Discounted Cash Flow Model and the Direct Capitalization Rates.
- 5) The Public Utility Financing Tracker provided the data for computing flotation costs.

CAPITAL STRUCTURE

For appraisal purposes, capital structure has three components: long-term debt, preferred stock and net worth (or common equity or, simply, equity). It differs from financial structure, which includes other, primarily, short-term sources of capital, such as payables and operating loans. There are two primary methods of computing capital structure for appraisals - book structure and market structure. Book structure uses the relationships of the book values (i.e., accounting values) of debt, preferred and equity. Market structure uses the market values of these components. The appropriate capital structure to use in a capitalization rate study for the modified netback rate of return is the market structure of the publicly traded companies (often the parent holding companies) because it reflects the structure which a typical purchaser would probably use to acquire the operating assets of a subject company. To compute market capital structure, we used the book value of debt and preferred securities (since there usually are no material differences between book and market value for these securities), as reported in Value Line. We computed the market value of common equity by multiplying the shares outstanding by the recent price, also as reported in Value Line. The average market capital structure for the companies in the study population is as follows:

	DEBT	PREFERRED	EQUITY
Top 10 Producers	31%	0%	69%

Table 1. Capital Structure

These percentages will later be used to compute the cost of capital for the industry.

COST OF EQUITY

The current cost of equity capital should be based on data taken from the capital markets for the top ten producers. Equity rates should reflect the representative cost of equity financing for a given industry type as of the appraisal date. There is no single commonly accepted method for making this estimate. However, there are three generally accepted methods which can be used in conjunction with each other. These include (1) the Discounted Cash Flow (DCF) model, (2) Capital Asset Pricing Model (CAPM), and (3) Risk Premium (RP) model.

The Discounted Cash Flow Model (DCF): This model measures the rate of return requirements of industrial stock (equity) as demonstrated by investors in the market. The basic theory of DCF is that the prices paid for a share of stock reflect the investors' discounted present values of future expected earnings/anticipated cash flows for both dividends and stock appreciation. The basic formula appears in the box to the right. The D_1 variable comes from the dividend declared per share Value Line has projected for 2018. P_0 is the average of the annual high and low prices of the stocks of the companies in our study. The growth factor in the model was computed using a weighted average of the growth indicators: Earnings, 1/6; Book Value, 2/6; and Dividends, 3/6. The Department looks at three computations of the DCF to determine the relative propriety of the indicator: 1) a DCF model that reduces the impact of any company for whom the projected dividend or any of the growth factors is "Nil" or "NMF" per Value Line; 2) a

$$K_E = \frac{D_1}{P_0} + G$$

where:

K_E = Cost of Capital
 D_1 = Projected Dividend
 P_0 = Current Stock Price
 G = Growth

DCF model which adjusts for the “Nil” and “NMF” items; and 3) a DCF model calculated on the average dividends, growth factors, and stock prices of the companies in the study group. Application of this model resulted in the equity rate shown in Table 3.

Capital Asset Pricing Model (CAPM): CAPM uses the concept that value is composed of a "safe rate" plus an add-on for equity risk. The market risk premium is defined as the difference between the expected rate of return in a given investment and the "risk-free rate" on government Treasury Bonds. This definition is based upon the premise that an informed investor expects to earn a greater return on his equity capital investment than he would receive from an alternative investment in risk free government bonds. Theoretically, the greater the investor's perceived risk in investment, the greater the risk premium. However, in the CAPM, the risk premium for the overall market must be adjusted by a market risk measure, "Beta", for the companies under review. The basic formula appears in the box at the right. Various versions of the CAPM take into account the different equity perceptions that prevail in the oil and gas industry, i.e. Long-Term, Intermediate, Short-Term and Corporate. Application of this formula to the various risk groups resulted in the use of the rate presented in Table 3.

$$K_E = R_F + B(R_M - R_F)$$

where:

K_E = Cost of Capital
 R_F = Risk Free Rate
 B = Beta
 R_M = Return on the Market

Risk Premium Model (RP): This model assumes that the rate of return required by equity investors depends upon: (1) the risk-free rate of return or what investors could obtain by investing in Treasury Bonds, which have an assured rate of return guaranteed by the U.S. Government, and (2) some risk premium, or an amount of compensation above the risk-free rate required to induce investors to invest their money in a risky stock. The formula appears in the box on the right. Various versions of the Risk Premium consider the different equity perceptions that prevail in the oil and gas industry, i.e. Long-Term, Intermediate, Short-Term and Corporate.

$$K_E = R_F + R_P$$

where:

K_E = Cost of Capital
 R_F = Risk Free Rate
 R_P = Risk Premium

As a matter of form, the Department calculates Long-Term, Intermediate, Short-Term and Corporate rates for both the CAPM and RP models. We then determine which rate is most appropriate for the top ten producers. The two primary considerations are the nature the operating assets and the term of debt instruments for companies within the industry. Generally speaking, the major assets of oil and gas companies have useful lives in excess of twenty years. Further, these oil and gas companies often issue debt with maturities in excess of twenty years. For these reasons, we consider the long-term rate, as shown in the table below, to be the most appropriate for the ten oil and gas companies used as a basis for the rate of return calculation.

	DCF	CAPM	RP
Top 10 Producers	8.55%	14.53%	10.23%

Table 3: Equity Rates

CONCLUSION REGARDING THE EQUITY RATE

For the cost of equity, rates from the CAPM, RP model and the traditional DCF models were given consideration for the ten oil and gas companies. The resulting equity capitalization rate, adjusted for flotation cost for the top ten producers is 7.78%.

FLOTATION COST ADJUSTMENTS

The costs of the various types of capital determined in the previous sections of this report consider only secondary market rates, the rates of return to be earned by the holders of the securities. These rates do not reflect any adjustment for primary costs, those costs a company incurs to raise capital initially. When a company issues new securities, it incurs legal, underwriting and accounting expenses. These expenses are known as “flotation” costs. They reduce the amount of actual proceeds the company receives from the issuance of the securities. As a result the effective required rates of return for the different types of securities are somewhat higher than the secondary rates indicate. Flotation costs are expressed as a percentage of the proceeds of the issue. To determine the true cost of capital the secondary rates must be adjusted for the flotation costs.

The objective of the flotation cost adjustment is to determine the effective rate of return for a security based on the net proceeds from the security issue. To calculate the real required rate of return for the two basic types of securities (debt and equity), we use the formulas in the box to the right. (Note: the term “equity” applies to both common and preferred stock issues.)

The formula for the debt rate requires some explanation. The reason for the income tax rate adjustment lies in the nature of flotation costs for debt issues. Under income tax law such costs are amortized and deducted to determine taxable income; however, they are not deductible to determine net operating income. Thus, the flotation cost has to be adjusted to recognize the difference between the tax treatment and the appraisal treatment of the flotation costs. There is no similar adjustment to the flotation costs for equity issues because they are not deductible for income tax purposes; the financial statements of the issuer simply reflect the net proceeds of the issue. The Department uses an income tax rate of 38% to incorporate the maximum federal corporate income tax rate of 35% plus an allowance of three percentage points for an average effective state corporate income tax rate.

For Debt:

$$K_A = \frac{K_B}{1 - (FC \times (1 - TR))}$$

For Equity (Common and Preferred):

$$K_A = \frac{K_B}{1 - FC}$$

where:

K_A = Adjusted Cost of Capital

K_B = Unadjusted (Base) Cost of Capital

FC = Flotation Cost as a Percentage

TR = Income Tax Rate (38%)

OVERALL WEIGHTED AVERAGE COST OF CAPITAL

The Mineral Tax Division computed an overall weighted average cost of capital using the band of investment method. The basic formula appears in the box at the right. The resulting capitalization rate (also known as the discount rate) will be applied to the appropriate income stream to determine indicators of the current market value for the top ten producers. The results of this band of investment analysis for the cost of capital appear in Exhibit A.

$$K = (D \times D_R) + (P \times P_R) + (E \times E_R)$$

where:

K = Weighted Average Cost of Capital

D = Percent of Debt in Capital Structure

D_R = Cost of Debt (Debt Rate)

P = Percent of Preferred in Capital Structure

P_R = Cost of Preferred (Preferred Rate)

E = Percent of Equity in Capital Structure

E_R = Cost of Equity (Equity Rate)

DIRECT CAPITALIZATION

Direct capitalization is a valuation technique which takes a single year's income (or some other common unit of comparison) divided by a rate (or multiplied by a factor) to derive an estimate of value. This technique is often used in real estate appraisal to determine an overall or total valuation of the property. Income, whether potential gross income, effective gross income, or net operating income, is divided by the sales prices for comparable properties and the resulting ratio is then divided into the same level of income for the subject property to determine an overall valuation estimate.

This approach is not limited to various levels of income. The same concepts are used in the sales comparison approach, where various units of comparison are divided into the sales prices of comparable properties. The resulting rates (ratios) are then divided into the comparable units for the subject property to calculate an overall value.

The same procedures can be applied to ten producers. However, because direct capitalization is a comparable sales technique, it requires a higher level of comparability between the subject property (company) and the comparable than is required for yield capitalization. The process is one of identifying units of comparison, dividing such units by the sales price and applying the resulting average factor to the subject property (company). In the Direct Capitalization Study the goal is to develop value estimates for three distinct components system value: equity, preferred, and debt. This is a similar concept to the use of the Band of Investment method of rate development.

The Capitalization Rate Study lists six units of comparison for equity value from the November 2018, issue of The Value Line Investment Survey for the nine producers. All six units are shown on a per share basis for each individual company within the industry. The price per share used to compute the ratios is the same average of the 52-week highs and lows of the publicly traded prices for the preceding calendar year use in the DCF model. The resulting ratios appear in the table below. They are then divided into the appropriate figures for the subject company to obtain the estimate of value for the equity portion of the company.

	RATE
Revenue (Sales) per Share	103.91%
“Cash Flow” per Share	23.91%
Earnings per Share	6.06%
Dividends Declared per Share	1.73%
Capital Spending/Gross Equipment per Share	24.38%
Book Value per Share	64.85%

Table 4. Direct Capitalization Rates

It is important to emphasize that the developed value represents the value of the equity portion of the company, not the value of the item capitalized. This is because the basis for all the ratios is price per share of the common stock (or equity) of the company. After developing the equity value, the value of the preferred stock and the long-term debt must be derived directly from the market.

The market value of the preferred stock (if applicable) is obtained by dividing the preferred dividends paid by the subject company by the market preferred yield rate. The market value of the long-term debt is likewise found by dividing the long-term interest expense by the debt yield rate. Finally, the three portions (equity, preferred stock, and long-term debt) are added together to develop an estimate of the total value for the company.

The final step in calculating the Direct Capitalization indicator of value is to determine the market value for the operating property. It uses a factor developed in the stock and debt approach to remove non-operating property from the value of the company. Ratios that are generally utilized are the asset influence (operating assets divided by total assets), the income influence (operating income divided by total income), or an average of the two. The value of the non-operating property is thus excluded from the total valuation to determine the final value for the operating property by the Direct Capitalization approach.

EXHIBIT A

WEIGHTED AVERAGE COST OF CAPITAL

Production Year 2018 Rate of Return on Investment

<u>Type of Capital</u>	<u>Cost of Capital</u>	<u>Flotation Cost</u>	<u>Adjusted Cost of Capital</u>	x	<u>Percent of Structure</u>	=	<u>Weighted Average Cost of Capital</u>	
Debt	5.81%	2.15%	5.94%		31%		1.8678%	
Preferred		<i>Not Applicable</i>					0.0000%	
Equity	11.10%	2.24%	11.35%		69%		7.7811%	
Modified Netback Rate of Return								<u><u>9.6489%</u></u>

EXHIBIT B

DEBT & EQUITY INFORMATION

Wyoming Department of Revenue
 Netback Return on Investment Calculation
 Debt to Equity Ratio's
 Production Year: 2018

2018 Netback Return on Investment.xls
 Debt - Equity

		Production Year 2018			Calculated from Source		
	a	b	c	d	e	f	g
Company Name	Long Term Debt	Shares of Common Stock*	Value Line Recent Price	Value of Equity	Debt & Equity	Debt %	Equity %
				d=b*c	e=a+d	a/e	100%-f
Anadarko Petroleum	\$15,355,000,000	501,631,045	\$61.84	\$31,020,863,823 ✓	\$46,375,863,823	33%	67%
BP p.l.c.	\$55,000,000,000	3,341,735,000	\$40.92	\$136,743,796,200	\$191,743,796,200	29%	71%
Chesapeake Energy	\$9,380,000,000	913,710,098	\$3.48	\$3,179,711,141	\$12,559,711,141	75%	25%
Conoco Phillips	\$14,885,000,000	1,162,066,208	\$69.22	\$80,438,222,918	\$95,323,222,918	16%	84%
Devon Energy	\$5,790,000,000	468,200,000	\$29.62	\$13,868,084,000	\$19,658,084,000	29%	71%
Encana O&G	\$3,698,000,000	955,100,000	\$7.60	\$7,258,760,000	\$10,956,760,000	34%	66%
EOG Resources	\$5,171,900,000	579,903,041	\$105.71	\$61,301,550,464	\$66,473,450,464	8%	92%
ExxonMobil	\$20,624,000,000	4,233,807,170	\$79.22	\$335,402,204,007	\$356,026,204,007	6%	94%
QEP Resources Inc.	\$2,451,100,000	236,770,924	\$9.12	\$2,159,350,827	\$4,610,450,827	53%	47%

* BP p.l.c. is traded using American Depository Receipt's (ADR's). An ADR represents the ownership in the shares of a foreign company trading on US financial markets. The stock of many non-US companies trades on US exchanges through the use of ADRs. ADRs enable US investors to buy shares in foreign companies without undertaking cross-border transactions. ADRs carry prices in US dollars, pay dividends in US dollars, and can be traded like the shares of US-based companies

EXHIBIT C

RISK FREE RATES

Risk Free Rate for 2018 Capitalization Rates

Long Term Risk Free Rate: 3.13%

Source:

2018 weekly Value Line Investment Survey Selection & Opinions reports, "Selected Yields" Section, average of the annual high and low for the weekly 30-year U.S. Treasury Securities Yield.

Intermediate Risk Free Rate: 2.86%

Source:

2018 weekly Value Line Investment Survey Selection & Opinion reports, "Selected Yields" Section, average of the annual high and low for the weekly 10 year US Treasury Securities yield rates

Short Term Risk Free Rate: 2.69%

Source:

2018 weekly Value Line Investment Survey Selection & Opinion reports, "Selected Yields" Section, average of the annual high and low for the weekly 5 year US Treasury Securities yield rates

Corporate Risk Free Rate: 3.85%

Source:

2018 weekly Value Line Investment Survey Selection & Opinion reports, "Market Monitor" Section, average of the annual high and low for the weekly Mergent Aaa Corporate bond yield

Prime Lending Rate: 5.50%

Source:

Wall Street Journal, January 2, 2019 edition, "Markets Digest" section

EXHIBIT D

DUFF & PHELPS DATA

**Duff & Phelps 2018 Valuation Handbook Guide to Cost of Capital
(Market Results for 1926 - 2017 Exhibit 2.3)**

Series	Geometric Mean	Arithmetic Mean	Standard Deviation
Large Company Stocks: Total Return	10.2%	12.1%	19.8%
Small Company Stocks: Total Return	12.1%	16.5%	31.7%
Long-Term Corporate Bonds: Total Return	6.1%	6.4%	8.3%
Long-Term Government Bonds: Total Return	5.5%	6.0%	9.9%
Income Return	5.0%	5.0%	2.6%
Intermediate-Term Government Bonds: Total Return	5.1%	5.2%	5.6%
Income Return	4.4%	4.4%	2.9%
U.S. Treasury Bills: Total Return	3.4%	3.4%	3.1%
Inflation	2.9%	3.0%	4.1%

	Long-Term Equity Risk Premium (2017)	Intermediate Equity Risk Premium (2017)	Short-Term Equity Risk Premium (2017)	Corporate Equity Risk Premium (2017)
RP Rate Calculation (Rated Companies) (Using Arithmetic Means)				
Base: Total Return on Large Company Stocks	12.1%	12.1%	12.1%	12.1%
Risk Free Rates: Income Return on Long-Term Government Bonds	5.0%			
Income Return on Intermediate Term Gov't Bonds		4.4%		
Total Return on U.S. Treasury Bills			3.4%	
Total Return on Long-Term Corporate Bonds				6.4%
Equity Risk Premiums	<u>7.1%</u>	<u>7.7%</u>	<u>8.7%</u>	<u>5.7%</u>

EXHIBIT E

LIBRARY OF RATINGS

State of Wyoming - Department of Revenue Capitalization Rate Study

Production Year 2018

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
COMPANY DATA													
Capital Structure													
Company Name	Standard & Poors Credit Rating	Moody's Credit Rating	Value Line Source	% of Debt	% of Preferred Stock	% of Common Equity	Type of Operations (pure or diversified)	Projected Dividend Per Share (2017)	Earnings Growth Rate	Dividends Growth Rate	Book Value Growth Rate	Beta	Wall Street Journal Common Stock Price
12/31/2018													
Anadarko Petroleum	BBB	Ba1	Issue 12; 11/2/2018	33% ✓	0%	67%	Diversified	\$1.00	NMF	16.0%	-1.0%	1.60	\$58.55
BP p.l.c.	A-	A1	Issue 3; 11/30/2018	29% ✓	0%	71%	Diversified	\$1.46	NMF	2.5%	2.0%	1.25	\$41.99
Chesapeake Energy	B+	B2	Issue 3; 11/30/2018	75% ✓	0%	25%	Diversified	Nil	NMF	NMF	NMF	2.25	\$3.66
Conoco Phillips	A-	A3	Issue 12; 11/2/2018	16% ✓	0%	84%	Diversified	\$1.20	NMF	-1.0%	3.5%	1.40	\$65.21
Devon Energy	BBB	Ba1	Issue 3; 11/30/2018	29% ✓	0%	71%	Diversified	\$0.36	23.5%	-0.5%	12.0%	1.80	\$33.46
Encana O&G	BBB-	Ba1	Issue 3; 11/30/2018	34% ✓	0%	66%	Diversified	\$0.10	52.0%	-1.5%	8.0%	1.80	\$9.66
EOG Resources	A-	Baa1	Issue 3; 11/30/2018	8% ✓	0%	92%	Diversified	\$0.92	NMF	10.0%	16.5%	1.45	\$107.79
ExxonMobil	AA+	Aaa	Issue 3; 11/30/2018	6% ✓	0%	94%	Diversified	\$3.34	18.0%	3.0%	6.0%	1.05	\$76.98
QEP Resources Inc.	B+	Ba3	Issue 3; 11/30/2018	53% ✓	0%	47%	Diversified	Nil	NMF	Nil	NMF	1.85	\$9.39
Mean				31%	0%	69%		\$0.93	31.2%	3.6%	6.7%	1.61	\$45.18
Median				29%	0%	71%		\$1.00	23.5%	2.5%	6.0%	1.60	\$41.99
Minimum				6%	0%	25%		\$0.10	18.0%	-1.5%	-1.0%	1.05	\$3.66
Maximum				75%	0%	94%		\$3.34	52.0%	16.0%	16.5%	2.25	\$107.79

ⓐ - Calculation for Discounted Cash Flow (Traditional Model) is $(i)/(n) + ((i)^2) + ((j)^3) + (k)/(l)/5$
 ~ - The Weighted Cap Rate is calculated using the total of all growth rates divided by the total of all weighting factors
 # - Long Term Equity Risk Premium from 2015 Duff & Phelps Valuation Handbook Guide to Cost of Capital

State of Wyoming - Department of Revenue

Capitalization Rate Study

Production Year 2018

(a)	(c)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)
INDUSTRY DATA												
Company Name	Long-Term Risk Free Rate	Long-Term Equity Risk Premium	Intermediate Risk Free Rate	Intermediate Equity Risk Premium	Short-Term Risk Free Rate	Short-Term Equity Risk Premium	Corp. Risk Free Rate	Corp. Equity Risk Premium	Long-Term Risk Premium	Intermediate Risk Premium	Short-Term Risk Premium	Corporate Risk Premium
	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)
12/31/2018												
		#										
Anadarko Petroleum	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
BP p.l.c.	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
Chesapeake Energy	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
Conoco Phillips	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
Devon Energy	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
Encana O&G	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
EOG Resources	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
ExxonMobil	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
QEP Resources Inc.	3.13%	7.10%	2.86%	7.70%	2.69%	8.70%	3.85%	5.70%	10.23%	10.56%	11.39%	9.55%
Mean												
Median												
Minimum												
Maximum												

State of Wyoming - Department of Revenue Capitalization Rate Study

Production Year 2018

(a)	(aa)	(ab)	(ac)	(ad)	(ae)	(af)	(ag)	(ah)	(ai)
COMPANY FINANCIAL CALCULATIONS									
Discounted Cash Flow									
Capital Asset Pricing Model									
Company Name	Long-Term CAPM	Intermediate CAPM	Short-Term CAPM	Corporate CAPM	Traditional Model	Treating "Nil" as Zero	Based on Library Averages	Value Line Page Number	NYSE Ticker
	(o)+(p)*(m)	(q)+(r)*(m)	(s)+(t)*(m)	(u)+(v)*(m)	@	(i)/(j)+(bb)	(bb)		
Anadarko Petroleum	14.49%	15.18%	16.61%	12.97%	NMF	9.37%	7.67%	2397	APC
BP p.l.c.	12.01%	12.49%	13.57%	10.98%	NMF	5.39%	1.92%	502	BP
Chesapeake Energy	19.11%	20.19%	22.27%	16.68%	NMF	NMF	NMF	530	CHK
Conoco Phillips	13.07%	13.64%	14.87%	11.83%	NMF	2.51%	0.67%	2401	COP
Devon Energy	15.91%	16.72%	18.35%	14.11%	16.74%	8.74%	7.67%	533	DVN
Encana O&G	15.91%	16.72%	18.35%	14.11%	29.45%	11.62%	10.58%	536	ECA
EOG Resources	13.43%	14.03%	15.31%	12.12%	NMF	11.35%	10.50%	534	EOG
ExxonMobil	10.59%	10.95%	11.83%	9.84%	15.84%	10.84%	6.50%	508	XOM
QEP Resources Inc.	16.27%	17.11%	18.79%	14.40%	NMF	NMF	NMF	544	QEP
Mean	14.53%	15.22%	16.66%	13.00%	20.68%	8.55%	6.50%		
Median	14.49%	15.18%	16.61%	12.97%	16.74%	9.37%	7.67%		
Minimum	10.59%	10.95%	11.83%	9.84%	15.84%	2.51%	0.67%		
Maximum	19.11%	20.19%	22.27%	16.68%	29.45%	11.62%	10.58%		

State of Wyoming - Department of Revenue Capitalization Rate Study

Production Year 2018

(a)	(aj)	(ak)	(al)	(am)	(an)	(ao)	(ap)	(aq)	(ar)	(as)	(at)	(au)
DIRECT CAPITALIZATION ANALYSIS												
Computed Equity Ratios												
Company Name	Revenue (Sales) Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Declared Per Share	Capital Spending Per Share	Book Value Per Share	Revenue (Sales) Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Declared Per Share	Capital Spending Per Share	Book Value Per Share
	(ap)/(n)	(aq)/(n)	(ar)/(n)	(as)/(n)	(at)/(n)	(au)/(n)						
12/31/2018	Value Line Direct Capitalization Data											
Anadarko Petroleum	46.46%	18.70%	3.50%	1.54%	14.52%	31.08%	\$27.20	\$10.95	\$2.05	\$0.90	\$8.50	\$18.20
BP p.l.c.	216.12%	19.29%	8.10%	5.79%	11.31%	73.59%	\$90.75	\$8.10	\$3.40	\$2.43	\$4.75	\$30.90
Chesapeake Energy	298.22%	61.56%	10.94%	0.00%	73.87%	56.09%	\$10.90	\$2.25	\$0.40	Nil	\$2.70	\$2.05
Conoco Phillips	49.00%	15.03%	7.05%	1.78%	8.13%	41.17%	\$31.95	\$9.80	\$4.60	\$1.16	\$5.30	\$26.85
Devon Energy	61.72%	15.54%	4.93%	0.90%	15.99%	62.32%	\$20.65	\$5.20	\$1.65	\$0.30	\$5.35	\$20.85
Encana O&G	54.38%	20.71%	7.77%	0.62%	21.23%	75.09%	\$5.25	\$2.00	\$0.75	\$0.06	\$2.05	\$7.25
EOG Resources	28.25%	10.95%	5.52%	0.75%	10.34%	30.76%	\$30.45	\$11.80	\$5.95	\$0.81	\$11.15	\$33.15
ExxonMobil	88.86%	11.89%	6.17%	4.20%	7.02%	60.67%	\$68.40	\$9.15	\$4.75	\$3.23	\$5.40	\$46.70
QEP Resources Inc.	92.17%	41.56%	0.53%	0.00%	57.01%	152.90%	\$8.65	\$3.90	\$0.05	Nil	\$5.35	\$14.35
Mean	103.91%	23.91%	6.06%	1.73%	24.38%	64.85%	\$32.69	\$7.02	\$2.62	\$0.99	\$5.62	\$22.26
Median	61.72%	18.70%	6.17%	0.90%	14.52%	60.67%	\$27.20	\$8.10	\$2.05	\$0.90	\$5.35	\$20.85
Minimum	28.25%	10.95%	0.53%	0.00%	7.02%	30.76%	\$5.25	\$2.00	\$0.05	\$0.06	\$2.05	\$2.05
Maximum	298.22%	61.56%	10.94%	5.79%	73.87%	152.90%	\$90.75	\$11.80	\$5.95	\$3.23	\$11.15	\$46.70

State of Wyoming - Department of Revenue Capitalization Rate Study

Production Year 2018

	(av)	(aw)	(ax)	(ay)	(az)	(ba)	(bb)	(bc)	(bd)	(be)	(bf)	(bg)	(bh)	(bi)	(bj)	
12/31/2018	Capitalization Weighing															
Company Name	Factor	Weighted Earning Growth Rate (i)*(av)	Factor	Weighted Dividend Growth Rate (k)*(ax)	Factor	Weighted Book Value Growth Rate (l)*(az)	Weighted Cap. Rate	Disc. Cash Flow	Long Term Debt	Risk Premium	Total	Weighted Disc. Cash Flow	Weighted Long Term Debt	Weighted Risk Premium	Total	
Anadarko Petroleum	1	0.0%	3	48.0%	2	-2.0%	7.7%	66.00%	34.00%	0.00%	100%	5.64%	4.94%	0.00%	10.58%	
BP p.l.c.	1	0.0%	3	7.5%	2	4.0%	1.9%	34.00%	66.00%	0.00%	100%	2.91%	9.59%	0.00%	12.50%	
Chesapeake Energy	1	0.0%	3	0.0%	2	0.0%	NMF	0.00%	33.00%	67.00%	100%	0.00%	4.79%	6.85%	11.65%	
Conoco Philips	1	0.0%	3	-3.0%	2	7.0%	0.7%	33.00%	0.00%	67.00%	100%	2.82%	0.00%	6.85%	9.67%	
Devon Energy	1	23.5%	3	-1.5%	2	24.0%	7.7%	66.00%	0.00%	34.00%	100%	5.64%	0.00%	3.48%	9.12%	
Encana O&G	1	52.0%	3	-4.5%	2	16.0%	10.6%	0.00%	66.00%	34.00%	100%	0.00%	9.59%	3.48%	13.07%	
EOG Resources	1	0.0%	3	30.0%	2	33.0%	10.5%									
ExxonMobil	1	18.0%	3	9.0%	2	12.0%	6.5%									
QEP Resources Inc.	1	0.0%	3	0.0%	2	0.0%	NMF									
Mean																
Median																
Minimum																
Maximum																
														<u>AVERAGE</u>	11.10%	

EXHIBIT F

FLOTATION COST DATA

2019 Summary of Flotation Cost Analyses
Public Utilities Financing Tracker 2014 - 2018
March 2019

	<u>Number of Companies</u>	<u>Rate (Wtd. Avg.)</u>
DEBT:		
Public Utilities Financing Tracker 2014 - 2018	358	2.15%

COMMON:		
Public Utilities Financing Tracker 2014 - 2018	30	2.24%

**FLOTATION COST ANALYSIS 2019
DEBT ISSUES - PUBLIC OFFERINGS 2014 to 2018**

Company	Issue	Type of Utility	Year Issued	Amount Offered (\$000)	Price to Public (%)	Under-Writers' Commission (%)	Discount or Premium	Gross Proceeds to Issuer	Net Proceeds to Issuer	Estimated Expenses (\$000)	Flotation Amount (\$000)	Percent (%)	Weighted Average (%)
COMMONWEALTH EDISON CO	1ST MORT BONDS, SER 116	ELEC	2014	350,000	99.967	0.875	0.9909	\$346,822	\$342,760	1000	4,063	2.07%	0.0038%
NORTHERN STATES POWER CO	1ST MORT BONDS	ELEC	2014	100,000	99.647	0.650	0.9900	\$98,997	\$97,841	500	1,150	1.15%	0.0011%
ARIZONA PUBLIC SERVICE CO	NOTES	ELEC	2014	250,000	99.600	0.875	0.9873	\$246,813	\$244,121	504	2,692	2.35%	0.0031%
VIRGINIA ELECTRIC & POWER CO	SR NOTES, SER A	ELEC	2014	350,000	99.798	0.650	0.9915	\$347,018	\$344,156	587	2,862	1.67%	0.0031%
VIRGINIA ELECTRIC & POWER CO	SR NOTES, SER B	ELEC	2014	400,000	99.212	0.875	0.9834	\$393,348	\$389,185	663	4,163	2.70%	0.0037%
PACIFIC GAS & ELECTRIC CO	SR NOTES	ELEC	2014	450,000	99.901	0.650	0.9925	\$446,630	\$442,855	850	3,775	1.59%	0.0038%
PACIFIC GAS & ELECTRIC CO	SR NOTES	ELEC	2014	450,000	99.573	0.875	0.9870	\$444,141	\$439,354	850	4,788	2.37%	0.0046%
PUBLIC SERVICE CO. OF COLORADO	1ST MORT BONDS, SER #27	ELEC	2014	300,000	99.631	0.875	0.9876	\$296,268	\$292,803	750	3,375	2.37%	0.0038%
COMMONWEALTH EDISON OF NY	DEBENTURES, SERIES 2014 A	ELEC	2014	850,000	99.916	0.875	0.9904	\$841,849	\$833,061	1350	8,788	1.99%	0.0090%
NSTAR ELECTRIC COMPANY	DEBT	ELEC	2014	300,000	99.309	0.875	0.9843	\$295,302	\$292,157	520	3,145	2.61%	0.0032%
TUCSON ELECTRIC POWER CO	NOTES	ELEC	2014	150,000	99.445	0.875	0.9857	\$147,855	\$146,293	250	1,563	2.47%	0.0030%
ENERGY ARKANSAS	1ST MORT BONDS	ELEC	2014	375,000	99.928	0.650	0.9928	\$372,293	\$369,255	600	3,038	1.53%	0.0030%
PACIFICORP	1ST MORT BONDS	ELEC	2014	425,000	99.940	0.620	0.9932	\$422,110	\$418,685	790	3,425	1.49%	0.0033%
PEPCO	1ST MORT BOND	ELEC	2014	400,000	99.867	0.650	0.9922	\$396,868	\$390,768	3500	6,100	2.31%	0.0049%
ENERGY MISSISSIPPI	1ST MORT BONDS	ELEC	2014	100,000	99.970	0.650	0.9932	\$99,320	\$98,350	320	970	1.65%	0.0009%
OKLAHOMA GAS & ELEC CO	SR NOTES	ELEC	2014	250,000	99.677	0.875	0.9880	\$247,005	\$244,318	500	2,688	2.27%	0.0030%
MIDAMERICAN ENERGY CO	1ST MORT BONDS	ELEC	2014	300,000	99.511	0.650	0.9886	\$296,583	\$294,031	602	2,552	1.99%	0.0032%
MIDAMERICAN ENERGY CO	1ST MORT BONDS	ELEC	2014	400,000	99.399	0.875	0.9852	\$389,798	\$387,098	798	4,298	2.55%	0.0044%
DUKE ENERGY	SR NOTES	ELEC	2014	600,000	99.941	0.650	0.9929	\$595,746	\$590,846	1000	4,900	1.53%	0.0049%
AMEREN MISSOURI	SEN SEC NOTES	ELEC	2014	350,000	99.982	0.650	0.9933	\$347,662	\$344,887	500	2,775	1.46%	0.0027%
CONNECTICUT LIGHT AND POWER CO	1ST AND REFUNDING MORT BONDS, 2014 SERIES A	ELEC	2014	250,000	100.000	0.875	0.9913	\$245,166	\$245,166	459	2,647	1.93%	0.0026%
APPALACHIAN PWER CO	SR NOTES, SERIES U	ELEC	2014	300,000	99.306	0.875	0.9843	\$295,293	\$292,193	475	3,100	2.60%	0.0041%
NORTHERN STATES POWER CO	1ST MORT BONDS	ELEC	2014	300,000	99.709	0.875	0.9883	\$296,502	\$292,177	1700	4,325	2.61%	0.0041%
FLORIDA POWER & LIGHT CO	1ST MORT BONDS	ELEC	2014	500,000	99.871	0.650	0.9922	\$496,105	\$490,455	2400	5,650	1.91%	0.0031%
TAMPA ELECTRIC CO.	NOTES	ELEC	2014	300,000	99.933	0.875	0.9906	\$297,174	\$293,953	596	3,221	2.02%	0.0032%
ENTERGY TEXAS INC	1ST MORT BONDS	ELEC	2014	135,000	100.000	3.150	0.9685	\$130,748	\$126,020	475	4,728	6.65%	0.0048%
WESTAR ENERGY	1ST MORT BONDS	ELEC	2014	180,000	96.675	0.875	0.9580	\$172,440	\$170,715	150	1,725	1.16%	0.0009%
DTE ENERGY COMPANY	SR NOTES, SERIES C	ELEC	2014	350,000	99.914	0.650	0.9926	\$347,424	\$344,799	350	2,625	1.49%	0.0028%
SOUTH CAROLINA ELECTRIC & GAS CO	1ST MORT BONDS	ELEC	2014	300,000	98.938	0.875	0.9806	\$294,189	\$290,934	630	3,255	3.02%	0.0048%
PPL ELECTRIC UTILITY CORP	1ST MORT BONDS	ELEC	2014	300,000	98.827	0.875	0.9795	\$293,856	\$290,231	1000	3,625	3.26%	0.0032%
SOUTHWESTERN PUBLIC SERVICE CO	1ST MORT BONDS, SER #3	ELEC	2014	150,000	99.670	0.650	0.9902	\$148,530	\$146,955	600	1,575	2.03%	0.0016%
OGLETHORPE POWER CO	1ST MORT BONDS, SER 2014 A	ELEC	2014	250,000	99.370	0.875	0.9850	\$246,238	\$243,150	900	3,088	2.74%	0.0036%
ARIZONA PUBLIC SERVICE CO	NOTES	ELEC	2014	250,000	99.908	0.650	0.9926	\$248,145	\$246,422	498	2,123	1.59%	0.0021%
WISCONSIN ELECTRIC POWER CO.	DEBENTURES	ELEC	2014	250,000	99.376	0.875	0.9850	\$246,253	\$243,065	600	2,788	2.61%	0.0035%
DTE ENERGY COMPANY	GENERAL AND REF MORT BONDS, SERIES D	ELEC	2014	350,000	99.861	0.650	0.9921	\$347,239	\$344,714	250	2,525	1.51%	0.0028%
DTE ENERGY COMPANY	GENERAL AND REF MORT BONDS, SERIES E	ELEC	2014	350,000	99.849	0.875	0.9897	\$346,409	\$343,097	250	3,313	1.97%	0.0037%
AMEREN ILLINOIS	SR SEC NOTES	ELEC	2014	250,000	99.432	0.875	0.9856	\$246,393	\$242,205	12000	14,188	7.12%	0.0094%
ENERGY GULF STATES	1ST MORT BONDS	ELEC	2014	110,000	99.911	0.650	0.9926	\$109,187	\$108,122	350	1,065	1.11%	0.0010%
ENERGY LOUISIANA LLC	1ST MORT BONDS	ELEC	2014	190,000	99.910	0.650	0.9926	\$188,594	\$186,984	375	1,610	1.59%	0.0016%
CALPINE CORP	NOTES	ELEC	2014	1,550,000	100.000	1.250	0.9875	\$1,530,625	\$1,507,050	4200	23,575	2.77%	0.0228%
PACIFIC GAS & ELECTRIC CO	SR NOTES	ELEC	2014	350,000	99.925	0.650	0.9928	\$347,463	\$345,146	42	2,317	1.39%	0.0026%
PECO	1ST & REF MORT BONDS	ELEC	2014	300,000	99.657	0.875	0.9878	\$296,346	\$292,971	800	3,425	2.36%	0.0038%
CONSUMERS ENERGY	1ST MORT BONDS	ELEC	2014	250,000	99.898	0.650	0.9925	\$248,170	\$246,220	275	1,900	1.51%	0.0020%
CONSUMERS ENERGY	1ST MORT BONDS	ELEC	2014	250,000	99.137	0.875	0.9826	\$245,655	\$243,493	275	2,463	2.72%	0.0036%
ALABAMA POWER	SR NOTES SER. 2014A	ELEC	2014	400,000	99.204	0.875	0.9833	\$393,316	\$389,406	410	3,910	2.65%	0.0056%
FLORIDA POWER & LIGHT CO	1ST MORT BONDS	ELEC	2014	500,000	99.670	0.875	0.9880	\$493,975	\$487,200	2400	6,775	2.56%	0.0068%
GULF POWER	SR NOTES, SERIES 2014 A	ELEC	2014	200,000	99.804	0.875	0.9893	\$197,853	\$195,823	285	2,035	2.09%	0.0022%
DOMINION RESOURCES	ENHANCED JR. SUB. NOTES, SER. A	ELEC	2014	685,000	100.000	1.000	0.9900	\$678,150	\$670,600	700	7,550	2.10%	0.0076%
WISCONSIN POWER & LIGHT COMPANY	DEBENTURES	ELEC	2014	250,000	99.914	0.875	0.9904	\$247,598	\$244,810	600	2,788	2.08%	0.0028%
PACIFIC GAS & ELECTRIC CO	SR NOTES	ELEC	2014	500,000	98.851	0.875	0.9798	\$489,880	\$484,805	700	5,075	3.45%	0.0081%
COMMONWEALTH EDISON CO	1ST MORT BONDS, SER 117	ELEC	2014	250,000	99.915	0.650	0.9927	\$248,163	\$246,428	110	1,735	1.43%	0.0019%
NORTHWESTERN CORP	1ST MORT BONDS	ELEC	2014	450,000	100.000	0.875	0.9913	\$446,063	\$440,825	1300	5,338	2.43%	0.0049%
INTERSTATE POWER & LIGHT CO.	SR DEBENTURES	ELEC	2014	250,000	99.255	0.650	0.9861	\$246,513	\$244,288	600	2,225	2.29%	0.0030%
ATLANTIC CITY ELECTRIC	1ST MORT BONDS	ELEC	2014	150,000	99.957	0.650	0.9931	\$148,961	\$147,566	420	1,395	1.62%	0.0013%
ENERGY LOUISIANA LLC	1ST MORT BONDS	ELEC	2014	250,000	99.616	0.875	0.9874	\$246,853	\$244,285	380	2,568	2.29%	0.0030%
COMMONWEALTH EDISON OF NY	DEBENTURES, SERIES 2014 B	ELEC	2014	250,000	99.653	0.650	0.9900	\$247,508	\$245,483	400	2,025	1.81%	0.0024%
COMMONWEALTH EDISON OF NY	DEBENTURES, SERIES 2014C	ELEC	2014	750,000	99.745	0.875	0.9887	\$741,525	\$733,763	1200	7,763	2.17%	0.0086%
ELPASO ELECTRIC	SR NOTES	ELEC	2014	150,000	99.645	0.875	0.9877	\$148,155	\$146,443	400	1,713	2.37%	0.0019%

AMEREN ILLINOIS	SR SEC NOTES	ELEC	2014	300,000	99.943	0.650	0.9929	\$297,879	\$294,918	1011	2.961	1.69%	0.0027%
ENERGY ARKANSAS	1ST MORT BONDS	ELEC	2014	250,000	99.288	0.875	0.9841	\$246,033	\$243,455	390	2.578	2.62%	0.0035%
OKLAHOMA GAS & ELEC CO	ELEC	ELEC	2014	250,000	98.214	0.875	0.9734	\$243,348	\$240,635	525	2.713	3.75%	0.0030%
WGL HOLDINGS INC	SR NOTES	GAS	2014	125,000	92.612	0.875	0.9174	\$114,671	\$113,197	381	1.475	9.44%	0.0063%
LACLEDE GROUP INC	SR NOTES	GAS	2014	250,000	99.908	0.875	0.9903	\$247,583	\$243,895	1500	3.688	2.44%	0.0032%
PIEDMONT NATURAL GAS CO	SR NOTES	GAS	2014	250,000	99.826	0.750	0.9908	\$247,690	\$245,515	300	2.175	1.79%	0.0034%
ATMOS ENERGY	SR NOTES	GAS	2014	500,000	99.812	0.875	0.9894	\$494,685	\$489,310	1000	5.375	2.14%	0.0037%
WGL HOLDINGS INC	SR NOTES	GAS	2014	125,000	99.236	0.875	0.9835	\$122,939	\$121,279	566	1.660	2.98%	0.0020%
VERIZON COMMUNICATIONS	NOTES	TELE	2014	500,000	100.000	2.920	0.9708	\$485,400	\$470,325	475	15.075	5.94%	0.0157%
VERIZON COMMUNICATIONS	NOTES	TELE	2014	1,250,000	99.838	0.450	0.9939	\$1,242,350	\$1,235,625	1100	6.725	1.15%	0.0076%
VERIZON COMMUNICATIONS	NOTES	TELE	2014	1,250,000	99.925	0.750	0.9918	\$1,239,688	\$1,229,213	1100	10.475	1.66%	0.0110%
AT&T	GLOBAL NOTES	TELE	2014	2,000,000	99.636	0.750	0.9889	\$1,977,720	\$1,961,070	1650	16.650	1.95%	0.0206%
VERIZON COMMUNICATIONS	NOTES	TELE	2014	870,000	100.000	0.100	0.9990	\$869,130	\$867,585	675	1.545	0.38%	0.0013%
QWEST CORP	NOTES	TELE	2014	500,000	100.000	3.150	0.9685	\$484,250	\$467,400	1100	16.850	6.52%	0.0173%
AT&T	GLOBAL NOTES	TELE	2014	1,295,000	100.000	0.100	0.9990	\$1,289,820	\$1,289,820	2590	3.885	0.40%	0.0027%
BLACK HILLS CORORATION	NOTES	ELEC	2015	300,000	99.697	0.650	0.9905	\$297,141	\$294,291	900	2.850	1.90%	0.0030%
NORTHEAST UTILITIES	SR NOTES SER II	ELEC	2015	300,000	99.898	0.650	0.9925	\$297,744	\$295,005	789	2.739	1.67%	0.0026%
SOUTHERN CALIFORNIA EDISON	1ST AND REFUNDING MORT BONDS, SERIES 2015	ELEC	2015	425,000	99.616	0.875	0.9874	\$419,649	\$413,931	2000	5.719	2.60%	0.0059%
CONSOLIDATED EDISON CO.	1ST MORT BONDS, SER 118	ELEC	2015	400,000	100.000	0.875	0.9913	\$396,500	\$392,100	900	4.400	1.98%	0.0042%
ALABAMA POWER CO	SERIES A, SR NOTES	ELEC	2015	550,000	99.106	0.875	0.9843	\$536,073	\$541,371	485	5.298	2.53%	0.0074%
IDAHO POWER	1ST MORT BONDS	ELEC	2015	250,000	99.314	0.750	0.9856	\$246,410	\$244,025	510	2.385	2.39%	0.0032%
DUKE OF CAROLINAS	1ST AND REFUNDING MORT BONDS	ELEC	2015	500,000	99.166	0.875	0.9829	\$491,455	\$486,230	850	5.235	2.75%	0.0073%
SOUTHWESTERN ELECTRIC POWER CO.	SERIES J, SR, NOTES	ELEC	2015	400,000	99.108	0.875	0.9823	\$392,932	\$388,957	475	3.975	2.76%	0.0059%
AMEREN MISSOURI	SR, SEC NOTES	ELEC	2015	250,000	99.764	0.875	0.9889	\$247,223	\$244,635	400	2.588	2.15%	0.0028%
ALABAMA POWER CO	SERIES B, SR, NOTES	ELEC	2015	250,000	99.888	0.650	0.9924	\$248,095	\$246,140	330	1.955	1.54%	0.0020%
ALABAMA POWER CO	SERIES A, SR, NOTES	ELEC	2015	175,000	101.051	0.875	1.0018	\$175,308	\$173,487	290	1.821	0.86%	0.0008%
DELMARVA POWER & LIGHT CO.	1ST MORT BONDS	ELEC	2015	200,000	99.614	0.875	0.9904	\$198,078	\$195,853	475	2.225	2.07%	0.0022%
PUBLIC SERVICE CO. OF COLORADO	1ST MORT BONDS, NO. 28	ELEC	2015	250,000	99.881	0.650	0.9903	\$247,578	\$245,203	750	2.375	1.92%	0.0025%
PUDGET SOUND ENERGY	SR, NOTES	ELEC	2015	425,000	99.550	0.875	0.9868	\$419,369	\$414,790	860	4.579	2.40%	0.0054%
VIRGINIA ELECTRIC & POWER CO.	2015 SERIES A, SR, NOTES	ELEC	2015	350,000	99.838	0.650	0.9919	\$347,158	\$344,533	350	2.625	1.56%	0.0039%
APPALACHIAN POWER	SR, NOTES, SER V	ELEC	2015	350,000	99.644	0.875	0.9877	\$345,692	\$343,279	350	3.413	2.21%	0.0041%
APPALACHIAN POWER	SR, NOTES SER W	ELEC	2015	350,000	99.277	0.875	0.9840	\$344,407	\$340,813	532	3.595	2.63%	0.0049%
EVERSOURCE ENERGY (CONNECTICUT POWER & L	1ST & REF SER A	ELEC	2015	300,000	98.261	0.875	0.9739	\$292,158	\$288,977	556	3.181	3.67%	0.0058%
ARIZONA PUBLIC SERVICE CO	NOTES	ELEC	2015	300,000	99.474	0.650	0.9882	\$296,941	\$293,941	581	2.531	2.02%	0.0032%
WISCONSIN ELECTRIC POWER CO	DEBT	ELEC	2015	250,000	99.897	0.650	0.9925	\$248,118	\$245,818	675	2.300	1.67%	0.0022%
TAMPA ELECT CO	NOTES	ELEC	2015	250,000	99.814	0.875	0.9894	\$247,348	\$244,635	525	2.713	2.15%	0.0028%
ENTERGY TX	1ST MORT BONDS	ELEC	2015	250,000	99.816	0.875	0.9894	\$247,353	\$244,565	600	2.788	2.17%	0.0029%
SOUTH CAROLINA ELEC. & GAS CO	1ST MORT BONDS	ELEC	2015	500,000	99.193	0.875	0.9832	\$491,590	\$486,268	947	5.322	2.75%	0.0073%
XCEL ENERGY	SR NOTES	ELEC	2015	250,000	99.587	0.650	0.9894	\$247,343	\$245,018	700	2.325	1.99%	0.0026%
WISCONSIN ENERGY CORP	SR, NOTES	ELEC	2015	500,000	99.983	0.650	0.9933	\$496,665	\$490,915	2500	5.750	1.82%	0.0048%
EXELON CORP	NOTES	ELEC	2015	1,250,000	99.795	0.650	0.9915	\$1,239,313	\$1,228,474	2714	10.839	1.75%	0.0144%
EXELON CORP	NOTES	ELEC	2015	500,000	99.722	0.875	0.9885	\$494,235	\$488,798	1062	5.437	2.24%	0.0059%
EXELON CORP	NOTES	ELEC	2015	1,000,000	99.664	0.875	0.9879	\$987,890	\$977,016	2124	10.874	2.30%	0.0122%
PACIFIC GAS AND ELECT CO	SR NOTES	ELEC	2015	400,000	99.365	0.650	0.9872	\$394,860	\$391,380	880	3.480	2.16%	0.0046%
PACIFIC GAS AND ELECT CO	SR NOTES	ELEC	2015	100,000	94.769	0.875	0.9389	\$92,799	\$92,799	220	1.095	7.20%	0.0038%
NORTHERN STATES POWER CO	1ST MORT BOND	ELEC	2015	300,000	98.367	0.875	0.9749	\$292,476	\$287,601	2250	4.875	4.13%	0.0066%
DUKE ENERGY PROGRESS	1ST MORT BONDS	ELEC	2015	500,000	99.695	0.650	0.9905	\$495,225	\$491,188	787	4.037	1.76%	0.0037%
DUKE ENERGY PROGRESS	1ST MORT BONDS	ELEC	2015	700,000	99.493	0.875	0.9862	\$690,326	\$683,113	1088	7.213	2.41%	0.0089%
INTERSTATE POWER & LIGHT CO	SR, DEBT	ELEC	2015	250,000	99.740	0.650	0.9909	\$247,725	\$245,600	500	2.125	1.76%	0.0033%
KANSAS CITY POWER	NOTES	ELEC	2015	350,000	99.644	0.650	0.9899	\$346,479	\$343,804	400	2.675	1.77%	0.0033%
LOUISVILLE GAS & ELECT CO.	1ST MORT BOND	ELEC	2015	300,000	99.957	0.650	0.9931	\$297,921	\$295,421	550	2.500	1.53%	0.0024%
LOUISVILLE GAS & ELECT CO.	1ST MORT BOND	ELEC	2015	250,000	99.917	0.870	0.9905	\$247,618	\$244,993	450	2.625	2.00%	0.0027%
PACIFICORP	1ST MORT BONDS	ELEC	2015	250,000	99.872	0.650	0.9922	\$248,055	\$245,912	515	2.140	1.63%	0.0023%
DOMINION RESOURCES, INC	2015 SERIES B, SR, NOTES	ELEC	2015	650,000	99.876	0.650	0.9923	\$644,969	\$640,044	700	4.925	1.53%	0.0033%
KENTUCKY UTILITIES, INC	1ST MORT BONDS	ELEC	2015	250,000	99.957	0.650	0.9931	\$248,268	\$246,143	500	2.125	1.54%	0.0020%
KENTUCKY UTILITIES, INC	1ST MORT BONDS	ELEC	2015	350,000	99.917	0.875	0.9904	\$247,605	\$244,918	500	2.688	2.03%	0.0027%
PECO ENERGY CO	1ST & REFUNDING MORT BOND	ELEC	2015	875,000	100.000	3.150	0.9894	\$846,290	\$838,015	6000	8.275	3.42%	0.0064%
SOUTHERN COMPANY	SERIES 2015A JR SUB NOTES	ELEC	2015	300,000	101.358	0.650	0.9885	\$847,438	\$849,185	690	28.253	6.38%	0.0296%
PACIFIC GAS AND ELECT CO	SR, NOTES	ELEC	2015	200,000	98.000	0.650	1.0071	\$201,416	\$199,696	420	1.720	0.15%	0.0002%
PACIFIC GAS AND ELECT CO	SR, NOTES	ELEC	2015	450,000	98.000	0.875	0.9713	\$437,063	\$432,145	980	4.918	3.97%	0.0095%
CONSUMERS ENERGY	1ST MORT BONDS	ELEC	2015	250,000	99.913	0.875	0.9904	\$247,595	\$244,838	550	2.758	2.06%	0.0037%
ARIZONA PUBLIC SERVICE CO	NOTES	ELEC	2015	250,000	99.866	0.875	0.9899	\$247,478	\$244,720	570	2.758	2.11%	0.0028%
CMS ENERGY	SR, NOTES	ELEC	2015	250,000	99.683	0.650	0.9903	\$247,583	\$245,408	550	2.175	1.84%	0.0024%
PUBLIC SERVICE CO. OF NEW MEXICO	SR UNSECURED NOTE	ELEC	2015	250,000	99.722	0.650	0.9907	\$247,680	\$245,335	720	2.345	1.87%	0.0035%

CONSOLIDATED EDISON CO. OF NY	DEBT, SERIES 2015 A	ELEC	2015	650,000	99,900	0.875	0.9903	\$636,825	1150	6.38	2.03%	0.0070%
SOUTHERN POWER COMPANY	SR, NOTES SERIES 2015C	ELEC	2015	500,000	99,779	0.650	0.9913	\$495,645	428	3.678	1.61%	0.0041%
CONSOLIDATED EDISON CO.	1ST MORT BONDS, SER 119	ELEC	2015	450,000	99,222	0.875	0.9835	\$442,562	1800	5.738	2.93%	0.0070%
EVERSOURCE ENERGY (N-STAR)	DEBT, SERIES 2015 A	ELEC	2015	250,000	99,519	0.650	0.9887	\$247,173	466	2.991	1.97%	0.0026%
EVERSOURCE ENERGY (CONNECTICUT POWER & LIGHT)	1ST & REIT SER A	ELEC	2015	50,000	97,180	0.875	0.9631	\$48,153	264	702	5.10%	0.0014%
WISCONSIN ELECTRIC POWER CO	DEBT	ELEC	2015	250,000	99,711	0.875	0.9884	\$247,090	751	2,939	2.34%	0.0031%
FLORIDA POWER & LIGHT COMPANY	SR, NOTES	ELEC	2015	600,000	99,664	0.875	0.9879	\$592,734	1160	6,410	2.28%	0.0072%
AMEREN CO.	1ST MORT BONDS	ELEC	2015	600,000	99,837	0.650	0.9919	\$595,122	2700	6,600	1.91%	0.0061%
AMEREN ILLINOIS CO.	SR, NOTES	ELEC	2015	350,000	99,911	0.650	0.9926	\$347,414	1500	3,775	1.82%	0.0034%
AMEREN ILLINOIS CO.	SR, SECURED NOTES	ELEC	2015	250,000	99,001	0.875	0.9813	\$245,315	1200	3,388	3.23%	0.0043%
AT&T INC	GLOBAL NOTES	TELE	2015	2,619,000	100,000	0.100	0.9990	\$2,616,381	5238	7,857	0.40%	0.0056%
SPRINT	NOTES	TELE	2015	150,000	100,000	1.250	0.9875	\$148,125	500	2,375	2.83%	0.0023%
QWEST CORP	NOTES	TELE	2015	400,000	100,000	0.9685	0.9865	\$387,400	1200	13,800	6.60%	0.0140%
NATIONAL FUEL GAS CO	NOTES	GAS	2015	450,000	99,686	0.650	0.9904	\$445,662	1100	4,025	1.86%	0.0044%
PIEDMONT NATURAL GAS	SR, NOTES	GAS	2015	150,000	99,935	0.650	0.9929	\$148,928	300	1,275	1.57%	0.0012%
SEMPRA ENERGY	NOTES	GAS	2015	350,000	99,728	0.650	0.9908	\$346,773	500	2,775	1.71%	0.0032%
AGI CAPITAL CORP	SR, NOTES	GAS	2015	250,000	99,910	0.650	0.9926	\$248,150	325	1,950	1.52%	0.0020%
ENTERGY ARKANSAS	1ST MORT BONDS	ELEC	2016	325,000	99,671	0.650	0.9902	\$321,818	550	2,663	1.80%	0.0031%
ALABAMA POWER CO	SR, NOTES	ELEC	2016	400,000	99,334	0.875	0.9846	\$393,836	400	3,900	2.52%	0.0053%
VIRGINIA ELECTRIC & POWER CO.	2016 SER. A, SENIOR NOTES	ELEC	2016	750,000	99,991	0.650	0.9934	\$745,058	700	5,575	1.40%	0.0056%
PACIFIC GAS & ELECT CO.	SR, NOTES	ELEC	2016	600,000	99,734	0.650	0.9908	\$594,504	1300	5,200	1.78%	0.0057%
INDIANA MICHIGAN POWER CO.	SR, NOTES, SER K	ELEC	2016	400,000	99,657	0.875	0.9878	\$395,128	615	4,115	2.25%	0.0048%
GEORGIA POWER	SERIES 2016 A	ELEC	2016	325,000	99,624	0.650	0.9897	\$321,666	320	2,433	1.77%	0.0031%
PUBLIC SERVICE ELECTRIC GAS CO. (PSE&G)	MED-TERM NOTES, SER. K	ELEC	2016	550,000	99,556	0.750	0.9881	\$543,433	3600	7,725	2.60%	0.0076%
ENTERGY LOUISIANA, LLC	1ST MORT BONDS	ELEC	2016	200,000	97,006	0.875	0.9613	\$192,262	450	2,200	4.97%	0.0053%
EVERSOURCE ENERGY	SR, NOTES, SERIES J	ELEC	2016	250,000	99,696	0.650	0.9905	\$247,615	931	2,556	1.98%	0.0026%
DUKE ENERGY CAROLINAS	1ST & REFUNDING MORT BONDS	ELEC	2016	500,000	99,647	0.875	0.9877	\$493,860	1000	5,375	2.30%	0.0061%
IDAHO POWER CO	1ST MORT BONDS	ELEC	2016	120,000	99,746	0.750	0.9900	\$118,795	360	1,260	2.05%	0.0013%
ENTERGY LOUISIANA, LLC	COLLATERAL TRUST MORT BONDS	ELEC	2016	425,000	99,990	0.675	0.9932	\$422,089	686	3,555	1.52%	0.0034%
EXELON CORP	NOTES	ELEC	2016	750,000	99,940	0.650	0.9929	\$744,675	1200	6,075	1.52%	0.0060%
EXELON CORP	NOTES	ELEC	2016	750,000	99,990	0.875	0.9862	\$739,613	1200	7,763	2.42%	0.0096%
OGLETHORPE POWER CORP	1ST MORT BONDS, SER. 2016 A	ELEC	2016	250,000	98,375	0.875	0.9750	\$243,750	766	2,954	3.68%	0.0049%
NSTAR ELEC CO.	DEBT	ELEC	2016	250,000	99,652	0.650	0.9900	\$247,505	484	2,109	1.84%	0.0024%
DUKE ENERGY INDIANA	1ST MORT BONDS, SERIES XXX	ELEC	2016	500,000	99,631	0.875	0.9886	\$494,280	580	4,955	2.14%	0.0037%
ENTERGY MISSISSIPPI, INC	1ST MORT BONDS	ELEC	2016	375,000	99,768	0.675	0.9929	\$372,349	530	3,061	1.52%	0.0030%
PPL CAPITAL FUNDING INC.	SR, NOTES	ELEC	2016	650,000	99,872	0.650	0.9922	\$644,943	1000	5,225	1.58%	0.0054%
ENTERGY LOUISIANA, LLC	COLLATERAL TRUST MORT BONDS	ELEC	2016	325,000	99,402	0.750	0.9865	\$320,619	575	3,013	2.27%	0.0039%
SAN DIEGO GAS & ELECT CO.	1ST MORT BONDS, SERIES OQQ	ELEC	2016	500,000	99,675	0.650	0.9903	\$495,125	500	3,750	1.73%	0.0046%
ENERGY NEW ORLEANS	1ST MORT BONDS	ELEC	2016	85,000	100,000	0.650	0.9935	\$84,448	550	1,103	1.95%	0.0009%
NORTHERN STATES POWER CO.	1ST MORT BONDS	ELEC	2016	350,000	99,402	0.875	0.9853	\$344,845	1500	4,563	2.78%	0.0031%
PUBLIC SERVICE CO OF COLORADO	1ST MORT BONDS, SER. NO. 29	ELEC	2016	250,000	98,960	0.875	0.9809	\$245,213	800	2,988	3.11%	0.0041%
SOUTH CAROLINA ELECT & GAS CO.	1ST MORT BONDS	ELEC	2016	425,000	99,794	0.875	0.9892	\$420,406	659	4,378	2.11%	0.0048%
SOUTH CAROLINA ELECT & GAS CO.	1ST MORT BONDS	ELEC	2016	75,000	97,843	0.875	0.9697	\$72,726	116	772	4.06%	0.0016%
SOUTHERN POWER	SER. 2016 B, SENIOR NOTES	ELEC	2016	566,500	99,855	0.500	0.9936	\$562,846	510	3,343	1.24%	0.0037%
WESTAR ENERGY	1ST MORT BONDS, SERIES 2 55	ELEC	2016	350,000	99,859	0.875	0.9921	\$347,232	150	2,425	1.48%	0.0028%
CONSOLIDATED EDISON OF NEW YORK	DEBT, SERIES 2016A	ELEC	2016	550,000	99,859	0.875	0.9898	\$544,412	1110	5,923	2.09%	0.0061%
COMMONWEALTH EDISON	1ST MORT BONDS, SER. 120	ELEC	2016	500,000	100,000	0.650	0.9935	\$496,750	1040	4,290	1.51%	0.0040%
COMMONWEALTH EDISON	1ST MORT BONDS, SER. 121	ELEC	2016	750,000	99,351	0.875	0.9848	\$738,570	1560	8,123	2.61%	0.0104%
DUKE ENERGY OHIO, INC	1ST MORT BONDS, SERIES 3 70%	ELEC	2016	250,000	99,301	0.875	0.9843	\$246,065	400	2,588	2.61%	0.0035%
UNION ELECTRIC	SR, NOTES	ELEC	2016	150,000	99,501	0.875	0.9863	\$147,939	600	1,913	2.65%	0.0021%
ITC HOLDINGS CORP	NOTES	ELEC	2016	400,000	99,865	0.650	0.9922	\$396,860	1050	3,650	1.70%	0.0036%
ENTERGY MISSISSIPPI, INC	1ST MORT BONDS	ELEC	2016	260,000	100,000	3.150	0.9685	\$251,810	535	8,725	6.51%	0.0090%
DOMINION RESOURCES, INC VA	2016 SERIES D, SR, NOTES	ELEC	2016	400,000	99,965	0.650	0.9932	\$397,260	1500	4,100	1.71%	0.0036%
SOUTHWESTERN PUBLIC SERVICE CO.	1ST MORT BONDS, SER. NO. 4	ELEC	2016	300,000	99,831	0.875	0.9896	\$296,868	750	3,375	2.17%	0.0034%
CENTER POINT ENERGY HOUSTON ELECT	GEN MORT BONDS, SER. Z	ELEC	2016	300,000	99,884	0.650	0.9923	\$297,702	900	2,850	1.72%	0.0027%
DUKE ENERGY	SR, NOTES	ELEC	2016	1,500,000	99,944	0.875	0.9907	\$1,486,035	2650	15,775	1.98%	0.0158%
ENTERGY ARKANSAS	1ST MORT BONDS	ELEC	2016	410,000	100,000	3.150	0.9685	\$397,085	710	13,625	6.47%	0.0141%
BLACK HILLS CORP	NOTES	ELEC	2016	400,000	99,946	0.650	0.9930	\$393,184	800	3,400	1.55%	0.0033%
BLACK HILLS CORP	NOTES	ELEC	2016	300,000	99,455	0.875	0.9858	\$295,740	600	3,225	2.50%	0.0040%
ENTERGY LOUISIANA, LLC	COLLATERAL TRUST MORT BONDS	ELEC	2016	270,000	100,000	3.150	0.9685	\$261,495	495	9,000	6.48%	0.0093%
BALTIMORE GAS & ELECTRIC CO.	2-4% NOTES	ELEC	2016	350,000	99,700	0.650	0.9905	\$346,675	880	3,155	1.85%	0.0034%
BALTIMORE GAS & ELECTRIC CO.	3-5% NOTES	ELEC	2016	500,000	99,908	0.875	0.9903	\$495,165	120	4,495	1.87%	0.0049%
DUKE ENERGY FLORIDA LLC	1ST MORT BONDS	ELEC	2016	600,000	99,438	0.875	0.9856	\$591,378	575	5,825	2.41%	0.0077%
PUBLIC SERVICE ELECTRIC GAS CO. (PSE&G)	MED-TERM NOTES, SER. L	ELEC	2016	425,000	99,671	0.600	0.9907	\$421,052	2600	5,150	2.14%	0.0048%
DUKE ENERGY PROGRESS	1ST MORT BONDS	ELEC	2016	450,000	99,745	0.875	0.9887	\$444,915	450	4,388	2.11%	0.0050%

ARIZONA PUBLIC SERVICE CO.	NOTES	2016	99.537	0.650	0.9889	\$247,218	\$245,063	530	2,155	1.98%	0.0026%
SOUTHWESTERN ELECTRIC POWER CO.	SR NOTES, SER. K	2016	99.896	0.650	0.9925	\$396,984	\$393,804	580	3,180	1.55%	0.0033%
ENTERGY LOUISIANA, LLC	COLLATERAL TRUST MORT BONDS	2016	99.577	0.650	0.9903	\$395,708	\$392,358	750	3,350	1.91%	0.0040%
EMS ENERGY CORP	SR NOTES	2016	99.651	0.650	0.9900	\$272,253	\$269,990	475	2,263	1.8%	0.0027%
SOUTHERN POWER	SER. 2016 F. SENIOR NOTES	2016	98.562	0.875	0.9769	\$390,748	\$386,873	375	3,875	3.28%	0.0070%
VIRGINIA ELECTRIC & POWER CO.	2016 SER. B, SENIOR NOTES	2016	99.708	0.650	0.9906	\$396,232	\$393,324	308	2,908	1.67%	0.0035%
VIRGINIA ELECTRIC & POWER CO.	2016 SER. C, SENIOR NOTES	2016	99.532	0.875	0.9866	\$493,285	\$488,518	392	4,767	2.30%	0.0061%
DUKE ENERGY CAROLINAS	1ST & REFUNDING MORT BONDS	2016	99.758	0.650	0.9911	\$594,648	\$589,548	1200	5,100	1.74%	0.0055%
DUKE ENERGY CAROLINAS	SR NOTES	2016	99.806	0.650	0.9916	\$495,780	\$491,680	850	4,100	1.66%	0.0044%
PACIFIC GAS & ELECT. CO.	SR NOTES	2016	98.764	0.875	0.9789	\$391,556	\$387,056	1000	4,500	3.24%	0.0069%
CONSOLIDATED EDISON OF NEW YORK	DEBT, SERIES 2016B	2016	99.593	0.650	0.9854	\$247,358	\$245,238	495	2,120	1.91%	0.0025%
CONSOLIDATED EDISON OF NEW YORK	DEBT, SERIES 2016C	2016	98.943	0.875	0.9807	\$490,340	\$484,960	1005	5,380	3.01%	0.0080%
DELMARVA POWER & LIGHT CO.	1ST MORT BONDS	2016	100.443	0.875	0.9957	\$174,244	\$172,213	500	2,031	1.59%	0.0015%
AGI CAPITAL CORP	SR NOTES	2016	99.598	0.650	0.9895	\$346,318	\$343,718	325	2,600	1.79%	0.0033%
PEIDMONT NATURAL GAS CO., INC.	SR NOTES	2016	99.878	0.875	0.9900	\$297,009	\$294,084	300	2,925	1.97%	0.0031%
SOUTHERN GAS COMPANY CAPITAL CORP	SR NOTES	2016	99.823	0.875	0.9895	\$544,214	\$538,902	500	5,313	2.02%	0.0039%
SOUTHWEST GAS CORP	SR NOTES	2016	99.698	0.875	0.9882	\$296,469	\$292,244	600	3,225	2.23%	0.0076%
SOUTHWEST GAS CORP	1ST MORT BONDS	2016	99.940	0.650	0.9929	\$645,385	\$637,060	4100	8,325	1.99%	0.0069%
DUKE ENERGY FLORIDA	1ST MORT BONDS	2017	99.968	0.600	0.9937	\$372,630	\$370,297	83	2,333	1.25%	0.0025%
MIDAMERICAN ENERGY INC	\$375,000,000 3.10% First Mortgage Bonds due 2027	2017	475,000	0.800	0.9906	\$470,530	\$466,628	102	3,902	1.76%	0.0044%
MIDAMERICAN ENERGY INC	\$475,000,000 3.95% First Mortgage Bonds due 2047	2017	475,000	0.800	0.9920	\$347,204	\$344,234	695	2,970	1.65%	0.0031%
WESTAR ENERGY	1ST MORT BONDS	2017	99.612	0.650	0.9896	\$296,886	\$294,786	150	2,100	1.74%	0.0028%
GEORGIA POWER	SER. 2017, SR, NOTES	2017	400,000	0.650	0.9924	\$396,948	\$393,988	360	2,960	1.50%	0.0032%
DTE ENERGY	SR NOTES, 2017 SER. A	2017	500,000	0.650	0.9909	\$495,430	\$491,680	500	3,750	1.66%	0.0044%
VIRGINIA ELECTRIC AND POWER CO	SR NOTES, SERIES A	2017	750,000	0.650	0.9926	\$744,435	\$738,860	700	5,575	1.49%	0.0059%
ARIZONA PUBLIC SERVICE CO	1ST AND REFUNDING MORT BONDS, SER. 2017A	2017	250,000	0.875	1.0065	\$251,635	\$248,882	566	2,754	0.45%	0.0006%
SO CALIFORNIA Edison	SR NOTES	2017	700,000	0.875	0.9906	\$693,392	\$686,047	1220	7,345	1.99%	0.0074%
OKLAHOMA GAS ELECTRIC CO	DEBENTURES	2017	300,000	0.875	0.9906	\$397,171	\$393,996	550	3,175	2.00%	0.0032%
NEXTERA ENERGY CAPITAL HOLDINGS INC	DEBENTURES	2017	1,250,000	0.650	0.9907	\$1,238,325	\$1,229,600	600	8,725	1.63%	0.0108%
APPALACHIAN POWER CO.	SR NOTES, SERIES Y	2017	325,000	0.650	0.9884	\$321,230	\$318,588	530	2,643	1.97%	0.0034%
PPL ELECTRIC UTILITIES CORP	1ST MORT BONDS	2017	475,000	0.875	0.9812	\$466,046	\$460,890	1000	5,156	2.97%	0.0075%
NSTAR ELECT CO	DEBT	2017	350,000	0.650	0.9862	\$345,184	\$342,219	690	2,965	2.22%	0.0041%
GULF POWER	SR NOTES, SER. 2017A	2017	300,000	0.650	0.9818	\$294,540	\$292,210	380	2,330	2.60%	0.0041%
ENTERGY LOUISIANA	COLLATERAL TRUST MORT BONDS	2017	450,000	0.650	0.9930	\$446,855	\$443,180	750	3,675	1.52%	0.0036%
CONSOLIDATED EDISON OF NY	DEBENTURES, SER. 2017A	2017	500,000	0.875	0.9876	\$493,775	\$488,300	1100	5,475	2.34%	0.0062%
SEMPRA ENERGY CAPITAL HOLDING INC	NOTES	2017	750,000	0.650	0.9904	\$742,810	\$736,755	1200	6,075	1.77%	0.0070%
PUBLIC SERVICE CO OF COLORADO	1ST MORT BONDS, SER. NO. 37	2017	400,000	0.875	0.9872	\$394,868	\$390,648	720	4,220	2.34%	0.0050%
KANSAS CITY POWER AND LIGHT CO	NOTES	2017	99.729	0.875	0.9885	\$296,562	\$293,537	400	3,025	2.15%	0.0034%
FIRST ENERGY CORP	NOTES SER. B	2017	1,500,000	0.650	0.9902	\$1,485,255	\$1,472,145	3360	13,110	1.86%	0.0148%
FIRST ENERGY CORP	NOTES SER. C	2017	1,000,000	0.875	0.9849	\$984,940	\$973,950	2240	10,990	2.61%	0.0138%
INDIANA MICHIGAN POWER CO	SR NOTES, SER. L	2017	300,000	0.875	0.9843	\$295,287	\$292,144	518	3,143	2.62%	0.0042%
DTE ELECT CO	SER. B, GENERAL AND REFUNDING MORT BONDS	2017	440,000	0.875	0.9907	\$435,912	\$431,387	675	4,525	1.96%	0.0046%
SOUTHWESTERN PUBLIC SERVICE CO.	1ST MORT BONDS, SER. NO. 5	2017	450,000	0.875	0.9855	\$443,475	\$438,638	900	4,838	2.53%	0.0066%
DUKE ENERGY	SR NOTES	2017	750,000	0.650	0.9907	\$743,018	\$736,118	2025	6,900	1.85%	0.0074%
DUKE ENERGY	SR NOTES	2017	500,000	0.875	0.9872	\$493,615	\$487,890	1350	5,725	2.42%	0.0064%
DUKE ENERGY PROGRESS	1ST MORT BONDS	2017	500,000	0.875	0.9898	\$494,890	\$489,725	790	5,165	2.06%	0.0054%
ARIZONA PUBLIC SERVICE CO	NOTES	2017	300,000	0.650	0.9928	\$297,843	\$295,236	657	2,607	1.59%	0.0025%
NORTHERN STATES POWER CO.	NOTES	2017	600,000	0.875	0.9813	\$588,768	\$580,618	2900	8,150	3.23%	0.0103%
PPL ELECTRIC UTILITIES CORP	SR NOTES	2017	500,000	0.875	0.9792	\$489,585	\$485,110	100	4,475	2.98%	0.0079%
VIRGINIA ELECTRIC AND POWER CO	SR NOTES, SERIES B	2017	550,000	0.875	0.9869	\$542,801	\$537,288	700	5,513	2.31%	0.0067%
GEORGIA POWER	JR SUB NOTES SER. 2017A	2017	270,000	3.150	0.9685	\$261,495	\$252,630	360	8,865	6.43%	0.0092%
NSTAR ELECT CO	DEBT	2017	350,000	0.650	1.0052	\$351,831	\$348,861	695	2,970	0.33%	0.0006%
WISCONSIN POWER AND LIGHT COMPANY	DEBENTURES	2017	300,000	0.650	0.9906	\$297,177	\$294,727	500	2,450	1.76%	0.0028%
NEXTERA ENERGY CAPITAL HOLDINGS INC	SER. M, JR. SUB DEBT	2017	550,000	1.000	0.9900	\$544,500	\$538,250	750	6,250	2.14%	0.0062%
ALABAMA POWER	SR NOTES, SERIES 2017B	2017	550,000	0.875	0.9900	\$544,478	\$539,181	485	5,298	1.97%	0.0037%
AMERICAN ELECTRIC POWER CO., INC	SR NOTES, SER. H	2017	500,000	0.650	0.9918	\$495,900	\$491,000	1650	4,900	1.80%	0.0048%
ENTERGY MISSISSIPPI	1ST MORT BONDS	2017	150,000	0.650	0.9901	\$148,514	\$147,139	400	1,375	1.91%	0.0015%
DUKE ENERGY CAROLINAS	1ST AND REFUNDING MORT BONDS	2017	550,000	0.875	0.9898	\$544,385	\$538,972	600	5,413	2.01%	0.0058%
CONSOLIDATED EDISON OF NY	DEBENTURES, SER. 2017B	2017	350,000	0.650	0.9932	\$347,634	\$344,654	705	2,980	1.53%	0.0028%
CONSOLIDATED EDISON OF NY	DEBENTURES, SER. 2017C	2017	350,000	0.875	0.9845	\$344,572	\$340,804	705	3,768	2.63%	0.0049%
FLORIDA POWER LIGHT CO	1ST MORT BONDS	2017	700,000	0.875	0.9833	\$688,338	\$679,313	2900	9,025	2.96%	0.0110%
AMEREN ILLINOIS	1ST MORT BONDS	2017	150,000	0.650	0.9909	\$148,632	\$147,267	390	1,365	1.82%	0.0014%
AMEREN ILLINOIS	1ST MORT BONDS	2017	500,000	0.875	0.9841	\$492,035	\$485,860	1800	6,175	2.83%	0.0075%
SO COMPANY	SER. 2017B JR. SUB NOTES	2017	450,000	3.150	0.9685	\$435,825	\$421,205	445	14,620	6.40%	0.0153%
NORTHERN STATES POWER CO. WI	1ST MORT BONDS	2017	100,000	0.875	0.9886	\$98,857	\$97,482	500	1,375	2.52%	0.0013%

SOUTHERN COMPANY GAS	SR, NOTES SER. 2017A	GAS	2017	450,000	99,765	0.875	0.9889	\$445,005	\$440,608	460	4,398	2.09%	0.0050%
NISOURCE FINANCE CORP	NOTES	GAS	2017	1,000,000	99,984	0.650	0.9933	\$993,340	\$985,528	1312	7,812	1.45%	0.0077%
NISOURCE FINANCE CORP	NOTES	GAS	2017	1,000,000	99,918	0.875	0.9904	\$990,430	\$980,367	1313	10,063	1.96%	0.0104%
NISOURCE FINANCE CORP	SR, NOTES	GAS	2017	500,000	99,725	0.650	0.9908	\$491,375	\$491,455	670	3,920	1.71%	0.0045%
SAN DIEGO GAS AND ELECTRIC CO	IST MORT BONDS, SER. RRR	GAS	2017	400,000	99,554	0.875	0.9868	\$394,716	\$390,716	500	4,000	2.32%	0.0049%
OKLAHOMA GAS AND ELECTRIC CO	SR, NOTES	GAS	2017	300,000	99,682	0.875	0.9881	\$296,423	\$293,096	700	3,325	2.30%	0.0037%
BALTIMORE GAS AND ELECTRIC CO	NOTES	GAS	2017	300,000	99,199	0.875	0.9832	\$294,972	\$291,847	500	3,125	2.72%	0.0043%
NISOURCE FINANCE CORP	NOTES	GAS	2017	750,000	99,892	0.875	0.9902	\$742,628	\$734,765	1300	7,863	2.03%	0.0081%
PECO ENERGY CO	IST AND REFUNDING NOTES, SER. K	GAS	2017	325,000	99,623	0.875	0.9875	\$317,887	\$317,887	600	3,444	2.31%	0.0040%
NATIONAL FUEL GAS CO	NOTES	GAS	2017	300,000	99,317	0.650	0.9867	\$296,001	\$293,151	900	2,850	2.38%	0.0036%
VERIZON COMMUNICATIONS INC	NOTES	TELE	2017	1,475,000	100,000	0.100	0.9990	\$1,473,525	\$1,470,050	2000	3,475	0.34%	0.0026%
AT&T INC	U.S. \$2,000,000,000.4 250% Global Notes due 2027	TELE	2017	2,000,000	99,940	0.400	0.9954	\$1,990,800	\$1,981,755	1045	9,045	0.91%	0.0097%
AT&T INC	U.S. \$3,000,000,000.5 250% Global Notes due 2037	TELE	2017	3,000,000	99,539	0.600	0.9893	\$2,967,870	\$2,948,303	1567	19,567	1.72%	0.0274%
AT&T INC	U.S. \$2,000,000,000.5 450% Global Notes due 2047	TELE	2017	3,000,000	99,439	0.750	0.9869	\$2,960,670	\$2,936,603	1567	24,067	2.11%	0.0336%
AT&T INC	U.S. \$1,000,000,000.5 700% Global Notes due 2057	TELE	2017	1,000,000	99,401	0.800	0.9860	\$986,010	\$977,439	571	8,571	2.26%	0.0120%
AT&T INC	5.500% Global Notes due 2047	TELE	2017	1,430,000	100,000	0.100	0.9990	\$1,428,570	\$1,424,280	2860	4,290	0.40%	0.0010%
VERIZON COMMUNICATIONS INC	\$3,250,000,000.4 125% Notes due 2027	TELE	2017	3,250,000	99,256	0.400	0.9886	\$3,212,820	\$3,198,098	1722	14,722	1.60%	0.0275%
VERIZON COMMUNICATIONS INC	\$3,000,000,000.5 250% Notes due 2037	TELE	2017	3,000,000	99,230	0.600	0.9863	\$2,958,900	\$2,939,301	1599	19,599	2.02%	0.0323%
VERIZON COMMUNICATIONS INC	\$1,500,000,000.5 500% Notes due 2047	TELE	2017	1,500,000	99,100	0.750	0.9835	\$1,475,250	\$1,463,221	779	12,029	2.45%	0.0195%
QUEST CORP	NOTES	TELE	2017	575,000	100,000	3.150	0.9685	\$556,888	\$537,275	1500	19,613	6.56%	0.0200%
AT&T INC	U.S. \$5,000,000,000.3 900% Global Notes due 2027	TELE	2017	5,000,000	99,827	0.400	0.9943	\$4,971,350	\$4,948,133	3217	23,217	1.04%	0.0275%
AT&T INC	U.S. \$4,500,000,000.4 900% Global Notes due 2037	TELE	2017	4,500,000	99,822	0.600	0.9932	\$4,464,990	\$4,435,201	2789	29,789	1.44%	0.0343%
AT&T INC	U.S. \$5,000,000,000.5 150% Global Notes due 2050	TELE	2017	5,000,000	99,779	0.800	0.9903	\$4,951,450	\$4,910,733	3217	40,717	1.79%	0.0473%
AT&T INC	U.S. \$2,500,000,000.5 300% Global Notes due 2058	TELE	2017	2,500,000	99,766	0.800	0.9897	\$2,474,150	\$2,452,648	1502	21,502	1.89%	0.0251%
AT&T INC	GLOBAL NOTES	TELE	2017	1,150,000	100,000	3.150	0.9685	\$1,113,775	\$1,076,950	600	36,825	6.35%	0.0387%
EVERSOURCE ENERGY	SR, NOTES, SER. M	ELEC	2018	450,000	99,932	0.650	0.9928	\$446,769	\$445,574	1270	4,195	1.65%	0.0039%
SOUTHWESTERN ELECTRIC POWER CO	SR, NOTES, SER. L	ELEC	2018	450,000	99,878	0.875	0.9900	\$445,514	\$441,026	550	4,488	1.99%	0.0048%
MID AMERICAN ENERGY CO	IST MORT BONDS	ELEC	2018	700,000	99,127	0.800	0.9833	\$688,289	\$681,389	1300	6,900	2.66%	0.0099%
COMMONWEALTH EDISON CO	IST MORT BONDS, SER. 124	ELEC	2018	800,000	99,981	0.875	0.9911	\$792,848	\$783,848	2000	9,000	2.02%	0.0086%
CENTERPOINT ENERGY HOUSTON	GENERAL MORTGAGE BONDS, SERIES AB	ELEC	2018	400,000	99,564	0.875	0.9869	\$394,736	\$390,356	900	4,400	2.41%	0.0051%
DUKE ENERGY CAROLINAS, LLC	IST AND REFUNDING MORTGAGE BONDS	ELEC	2018	500,000	99,527	0.875	0.9865	\$493,260	\$487,970	915	5,290	2.41%	0.0064%
FLORIDA POWER AND LIGHT COMPANY	IST MORT BONDS	ELEC	2018	1,000,000	99,460	0.875	0.9859	\$985,850	\$973,000	4100	12,850	2.70%	0.0143%
KANSAS CITY POWER & LIGHT COMPANY	NOTES	ELEC	2018	300,000	99,913	0.875	0.9904	\$297,114	\$294,089	400	3,025	1.97%	0.0031%
SOUTHERN CALIFORNIA EDISON CO.	IST AND REFUNDING MORTGAGE BONDS, SER. 20	ELEC	2018	400,000	99,818	0.650	0.9917	\$396,672	\$393,072	1000	3,600	1.73%	0.0037%
SOUTHERN CALIFORNIA EDISON CO.	IST AND REFUNDING MORTGAGE BONDS, SER. 20	ELEC	2018	400,000	99,812	0.875	0.9894	\$395,748	\$391,248	1000	4,500	2.19%	0.0046%
CMS ENERGY CORP	JR. SUB NOTES	ELEC	2018	200,000	100,000	3.150	0.9685	\$193,700	\$186,725	675	6,975	6.64%	0.0070%
EDISON INTERNATIONAL	SR, NOTES	ELEC	2018	550,000	99,845	0.650	0.9920	\$545,573	\$541,363	635	4,210	1.57%	0.0046%
EVERSOURCE ENERGY	IST AND REFUNDING MORT BONDS, SERIES A	ELEC	2018	500,000	99,757	0.875	0.9888	\$494,310	\$488,965	1070	5,445	2.21%	0.0058%
ENERGY LOUISIANA LLC	COLLATERAL TRUST MORT BONDS	ELEC	2018	750,000	99,844	0.750	0.9909	\$743,200	\$736,480	1100	6,725	1.80%	0.0072%
OHIO POWER CO	SR, NOTES, SER. N	ELEC	2018	400,000	99,268	0.875	0.9839	\$393,572	\$389,407	665	4,165	2.65%	0.0056%
VIRGINIA ELECTRIC AND POWER CO	SR A SR NOTES	ELEC	2018	700,000	99,768	0.650	0.9912	\$693,826	\$688,476	800	5,350	1.65%	0.0061%
MISSISSIPPI POWER	2018 SER. B SR NOTES	ELEC	2018	300,000	99,721	0.650	0.9907	\$297,213	\$294,878	385	2,335	1.71%	0.0027%
CENTERPOINT ENERGY RESOURCE CORP	SR, NOTES	ELEC	2018	300,000	99,942	0.650	0.9929	\$297,876	\$294,626	1300	3,250	1.79%	0.0028%
AMEREN MISSOURI	IST MORT BONDS	ELEC	2018	425,000	99,567	0.875	0.9869	\$419,441	\$415,022	700	4,419	2.35%	0.0053%
CONSUMERS ENERGY COMPANY	IST MORTGAGE BONDS	ELEC	2018	550,000	98,971	0.875	0.9810	\$539,528	\$533,666	1050	5,863	2.97%	0.0087%
FLORIDA POWER AND LIGHT COMPANY	IST MORT BONDS	ELEC	2018	500,000	99,911	0.875	0.9904	\$495,180	\$488,505	2300	6,675	2.30%	0.0061%
CONSOLIDATED EDISON OF NY	DEBTURES SERIES 2018A	ELEC	2018	300,000	99,983	0.650	0.9933	\$297,999	\$295,449	600	2,550	1.53%	0.0024%
CONSOLIDATED EDISON OF NY	DEBTURES SERIES 2018B	ELEC	2018	700,000	99,539	0.875	0.9866	\$690,648	\$683,123	1400	7,525	2.41%	0.0089%
ENERGY ARKANSAS	IST MORT BONDS	ELEC	2018	250,000	99,932	0.650	0.9928	\$248,205	\$246,090	490	2,115	1.56%	0.0021%
AMEREN ILLINOIS	IST MORT BONDS	ELEC	2018	430,000	99,910	0.650	0.9926	\$426,818	\$422,423	1600	4,395	1.76%	0.0040%
AVISTA CORPORATION	IST MORT BONDS	ELEC	2018	350,000	99,899	0.875	0.9902	\$346,584	\$343,022	500	3,563	1.99%	0.0037%
DOMINION ENERGY OF VA	SR DEBT SEC. SERIES B	ELEC	2018	300,000	100,000	0.650	0.9935	\$298,050	\$294,600	1500	3,450	1.80%	0.0029%
SOUTHERN CALIFORNIA EDISON CO.	IST AND REFUNDING MORT BONDS, SERIES N	ELEC	2018	350,000	96,829	0.875	0.9595	\$335,839	\$331,877	900	3,963	5.18%	0.0096%
PUDGET SOUND ENERGY	SR, NOTES	ELEC	2018	600,000	100,000	0.875	0.9913	\$594,750	\$588,100	1400	6,650	1.98%	0.0063%
TAMPA ELECTRIC CO	NOTES	ELEC	2018	350,000	99,464	0.875	0.9859	\$345,062	\$341,484	515	3,578	2.43%	0.0045%
PPL ELECTRIC UTILITIES CORP.	IST MORT BONDS	ELEC	2018	400,000	99,439	0.875	0.9856	\$394,256	\$390,656	100	3,600	2.34%	0.0050%
FLORIDA POWER AND LIGHT COMPANY	FLOATING RATE NOTES, SERIES DUE @15/68	ELEC	2018	94,121	100,000	1.000	0.9900	\$93,180	\$91,739	500	1,441	2.53%	0.0013%
PUBLIC SERVICE OF COLORADO	IST MORTGAGE BONDS, SER. NO 31	ELEC	2018	350,000	99,785	0.650	0.9914	\$346,973	\$343,948	750	3,025	1.73%	0.0032%
PUBLIC SERVICE OF COLORADO	IST MORTGAGE BONDS, SER. NO 31	ELEC	2018	350,000	99,727	0.875	0.9885	\$345,982	\$342,170	750	3,813	2.24%	0.0041%
DUKE ENERGY, FLORIDA	IST MORT BONDS	ELEC	2018	400,000	99,861	0.875	0.9899	\$395,944	\$391,544	900	4,400	2.11%	0.0045%
XCEL ENERGY, INC	SR, NOTES	ELEC	2018	500,000	99,311	0.650	0.9866	\$493,305	\$489,102	953	4,203	2.18%	0.0058%
ALABAMA POWER CO.	SER 2018A 4.3% SR NOTES	ELEC	2018	500,000	99,247	0.875	0.9837	\$491,860	\$487,025	460	4,835	2.60%	0.0069%
PACIFIC CORP	IST MORT BONDS	ELEC	2018	600,000	99,776	0.800	0.9898	\$593,856	\$588,266	850	5,650	1.97%	0.0062%
SOUTHERN CALIFORNIA EDISON	IST AND REFUNDING MORTGAGE BONDS, SER. 20	ELEC	2018	550,000	96,144	0.875	0.9527	\$523,980	\$518,167	1000	5,813	5.79%	0.0169%
DUKE ENERGY PROGRESS	IST MORTGAGE BONDS	ELEC	2018	500,000	99,981	0.650	0.9933	\$496,655	\$492,655	750	4,000	1.47%	0.0039%

INDIANA MICHIGAN POWER CO	SR, NOTES, SERIES N	ELEC	2018	475,000	99.428	0.875	0.9855	\$468,127	\$463,121	850	5,006	2.50%	0.0063%
ARIZONA PUBLIC SERVICE CO	NOTES	ELEC	2018	300,000	99.290	0.875	0.9842	\$295,245	\$291,907	713	3,338	2.70%	0.0043%
COMMONWEALTH EDISON CO	IST MORT BONDS, SER 125	ELEC	2018	550,000	99.760	0.650	0.9911	\$545,105	\$539,310	2,200	5,775	1.94%	0.0057%
ENTERGY LOUISIANA LLC	COLLATERAL TRUST MORT BONDS	ELEC	2018	600,000	99.811	0.875	0.9894	\$593,616	\$587,366	1,000	6,250	2.11%	0.0067%
BLACK HILLS CORPORATION	NOTES	ELEC	2018	400,000	99.543	0.850	0.9869	\$394,772	\$389,972	1,400	4,800	2.51%	0.0055%
OKLAHOMA GAS AND ELECTRIC CO.	SR, NOTES	ELEC	2018	400,000	99.811	0.650	0.9916	\$396,644	\$393,092	952	3,552	1.73%	0.0037%
PECO ENERGY CO	IST AND REFUNDING MORTGAGE BONDS	ELEC	2018	325,000	96.347	0.875	0.9547	\$310,284	\$306,940	500	3,344	5.56%	0.0096%
AEP TRANSMISSION CO, LLC	SR, NOTES, SER J	ELEC	2018	325,000	99.982	0.875	0.9911	\$322,098	\$318,474	780	3,624	2.01%	0.0035%
NORTHERN STATES POWER CO.	IST MORT BONDS	ELEC	2018	200,000	99.629	0.875	0.9875	\$197,508	\$195,108	650	2,400	2.45%	0.0026%
SOUTHWESTERN ELECTRIC POWER CO	SR, NOTES, SER M	ELEC	2018	575,000	100.000	0.650	0.9935	\$571,263	\$566,535	990	4,728	1.47%	0.0045%
SOUTH CAROLINA ELECTRIC AND GAS CO	IST MORT BONDS	ELEC	2018	400,000	99.750	0.650	0.9910	\$396,400	\$392,400	1,400	4,200	1.90%	0.0040%
INTERSTATE POWER AND LIGHT CO.	SR, DEBENTURES	ELEC	2018	500,000	99.748	0.650	0.9910	\$495,490	\$491,240	1,000	4,250	1.75%	0.0046%
CMS ENERGY CORP	JR, SUB NOTES	ELEC	2018	250,000	100.000	3.150	0.9685	\$242,125	\$231,510	740	8,615	6.60%	0.0087%
TAMPA ELECTRIC CO.	NOTES	ELEC	2018	375,000	99.489	0.875	0.9861	\$369,803	\$365,793	728	4,009	2.46%	0.0049%
WISCONSIN ELECTRIC POWER COMPANY	DEBENTURES	ELEC	2018	300,000	99.464	0.875	0.9859	\$295,767	\$292,392	750	3,375	2.54%	0.0040%
CENTERPOINT ENERGY INC	SR, NOTES DUE 2028	ELEC	2018	500,000	99.599	0.650	0.9895	\$494,745	\$488,495	3,000	6,250	2.10%	0.0061%
ATLANTA CITY ELECTRIC CO.	IST MORT BOND	ELEC	2018	350,000	99.902	0.650	0.9925	\$347,382	\$344,607	500	2,775	1.54%	0.0029%
CONSUMERS ENERGY COMPANY	IST MORTGAGE BONDS	ELEC	2018	300,000	99.750	0.650	0.9910	\$297,300	\$294,912	438	2,388	1.70%	0.0027%
CONSUMERS ENERGY COMPANY	IST MORTGAGE BONDS	ELEC	2018	550,000	99.610	0.875	0.9874	\$543,043	\$537,418	812	5,625	2.29%	0.0067%
SOUTHWESTERN PUBLIC SERVICE CO	IST MORTGAGE BONDS, SER NO 6	ELEC	2018	300,000	99.355	0.875	0.9848	\$295,440	\$291,915	900	3,525	2.70%	0.0043%
AMEREN ILLINOIS	IST MORT BONDS	ELEC	2018	500,000	99.907	0.875	0.9903	\$495,160	\$489,485	1,300	5,675	2.10%	0.0056%
DUKE ENERGY CAROLINAS	IST AND REFUNDING MORTGAGE BONDS	ELEC	2018	650,000	99.631	0.650	0.9898	\$643,377	\$638,162	990	5,215	1.82%	0.0063%
FLORIDA POWER AND LIGHT COMPANY	FLOATING RATE NOTES, SERIES DUE 11/14/68	ELEC	2018	993,300	100.000	1.000	0.9900	\$983,367	\$975,934	500	10,433	2.05%	0.0108%
TUCSON ELECTRIC POWER CO	SR, NOTES DUE 2048	ELEC	2018	300,000	99.623	0.875	0.9875	\$296,244	\$292,804	815	3,440	2.40%	0.0078%
VIRGINIA ELECTRIC AND POWER CO	2018 SERIES B, 4.60% SR, NOTES DUE 2048	ELEC	2018	600,000	99.435	0.875	0.9856	\$591,360	\$585,310	800	6,050	2.45%	0.0078%
CONSOLIDATED EDISON OF NY	DEBENTURES SERIES 2018D	ELEC	2018	500,000	99.926	0.650	0.9928	\$496,380	\$492,133	997	4,247	1.57%	0.0042%
CONSOLIDATED EDISON OF NY	DEBENTURES SERIES 2018E	ELEC	2018	600,000	99.615	0.875	0.9874	\$592,440	\$585,972	1,218	6,468	2.34%	0.0074%
AMERICAN ELECTRIC POWER CO, INC	SR NOTES, SER, J DUE 2028	ELEC	2018	600,000	99.718	0.650	0.9907	\$594,408	\$588,758	1,750	5,650	1.87%	0.0060%
EVERSOURCE ENERGY	SR NOTES, SERIES O	ELEC	2018	500,000	99.305	0.650	0.9866	\$493,275	\$488,235	1,790	5,040	2.35%	0.0062%
SEMPRA ENERGY	NOTES	GAS	2018	1,000,000	99.299	0.650	0.9865	\$986,490	\$977,290	2,700	9,200	2.27%	0.0120%
SEMPRA ENERGY	NOTES	GAS	2018	1,000,000	98.918	0.875	0.9804	\$980,430	\$968,980	2,700	11,450	3.10%	0.0164%
SOUTHWEST GAS CORP	SR, NOTES	GAS	2018	800,000	98.654	0.875	0.9778	\$782,232	\$773,132	2,100	9,100	3.36%	0.0142%
SAN DIEGO GAS AND ELECTRIC CO.	SR, NOTES	GAS	2018	300,000	99.815	0.650	0.9917	\$297,495	\$294,770	775	2,725	1.74%	0.0028%
BALTIMORE GAS AND ELECTRIC CO	IST MORTGAGE BONDS, SERIES SSS	GAS	2018	400,000	99.558	0.875	0.9868	\$394,732	\$390,732	500	4,000	2.32%	0.0049%
ATMOS ENERGY CORP	SR, NOTES	GAS	2018	300,000	99.916	0.875	0.9904	\$297,123	\$293,998	500	3,125	2.00%	0.0032%
ONE GAS, INC	SR, NOTES	GAS	2018	600,000	99.499	0.875	0.9862	\$591,744	\$585,494	1,000	6,250	2.42%	0.0077%
VERIZON COMMUNICATIONS	INTERNOTES	TELE	2018	400,000	99.912	0.875	0.9904	\$396,148	\$391,848	800	4,300	2.04%	0.0043%
VERIZON COMMUNICATIONS	NOTES	TELE	2018	7,212	100.000	3.150	0.9685	\$6,985	\$6,083	675	902	15.66%	0.00066%
AT&T	GLOBAL NOTES	TELE	2018	730,000	100.000	0.100	0.9990	\$729,270	\$728,030	510	1,240	0.27%	0.0010%
	GLOBAL NOTES	TELE	2018	750,000	100.000	3.150	0.9685	\$726,375	\$702,225	525	24,150	6.37%	0.0233%
	Flotation cost all companies		358	188,715,133								2.39%	2.15%

EXHIBIT G

Bond Ratings

Wyoming Department of Revenue
 Netback Return on Investment Calculation
 Bond Ratings
 Production Year: 2018

Company Name	Standard & Poors	Moody's
Anadarko Petroleum	BBB	Ba1
BP p.l.c.	A-	A1
Chesapeake Energy	B+	B2
Conoco Philips	A-	A3
Devon Energy	BBB	Ba1
Encana O&G	BBB-	Ba1
EOG Resources	A-	Baa1
ExxonMobil	AA+	Aaa
QEP Resources Inc.	B+	Ba3

Note: The source of Moody's credit rating the Moody's website www.moodys.com. The source of the Standard and Poor's credit rating from the Standard and Poor's website www.standardandpoors.com. All information current as of February 27, 2019.

LONG TERM DEBT (30 Year Industrial Bond Yields)

	<u>AA+</u>	<u>A-</u>	<u>BBB</u>	<u>BBB-</u>	<u>B+</u>	<u>Weighted Avg.Hi&Lo</u>
	3.313%	4.787%	5.268%	5.684%	9.192%	5.8087%