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# *Capitalization Rate Study*

*Property and Special Taxes Department  
David J. Gau, Deputy Director*

*State-Assessed Properties Division  
John K. Thompson, Chief*

*Lien Date 2013*

# Executive Summary

“The income approach to value includes any method of converting an income stream into a present value estimate (i.e., an indicator of current fair market value). The income approach is also called the capitalization approach because capitalization is the process of converting an expected income into an indicator of value.

The methods or techniques used in the income approach may be relatively simple (e.g., income or rent multipliers and direct capitalization), or more complex (e.g., various yield capitalization techniques). All of these methods are referred to as capitalization techniques because they convert an expected future income stream into a present value estimate.

The income approach requires careful application because small variations in its key variables (capitalization rate, duration of income stream, estimated income and expenses, etc.) will be mathematically leveraged into a wide range of estimated value. This is particularly true for the capitalization rate variable. The reliability of the income approach is no greater than the validity of the assumptions used to estimate the key variables. The mathematical techniques used in the approach, while sometimes complicated, are merely tools for converting these assumptions into an estimate of current market value.”<sup>1</sup>

## ***I. Authority for Capitalization Rate Study***

Property Tax Rule 8 (g) (2) provides the authority for the method in which the capitalization rates were developed in this study. The rule states “the capitalization rate may be developed...

By deriving a weighted average of the capitalization rates for debt and for equity capital appropriate to the California money markets (the band-of-investment method) and adding increments for expenses that are excluded from outgo because they are based on the value that is being sought or the income that is being capitalized. The appraiser shall weight the rates for debt and equity capital by the respective amounts of such capital he deems most likely to be employed by prospective purchasers.”

## ***II. Band of Investment Approach***

In its simplest form, the band of investment method assumes that a purchaser would pay cash (or equity) for a portion of the property and would borrow the balance of the purchase price. For example:

Debt	30%	x	Cost of Debt	7%	=	2.1%
Equity	70%	x	Cost of Equity	12%	=	8.4%
						<hr/>
Weighted Average Cost of Capital						10.5%
						<hr/> <hr/>

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<sup>1</sup> Assessors’ Handbook 501, Basic Appraisal, Revised January 2002

# Executive Summary

This booklet contains a study for each of the major state assessee industry groups<sup>2</sup> in California. Industry data was compiled by groups with similar Value Line financial ratings. Local exchange, wireless and interexchange industries have been combined into one telecommunications study.

Generally accepted procedures were used to estimate the cost of capital for debt and equity. The long term debt cost is the cost for a particular risk class of debt on the lien date. The equity rate reflects the rate of return or compensation that will satisfy the risk that a prospective purchaser would anticipate if a property purchase decision was made. The rates chosen are the result of analysis of economic conditions and financial data listed in the supporting schedules and are the product of the staff's informed judgment.

The rates derived in this study are basic capitalization (or discount) rates that represent the after-tax return on investment only. Any increments required to be added by Property Tax Rule 8(g)(2), such as income or ad valorem tax components, are in addition to the rates listed.

## A. *Capital Structure - Prospective Purchaser vs. Company Specific*

State assessees often ask why the Board does not use the current capital structure of individual companies in the band-of-investment method. As explained in Rule 8 (g)(2), the appraiser shall weight the rates of debt and equity capital by the respective amounts of such capital deemed most likely to be employed by a prospective purchaser.

Therefore, the capital structure contemplated is a representative or typical structure of an industry group of companies with a similar bond rating, not that of the present owner. The objective of doing so is to strike an optimum capital structure from the perspective of a potential investor.

## B. *Company Specific Debt Rates*

In many cases the debt component of the capital structure for a prospective purchaser and the individual company being assessed may be similar. In cases where, in the judgement of staff, the debt ratings of the individual companies being assessed and the debt ratings of prospective purchasers are similar, the company-specific bond rating has been used to develop the appropriate debt component of the recommended capitalization rate. In cases where rate-base regulated companies have embedded debt with rates higher than the market rates at the lien date, a revenue adjustment may be indicated in order to match the revenue expected by a prospective purchaser if the purchaser's revenue would be determined by those market rates.

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<sup>2</sup> Gas, Electric & Water; Natural Gas Transmission; Electric Generation; Telecommunications (Local Exchange, Interexchange, Wireless); Pipeline; Railroad

# Executive Summary

## *C. Impact of Holding Companies on Determination of Capital Structure*

Many of the larger state assesseees are subsidiaries of their holding company. Stock purchases related to a subsidiary must be made through the parent holding company. Since there is no direct market data for state assesseees that are subsidiaries of a holding company, staff must rely, in great part, upon market data related to the holding company.

## **III. Capital Asset Pricing Model**

The Capital Asset Pricing Model (CAPM) is a widely accepted theory used to estimate the cost of equity capital. In the application of CAPM, the most sensitive component affecting the outcome is the estimate of the beta<sup>3</sup> coefficient. The choice of different time frames and frequencies of measurement in the calculation of the beta can produce significantly different results. Another factor in the use of beta is the choice of whether to use an unadjusted beta or a beta adjusted to reflect the fact that betas tend to revert to the mean over time. In this study, three betas were obtained from separate sources: one adjusted (Value Line) and two unadjusted. Generally the betas from the three sources are averaged to establish the beta used to estimate the cost of equity capital for a specific industry. However, the average beta for highly regulated industries, such as gas or electric transmission and distribution, tend to understate the risk inherent in those securities. Accordingly, for companies in highly regulated environments, the Value Line adjusted beta was chosen as a better estimate of the relative risk in the calculation of the required equity return.

## **IV. Flotation Costs**

When new issues of both debt and equity capital are sold to investors, the issuing company incurs transaction costs such as underwriting fees, legal expenses, and prospectus preparation costs. These costs of issuing securities are known as flotation costs. Much like loan fees or points on a mortgage, flotation costs effectively reduce the net proceeds that a firm will receive from issuing securities. The cost of capital is adjusted upward to reflect the expected flotation costs incurred to issue securities. Since the flotation costs are reflected in the weighted average cost of capital, the flotation costs should not be allowed as expenses in projecting cash flows to be capitalized. Each basic capitalization rate in this study has been adjusted to reflect flotation costs.

## **V. Utilization of Other Studies and Data**

Staff appraisers reviewed data and capitalization rate studies submitted by assesseees and interested parties in addition to a review of recent regulatory rate case filings and decisions, and where appropriate, used this information in the development of the staff derived rates.

The capitalization rates published in this study are intended to be applied to the unitary operations of the companies subject to assessment by the California State Board of Equalization.

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<sup>3</sup> The covariance of the returns of a security regressed against the returns of the overall market - a measurement of relative volatility

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
<b>Gas and Electric Companies</b>											
141	San Diego Gas & Electric Company	A	Baa1	Aa3	52%	4%	44%	10.79%	6.38%	4.27%	<b>7.74%</b>
135	Pacific Gas and Electric Company	B++	Baa3	A3	52%	4%	44%	10.89%	7.03%	4.60%	<b>7.97%</b>
148	Southern California Edison Company	B+	Baa2	A1	52%	4%	44%	10.94%	6.70%	4.35%	<b>7.87%</b>
146	Sierra Pacific Power Company	B	B2	Baa1	52%	1%	47%	11.52%	8.66%	4.93%	<b>8.40%</b>
106	PacifiCorp	Not Rated	Baa3	A2	52%	1%	47%	11.52%	7.03%	4.44%	<b>8.14%</b>
119	Trans Bay Cable LLC	Not Rated		Not Rated	51%		49%	11.52%		4.93%	<b>8.29%</b>
125	Terra-Gen Dixie Valley, LLC	Not Rated		Not Rated	51%		49%	11.52%		4.93%	<b>8.29%</b>
156	Atlantic Path 15, LLC	Not Rated		Not Rated	51%		49%	11.52%		4.93%	<b>8.29%</b>
163	California Pacific Electric Co., LLC	Not Rated		Not Rated	51%		49%	11.52%		4.93%	<b>8.29%</b>
191	Arizona Public Service Company	Not Rated		Baa1	51%		49%	11.52%		4.93%	<b>8.29%</b>
	Electric Cooperatives	Not Rated		Not Rated	51%		49%	11.52%		4.93%	<b>8.29%</b>
<b>Natural Gas Distribution and Storage Companies</b>											
149	Southern California Gas Company	A	Baa1	Baa1	52%	4%	44%	10.58%	6.38%	4.77%	<b>7.85%</b>
152	Southwest Gas Corporation	B	Ba1	Baa1	52%	4%	44%	10.99%	7.36%	4.93%	<b>8.18%</b>
192	Alpine Natural Gas Operating Company	Not Rated		Not Rated	51%		49%	12.30%		5.10%	<b>8.77%</b>
194	West Coast Gas Company, Inc.	Not Rated		Not Rated	51%		49%	12.30%		5.10%	<b>8.77%</b>
104	Central Valley Gas Storage LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
121	Gill Ranch Storage, LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
195	Wild Goose Storage, LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
<b>Water Company</b>											
101	Golden State Water Company	B++		Not Rated	55%		45%	11.52%		5.34%	<b>8.74%</b>

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
187	Mojave Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
189	Standard Pacific Gas Line Incorporated	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
197	El Paso Pipeline Partners, L.P.	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%

California State Board of Equalization  
**State-Assessed Properties Division**  
**2013 Capitalization Rate Study**  
**Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate <sup>3</sup>
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
<b>Modern Electric Generation Technology</b> <sup>1</sup>	B	B2	60%	40%	13.77%	6.61%	<b>10.91%</b>
<b>Older Electric Generation Technology</b> <sup>2</sup>	B	B2	60%	40%	15.86%	7.63%	<b>12.57%</b>

<sup>1</sup> Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

<sup>2</sup> Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

<sup>3</sup> Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
<b>Local Exchange Companies</b>								
279	Pacific Bell Telephone Company	A++	A2	70%	30%	12.04%	4.23%	<b>9.70%</b>
201	Verizon California, Inc.	A++	A3	70%	30%	12.04%	4.40%	<b>9.75%</b>
284	Citizens Telecommunications Company of California, Inc.	B	Not Rated	65%	35%	13.09%	4.90%	<b>10.22%</b>
294	SureWest Telephone	C++	Not Rated	65%	35%	13.09%	4.90%	<b>10.55%</b>
	<b>Other Local Exchange Companies</b>	Not Rated	Not Rated	65%	35%	15.45%	5.06%	<b>11.81%</b>
<b>Wireless Companies</b>								
2606	AT&T Mobility LLC	A++	A2	70%	30%	11.52%	4.23%	<b>9.33%</b>
2532	Los Angeles SMSA Ltd., Partnership	A++	A3	70%	30%	11.52%	4.40%	<b>9.38%</b>
2552	Fresno MSA Limited Partnership	A++	A3	70%	30%	11.52%	4.40%	<b>9.38%</b>
2559	Cellco Partnership	A++	A3	70%	30%	11.52%	4.40%	<b>9.38%</b>
2748	T-Mobile West Corporation	B++	Not Rated	65%	35%	12.83%	5.06%	<b>10.11%</b>
2733	MetroPCS Communications	B	Not Rated	65%	35%	12.83%	5.06%	<b>10.11%</b>
2720	Sprint Telephony PCS, L.P.	C++	B3	65%	35%	14.66%	5.89%	<b>11.59%</b>
	<b>Other Wireless Companies<sup>1</sup></b>	Not Rated	Not Rated	55%	45%	16.75%	7.42%	<b>12.55%</b>
	<b>Wireless Reseller Companies</b>	Not Rated	Not Rated	55%	45%	18.85%	7.93%	<b>13.93%</b>
<b>Interexchange Companies</b>								
2310	AT&T Communications	A++	A2	70%	30%	12.83%	4.23%	<b>10.25%</b>
2274	MCI Communications Services, Inc.	A++	A3	70%	30%	12.83%	4.40%	<b>10.30%</b>
2372	MCI Metro Access Transmission Services, LLC	A++	A3	70%	30%	12.83%	4.40%	<b>10.30%</b>
2463	CenturyLink, Inc.	B++	Baa3	65%	35%	14.40%	4.90%	<b>11.07%</b>
7522	tw telecom of california l.p.	B	B1	65%	35%	14.40%	7.42%	<b>11.96%</b>
2014	Sprint Communications Company, L.P.	C++	B3	60%	40%	16.75%	5.06%	<b>12.08%</b>
7761	Level 3 Communications, LLC	C++	Caa2	60%	40%	16.75%	7.42%	<b>13.02%</b>
	<b>Other Interexchange - Carriers</b>	Not Rated	Not Rated	55%	45%	21.47%	7.42%	<b>15.15%</b>
	<b>Other Interexchange - Resellers</b>	Not Rated	Not Rated	55%	45%	24.61%	7.93%	<b>17.10%</b>

<sup>1</sup> Includes Radio Telephone and Paging Companies

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
<b>402</b>	<b>CALNEV Pipe Line, L.L.C.</b>	NR-1	NR-b	70%	30%	12.30%	4.79%	<b>10.05%</b>
<b>461</b>	<b>SFPP, L.P.</b>	NR-1	NR-b	70%	30%	12.30%	4.79%	<b>10.05%</b>
<b>468</b>	<b>Shell California Pipeline Company, LLC</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
<b>479</b>	<b>Chevron Pipe Line Company</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
<b>480</b>	<b>ConocoPhillips Pipe Line Company</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
<b>486</b>	<b>Pacific Pipeline System LLC</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
	<b>Other Pipeline Companies</b>	NR-3	NR-c	70%	30%	13.87%	5.80%	<b>11.45%</b>

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Railroads**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
804	BNSF Railway Company	A	Baa2	80%	20%	13.87%	4.79%	12.06%
843	Union Pacific Railroad Company	A	Baa2	80%	20%	13.87%	4.79%	12.06%
802	Central Oregon & Pacific Railroad	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
810	California Northern Railroad	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
813	Pacific Harbor Lines	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
850	Modesto & Empire Traction Company	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
865	San Diego & Imperial Valley Railroad Co. Inc.	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
882	Trona Railway Co.	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
897	San Joaquin Valley Railroad Company	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
899	Arizona & California Railroad	NR-1	NR-1	60%	40%	15.97%	6.31%	12.11%
	Other Railroad Companies	NR-2	NR-2	60%	40%	16.23%	7.33%	12.67%

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
<b>Gas and Electric Companies</b>											
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135	Pacific Gas and Electric Company	B++	Baa3	A3	52%	4%	44%	10.89%	7.03%	4.60%	<b>7.97%</b>
148	Southern California Edison Company	B+	Baa2	A1	52%	4%	44%	10.94%	6.70%	4.35%	<b>7.87%</b>
146	Sierra Pacific Power Company	B	B2	Baa1	52%	1%	47%	11.52%	8.66%	4.93%	<b>8.40%</b>
106	PacifiCorp	Not Rated	Baa3	A2	52%	1%	47%	11.52%	7.03%	4.44%	<b>8.14%</b>
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	Electric Cooperatives	Not Rated		Not Rated	51%		49%	11.52%		4.93%	<b>8.29%</b>
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121	Gill Ranch Storage, LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
195	Wild Goose Storage, LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	60%		40%	13.35%		5.60%	<b>10.25%</b>
<b>Water Company</b>											
101	Golden State Water Company	B++		Not Rated	55%		45%	11.52%		5.34%	<b>8.74%</b>

**2013 Capitalization Rate Study  
Gas, Electric and Water Companies  
Industry Notes**

- In establishing the capital structures for the rate-regulated utilities, staff considered the decisions of the California Public Utilities Commission (CPUC). For the non-rate-regulated utilities, the capital structures were developed based on the financial data collected and the relative risks of the utilities sampled in the Capitalization Rate Study.
- Staff considered the following in the development of equity rates:
  1. CPUC-authorized rates of return
  2. Discounted Cash Flow Model
  3. Capital Asset Pricing Model – ex post and ex ante risk premiums
- Staff considered the following in the development of debt rates:
  1. Moody's Utility Bond Yield Spreads
  2. The debt rates that a prospective purchaser would expect at lien date
- The following utility was added to the 2013 Capitalization Rate Study sample:
  1. Duke Energy
- The following utilities were removed from the 2013 Capitalization Rate Study sample:
  1. Central Vermont Public Service Corp. was acquired by Gaz Metro inc., which is regulated by the National Energy Board of Canada.
  2. NSTAR merged into Northeast Utilities, which is already included in the study.
  3. Progress Energy, Inc. merged with Duke Energy, which was added to the sample this year.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Flotation Cost Adjustment**

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A	10.30%	4.50%	10.79%	Baa1	6.27%	1.70%	6.38%	Aa3	4.20%	1.70%	4.27%
B++	10.40%	4.50%	10.89%	Baa2	6.59%	1.70%	6.70%	A1	4.28%	1.70%	4.35%
B+	10.45%	4.50%	10.94%	Baa3	6.91%	1.70%	7.03%	A2	4.36%	1.70%	4.44%
B	11.00%	4.50%	11.52%	Ba1	7.23%	1.70%	7.36%	A3	4.52%	1.70%	4.60%
Not Rated	11.00%	4.50%	11.52%	Ba2	7.55%	1.70%	7.68%	Baa1	4.69%	1.70%	4.77%
				Ba3	7.87%	1.70%	8.01%	Baa2	4.85%	1.70%	4.93%
				B1	8.19%	1.70%	8.33%	Baa3	5.01%	1.70%	5.10%
				B2	8.51%	1.70%	8.66%	Ba1	5.18%	1.70%	5.27%
				B3	8.83%	1.70%	8.98%	Ba2	5.34%	1.70%	5.43%
								Ba3	5.50%	1.70%	5.60%
								B1	5.67%	1.70%	5.76%
								B2	5.83%	1.70%	5.93%
				B3	5.99%	1.70%	6.10%				

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return <sup>1</sup>	Moody's P/S Yields	Moody's Rating	Rate of Return <sup>2</sup>	Moody's Bond Yields	Moody's Rating	Rate of Return <sup>2</sup>
A	10.30%	Aa=N/A	Aa1	5.15%	Aaa=N/A	Aaa2	3.56%
			Aa2	5.27%		Aaa3	3.68%
B++	10.40%	A=5.63%	Aa3	5.31%	Aa=3.92	Aa1	3.80%
			A1	5.47%		Aa2	3.92%
B+	10.45%	A=5.63%	A2	5.63%	A=4.16	Aa3	4.00%
			A3	5.95%		A1	4.08%
B	11.00%	Baa=6.59%	Baa1	6.27%	A=4.16	A2	4.16%
			Baa2	6.59%		A3	4.32%
Not Rated	11.00%	Baa=6.59%	Baa3	6.91%	Baa=4.65	Baa1	4.49%
			Ba1	7.23%		Baa2	4.65%
			Ba2	7.55%	Baa3	4.81%	
			Ba3	7.87%	Ba1	4.98%	
			B1	8.19%	Ba2	5.14%	
			B2	8.51%	Ba3	5.30%	
			B3	8.83%	B1	5.47%	
					B2	5.63%	
				B3	5.79%		
				Not Rated	5.96%		

<sup>1</sup> The Rate of Return on Common Equity was developed by staff based on the relative risks of the utilities in conjunction with the results of various models and pertinent information from different sources. Consideration was also given to the latest decisions of the California Public Utilities Commission. For 2013, the return on equity (ROE) and return on rate base (ROR) for Pacific Gas and Electric Company are 10.40% and 8.06%, respectively; for Southern California Edison Company, the ROE and ROR are 10.45% and 7.12%, respectively (D 12-12-034); for San Diego Gas & Electric Company, the ROE and ROR are 10.30% and 7.79%, respectively (D 12-12-034).

<sup>2</sup> The Rates of Return on Preferred Stocks and Bonds were based on the 2013 Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" reports. Because Moody's assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolated the difference between these groups to further refine the ratings.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A+, A	B++, B+, B
Expected Future Return, S&P 500	10.96%	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%
Risk Premium	7.92%	7.92%
Beta <sup>2</sup>	0.68	0.71
Adjusted Risk Premium	5.39%	5.62%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%
<b>Projected Return on Common Equity</b>	<b>8.43%</b>	<b>8.66%</b>

<sup>1</sup> WSJ.com, January 2, 2013

<sup>2</sup> The estimated betas were derived from a sample of gas and electric companies with similar ratings.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A+, A	B++, B+, B
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%	11.80%
Less: Income-Long Term Government Bonds (1926 - 2012) <sup>1</sup>	5.10%	5.10%
Risk Premium	6.70%	6.70%
Beta <sup>2</sup>	0.68	0.71
Adjusted Risk Premium	4.56%	4.76%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	3.04%	3.04%
<b>Projected Return on Common Equity</b>	<b>7.60%</b>	<b>7.80%</b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> The estimated betas were derived from a sample of gas and electric companies with similar ratings.

<sup>3</sup> WSJ.com, January 2, 2013

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A+	Consolidated Edison, Inc.	55.54	3.90	3.85	2.42	2.44	4.39%	1.00%	3.33%	7.02%	5.39%	7.73%
A	Allete, Inc.	40.98	2.70	2.55	1.84	1.88	4.59%	3.00%	6.83%	6.59%	7.59%	11.42%
A	Alliant Energy Corp.	43.92	3.15	3.00	1.80	1.88	4.28%	5.50%	5.83%	7.17%	9.78%	10.11%
A	Avista Corp.	24.11	1.70	1.50	1.16	1.20	4.98%	5.00%	3.90%	7.05%	9.98%	8.88%
A	CH Energy Group	65.22	3.20	2.50	2.22	2.22	3.40%	0.50%	2.50%	4.91%	3.90%	5.90%
A	Cleco Corp.	39.99	2.55	2.65	1.30	1.40	3.50%	11.50%	4.67%	6.38%	15.00%	8.17%
A	Duke Energy	63.80	4.40	3.70	3.03	3.09	4.84%	2.00%	3.83%	6.90%	6.84%	8.68%
A	Entergy Corp.	63.75	4.55	5.30	3.32	3.32	5.21%	1.00%	-2.25%	7.14%	6.21%	2.96%
A	MGE Energy Inc.	50.95	2.95	2.85	1.56	1.62	3.18%	3.50%	4.75%	5.79%	6.68%	7.93%
A	NextEra Energy, Inc.	69.19	4.75	4.30	2.40	2.60	3.76%	8.50%	5.27%	6.87%	12.26%	9.02%
A	OGE Energy Corp.	56.31	3.65	3.55	1.60	1.70	3.02%	5.50%	5.60%	6.48%	8.52%	8.62%
A	Sempra Energy	70.94	4.25	4.20	2.40	2.50	3.52%	9.00%	4.37%	5.99%	12.52%	7.89%
A	Southern Co.	42.81	2.80	2.65	1.94	2.02	4.72%	4.00%	5.00%	6.54%	8.72%	9.72%
A	Vectren Corp.	29.39	1.95	1.85	1.41	1.43	4.87%	2.50%	5.25%	6.63%	7.37%	10.12%
A	Wisconsin Energy Corp.	36.85	2.40	2.32	1.20	1.36	3.69%	13.50%	5.90%	6.51%	17.19%	9.59%
	Mean						4.13%	5.07%	4.32%	6.53%	9.20%	8.45%
	Median						4.28%	4.00%	4.75%	6.59%	8.52%	8.68%
	Weighted Average										9.22%	8.43%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	Ameren Corp.	30.72	2.15	2.40	1.60	1.60	5.21%	1.50%	-2.50%	7.00%	6.71%	2.71%
B++	American Electric Power Co.	42.68	3.05	2.95	1.88	1.88	4.40%	2.50%	3.17%	7.15%	6.90%	7.57%
B++	CenterPoint Energy, Inc.	19.25	1.30	1.25	0.81	0.83	4.31%	2.50%	5.40%	6.75%	6.81%	9.71%
B++	DTE Energy Co.	60.05	4.00	3.90	2.42	2.52	4.20%	4.00%	5.00%	6.66%	8.20%	9.20%
B++	El Paso Electric Co.	31.91	2.25	2.25	0.97	1.06	3.32%	0.00%	2.80%	7.05%	3.32%	6.12%
B++	Empire District Electric Co.	20.38	1.40	1.25	1.00	1.00	4.91%	2.00%	5.50%	6.87%	6.91%	10.41%
B++	Exelon Corp.	29.74	2.85	2.00	2.10	2.10	7.06%	0.00%	-8.13%	9.58%	7.06%	-1.07%
B++	FirstEnergy Corp.	41.76	3.10	3.15	2.20	2.20	5.27%	1.50%	4.33%	7.42%	6.77%	9.60%
B++	Hawaiian Electric Industries, Inc.	25.14	1.70	1.60	1.24	1.24	4.93%	2.00%	7.67%	6.76%	6.93%	12.60%
B++	Integrus Energy Group, Inc.	52.22	3.55	3.70	2.72	2.72	5.21%	0.50%	5.60%	6.80%	5.71%	10.81%
B++	Northeast Utilities	39.08	2.50	1.90	1.32	1.44	3.68%	8.50%	6.97%	6.40%	12.18%	10.65%
B++	PG&E Corp.	40.18	2.75	2.25	1.82	1.82	4.53%	2.00%	0.37%	6.84%	6.53%	4.90%
B++	Pinnacle West Capital Corp.	50.98	3.50	3.45	2.12	2.20	4.32%	2.50%	6.07%	6.87%	6.82%	10.38%
B++	Portland General Electric Co.	27.36	1.95	1.90	1.08	1.11	4.06%	3.50%	3.87%	7.13%	7.56%	7.92%
B++	SCANA Corp.	45.64	3.35	3.20	1.98	2.02	4.43%	2.00%	4.80%	7.34%	6.43%	9.23%
B++	UIL Holdings	35.81	2.30	2.05	1.73	1.73	4.83%	0.00%	4.00%	6.42%	4.83%	8.83%
B++	Westar Energy, Inc.	28.62	2.10	2.00	1.32	1.36	4.75%	3.00%	6.83%	7.34%	7.75%	11.59%
B++	Xcel Energy, Inc.	26.71	1.90	1.85	1.07	1.11	4.16%	5.00%	5.20%	7.11%	9.16%	9.36%
B+	Black Hills Corp.	36.34	2.20	1.85	1.48	1.50	4.13%	2.00%	6.50%	6.05%	6.13%	10.63%
B+	CMS Energy Corp.	24.38	1.65	1.55	0.96	1.02	4.18%	10.00%	6.43%	6.77%	14.18%	10.62%
B+	Edison International	45.19	2.65	2.60	1.31	1.33	2.94%	3.50%	2.23%	5.86%	6.44%	5.18%
B+	Great Plains Energy Inc.	20.31	1.40	1.30	0.86	0.88	4.33%	5.00%	7.57%	6.89%	9.33%	11.90%
B+	Otter Tail Corp.	25.00	1.35	1.20	1.19	1.19	4.76%	1.50%	11.33%	5.40%	6.26%	16.09%
B	NV Energy, Inc.	18.11	1.25	1.25	0.64	0.74	4.09%	14.00%	10.37%	6.90%	18.09%	14.45%
B	PNM Resources	20.51	1.40	1.30	0.58	0.70	3.41%	12.00%	11.23%	6.83%	15.41%	14.65%
	Mean						4.46%	3.64%	4.90%	6.89%	8.10%	9.36%
	Median						4.33%	2.50%	5.40%	6.87%	6.90%	9.71%
	Weighted Average										7.98%	7.33%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A+	Consolidated Edison, Inc.	4.00%	3.20%	2.80%	3.33%
A	Allete, Inc.	9.00%	5.50%	6.00%	6.83%
A	Alliant Energy Corp.	6.50%	6.40%	4.60%	5.83%
A	Avista Corp.	3.50%	4.30%	N/A	3.90%
A	CH Energy Group	2.50%	N/A	N/A	2.50%
A	Cleco Corp.	8.00%	3.00%	3.00%	4.67%
A	Duke Energy	4.50%	4.10%	2.90%	3.83%
A	Entergy Corp.	-4.50%	N/A	0.00%	-2.25%
A	MGE Energy Inc.	5.50%	4.00%	N/A	4.75%
A	NextEra Energy, Inc.	4.00%	5.90%	5.90%	5.27%
A	OGE Energy Corp.	6.00%	5.40%	5.40%	5.60%
A	Sempra Energy	4.50%	1.60%	7.00%	4.37%
A	Southern Co.	5.00%	5.10%	4.90%	5.00%
A	Vectren Corp.	5.50%	5.00%	N/A	5.25%
A	Wisconsin Energy Corp.	6.50%	5.50%	5.70%	5.90%
B++	Ameren Corp.	-1.00%	-1.30%	-5.20%	-2.50%
B++	American Electric Power Co.	3.00%	3.40%	3.10%	3.17%
B++	CenterPoint Energy, Inc.	5.00%	5.70%	5.50%	5.40%
B++	DTE Energy Co.	5.00%	5.00%	5.00%	5.00%
B++	El Paso Electric Co.	3.50%	2.10%	N/A	2.80%
B++	Empire District Electric Co.	5.50%	N/A	N/A	5.50%
B++	Exelon Corp.	-2.00%	-4.90%	-17.50%	-8.13%
B++	FirstEnergy Corp.	5.00%	4.00%	4.00%	4.33%
B++	Hawaiian Electric Industries, Inc.	9.00%	6.30%	7.70%	7.67%
B++	Integrus Energy Group, Inc.	6.00%	5.30%	5.50%	5.60%
B++	Northeast Utilities	8.00%	7.00%	5.90%	6.97%
B++	PG&E Corp.	3.50%	1.80%	-4.20%	0.37%
B++	Pinnacle West Capital Corp.	5.00%	6.90%	6.30%	6.07%

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B++	Portland General Electric Co.	5.50%	4.10%	2.00%	3.87%
B++	SCANA Corp.	4.00%	4.80%	5.60%	4.80%
B++	UIL Holdings	4.00%	4.00%	N/A	4.00%
B++	Westar Energy, Inc.	7.50%	6.20%	6.80%	6.83%
B++	Xcel Energy, Inc.	6.00%	4.70%	4.90%	5.20%
B+	Black Hills Corp.	7.00%	6.00%	N/A	6.50%
B+	CMS Energy Corp.	7.00%	6.00%	6.30%	6.43%
B+	Edison International	0.00%	5.80%	0.90%	2.23%
B+	Great Plains Energy Inc.	5.50%	7.80%	9.40%	7.57%
B+	Otter Tail Corp.	24.00%	5.00%	5.00%	11.33%
B	NV Energy, Inc.	11.00%	15.10%	5.00%	10.37%
B	PNM Resources	16.00%	8.40%	9.30%	11.23%
	Mean	5.59%	4.82%	3.73%	4.68%
	Median	5.25%	5.00%	5.00%	5.10%
	Weighted Average				3.32%

Sources: Columns a, b and c were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from ThomsonReuters.com.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A+	Consolidated Edison, Inc.	292,892,396	55.54	16,267.24	9,842.00	0.00	16,267.24	26,109.24	37.70%	0.00%	62.30%
A	Allete, Inc.	38,845,290	40.98	1,591.88	947.60	0.00	1,591.88	2,539.48	37.31%	0.00%	62.69%
A	Alliant Energy Corp.	110,987,400	43.92	4,874.57	2,828.10	205.10	4,874.57	7,907.77	35.76%	2.59%	61.64%
A	Avista Corp.	58,769,670	24.11	1,416.94	1,284.80	0.00	1,416.94	2,701.74	47.55%	0.00%	52.45%
A	CH Energy Group	14,948,216	65.22	974.92	493.50	9.00	974.92	1,477.42	33.40%	0.61%	65.99%
A	Cleco Corp.	60,726,390	39.99	2,428.45	1,237.20	0.00	2,428.45	3,665.65	33.75%	0.00%	66.25%
A	Duke Energy	704,125,200	63.80	44,923.19	18,454.00	0.00	44,923.19	63,377.19	29.12%	0.00%	70.88%
A	Entergy Corp.	177,732,990	63.75	11,330.48	11,784.00	280.50	11,330.48	23,394.98	50.37%	1.20%	48.43%
A	MGE Energy Inc.	23,113,638	50.95	1,177.64	359.50	0.00	1,177.64	1,537.14	23.39%	0.00%	76.61%
A	NextEra Energy, Inc.	423,206,077	69.19	29,281.63	22,714.00	0.00	29,281.63	51,995.63	43.68%	0.00%	56.32%
A	OGE Energy Corp.	98,742,187	56.31	5,560.17	2,848.40	0.00	5,560.17	8,408.57	33.87%	0.00%	66.13%
A	Sempra Energy	241,699,518	70.94	17,146.16	10,315.00	99.00	17,146.16	27,560.16	37.43%	0.36%	62.21%
A	Southern Co.	874,796,883	42.81	37,450.05	19,459.00	1,082.00	37,450.05	57,991.05	33.56%	1.87%	64.58%
A	Vectren Corp.	82,131,807	29.39	2,413.85	1,453.70	0.00	2,413.85	3,867.55	37.59%	0.00%	62.41%
A	Wisconsin Energy Corp.	230,070,094	36.85	8,478.08	4,240.60	30.40	8,478.08	12,749.08	33.26%	0.24%	66.50%
	Mean								36.52%	0.46%	63.03%
	Median								35.76%	0.00%	62.69%
	Weighted Average								36.66%	0.58%	62.76%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B++	Ameren Corp.	242,634,671	30.72	7,453.74	6,781.00	142.00	7,453.74	14,376.74	47.17%	0.99%	51.85%
B++	American Electric Power Co.	485,249,046	42.68	20,710.43	14,955.00	0.00	20,710.43	35,665.43	41.93%	0.00%	58.07%
B++	CenterPoint Energy, Inc.	427,441,738	19.25	8,228.25	8,415.00	0.00	8,228.25	16,643.25	50.56%	0.00%	49.44%
B++	DTE Energy Co.	172,073,378	60.05	10,333.01	7,120.00	0.00	10,333.01	17,453.01	40.80%	0.00%	59.20%
B++	El Paso Electric Co.	40,114,838	31.91	1,280.06	816.50	0.00	1,280.06	2,096.56	38.94%	0.00%	61.06%
B++	Empire District Electric Co.	42,421,281	20.38	864.55	593.70	0.00	864.55	1,458.25	40.71%	0.00%	59.29%
B++	Exelon Corp.	853,573,260	29.74	25,385.27	18,173.00	280.00	25,385.27	43,838.27	41.45%	0.64%	57.91%
B++	FirstEnergy Corp.	418,216,437	41.76	17,464.72	15,627.00	0.00	17,464.72	33,091.72	47.22%	0.00%	52.78%
B++	Hawaiian Electric Industries, Inc.	97,082,085	25.14	2,440.64	1,282.60	34.30	2,440.64	3,757.54	34.13%	0.91%	64.95%
B++	Integrays Energy Group, Inc.	77,907,270	52.22	4,068.32	1,708.10	51.10	4,068.32	5,827.52	29.31%	0.88%	69.81%
B++	Northeast Utilities	313,804,466	39.08	12,263.48	7,096.60	155.60	12,263.48	19,515.68	36.36%	0.80%	62.84%
B++	PG&E Corp.	426,462,616	40.18	17,135.27	12,166.00	252.00	17,135.27	29,553.27	41.17%	0.85%	57.98%
B++	Pinnacle West Capital Corp.	109,543,792	50.98	5,584.54	3,371.40	0.00	5,584.54	8,955.94	37.64%	0.00%	62.36%
B++	Portland General Electric Co.	75,527,955	27.36	2,066.44	1,586.00	0.00	2,066.44	3,652.44	43.42%	0.00%	56.58%
B++	SCANA Corp.	131,299,288	45.64	5,992.50	4,707.00	0.00	5,992.50	10,699.50	43.99%	0.00%	56.01%
B++	UIL Holdings	50,665,114	35.81	1,814.32	1,623.00	0.00	1,814.32	3,437.32	47.22%	0.00%	52.78%
B++	Westar Energy, Inc.	126,462,407	28.62	3,619.35	3,061.60	0.00	3,619.35	6,680.95	45.83%	0.00%	54.17%
B++	Xcel Energy, Inc.	487,553,810	26.71	13,022.56	8,706.40	0.00	13,022.56	21,728.96	40.07%	0.00%	59.93%
B+	Black Hills Corp.	44,188,286	36.34	1,605.80	1,044.90	0.00	1,605.80	2,650.70	39.42%	0.00%	60.58%
B+	CMS Energy Corp.	263,900,000	24.38	6,433.88	6,866.00	44.00	6,433.88	13,343.88	51.45%	0.33%	48.22%
B+	Edison International	325,811,206	45.19	14,723.41	13,658.00	1,760.00	14,723.41	30,141.41	45.31%	5.84%	48.85%
B+	Great Plains Energy Inc.	153,475,437	20.31	3,117.09	2,762.90	39.00	3,117.09	5,918.99	46.68%	0.66%	52.66%
B+	Otter Tail Corp.	36,166,218	25.00	904.16	421.70	15.50	904.16	1,341.36	31.44%	1.16%	67.41%
B	NV Energy, Inc.	235,999,750	18.11	4,273.96	5,130.30	0.00	4,273.96	9,404.26	54.55%	0.00%	45.45%
B	PNM Resources	79,653,624	20.51	1,633.70	1,672.00	11.50	1,633.70	3,317.20	50.40%	0.35%	49.25%
	Mean								42.69%	0.54%	56.78%
	Median								41.93%	0.00%	57.91%
	Weighted Average								43.35%	0.81%	55.85%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A+	Consolidated Edison, Inc.	0.60	0.21	0.23	0.35	0.36	0.71	0.41
A	Allete, Inc.	0.70	0.63	0.65	0.66	0.25	0.56	0.49
A	Alliant Energy Corp.	0.70	0.54	0.52	0.59	0.28	0.61	0.49
A	Avista Corp.	0.70	0.67	0.68	0.68	0.36	0.88	0.45
A	CH Energy Group	0.60	0.40	0.41	0.47	0.35	0.59	0.43
A	Cleco Corp.	0.65	0.47	0.47	0.53	0.28	0.64	0.44
A	Duke Energy	0.60	0.32	0.34	0.42	0.32	0.41	0.47
A	Entergy Corp.	0.70	0.49	0.50	0.56	0.19	0.85	0.41
A	MGE Energy Inc.	0.60	0.29	0.30	0.40	0.38	0.33	0.50
A	NextEra Energy, Inc.	0.70	0.52	0.54	0.59	0.25	0.78	0.44
A	OGE Energy Corp.	0.75	0.72	0.73	0.73	0.27	0.57	0.53
A	Sempra Energy	0.80	0.50	0.49	0.60	0.30	0.62	0.56
A	Southern Co.	0.55	0.27	0.27	0.36	0.32	0.59	0.39
A	Vectren Corp.	0.70	0.35	0.37	0.47	0.36	0.69	0.49
A	Wisconsin Energy Corp.	0.60	0.29	0.30	0.40	0.36	0.59	0.44
	Mean	0.66	0.44	0.45	0.52		0.63	0.46
	Median	0.70	0.47	0.47	0.53		0.61	0.45
	Weighted Average				0.48		0.62	0.45
	Relevered Beta based on 44% Debt Capital Structure and Mean Unlevered Beta <sup>3</sup>							0.68
	Relevered Beta based on 44% Debt Capital Structure and Weighted Average Unlevered Beta <sup>3</sup>							0.66

Sources: Columns a, b, c and g were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years

<sup>2</sup> Unlevered Beta = Beta/[1+(1-*tc*)(D/E)]; where D/E is the debt to equity ratio, *tc* is the company's most recent tax rate

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-*tp*)(D/E)]; where D/E is the debt to equity ratio, *tp* is the prospective purchaser's tax rate (assumed to be 40%)

**2013 Capitalization Rate Study  
Gas and Electric Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
B++	Ameren Corp.	0.80	0.59	0.57	0.65	0.36	0.98	0.49
B++	American Electric Power Co.	0.65	0.47	0.49	0.54	0.34	0.90	0.41
B++	CenterPoint Energy, Inc.	0.75	0.61	0.63	0.66	0.33	1.41	0.38
B++	DTE Energy Co.	0.75	0.58	0.58	0.64	0.32	0.96	0.45
B++	El Paso Electric Co.	0.70	0.58	0.61	0.63	0.33	0.77	0.46
B++	Empire District Electric Co.	0.65	0.56	0.57	0.59	0.38	0.84	0.43
B++	Exelon Corp.	0.80	0.49	0.51	0.60	0.36	0.46	0.62
B++	FirstEnergy Corp.	0.75	0.40	0.42	0.52	0.42	0.89	0.49
B++	Hawaiian Electric Industries, Inc.	0.70	0.46	0.48	0.55	0.35	0.62	0.50
B++	Integrus Energy Group, Inc.	0.90	0.80	0.81	0.84	0.33	0.47	0.68
B++	Northeast Utilities	0.70	0.47	0.47	0.55	0.35	0.92	0.44
B++	PG&E Corp.	0.55	0.24	0.24	0.34	0.32	0.68	0.38
B++	Pinnacle West Capital Corp.	0.70	0.52	0.51	0.58	0.35	0.79	0.46
B++	Portland General Electric Co.	0.75	0.64	0.63	0.67	0.30	0.94	0.45
B++	SCANA Corp.	0.65	0.53	0.52	0.57	0.31	0.83	0.41
B++	UIL Holdings	0.70	0.67	0.66	0.68	0.40	0.72	0.49
B++	Westar Energy, Inc.	0.70	0.55	0.54	0.60	0.30	0.93	0.42
B++	Xcel Energy, Inc.	0.65	0.35	0.35	0.45	0.35	0.79	0.43
B+	Black Hills Corp.	0.80	0.95	0.96	0.90	0.32	0.77	0.53
B+	CMS Energy Corp.	0.75	0.47	0.48	0.57	0.37	1.79	0.35
B+	Edison International	0.75	0.58	0.58	0.64	0.26	1.04	0.42
B+	Great Plains Energy Inc.	0.75	0.69	0.71	0.72	0.34	1.09	0.44
B+	Otter Tail Corp.	0.90	1.06	1.07	1.01	0.10	0.50	0.62
B	NV Energy, Inc.	0.85	0.59	0.59	0.68	0.33	1.64	0.41
B	PNM Resources	0.95	0.87	0.87	0.90	0.40	1.37	0.52
	Mean	0.74	0.59	0.59	0.64		0.92	0.47
	Median	0.75	0.58	0.57	0.63		0.89	0.45
	Weighted Average				0.57		0.91	0.46

Relevered Beta based on 47% Debt Capital Structure and Mean Unlevered Beta <sup>5</sup> 0.72

Relevered Beta based on 47% Debt Capital Structure and Weighted Average Unlevered Beta <sup>3</sup> 0.70

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Beta/[1+(1- $\tau_c$ )(D/E)]; where D/E is the debt to equity ratio,  $\tau_c$  is the company's most recent tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1- $\tau_p$ )(D/E)]; where D/E is the debt to equity ratio,  $\tau_p$  is the prospective purchaser's tax rate (assumed to be 40%).

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Preferred Stock</b>				<b>Debt</b>				
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	
A	10.10%	4.50%	10.58%	Baa1	6.27%	1.70%	6.38%	Aa2	4.12%	1.70%	4.19%	
B	10.50%	4.50%	10.99%	Baa2	6.59%	1.70%	6.70%	Aa3	4.20%	1.70%	4.27%	
Not Rated	11.75%	4.50%	12.30%	Baa3	6.91%	1.70%	7.03%	A1	4.28%	1.70%	4.35%	
				Ba1	7.23%	1.70%	7.36%	A2	4.36%	1.70%	4.44%	
	12.75%	4.50%	13.35%	Ba2	7.55%	1.70%	7.68%	A3	4.52%	1.70%	4.60%	
				Ba3	7.87%	1.70%	8.01%	Baa1	4.69%	1.70%	4.77%	
									Baa2	4.85%	1.70%	4.93%
									Baa3	5.01%	1.70%	5.10%
									Ba1	5.18%	1.70%	5.27%
									Ba2	5.34%	1.70%	5.43%
									Ba3	5.50%	1.70%	5.60%
Not Rated									6.16%	1.70%	6.26%	

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return <sup>1</sup>	Moody's P/S Yields	Moody's Rating	Rate of Return <sup>2</sup>	Moody's Bond Yields	Moody's Rating	Rate of Return <sup>2</sup>
A	10.10%		Aa1	5.15%	Aaa=N/A	Aaa2	3.56%
		Aa=N/A	Aa2	5.27%		Aaa3	3.68%
B	10.50%		Aa3	5.31%	Aa=3.92	Aa1	3.80%
			A1	5.47%		Aa2	3.92%
Not Rated	11.75%	A=5.63%	A2	5.63%	A=4.16	Aa3	4.00%
			A3	5.95%		A1	4.08%
	12.75%	Baa=6.59%	Baa1	6.27%	Baa=4.65	A2	4.16%
			Baa2	6.59%		A3	4.32%
			Baa3	6.91%		Baa1	4.49%
			Ba1	7.23%		Baa2	4.65%
			Ba2	7.55%		Baa3	4.81%
			Ba3	7.87%		Ba1	4.98%
			B1	8.19%		Ba2	5.14%
			B2	8.51%		Ba3	5.30%
			B3	8.83%		B1	5.47%
					B2	5.63%	
					B3	5.79%	
					Not Rated	5.96%	

<sup>1</sup> The Rate of Return on Common Equity was developed by staff based on the relative risks of the utilities in conjunction with the results of various financial models and pertinent information from different sources. Consideration was also given to the latest decisions of the California Public Utilities Commission. For 2013, the return on equity (ROE) and return on rate base (ROR) for Southern California Gas Company are 10.10% and 8.02%, respectively.

<sup>2</sup> The Rates of Return on Preferred Stocks and Bonds were based on the 2013 Moody's "Utility Preferred Stock Yields" and "Utility Yields" reports. Because Moody's assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolated the difference between these groups to further refine the ratings.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A, B++	B+, B
Expected Future Return, S&P 500	10.96%	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%
Risk Premium	7.92%	7.92%
Beta <sup>2</sup>	0.65	0.69
Adjusted Risk Premium	5.15%	5.43%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%
<b>Projected Return on Common Equity</b>	<b>8.19%</b>	<b>8.47%</b>

<sup>1</sup> WSJ.com, January 2, 2013

<sup>2</sup> The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A, B++	B+, B
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%	11.80%
Less: Income-Long Term Government Bonds (1926 - 2012) <sup>1</sup>	5.10%	5.10%
Risk Premium	6.70%	6.70%
Beta <sup>2</sup>	0.65	0.69
Adjusted Risk Premium	4.36%	4.59%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	3.04%	3.04%
<b>Projected Return on Common Equity</b>	<b>7.40%</b>	<b>7.63%</b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

<sup>3</sup> WSJ.com, January 2, 2013

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	AGL Resources, Inc.	39.97	3.20	2.70	1.74	1.84	4.60%	1.50%	4.83%	8.01%	6.10%	9.44%
A	New Jersey Resources Corp.	39.62	2.90	2.71	1.52	1.60	4.04%	4.00%	4.07%	7.32%	8.04%	8.11%
A	Northwest Natural Gas Co.	44.20	2.45	2.25	1.79	1.83	4.14%	2.50%	3.90%	5.54%	6.64%	8.04%
A	WGL Holdings, Inc.	39.19	2.50	2.68	1.59	1.63	4.16%	2.50%	4.47%	6.38%	6.66%	8.63%
B++	Atmos Energy Corp.	35.14	2.35	2.10	1.38	1.40	3.98%	1.50%	5.33%	6.69%	5.48%	9.32%
B++	Laclede Group, Inc.	38.61	2.85	2.79	1.66	1.74	4.51%	2.50%	3.00%	7.38%	7.01%	7.51%
B++	Piedmont Natural Gas Co.	31.30	1.70	1.60	1.19	1.23	3.93%	3.50%	3.87%	5.43%	7.43%	7.80%
B++	South Jersey Industries, Inc.	50.33	3.35	3.15	1.65	1.82	3.62%	9.00%	7.00%	6.66%	12.62%	10.62%
B++	UGI Corp.	32.73	2.50	1.76	1.06	1.10	3.36%	6.00%	4.50%	7.64%	9.36%	7.86%
	Mean						4.04%	3.67%	4.55%	6.78%	7.70%	8.59%
	Median						4.04%	2.50%	4.47%	6.69%	7.01%	8.11%
	Weighted Average										7.47%	8.71%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B+	NiSource, Inc.	24.89	1.40	1.35	0.94	0.96	3.86%	1.00%	8.27%	5.62%	4.86%	12.12%
B	Southwest Gas Corp.	42.41	2.85	2.72	1.18	1.30	3.07%	8.00%	6.03%	6.72%	11.07%	9.10%
	Mean						3.46%	4.50%	7.15%	6.17%	7.96%	10.61%
	Median						3.46%	4.50%	7.15%	6.17%	7.96%	10.61%
	Weighted Average										5.98%	11.58%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	AGL Resources, Inc.	6.00%	4.40%	4.10%	4.83%
A	New Jersey Resources Corp.	5.50%	4.00%	2.70%	4.07%
A	Northwest Natural Gas Co.	3.00%	4.20%	4.50%	3.90%
A	WGL Holdings, Inc.	2.50%	5.30%	5.60%	4.47%
B++	Atmos Energy Corp.	4.00%	6.00%	6.00%	5.33%
B++	Laclede Group, Inc.	3.00%	3.00%	N/A	3.00%
B++	Piedmont Natural Gas Co.	2.50%	3.70%	5.40%	3.87%
B++	South Jersey Industries, Inc.	9.00%	6.00%	6.00%	7.00%
B++	UGI Corp.	4.50%	N/A	N/A	4.50%
B+	NiSource, Inc.	10.50%	7.60%	6.70%	8.27%
B	Southwest Gas Corp.	9.00%	5.00%	4.10%	6.03%
	Mean	5.41%	4.92%	5.01%	5.02%
	Median	4.50%	4.70%	5.40%	4.50%
	Weighted Average				5.79%

Sources: Columns a, b and c were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from ThomsonReuters.com.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A	AGL Resources, Inc.	117,782,207	39.97	4,707.75	3,330.00	0.00	4,707.75	8,037.75	41.43%	0.00%	58.57%
A	New Jersey Resources Corp.	41,689,123	39.62	1,651.72	525.20	0.00	1,651.72	2,176.92	24.13%	0.00%	75.87%
A	Northwest Natural Gas Co.	26,902,000	44.20	1,189.07	641.70	0.00	1,189.07	1,830.77	35.05%	0.00%	64.95%
A	WGL Holdings, Inc.	51,613,381	39.19	2,022.73	589.20	28.20	2,022.73	2,640.13	22.32%	1.07%	76.61%
B++	Atmos Energy Corp.	90,173,217	35.14	3,168.69	1,956.30	0.00	3,168.69	5,124.99	38.17%	0.00%	61.83%
B++	Laclede Group, Inc.	22,262,000	38.61	859.54	339.40	0.00	859.54	1,198.94	28.31%	0.00%	71.69%
B++	Piedmont Natural Gas Co.	72,076,431	31.30	2,255.99	975.00	0.00	2,255.99	3,230.99	30.18%	0.00%	69.82%
B++	South Jersey Industries, Inc.	31,262,570	50.33	1,573.45	566.40	0.00	1,573.45	2,139.85	26.47%	0.00%	73.53%
B++	UGI Corp.	112,704,763	32.73	3,688.83	3,347.60	0.00	3,688.83	7,036.43	47.58%	0.00%	52.42%
	Mean								32.62%	0.12%	67.26%
	Median								30.18%	0.00%	69.82%
	Weighted Average								36.72%	0.08%	63.20%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B+	NiSource, Inc.	309,755,140	24.89	7,709.81	6,819.70	0.00	7,709.81	14,529.51	46.94%	0.00%	53.06%
B	Southwest Gas Corp.	46,140,788	42.41	1,956.83	1,256.00	0.00	1,956.83	3,212.83	39.09%	0.00%	60.91%
	Mean								43.02%	0.00%	56.98%
	Median								43.02%	0.00%	56.98%
	Weighted Average								45.52%	0.00%	54.48%

Sources: Columns a, b, c, f and g were extracted from Value Line.  
Column d was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A	AGL Resources, Inc.	0.75	0.41	0.42	0.53	0.36	0.69	0.52
A	New Jersey Resources Corp.	0.65	0.23	0.22	0.37	0.35	0.27	0.55
A	Northwest Natural Gas Co.	0.55	0.26	0.25	0.35	0.39	0.49	0.42
A	WGL Holdings, Inc.	0.65	0.21	0.22	0.36	0.39	0.33	0.54
B++	Atmos Energy Corp.	0.70	0.45	0.46	0.54	0.34	0.76	0.47
B++	Laclede Group, Inc.	0.55	0.06	0.06	0.22	0.32	0.41	0.43
B++	Piedmont Natural Gas Co.	0.65	0.30	0.29	0.41	0.25	0.37	0.51
B++	South Jersey Industries, Inc.	0.65	0.31	0.30	0.42	0.20	0.28	0.53
B++	UGI Corp.	0.70	0.38	0.37	0.48	0.35	0.69	0.48
	Mean	0.65	0.29	0.29	0.41		0.48	0.49
	Median	0.65	0.30	0.29	0.41		0.41	0.51
	Weighted Average				0.46		0.57	0.50
	Relevered Beta based on 44% Debt Capital Structure and Mean Unlevered Beta <sup>3</sup>							0.73
	Relevered Beta based on 44% Debt Capital Structure and Weighted Average Unlevered Beta <sup>3</sup>							0.73

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta =  $Beta / [1 + (1 - tc)(D/E)]$ ; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

<sup>3</sup> Relevered Beta =  $[Unlevered Beta] [1 + (1 - tp)(D/E)]$ ; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2013 Capitalization Rate Study  
Natural Gas Distribution Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
B+	NiSource, Inc.	0.80	0.73	0.74	0.76	0.33	1.34	0.42
B	Southwest Gas Corp.	0.75	0.69	0.70	0.71	0.36	0.78	0.50
	Mean	0.78	0.71	0.72	0.74		1.06	0.46
	Median	0.78	0.71	0.72	0.74		1.06	0.46
	Weighted Average				0.75		1.24	0.43
								Relevered Beta based on 49% Debt Capital Structure and Mean Unlevered Beta <sup>3</sup>
								0.73
								Relevered Beta based on 49% Debt Capital Structure and Weighted Average Unlevered Beta <sup>3</sup>
								0.69

Sources: Columns a, b, c and g were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2013 Capitalization Rate Study  
Water Utility Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++	11.00%	4.50%	11.52%	Not Rated	5.25%	1.70%	5.34%

Cost of Capital Adjusted for Flotation Costs = 
$$\frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2013 Capitalization Rate Study  
Water Utility Companies  
Summary of Rates of Return**

Common Equity		Bonds	
Value Line Rating	Rate of Return <sup>1</sup>	Moody's Rating	Rate of Return <sup>2</sup>
B++	11.00%	Not Rated	5.25%

<sup>1</sup> In developing the Rate of Return on Common Equity, staff considered the latest decision of the California Public Utilities Commission and other pertinent information. For 2013, the return on equity and return on rate base for Golden State Water Company are 10.20% and 8.87%, respectively (D.08-01-043).

<sup>2</sup> The Rate of Return on Bonds represents what staff estimates a prospective purchaser would expect in the open market.

**2013 Capitalization Rate Study  
Water Utility Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings B++, B+, B
Expected Future Return, S&P 500	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
Risk Premium	7.92%
Beta <sup>2</sup>	0.48
Adjusted Risk Premium	3.81%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
<b>Projected Return on Common Equity</b>	<b>6.85%</b>

<sup>1</sup> WSJ.com, January 2, 2013

<sup>2</sup> The estimated betas were derived from a sample of water companies with similar ratings.

**2013 Capitalization Rate Study  
Water Utility Companies  
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings
	B++, B+, B
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%
Less: Income-Long Term Government Bonds (1926 - 2012) <sup>1</sup>	<u>5.10%</u>
Risk Premium	6.70%
Beta <sup>2</sup>	<u>0.48</u>
Adjusted Risk Premium	3.22%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	<u>3.04%</u>
<b>Projected Return on Common Equity</b>	<b><u><u>6.26%</u></u></b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> The estimated betas were derived from a sample of water companies with similar ratings.

<sup>3</sup> WSJ.com, January 2, 2013

**2013 Capitalization Rate Study  
Water Utility Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	American States Water Co.	47.98	2.70	2.65	1.27	1.45	3.02%	7.50%	5.75%	5.63%	10.52%	8.77%
B++	Aqua America, Inc.	25.42	1.15	1.05	0.67	0.71	2.79%	5.00%	7.07%	4.52%	7.79%	9.86%
B+	California Water Service Group	18.35	1.05	0.97	0.63	0.64	3.49%	3.00%	5.33%	5.72%	6.49%	8.82%
B+	Middlesex Water Company	19.56	1.00	0.90	0.74	0.75	3.83%	1.50%	7.00%	5.11%	5.33%	10.83%
B	American Water Works Co., Inc.	37.13	2.25	2.20	0.96	1.04	2.80%	6.50%	8.67%	6.06%	9.30%	11.47%
	Mean						3.19%	4.70%	6.76%	5.41%	7.89%	9.95%
	Median						3.02%	5.00%	7.00%	5.63%	7.79%	9.86%
	Weighted Average										8.73%	10.70%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Water Utility Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	American States Water Co.	5.50%	6.00%	N/A	5.75%
B++	Aqua America, Inc.	7.00%	6.90%	7.30%	7.07%
B+	California Water Service Group	6.00%	5.00%	5.00%	5.33%
B+	Middlesex Water Company	7.00%	N/A	N/A	7.00%
B	American Water Works Co., Inc.	9.00%	8.50%	8.50%	8.67%
	Mean	6.90%	6.60%	6.93%	6.76%
	Median	7.00%	6.45%	7.30%	7.00%
	Weighted Average				7.82%

Sources: Columns a, b and c were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from ThomsonReuters.com.

**2013 Capitalization Rate Study  
Water Utility Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A	American States Water Co.	19,216,427	47.98	922.00	344.20	0.00	922.00	1,266.20	27.18%	0.00%	72.82%
B++	Aqua America, Inc.	139,941,476	25.42	3,557.31	1,519.70	0.00	3,557.31	5,077.01	29.93%	0.00%	70.07%
B+	California Water Service Group	41,905,495	18.35	768.97	479.50	0.00	768.97	1,248.47	38.41%	0.00%	61.59%
B+	Middlesex Water Company	15,754,856	19.56	308.16	132.40	3.40	308.16	443.96	29.82%	0.77%	69.41%
B	American Water Works Co., Inc.	176,756,790	37.13	6,562.98	5,203.10	19.30	6,562.98	11,785.38	44.15%	0.16%	55.69%
	Mean								33.90%	0.19%	65.92%
	Median								29.93%	0.00%	69.41%
	Weighted Average								38.74%	0.11%	61.14%

Sources: Columns a, b, c, f and g were extracted from Value Line.

Column d was acquired from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Water Utility Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A	American States Water Co.	0.70	0.34	0.35	0.46	0.43	0.46	0.37
B++	Aqua America, Inc.	0.60	0.19	0.20	0.33	0.40	0.47	0.26
B+	California Water Service Group	0.65	0.27	0.31	0.41	0.41	0.51	0.32
B+	Middlesex Water Company	0.70	0.48	0.49	0.56	0.32	0.46	0.42
B	American Water Works Co., Inc.	0.65	0.31	0.31	0.42	0.40	1.15	0.25
	Mean	0.66	0.32	0.33	0.44		0.61	0.32
	Median	0.65	0.31	0.31	0.42		0.47	0.32
	Weighted Average				0.40		0.88	0.27
	Relevered Beta based on 45% Debt Capital Structure and Mean Unlevered Beta <sup>3</sup>							0.48
	Relevered Beta based on 45% Debt Capital Structure and Weighted Average Unlevered Beta <sup>3</sup>							0.40

Sources: Columns a, b, c and g were extracted from Value Line.  
Column d was extracted from Zacks.com.  
Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta =  $Beta / [1 + (1 - tc)(D/E)]$ ; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

<sup>3</sup> Relevered Beta =  $[Unlevered Beta][1 + (1 - tp)(D/E)]$ ; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
187	Mojave Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
189	Standard Pacific Gas Line Incorporated	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%
197	El Paso Pipeline Partners, L.P.	Not Rated	Not Rated	80%	20%	12.04%	4.73%	10.58%

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Industry Notes**

- Interstate gas transmission companies are regulated by the Federal Energy Regulatory Commission (FERC).
- EOG Resources Company was removed from the 2013 Capitalization Rate Study sample. EOG Resources does not significantly concentrate on Natural Gas Transmission.
- Staff relied upon the results of the following models in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model (Ex Post and Ex Ante)

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
Not Rated	11.50%	4.50%	12.04%	Not Rated	4.65%	1.70%	4.73%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

Staff applied a bond rating of Baa3 for the Natural Gas Transmission Companies, which represents the estimated cost of debt for the companies in the study.

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Comparison of Return on Common Equity**

Description	2013	2012	Change
E/P Ratio - Mean	5.43%	5.88%	-0.44%
E/P Ratio - Median	5.89%	5.11%	0.77%
Dividends Yield + Dividends Growth - Mean	7.59%	4.16%	3.43%
Dividends Yield + Dividends Growth - Median	7.00%	5.10%	1.90%
Dividends Yield + Earnings Growth - Mean	11.77%	19.15%	-7.38%
Dividends Yield + Earnings Growth - Median	11.92%	10.26%	1.66%
Capital Asset Pricing Model (CAPM) - Ex Ante	10.37%	12.90%	-2.52%
Capital Asset Pricing Model (CAPM) - Ex Post	9.25%	10.46%	-1.21%
State-Assessed Properties Division Recommendation:	11.50%	11.50%	0.00%

The Discounted Cash Flow (DCF) model is computed using data from a sample of gas transmission companies with similar risk and operation

The information considered by staff includes the results of DCF analysis (Dividends Yield + Dividends Growth and Dividends Yield + Earnings Growth) and the results of the Capital Asset Pricing Model (CAPM) analysis.

**2013 Capitalization Rate Study**  
**Natural Gas Transmission Companies**  
**Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line		Stock	2013			2013	Dividend	Est.	Est.	E/P	Div Yld+	Div Yld+
Rating	Company Name	Price	Est.	2012	2012	Est.	Yield	Dividend	Earnings	Ratio	Div Grwh	Engs Grwh
		12/31/12	Earnings	Earnings	Dividends	Dividends	(g/c)	Growth	Growth	(d/c)	(h+i)	(h+j)
A	Questar Corp.	19.76	1.25	1.18	0.67	0.70	3.54%	6.50%	4.50%	6.33%	10.04%	8.04%
B++	Cabot Oil & Gas Corp.	49.74	1.15	0.60	0.08	0.08	0.16%	NIL	15.00%	2.31%	0.16%	15.16%
B++	Devon Energy Corp.	52.04	4.45	3.30	0.80	0.80	1.54%	6.50%	6.23%	8.55%	8.04%	7.77%
B++	EQT Corporation	58.98	2.15	1.47	0.88	0.88	1.49%	3.00%	14.30%	3.65%	4.49%	15.79%
B++	National Fuel Gas Co.	50.69	2.95	2.64	1.44	1.50	2.96%	3.00%	7.63%	5.82%	5.96%	10.59%
B	El Paso Pipeline Partners, L.P.	36.97	2.20	2.10	2.14	2.35	6.36%	10.50%	6.90%	5.95%	16.86%	13.26%
	Mean						2.67%	5.90%	9.09%	5.43%	7.59%	11.77%
	Median						2.25%	6.50%	7.27%	5.89%	7.00%	11.92%
	Weighted Average										9.22%	13.47%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column c was extracted from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

Column j is an average of Value Line, Zacks.com and ThomsonReuters.com.

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	Questar Corp.	NMF	4.80%	4.20%	4.50%
B++	Cabot Oil & Gas Corp.	14.00%	N/A	16.00%	15.00%
B++	Devon Energy Corp.	9.50%	5.90%	3.30%	6.23%
B++	EQT Corporation	14.50%	11.60%	16.80%	14.30%
B++	National Fuel Gas Co.	4.50%	9.20%	9.20%	7.63%
B	El Paso Pipeline Partners, L.P.	10.50%	5.10%	5.10%	6.90%
	Mean	10.60%	7.32%	9.10%	9.09%
	Median	10.50%	5.90%	7.15%	7.27%
	Weighted Average				8.92%

**2013 Capitalization Rate Study  
Natural Gas Transmission Company  
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
Risk Premium	<u>7.92%</u>
Relevered Beta	0.93
Adjusted Risk Premium	<u>7.33%</u>
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	<u>3.04%</u>
Projected Return on Common Equity	<b><u><u>10.37%</u></u></b>

<sup>1</sup> WSJ.com on January 2, 2013

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.10%
Risk Premium	6.70%
Relevered Beta	0.93
Adjusted Risk Premium	6.21%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>2</sup>	3.04%
Projected Return on Common Equity	<b><u>9.25%</u></b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> WSJ.com on January 2, 2013

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line's Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
A	Questar Corp.	0.75	0.63	0.38	0.59	0.36	0.28	0.50
B++	Cabot Oil & Gas Corp.	1.25	1.07	1.09	1.14	0.39	0.20	1.02
B++	Devon Energy Corp.	1.20	1.14	1.13	1.16	0.28	0.22	1.00
B++	EQT Corp.	1.20	0.81	0.82	0.94	0.33	0.29	0.79
B++	National Fuel Gas Co.	1.00	1.04	1.03	1.02	0.41	0.27	0.88
B	El Paso Pipeline Partners, L.P.	0.70	0.24	0.23	0.39	0.40	1.12	0.23
	Mean	1.02	0.82	0.78	0.87		0.40	0.74
	Median	1.10	0.93	0.93	0.98		0.28	0.84
	Weighted				0.95		2.39	0.81
	Relevered Beta based on 20% Debt Capital Structure						0.85 <sup>3</sup>	
	Relevered Beta based on 20% Debt Capital Structure and a weighted average Beta						0.93 <sup>3</sup>	

Sources: Column g was extracted from Value Line.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Corrected Beta/[1+(1- $t_c$ )(D/E)]; where D/E is the debt to equity ratio,  $t_c$  is the company's 2012 tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1- $t_p$ )(D/E)]; where D/E is the debt to equity ratio,  $t_p$  is a prospective purchaser's tax rate (assumed to be 40%).

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Bond Rating	P/S Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Market Value Equity (\$million)	L.T. Debt (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Common Equity %
A	NR	NR	Questar Corp.	175,083,790	19.76	3,459.66	988.90	3,459.66	4,448.56	22.20%	77.80%
B++	NR	NR	Cabot Oil & Gas Corp.	210,242,354	49.74	10,457.45	987.00	10,457.45	11,444.45	8.60%	91.40%
B++	NR	NR	Devon Energy Corp.	405,000,000	52.04	21,076.20	8,450.00	21,076.20	29,526.20	28.60%	71.40%
B++	NR	NR	EQT Corp.	149,613,335	58.98	8,824.19	2,503.30	8,824.19	11,327.49	22.10%	77.90%
B++	NR	NR	National Fuel Gas Co.	83,812,677	50.69	4,248.46	1,149.00	4,248.46	5,397.46	21.30%	78.70%
B	NR	NR	El Paso Pipeline Partners, L.P.	215,784,501	36.97	7,977.6	4,244.00	7,977.55	12,221.55	34.70%	65.30%
			Mean							22.92%	77.08%
			Median							22.15%	77.85%
			Weighted Average							24.62%	75.38%

Recommended Capital Structure for Natural Gas Transmission Companies for lien date January 1, 2013:

Debt - 20%  
Equity - 80%

Sources: Columns a, e and h were extracted from Value Line.

Column f was extracted from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

NR - Not Rated

**2013 Capitalization Rate Study  
Natural Gas Transmission Companies  
Bonds - Rate of Return**

Utility Bond Yield	Bond Rating				
	Aaa	Aa	A	Baa	Avg Utility
As of January 2, 2013	N/A	3.92%	4.16%	4.65%	4.24%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages.

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate <sup>3</sup>
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
<b>Modern Electric Generation Technology<sup>1</sup></b>	B	B2	60%	40%	13.77%	6.61%	<b>10.91%</b>
<b>Older Electric Generation Technology<sup>2</sup></b>	B	B2	60%	40%	15.86%	7.63%	<b>12.57%</b>

<sup>1</sup> Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

<sup>2</sup> Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

<sup>3</sup> Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.

**2013 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Industry Notes**

- Staff relied primarily on the Capital Asset Pricing Model (CAPM) and Risk Premium Analysis in the development of equity rates. Consideration was given to both the ex post and ex ante risk premiums.
- The Discounted Cash Flow Model was not relied upon because the merchant generators in the sample are not currently paying dividends.
- Staff's recommended capital structure of 60% equity and 40% debt provides sufficient coverage of interest and principal payments on debt.
- Staff added a risk premium of 100 basis points to the debt rate for older technology to recognize the market's perception of additional risk present in operating these types of facilities.
- Staff considers the risk associated with older facilities to be greater than that of newer facilities, and has adjusted the beta used in the CAPM calculation upward to reflect this additional risk.
- The following companies were added to the 2013 Capitalization Rate Study sample for electric generation companies:
  1. Calpine Corporation was added as a merchant generator.
  2. Atlantic Power was added as a merchant generator.
  3. NextEra Energy, Inc. was added as a diversified electric utility.
  4. NV Energy, Inc. was added as a diversified electric utility.
- The following companies were removed from the 2013 Capitalization Rate Study sample for electric generation companies:
  1. GenOn Energy, Inc. was removed due to its merger with NRG Energy, Inc. as of December 14, 2012.
  2. Exelon Corp. was removed due to the data being less representative of the companies comprising this industry.
  3. Sempra Energy was removed due to the data being less representative of the companies comprising this industry.

**2013 Capitalization Rate Study  
Electric Generation Facilities  
Flotation Cost Adjustment**

Facility Type	Equity			Debt		
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Recommended Rate	Flotation Cost in %	Adjusted Rate
Modern Electric Generation Technology <sup>1</sup>	13.15%	4.50%	13.77%	6.50%	1.70%	6.61%
Older Electric Generation Technology <sup>2</sup>	15.15%	4.50%	15.86%	7.50%	1.70%	7.63%

Cost of Capital Adjusted for Flotation Costs = 
$$\frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

<sup>1</sup> The Modern Electric Generation Technology Recommended Debt Rate was developed by staff based on the relative rates of the utilities and other pertinent information from various sources.

<sup>2</sup> The Older Electric Generation Technology Recommended Debt Rate is equal to the Modern Electric Generation Technology Recommended Debt Rate with an additional risk premium of 100 basis points.

**2013 Capitalization Rate Study  
Electric Generation Facilities  
Summary of Rates of Return**

Common Equity		Bonds			
Facility Type	Rate of Return <sup>1</sup>	Moody's Bond Yields	Moody's Rating	Rate of Return <sup>2</sup>	
Modern Electric Generation Technology	13.15%	Aaa=NA	Aaa2	3.56%	
			Aaa3	3.68%	
			Aa1	3.80%	
Older Electric Generation Technology	15.15%	Aa=3.92%	Aa2	3.92%	
			Aa3	4.00%	
			A1	4.08%	
		A=4.16%	A2	4.16%	
			A3	4.32%	
			Baa1	4.49%	
			Baa=4.65%	Baa2	4.65%
				Baa3	4.81%
				Ba1	4.98%
				Ba2	5.14%
Ba3	5.30%				
B1	5.47%				
B2	5.63%				
B3	5.79%				
Caa1	5.96%				

<sup>1</sup> The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

<sup>2</sup> Rates of Return on Bonds are based on Moody's "Utility Bond Yields" as of January 2, 2013. However, because Moody assigns a yield to the groups Aa, A and Baa for bonds, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

**2013 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Comparison of Rates of Return on Common Equity**

	All Facilities in Study		
	2013	2012	Change
E/P Ratio-Mean	5.56%	4.97%	0.59%
E/P Ratio-Median	6.88%	6.69%	0.19%
Div Yld + Div Growth-Mean	7.49%	4.43%	3.06%
Div Yld + Div Growth-Median	8.00%	3.34%	4.66%
Div Yld + Div Growth-Weighted Avg.	7.82%	5.63%	2.19%
Div Yld + Earn.Growth-Mean	11.78%	7.20%	4.58%
Div Yld + Earn.Growth-Median	9.93%	8.90%	1.03%
Div Yld + Earn.Growth-Weighted Avg.	9.91%	7.66%	2.25%
Merrill Lynch Industry Factor - Required Return IPPs	13.20%	13.30%	-0.10%
ROE% - Yahoo Finance - Utilities	10.26%	9.62%	0.64%
ROE% - Yahoo Finance - Electric Utilities	7.80%	7.10%	0.70%
ROE% - Yahoo Finance - Diversified Utilities	11.50%	11.10%	0.40%

	Modern Technology	Older Technology
2012 Recommended Rate	<u>13.25%</u>	<u>15.25%</u>
CAPM - Ex Ante	11.75%	13.73%
CAPM - Ex Post	10.41%	12.09%
Risk Premium Analysis <sup>1</sup>	13.31%	14.33%
2013 Recommended Rate	<u>13.15%</u>	<u>15.15%</u>

<sup>1</sup> Risk Premium Analysis estimates the market indicated cost of equity by adding the appropriate "risk premium" to the corresponding cost of debt. "Risk Premium" of 6.70% is determined by comparing the Ibbotson total return on large company stocks to the total return on long-term corporate bonds.

**2013 Capitalization Rate Study  
Electric Generation Facilities  
Capital Asset Pricing Model - Ex Ante**

<b>Component</b>	<b>Types of Facilities</b>	
	<b>Modern Technology</b>	<b>Older Technology</b>
Expected Future Return, S&P 500	10.96%	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%
Risk Premium	7.92%	7.92%
Beta <sup>2</sup>	1.10	1.35
Adjusted Risk Premium	8.71%	10.69%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%
<b>Projected Return on Common Equity</b>	<b>11.75%</b>	<b>13.73%</b>

<sup>1</sup> WSJ.com on January 2, 2013

<sup>2</sup> The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

**2013 Capitalization Rate Study  
Electric Generation Facilities  
Capital Asset Pricing Model - Ex Post**

<b>Component</b>	<b>Types of Facilities</b>	
	Modern Technology	Older Technology
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.10%	5.10%
Risk Premium	6.70%	6.70%
Beta <sup>2</sup>	1.10	1.35
Adjusted Risk Premium	7.37%	9.05%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	3.04%	3.04%
<b>Projected Return on Common Equity</b>	<b>10.41%</b>	<b>12.09%</b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

<sup>3</sup> WSJ.com on January 2, 2013

**2013 Capitalization Rate Study  
Electric Generation Facilities  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
<u>Merchant Generators</u>												
B+	NRG Energy, Inc.	22.99	0.40	0.70	0.18	0.36	1.57%	0.00%	19.30%	1.74%	1.57%	20.87%
B	AES Corp.	10.70	1.35	1.25	0.08	0.16	1.50%	0.00%	13.21%	12.62%	1.50%	14.71%
B	Atlantic Power	11.43	-0.05	-0.45	1.16	1.20	10.50%	0.00%	0.00%	0.00%	10.50%	10.50%
B	Calpine Corp	18.13	0.43	-0.20	0.00	0.00	0.00%	0.00%	5.82%	2.37%	0.00%	5.82%
<u>Diversified Electric Utilities</u>												
A	Duke Energy	63.80	4.40	3.70	3.03	3.09	4.84%	2.00%	3.82%	6.90%	6.84%	8.66%
A	NextEra Energy, Inc.	69.19	4.75	4.30	2.40	2.60	3.76%	8.50%	5.45%	6.87%	12.26%	9.21%
B++	Xcel Energy Inc.	26.71	1.90	1.85	1.07	1.11	4.16%	5.00%	5.21%	7.11%	9.16%	9.37%
B	NV Energy, Inc.	18.14	1.25	1.25	0.64	0.74	4.08%	14.00%	11.04%	6.89%	18.08%	15.11%
	Mean						3.80%	3.69%	7.98%	5.56%	7.49%	11.78%
	Median						3.92%	1.00%	5.64%	6.88%	8.00%	9.93%
	Weighted Average										7.82%	9.91%
	Merrill Lynch Required Return - Independent Power Producers & Energy Traders											13.20%

Sources: Columns a, b, d, e, f, g and i were extracted from the Value Line Investment Survey Reports.  
Column c was extracted from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.  
Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

**2013 Capitalization Rate Study  
Electric Generation Facilities  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
	<u>Merchant Generators</u>				
B+	NRG Energy, Inc.	0.00%	33.10%	24.80%	19.30%
B	AES Corp.	23.00%	9.13%	7.50%	13.21%
B	Atlantic Power	NMF	NMF	NMF	0.00%
B	Calpine Corp	0.07%	7.00%	10.40%	5.82%
	<u>Diversified Electric Utilities</u>				
A	Duke Energy	4.50%	4.06%	2.90%	3.82%
A	NextEra Energy, Inc.	4.00%	5.96%	6.40%	5.45%
B++	Xcel Energy Inc.	6.00%	4.73%	4.90%	5.21%
B	NV Energy, Inc.	11.00%	11.07%	NMF	11.04%
	Mean	6.94%	10.72%	9.48%	7.98%
	Median	4.50%	7.00%	6.95%	5.64%
	Weighted Average				7.22%
	Merrill Lynch 5 Year Growth Estimate - Independent Power Producers & Energy Traders				13.50%

**2013 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l	m	
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity Ratio	
<u>Merchant Generators</u>													
B+	NRG Energy, Inc.	228,297,805	22.99	5,248.57	10,968.00	249.00	5,248.57	16,465.57	66.61%	1.51%	31.88%	2.00	
B	AES Corp.	743,961,090	10.70	7,960.38	19,225.00	0.00	7,960.38	27,185.38	70.72%	0.00%	29.28%	2.42	
B	Atlantic Power	119,333,349	11.43	1,363.98	1,225.70	221.00	1,363.98	2,810.68	43.61%	7.86%	48.53%	0.77	
B	Calpine Corp	481,700,000	18.13	8,733.22	10,425.00	0.00	8,733.22	19,158.22	54.42%	0.00%	45.58%	1.19	
<hr/>									58.84%	2.34%	38.82%	1.59	
Mean									60.51%	0.76%	38.73%	1.59	
Median									63.77%	0.72%	35.52%	1.88	
Weighted Average													
<u>Diversified Electric Utilities</u>													
A	Duke Energy	704,125,200	63.80	44,923.19	18,454.00	0.00	44,923.19	63,377.19	29.12%	0.00%	70.88%	0.41	
A	NextEra Energy, Inc.	423,206,077	69.19	29,281.63	22,714.00	0.00	29,281.63	51,995.63	43.68%	0.00%	56.32%	0.78	
B++	Xcel Energy Inc.	487,553,810	26.71	13,022.56	8,706.40	0.00	13,022.56	21,728.96	40.07%	0.00%	59.93%	0.67	
B	NV Energy, Inc.	235,999,750	18.14	4,281.04	5,130.30	0.00	4,281.04	9,411.34	54.51%	0.00%	45.49%	1.20	
<hr/>									41.85%	0.00%	58.15%	0.76	
Mean									41.88%	0.00%	58.12%	0.72	
Median									37.54%	0.00%	62.46%	0.63	
Weighted Average													
Value Line - Power Industry									62.0%	0.0%	38.0%	1.63	
Value Line - Electric Utility (West) Industry									44.9%	0.0%	55.1%	0.81	
Fidelity.com Research Independent Power Producers & Energy Traders													1.73
Fidelity.com Research Electric Utilities													1.14

Sources: Columns a, b, c, f and g were extracted from the Value Line Investment Survey Reports.  
Column d was extracted from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study**  
**Electric Generation Facilities**  
**Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
<u>Merchant Generators</u>								
B+	NRG Energy, Inc.	1.10	0.70	0.78	0.86	0.32	1.70	0.44
B	AES Corp.	1.20	1.38	1.39	1.32	0.29	2.32	0.54
B	Atlantic Power	0.75	0.03	NA	0.39	0.00	0.77	0.22
B	Calpine Corp	1.15	1.26	1.25	1.22	0.00	1.19	0.60
Mean					0.95	0.15	1.50	0.40
Median					1.04	0.15		0.44
Weighted					1.14	0.20		0.52
<u>Diversified Electric Utility</u>								
A	Duke Energy	0.60	0.32	0.34	0.42	0.32	0.62	0.30
A	NextEra Energy, Inc.	0.70	0.51	0.57	0.59	0.25	0.78	0.38
B++	Xcel Energy Inc.	0.65	0.35	0.35	0.45	0.35	0.76	0.30
B	NV Energy, Inc.	0.85	0.56	0.66	0.69	0.33	1.20	0.38
Mean					0.70	0.31	0.84	0.34
Median					0.68	0.32		0.34
Weighted					0.50	0.30		0.33
Merchant Generators Relevered Beta based on 40% Debt Capital Structure							0.72	<sup>3</sup>
Diversified Electric Utilities Relevered Beta based on 40% Debt Capital Structure							0.46	<sup>3</sup>
Merrill Lynch Adjusted Beta Independent Power Producers & Energy Traders							1.10	

Sources: Columns a, b, c and g were extracted from the Value Line Investment Survey Reports.  
Column d was extracted from Zacks.com.  
Column e was extracted from Standard and Poor's Stock Reports.

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2012 tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
<b>Local Exchange Companies</b>								
279	Pacific Bell Telephone Company	A++	A2	70%	30%	12.04%	4.23%	<b>9.70%</b>
201	Verizon California, Inc.	A++	A3	70%	30%	12.04%	4.40%	<b>9.75%</b>
284	Citizens Telecommunications Company of California, Inc.	B	Not Rated	65%	35%	13.09%	4.90%	<b>10.22%</b>
294	SureWest Telephone	C++	Not Rated	65%	35%	13.09%	4.90%	<b>10.55%</b>
	<b>Other Local Exchange Companies</b>	Not Rated	Not Rated	65%	35%	15.45%	5.06%	<b>11.81%</b>
<b>Wireless Companies</b>								
2606	AT&T Mobility LLC	A++	A2	70%	30%	11.52%	4.23%	<b>9.33%</b>
2532	Los Angeles SMSA Ltd., Partnership	A++	A3	70%	30%	11.52%	4.40%	<b>9.38%</b>
2552	Fresno MSA Limited Partnership	A++	A3	70%	30%	11.52%	4.40%	<b>9.38%</b>
2559	Cellco Partnership	A++	A3	70%	30%	11.52%	4.40%	<b>9.38%</b>
2748	T-Mobile West Corporation	B++	Not Rated	65%	35%	12.83%	5.06%	<b>10.11%</b>
2733	MetroPCS Communications	B	Not Rated	65%	35%	12.83%	5.06%	<b>10.11%</b>
2720	Sprint Telephony PCS, L.P.	C++	B3	65%	35%	14.66%	5.89%	<b>11.59%</b>
	<b>Other Wireless Companies<sup>1</sup></b>	Not Rated	Not Rated	55%	45%	16.75%	7.42%	<b>12.55%</b>
	<b>Wireless Reseller Companies</b>	Not Rated	Not Rated	55%	45%	18.85%	7.93%	<b>13.93%</b>
<b>Interexchange Companies</b>								
2310	AT&T Communications	A++	A2	70%	30%	12.83%	4.23%	<b>10.25%</b>
2274	MCI Communications Services, Inc.	A++	A3	70%	30%	12.83%	4.40%	<b>10.30%</b>
2372	MCI Metro Access Transmission Services, LLC	A++	A3	70%	30%	12.83%	4.40%	<b>10.30%</b>
2463	CenturyLink, Inc.	B++	Baa3	65%	35%	14.40%	4.90%	<b>11.07%</b>
7522	tw telecom of california l.p.	B	B1	65%	35%	14.40%	7.42%	<b>11.96%</b>
2014	Sprint Communications Company, L.P.	C++	B3	60%	40%	16.75%	5.06%	<b>12.08%</b>
7761	Level 3 Communications, LLC	C++	Caa2	60%	40%	16.75%	7.42%	<b>13.02%</b>
	<b>Other Interexchange - Carriers</b>	Not Rated	Not Rated	55%	45%	21.47%	7.42%	<b>15.15%</b>
	<b>Other Interexchange - Resellers</b>	Not Rated	Not Rated	55%	45%	24.61%	7.93%	<b>17.10%</b>

<sup>1</sup> Includes Radio Telephone and Paging Companies

**2013 Capitalization Rate Study  
Telecommunications Companies  
Industry Notes**

- Staff conducted a consolidated capitalization rate study for the local exchange, wireless, and interexchange industries due to the increasing convergence of these three industries. Separate capitalization rates were estimated for the companies in each of the three industries based on the relative risk experienced by each group of companies within their respective industries.
- Staff relied on the Discounted Cash Flow Model (DCF) and Capital Asset Pricing Model (CAPM ex post and ex ante) in the development of equity rates.
- SureWest Communications Inc. was removed from the 2013 Capitalization Rate Study sample as it was acquired by Consolidated Communications Holdings Inc. in 2012.

**2013 Capitalization Rate Study  
Telecommunications Companies - Local Exchange  
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A++	11.50%	4.50%	12.04%	Aa2	3.92%	1.70%	3.99%
B	12.50%	4.50%	13.09%	Aa3	4.00%	1.70%	4.07%
C++	14.75%	4.50%	15.45%	A1	4.08%	1.70%	4.15%
Other Local Exchange Companies	14.75%	4.50%	15.45%	A2	4.16%	1.70%	4.23%
				A3	4.32%	1.70%	4.40%
				Baa1	4.49%	1.70%	4.56%
				Baa2	4.65%	1.70%	4.73%
				Baa3	4.81%	1.70%	4.90%
				Not Rated	4.98%	1.70%	5.06%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

$k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2013 Capitalization Rate Study  
Telecommunications Companies - Wireless  
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A++	11.00%	4.50%	11.52%	Aa2	3.92%	1.70%	3.99%
B++, B	12.25%	4.50%	12.83%	Aa3	4.00%	1.70%	4.07%
C++	14.00%	4.50%	14.66%	A1	4.08%	1.70%	4.15%
Other Wireless Companies <sup>1</sup>	16.00%	4.50%	16.75%	A2	4.16%	1.70%	4.23%
Wireless Reseller Companies	18.00%	4.50%	18.85%	A3	4.32%	1.70%	4.40%
				Baa1	4.49%	1.70%	4.56%
				Baa2	4.65%	1.70%	4.73%
				Baa3	4.81%	1.70%	4.90%
				Ba1	4.98%	1.70%	5.06%
				Ba2	5.14%	1.70%	5.23%
				Ba3	5.30%	1.70%	5.40%
				B1	5.47%	1.70%	5.56%
				B2	5.63%	1.70%	5.73%
				B3	5.79%	1.70%	5.89%
				Not Rated	7.29%	1.70%	7.42%
				Not Rated	7.79%	1.70%	7.93%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

$k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

<sup>1</sup> Includes Radio Telephone and Paging Companies

**2013 Capitalization Rate Study  
Telecommunications Companies - Interexchange  
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A++	12.25%	4.50%	12.83%	Aa2	3.92%	1.70%	3.99%
B++, B	13.75%	4.50%	14.40%	Aa3	4.00%	1.70%	4.07%
C++	16.00%	4.50%	16.75%	A1	4.08%	1.70%	4.15%
Other Interexchange Carriers	20.50%	4.50%	21.47%	A2	4.16%	1.70%	4.23%
Other Interexchange Resellers	23.50%	4.50%	24.61%	A3	4.32%	1.70%	4.40%
				Baa1	4.49%	1.70%	4.56%
				Baa2	4.65%	1.70%	4.73%
				Baa3	4.81%	1.70%	4.90%
				Ba1	4.98%	1.70%	5.06%
				Ba2	5.14%	1.70%	5.23%
				Ba3	5.30%	1.70%	5.40%
				B1	5.47%	1.70%	5.56%
				B2	5.63%	1.70%	5.73%
				B3	5.79%	1.70%	5.89%
				Not Rated	7.29%	1.70%	7.42%
				Not Rated	7.79%	1.70%	7.93%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

$k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

**2013 Capitalization Rate Study**  
**Telecommunications Companies**  
**Comparison of Return on Common Equity**

Description	A++			B++, B+, B			C++, C+, C		
	2013	2012	Change	2013	2012	Change	2013	2012	Change
<b>Discounted Cash Flow Analysis</b>									
E/P Ratio - Mean	7.02%	7.39%	-0.38%	6.61%	7.01%	-0.40%	3.46%	6.38%	-2.93%
E/P Ratio - Median	7.02%	7.39%	-0.38%	6.64%	7.24%	-0.60%	3.46%	6.38%	-2.93%
Dividend Yield + Dividend Growth - Mean	7.54%	8.15%	-0.61%	6.89%	9.59%	-2.70%	9.74%	18.35%	-8.61%
Dividend Yield + Dividend Growth - Median	7.54%	8.15%	-0.61%	7.41%	9.24%	-1.83%	9.74%	18.35%	-8.61%
Weighted Average (Div. Yield + Div. Growth)	7.69%	8.39%	-0.70%	6.42%	8.43%	-2.01%	9.74%	14.80%	-5.06%
Dividend Yield + Earnings Growth - Mean	12.51%	11.97%	0.54%	12.67%	13.01%	-0.34%	12.41%	25.27%	-12.86%
Dividend Yield + Earnings Growth - Median	12.51%	11.97%	0.54%	14.11%	11.91%	2.21%	12.41%	25.27%	-12.86%
Weighted Average (Div. Yield + Earn. Growth)	12.41%	11.78%	0.63%	12.42%	13.26%	-0.84%	12.41%	20.99%	-8.58%
<b>CAPM Analysis</b>									
Ex Ante	7.95%	8.74%	-0.79%	9.14%	10.18%	-1.05%	10.96%	12.98%	-2.02%
Ex Post	7.19%	7.31%	-0.12%	8.20%	8.41%	-0.21%	9.74%	10.52%	-0.78%
<b>Recommended Rates</b>									
Local Exchange	11.50%	11.75%	-0.25%	12.50%	12.75%	-0.25%	14.75%	15.00%	-0.25%
Wireless	11.00%	11.25%	-0.25%	12.25%	12.50%	-0.25%	14.00%	14.25%	-0.25%
Interexchange	12.25%	12.50%	-0.25%	13.75%	14.00%	-0.25%	16.00%	16.25%	-0.25%

**2013 Capitalization Rate Study  
Telecommunications Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
A++	AT&T Inc.	33.71	2.55	2.40	1.76	1.80	5.34%	3.00%	6.67%	7.56%	8.34%	12.01%
A++	Verizon Communications	43.27	2.80	2.47	2.00	2.05	4.74%	2.00%	8.27%	6.47%	6.74%	13.00%
	Mean						5.04%	2.50%	7.47%	7.02%	7.54%	12.51%
	Median						5.04%	2.50%	7.47%	7.02%	7.54%	12.51%
	Weighted Average										7.69%	12.41%
B++	Atlantic Tele-Network, Inc.	36.71	2.40	2.80	0.94	0.97	2.64%	5.50%	13.50%	6.54%	8.14%	16.14%
B++	CenturyLink, Inc.	39.12	2.80	2.67	2.90	2.90	7.41%	0.00%	4.30%	7.16%	7.41%	11.71%
B	Frontier Communications	4.28	0.30	0.27	0.40	0.40	9.35%	-12.50%	4.77%	7.01%	-3.15%	14.11%
B	NTELOS Holdings	13.11	1.30	1.15	1.68	1.68	12.81%	0.00%	2.00%	9.92%	12.81%	14.81%
B	Shenandoah Telecom	15.31	0.55	0.55	0.33	0.33	2.16%	2.50%	9.00%	3.59%	4.66%	11.16%
B	Telephone & Data Systems	22.14	1.20	1.25	0.49	0.51	2.30%	4.00%	3.50%	5.42%	6.30%	5.80%
B	Windstream Corp.	8.28	0.55	0.50	1.00	1.00	12.08%	0.00%	2.87%	6.64%	12.08%	14.94%
	Mean						6.96%	-0.07%	5.70%	6.61%	6.89%	12.67%
	Median						7.41%	0.00%	4.30%	6.64%	7.41%	14.11%
	Weighted Average										6.42%	12.42%

Sources: Columns a, d, e, f, g and i were extracted from the December 21, 2012 Value Line.

Column c was extracted from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

Column j is an average of Value Line, Zacks.com and ThomsonReuters.com.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/31/12	Est. 2013 Earnings	2012 Earnings	2012 Dividends	Est. 2013 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
C++	Consolidated Communications	15.91	0.55	0.25	1.55	1.55	9.74%	0.00%	2.67%	3.46%	9.74%	12.41%
	Mean						9.74%	0.00%	2.67%	3.46%	9.74%	12.41%
	Median						9.74%	0.00%	2.67%	3.46%	9.74%	12.41%
	Weighted Average										9.74%	12.41%

Sources: Columns a, d, e, f, g and i were extracted from the December 21, 2012 Value Line.  
Column c was extracted from Finance.Yahoo.com and represents December 31, 2012 closing stock prices.  
Column j is an average of Value Line, Zacks.com and ThomsonReuters.com.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A++	AT&T Inc.	7.50%	6.10%	6.40%	6.67%
A++	Verizon Communications	5.50%	7.80%	11.50%	8.27%
	Mean	6.50%	6.95%	8.95%	7.47%
	Median	6.50%	6.95%	8.95%	7.47%
	Weighted Average				7.31%
B++	Atlantic Tele-Network, Inc.	13.50%	NMF	NMF	13.50%
B++	CenturyLink, Inc.	1.50%	3.00%	8.40%	4.30%
B	Frontier Communications	6.00%	4.50%	3.80%	4.77%
B	NTELOS Holdings	0.00%	3.00%	3.00%	2.00%
B	Shenandoah Telecom	9.00%	NMF	NMF	9.00%
B	Telephone & Data Systems	10.00%	-3.00%	NMF	3.50%
B	Windstream Corp.	9.50%	1.00%	-1.90%	2.87%
	Mean	7.07%	1.70%	3.33%	5.70%
	Median	9.00%	3.00%	3.40%	4.30%
	Weighted Average				4.21%

Sources: Columns a, c were extracted from the December 21, 2012 Value Line.  
Column d was extracted from Zacks.com on January 2, 2013.  
Column e was extracted from ThomsonReuters.com on January 9, 2013.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
C++	Consolidated Communications	4.00%	2.00%	2.00%	2.67%
	Mean	4.00%	2.00%	2.00%	2.67%
	Median	4.00%	2.00%	2.00%	2.67%
	Weighted Average				2.67%

Sources: Columns a, c were extracted from the December 21, 2012 Value Line.  
Column d was extracted from Zacks.com on January 2, 2013.  
Column e was extracted from ThomsonReuters.com on January 9, 2013.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
A++	AT&T Inc.	5,680,000,000	33.71	191,472.80	60,314.00	0.00	191,472.80	251,786.80	23.95%	0.00%	76.05%
A++	Verizon Communications	2,853,919,743	43.27	123,489.11	46,467.00	0.00	123,489.11	169,956.11	27.34%	0.00%	72.66%
	Mean								25.65%	0.00%	74.35%
	Median								25.65%	0.00%	74.35%
	Weighted Average								25.32%	0.00%	74.68%
B++	Atlantic Tele-Network, Inc.	15,569,547	36.71	571.56	254.60	0.00	571.56	826.16	30.82%	0.00%	69.18%
B++	CenturyLink, Inc.	624,300,000	39.12	24,422.62	19,508.00	0.00	24,422.62	43,930.62	44.41%	0.00%	55.59%
B++	Warwick Valley Telephone	5,699,708	10.44	59.50	0.00	0.50	59.50	60.00	0.00%	0.83%	99.17%
B+	U.S. Cellular	84,734,701	35.24	2,986.05	880.50	0.00	2,986.05	3,866.55	22.77%	0.00%	77.23%
B	Frontier Communications	998,445,000	4.28	4,273.34	8,257.60	0.00	4,273.34	12,530.94	65.90%	0.00%	34.10%
B	MetroPCS Communications	363,875,489	9.94	3,616.92	4,731.20	0.00	3,616.92	8,348.12	56.67%	0.00%	43.33%
B	NTELOS Holdings	21,749,898	13.11	285.14	451.20	0.00	285.14	736.34	61.28%	0.00%	38.72%
B	Shenandoah Telecom	23,925,153	15.31	366.29	230.20	0.00	366.29	596.49	38.59%	0.00%	61.41%
B	Telephone & Data Systems	108,702,166	22.14	2,406.67	1,528.50	0.90	2,406.67	3,936.07	38.83%	0.02%	61.14%
B	tw telecom inc.	151,354,943	25.47	3,855.01	903.20	0.00	3,855.01	4,758.21	18.98%	0.00%	81.02%
B	Windstream Corp.	588,127,475	8.28	4,869.70	7,848.30	0.00	4,869.70	12,718.00	61.71%	0.00%	38.29%
	Mean								40.00%	0.08%	59.93%
	Median								38.83%	0.00%	61.14%
	Weighted Average								48.31%	0.00%	51.69%

Sources: Columns a, c, f, g were extracted from the December 21, 2012 Value Line.  
Column d represents closing stock prices as of December 31, 2012 downloaded from Finance.Yahoo.com.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/31/12	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
C++	Consolidated Communications	39,917,265	15.91	635.08	1,202.10	0.00	635.08	1,837.18	65.43%	0.00%	34.57%
C++	General Communication	41,702,412	9.59	399.93	941.00	0.00	399.93	1,340.93	70.18%	0.00%	29.82%
C++	Level 3 Communications	217,710,720	23.11	5,031.29	8,496.00	0.00	5,031.29	13,527.29	62.81%	0.00%	37.19%
C++	Sprint Nextel	3,003,000,000	5.67	17,027.01	20,994.00	0.00	17,027.01	38,021.01	55.22%	0.00%	44.78%
C+	Alaska Communications	45,677,310	1.94	88.61	536.20	0.00	88.61	624.81	85.82%	0.00%	14.18%
C+	Cincinnati Bell	199,430,620	5.48	1,092.88	2,561.90	129.40	1,092.88	3,784.18	67.70%	3.42%	28.88%
C	Leap Wireless	79,213,684	6.65	526.77	3,204.40	0.00	526.77	3,731.17	85.88%	0.00%	14.12%
	Mean								70.43%	0.49%	29.08%
	Median								67.70%	0.00%	29.82%
	Weighted Average								60.34%	0.21%	39.45%

Sources: Columns a, c, f, g were extracted from the December 21, 2012 Value Line.

Column d represents closing stock prices as of December 31, 2012 downloaded from Finance.Yahoo.com.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Rating		
	A++	B++, B+, B	C++, C+, C
Expected Future Return, S&P 500	10.96%	10.96%	10.96%
Less: Risk Free Return, 25-30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%	3.04%
Ex Ante Risk Premium	7.92%	7.92%	7.92%
Relevered Beta <sup>2</sup>	0.62	0.77	1.00
Adjusted Risk Premium	4.91%	6.10%	7.92%
Risk Free Return, 25-30 Year Treasury Bonds <sup>1</sup>	3.04%	3.04%	3.04%
<b>Projected Equity Yield</b>	<b>7.95%</b>	<b>9.14%</b>	<b>10.96%</b>

<sup>1</sup> WSJ.com on January 2, 2013.

<sup>2</sup> The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Capital Asset Pricing Model - Ex Post**

Component	Value Line Rating		
	A++	B++, B+, B	C++, C+, C
Common Stock Return (1926-2012) <sup>1</sup>	11.80%	11.80%	11.80%
Less: Income - Long Term Government Bonds (1926-2012) <sup>1</sup>	5.10%	5.10%	5.10%
Ex Post Risk Premium	6.70%	6.70%	6.70%
Relevered Beta <sup>2</sup>	0.62	0.77	1.00
Adjusted Risk Premium	4.15%	5.16%	6.70%
Risk Free Return, 25-30 Year Treasury Bonds <sup>3</sup>	3.04%	3.04%	3.04%
<b>Projected Equity Yield</b>	<b>7.19%</b>	<b>8.20%</b>	<b>9.74%</b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

<sup>3</sup> WSJ.com on January 2, 2013.

**2013 Capitalization Rate Study  
Telecommunications Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta <sup>1</sup>
A++	AT&T Inc.	0.70	0.56	0.66	0.64	0.34	0.35	0.52
A++	Verizon Communications	0.70	0.51	0.56	0.59	0.35	0.45	0.46
	Mean	0.70	0.54	0.61	0.62		0.40	0.49
	Median	0.70	0.54	0.61	0.62		0.40	0.49
	Weighted Average				0.62		0.39	0.49
B++	Atlantic Tele-Network, Inc.	1.00	1.02	1.16	1.06	0.49	0.38	0.89
B++	CenturyLink, Inc.	0.75	0.72	0.59	0.69	0.39	0.83	0.46
B++	Warwick Valley Telephone	0.50	0.63	0.18	0.44	0.33	0.04	0.43
B+	U.S. Cellular	1.10	0.87	0.78	0.92	0.33	0.26	0.78
B	Frontier Communications	0.95	0.79	0.57	0.77	0.36	1.62	0.38
B	MetroPCS Communications	1.05	0.89	1.38	1.11	0.36	1.14	0.64
B	NTELOS Holdings	NMF	0.83	0.64	0.74	0.40	1.13	0.44
B	Shenandoah Telecom.	0.85	0.68	1.53	1.02	0.40	0.35	0.84
B	Telephone & Data Systems	0.90	0.88	1.24	1.01	0.34	0.50	0.76
B	tw telecom inc.	1.30	1.36	0.63	1.10	0.25	0.56	0.77
B	Windstream Corp.	0.90	0.91	0.78	0.86	0.38	1.24	0.49
	Mean	0.93	0.87	0.86	0.88		0.73	0.62
	Median	0.93	0.87	0.78	0.92		0.56	0.64
	Weighted Average				0.81		0.96	0.52

Sources: Columns a, c, g were extracted from December 21, 2012 Value Line.  
Column d was extracted from Zacks.com on January 2, 2013.  
Column e was extracted from ThomsonReuters.com on January 9, 2013.  
Column h is a 5-year average Debt to Equity Ratio.

<sup>1</sup> Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate

**2013 Capitalization Rate Study  
Telecommunications Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta <sup>1</sup>
C++	Consolidated Communications	0.85	1.02	0.61	0.83	0.10	1.83	0.31
C++	General Communication	1.20	1.13	1.14	1.16	0.55	2.04	0.60
C++	Level 3 Communications	1.25	1.62	1.68	1.52	0.40	3.09	0.53
C++	Sprint Nextel	1.35	1.12	1.57	1.35	0.40	2.20	0.58
C+	Alaska Communications	0.80	0.79	0.83	0.81	0.42	2.83	0.31
C+	Cincinnati Bell	1.05	1.46	1.03	1.18	0.55	3.84	0.43
C	Leap Wireless	1.40	1.41	1.38	1.40	0.40	3.35	0.46
	Mean	1.13	1.22	1.18	1.18		2.74	0.46
	Median	1.20	1.13	1.14	1.18		2.83	0.46
	Weighted Average				1.35		2.55	0.54

	A++	B++, B+, B	C++, C+, C
A++: Relevered beta based on 30% debt capital structure	0.61 <sup>2</sup>	----	----
Relevered beta based on 30% debt capital structure and a weighted average beta	0.62 <sup>2</sup>	----	----
B++, B+, B: Relevered beta based on 35% debt capital structure	----	0.83 <sup>2</sup>	----
Relevered beta based on 35% debt capital structure and a weighted average beta	----	0.68 <sup>2</sup>	----
C++, C+, C: Relevered beta based on 40% debt capital structure	----	----	0.65 <sup>2</sup>
Relevered beta based on 40% debt capital structure and a weighted average beta	----	----	0.76 <sup>2</sup>

Sources: Columns a, c, g were extracted from December 21, 2012 Value Line.  
Column d was extracted from Zacks.com on January 2, 2013.  
Column e was extracted from ThomsonReuters.com on January 9, 2013.  
Column h is a 5-year average Debt to Equity Ratio.

<sup>1</sup> Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate

<sup>2</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%)

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
<b>402</b>	<b>CALNEV Pipe Line, L.L.C.</b>	NR-1	NR-b	70%	30%	12.30%	4.79%	<b>10.05%</b>
<b>461</b>	<b>SFPP, L.P.</b>	NR-1	NR-b	70%	30%	12.30%	4.79%	<b>10.05%</b>
<b>468</b>	<b>Shell California Pipeline Company, LLC</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
<b>479</b>	<b>Chevron Pipe Line Company</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
<b>480</b>	<b>ConocoPhillips Pipe Line Company</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
<b>486</b>	<b>Pacific Pipeline System LLC</b>	NR-2	NR-b	70%	30%	12.83%	4.79%	<b>10.41%</b>
	<b>Other Pipeline Companies</b>	NR-3	NR-c	70%	30%	13.87%	5.80%	<b>11.45%</b>

**2013 Capitalization Rate Study**  
**Pipeline Companies**  
**Industry Notes**

- Staff relied primarily on the Discounted Cash Flow model in the development of equity rates.
- Staff considered the sample without Kinder Morgan Energy Partners, L. P. (Kinder Morgan) data more representative of the current pipeline industry. Kinder Morgan acquired Tennessee Gas Pipeline and El Paso Natural Gas Pipeline in 2012 which makes the data less reliable.

**2013 Capitalization Rate Study  
Pipeline Companies  
Flotation Cost Adjustment**

<b>Equity</b>				<b>Debt</b>			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
NR-1	11.75%	4.50%	12.30%	NR-b	4.71%	1.70%	4.79%
NR-2	12.25%	4.50%	12.83%	NR-c	5.71%	1.70%	5.80%
NR-3	13.25%	4.50%	13.87%				

Cost of Capital Adjusted for Flotation Costs =  $\frac{k_u}{1 - f}$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

NR-1: Not-Rated-1 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting refined petroleum products.

NR-2: Not-Rated-2 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting crude oil.

NR-3: Not-Rated-3 pipelines are smaller companies transporting petroleum products or crude oil.

NR-b: Although these companies do not have rated debt securities, the rating class "Baa" was chosen to represent these subsidiaries of larger corporations.

NR-c: Issues of this size are not normally rated. An additional increment of 100 basis points (before flotation costs) has been added to the "Baa" rate.

**2013 Capitalization Rate Study  
Pipeline Companies  
Comparison of Return on Common Equity**

Description	2013	2012	Change
E/P Ratio - Mean	4.42%	4.03%	0.39%
E/P Ratio - Median	4.17%	4.45%	-0.29%
Dividend Yield + Dividend Growth - Mean	11.36%	10.51%	0.84%
Dividend Yield + Dividend Growth - Median	12.61%	10.56%	2.04%
Dividend Yield + Earnings Growth - Mean	11.46%	11.35%	0.11%
Dividend Yield + Earnings Growth - Median	11.84%	12.56%	-0.72%
Capital Asset Pricing Model (CAPM) - Ex Ante	7.87%	8.28%	-0.41%
Capital Asset Pricing Model (CAPM) - Ex Post	7.12%	6.97%	0.15%

2013 recommended equity rates:

**11.75%** for Common Carrier product lines  
**12.25%** for Common Carrier crude oil lines  
**13.25%** for all other pipelines

**2013 Capitalization Rate Study  
Pipeline Companies  
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Stock Price 12/31/12	2012 Earnings	2012 Dividends	2013 Est Div	2013 Dividend Yield	2013 Hist. Div Growth	2013 Avg. Erns Growth	E/P Ratio (d/c)	Div Yld+ Div Gwth (g+h)	Div Yld+ Erns Gwth (g+i)
B++	Enbridge Energy Partners, L.P.	27.90	1.05	2.15	1.29	4.62%	2.00%	2.30%	3.76%	6.62%	6.92%
B++	Magellan Midstream Partners, L.P.	43.19	1.80	1.84	2.05	4.75%	7.00%	4.73%	4.17%	11.75%	9.48%
B+	Buckeye Partners, L.P.	45.41	2.80	4.15	4.35	9.58%	4.00%	5.67%	6.17%	13.58%	15.25%
B+	Enterprise Product Partners, L.P.	50.08	2.65	2.53	2.74	5.47%	8.00%	8.73%	5.29%	13.47%	14.20%
B+	Kinder Morgan Energy Partners, L.P.	79.79	2.15	4.85	5.22	6.54%	7.00%	18.83%	2.69%	13.54%	25.38%
With Kinder Morgan:		Mean					5.60%	8.05%	4.42%	11.79%	14.25%
		Median					7.00%	5.67%	4.17%	13.47%	14.20%
		Weighted Average									16.74%
Without Kinder Morgan:		Mean					5.25%	5.36%	4.85%	11.36%	11.46%
		Median					5.50%	5.20%	4.73%	12.61%	11.84%
		Weighted Average									12.60%

Sources: Columns a, d, e, f and h were extracted from the Value Line Investment Survey Reports.  
Column c was extracted from the Finance.Yahoo.com and represents December 31, 2012 closing stock prices.  
Column i is an average of Value Line, Zacks.com, and ThomsonReuters.com.

**2013 Capitalization Rate Study  
Pipeline Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B++	Enbridge Energy Partners, L.P.	-6.50%	6.70%	6.70%	2.30%
B++	Magellan Midstream Partners, L. P.	6.00%	11.20%	-3.00%	4.73%
B+	Buckeye Partners, L.P.	6.50%	5.90%	4.60%	5.67%
B+	Enterprise Product Partners, L.P.	9.50%	8.50%	8.20%	8.73%
B+	Kinder Morgan Energy Partners, L.P.	13.50%	21.50%	21.50%	18.83%
	Mean	5.80%	10.76%	7.60%	8.05%
	Median	6.50%	8.50%	6.70%	5.67%
	Weighted Average				10.86%

**2013 Capitalization Rate Study  
Pipeline Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
Risk Premium	7.92%
Relevered Beta <sup>2</sup>	0.61
Adjusted Risk Premium	4.83%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
Projected Return on Common Equity	<b>7.87%</b>

<sup>1</sup> WSJ.com on January 2, 2013

<sup>2</sup> Weighted average using betas from Value Line, Zacks.com, and Standard & Poor's for a representative sample of pipeline companies.

**2013 Capitalization Rate Study**  
**Pipeline Companies**  
**Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.10%
Risk Premium	6.70%
Relevered Beta <sup>2</sup>	0.61
Adjusted Risk Premium	4.08%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>3</sup>	3.04%
Projected Return on Common Equity	<b>7.12%</b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> Weighted average using betas from Value Line, Zacks.com, and Standard & Poor's for a representative sample of pipeline companies.

<sup>3</sup> WSJ.com on January 2, 2013

**2013 Capitalization Rate Study  
Pipeline Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Tax Rate	Debt Equity Ratio	Unlevered Beta <sup>1</sup>
B++	Enbridge Energy Partners, L.P.	0.90	0.63	0.67	0.73	0.40	0.62	0.53
B++	Magellan Midstream Partners, L.P.	0.85	0.36	0.37	0.53	0.40	0.22	0.47
B+	Buckeye Partners, L.P.	0.80	0.25	0.30	0.45	0.40	0.60	0.33
B+	Enterprise Product Partners, L.P.	0.85	0.62	0.61	0.69	0.40	0.33	0.58
B+	Kinder Morgan Energy Partners, L.P.	0.75	0.36	0.36	0.49	0.40	0.52	0.37
	Mean	0.83	0.44	0.46	0.58	0.40	0.46	0.46
	Median	0.85	0.36	0.37	0.53	0.40	0.52	0.47
	Weighted Average				0.60		0.43	0.48
	Relevered beta based on 30% Debt Capital Structure				0.57 <sup>2</sup>			
	Relevered beta based on 30% Debt Capital Structure and a weighted average beta				0.61 <sup>2</sup>			

<sup>1</sup> Unlevered Beta = Beta/[1+(1-t)(D/E)]; where D/E is the debt to equity ratio, t is the tax rate (assumed to be 40%)

<sup>2</sup> Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]; where D/E is the debt to equity ratio, t is the tax rate (assumed to be 40%)

**2013 Capitalization Rate Study  
Pipeline Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody Bond Rating	Company Name	Partnership Units Outstanding (000)	Unit Price 12/31/12	Market Value Equity (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Equity %
B++	NR	Enbridge Energy Partners, L.P.	302,537	27.90	8,440,777	5,219,600	13,660,377	38.21%	61.79%
B++	NR	Magellan Midstream Partners, L.P.	226,201	43.19	9,769,617	2,151,800	11,921,417	18.05%	81.95%
B+	NR	Buckeye Partners, L.P.	98,110	45.41	4,455,175	2,672,700	7,127,875	37.50%	62.50%
B+	NR	Enterprise Product Partners, L.P.	895,642	50.08	44,853,766	14,747,200	59,600,966	24.74%	75.26%
B+	NR	Kinder Morgan Energy Partners, L.P.	364,701	79.79	29,099,501	15,217,000	44,316,501	34.34%	65.66%
		Total			96,618,836	40,008,300	136,627,136		
		Mean						30.57%	69.43%
		Median						34.34%	65.66%
		Weighted Average						29.28%	70.72%

Recommended Capital Structure for Common Carrier Pipelines for lien date January 1, 2013:

Debt - 30%

Equity - 70%

Sources: . Columns a, d, and g were extracted from the Value Line Investment Survey Reports.  
Column e was extracted from the Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Pipeline Companies  
Debt Yield Rate**

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Average of Industrial and Public Utility Bond Yield:

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	Aa Industrial/Utility Average	3.86%	
	A Industrial/Utility Average	4.12%	
		3.86%	Aa
		4.12%	A
	Baa Industrial/Utility Average	4.71%	
	Recommended	4.71%	Baa/Ba

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	Bond Rating	Industrial	Public Utility	Average
	Aaa	3.77%	N/A	3.77%
	Aa	3.79%	3.92%	3.86%
	A	4.07%	4.16%	4.12%
	Baa	4.76%	4.65%	4.71%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of January 2, 2013.

**California State Board of Equalization  
State-Assessed Properties Division  
2013 Capitalization Rate Study  
Railroads**

SBE No.	Company Name	Capital Structure				Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
804	<b>BNSF Railway Company</b>	A	Baa2	80%	20%	13.87%	4.79%	<b>12.06%</b>
843	<b>Union Pacific Railroad Company</b>	A	Baa2	80%	20%	13.87%	4.79%	<b>12.06%</b>
802	<b>Central Oregon &amp; Pacific Railroad</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
810	<b>California Northern Railroad</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
813	<b>Pacific Harbor Lines</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
850	<b>Modesto &amp; Empire Traction Company</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
865	<b>San Diego &amp; Imperial Valley Railroad Co. Inc.</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
882	<b>Trona Railway Co.</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
897	<b>San Joaquin Valley Railroad Company</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
899	<b>Arizona &amp; California Railroad</b>	NR-1	NR-1	60%	40%	15.97%	6.31%	<b>12.11%</b>
	<b>Other Railroad Companies</b>	NR-2	NR-2	60%	40%	16.23%	7.33%	<b>12.67%</b>

**2013 Capitalization Rate Study  
Railroad Companies  
Industry Notes**

- Staff relied upon the results of the following models in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model (Ex Post and Ex Ante)
  
- On December 28, 2012, Genesee & Wyoming Inc. purchased RailAmerica Inc. for \$1.39 billion.

**2013 Capitalization Rate Study  
Railroad Companies  
Flotation Cost Adjustment**

<b>Equity</b>							
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++, B+	13.25%	4.50%	13.87%	Baa2	4.71%	1.70%	4.79%
NR-1	15.25%	4.50%	15.97%	NR-1 <sup>1</sup>	6.21%	1.70%	6.31%
NR-2	15.50%	4.50%	16.23%	NR-2 <sup>2</sup>	7.21%	1.70%	7.33%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where:  $k_u$  = The cost of capital unadjusted for flotation costs

$f$  = Flotation cost as a percentage of the value of securities issued

<sup>1</sup>NR-1: Represents short line railroad companies with stable historical income. An additional 150 basis points were added to the Baa2 bond rate to represent the additional risk premium.

<sup>2</sup>NR-2: Represents short line railroad companies without stable historical income patterns. An additional 250 basis points were added to the Baa2 bond rate to represent the additional risk premium.

**2013 Capitalization Rate Study  
Railroad Companies  
Comparison of Return on Common Equity**

Description	2013	2012	Change
E/P Ratio - Mean	8.86%	8.32%	0.54%
E/P Ratio - Median	9.22%	8.23%	0.98%
Dividend Yield + Dividend Growth - Mean	19.03%	18.46%	0.57%
Dividend Yield + Dividend Growth - Median	19.73%	14.27%	5.46%
Dividend Yield + Earnings Growth - Mean	16.46%	18.00%	-1.54%
Dividend Yield + Earnings Growth - Median	17.13%	17.27%	-0.14%
Capital Asset Pricing Model - Ex Post	10.44%	10.27%	0.17%
Capital Asset Pricing Model - Ex Ante	11.79%	12.66%	-0.87%
State-Assessed Properties Division Recommendation:	13.25%	13.50%	-0.25%



**2013 Capitalization Rate Study  
Railroad Companies  
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
<b>Class 1 Railroads:</b>					
A	Norfolk Southern Corp.	11.50%	10.10%	12.60%	11.40%
A	Union Pacific Corp.	15.50%	14.80%	14.40%	14.90%
B++	CSX Corp.	17.00%	12.80%	13.60%	14.47%
	Mean	14.67%	12.57%	13.53%	13.59%
	Median	15.50%	12.80%	13.60%	14.47%
	Weighted Average				14.01%

**2013 Capitalization Rate Study  
Railroad Companies  
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	10.96%
Less: Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
Risk Premium	7.92%
Relevered Beta	1.10
Adjusted Risk Premium	8.75%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>1</sup>	3.04%
Projected Return on Common Equity	<b>11.79%</b>

<sup>1</sup> WSJ.com on January 2, 2013

**2013 Capitalization Rate Study  
Railroad Companies  
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2012) <sup>1</sup>	11.80%
Less: Income - Long Term Government Bonds <sup>1</sup>	5.10%
Risk Premium	6.70%
Relevered Beta	1.10
Adjusted Risk Premium	7.40%
Risk Free Return 25 - 30 Year Treasury Bonds <sup>2</sup>	3.04%
Projected Return on Common Equity	<b>10.44%</b>

<sup>1</sup> Ibbotson 2013 Valuation Yearbook

<sup>2</sup> WSJ.com on January 2, 2013

**2013 Capitalization Rate Study  
Railroad Companies  
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zack's Beta	Thomson Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio <sup>1</sup>	Unlevered Beta <sup>2</sup>
<b>Class 1 Railroads:</b>								
A	Norfolk Southern Corp.	1.10	1.06	1.07	1.08	0.38	0.34	0.89
A	Union Pacific Corp.	1.15	1.15	1.11	1.14	0.38	0.23	0.99
B++	CSX Corp.	1.20	1.23	1.17	1.20	0.37	0.41	0.95
	Mean	1.15	1.15	1.12	1.14		0.33	0.95
	Median	1.15	1.15	1.11	1.14		0.34	0.95
	Weighted Average				1.14		0.30	0.96
	Relevered Beta based on 20% Debt Capital Structure						1.09 <sup>3</sup>	
	Relevered Beta based on 20% Debt Capital Structure and a weighted average Beta						1.10 <sup>3</sup>	
<b>Non-Class 1 Railroads:</b>								
B+	Genesee and Wyoming, Inc.	1.25	1.22	1.32	1.26	0.35	0.23	1.10
	Mean	1.25	1.22	1.32	1.26		0.23	1.10
	Median	1.25	1.22	1.32	1.26		0.23	1.10
	Weighted Average				1.26		0.23	1.10
	Relevered Beta based on 40% Debt Capital Structure						1.54 <sup>3</sup>	
	Relevered Beta based on 40% Debt Capital Structure and a weighted average Beta						1.54 <sup>3</sup>	

<sup>1</sup> Average Debt to Equity Ratio over the last five years.

<sup>2</sup> Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2012 tax rate.

<sup>3</sup> Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**2013 Capitalization Rate Study  
Railroad Companies  
Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody Bond Rating	Company Name	Common Stock Outstanding (000)	Common Stock Price 12/31/12	Market Value Equity (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Common Equity %
<b>Class 1 Railroads:</b>									
A	NR	Norfolk Southern Corp.	316,044	61.84	19,544,161	8,428,000	27,972,161	30.13%	69.87%
A	NR	Union Pacific Corp.	470,397	125.72	59,138,311	8,773,000	67,911,311	12.92%	87.08%
B++	NR	CSX Corp.	1,031,400	19.73	20,349,522	8,257,000	28,606,522	28.86%	71.14%
		Total					<u>124,489,994</u>		
						Mean		23.97%	76.03%
						Median		28.86%	71.14%
						Weighted Average		20.45%	79.55%
<b>Non-Class 1 Railroads:</b>									
B+	NR	Genesee and Wyoming, Inc.	46,856	76.06	3,563,867	594,500	4,158,367	14.30%	85.70%
		Total					<u>4,158,367</u>		
						Mean		14.30%	85.70%
						Median		14.30%	85.70%
						Weighted Average		14.30%	85.70%

Recommended Capital Structures for lien date January 1, 2013		Equity	Debt
Class 1 Railroads:		80%	20%
Non-Class 1 Railroads:		60%	40%

Sources: Columns a, d, and g were extracted from the Value Line Investment Survey Reports.  
Column e was extracted from the Finance.Yahoo.com and represents December 31, 2012 closing stock prices.

**2013 Capitalization Rate Study  
Railroad Companies  
Interpolation of Railroad Bond Yield**

Yield Increment from Moody's Average Bond Ratings			
a	b	c	d
Moody's Average Rating	Moody's Average Bond Yield	Number of Increments	Incremental Increase (b/c)
Aa = Aa2	3.86%		
A = A2	<u>4.12%</u>		
Difference	<u><u>0.26%</u></u>	3	0.09%
A = A2	4.12%		
Baa = Baa2	<u>4.71%</u>		
Difference	<u><u>0.59%</u></u>	3	0.20%

Interpolated Railroad Bond Yield			
a	b	c	d
Moody's Average Rating	Moody's Average Bond Yield	Incremental Increase	Interpolated Bond Yield
Aa2	3.855%		3.86%
Aa3		0.09%	3.94%
A1		0.09%	4.03%
A2	4.115%		4.12%
A3		0.20%	4.31%
Baa1		0.20%	4.51%
Baa2	4.705%		4.71%
Baa3		0.20%	4.90%

**2013 Capitalization Rate Study  
Railroad Companies  
Debt Yield Rates**

Bond Rating	Industrial	Public Utility	Average
Aaa	3.77%	N/A	3.77%
Aa	3.79%	3.92%	3.86%
A	4.07%	4.16%	4.12%
Baa	4.76%	4.65%	4.71%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of January 2, 2013.