CAPITAL ASSET PRICING MODEL ANALYSIS

Q54. PLEASE DESCRIBE THE CAPITAL ASSET PRICING MODEL.

A. The Capital Asset Pricing Model ("CAPM") is a version of the risk premium approach described above. The CAPM measures the relationship between a specific security's investment risk and its return. The general mathematical form of the CAPM can be described as follows:

$$K=RF+B(RM-RF)$$

Where: K = cost of equity
Rf=risk free return
Rm=return on market
B=Beta
Rm-Rf= market risk premium

Q55. HOW HAVE YOU CALCULATED YOUR CAPM ESTIMATES?

A. I have applied the CAPM to each company in the comparable risk group as is shown in my Schedule (DJL-11). For the risk free rate, I have employed a three month average yield (May 2009 – July 2009) for 30 year U.S. Treasury bonds which is shown in my Schedule (DJL-4). Over the 3 month period 30 year Treasury bonds had an average yield of 4.4%.

The market risk premium component (Rm-Rf) represents the investor expected risk premium over the risk free return. For this calculation I have relied on the

2009 Morningstar yearbook which provides long-term (1926-2008) market and government bond returns. The market return over this time horizon is 9.6%[20] while the long-term government bond return is 5.7%[21] resulting in a risk premium of 3.9% based on the geometric average return calculation. I also ran the calculation employing arithmetic average returns which show a market return (1926 – 2007) of 11.7%[22] and a long-term government bond return of 6.1%[23] resulting in a risk premium of 5.6%.

Q56. PLEASE DESCRIBE THE BETA YOU EMPLOYED IN YOUR CAPM ANALYSIS.

A. Beta is a measure of specific stock volatility relative to a market index. Betas less than 1.0 move less that the market while Betas greater than 1.0 have more movement or volatility relative to a market index. For this case I employed the Value Line Betas for each company in the comparable group. These Value Line Betas are shown in my Schedule (DJL-5).

Q57. WHAT ARE THE RESULTS OF YOUR CAPM ROE ESTIMATES?

A. My analysis for CAPM is contained in my Schedule (DJL-11). The CAPM result is in the 6.92%-7.07% range using the geometric average and 8.03% to 8.24% employing the arithmetic average risk premium. I believe the CAPM results are low and not reasonable estimates of equity costs.

[20] Morningstar at 31
[21] *Id.*
[22] *Id.*
[23] *Id.*

Q58. DID YOU ESTIMATE AN ALTERNATIVE CAPM CALCULATION OF EQUITY RETURN?

A. Yes, I calculated an alternative estimate employing an empirical version of the CAPM or ECAPM. It is argued that the CAPM estimate of equity cost will underestimate the return required for low-beta securities and overstate the required return for high-beta securities.

To address the flaws of the CAPM, the alternative ECAPM estimates the cost of equity employing the following equation:

$$ROE=R_f + \alpha + (\beta\ \alpha\ (R_m-R_f)$$

Where (α) is the measure of the constant of a risk return line. Typically, an (α) value of 1% to 2% is employed in the ECAPM analysis resulting in a more conservative estimate of equity return. Employing a 1% (α) value results in the following ECAPM:

$$ROE=R_f+.25\ (R_m-R_f) + .75\ \beta(R_m-R_f)$$

I have made these calculations in my Schedule (DJL-11).

Q59. WHAT ARE THE RESULTS OF YOUR ECAPM ANALYSES?

A. The ECAPM estimates employing the geometric average and arithmetic average risk premium estimates are 7.26% to 7.37% and 8.52% to 8.67% respectively. Given current BBB bond rates are in the 6.6% range, only the higher end of these estimates of 8.7% should be considered as reasonable estimates of current equity costs.

Q60. PLEASE SUMMARIZE YOUR DCF, RISK PREMIUM AND CAPM ANALYSES?

A. The following table summarized the cost of equity results for each analysis:

TABLE 7

COST OF EQUITY CAPITAL SUMMARY

Model	COMPARABLE GROUP Range
Constant Growth DCF	9.82% - 10.04%
Two-Stage DCF	9.51% - 9.53%
Risk Premium	9.9% - 10.5%
CAPM	8.52% - 8.7%

The relevant range of results for the comparable group is 9.5% to 10.5%. The midpoint estimate for the comparable group is 10.0%. In my opinion, a return on equity estimate of 10% is a reasonable estimate of MGE's equity costs.

SECTION VII: CAPITAL STRUCTURE

Q61. WHAT CAPITAL STRUCTURE, COST RATES AND OVERALL COST OF CAPITAL IS THE COMPANY PROPOSING IN THIS CASE?

A. The Company is proposing a hypothetical capital based on Mr. Hanley's comparable group analysis. The Company's proposed capital structure and cost rates is as follows:

TABLE 8
MGE PROPOSED CAPITAL STRUCTURE
AND COST RATES PRIMARY PROPOSAL

DESCRIPTION	RATIO	COST	WEIGHTED COST
Long-Term Debt	41.06%	6.080%	2.496%
Short-Term Debt	10.94%	4.920%	0.538%
Total Debt	52.00%		
Common Equity	48.00%	11.25%	5.400%
Total	100.00%		8.434%

As an alternative, Mr. Hanley does present the actual Southern Company capital structure and cost rates as follows:

TABLE 9
ALTERNATIVE CAPITAL STRUCTURE
AND COST RATES – SOUTHERN UNION
COMPANY AT DECEMBER 31, 2008

DESCRIPTION	RATIO	COST	WEIGHTED COST
Long-Term Debt	56.16%	6.258%	3.514%
Short-Term Debt	3.26%	5.920%	0.193%
Preferred Equity	1.92%	7.758%	0.149%
Common Equity	38.66%	15.250%	5.896%
Total	100.00%		9.752%

One obvious adjustment included in the alternative capital structure is Mr. Hanley's conclusion that the equity return be set at 15.250% under the alternative capital structure.

Q62. WHAT IS THE SIGNIFICANCE OF CAPITAL STRUCTURE?

A. The overall cost of capital is the sum of the weighted average cost rates of various sources of capital. The quantity or portion of each type of capital, combined with the cost rate of capital determines the overall rate of return that the Company should be allowed to earn in this proceeding. The most significant relationship in any capital structure is the debt to equity ratio.

Q63. DOES THERE EXIST SOME SET RELATIONSHIP OR IDEAL MIX OF DEBT AND EQUITY CAPITAL?

A. There exists no set debt/equity relationship for all firms or all industries in terms

of leveraging. However, the ideal capital structure is one that minimizes the overall cost of capital to the firm, while still maintaining financial integrity so as to maintain the ability to attract capital at reasonable costs to meet future needs. Because the cost of debt is generally lower than the cost of equity, and also because the cost of debt represents a tax deductible expense, any increase in the quantity of debt capital tends to decrease the overall cost of capital relative to equity financing. One must keep in mind that increases in the quantity of debt financing can cause the financial risk of the Company to increase. In other words, there is a cost for the savings associated with increased debt leveraging. That cost is increased financial risk to the firm.

In summary, it is not possible to determine with precision the exact proportion of debt and equity that minimizes the overall cost of capital without imposing undue financial risk upon the Company. There does exist some range of capital structure that generally meets the goal of minimizing the overall cost of capital while maintaining the firm's financial integrity.

Q64. WHAT CRITERIA SHOULD REGULATORS EMPLOY IN DETERMINING THE APPROPRIATE CAPITAL STRUCTURE TO BE USED FOR RATEMAKING?

A. In my opinion, rate regulation should focus on two criteria to determine the appropriate capital structure. Those factors as outlined below should be economy and safety.

The advantage of debt in the capital structure is that debt costs less than equity. Moreover, interest charges are deductible for income tax purposes and act to reduce taxes. Thus, the more debt in the capital structure the lower the cost of

capital will be. The question of economy is addressed by examining whether increases in the debt ratio act to increase the cost rates of both debt and equity so as to over balance the benefits of the larger proportion of debt.

In addition, there is always the overriding question of safety. In other words, financial risk is increased if the proportion of debt is increased by such a magnitude that interest obligations cannot be covered during periods of depressed earnings.

Q65. HOW DOES THE COMPANY'S PROPOSED PRIMARY CAPITAL STRUCTURE WHICH INCLUDES A 48.00% EQUITY RATIO COMPARE WITH THE CAPITAL STRUCTURE RATIOS OF THE COMPARABLE RISK COMPANIES?

A. The Company's proposed capital structure compares quite favorably to the equity ratios in the natural gas utility industry.[24] As can be seen from Schedule (DJL-5) the industry equity ratio averages 48% percent for 2009 and 2010, and 46% for 2012 – 2014. Thus, the Company has similar financial risk in terms of leverage as the industry.

In terms of the alternative or actual capital structure, the equity ratio of about 39% is below the gas industry average. While this reflects higher financial risks for MGE, business risk has been reduced – especially in light of the benefits (risk reductions) associated with decoupling.

[24] See Value Line Investment Survey, at 446, June 12, 2009, also see Schedule (DJL-5).

Q66. HAS THIS COMMISSION ADDRESSED THE ISSUE OF HYPOTHETICAL CAPITAL STRUCTURE FOR MGE IN PAST CASES?

A. Yes. In the final decision from MGE's last rate case this Commission stated the following regarding the use of the hypothetical capital structure for MGE:

> This issue was discussed by the Commission in MGE's last rate case. As discussed in that case, the capital structure of Southern Union is the result of its management decisions. Hence, Southern Union, and ultimately MGE, must operate with the result of its decisions.[25]

Thus, in at least the past two cases this Commission has concluded that the actual, not hypothetical, capital structure should be employed for establishing MGE's cost of capital and setting rates.

Q67. GIVEN THIS COMMISSION'S PAST ORDERS ARE THERE ADDITIONAL REASONS FOR EMPLOYING THE ACTUAL SOUTHERN UNION CAPITAL STRUCTURE IN THIS PROCEEDING?

A. Yes. Employing the proposed hypothetical capital structure will allow MGE to recover revenues in excess of costs. As stated by this Commission in MGE's last rate case, the capital structure is the result of Southern Union management decisions. Those decisions include employing a substantially higher percentage of lower cost debt. To employ the hypothetical capital structure would allow MGE to earn an equity return on some capital that was financed by debt.

[25] Public Service Commission of the State of Missouri, Report and Order, Case No. GR-2006-0422, at 9 of 38, March 22, 2007.

To illustrate this issue I have included the two capital structures in my Schedule (DJL-12). Given the Company's rate base investment of $609 million – the Company would have a return requirement of $71.4 million under the hypothetical capital structure versus a return requirement of $66.6 million under the actual capital. The $4.8 million ($71.4 - $66.6) higher earnings level in the hypothetical capital structure is essentially added earnings for hypothetical or phantom equity. Thus, employment of the hypothetical capital structure would lead to excessive earnings on the part of MGE.

Q68. WHAT CAPITAL STRUCTURE AND COST RATES DO YOU RECOMMEND IN THIS CASE?

A. I recommend the actual Southern Union capital structure to be employed and those cost rates are as follows:

TABLE 11
ACTUAL CAPITAL STRUCTURE

DESCRIPTION	RATIO	COST	WEIGHTED COST
Long-Term Debt	56.16%	6.258%	3.514%
Short-Term Debt	3.26%	5.920%	0.193%
Preferred Equity	1.92%	7.758%	0.149%
Common Equity	38.66%	10.000%	3.866%
Total	100.00%		7.722%

As can be seen from the above, under the actual capital structure, MGE would earn a return on investment of 7.722% employing the actual capital structure and

my recommended 10.0% equity return.

Q69. PLEASE SUMMARIZE YOUR OVERALL COST OF CAPITAL RECOMMENDATION IN THIS CASE.

A. The Company's requested 11.250% return on equity is overstated. A more reasoned cost of equity analysis results in a required return on shareholder equity of 10.0%. The combination of the recommended equity return adjustment and use of the actual capital structure results in an overall cost of capital of 7.722% in this case.

SECTION VIII: FINANCIAL INTEGRITY AND REGULATORY ENHANCEMENTS

Q70. WILL YOUR RECOMMENDED RETURN PROVIDE THE COMPANY SUFFICIENT INTEREST COVERAGE TO MAINTAIN ITS FINANCIAL INTEGRITY?

A. Yes. Based on the capital structure above, my recommended overall cost of capital (which is based on a 10.0% ROE) provides sufficient financial metrics for the Company.

Q71. WHAT FINANCIAL RATIOS OR FINANCIAL METRICS SHOULD THE COMMISSION CONSIDER WHEN EVALUATING COST OF EQUITY?

A. In my opinion, the Commission should consider the financial metrics that bond rating agencies consider in evaluating credit risk to a Company. Three key

financial metrics involve cash flow coverage of interest, cash flow as a percentage of debt, and debt leverage ratio.

Q72. HOW ARE THESE FINANCIAL RATIOS CONSIDERED AND CALCULATED?

A. Ratings agencies such as Standard & Poor's develop rating guidelines that make explicit general ratings outcomes that are typical or expected given various financial and business risk combinations. While a rating matrix or guideline is just that, a guideline, not a rule written in stone that guarantees a particular rating for a particular achieved financial metric level.

Funds from a company's operations, in other words cash flow, are very critical to any rating/risk consideration. Interest and principal obligations of a company cannot be paid out of earnings if earnings are not cash. Thus, analyses of cash flow reveal debt servicing ability.

Debt and capital structure considerations are indicative of leverage and flexibility to address financial changes. The liquidity crisis that hit all markets and industries starting last year is an example of the importance of financial flexibility. Stable and continuous cash flows provide financial flexibility.

Each of these financial ratios are calculated in my Schedule (DJL-13) employing my recommendations in this proceeding. The results of my analyses indicate strong financial metrics. Moreover, the decoupling proposal, if approved, enhances cash flow and financial metrics.

The resulting financial metrics at a 10% equity return are consistent with a solid BBB bond rating. Further, the impact of decoupling in protecting against

earnings and revenue erosion should result in stronger financials on a going forward basis.

Q73. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

DANIEL J. LAWTON
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B.A. ECONOMICS, MERRIMACK COLLEGE
M.A. ECONOMICS, TUFTS UNIVERSITY

Prior to beginning his own consulting practice Diversified Utility Consultants, Inc., in 1986 where he practiced as a firm principal through December 31, 2005, Mr. Lawton had been in the utility consulting business with a national engineering and consulting firm. In addition, Mr. Lawton has been employed as a senior analyst and statistical analyst with the Department of Public Service in Minnesota. Prior to Mr. Lawton's involvement in utility regulation and consulting he taught economics, econometrics, statistics and computer science at Doane College.

Mr. Lawton has conducted numerous financial and cost of capital studies on electric, gas and telephone utilities for various interveners before local, state and federal regulatory bodies. In addition, Mr. Lawton has provided studies, analyses, and expert testimony on statistics, econometrics, account, forecasting, and cost of service issues. Other projects in which Mr. Lawton has been involved include rate design and analyses, prudence analyses, fuel cost reviews and regulatory policy issues for electric, gas and telephone utilities. Mr. Lawton has developed software systems, databases and management systems for cost of service analyses.

In addition, Mr. Lawton has developed and reviewed numerous forecasts of energy and demand used for utility generation expansion studies as well as municipal financing. Mr. Lawton has represented numerous municipalities as a negotiator in utility related matters. Such negotiations ranges from the settlement of electric rate cases to the negotiation of provisions in purchase power contracts.

A list of cases in which Mr. Lawton has provided testimony is attached.

UTILITY RATE PROCEEDINGS IN WHICH TESTIMONY HAS BEEN PRESENTED BY DANIEL J. LAWTON

ALASKA REGULATORY COMMISSION		
Beluga Pipe Line Company	P-04-81	Cost of Capital

JURISDICTION/COMPANY	DOCKET NO.	TESTIMONY TOPIC
FEDERAL ENERGY REGULATORY COMMISSION		
Alabama Power Company	ER83-369-000	Cost of Capital
Arizona Public Service Company	ER84-450-000	Cost of Capital
Florida Power & Light	EL83-24-000	Cost Allocation, Rate Design
Florida Power & Light	ER84-379-000	Cost of Capital, Rate Design, Cost of Service
Southern California Edison	ER82-427-000	Forecasting
LOUISIANA PUBLIC SERVICE COMMISSION		
Louisiana Power & Light	U-15684	Cost of Capital, Depreciation
Louisiana Power & Light	U-16518	Interim Rate Relief
Louisiana Power & Light	U-16945	Nuclear Prudence, Cost of Service
MINNESOTA PUBLIC UTILITIES COMMISSION		
Continental Telephone	P407/GR-81-700	Cost of Capital
Interstate Power Co.	E001/GR-81-345	Financial
Montana Dakota Utilities	G009/GR-81-448	Financial, Cost of Capital

New ULM Telephone Company	P419/GR81767	Financial
Norman County Telephone	P420/GR-81-230	Rate Design, Cost of Capital
Northern States Power	G002/GR80556	Statistical Forecasting, Cost of Capital
Northwestern Bell	P421/GR80911	Rate Design, Forecasting

FLORIDA PUBLIC SERVICE COMMISSION		
Progress Energy	070052-EI	Cost Recovery

NORTH CAROLINA UTILITIES COMMISSION		
North Carolina Natural Gas	G-21, Sub 235	Forecasting, Cost of Capital, Cost of Service

OKLAHOMA PUBLIC SERVICE COMMISSION		
Arkansas Oklahoma Gas Corporation	200300088	Cost of Capital
Public Service Company of Oklahoma	200600285	Cost of Capital
Public Service Company of Oklahoma	200800144	Cost of Capital

PUBLIC SERVICE COMMISSION OF INDIANA		
Kokomo Gas & Fuel Company	38096	Cost of Capital

PUBLIC UTILITY COMMISSION OF NEVADA		
Nevada Bell	99-9017	Cost of Capital
Nevada Power Company	99-4005	Cost of Capital
Sierra Pacific Power Company	99-4002	Cost of Capital
Nevada Power Company	08-12002	Cost of Capital

PUBLIC SERVICE COMMISSION OF UTAH		
PacifiCorp	04-035-42	Cost of Capital
Rocky Mountain Power	08-035-38	Cost of Capital

SOUTH CAROLINA PUBLIC SERVICE COMMISSION		
Piedmont Municipal Power	82-352-E	Forecasting

PUBLIC UTILITY COMMISSION OF TEXAS		
Central Power & Light Company	6375	Cost of Capital, Financial Integrity
Central Power & Light Company	9561	Cost of Capital, Revenue Requirements
Central Power & Light Company	7560	Deferred Accounting
Central Power & Light Company	8646	Rate Design, Excess Capacity
Central Power & Light Company	12820	STP Adj. Cost of Capital, Post Test-year adjustments, Rate Case Expenses
Central Power & Light Company	14965	Salary & Wage Exp., Self-Ins. Reserve, Plant Held for Future use, Post Test Year Adjustments, Demand Side Management, Rate Case Exp.
Central Power & Light Company	21528	Securitization of Regulatory Assets

El Paso Electric Company	9945	Cost of Capital, Revenue Requirements, Decommissioning Funding
El Paso Electric Company	12700	Cost of Capital, Rate Moderation Plan, CWIP, Rate Case Expenses
Entergy Gulf States Incorporated	16705	Cost of Service, Rate Base, Revenues, Cost of Capital, Quality of Service
Entergy Gulf States Incorporated	21111	Cost Allocation
Entergy Gulf States Incorporated	21984	Unbundling
Entergy Gulf States Incorporated	22344	Capital Structure
Entergy Gulf States Incorporated	22356	Unbundling
Entergy Gulf States Incorporated	24336	Price to Beat
Gulf States Utilities Company	5560	Cost of Service
Gulf States Utilities Company	6525	Cost of Capital, Financial Integrity
Gulf States Utilities Company	6755/7195	Cost of Service, Cost of Capital, Excess Capacity
Gulf States Utilities Company	8702	Deferred Accounting, Cost of Capital, Cost of Service
Gulf States Utilities Company	10894	Affiliate Transaction
Gulf States Utilities Company	11793	Section 63, Affiliate Transaction
Gulf States Utilities Company	12852	Deferred acctng., self-Ins. reserve, contra AFUDC adj., River Bend Plant specifically assignable to Louisiana, River Bend Decomm., Cost of Capital, Financial Integrity, Cost of Service, Rate Case Expenses
GTE Southwest, Inc.	15332	Rate Case Expenses
Houston Lighting & Power	6765	Forecasting
Houston Lighting & Power	18465	Stranded costs

Lower Colorado River Authority	8400	Debt Service Coverage, Rate Design
Southwestern Electric Power Company	5301	Cost of Service
Southwestern Electric Power Company	4628	Rate Design, Financial Forecasting
Southwestern Electric Power Company	24449	Price to Beat Fuel Factor
Southwestern Bell Telephone Company	8585	Yellow Pages
Southwestern Bell Telephone Company	18509	Rate Group Re-Classification
Southwestern Public Service Company	13456	Interruptible Rates
Southwestern Public Service Company	11520	Cost of Capital
Southwestern Public Service Company	14174	Fuel Reconciliation
Southwestern Public Service Company	14499	TUCO Acquisition
Southwestern Public Service Company	19512	Fuel Reconciliation
Texas-New Mexico Power Company	9491	Cost of Capital, Revenue Requirements, Prudence
Texas-New Mexico Power Company	10200	Prudence
Texas-New Mexico Power Company	17751	Rate Case Expenses
Texas-New Mexico Power Company	21112	Acquisition risks/merger benefits
Texas Utilities Electric Company	9300	Cost of Service, Cost of Capital
Texas Utilities Electric Company	11735	Revenue Requirements
TXU Electric Company	21527	Securitization of Regulatory Assets
West Texas Utilities Company	7510	Cost of Capital, Cost of Service

West Texas Utilities Company	13369	Rate Design

RAILROAD COMMISSION OF TEXAS		
Energas Company	5793	Cost of Capital
Energas Company	8205	Cost of Capital
Energas Company	9002-9135	Cost of Capital, Revenues, Allocation
Lone Star Gas Company	8664	Rate Design, Cost of Capital, Accumulated Depr. & DFIT, Rate Case Exp.
Lone Star Gas Company-Transmission	8935	Implementation of Billing Cycle Adjustment
Southern Union Gas Company	6968	Rate Relief
Southern Union Gas Company	8878	Test Year Revenues, Joint and Common Costs
Texas Gas Service Company	9465	Cost of Capital, Cost of Service, Allocation
TXU Lone Star Pipeline	8976	Cost of Capital, Capital Structure
TXU-Gas Distribution	9145-9151	Cost of Capital, Transport Fee, Cost Allocation, Adjustment Clause
TXU-Gas Distribution	9400	Cost of Service, Allocation, Rate Base, Cost of Capital, Rate Design
Westar Transmission Company	4892/5168	Cost of Capital, Cost of Service
Westar Transmission Company	5787	Cost of Capital, Revenue Requirement
TEXAS WATER COMMISSION		
Southern Utilities Company	7371-R	Cost of Capital, Cost of Service

SCOTSBLUFF, NEBRASKA CITY COUNCIL		
K. N. Energy, Inc.		Cost of Capital

HOUSTON CITY COUNCIL		