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| *Exhibit No.:* | |
| *Issues:* | *Rate of Return* |
| *Witness:* | *David Murray* |
| *Sponsoring Party:* | *MoPSC Staff* |
| *Type of Exhibit:* | *Rebuttal Testimony* |
| *Case No.:* | *ER-2009-0090* |
| *Date Testimony Prepared:* | *March 13, 2009* |

# MISSOURI PUBLIC SERVICE COMMISSION

# UTILITY SERVICES DIVISION

# REBUTTAL TESTIMONY

# OF

# DAVID MURRAY

## Great Plains Energy, Incorporated
## GREATER MISSOURI OPERATIONS
## GMO-MPS AND GMO-L&P ELECTRIC

## CASE NO. ER-2009-0090

***Jefferson City, Missouri***
***March 2009***

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Q. Please state your name.

A. My name is David Murray.

Q. Are you the same David Murray who filed direct testimony in this proceeding for the Staff of the Missouri Public Service Commission (Staff)?

A. Yes, I am.

Q. In your direct testimony, did you recommend a fair and reasonable rate of return on the Missouri jurisdictional electric utility rate base for KCP&L Greater Missouri Operations Company ("GMO" or "the Company")?

A. Yes, I did.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimony of Dr. Samuel C. Hadaway and Michael Gorman. Dr. Hadaway sponsored rate-of-return testimony on behalf of GMO. Mr. Gorman sponsored rate-of-return testimony on behalf of the Office of the Public Counsel (OPC). I will address the issues of appropriate capital structure, cost of debt and the cost of common equity to be applied to GMO's Missouri electric utility rate base for ratemaking purposes in this proceeding.

**EXECUTIVE SUMMARY**

Q. Please explain why Staff's recommended return on common equity (ROE) is lower than that of Dr. Hadaway and Mr. Gorman.

A. Growth rates. Although Staff chose to rely on a multi-stage DCF analysis in this case for its recommendation, Staff chose to rely on perpetual growth rates that are more consistent with investors' expectations for the electric utility industry. While Dr. Hadaway and Mr. Gorman chose to rely on a larger number of comparable companies than Staff did in its analysis, this is not the main reason for the differences in our estimated costs of common equity. All of the rate of return (ROR) witnesses in this case chose to rely at least in part on a variety of DCF methodologies, and all witnesses performed a multi-stage DCF analysis. The driving factor behind the results from a multi-stage DCF analysis is the reasonableness of the perpetual growth rate. Consequently, it would appear that the main issue before the Commission is the determination of a reasonable perpetual growth rate since all witnesses relied on this methodology to estimate the cost of common equity for GMO. Dr. Hadaway relies on his own calculation of historical nominal GDP of 6.5 percent for his perpetual growth rate. Although Mr. Gorman relies on a more reasonable nominal GDP growth rate of 4.9 percent for his assumed perpetual growth rate, this perpetual growth rate is still unreasonable because it is not reflective of expected long-term demand growth for the electric utility industry. Staff relied on projected demand growth for electricity and a factor for inflation for its perpetual growth rate of 3.1 percent. Staff relied on aggregate data from the Energy Information Administration (EIA) to support this long-term growth rate, but Staff also cited perpetual growth rates used by GPE's and Aquila's own financial advisors that supported Staff's estimated perpetual growth rate.

Q. Please summarize the differences in capital structure recommendations.

A. Dr. Hadaway is recommending the use of a pro-forma capital structure based on capital issuances that he anticipated GPE would make. However, GPE has reconsidered these plans. Therefore, his pro-forma capital structure will not reflect the capitalization of GMO at least in the near future. Mr. Gorman adopted this pro-forma capital structure in his direct testimony. Because of the uncertainty surrounding GPE's capital structure going forward, the Commission should wait until the true-up information is available to determine the appropriate rate making capital structure for GMO.

Q. What are this issues surrounding GMO's embedded cost of debt?

A. The Company proposes using an allocated cost of debt for GMO based on hypothetical debt issuances at a hypothetical cost. Staff has concerns about both how the amount of debt assigned is determined and how the cost is determined. Therefore, the Staff believes a proxy cost of debt should be used based on The Empire District Electric Company's (Empire) most recent embedded cost of debt as of the true-up date in Case No. ER-2008-0093.

## DR. HADAWAY'S RECOMMENDED COST OF COMMON EQUITY FOR GMO

Q. Please summarize Dr. Hadaway's recommended cost of common equity and the requested cost of common equity in this case.

A. Although Dr. Hadaway's cost of common equity estimates range from 10.80 percent to 11.49 percent, GMO's requested cost of common equity is 10.75 percent. It is not clear if Dr. Hadaway chose to recommend a 10.75 percent cost of common equity or if GMO directed him to request this cost of common equity. The 10.75 percent cost of

common equity request is identical to the Commission's authorized return on common equity in KCPL's last rate case, Case No. ER-2007-0291.

Dr. Hadaway's cost of common equity estimates were based on his analysis using three DCF variations and he tested the reasonableness of his DCF analysis with an analysis using two risk premium variations. Dr. Hadaway's DCF analysis resulted in an indicated cost of common equity of 10.8 percent to 11.2 percent. Dr. Hadaway's risk premium analysis resulted in an indicated cost of common equity of 11.10 percent for one method and 11.49 percent for the other method.

Although the timing of Dr. Hadaway's analysis for purposes of his recommended cost of common equity was not under his control, it is important to note that the market data that Dr. Hadaway analyzed was prior to the change in the capital and economic environment that has occurred since the fall of last year. Consequently, I will not dwell on his overall cost of common equity estimates, but rather evaluate the proxies that he uses for his estimates and explain why they wouldn't be reasonable under any economic scenario. However, that being said, I think it is important for the Commission to understand that there is a reason why stock prices have declined, and it is not just because equity risk premiums have gone up; it is also because expected growth rates have come down because of concerns about the economy. While investors may have already factored this into stock prices, Staff does not believe that equities analysts' have caught up to investors. Even so, before the economic collapse these estimates were not sustainable for purposes of estimating the perpetual growth rate.

Q. What are some of the main flaws with Dr. Hadaway's cost of common equity estimates from his DCF analysis?

A. Dr. Hadaway's estimated costs of common equity using three variations of the DCF are all heavily dependent on the constant growth rate(s) he uses to estimate the future growth in the stock price of his comparable companies. Consequently, his cost-of-common-equity estimates are very sensitive to the reasonableness of this growth rate, whether it is applied in a constant-growth DCF analysis or a multi-stage DCF analysis. Therefore, these growth rates need to be heavily scrutinized and tested for their reasonableness.

Q. Why should the Commission dismiss Dr. Hadaway's constant-growth DCF estimate using equities analysts' estimates?

A. This version of the constant-growth DCF analysis assumes that Dr. Hadaway's comparable companies' stock prices will grow at the analysts' 5-year earnings per share (EPS) growth rate projection indefinitely into the future. These growth rates are not sustainable and do not reflect the fundamentals of the electric utility industry. I will discuss why these growth rates are not sustainable when I discuss the unreasonableness of all three of Dr. Hadaway's DCF analysis because each of his DCF analysis rely on perpetual growth rates that aren't sustainable (either 6.7 percent based on equities analysts' projections or 6.5 percent based on Dr. Hadaway's calculation of a historical average annual nominal GDP growth rate).

Q. Why should the Commission dismiss Dr. Hadaway's second DCF analysis, in which he assumes that his comparable companies' stock prices will grow at a constant growth rate of 6.5 percent?

A. The Commission should dismiss this version of Dr. Hadaway's DCF analysis because his assumption that electric utility companies will grow at the same rate of the

economy is flawed, but even assuming that the expected nominal GDP growth was a reasonable proxy for the perpetual growth rate of electric utility companies, his calculated growth rate of 6.5 percent doesn't represent investors' expectations of future economic growth.

Q. Why should the Commission dismiss Dr. Hadaway's third DCF analysis, in which he performs a multiple-stage DCF analysis that assumes growth in dividends for the first five years based on Value Line's projections and then a perpetual growth rate based on his 6.5 percent calculation of historical average annual growth in nominal GDP?

A. This version of Dr. Hadaway's DCF analysis should be dismissed for the same reason the second version should be dismissed, which is because investors' do not expect electric utility companies to grow in perpetuity at the same rate as the overall economy. Even though a multiple-stage DCF analysis may be appropriate in certain circumstances, the reasonableness of the growth rate for the perpetual growth stage is the primary factor that impacts the results from this model.

Q. Why is Dr. Hadaway's constant-growth DCF analysis using analysts' estimates unreliable?

A. Because he used unsustainable average analysts' growth rates of 6.70 percent as the assumed constant-growth rate into perpetuity. If a ROR witness assumes an unsustainable high-constant-growth rate in his constant-growth DCF analysis, then this will result in a one-for-one increase in his cost of capital estimation. For example, if Dr. Hadaway had assumed a constant-growth rate of 5.00 percent, then his cost of common equity estimate would be 1.70 percent lower, or 9.5 percent. In past cases in which analysts' growth rate estimates were in the 4 to 5 percent range, Dr. Hadaway dismissed these growth

rates as too low because he didn't think that investors' long-term expectations would change that much. While I agree that the constant-growth rate used shouldn't change dramatically, I don't agree that the current level of equities analysts' estimated growth rates are sustainable. In order to adjust for this, the ROR witness should either reduce his assumed constant-growth rate or he should estimate the cost of common equity using a multiple-stage DCF analysis.

Q. Do you believe equities analysts have factored recent economic concerns into their 5-year EPS projections?

A. No. Although the average 5-year EPS growth rate projections from IBES for my comparable companies have declined by 0.25 percent from 6 months ago; this does not appear to be consistent with investors' and companies' concerns about the economy and the possibility of much slower growth. I think the fact that two of the parent companies of Missouri's regulated utilities have reduced their dividends to conserve capital confirms concerns about the likely impact that the current economic outlook may have on future load growth. In fact, the forecast of reduced demand for electricity is one of the reasons that GPE cited for reducing the dividend. During the GPE's recent 2008 fourth quarter earnings conference call, Mike Chesser, Chairman and CEO of GPE, discussed the continued deterioration in demand for electricity across its service territory and that this deterioration had become even more pronounced since they first began to discuss this concern during their earnings conference call for the fourth quarter of 2007. Companies usually do not reduce dividends due to short-term fluctuations in cash flow. Because dividends are important to regulated utility stock investors, this type of action likely is an indication of

GPE's pessimism of the impact the current economic environment will have on its long-term earnings and cash flow and consequently, its ability to support the previous dividend amount.

Q. Is it logical to expect electric utilities' EPS to grow at a constant rate of 6.70 percent into the indefinite future?

A. No. This growth rate is not only above what is reasonable to expect for a mature industry such as an electric utility industry, but it is also much higher than what investors expect for the growth in the economy. While I do not believe the perpetual growth rate for the electric utility industry should be based on the expected growth in GDP, I do believe the expected long-term growth in GDP can provide insight as to any changes that should be made to perpetual growth rates for the electric utility industry. Although electric utility stocks will not grow as fast as GDP, electricity consumption is correlated with GDP and if future GDP growth is expected to be less than historical GDP growth, then the perpetual growth rate should be adjusted accordingly.

Q. Has Staff relied on analysts' EPS projections in past rate cases as a proxy for the constant-growth rate in its DCF analysis?

A. Yes. Staff started to rely more heavily on analysts' projected EPS growth rates for its constant-growth DCF analysis beginning in late 2005 because these growth rates seemed to be somewhat consistent with sustainable long-term constant growth rates. Staff continued to rely on projected growth rates up to the most recent Empire rate case, Case No. ER-2008-0093, because the historical growth rates were volatile and not reliable in providing much insight on expected future growth. Consequently, even though these projected EPS growth rates were trending higher, Staff relied on them in its constant-growth

DCF analysis because historical growth rates were not providing much insight as to what investors may expect going forward.

At the time, it might have been plausible to argue that these growth rates were consistent with investors' expectations, at least in the near future, because the economy was not as uncertain as it is now. However, the capital and economic environment have changed and Staff believes investors' expectations have changed with it. Consequently, Staff believes the best approach to estimate GMO's cost of common equity in today's environment is to use a multiple-stage DCF analysis. Of course, just as with any cost of equity analysis, the reasonableness of the results depends on the reasonableness of the inputs.

Q. Two variations of Dr. Hadaway's DCF analysis assumed that his electric utility comparable group would grow at the same rate of the economy. Why is this assumption unreasonable?

A. This assumption is often used for companies and/or an industry that are in their "growth phase". This is commonly referred to as a situation in which the company or industry is experiencing "supernormal" growth. In these cases, many finance textbooks recommend that the perpetual growth rate may be estimated based on the expected growth in the economy if this is consistent with expected sustainable growth.[1] However, this assumption is not usually made for a companies or industries that have reached mature stages, unless the industry growth rate is similar to that of the overall economy. Based on the perpetual growth rates used by GPE's and Aquila's financial advisors, apparently they also

[1] John D. Stowe, Thomas R. Robinson, Jerald E. Pinto and Dennis W. McLeavey, *Analysis of Equity Investments: Valuation*, 2002, Association for Investment Management and Research.
Aswath Damodaran, *Investment Valuation: Tools and techniques for determining the value of any asset*, 1996, John Wiley & Sons, Inc.

assumed that KCPL and GMO cannot grow faster than the overall economy because the perpetual growth rates used in their cash flow analysis were much lower than the 6.5 percent assumed by Dr. Hadaway. Blackstone assumed a perpetual growth rate of 3.4 to 4.8 percent for the GMO properties and 1.7 to 3.2 percent for GPE without Strategic Energy.

Q. Is it appropriate to compare these perpetual growth rates to the growth rate Dr. Hadaway used in his analysis?

A. Yes, especially considering the fact that these perpetual growth rates were estimated when the economy was more stable both regionally and nationally. Dr. Hadaway's cost of equity analysis was also done at a time when the economy was more stable so these lower growth rates definitely contradict Dr. Hadaway's assumption that electric utility perpetual growth rates would be anywhere near 6.5 percent.

Q. What would Dr. Hadaway's multiple-stage DCF results have been if he had used the high end of the GPE perpetual growth rates without the Strategic Energy operations?

A. His estimated cost of common equity would have been in the 7.90 percent to 7.95 percent range. Consequently, the estimated cost common equity using a multiple-stage DCF is very sensitive to the estimated perpetual growth rate since it applies to the majority of the cash flows expected in the indefinite future.

Q. Is this cost of common equity estimate consistent with the cost of common equity estimates that equity research analysts had used in the past to estimate the value of GPE's stock?

A. Yes. In various research reports GMO provided in response to Staff Data Request No. 0121, Staff discovered equity discount rates (i.e. costs of equity) ranging from 6.90 percent to 8.75 percent for purposes of discounting future cash flow

estimates to determine the estimated GPE common stock values. Although these cost of equity estimates may have increased because of the recent financial and economic crisis, I believe the Commission should consider these lower discount rates used by investment analysts in order to judge the reasonableness of an allowed ROE in this case.

Q. Why do you believe this is important for the Commission to consider?

A. It is likely that the Company will use recent Commission authorized ROEs for Missouri electric utility companies as their benchmark to argue for a higher allowed ROE in this case. Therefore, I think it is important for the Commission to understand that its past authorizations were higher than equity discount rates used by certain investment analysts at the time. These lower equity discount rates corroborate the costs of equity used by GPE's and Aquila's own financial advisors.

Q. But haven't utility stock prices declined since these equities analysts' research reports?

A. Yes, but these stock price declines are in part due to concerns about the contraction in the economy and about the future growth rate of the economy. Even when Staff performed its multiple-stage DCF analysis using recent lower stock prices and a reasonable 3.1 percent perpetual growth rate, the cost of common equity was still 9.25 to 10.25 percent.

Q. What perpetual growth rates were used by the equity analysts in the equity research reports GMO provided in response to Staff Data Request No. 0121?

A. The perpetual growth rates ranged from as low as 1 percent to as high as 3.6 percent. These perpetual growth rates are more consistent with the estimate I used in my multi-stage DCF analysis in my direct testimony.

Q. Isn't it possible that GPE's and Aquila's financial advisors relied on a more reasonable economic growth rate and this is the reason for their lower perpetual growth rates?

A. Yes, but other than the perpetual growth rates used for Aquila, the financial advisors' perpetual growth rates are still below those of more reasonable projected economic growth rates.

Q. What are the long-term nominal GDP growth projections from some sources that may be relied upon by investors?

A. According to the Congressional Budget Office's January 2009 *The Budget and Economic Outlook: Fiscal Years 2009-2019*, the projected compound annual growth in GDP for 2009 to 2019 is expected to be approximately 4.70 percent. According to the Energy Information Administration (EIA), the expected compound annual growth in real GDP is expected to be 2.5 percent from 2009 through 2030. After factoring in EIA's expected inflation factor, the expected nominal GDP growth rate is approximately 4.5 percent. According to the Social Security Administration, the expected annual compound growth in nominal GDP for 2009 through 2030 is expected to be approximately 4.7 percent. According to the Federal Reserve's minutes from its meeting on January 27-28, 2009, the Federal Open Market Committee's (FOMC) participants' central tendency long-run projections for growth in real GDP is expected to be 2.5 to 2.7 percent. If you add the FOMC's expected inflation of 1.7 to 2.0 percent over the long-run to the expected real GDP growth rates, the nominal GDP is expected to be approximately 4.2 to 4.5 percent. Consequently, no source is expecting a long-run nominal GDP growth rate of above

4.70 percent. The electric utility industry's expected growth rate in perpetuity should be below this growth rate.

Q. Is it possible that GPE's and Aquila's financial advisors' relied on economic forecasts that were more optimistic since they performed their analysis before the recent financial crisis?

A. Yes. Consequently, Staff believes that they would reconsider their near-term projected growth rates and probably their perpetual forecasted growth rates as well.

Q. Do you believe that current government bond yields may be providing some insight as to the possibility of lower long-term growth in the economy for a protracted period of time?

A. Yes. As I explained in the Staff's Cost of Service Report on page 35, the yield on long-term U.S. Treasury bonds are used as a proxy for investors' expectation of growth in the economy going forward.[2] This is the case because the U.S. Treasury bond's yield contains an inflation component and a real return component. The real return component is based on investors' expectations of the growth in the overall economy going forward. As of February 2009, the average 30-year U.S. Treasury bond yield was 3.59 percent. This would appear to imply that investors do not expect the U.S. economy to grow at a rate much above this rate over the next 30-years and it also implies that investors are not requiring much of a return to compensate for the possibility of inflation. It is clear from these continued low long-term Treasury bond yields that investors are still more

[2] John L. Maginn, CFA, Donald L. Tuttle, CFA, Dennis W. McLeavey, CFA, and Jerald E. Pinto, CFA, *Managing Investment Porfolios: A Dynamic Process*, p. 93 of Volume 3 of 2009 Level III CFA Program Curriculum.

focused on investing in safer investments because of what they believe may be a slow growth rate in the economy for some time to come.

Q. Does it appear that the yields have increased due to concerns about inflation or due to the prospects of a rebound in the economy?

A. Based on the spread between the twenty-year constant maturity yield and the twenty-year Treasury Inflation Protected Security yield of 1.52 percent (3.83 – 2.31) for February 2009 compared to the spread of 1 percent (3.46 – 2.46) for January 2009, the increase in the yields have been driven by an additional required return for inflation. However, this increase has been fairly minimal.

Q. Are you proposing the use of long-term Treasury yields as a proxy for the perpetual growth for the electric utility industry?

A. No. I am just providing this information so the Commission can evaluate the reasonableness of Dr. Hadaway's assumptions. Although there are many sources available that provide projections about the future growth in the economy, because we are attempting to estimate investors' requirements and expectations, it is important to analyze the prices and yields of securities to test the reasonableness of certain assumptions. I still believe it is more appropriate to estimate the perpetual growth rate based on projected demand for electricity.

Q. Why do you believe this is the most appropriate approach for estimating at least the perpetual growth rate for electric utility companies?

A. It is widely known by investors that a regulated electric utility company's earnings are driven by a utility company's investment in rate base to meet projected load growth on the system. Because generation investment decisions are made based on long-term projections of future load, then it is only logical that investors will estimate

long-term sustainable future earnings based on estimated load growth. While large investments in rate base may cause a significant increase in earnings in the short-term, this initial bump in earnings should not be considered the sustainable growth rate. The sustainable growth rate should be based on long-term projections for load growth.

Additional growth can only come from a few other areas, such as becoming more cost efficient, financial leverage, abnormal rate increases and possibly through acquisitions and/or diversification. However, none of these factors should be sustainable growth factors and that is why it is logical that investors would evaluate long-term demand growth to estimate perpetual growth rates. However, it should be noted that if expected growth is coming from acquisitions and/or riskier non-regulated investments, then it is not appropriate to pass any resulting higher costs of common equity on to ratepayers. This higher cost of equity would be a result of management decisions to incur risks to attempt to enhance shareholder value. In a competitive market, a business would not be able to raise prices in one business segment to support another business segment, otherwise, it would lose market share.

Q. What is the projected growth in demand for electricity over the long-term?

A. According to the early release of the 2009 Annual Energy Outlook from the Energy Information Administration (EIA), the projected compound annual growth rate for electricity consumption is only 1 percent for the period 2007 through 2030 (see Schedule 1).

Q. What else can be inferred from the chart provided on Schedule 1?

A. Using averages of electricity consumption dating back to the 1950 will not provide reliable information to project future growth in electricity consumption.

Q. Why is this important?

A. Because Dr. Hadaway relies on nominal GDP growth rates dating back to 1947 to estimate the future growth in EPS for electric utility companies. This graph attacks the very logic of Dr. Hadaway's assumption. Based on this graph, electricity consumption has become, and will be, a smaller part of economic growth going forward.

Q. Is this consistent with the financial management of electric utility companies?

A. Yes. Electric utility companies typically pay out a large percentage of their earnings in dividends because they do not need to retain earnings for constant reinvestment for growth opportunities. Conversely, the average dividend payout ratio for the S&P 500 has typically been much lower. According to the Edison Electric Institute's 2007 Financial Review, regulated electric utility companies' dividend payout ratios averaged 70.8 percent from 2004 through 2007 ranging from 65.0 percent to 78.3 percent, whereas the dividend payout ratio for the S&P 500 averaged 34.48 percent and ranged from 30.52 percent to 42.16 percent for the same period.

Because the S&P 500 is a proxy for the entire market, one would assume that the use of nominal GDP growth of the economy may be an appropriate proxy for the S&P 500. However, it is not an appropriate proxy for the electric utility industry. Quite simply, electric utility companies do not retain as much earnings as the rest of the market because they do not have similar growth prospects.

Q. Although you do not believe it is appropriate to use nominal GDP growth as a proxy for the perpetual growth rate for the electric utility industry, for sake of discussion, please use a more reasonable expected 4.5 percent nominal GDP growth to show what

Dr. Hadaway's estimated cost of common equity would have been if he had used this as his proxy for both his constant-growth DCF and his multi-stage DCF analysis?

A. His constant-growth DCF would have dropped by two percent to an estimated 9.0 percent cost of common equity. His multi-stage DCF estimated cost of common equity would have been approximately 9.00 to 9.05 percent.

Q. Dr. Hadaway states in his direct testimony (p. 32, ll. 18-21) that he believes it is appropriate to give more weight to recent nominal GDP growth rates for an estimated proxy for his electric utility companies because more recent data should have a greater effect on expectations. Is the use of recent GDP data as a proxy for investors' expectations of electric utility industry growth consistent with Dr. Hadaway's methodology when he did not sponsor testimony on behalf of utility companies?

A. No. In the early 1980s, when interest rates were very high and volatile, Dr. Hadaway held the position of Director of the Economic Research Division at the Public Utility Commission (PUC) of Texas. In his position at the Texas PUC, Dr. Hadaway sponsored rate of return testimony on behalf of the Texas PUC. Dr. Hadaway's recommendations in docket numbers 3780, 4240, 4400 and 4620 relied exclusively on his use of a constant-growth DCF model. Dr. Hadaway did not rely on a DCF model that incorporated a nominal GDP growth rate, let alone a nominal GDP growth rate that was from a recent period.

Q. What did Dr. Hadaway estimate for investors' expected perpetual growth in his constant-growth DCF analysis in docket numbers 3473, 3780, 4240, 4400 and 4620?

A. Dr. Hadaway's estimate of perpetual growth was anywhere from 2.5 to 5.0 percent in these dockets. This is significantly different from the perpetual growth rate Dr. Hadaway proposes in this case of 6.5 or 6.7 percent.

Q. If Dr. Hadaway used nominal GDP growth rates that reflected the recent past when he sponsored testimony an behalf of the Texas PUC, would his growth rates have been higher?

A. Yes. As can be seen on Dr. Hadaway's Schedule SCH-4, nominal GDP growth rates were consistently above 10 percent during the late 1970s and early 1980s. If Dr. Hadaway had used a constant-growth rate similar to these levels, he would have had much higher recommended ROEs while he was sponsoring testimony on behalf of the Texas PUC.

Q. What was his recommended ROE in docket number 3473?

A. His constant-growth DCF results were in the range of 15.0 to 16.0 percent. His final recommendation of 15.2 to 15.5 percent was within this range. His recommendation in the case was premised on an estimated constant-growth rate of 3 to 4 percent based on his analysis of Central and South West Corporation.

Q. If he had performed an analysis then similar to that in which he performs now, what would his estimated perpetual growth rate have been?

A. 8.5 percent. If he had used this constant-growth rate, his cost of common equity would have been 20.5 percent, a full 5 percent higher than the high end of his recommendation at the time.

Q. Please compare the interest rate environment during the period in which Dr. Hadaway sponsored his testimony compared to the current interest rate environment.

A. Actually, the interest rate environment in the early 1980s was the highest it had been for at least the last 85 years. Although utility bond yields had increased and become more volatile during the fall of 2008, before this period they had been quite low and fairly stable up to this time. Long-term Treasury bonds have hit historic lows during the same period in which utility bond yields increased, which implies a higher risk premium for riskier investments. However, high quality investments are realizing fairly low costs of capital, which is reflected in the larger spreads between the average yields for lower credit quality debt versus higher credit quality debt.

Q. Is it important for there to be some stability in the economic environment when deciding to rely on the constant-growth DCF to estimate the cost of common equity?

A. Yes. Because of the recent volatility in the capital markets (inclusive of equity and fixed-income) and the economy, I believe it is appropriate to evaluate the cost of common equity using a multiple-stage DCF.

Q. How stable were returns on high-grade bonds before the recent credit crisis?

A. They were quite stable. The standard deviation of high-grade bonds was actually decreasing up until the recent credit crisis. The standard deviation of high-grade bonds for each year from 2003 through 2007 was 3.51 percent, 2.33 percent, 2.24 percent, 2.20 percent and 1.48 percent, respectively. Although the volatility had been decreasing, Staff expects that the total return standard deviation for 2008 will be much higher. Staff did not have this data available to it at the time it wrote its testimony.

Q. Why does Staff believe the above information is relevant to estimating the cost of common equity in this case?

A. Because in the Aquila rate case in 2005, Case No. ER-2005-0436, Staff used the above information to justify its continued reliability of the constant-growth DCF during stable capital market environments. However, because of the recent volatility in the capital markets, Staff was concerned about relying on the constant-growth DCF for purposes of this rate case. Therefore, Staff decided to rely on a multiple-stage DCF analysis. However, as with any DCF analysis, the inputs for growth need to be heavily scrutinized for this analysis to provide a reliable estimate of the cost of common equity. Staff does not believe that Dr. Hadaway's growth rate inputs are supported by any reasonable expectations, even before the recent credit crisis.

Q. If all of Dr. Hadaway's DCF estimated costs of common equity are not credible due to the reasons you have discussed, then what can be inferred from his "risk premium" analysis that uses commission allowed ROEs to support his DCF cost of common equity estimates?

A. I believe that this confirms that commissions and some ROR witnesses hesitated to recognize the lower costs of common equity that utility companies realized when capital was flowing fairly easily. If this was the case, then allowed ROEs did not reflect the cost of common equity and may not be a true measure of risk premiums.

Q. Do you have any comments about Dr. Hadaway's other risk premium analysis that he used to test the reasonableness of his DCF estimates?

A. Yes. Because his other risk premium analysis is based on a risk premium for the broader stock market, it should be dismissed. Just as I think it is inappropriate to use the growth in the broader economy as a proxy for perpetual growth for electric utilities, I also think it is inappropriate to use the broader market to estimate an equity risk premium.

Dr. Hadaway should have adjusted his risk premium to consider that electric utility companies' risk premium is about 75 percent (approximate beta of electric utility companies) of that of the S&P 500. Of course he would also have been required to measure this risk premium against a risk-free rate such as a long-term Treasury bond yield, which would have caused his risk premium to be higher. However, because current long-term Treasury yields are quite low, his overall cost of common equity indication would have been lower than his current indications.

Dr. Hadaway also added his estimated risk premium to projected bond yields. This is inappropriate because it is akin to using projected stock prices in a DCF analysis. The rate of return witness should not attempt to estimate where he thinks stock prices and bond yields will be in the future because then he is substituting his judgment for that of the market.

**GMO'S EMBEDDED COST OF DEBT**

Q. What did Dr. Hadaway propose for GMO's cost of debt for both its MPS and L&P divisions?

A. He proposed the use of GMO's adjusted debt costs for MPS and L&P.

Q. How was the amount of debt assigned to MPS and L&P determined?

A. GMO's previous owner, Aquila, continued to rely on its capital assignment process to determine the amount of debt to assign to each of its operations. This assignment process was based on Aquila's attempt to show divisional capital structures that had approximately 47.5 percent equity and 52.5 percent debt. Staff never accepted this assigned capital structure process because it was subject to manipulation by Aquila's management.

For example, during the period of Aquila's financial crisis it pretended that it had a 47.5 percent equity ratio at its regulated utility divisions even when doing so meant they would have to allocate a negative amount of equity to their non-regulated operations. Aquila's financial distress magnified the illogical assumptions one would have to make to justify a fictional capital structure for rate making purposes.

Q. If too little debt was assigned to GMO for purposes of the assigned capital structure, can you have any confidence in the estimated embedded cost of debt for GMO?

A. No. Because the market cost of debt continued to decline over the period of Aquila's financial difficulties, it is hard to estimate what the cost of debt may have been if Aquila had maintained at least an investment grade credit rating. If Aquila had maintained an investment grade credit rating and continued to use the same amount of leverage as it used when it had an investment grade credit rating, then it is possible that Aquila would have used a larger portion of lower cost debt to fund GMO's operations. However, because of Aquila's financial difficulties, this will forever be an uncertainty.

Q. Even if you had confidence in the amount of debt assigned to GMO, do you believe the costs of the debt assigned to MPS and L&P are based on a sound process?

A. No. Although Aquila had adjusted its assigned debt costs to MPS and L&P to follow through on its commitment to not charge higher than investment grade debt costs to rate payers, Staff does not have confidence in this process.

Q. Why doesn't Staff have confidence in this process?

A. First, Aquila based these assigned debt costs on BBB- debt yields obtained from Bloomberg. Because Aquila had a BBB credit rating before it encountered financial difficulties due to its failed non-regulated investments, Staff believes this would be the most

appropriate benchmark. Second, Aquila used spot yields to determine the cost of debt to assign to L&P and MPS. Staff believes it would be better to smooth these yields by taking an average for the month. Finally, Staff is not sure how many debt issuances comprise the BBB- debt yields. If there are relatively few BBB- debt issuances comprising these debt yields, then a few debt issuances may skew these yields.

Q. What was your proposed solution in your direct testimony?

A. I proposed that the cost of debt for GMO be based on Empire's embedded cost of long-term debt for the true-up period for its most recent rate case, Case No. ER-2009-0093. This seems appropriate because Empire's embedded cost of debt is based in reality and Empire is predominately a Missouri regulated electric utility exposed to many of the same risks as the GMO properties.

**DR. HADAWAY'S AND MR. GORMAN'S RECOMMENDED CAPITAL STRUCTURE FOR GMO**

Q. Please summarize Dr. Hadaway's and Mr. Gorman's recommended capital structure for GMO.

A. Dr. Hadaway's recommended capital structure is based on GPE's projected capital structure as of March 31, 2009. With reservations, Mr. Gorman accepted GPE's projected capital structure. Because of uncertainty around the timing and actual issuance of projected capital in this capital structure, the Commission should wait until the true-up date to determine the appropriate capital structure in this case.

Q. Do you believe the preferred stock component should be included in GMO's rate making capital structure?

A. No. All of the components other than the cost of common equity are based on historical embedded costs. Because the preferred stock capital component was issued before GPE's acquisition of the GMO properties, this shouldn't be included in the capital structure.

**MR. GORMAN'S RECOMMENDED COST OF COMMON EQUITY FOR GMO**

Q. What is Mr. Gorman's recommended ROE in this case?

A. 10.30 percent.

Q. How did Mr. Gorman arrive at a recommended ROE of 10.30 percent?

A. He calculated a simple average of his indicated cost of equity using three different methodologies. His DCF indicated cost of common equity was 11.15 percent; his risk premium indicated cost of common equity was 10.54 percent; and his CAPM cost of common equity was 9.20 percent.

Q. Which methodology makes up the biggest difference between the midpoint of your recommendation of 9.75 percent compared to his recommendation?

A. His DCF analysis.

Q. What is the primary reason for the differences in your DCF estimates?

A. Mr. Gorman uses a consensus GDP growth rate of 4.9 percent as published by the *Blue Chip Economic Indicators* for his perpetual growth rate in both his two-stage and multi-stage DCF analysis. Although Mr. Gorman's expected GDP growth rate is much more realistic than Dr. Hadaway's, I still do not believe this is an appropriate proxy for a perpetual growth rate for the electric utility industry. On page 20 of his Direct Testimony, Mr. Gorman recognizes that electric utility companies are not likely to have a sustainable growth rate similar to that of the overall economy. Again, I believe the perpetual growth

rates used by GPE and Aquila's own financial advisors confirm this reality. If Mr. Gorman had used a lower perpetual growth rate, his two-stage and multiple-stage DCF analysis would have provided results more in line with my estimates.

The other reason for Mr. Gorman's higher DCF results is that he reluctantly included his constant-growth DCF results using analysts' estimates in his average DCF cost of common equity estimates. While I understand that he probably felt compelled to include these results in his estimates for sake of consistency, I do not believe these cost of common equity estimates should be considered if they are not consistent with investors' lower expectations of growth for electric utility companies in the long run. The recent capital and economic environment should be reason enough for one to use judgment about which methodologies and inputs should receive weight in today's environment. This is why Staff chose to perform a multi-stage DCF analysis in this case using inputs that are consistent with the fundamentals for electric utility companies.

## SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your rebuttal testimony.

A. My conclusions regarding the capital structure and cost of common equity are listed below.

1. The use of the pro forma capital structure proposed by Dr. Hadaway and used by Mr. Gorman are inappropriate. The calculation of the cost of capital for GMO should be based on GPE's consolidated capital structure as of September 30, 2008, as shown in Staff's Cost of Service Report.

Any changes to this capital structure should only be considered at the time of true-up in this proceeding;

2. My cost of common equity recommendation of 9.25 percent to 10.25 percent, would produce a fair and reasonable rate of return of 8.03 percent to 8.54 percent for the Missouri jurisdictional electric utility rate base for GMO.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION**

**OF THE STATE OF MISSOURI**

| | | |
|---|---|---|
| In the Matter of the Application of KCP&L Greater Missouri Operations Company for Approval to Make Certain Changes in its Charges for Electric Service. | ) ) ) ) ) | Case No. ER-2009-0090 |

AFFIDAVIT OF DAVID MURRAY

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|---|---|---|
| STATE OF MISSOURI | ) | |
| | ) | ss. |
| COUNTY OF COLE | ) | |

David Muray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Rebuttal Testimony in question and answer form, consisting of 26 pages to be presented in the above case; that the answers in the foregoing Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

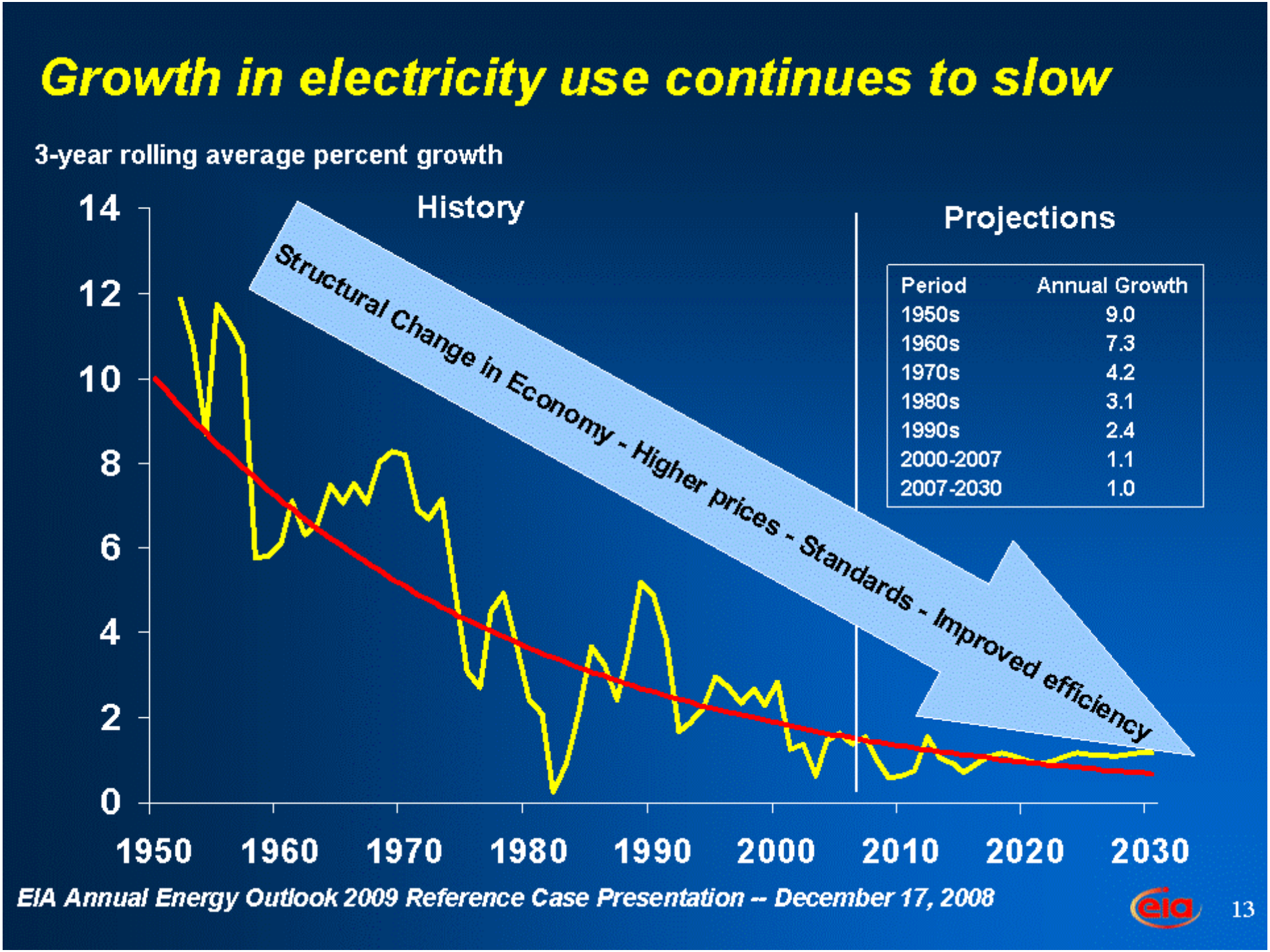
David Murray

Subscribed and sworn to before me this 12th day of March, 2009.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 08, 2012
Commission Number: 08412071

Notary Public

# Growth in electricity use continues to slow




*EIA Annual Energy Outlook 2009 Reference Case Presentation -- December 17, 2008*



SCHEDULE 1

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