Exhibit No.:
Witness:. Michael Gorman
Type of Exhibit: Direct Testimony
Issue: Rate of Return, Depreciation
Sponsoring Party: Federal Executive Agencies, Sedalia Industrial Energy Users' Association and St. Joe Industrial Group
Case No.: ER-2007-0004

**Before the Public Service Commission of the State of Missouri**

| | | |
|---|---|---|
| In the Matter of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P, for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS and Aquila Networks-L&P service areas | ) ) ) ) ) ) | Case No. ER-2007-0004 |



Direct Testimony and Schedules of

**Michael Gorman**

On behalf of

**Federal Executive Agencies, Sedalia Industrial Energy Users' Association and St. Joe Industrial Group**

Project 8629
January 18, 2007

BRUBAKER & ASSOCIATES, INC.
ST. LOUIS, MO 63141-2000

**Before the Public Service Commission**
**of the State of Missouri**

| | | |
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| In the Matter of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P, for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS and Aquila Networks-L&P service areas | ) | Case No. ER-2007-0004 |

**STATE OF MISSOURI** )
) **SS**
**COUNTY OF ST. LOUIS** )

## Affidavit of Michael Gorman

Michael Gorman, being first duly sworn, on his oath states:

1. My name is Michael Gorman. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by the Federal Executive Agencies, Sedalia Industrial Energy Users' Association and the St. Joe Industrial Group in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes are my direct testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2007-0004.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things they purport to show.

Michael Gorman

Subscribed and sworn to before me this 16th day of January 2007.

CAROL SCHULZ
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis County
My Commission Expires: Feb. 26, 2008

Notary Public

My Commission Expires February 26, 2008.

**Before the Public Service Commission**
**of the State of Missouri**

| | | |
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| In the Matter of Aquila, Inc. d/b/a Aquila Networks-MPS and Aquila Networks-L&P, for authority to file tariffs increasing electric rates for the service provided to customers in the Aquila Networks-MPS and Aquila Networks-L&P service areas | ) ) ) ) ) ) | Case No. ER-2007-0004 |

## Direct Testimony of Michael Gorman

**Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A My name is Michael Gorman and my business address is 1215 Fern Ridge Parkway, Suite 208, St. Louis, MO 63141-2000.

**Q WHAT IS YOUR OCCUPATION?**

A I am an energy advisor and a consultant in the field of public utility regulation and a managing principal in the firm of Brubaker & Associates, Inc. (BAI).

**Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

A These are set forth in Appendix A.

**Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

A I am appearing on behalf of the Federal Executive Agencies ("FEA"), Sedalia Industrial Energy Users' Association ("SIEUA") and the St. Joe Industrial Group ("SJIG"). The FEA, and the SIEUA and SJIG memberships are large energy consumers with facilities served by Aquila, Inc. ("Aquila").

**Q WHAT IS THE SUBJECT OF YOUR TESTIMONY?**

A I will recommend a fair return on common equity and overall rate of return for Aquila Missouri Public Service Company (MPS) and Aquila St. Joe Light & Power Company (L&P). I also address the appropriate depreciation rates for the Other Production plant accounts.

**Q PLEASE SUMMARIZE YOUR RATE OF RETURN RECOMMENDATIONS.**

A I recommend the Missouri Public Service Commission ("MPSC" or the "Commission") award MPS and L&P a return on common equity of 10.0%.

My recommended return on equity for Aquila is based on a constant growth Discounted Cash Flow ("DCF"), Risk Premium ("RP") and Capital Asset Pricing Model ("CAPM") analyses. These analyses estimate a fair return on equity based on observable market information for a group of publicly traded electric utility companies that proxy Aquila's going forward investment risk.

My recommended return on equity for MPS and L&P of 10.0% compares favorably to industry average authorized returns on equity in third quarter of 2006. Regulatory Research Associates identified seven regulatory proceedings that awarded an average return on equity for electric and gas utility companies of 10.06% and 9.6%, respectively, for the third quarter of 2006. During that same quarter, the authorized common equity ratio of total capital for electric and gas utilities was 46.86% and 45.0%, respectively. As such, my recommended return on equity of 10.0%, and the Company's proposed capital structure with a 47.5% common equity ratio is consistent with industry average authorized return capital structure and will support MPS and L&P's financial integrity and access to capital (Regulatory Research Associates, Regulatory Focus, October 5, 2006).

Finally, I recommend an overall rate of return for MPS of 8.20%, and for L&P of 8.92%. My recommended overall rate of return is based on a forecasted capital structure, my recommended return on equity for each company, and the Companies' projected embedded cost of debt. I recommend the Commission award my estimated overall rate of return to the two utilities on its conditional acceptance of a forecasted capital structure that reflects the expected increase in Aquila's equity ratio, and decrease in its debt ratio, created through its plan to sell assets and use the proceeds to retire debt.

**Q PLEASE SUMMARIZE YOUR DEPRECIATION EXPENSE ADJUSTMENT.**

A I recommend that the depreciable lives for Other Production be lengthened to a more realistic 35 years. This reduces the depreciation expense for MPS by $2.102 million per year.

## ELECTRIC UTILITY INDUSTRY MARKET PERSPECTIVE

**Q PLEASE DESCRIBE THE MARKET'S PERCEPTION OF THE ELECTRIC UTILITY INDUSTRY OVER THE LAST SEVERAL YEARS.**

A Standard & Poor's ("S&P") I believe captures the sentiment of the investment market toward the electric utility industry experienced over the last several years. In 2001, S&P stated it recorded 81 downgrades to utility credit ratings, with only 29 upgrades. S&P stated in 2002 that the credit rating activity in the electric utility industry was negative due to: (1) weakening financial profiles, (2) loss of investor confidence which affected the industries liquidity and financial flexibility, (3) heightened business risk derived from more investments outside the traditional regulated utility business, (4)

corporate restructuring and mergers and acquisitions, and (5) certain regulatory difficulties.

S&P attributed most of the 2002 liquidity and credit erosion in the industry to heavy debt funded investments in higher risk non-regulated activities, and the loss of management credibility due to accounting and trading irregularities.[1]

Importantly, this negative perception of the energy industry over the last several years has been improved considerably because the industry has reverted to a "back to basics" business model. As part of the back to basics business model, utilities have been shedding non-regulated activities and using the asset sale proceeds to retire debt. Also, utilities have adopted corporate governance policies that have helped regain the confidence of the market.

In 2005, S&P revised its industry outlook by stating that the industry's leading indicators of credit rating tends show that there are nearly twice as many stable outlooks as negative outlooks. S&P credits this improved credit quality and liquidity enhancement to improving credit rating metrics resulting primarily from a reduction of high cost debt and elimination of higher risk non-utility investments, and the industry's shift to a back to basics business model, which concentrates on core competencies, debt reduction and risk management (Standard & Poor's: Industry Report Card: U.S. Electric/Water/Gas, January 4, 2005).

**Q PLEASE SUMMARIZE AQUILA'S CURRENT CREDIT STANDING AND ACCESS TO CAPITAL.**

A Aquila's Missouri utility operations do not have a stand-alone credit rating. Rather, its credit rating and access to capital is derived entirely through participation in Aquila

[1] S&P Utilities & Perspectives, Global Utilities Rating Service, October 14, 2002.

Corp.'s consolidated operations. On a consolidated basis, Aquila Inc.'s bond rating has increased to "B," from "B-" from Standard & Poor's (S&P) and S&P has placed it on credit watch with positive implications reflecting its successful restructuring plan to pay down debt and improve its financial standing, and lower its operating risk by focusing on core utility operations. S&P states as follows concerning Aquila:

> **"Rationale**
> On Sept. 1, 2006, Standard & Poor's Ratings Services raised its long-term corporate credit rating on Aquila Inc. to 'B' from 'B-'. The rating remains on CreditWatch with positive implications.
>
> At the same time, Standard & Poor's raised its short-term corporate credit rating to 'B-2' from 'B-3' and removed the rating from CreditWatch with positive implications.
>
> Kansas City, Mo.-based Aquila is primarily an integrated electric and natural gas utility. The company had approximately $1.6 billion in total debt outstanding at the end of June 2006.
>
> The upgrade reflects the company's improved business risk profile, significant debt reduction and plans for further deleveraging, expected cash-flow improvement, and lower ongoing working capital requirements.
>
> The continued CreditWatch listing for the long-term ratings on the company reflects Standard & Poor's expectations that the company's corporate credit rating could be raised another notch to 'B+' once Aquila's Kansas electric utility is sold and the company's debt reduction plan is completed. We expect Aquila to achieve another $600 million in debt reduction over the next several months using proceeds from various asset sales. Proceeds from the sale of the Kansas electric utility are needed to help defray the costs of new generation, namely Iatan 2 and the potential acquisition of the Aries gas-fired, 585MW combined cycle plant." (Standard & Poor's RatingsDirect, September 1, 2006) (Response to SIE-0106, p. 1)

S&P also made comments concerning Aquila's Missouri utility operations. S&P stated that Missouri Aquila had moderate exposure to rising gas and power prices, capital expenditures or construction risks. S&P's specific statements were as follows:

"Aquila's Missouri utilities are characterized by moderate exposure to rising gas and power prices (the utilities are short owned generation and do not currently have access to a fuel adjustment clause) and moderate growth-related capital expenditure requirements. Aquila's capital program which includes participation in the latan 2 project, is expected to add to debt leverage over the 2008-2010 time frame. The company will own 18% of the 800-900 MW coal-fired latan 2 project, which will be built by Kansas City Power & Light Co. for an expected $1.3 billion. The aforementioned business risks are partially mitigated by an improving regulatory environment (which for the first time may allow a fuel-adjustment clause as early as next year), relatively low operating risk (the company purchases about approximately 30% of its capacity needs through long- and short-term contracts), and a growing customer base." (*id.*) (Emphasis added)

## PROJECTED INTEREST RATES AND CAPITAL MARKET COSTS

**Q SHOULD THE COMMISSION PLACE HEAVY RELIANCE ON PROJECTED INTEREST RATES AND FUTURE CAPITAL MARKET COSTS RELATIVE TO TODAY'S OBSERVABLE CAPITAL MARKET COSTS?**

A No. While projected interest rates should be given some consideration, the determination of Aquila's cost of capital today should be based primarily on observable and verifiable actual current market costs. This is appropriate because projected changes to interest rates are highly uncertain and the accuracy is at best problematic. Indeed, this is clearly evident by a review of projected changes to interest rates made over the last five years, in comparison to how accurate these projections turned out to be. This analysis clearly illustrates that observable interest rates today are as accurate as are economists' consensus projections of future interest rates.

An analysis supporting this conclusion is illustrated on my Schedule MPG-1. On this Schedule, under Columns 1 and 2, I show the actual market yield at the time

a projection is made for Treasury bond yields two years in the future. In Column 1, I show the actual Treasury yield and, in Column 2, I show the projected yield two years out.

As shown in Columns 1 and 2, over the last five years Treasury yields were projected to increase relative to the current Treasury yields at the time of the projection.

In Column 4, I show what the Treasury yield actually turned out to be two years after the forecast. Under Column 5, I show the actual yield change at the time of the projections relative to the projected yield change.

As shown on this Schedule, over the last five years economists have consistently been projecting increases to interest rates. However, as demonstrated under Column 5, those yield projections have turned out to be overstated in virtually every case. Indeed, Treasury yields have actually decreased or remained flat over the last five years, rather than increase as the economists' projections indicated.

This review of the experience with projected interest rates clearly illustrates that interest rate projection accuracy is highly problematic. Indeed, current observable interest rates are just as likely a reasonable projection of future interest rates as are economists' projections. Accordingly, while I will use projected interest rates to provide some sense of the market's expectations of future capital market costs in my models, I will not use them exclusively. Rather, my analyses will be based on the combination of current observable interest rates and projected interest rates. Thus, my analyses will capture a return on equity range reflecting a broad range of potential actual capital market costs during the period rates determined in this proceeding will be in effect.

**Q ARE THERE OTHER REASONS NOT TO PROVIDE EXCLUSIVE RELIANCE ON UNCERTAIN PROJECTED INCREASES TO INTEREST RATES?**

A Yes. The ratemaking process in itself provides utility protection against the increasing cost of capital. Indeed, if Aquila's utility subsidiaries' rates of return are set based on today's market cost of capital, and capital costs increase in the future, then the utilities are free to file for a rate change to reflect higher capital costs in the future when or if costs change. Hence, the regulatory mechanism itself provides utilities a hedge against increasing capital costs.

Depriving customers of today's low cost capital market environment is prejudicial and unreasonably tilts the regulatory balance in favor of investors. Consequently, Dr. Hadaway's exclusive use of projected interest rates, which reflect a dramatic increase over current observable and real interest rates today, must be rejected.

## AQUILA'S PROPOSED CAPITAL STRUCTURE

**Q WHAT CAPITAL STRUCTURE IS THE COMPANY REQUESTING TO USE TO DEVELOP ITS OVERALL RATE OF RETURN FOR ELECTRIC OPERATIONS IN THIS PROCEEDING?**

A Aquila's proposed capital structure, as supported by Dr. Hadaway, is shown below in Table 1.

**TABLE 1**

**Aquila's Proposed Hypothetical Capital Structure**

| Description | Percent of Total Capital |
|---|---|
| Common Equity | 47.5% |
| Debt | 52.5% |
| Total Financial Capital Structure | 100.0% |

Source: Hadaway Direct at 9.

Dr. Hadaway's proposed capital structure is a hypothetical capital structure that is reportedly tied to Aquila's internal capital assignment process as supported by 2005 year-end capital structure percentages and the investment grade 24 company reference group Dr. Hadaway used to estimate Aquila's return on equity.

**Q DID AQUILA OFFER ANY OTHER EVIDENCE IN SUPPORT OF THE USE OF A HYPOTHETICAL CAPITAL STRUCTURE IN THIS PROCEEDING?**

A Yes. Aquila witness John R. Empson testified that use of a hypothetical capital structure is a component of Aquila management's efforts to protect customers and insulate regulated utility operations from Aquila's financial repositioning plan and non-regulated business risk. Specifically, Mr. Empson testified about the three primary principles in protecting its utility customers, the first of which is stated below:

> **"1. Protect utility customers from potential adverse financial impacts.**
>
> - Maintain the Aquila capital allocation process that utilities 'hypothetical' capital structures and long-term debt assignments.
>
> - Price new/replacement debt the utility divisions at comparable BBB credit ratings."

**Q WHAT IS AQUILA'S ACTUAL CAPITAL STRUCTURE?**

A As supported in its 3rd Quarter 2006 Security & Exchange Commission 10Q, Aquila's actual consolidated capital structure is as shown below in Table 2.

**TABLE 2**

**Aquila's Actual Capital Structure**

| Description | Percent of Total Capital |
|---|---|
| Common Equity | 47.80% |
| Debt | 52.20% |
| Total Financial Capital Structure | 100.00% |

Source: Aquila's 3rd Quarter 2006 SEC 10Q at 5.

**Q IS IT POSSIBLE TO USE THE HYPOTHETICAL CAPITAL STRUCTURE TO PROVIDE AQUILA AN OPPORTUNITY TO EARN MORE THAN THE COMMISSION AUTHORIZED RETURN ON EQUITY?**

A Yes. If the proposed hypothetical capital structure contains more common equity than Aquila's actual capital structure, then the use of the hypothetical capital structure will provide Aquila an opportunity to earn a higher return on equity than that approved by the Commission.

As an example, Dr. Hadaway shows that if the Commission uses Aquila's proposed hypothetical capital structure to develop its overall rate of return and approves an 11.5% equity return, then rates would be set at a pre-tax cost of capital of 12.4% (Hadaway Schedule 6). If Aquila's Missouri utility assets are actually supported by the consolidated corporate capital structure that contains only 39.8%,

which is less than the hypothetical capital structure, then a pre-tax rate of return will provide Aquila an opportunity to earn a return on equity of 12.93% on the actual common equity invested in Missouri utility assets.

**Q HAS AQUILA INITIATED EFFORTS TO REDUCE ITS DEBT AND INCREASE ITS PERCENTAGE OF EQUITY TO TOTAL CAPITAL?**

A Yes. As noted above by S&P, and as reflected in more recent financial reports, Aquila's efforts to restructure its financial position has resulted in significant debt reductions.

**Q DO YOU OBJECT TO AQUILA'S PROPOSED USE OF A HYPOTHETICAL CAPITAL STRUCTURE IN THIS PROCEEDING?**

A No, I do not. As set forth above, Aquila's proposed capital structure is reasonably consistent with its actual consolidated capital structure as of the third quarter of 2006, and thus likely reflects the actual capitalization mix the Company will use to support its Missouri utility operations during the period rates determined in this proceeding will be in effect.

## COST OF DEBT

**Q DO YOU PROPOSE ANY ADJUSTMENTS TO AQUILA'S ESTIMATED EMBEDDED COST OF DEBT FOR MPS AND L&P?**

A Yes. I propose to reprice certain debt instruments reflected in MPS's embedded debt structure that it retired in calendar year 2006, or is scheduled to retire early in calendar year 2007. Repricing these securities reflecting today's lower market interest rates is consistent with Mr. Empson's representation that the Company

intends to reprice retiring securities in order to protect customers from the costs associated with Aquila's restructuring. However, the Company failed to reprice two debt instruments in developing MPS's embedded debt cost.

As shown on my Schedule MPG-2, I repriced these securities to one that retires in 2006 and the second in January 2007, I relied on the 13-week average Baa bond yield of 6.12% for this repricing. I added approximately 18 basis points to this average bond yield to reflect issuance expenses. Hence, these debt issuances were repriced at a current market rate of 6.3% to develop MPS's embedded debt cost. As shown on my Schedule MPG-2, this repricing reflected a reduction in MPS's embedded debt cost from 6.73% as estimated by Aquila, down to 6.56%.

**Q ARE YOU PROPOSING ANY ADJUSTMENT TO L&P'S EMBEDDED DEBT COST?**

A While I do not propose specific adjustments to L&P's embedded debt cost, I would note that that embedded debt cost appears to have been negatively impacted by Aquila's financial distress recently. L&P's embedded debt cost is significantly higher than the embedded debt cost of MPS and other Missouri utilities. Consequently, L&P's retail customers will not benefit from the significant decline in interest rates, because L&P appears to be locked out of refinancing debt instruments in support of its utility operations. Further, because it has not refinanced debt, its embedded debt cost is well above market and industry costs. Therefore, L&P's credit ratios are somewhat weaker than they otherwise would be if its debt cost was in line with market and industry costs. The impact on L&P's financial ratios will be discussed later in my testimony.

**Q HOW DO OTHER MISSOURI ELECTRIC UTILITIES DEBT COSTS COMPARE TO L&P?**

A L&P's embedded debt cost of 7.95% is significantly higher than other Missouri utilities that have recently made rate filings. Embedded debt costs for three other Missouri utilities that made rate filings in calendar year 2006 are shown below in Table 3. Generally, I reviewed the embedded debt cost of other Missouri electric utilities with a BBB bond rating, and a business profile score of 5 or 6. These utilities include AmerenUE, Kansas City Power & Light, and Empire District Electric. Based on recent filings by those companies, their embedded debt costs were as shown in Table 3 below.

**TABLE 3**

**Proxy Missouri Utility Embedded Debt Cost**

| Utility | Bond Rating[1] | S&P Business Profile Score | Year | Embedded Debt Cost |
|---|---|---|---|---|
| AmerenUE | BBB+ | 5 | 2006 | 5.473%[2] |
| KCP&L | BBB | 6 | 2006 | 6.160%[3] |
| Empire District | BBB- | 6 | 2006 | 7.020%[4] |
| MPS | | | 2006 | 6.73% |
| L&P | | | 2006 | 7.95% |

Source: [1]S&P: U.S. Utility and Power Ranking List, May 26, 2006
[2]Nickloy Supplemental Direct ER-2007-002
[3]Hadaway Direct at 7, ER-2006-0314
[4]ER – 2006 – 0315 at 26.

As shown above in Table 3, other Missouri utilities have embedded debt costs in the range of approximately 5.5% to 7.0%. MPS's embedded debt cost, as I adjusted above, of 6.56% generally falls within this range.

L&P's embedded debt cost is significantly above market and deserves some attention and comment by Aquila in this proceeding. Specifically, the Commission should direct Aquila to identify how it can refinance L&P's embedded debt to bring it down to market levels, and explain all restrictions it will encounter for refinancing this debt. Refinancing is critical to allow L&P's customers to benefit from today's very low capital market costs and to protect them from Aquila Corporation's financial restructuring.

**Q AQUILA WITNESS EMPSON OFFERED SOME TESTIMONY CONCERNING A RING FENCE PROTECTION OF AQUILA'S MISSOURI UTILITY CREDIT RATING RELATIVE TO ITS OVERALL CORPORATE RISK. DO YOU BELIEVE THAT AQUILA'S MISSOURI UTILITY ASSETS ARE REASONABLY RING FENCE PROTECTED FROM AQUILA CORP.?**

A No. I am not aware of a universal accepted definition of ring fence protection. However, the way I have seen it used in regulatory proceedings deals with isolating the utility's cash flows and access to capital from the risk and capital access limitations that might be imposed on affiliates of the utility. As such, in my opinion, a reasonable ring fenced utility would contain the following attributes:

1. A stand-alone bond rating based predominately on the utility's credit rating financial metrics and business risk.

2. Limitation on cash movements from the utility to the parent company and other affiliates. The utility should only be allowed to participate in money pool agreements with other regulated utility affiliates, and the parent company should be permitted to only loan money to a money pool, not borrow from the pool.

3. Dividend payments to the parent, in a holding company structure, should be contingent on meeting regulatory capital structure and common equity targets and the regulator should have authority to impose financial penalties on utility management if regulator dividend restrictions are not followed.

These types of ring fence credit protections have allowed utilities that operate in the states of Wisconsin and Oregon to strengthen their credit standing and access to debt capital during periods where their parent company, or affiliate companies, was undergoing financial distress.

**Q IN YOUR OPINION, DO AQUILA'S MISSOURI UTILITY ASSETS HAVE ADEQUATE RING FENCE PROTECTION FROM AQUILA CORPORATION?**

A No. Aquila's Missouri utilities are integrated into Aquila Corporation, do not have stand-alone credit ratings and there is no restriction on movement of cash from Missouri utility assets into consolidated corporate operations.

In my opinion, Aquila's cost assignment process in a rate proceeding is not a substitute for adequate utility ring fence protections. While this may help regulators to set rates based on hypothetical utility cost estimates, it does not help to assure the utility will have the access to capital needed to assure its ability to provide reliable and high quality utility service. Aquila's consolidated corporation structure, in my judgment, does not reasonably ring-fence the Missouri utility's stand-alone credit strength and access to capital.

**Q DO YOU HAVE ANY OTHER COMMENTS CONCERNING MR. EMPSON'S REPRESENTATION ON STAND-ALONE RATEMAKING PRINCIPLES?**

A Yes. Mr. Empson quoted a Missouri Public Service Commission Staff report on Aquila that stated as follows:

> "Instead of using Aquila's actual cost of debt and equity, the Commission could impute debt and equity rates that it considers reasonable for Aquila's Missouri utilities."

This is significant because, as I stated above, L&P's embedded cost of debt is significantly above market, and significantly higher than other utilities' debt cost. Aquila's testimony does not explain why L&P's cost of debt is out of line with market costs and industry debt costs, and such a demonstration is necessary in order to fulfill this parameter identified in the Staff report that Mr. Empson stated he agreed with in his testimony (Empson direct at 9-10).

As such, I recommend the Commission direct Aquila to explain why L&P's cost of debt is above market and above industry averages, and why an imputed cost of debt for L&P would not be appropriate for this proceeding.

**Q IF THE COMMISSION WOULD BELIEVE AN IMPUTED DEBT COST FOR L&P IS APPROPRIATE, DO YOU RECOMMEND AN ADJUSTED EMBEDDED DEBT COST FOR L&P?**

A If the Commission finds an imputed cost for L&P is justified, then I recommend an adjusted embedded debt cost of 6.56% for L&P. This is based on MPS's embedded cost of debt. As demonstrated above, this adjusted embedded debt cost reflects the repricing of all maturing MPS embedded debt cost, and results in an embedded debt cost that is reasonably comparable to other Missouri utilities in recent rate filings.

**Q IS DR. HADAWAY'S USE OF A S&P BUSINESS PROFILE SCORE OF 6 REASONABLE?**

A Yes. I will not take issue with Dr. Hadaway's use of a business profile score of 6 for two reasons. First, Aquila's system-wide business profile score is 8, which is more risky than a business profile score of 6. Aquila's higher business profile score is attributable to its higher risk non-regulated investments and unwinding restructuring

activities, which are not related to the low risk, regulated utility operations in Missouri. Also, a business profile score of 6 is the same S&P rating assigned to other Missouri electric utility operations as listed in Table 3 above.

**Q WHAT OVERALL RATE OF RETURN DO YOU RECOMMEND FOR MPS AND L&P IN THIS PROCEEDING?**

A As shown on Schedule MPG-3, I recommend the Commission set MPS's and L&P's overall rate of return at 8.20% and 8.92%, respectively. MPS's overall rate of return is based on Dr. Hadaway's hypothetical capital structure, my recommended return on equity for Aquila's Missouri utility operations of 10.0%, and my adjusted cost of debt of 6.56%. L&P's overall rate of return is based on Dr. Hadaway's hypothetical capital structure and my recommended return on equity for Aquila's Missouri utility operations of 10.0%

## RETURN ON COMMON EQUITY

**Q PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A REGULATED COMPANY'S COST OF COMMON EQUITY.**

A In general, determining a fair cost of common equity for a regulated utility has been framed by two decisions of the U.S. Supreme Court, in Bluefield Water Works & Improvement Co. v. Public Serv. Comm'n of West Virginia, 26 U.S. 679 (1923) and Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

These decisions identify the general standards to be considered in establishing the cost of common equity for a public utility. Those general standards are that the authorized return should: (1) be sufficient to maintain financial integrity;

(2) attract capital under reasonable terms; and (3) be commensurate with returns investors could earn by investing in other enterprises of comparable risk.

**Q PLEASE DESCRIBE WHAT IS MEANT BY "UTILITY'S COST OF COMMON EQUITY."**

A The utility's cost of common equity is the return investors expect, or require, in order to make an investment. Investors expect to achieve their return requirement from receiving dividends and stock price appreciation.

**Q PLEASE DESCRIBE THE METHODS YOU HAVE USED TO ESTIMATE THE COST OF COMMON EQUITY FOR AQUILA.**

A I have used several models based on financial theory to estimate Aquila's cost of common equity. These models are: (1) the constant growth discounted cash flow DCF model, (2) the bond yield plus equity risk premium model, and (3) a capital asset pricing model ("CAPM"). I have applied these models to a group of publicly traded utilities that I have determined represent the investment risk of an electric utility similar to Aquila. I discuss this comparable utility group below.

**Q HOW DID YOU DEVELOP A DCF ANALYSIS AND RISK PREMIUM ESTIMATES FOR AQUILA?**

A I relied on a comparable risk proxy group of electric utility companies to estimate a fair return on equity for Aquila. As shown below, I believe this group is a reasonable risk proxy for a minimum investment grade electric utility company. As demonstrated on my Schedule MPG-4, this group has an average bond rating from S&P and

Moody's of BBB and Baa1. It has a common equity ratio of 50% from Value Line, and a common equity ratio of 46% from AUS Utility Reports.

These risk factors are reasonably comparable to Aquila's target investment grade bond rating, its proposed hypothetical capital structure, its target S&P business profile score of 6, and contains a 47.5% common equity ratio. Finally, the group average S&P business profile score is 5. Selecting a group that meets Aquila's target risk parameters is consistent with protecting the Missouri retail customers from Aquila's restructuring efforts as outlined by Aquila witness Empson. This proxy group accommodates that objective.

**Q HOW DID YOU SELECT YOUR PROXY GROUP OF ELECTRIC COMPANIES?**

A I first started with all the electric utility companies followed by the Value Line. I then removed companies that do not meet the following criteria:

1. S&P's bond rating in the BBB and A categories.
2. Moodys bond rating in the Baa and A categories.
3. Common equity ratios of total capital between 40% and 60%.
4. S&P's business profile scores in the range of 4 to 6.
5. Consensus analyst growth rates estimates available from Zacks, Reuters and Thomson Financial.
6. No significant merger and acquisition activities.
7. Not suspended dividends over the last two years.
8. Not exposed to corporate or market restructuring.

As noted above, my selection criteria resulted in a proxy group that reasonably reflects a minimum investment grade utility company, with approximately average business risk and financial risk as estimated from S&P business profile scores and the common equity ratios. I would note S&P estimates that most integrated electric

utility companies, like Aquila's Missouri utility operations, have business profile scores in the range of 4 to 6.[2] Hence, the proxy group represents an average operating business risk for integrated electric utility companies.

**Q WILL YOU PERFORM ANY TESTS TO SHOW WHETHER OR NOT THE PROXY GROUP HAS A SIGNIFICANT IMPACT ON YOUR ESTIMATED RETURN ON EQUITY FOR AQUILA?**

A Yes. I will also perform a DCF and CAPM analysis using Aquila's witness Dr. Hadaway's proxy group. While I find that certain companies included in Dr. Hadaway's election group were not a reasonable proxy of the investment risk of a typical integrated electric utility company, I will perform these studies on this group nonetheless to illustrate the reasonableness of my return on equity findings for MPS and L&P.

## DISCOUNTED CASH FLOW MODEL

**Q PLEASE DESCRIBE THE DCF MODEL.**

A The DCF model posits that a stock price is valued by summing the present value of expected future cash flows discounted at the investor's required rate of return (ROR) or cost of capital. This model is expressed mathematically as follows:

$$Po = \frac{D1}{(1+K)^1} + \frac{D2}{(1+K)^2} \quad \ldots \quad \frac{D\infty}{(1+K)^\infty} \quad \text{where} \qquad \text{(Equation 1)}$$

Po= Current stock price
D = Dividends in periods 1 - ∞
K = Investor's required return

[2] Standard & Poor's: New Business Profile Score Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised, June 2, 2004, Chart 4.

This model can be rearranged in order to estimate the discount rate or investor required return, "K." If it is reasonable to assume that earnings and dividends will grow at a constant rate, then Equation 1 can be rearranged as follows:

$$K = D1/Po + G \qquad \text{(Equation 2)}$$

K = Investor's required return
D1 = Dividend in first year
Po = Current stock price
G = Expected constant dividend growth rate

Equation 2 is referred to as the "constant growth" annual DCF model.

**Q PLEASE DESCRIBE THE INPUTS TO YOUR CONSTANT GROWTH DCF MODEL.**

A As shown under Equation 2 above, the DCF model requires a current stock price, expected dividend, and expected growth rate in dividends.

**Q WHAT STOCK PRICE AND DIVIDEND HAVE YOU RELIED ON IN YOUR CONSTANT GROWTH DCF MODEL?**

A I relied on the average of the weekly high and low stock prices over a 13-week period ending December 29, 2006. An average stock price is less susceptible to market price variations than is a spot price. Therefore, an average stock price is less susceptible to aberrant market price movements, which may not be reflective of the stock's long-term value.

A 13-week average stock price is short enough to contain data that reasonably reflects current market expectations, but is not too short a period to be susceptible to market price variations that may not be reflective of the security's long-term value. Therefore, in my judgment, a 13-week average stock price is a reasonable balance between the need to reflect current market expectations and to

capture sufficient data to smooth out aberrant market movements. I used the most recently paid quarterly dividend, as reported in the Value Line Investment Survey. This dividend was annualized (multiplied by 4) and adjusted for next year's growth to produce the D1 factor for use in Equation 2 above.

**Q WHAT DIVIDEND GROWTH RATES HAVE YOU USED IN YOUR DCF MODEL?**

A There are several methods one can use in order to estimate the expected growth in dividends. However, for purposes of determining the market required return on common equity, one must attempt to estimate what the consensus of investors believes the dividend or earnings growth rate will be, and not what an individual investor or analyst may use to form individual investment decisions.

Security analysts' growth estimates have been shown to be more accurate predictors of future returns than growth rates derived from historical data[3/] because they are more reliable estimates, and assuming the market generally makes rational investment decisions, analysts' growth projections are the most likely growth estimates that are built into stock prices.

For my constant growth DCF analysis, I have relied on a consensus, or mean, of professional security analysts' earnings growth estimates as a proxy for the investor consensus dividend growth rate expectations. I used the average of three sources of customer growth rate estimates, including Zack's Detailed Analyst Estimates, and Reuters First Call. All consensus analyst projections used were available on January 4 and January 16, 2007, as reported on-line. Each consensus growth rate projection is based on a survey of security analysts. The consensus

[3] *See e.g.*, David Gordon, Myron Gordon, and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management, Spring 1989.

estimate is a simple arithmetic average or mean of surveyed analysts' earnings growth forecasts. A simple average of the growth forecast gives equal weight to all surveyed analysts' projections. It is problematic as to whether any particular analyst's forecast is most representative of general market expectations. Therefore, a simple average, or arithmetic mean, analyst forecast is a good proxy for market consensus expectations. The growth rates I used in my DCF analysis are shown on Schedule MPG-5.

**Q WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?**

A As shown on my Schedule MPG-6, page 1, my DCF return for my comparable group is 9.4%. As shown on page 2 of this schedule, using Dr. Hadaway's comparable group, my DCF model produces a return on equity of 9.5%.

**Q DO YOU HAVE ANY COMMENTS CONCERNING THE RESULTS OF YOUR DCF ANALYSIS?**

A Yes. I believe the results of my constant growth DCF analysis, and a DCF analysis in general in today's marketplace, reflect rational investment financial metrics and reflect today's very low cost capital market. Therefore, the DCF results are reasonable.

**Q WHY DO YOU BELIEVE YOUR DCF REFLECTS CONSERVATIVE GROWTH PROJECTIONS?**

A The consensus analysts' growth rate for my comparable groups is 5.33% and Dr. Hadaway's is 5.16%. These growth rates are reasonable for several factors. First, these growth rates are reasonably comparable to the five to ten-year projected GDP growth of 5.1%, and considerably higher than the five-year projected GDP inflation

growth of 2.1%.[4] The two-year GDP growth is projected to be 5.5%, and GDP inflation rate is 2.2%.[5]

Utilities' dividend growth cannot sustain a growth rate that exceeds the growth rate of the overall economy. The growth rate of the utility's service territory is the proxy for the sustainable long-term growth rate of earnings. Utilities invest in plant to meet sales growth, and sales growth in turn is tied to economic activity. Hence, nominal GDP growth is a proxy for the highest sustainable long-term growth rate of the utility.

However, growth of utility companies has historically been tied to the growth rate of inflation. This is caused because utilities typically pay out a very high percentage of earnings as dividends, thus limiting the reinvestment of earnings and the growth to their company business platforms. The growth rate used in my DCF analysis is much higher than expected inflation rates, and nears the maximum sustainable growth estimate as proxied by the GDP growth factor. This clearly indicates a very strong and relatively high growth rate used in my DCF estimate.

Moreover, a projected growth rate of 5.33% and 5.16% is considerably higher than the historical growth rate the proxy group has achieved over the last five to ten years, and that projected over the next three to five years. As shown on Schedule MPG-7, pages 1 and 2, the historical growth of my proxy group's dividend is substantially lower than the nominal GDP growth, and actually less than the projected inflation growth. Importantly, my use of a growth rate that exceeds the projected growth of inflation and is approaching the projected growth of nominal GDP growth

[4] Blue Chip Economic Forecasts, October 10, 2006, at 15.

[5] Blue Chip Financial Forecasts, December 1, 2006 at 2.

and illustrates the conservative nature of this growth projection and the robust nature of the DCF results.

**Q WHY DO YOU BELIEVE YOUR DCF REFLECTS RATIONAL COMPANY FINANCIAL METRICS AND DIVIDEND EXPECTATIONS?**

A The dividend fundamentals of companies included in my comparable groups show strong and consistent earnings strength in relation to dividends. This indicates that current and projected earnings support dividends and permit the continued predictable growth in dividends.

For example, my and Dr. Hadaway's comparable groups have 2005 dividend payout ratios of approximately 73% and 117%, respectively, and dividend to book ratios of approximately 6.4% and 6.9%, respectively. The dividend payout ratio represents the percentage of earnings paid out as dividends. Traditionally, utility companies have paid out approximately 70% of their earnings as dividends. My group average Value Line's three to five-year projected dividend to book and payout ratios are 6.0% and 61%, respectively. Dr. Hadaway's group average Value Line's three to five-year projected dividend to book and payout ratios are 6.9% and 65%, respectively. Hence, a payout ratio of 61% and 65% suggests that the companies' earnings will support dividends and retain earnings to produce earnings and dividend growth going forward.

Also, a dividend to book ratio of 6.0%-7.0% indicates that these dividend payments are affordable in today's low capital cost environment. In essence, companies need to earn 6.0%-7.0% on their book value in order to produce earnings to pay their dividends. With authorized returns dropping in response to significant

declines in capital market costs, these low cost dividends will be supported in today's lower authorized equity returns.

## RISK PREMIUM MODEL

**Q PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.**

A This model is based on the principle that investors require a higher ROR to assume greater risk. Common equity investments have greater risk than bonds because bonds have more security of payment in bankruptcy proceedings than common equity and the coupon payments on bonds represent contractual obligations. In contrast, companies are not required to pay dividends on common equity, or to guarantee returns on common equity investments. Therefore, common equity securities are considered to be more risky than bond securities.

This risk premium model is based on two estimates of an equity risk premium. First, I estimated the difference between the required return on utility common equity investments and Treasury bonds. The difference between the required return on common equity and the bond yield is the risk premium. I estimated the risk premium on an annual basis for each year over the period 1986 through September 2006 the common equity required returns were based on regulatory commission-authorized returns for electric utility companies. Authorized returns are typically based on expert witnesses' estimates of the contemporary investor required return.

The second equity risk premium method is based on the difference between regulatory commission authorized returns on common equity and contemporary A-rated utility bond yields. This time period was selected because over the period 1986 through September 2006, public utility bond yields have consistently traded at a premium to book value. This is illustrated on my Schedule MPG-8, where the market

to book ratio since 1986 for the electric utility industry was consistently above 1.0. Therefore, over this time period, regulatory authorized returns were sufficient to support market prices that at least exceeded book value. This is an indication that regulatory authorized returns on common equity supported a utility's ability to issue additional common stock, without diluting existing shares. This is an indication that utilities were able to access equity markets without a detrimental impact on current shareholders.

Based on this analysis, as shown on Schedule MPG-9, the average indicated equity risk premium of authorized electric utility common equity returns over U.S. Treasury bond yields has been 5.0%. Of the 21 observations, 15 indicated risk premiums fall in the range of 4.4% to 5.9%. Since the risk premium can vary depending upon market conditions and changing investor risk perceptions, I believe using an estimated range of risk premiums provides the best method to measure the current return on common equity using this methodology.

As shown on Schedule MPG-10, the average indicated authorized electric utility common equity returns over contemporary Moody's utility bond yields was 3.64% over the period 1986 through September 2006. The equity risk premium estimates based on this analysis primarily fall in the range of 3.0% to 4.4% over this time period.

**Q BASED ON HISTORICAL DATA, WHAT RISK PREMIUM HAVE YOU USED TO ESTIMATE AQUILA'S COST OF EQUITY IN THIS PROCEEDING?**

A The equity risk premium should reflect the relative market perception of risk in the utility industry today. I have gauged investor perceptions in utility risk today on Schedule MPG-11. On that schedule, I show the yield spread between utility bonds

and Treasury bonds over the last 27 years. As shown on this schedule, the current utility bond yield spreads for "A" rated and "Baa" rated utility bonds are 1.08% and 1.33%, respectively. These utility bond yield spreads over Treasury bond yields are among the lowest yield spreads in the last 26 years, and are below the 26-year average "A" and "Baa" yield spreads of 1.58% and 1.94%, respectively. Hence, this comparison of utility bond yield spreads indicates the market perception of utility risk to be below the average industry risk over this historical time period.

Recognizing a robust nature and the current market's low-risk valuation of utility investments, I believe it is appropriate to use an average market equity risk premium to estimate the current market-required return on equity. Hence, I relied on a market equity premium over Treasury bonds of 5.2% (midpoint of the 4.4% to 5.9% range), and an equity risk premium over utility bond yields of 3.7% (midpoint of the 3.0% to 4.4% range), as described above.

**Q HOW DID YOU ESTIMATE AQUILA'S COST OF COMMON EQUITY WITH THIS MODEL?**

A I added a projected long-term Treasury bond yield to my estimated equity risk premium over Treasury yields. Blue Chip Financial Forecasts projects the 30-year Treasury bond yields to be 5.0%, and a 10-year Treasury bond to be 4.9% (Blue Chip Financial Forecast, December 1, 2006 at 2). Using the projected 30-year bond yield of 5.0%, and an equity risk premium of 4.4% to 5.9%, produces an estimated common equity return in the range of 9.4% to 10.9%, with a mid-point estimate at 10.2%.

I next added my equity risk premium over utility bond yields to a current 13-week average yield on "Baa" rated utility bonds for the period ending December 29,

2006 of 6.12%. This current "Baa" utility bond yield is developed on Schedule MPG-12. Adding the utility bond equity premium of 3.0% to 4.4% to a "Baa" rated bond yield of 6.12% produces a cost of equity in the range of 9.1% to 10.5%, with a mid-point of 9.8%.

My risk premium analyses produce a return estimate in the range of 9.8% to 10.2%, with a mid-point estimate of 10.0%.

## CAPITAL ASSET PRICING MODEL

**Q PLEASE DESCRIBE THE CAPM.**

A The CAPM method of analysis is based upon the theory that the market required ROR for a security is equal to the risk-free ROR, plus a risk premium associated with the specific security. This relationship between risk and return can be expressed mathematically as follows:

Ri = Rf + Bi x (Rm - Rf) where:

Ri = Required return for stock i
Rf = Risk-free rate
Rm = Expected return for the market portfolio
Bi = Beta - Measure of the risk for stock;

The stock specific risk term in the above equation is beta. Beta represents the investment risk that cannot be diversified away when the security is held in a diversified portfolio. When stocks are held in a diversified portfolio, firm-specific risks can be eliminated by balancing the portfolio with securities that react in the opposite direction to firm-specific risk factors (e.g., business cycle, competition, product mix and production limitations).

The risks that cannot be eliminated when held in diversified portfolio are nondiversifiable risks. Nondiversifiable risks are related to the market in general and

are referred to as systematic risks. Risks that can be eliminated by diversification are regarded as nonsystematic risks. In a broad sense, systematic risks are market risks, and nonsystematic risks are business risks. The CAPM theory suggests that the market will not compensate investors for assuming risks that can be diversified away. Therefore, the only risk that investors will be compensated for are systematic or nondiversifiable risks. The beta is a measure of the systematic or nondiversifiable risks.

**Q PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.**

A The CAPM requires an estimate of the market risk-free rate, the company's beta, and the market risk premium.

**Q WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE RATE?**

A I used Blue Chip Financial Forecasts' projected 30-year Treasury bond yield of 5.0%. The current 30-year bond yield is 5.0% (Blue Chip Financial Forecast, December 1, 2006 at 2).

**Q WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN ESTIMATE OF THE RISK-FREE RATE?**

A Treasury securities are backed by the full faith and credit of the United States government. Therefore, long-term Treasury bonds are considered to have negligible credit risk. Also, long-term Treasury bonds have an investment horizon similar to that of common stock. As a result, investor-anticipated long-run inflation expectations are reflected in both common stock required returns and long-term bond yields. Therefore, the nominal risk-free rate (or expected inflation rate and real risk-free rate)

included in a long-term bond yield is a reasonable estimate of the nominal risk-free rate included in common stock returns.

Treasury bond yields, however, do include risk premiums related to unanticipated future inflation and interest rates. Therefore, a Treasury bond yield is not a risk-free rate. Risk premiums related to unanticipated inflation and interest rates are systematic or market risks. Consequently, for companies with betas less than one, using the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can produce an overstated estimate of the CAPM return.

**Q WHAT BETA DID YOU USE IN YOUR ANALYSIS?**

A I relied on the proxy group median Value Line beta estimate of 0.80, as shown on my Schedule MPG-13, page 1. As shown on my Schedule MPG-13, page 2, using Dr. Hadaway's proxy group, the Value Line data of 0.85 is still reasonable. I conclude that a beta in the range of 0.80 to 0.85 is reasonable for estimating a fair return for MPS and L&P in this proceeding.

**Q DO YOU RECOMMEND A CAREFUL CONSIDERATION OF A UTILITY BETA FOR USE IN A CAPM STUDY?**

A Yes. Utility betas have been increasing over the last five years, as shown on Schedule MPG-13, largely because electric utility stocks have outperformed the overall market. While this increasing beta gives the impression of increasing risk, that interpretation is incorrect.

Indeed, electric utility risk factors have been decreasing as these companies revert to a back-to-basics investment strategy that lower their operating risks, and they have been divesting non-regulated businesses to reduce debt and strengthen

balance sheets, which is lowering risk. Value Line notes this in a recent review of the electric utility industry. Value Line states as follows:

> "**Better Finances**
> This decade, utilities have distanced themselves from risky unregulated business forays, including commodities trading, foreign energy operations, water services and aircraft leasing. Currently, *Dominion Resources* plans to sell its oil and gas production business, *Duke* is spinning its mid-stream gas operations to shareholders, *Northeast Utilities* is divesting its merchant power generation business, and *Progress Energy* is shedding power plant and natural gas assets. Such actions have improved earnings performance and strengthened capital ratios. Companies are targeting a nearly equal weighting of debt and equity on their balance sheets, a goal that should be met by 2009-2011.
> Revenue-backed and tax-exempt bonds will provide economical funding for planned capital improvements. This will further support overall finances." (The Value Line Investment Survey, Electric Utility (East) Industry, December 1, 2006, p. 157)

Further, Value Line notes an increase in the common equity ratio and fixed charge coverage ratio over the last three to five years. These Value Line parameters indicate lower financial risk and stronger earnings and cash flow coverages of financial obligations. This reduces utilities' risk and limits the variability to market factors that can inhibit the utilities' ability to meet investors' earnings and cash flow expectations.

These risk reductions have resulted in robust stock return performance for electric utility stocks, as shown on my Schedule MPG-14. As illustrated on this schedule, electric utility stocks have outperformed the market over the last five years. This utility stock performance has contributed to an increase in betas and given the impression the electric utility stock variability is comparable to the overall market, but other risk factors clearly show that that is a false indication.

Reliance on the group median beta, which is a beta that is stronger that the beta has been over the last five years, is more reflective of the majority of the individual company betas included in my proxy group.

**Q HOW DID YOU DERIVE YOUR MARKET PREMIUM ESTIMATE?**

A I derived two market premium estimates, a forward-looking estimate and one based on a long-term historical average.

The forward-looking estimate was derived by estimating the expected return on the market (S&P 500) and subtracting the risk-free rate from this estimate. I estimated the expected return on the S&P 500 by adding an expected inflation rate to the long-term historical arithmetic average real return on the market. The real return on the market represents the achieved return above the rate of inflation.

The Ibbotson and Associates' Stocks, Bonds, Bills and Inflation 2006 Year Book publication estimates the historical arithmetic average real market return over the period 1926-2006 as 9.1%. A current consensus analyst inflation projection, as measured by the Consumer Price Index, is 2.3% (Blue Chip Financial Forecasts, December 1, 2006 at 2). Using these estimates, the expected market return is 11.6%.[6] The market premium then is the difference between the 11.6% expected market return, and my 5.0% risk-free rate estimate, or 6.6%.

The historical estimate of the market risk premium was also estimated by Ibbotson and Associates in the Stock, Bonds, Bills and Inflation, 2006 Year Book. Over the period 1926 through 2005, Ibbotson's study estimated that the arithmetic average of the achieved total return on the S&P 500 was 12.3%, and the total return

[6] { [ (1 + 0.091) * (1 + 0.023) ] – 1 ] } * 100.

on long-term Treasury bonds was 5.8%. The indicated equity risk premium is 6.5% (12.3% - 5.8% = 6.5%).

**Q WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?**

A As shown on Schedule MPG-15, pages 1 and 2, based on the average of the prospective market risk premium of 6.6%, a beta of 0.80 and historical market risk premium estimate of 6.5%, the CAPM estimated return on equity is 10.2%. Using a beta of 0.85 would increase the CAPM investment to 10.6%, as shown on Schedule MPG-15, Page 2.

## RETURN ON EQUITY SUMMARY

**Q BASED ON THE RESULTS OF YOUR RATE OF RETURN ON COMMON EQUITY ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY DO YOU RECOMMEND FOR AQUILA?**

A Based on my analyses, I estimate Aquila's current market cost of equity to be 10.0%.

**TABLE 4**

**Return on Common Equity Summary**

| Description | Gorman's Proxy Group | Hadaway's Proxy Group |
|---|---|---|
| Constant Growth DCF | 9.4% | 9.5% |
| Risk Premium | 10.0% | 10.0% |
| CAPM | 10.2% | 10.6% |

My recommended return on equity of 10.0% is at the mid-point of my estimated return on equity range for Aquila of 9.4% to 10.2%. The high end of my estimated range is based on my CAPM analysis, and the low end of my estimated

range is based on my DCF analysis. The midpoint of that estimated range is 9.8%. Using Dr. Hadaway's proxy group would indicate a return on equity in the range of 9.5% to 10.6%. The high end of that estimated range is based on a CAPM return using Dr. Hadaway's proxy group, the low end is based on my DCF study using Dr. Hadaway's group. The midpoint of that estimated range is 10.0%.

Based on this assessment, my recommended return on equity will fall in the range of 9.8% to 10.0%. To be conservative, I recommend Aquila's rates be set based on a 10.0% return on equity. It merely reflects Dr. Hadaway's proxy group, it is higher than I believe to be reasonable based on a more reasonable assessment of proxy companies reasonably comparable in risk to a typical integrated utility company with a minimum investment grade bond rating.

## FINANCIAL INTEGRITY

**Q WILL YOUR RECOMMENDED OVERALL RATE OF RETURN SUPPORT AQUILA'S CURRENT BOND RATING FROM S&P?**

A Yes. I have reached this conclusion by comparing the key credit rating financial ratios for MPS and L&P at my proposed capital structure and return on equity to S&P's benchmark financial ratios for an "A" rated utility and "BBB" rated utility with a business profile score of 6.

**Q PLEASE DESCRIBE S&P'S USE OF THE FINANCIAL BENCHMARK RATIOS IN ITS CREDIT RATING REVIEW.**

A S&P evaluates a utility's credit rating based on an assessment of its financial and business risks. A combination of financial and business risks equates to the overall assessment of the Company's total credit risk exposure. S&P publishes a matrix of

financial ratios that defines the level of financial risk as a function of the level of business risk.

S&P rates a utility's business risk based on a business profile score of 1, lowest risk, up to 10, highest risk. Integrated electric utilities typically have a business profile score from S&P of 4, 5 or 6.

S&P publishes ranges for three primary financial ratios that it uses as guidance in its credit review for utility companies. The three primary financial ratio benchmarks it relies on in its credit rating process include: (1) funds from operations ("FFO") to debt interest expense, (2) FFO to total debt, and (3) total debt to total capital.

**Q HOW DID YOU APPLY S&P'S FINANCIAL RATIOS TO TEST THE REASONABLENESS OF YOUR RATE OF RETURN RECOMMENDATIONS?**

A I calculated each of S&P's financial ratios based on Aquila's cost of service for retail operations and my recommended return on equity, debt and Aquila's proposed capital structure. I relied on the same credit rating analysis used by Aquila witness Dr. Hadaway on his Schedule SCH-6, page 1.

**Q PLEASE DESCRIBE THE RESULTS OF THIS CREDIT METRIC ANALYSIS FOR MPS.**

A The S&P financial metric calculations for MPS are developed on my Schedule MPG-16.

As shown on my Schedule MPG-16, based on an equity return of 10.0%, MPS will be provided an opportunity to produce a Funds From Operations ("FFO") to debt interest expense of 4.0x. This FFO to interest coverage ratio is within S&P's

benchmark ratio range for a BBB-rated utility company, with a business profile score of 6, of 4.2x to 3.0x.

MPS's total debt ratio to total capital is 53%. This is within S&P's "BBB" rated utility range of 48% to 58%.

Finally, MPS's retail operations FFO to total debt coverage at a 9.8% equity return would be 19.7%, which is again within S&P's financial metric range of 28% to 18% for a BBB-rated utility company.

**Q PLEASE DESCRIBE THE RESULTS OF YOUR CREDIT METRIC ANALYSIS FOR L&P.**

A As shown on Schedule MPG-16, based on an equity return of 10.0%, L&P will be provided an opportunity to produce a FFO to debt interest average of 3.5x. This FFO to interest is within S&P's benchmark ratio for a BBB rated utility company with a business profile score of 6, of 4.2x to 3.0x.

The debt ratio of 53% meets S&P's benchmarks for BBB rated utility. Also, the L&P FFO to total debt coverage will be 20.2%, which is within S&P's financial metric range of 28% to 18% for a BBB rated utility company.

**Q HOW ARE L&P'S FINANCIAL RATIOS IMPACTED BY ITS ABOVE-MARKET EMBEDDED DEBT COST?**

A L&P's above market and above industry average debt cost erodes its FFO. Thus, this above market cost of debt impacts its FFO to total debt ratio and FFO to interest coverage ratio. As such, if Aquila initiates an effort to bring L&P's embedded debt cost down to market and industry levels, two of its three credit ratios will be positively

impacted, which will contribute to protecting L&P's retail customers from Aquila's financial restructuring efforts.

Again, the Commission should direct Aquila to focus on reducing L&P's embedded debt cost and share Aquila's available options to refinance this above market debt cost in Aquila's rebuttal in this case, and to update it in any future rate filings, until L&P's embedded debt cost is brought down to market and industry levels. I recommend the Commission give specific attention to L&P's debt cost because it is so high in comparison to industry averages and so much higher than debt costs for a minimum investment grade utility, as evidenced by a review of other Missouri electric utility rate filings.

## DEPRECIATION EXPENSE ADJUSTMENT

**Q ARE YOU PROPOSING ANY ADJUSTMENTS TO AQUILA'S DEPRECIATION RATES?**

A Yes. I recommend that the Commission adjust the Other Production depreciation rates for Aquila.

**Q WHY ARE YOU RECOMMENDING TO ADJUST THE OTHER PRODUCTION DEPRECIATION RATES?**

A The Other Production average service lives, that were approved in a Stipulation in Case No. ER-2005-0436, are short when compared to the average service lives proposed for other utilities' Other Production plant accounts in Missouri. The average service life is one of the key components used to develop book depreciation rates.

**Q WHAT AVERAGE SERVICE LIVES WERE USED TO CALCULATE THE OTHER PRODUCTION DEPRECIATION RATES?**

A Table 5 below summarizes Aquila's average service lives for the Other Production plant accounts.

**TABLE 5**

**Other Production**
**Average Service Lives**

| Account No. | Average Service Life Years |
|---|---|
| 341 | 60 |
| 342 | 34 |
| 343 | 22 |
| 344 | 28 |
| 345 | 37 |
| 346 | 28 |

Source: Order, Case No. ER-2005-0436.

These average service lives apply to both Aquila MPS and L&P.

**Q WHAT ARE THE CONSEQUENCES OF USING AN AVERAGE SERVICE LIFE THAT IS TOO SHORT TO DEVELOP BOOK DEPRECIATION RATES?**

A Utilizing an average service life to calculate book depreciation rates that is shorter than the actual average service life results in an accelerated recovery of investment. As a result, customers near the end of the asset's actual useful life will not have included in their rate base and rates any or minimal investment associated with the assets. This produces intergenerational inequities and provides for a larger cost burden on today's ratepayers. As a result, the currently approved deprecation rates

allow Aquila to recover the investment in its Other Production assets over a life that is shorter than the useful life.

**Q WHAT IS YOUR RECOMMENDED AVERAGE SERVICE LIFE FOR THE AQUILA OTHER PRODUCTION PLANT ACCOUNTS?**

A I am recommending that the Commission utilize a 35-year average service life to develop the Other Production plant depreciation rates for Accounts 342 through 346. I am not proposing any changes to the net salvage ratio that are used to develop the depreciation rates. In addition, I support the continued use of a 60-year average service life for Account 341, Structures and Improvements.

**Q WHAT IS THE BASIS FOR RECOMMENDING A 35-YEAR AVERAGE SERVICE LIFE?**

A The basis for this recommendation is that the currently approved Other Production average service lives are short when compared to average service lives proposed for other utilities in Missouri. Specifically, AmerenUE proposed a 35-year average service life for its Other Production plant accounts. This represents a lengthening of 10 years from the lives previously approved. In addition, the MPSC Staff has proposed average service lives for Other Production significantly in excess of the lives used to develop Aquila's Other Production depreciation rates.

**Q WHY ARE YOU NOT ADJUSTING THE AVERAGE SERVICE LIFE FOR ACCOUNT 341?**

A The investment in this account is related to the site and not specific equipment used to generate electricity. The sites will continue to be used for the next generation of

Other Production generating plants. The site has access to the transmission system, therefore, the site will be useful in the future. As a result, Account 341's average service life of 60 years is reasonable. One final note, for Account 343.1, Wind Turbines, I am not proposing a revision to the average service life.

**Q WHAT LIVES HAS THE MPSC STAFF SUPPORTED FOR OTHER PRODUCTION PLANT ACCOUNTS?**

A In the Empire District Electric Company case, Case No. ER-2004-0570, the MPSC Staff witness Gregory Macias supported a composite average service life for the Other Production plant accounts that exceeded 35 years. In fact, the composite average service life for the Other Production accounts proposed by the MPSC Staff in the Empire District Electric Company case was 43 years. This reflects a 35-year life for the State Line CC. For all other Empire Other Production units, the composite average service life was 49 years. Similarly, in Ameren Electric Company's case, Case No. ER-2007-0002, the MPSC Staff proposed an average service life for all Other Production accounts of approximately 45 years. Therefore, it is clear that the lives supported by the MPSC Staff for Other Production plant accounts have exceeded 35 years that I am proposing in this case.

**Q WHAT IS THE COMPOSITE AVERAGE SERVICE LIFE FOR AQUILA'S OTHER PRODUCTION PLANTS?**

A The composite average service life for Aquila MPS and L&P is approximately 27 years. As referenced above, this is over 15 years shorter than the average service life supported by the Staff in other Missouri rate proceedings.

**Q WHAT DEPRECIATION RATES ARE YOU PROPOSING BE UTILIZED FOR AQUILA'S OTHER PRODUCTION PLANT ACCOUNTS?**

A Table 6 below shows the average service life, net salvage, and resulting depreciation rates that should be utilized to depreciate Aquila's Other Production depreciation expense.

**TABLE 6**

**Proposed Depreciation Parameters and Rates**

**Aquila Network – L&P**

| Account No. | Service Life | Net Salvage | Depreciation Rate |
|---|---|---|---|
| 341.0 | 60 years | - 5.0% | 1.75% |
| 342.0 | 35 years | - 5.0% | 3.00% |
| 343.0 | 35 years | - 5.1% | 3.00% |
| 344.0 | 35 years | -15.2% | 3.29% |
| 345.0 | 35 years | - 5.0% | 3.00% |
| 346.0 | 35 years | 0.0% | 2.86% |

**Aquila Network – MPS**

| Account No. | Service Life | Net Salvage | Depreciation Rate |
|---|---|---|---|
| 341.0 | 60 years | -4.9% | 1.75% |
| 342.0 | 35 years | -4.9% | 3.00% |
| 343.0 | 35 years | -5.8% | 3.02% |
| 343.1 | 22 years | -5.0% | 4.77% |
| 344.0 | 35 years | -6.4% | 3.04% |
| 345.0 | 35 years | -5.4% | 3.01% |
| 346.0 | 35 years | 0.0% | 2.86% |

**Q WHAT IS THE IMPACT OF YOUR RECOMMENDATIONS ON AQUILA'S DEPRECIATION EXPENSE?**

A Schedule MPG-17 shows the impact on Aquila's Other Production depreciation expense as a result of my proposed recommendations. As the Schedule shows,

utilizing a 35-year life for Accounts 342 through 346 results in reducing Aquila's depreciation expense by $2.102 million for MPS and $217,000 for L&P.

**Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

A Yes.

## Appendix A

## Qualifications of Michael Gorman

**Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A Michael P. Gorman. My business mailing address is P. O. Box 412000, 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000.

**Q PLEASE STATE YOUR OCCUPATION.**

A I am a consultant in the field of public utility regulation and a managing principal with Brubaker & Associates, Inc., energy, economic and regulatory consultants.

**Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.**

A In 1983 I received a Bachelors of Science Degree in Electrical Engineering from Southern Illinois University, and in 1986, I received a Masters Degree in Business Administration with a concentration in Finance from the University of Illinois at Springfield. I have also completed several graduate level economics courses.

In August of 1983, I accepted an analyst position with the Illinois Commerce Commission (ICC). In this position, I performed a variety of analyses for both formal and informal investigations before the ICC, including: marginal cost of energy, central dispatch, avoided cost of energy, annual system production costs, and working capital. In October of 1986, I was promoted to the position of Senior Analyst. In this position, I assumed the additional responsibilities of technical leader on projects, and my areas of responsibility were expanded to include utility financial modeling and financial analyses.

In 1987, I was promoted to Director of the Financial Analysis Department. In this position, I was responsible for all financial analyses conducted by the staff. Among other things, I conducted analyses and sponsored testimony before the ICC on rate of return, financial integrity, financial modeling and related issues. I also supervised the development of all Staff analyses and testimony on these same issues. In addition, I supervised the Staff's review and recommendations to the Commission concerning utility plans to issue debt and equity securities.

In August of 1989, I accepted a position with Merrill-Lynch as a financial consultant. After receiving all required securities licenses, I worked with individual investors and small businesses in evaluating and selecting investments suitable to their requirements.

In September of 1990, I accepted a position with Drazen-Brubaker & Associates, Inc. In April 1995 the firm of Brubaker & Associates, Inc. (BAI) was formed. It includes most of the former DBA principals and Staff. Since 1990, I have performed various analyses and sponsored testimony on cost of capital, cost/benefits of utility mergers and acquisitions, utility reorganizations, level of operating expenses and rate base, cost of service studies, and analyses relating industrial jobs and economic development. I also participated in a study used to revise the financial policy for the municipal utility in Kansas City, Kansas.

At BAI, I also have extensive experience working with large energy users to distribute and critically evaluate responses to requests for proposals (RFPs) for electric, steam, and gas energy supply from competitive energy suppliers. These analyses include the evaluation of gas supply and delivery charges, cogeneration and/or combined cycle unit feasibility studies, and the evaluation of third-party asset/supply management agreements. I have also analyzed commodity pricing

indices and forward pricing methods for third party supply agreements. Continuing, I have also conducted regional electric market price forecasts.

In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona; Corpus Christi, Texas; and Plano, Texas.

**Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?**

A Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of service and other issues before the regulatory commissions in Arizona, California, Delaware, Georgia, Illinois, Indiana, Iowa, Louisiana, Michigan, Missouri, New Mexico, New Jersey, Oklahoma, Oregon, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming, and before the provincial regulatory boards in Alberta and Nova Scotia, Canada. I have also sponsored testimony before the Board of Public Utilities in Kansas City, Kansas; presented rate setting position reports to the regulatory board of the municipal utility in Austin, Texas, and Salt River Project, Arizona, on behalf of industrial customers; and negotiated rate disputes for industrial customers of the Municipal Electric Authority of Georgia in the LaGrange, Georgia district.

**Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR ORGANIZATIONS TO WHICH YOU BELONG.**

A I earned the designation of Chartered Financial Analyst (CFA) from the Charter Financial Analyst Institute. The CFA charter was awarded after successfully completing three examinations which covered the subject areas of financial accounting, economics, fixed income and equity valuation and professional and ethical conduct. I am a member of CFA's Financial Analyst Society.

# Aquila Networks

## Accuracy of Interest Rate Forecasts

### (Long-Term Treasury Bond Yields - Projected Vs. Actual)

| Line | Date | Publication Data | | | Actual Yield in Projected Quarter (4) | Projected Yield Higher (Lower) Than Actual Yield (5) |
|---|---|---|---|---|---|---|
| | | Current Yield (1) | Projected Yield (2) | For Quarter (3) | | |
| 1 | Dec-00 | 5.8% | 5.8% | 1Q, 02 | 5.6% | 0.2% |
| 2 | Mar-01 | 5.7% | 5.6% | 2Q, 02 | 5.8% | -0.2% |
| 3 | Jun-01 | 5.4% | 5.8% | 3Q, 02 | 5.2% | 0.6% |
| 4 | Sep-01 | 5.7% | 5.9% | 4Q, 02 | 5.1% | 0.8% |
| 5 | Dec-01 | 5.5% | 5.7% | 1Q, 03 | 4.9% | 0.8% |
| 6 | Mar-02 | 5.3% | 5.9% | 2Q, 03 | 4.7% | 1.2% |
| 7 | Jun-02 | 5.6% | 6.2% | 3Q, 03 | 5.2% | 1.0% |
| 8 | Sep-02 | 5.8% | 5.9% | 4Q, 03 | 5.2% | 0.7% |
| 9 | Dec-02 | 5.2% | 5.7% | 1Q, 04 | 4.9% | 0.8% |
| 10 | Mar-03 | 5.1% | 5.7% | 2Q, 04 | 5.4% | 0.3% |
| 11 | Jun-03 | 5.0% | 5.4% | 3Q, 04 | 5.1% | 0.3% |
| 12 | Sep-03 | 4.7% | 5.8% | 4Q, 04 | 4.9% | 0.9% |
| 13 | Dec-03 | 5.2% | 5.9% | 1Q, 05 | 4.8% | 1.1% |
| 14 | Mar-04 | 5.2% | 5.9% | 2Q, 05 | 4.6% | 1.3% |
| 15 | Jun-04 | 4.9% | 6.2% | 3Q, 05 | 4.5% | 1.7% |
| 16 | Sep-04 | 5.4% | 6.0% | 4Q, 05 | 4.8% | 1.2% |
| 17 | Dec-04 | 5.1% | 5.8% | 1Q, 06 | 4.6% | 1.2% |
| 18 | Mar-05 | 4.9% | 5.6% | 2Q, 06 | 5.1% | 0.5% |
| 19 | Jun-05 | 4.8% | 5.5% | 3Q, 06 | 5.0% | 0.5% |
| 20 | Sep-05 | 4.6% | 5.2% | 4Q, 06 | | |
| 21 | Oct-05 | 4.5% | 5.2% | 1Q, 07 | | |
| 22 | Nov-05 | 4.5% | 5.3% | 1Q, 07 | | |
| 23 | Dec-05 | 4.5% | 5.3% | 1Q, 07 | | |
| 24 | Jan-06 | 4.8% | 5.3% | 2Q, 07 | | |
| 25 | Feb-06 | 4.8% | 5.1% | 2Q, 07 | | |
| 26 | Mar-06 | 4.8% | 5.1% | 2Q, 07 | | |
| 27 | Apr-06 | N/A | 5.1% | 3Q, 07 | | |
| 28 | May-06 | 4.6% | 5.2% | 3Q, 07 | | |
| 29 | Jun-06 | 4.6% | 5.3% | 3Q, 07 | | |
| 30 | Jul-06 | 5.1% | 5.3% | 4Q, 07 | | |
| 31 | Aug-06 | 5.1% | 5.3% | 4Q, 07 | | |
| 32 | Sep-06 | 5.1% | 5.2% | 4Q, 07 | | |
| 33 | Oct-06 | 5.0% | 5.1% | 1Q, 08 | | |
| 34 | Nov-06 | 5.0% | 5.1% | 1Q, 08 | | |
| 35 | Dec-06 | 5.0% | 5.0% | 1Q, 08 | | |

Source:
Blue Chip Financial Forecasts, Various Dates.

Michael Gorman
Schedule MPG-1

# Aquila Networks

## Embeded Cost of Debt Adjustment- MPS

| Assigned Debt | Repriced At | Effective Rate | 224001-122 MPD Elec Dist | 224001-121 MPD Elec Trans | 224001-123 MPG | MO Electric Assigned Debt | MO Electric Annual Interest | MO Electric Weighted Avg Cost of Debt |
|---|---|---|---|---|---|---|---|---|
| 30 Yr 8.27%, Due 11/15/21<br>Effective Rate 8.502% | | 8.502% | 12,771,000 | 3,494,000 | 7,889,962 | 24,154,962 | 2,053,656 | |
| 15 Yr 8.2%, Due 1/15/07<br>**Effective Rate 9.114%** | **6.3%** | **6.300%** | **9,629,000** | **2,517,000** | **2,756,000** | **14,902,000** | **938,826** | |
| 30 Yr 8.0%, Due 3/1/23<br>Effective Rate 8.129% | | 8.129% | 7,421,000 | 1,452,000 | 3,686,000 | 12,559,000 | 1,020,924 | |
| Sr 6.70%, Due 10/15/06<br>**Effective Rate 6.745%** | **6.3%** | **6.300%** | **35,619,752** | **12,208,967** | **10,967,712** | **58,796,431** | **3,704,175** | |
| Sr 11.875% (downgrade 14.875%), Due 7/1/12<br>Effective Rate 5.35% (10/01/04) | | 5.350% | 69,954,461 | 16,976,000 | 21,133,500 | 108,063,961 | 5,781,420 | |
| Wamego 96, Due 3/1/26<br>Effective Rate 2.441% | | 2.980% | 2,921,000 | 1,050,000 | 2,644,000 | 6,615,000 | 194,424 | |
| Environ Improve, Due 5/1/28<br>Effective Rate 2.404% | | 3.020% | 0 | 0 | 5,000,000 | 5,000,000 | 153,900 | |
| Sanwa Bank Loan, Due 12/9/09<br>Effective Rate 7.02% | | 7.020% | 0 | 0 | 3,192,865 | 3,192,865 | 224,136 | |
| Sr 11.875% (downgrade 14.875%), Due 7/1/12<br>Effective Rate 6.05% (7/15/04) | | 6.050% | 59,655,000 | 121,000 | 6,395,000 | 66,171,000 | 4,003,344 | |
| Sr 7.625%, Due 11/15/09<br>Effective Rate 7.742% | | 7.742% | 10,591,084 | 6,800,000 | 33,774,000 | 51,165,084 | 3,961,200 | |
| Sr 7.95% (downgrade 9.95%), Due 2/1/11<br>Effective Rate 8.01% | | 8.010% | 21,437,203 | 6,314,033 | 39,829,326 | 67,580,562 | 5,413,200 | |
| **Total** | | | 229,999,500 | 50,933,000 | 137,268,365 | 418,200,865 | 27,449,205 | 6.564% |

Source:
Schedule SCH-2, Page 1, Revised.
Bold indicates repriced debt issuance.

# Aquila Networks

## Overall Rate of Return

### Misouri Public Service Company

| Line | Discription | Weight (1) | Cost (2) | Weighted Cost (3) |
|---|---|---|---|---|
| 4 | Total Debt | 52.5% | 6.56% | 3.45% |
| 5 | Common Equity | 47.5% | 10.00% | 4.75% |
| 6 | **Total** | **100.0%** | | **8.20%** |

### St. Joseph Light & Power Company

| Line | Discription | Weight (1) | Cost (2) | Weighted Cost (3) |
|---|---|---|---|---|
| 1 | Total Debt | 52.5% | 7.95% | 4.17% |
| 2 | Common Equity | 47.5% | 10.00% | 4.75% |
| 3 | **Total** | **100.0%** | | **8.92%** |

Source:
Hadaway Direct at 9.

# Aquila Networks

## Comparable Group

| Line | Electric Utility | Bond Ratings S&P[1] (1) | Bond Ratings Moody's[1] (2) | Business Profile Rating[3] (3) | 2005 Common Equity Ratios Value Line[2] (4) | 2005 Common Equity Ratios AUS (5) |
|---|---|---|---|---|---|---|
| 1 | Ameren Corp. | BBB | Baa1 | 6 | 53% | 50% |
| 2 | DTE Energy | BBB+ | A3 | 6 | 45% | 40% |
| 3 | FirstEnergy Corp. | BBB | Baa1 | 6 | 52% | 44% |
| 4 | IDACORP, Inc. | A- | A3 | 5 | 50% | 49% |
| 5 | NiSource Inc. | BBB | Baa2 | 4 | 48% | 43% |
| 6 | OGE Energy | BBB+ | Baa2 | 6 | 51% | 52% |
| 7 | Pinnacle West Capital | BBB- | Baa1 | 5 | 57% | 52% |
| 8 | Puget Energy Inc. | BBB | Baa2 | 4 | 46% | 40% |
| 9 | Xcel Energy Inc. | BBB+ | A3 | 5 | 47% | 43% |
| 10 | **Average** | **BBB** | **Baa1** | **5** | **50%** | **46%** |
| 11 | Aquila | BB- | B2 | 6 | 47.5%[4] | |

Sources:

[1] AUS Utility Reports; December, 2006.

[2] The Value Line Investment Survey; September 29, November 10, December 1, 2006.

[3] U.S. Utilities and Power Ranking List, May 26, 2006.

[4] Hadaway Direct at 9.

# Aquila Networks

## Growth Rate Estimates

| Line | Electric Utility | Zacks Estimated Growth %[1] (1) | Zacks Number of Estimates[1] (2) | Reuters Estimated Growth %[2] (3) | Reuters Number of Estimates[2] (4) | Thomson Estimated Growth %[3] (5) | Thomson Number of Estimates[3] (6) | AVG of Growth Rates (7) |
|---|---|---|---|---|---|---|---|---|
| 1 | Ameren Corp. | 6.10% | 5 | 7.00% | 6 | 5.60% | 5 | 6.23% |
| 2 | DTE Energy | 5.67% | 3 | 5.50% | 6 | 5.00% | 1 | 5.39% |
| 3 | FirstEnergy Corp. | 5.80% | 5 | 6.17% | 6 | 6.75% | 4 | 6.24% |
| 4 | IDACORP, Inc. | 5.00% | 2 | 4.67% | 3 | 4.67% | 3 | 4.78% |
| 5 | NiSource Inc. | 3.33% | 6 | 3.43% | 7 | 3.33% | 6 | 3.36% |
| 6 | OGE Energy | 5.00% | 1 | 7.00% | 1 | 7.00% | 1 | 6.33% |
| 7 | Pinnacle West Capital | 6.75% | 4 | 6.10% | 6 | 5.00% | 3 | 5.95% |
| 8 | Puget Energy Inc. | N/A | N/A | 4.60% | 5 | 4.83% | 3 | 4.72% |
| 9 | Xcel Energy Inc. | 4.33% | 6 | 5.14% | 7 | 6.40% | 5 | 5.29% |
| 10 | **Average** | **5.25%** | **4** | **5.51%** | **5** | **5.40%** | **3** | **5.37%** |

Sources:

[1] www.zacksadvisor.com, Detailed Research on January 4, 2007.

[2] www.investor.reuters.com, Earnings Estimates on January 4, 2007.

[3] http://ec.thomsonfn.com, Earnings Estimates on January 4, 2007.

# Aquila Networks

## Growth Rate Estimates

| Line | Electric Utility | Zacks Estimated Growth %[1] (1) | Zacks Number of Estimates[1] (2) | Reuters Estimated Growth %[2] (3) | Reuters Number of Estimates[2] (4) | Thomson Estimated Growth %[3] (5) | Thomson Number of Estimates[3] (6) | AVG of Growth Rates (7) |
|---|---|---|---|---|---|---|---|---|
| 1 | Alliant Energy | 4.00% | 2 | 5.00% | 3 | 6.00% | 2 | 5.00% |
| 2 | Ameren Corp. | 6.10% | 5 | 7.00% | 6 | 6.25% | 4 | 6.45% |
| 3 | American Electric Power | 4.17% | 6 | 3.99% | 8 | 3.98% | 5 | 4.05% |
| 4 | CH Energy | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 5 | Cent. Vermount P.S. | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 6 | Consolidated Edison | 3.42% | 6 | 3.63% | 7 | 3.07% | 6 | 3.37% |
| 7 | DTE Enrgy | 5.67% | 3 | 5.50% | 6 | 4.50% | 2 | 5.22% |
| 8 | Duquesne Light | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 9 | Empire District | N/A | N/A | 3.00% | 1 | 3.00% | 1 | 3.00% |
| 10 | Energy East Corp. | 3.00% | 1 | N/A | N/A | 4.00% | 2 | 3.50% |
| 11 | Green Mountain | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 12 | Hawaiian Electric | 5.17% | 3 | 4.63% | 4 | 3.38% | 4 | 4.39% |
| 13 | MGE Energy | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 14 | NiSource Inc. | 3.33% | 6 | 3.43% | 7 | 3.33% | 6 | 3.36% |
| 15 | Northeast Utilities | 10.50% | 2 | 9.20% | 5 | 11.40% | 5 | 10.37% |
| 16 | NSTAR | 6.00% | 4 | 5.50% | 4 | 6.00% | 2 | 5.83% |
| 17 | Pinnacle West Capital | 6.75% | 4 | 6.10% | 6 | 4.90% | 4 | 5.92% |
| 18 | PPL Corporation | 9.25% | 4 | 10.33% | 9 | 10.67% | 6 | 10.08% |
| 19 | Progress Energy | 3.67% | 6 | 3.91% | 8 | 3.76% | 7 | 3.78% |
| 20 | Puget Energy, Inc. | N/A | N/A | 5.32% | 5 | 4.87% | 3 | 5.10% |
| 21 | SCANA Corp. | 4.50% | 4 | 4.35% | 6 | 4.35% | 6 | 4.40% |
| 22 | Southern Co. | 4.43% | 7 | 4.64% | 11 | 5.00% | 8 | 4.69% |
| 23 | Vectren Corp. | 4.00% | 3 | 4.00% | 3 | 4.73% | 3 | 4.24% |
| 24 | Xcel Energy, Inc. | 4.33% | 6 | 5.14% | 7 | 6.40% | 5 | 5.29% |
| 25 | **Average** | **5.19%** | **4** | **5.26%** | **6** | **5.24%** | **4** | **5.16%** |

Sources:

[1] www.zacksadvisor.com, Detailed Research on January 16, 2007.

[2] www.investor.reuters.com, Earnings Estimates on January 16, 2007.

[3] http://ec.thomsonfn.com, Earnings Estimates on January 16, 2007.

# Aquila Networks

## Constant Growth DCF Model

| Line | Electric Utility | 13-Week AVG Stock Price[1] (1) | AVG (%) Growth (2) | Annual Dividend[2] (3) | Adjusted Yield (4) | Constant Growth DCF (5) |
|---|---|---|---|---|---|---|
| 1 | Ameren Corp. | $ 53.76 | 6.23% | $ 2.54 | 5.02% | 11.25% |
| 2 | DTE Energy | $ 46.05 | 5.39% | $ 2.06 | 4.71% | 10.10% |
| 3 | FirstEnergy Corp. | $ 59.23 | 6.24% | $ 1.80 | 3.23% | 9.47% |
| 4 | IDACORP, Inc. | $ 39.13 | 4.78% | $ 1.20 | 3.21% | 7.99% |
| 5 | NiSource Inc. | $ 23.51 | 3.36% | $ 0.92 | 4.05% | 7.41% |
| 6 | OGE Energy | $ 38.79 | 6.00% | $ 1.33 | 3.64% | 9.64% |
| 7 | Pinnacle West Capital | $ 48.18 | 5.95% | $ 2.00 | 4.40% | 10.35% |
| 8 | Puget Energy Inc. | $ 24.30 | 4.72% | $ 1.00 | 4.31% | 9.03% |
| 9 | Xcel Energy Inc. | $ 22.24 | 5.29% | $ 0.89 | 4.22% | 9.51% |
| 10 | **Average** | **$ 39.46** | **5.33%** | **$ 1.53** | **4.09%** | **9.4%** |

Sources:

[1] http://moneycentral.msn.com, downloaded on November 13, 2006.

[2] The Value Line Investment Survey; September 29, November 10, Decmeber 1, 2006.

# Aquila Networks

## Constant Growth DCF Model

| Line | Hadaway's Comp. Group | 13-Week AVG Stock Price[1] (1) | AVG (%) Growth (2) | Annual Dividend[2] (3) | Adjusted Yield (4) | Constant Growth DCF (5) |
|---|---|---|---|---|---|---|
| 1 | Alliant Energy | $ 38.41 | 5.00% | $ 1.15 | 3.15% | 8.15% |
| 2 | Ameren Corp. | $ 53.76 | 6.45% | $ 2.54 | 5.03% | 11.48% |
| 3 | American Electric Power | $ 41.08 | 4.05% | $ 1.48 | 3.75% | 7.80% |
| 4 | CH Energy | $ 52.46 | N/A | $ 2.16 | N/A | N/A |
| 5 | Cent. Vermount P.S. | $ 22.20 | N/A | $ 0.92 | N/A | N/A |
| 6 | Consolidated Edison | $ 47.79 | 3.37% | $ 2.30 | 4.98% | 8.35% |
| 7 | DTE Enrgy | $ 46.05 | 5.22% | $ 2.06 | 4.71% | 9.93% |
| 8 | Duquesne Light | $ 19.86 | N/A | $ 1.00 | N/A | N/A |
| 9 | Empire District | $ 23.76 | 3.00% | $ 1.28 | 5.55% | 8.55% |
| 10 | Energy East Corp. | $ 24.49 | 3.50% | $ 1.20 | 5.07% | 8.57% |
| 11 | Green Mountain | $ 33.72 | N/A | $ 1.12 | N/A | N/A |
| 12 | Hawaiian Electric | $ 27.31 | 4.39% | $ 1.24 | 4.74% | 9.13% |
| 13 | MGE Energy | $ 34.12 | N/A | $ 1.39 | N/A | N/A |
| 14 | NiSource Inc. | $ 23.51 | 3.36% | $ 0.92 | 4.05% | 7.41% |
| 15 | Northeast Utilities | $ 26.20 | 10.37% | $ 0.75 | 3.17% | 13.53% |
| 16 | NSTAR | $ 34.73 | 5.83% | $ 1.21 | 3.69% | 9.53% |
| 17 | Pinnacle West Capital | $ 48.18 | 5.92% | $ 2.00 | 4.40% | 10.31% |
| 18 | PPL Corporation | $ 34.74 | 10.08% | $ 1.10 | 3.49% | 13.57% |
| 19 | Progress Energy | $ 46.97 | 3.78% | $ 2.42 | 5.35% | 9.13% |
| 20 | Puget Energy, Inc. | $ 24.30 | 5.10% | $ 1.00 | 4.33% | 9.42% |
| 21 | SCANA Corp. | $ 41.04 | 4.40% | $ 1.68 | 4.27% | 8.67% |
| 22 | Southern Co. | $ 36.08 | 4.69% | $ 1.55 | 4.50% | 9.19% |
| 23 | Vectren Corp. | $ 28.30 | 4.24% | $ 1.26 | 4.64% | 8.88% |
| 24 | Xcel Energy, Inc. | $ 22.24 | 5.29% | $ 0.89 | 4.22% | 9.51% |
| 10 | **Average** | **$ 34.64** | **5.16%** | **$ 1.44** | **4.37%** | **9.5%** |

Sources:

[1] http://moneycentral.msn.com, downloaded on November 13, 2006.

[2] The Value Line Investment Survey; September 29, November 10, Decmeber 1, 2006.

# Aquila Networks

## GDP and Dividend Growth Rates

| Line | Electric Group | Dividend Growth | | | Inflation (CPI)* | | | Nominal GDP* | |
|---|---|---|---|---|---|---|---|---|---|
| | | Past 5 Years[1] | Past 10 Years[1] | 3-5 Years Projection[1] | Past 5 Years[2] | Past 10 Years[2] | 3-5 Years Projection[2] | Past 5 Years[1] | Past 10 Years[1] |
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 1 | Ameren Corp. | N/A | 0.5% | N/A | | | | | |
| 2 | DTE Energy | N/A | N/A | 0.5% | | | | | |
| 3 | FirstEnergy Corp. | 2.5% | 1.5% | 5.0% | | | | | |
| 4 | IDACORP, Inc. | -6.0% | -3.0% | -2.0% | | | | | |
| 5 | NiSource Inc. | 1.0% | 3.0% | 0.5% | | | | | |
| 6 | OGE Energy | N/A | N/A | 2.0% | | | | | |
| 7 | Pinnacle West Capital | 6.5% | 11.0% | 5.0% | | | | | |
| 8 | Puget Energy Inc. | -11.5% | -6.0% | 1.5% | | | | | |
| 9 | Xcel Energy Inc. | -11.0% | -5.0% | 5.5% | | | | | |
| 10 | **Average** | **-3.1%** | **0.3%** | **2.3%** | **2.7%** | **2.5%** | **2.2%** | **5.2%** | **5.3%** |

Sources:

[1] The Value Line Investment Survey; May 12, June 2, June 30, 2006.

[2] The Value Line Investment Survey; September 29, November 10, December 1, 2006.

# Aquila Networks

## GDP and Dividend Growth Rates

| Line | Hadaway's Comp. Group | Dividend Growth: Past 5 Years[1] (1) | Dividend Growth: Past 10 Years[1] (2) | Dividend Growth: 3-5 Years Projection[1] (3) | Inflation (CPI)*: Past 5 Years[2] (4) | Inflation (CPI)*: Past 10 Years[2] (5) | Inflation (CPI)*: 3-5 Years Projection[2] (6) | Nominal GDP*: Past 5 Years[1] (7) | Nominal GDP*: Past 10 Years[1] (8) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Alliant Energy | -12.5% | -6.0% | 6.0% | | | | | |
| 2 | Ameren Corp. | N/A | 0.5% | N/A | | | | | |
| 3 | American Electric Power | -9.0% | -4.5% | 4.0% | | | | | |
| 4 | CH Energy | N/A | 0.5% | 0.5% | | | | | |
| 5 | Cent. Vermount P.S. | 0.5% | -3.0% | -1.0% | | | | | |
| 6 | Consolidated Edison | 1.0% | 1.5% | 1.0% | | | | | |
| 7 | DTE Enrgy | N/A | N/A | 0.5% | | | | | |
| 8 | Duquesne Light | -8.5% | -1.5% | N/A | | | | | |
| 9 | Empire District | N/A | N/A | N/A | | | | | |
| 10 | Energy East Corp. | 5.0% | 1.5% | 5.0% | | | | | |
| 11 | Green Mountain | 5.0% | -8.5% | 10.0% | | | | | |
| 12 | Hawaiian Electric | N/A | 0.5% | N/A | | | | | |
| 13 | MGE Energy | 1.0% | 1.0% | 0.5% | | | | | |
| 14 | NiSource Inc. | 1.0% | 3.0% | 0.5% | | | | | |
| 15 | Northeast Utilities | 30.5% | -10.0% | 6.5% | | | | | |
| 16 | NSTAR | 1.0% | 1.5% | 8.0% | | | | | |
| 17 | Pinnacle West Capital | 6.5% | 11.0% | 5.0% | | | | | |
| 18 | PPL Corporation | 8.5% | N/A | 13.5% | | | | | |
| 19 | Progress Energy | 3.0% | 3.0% | 2.0% | | | | | |
| 20 | Puget Energy, Inc. | -11.5% | -6.0% | 1.5% | | | | | |
| 21 | SCANA Corp. | 2.0% | 0.5% | 4.5% | | | | | |
| 22 | Southern Co. | 1.0% | 2.0% | 4.0% | | | | | |
| 23 | Vectren Corp. | 3.5% | N/A | 3.0% | | | | | |
| 24 | Xcel Energy, Inc. | -11.0% | -5.0% | 5.5% | | | | | |
| 25 | **Average** | **1.6%** | **-0.6%** | **3.9%** | **2.7%** | **2.5%** | **2.2%** | **5.2%** | **5.3%** |

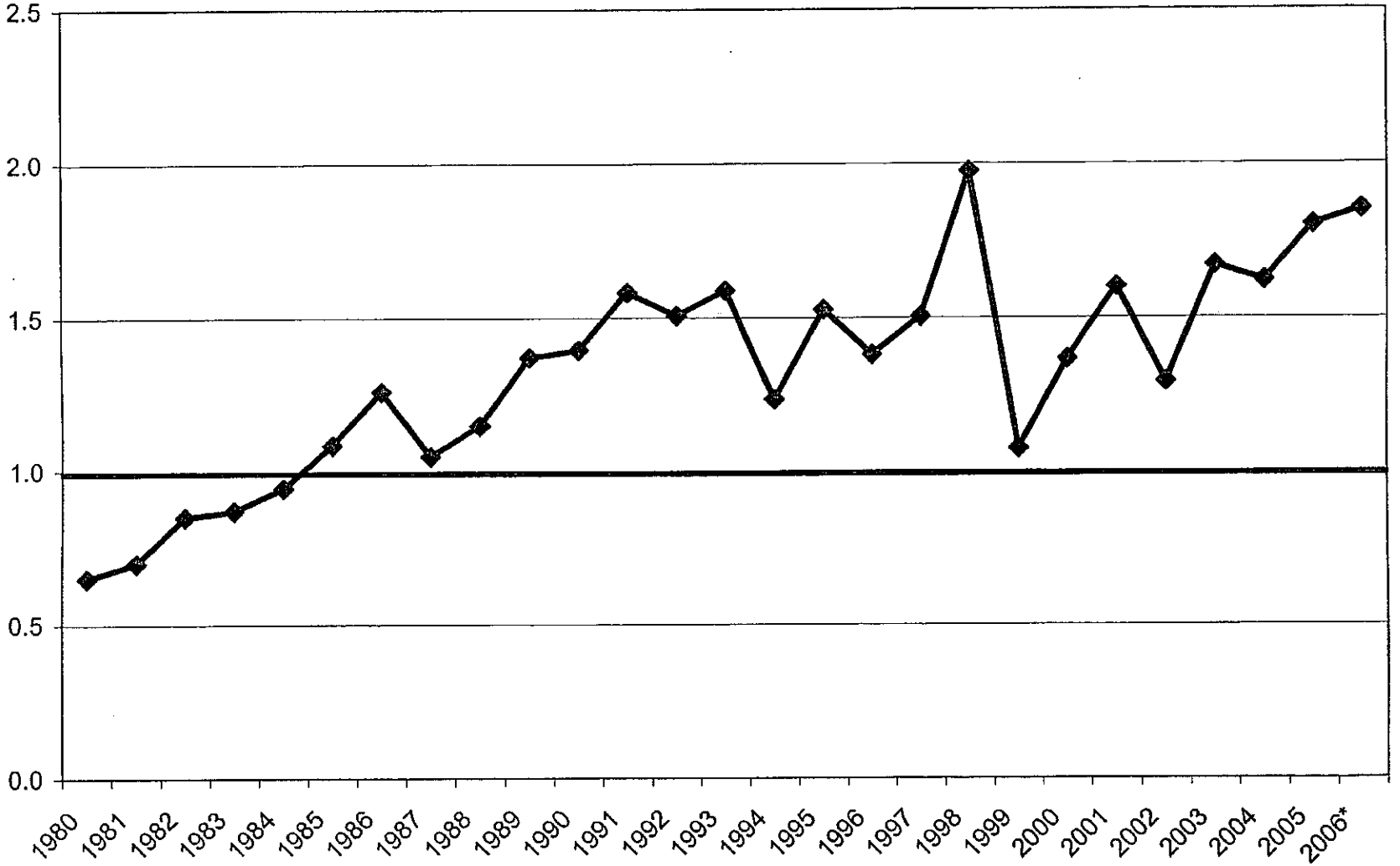
Sources:

[1] The Value Line Investment Survey; May 12, June 2, June 30, 2006.

[2] The Value Line Investment Survey; September 29, November 10, December 1, 2006.

# Aquila Networks

## Electric Common Stock Market/Book Ratio




Sources:
2002-2005: AUS Utility Reports.
1980 - 2000: Mergent Public Utility Manual, 2003; at a15, and a17.
* The data for 2006 includes the period Jan-Sept, 2006.

Michael Gorman
Schedule MPG-8

# Aquila Networks

## Equity Risk Premium - Treasury Bond

| Line | Date | Treasury Bond Yield[1] (1) | Authorized Electric Returns[2] (2) | Indicated Risk Premium (3) |
|---|---|---|---|---|
| 1 | 1986 | 7.78% | 13.93% | 6.15% |
| 2 | 1987 | 8.59% | 12.99% | 4.40% |
| 3 | 1988 | 8.96% | 12.79% | 3.83% |
| 4 | 1989 | 8.45% | 12.97% | 4.52% |
| 5 | 1990 | 8.61% | 12.70% | 4.09% |
| 6 | 1991 | 8.14% | 12.55% | 4.41% |
| 7 | 1992 | 7.67% | 12.09% | 4.42% |
| 8 | 1993 | 6.59% | 11.41% | 4.82% |
| 9 | 1994 | 7.37% | 11.34% | 3.97% |
| 10 | 1995 | 6.88% | 11.55% | 4.67% |
| 11 | 1996 | 6.71% | 11.39% | 4.68% |
| 12 | 1997 | 6.61% | 11.40% | 4.79% |
| 13 | 1998 | 5.58% | 11.66% | 6.08% |
| 14 | 1999 | 5.87% | 10.77% | 4.90% |
| 15 | 2000 | 5.94% | 11.43% | 5.49% |
| 16 | 2001 | 5.49% | 11.09% | 5.60% |
| 17 | 2002 | 5.42% | 11.16% | 5.74% |
| 18 | 2003 | 5.02% | 10.97% | 5.95% |
| 19 | 2004 | 5.05% | 10.73% | 5.68% |
| 20 | 2005 | 4.65% | 10.54% | 5.89% |
| 21 | 2006[3] | 5.05% | 10.34% | 5.29% |
| 22 | **Average** | **6.69%** | **11.70%** | **5.02%** |

Sources:

[1] Economic Report of the President, January, 2001 and the St. Louis Federal Reserve Bank Website.

[2] Regulatory Research Associates, Inc., Regulatory Focus, Jan.90-Dec.05.

[3] The data for 2006 includes the period Jan-Sept, 2006.

# Aquila Networks

## Equity Risk Premium - Utility Bond

| Line | Date | Average "A" Rating Utility Bond Yield[1] (1) | Authorized Electric Returns[2] (2) | Indicated Risk Premium (3) |
|---|---|---|---|---|
| 1 | 1986 | 9.58% | 13.93% | 4.35% |
| 2 | 1987 | 10.10% | 12.99% | 2.89% |
| 3 | 1988 | 10.49% | 12.79% | 2.30% |
| 4 | 1989 | 9.77% | 12.97% | 3.20% |
| 5 | 1990 | 9.86% | 12.70% | 2.84% |
| 6 | 1991 | 9.36% | 12.55% | 3.19% |
| 7 | 1992 | 8.69% | 12.09% | 3.40% |
| 8 | 1993 | 7.59% | 11.41% | 3.82% |
| 9 | 1994 | 8.31% | 11.34% | 3.03% |
| 10 | 1995 | 7.89% | 11.55% | 3.66% |
| 11 | 1996 | 7.75% | 11.39% | 3.64% |
| 12 | 1997 | 7.60% | 11.40% | 3.80% |
| 13 | 1998 | 7.04% | 11.66% | 4.62% |
| 14 | 1999 | 7.62% | 10.77% | 3.15% |
| 15 | 2000 | 8.24% | 11.43% | 3.19% |
| 16 | 2001 | 7.78% | 11.09% | 3.31% |
| 17 | 2002 | 7.36% | 11.16% | 3.80% |
| 18 | 2003 | 6.57% | 10.97% | 4.40% |
| 19 | 2004 | 6.01% | 10.73% | 4.72% |
| 20 | 2005 | 5.66% | 10.54% | 4.88% |
| 21 | 2006[3] | 6.14% | 10.34% | 4.20% |
| 22 | **Average** | **8.16%** | **11.70%** | **3.64%** |

Sources:

[1] Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.

[2] Regulatory Research Associates, Inc., Regulatory Focus, Jan.90-Dec.05.

[3] The data for 2006 includes the period Jan-Sept, 2006.

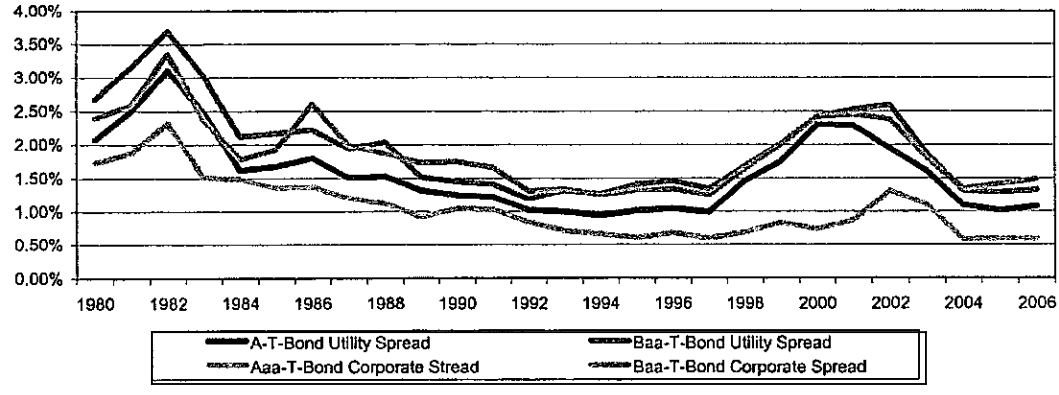
# Aquila Networks

## Annual Average Yields

| Line | Year | T-Bond Yield[1] | Public Utility Bond Yields A[2] | Public Utility Bond Yields Baa[2] | A-T-Bond Spread | Baa-T-Bond Spread | Corporate Bond Yields Aaa[1] | Corporate Bond Yields Baa[1] | Aaa-T-Bond Spread | Baa-T-Bond Spread |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 1 | 1980 | 11.27% | 13.34% | 13.95% | 2.07% | 2.68% | 11.94% | 13.67% | 1.73% | 2.40% |
| 2 | 1981 | 13.45% | 15.95% | 16.60% | 2.50% | 3.15% | 14.17% | 16.04% | 1.87% | 2.59% |
| 3 | 1982 | 12.76% | 15.86% | 16.45% | 3.10% | 3.69% | 13.79% | 16.11% | 2.32% | 3.35% |
| 4 | 1983 | 11.18% | 13.66% | 14.20% | 2.48% | 3.02% | 12.04% | 13.55% | 1.51% | 2.37% |
| 5 | 1984 | 12.41% | 14.03% | 14.53% | 1.62% | 2.12% | 12.71% | 14.19% | 1.48% | 1.78% |
| 6 | 1985 | 10.79% | 12.47% | 12.96% | 1.68% | 2.17% | 11.37% | 12.72% | 1.35% | 1.93% |
| 7 | 1986 | 7.78% | 9.58% | 10.00% | 1.80% | 2.22% | 9.02% | 10.39% | 1.37% | 2.61% |
| 8 | 1987 | 8.59% | 10.10% | 10.53% | 1.51% | 1.94% | 9.38% | 10.58% | 1.20% | 1.99% |
| 9 | 1988 | 8.96% | 10.49% | 11.00% | 1.53% | 2.04% | 9.71% | 10.83% | 1.12% | 1.87% |
| 10 | 1989 | 8.45% | 9.77% | 9.97% | 1.32% | 1.52% | 9.26% | 10.18% | 0.92% | 1.73% |
| 11 | 1990 | 8.61% | 9.86% | 10.06% | 1.25% | 1.45% | 9.32% | 10.36% | 1.04% | 1.75% |
| 12 | 1991 | 8.14% | 9.36% | 9.55% | 1.22% | 1.41% | 8.77% | 9.80% | 1.03% | 1.66% |
| 13 | 1992 | 7.67% | 8.69% | 8.86% | 1.02% | 1.19% | 8.14% | 8.98% | 0.84% | 1.31% |
| 14 | 1993 | 6.59% | 7.59% | 7.91% | 1.00% | 1.32% | 7.22% | 7.93% | 0.71% | 1.34% |
| 15 | 1994 | 7.37% | 8.31% | 8.63% | 0.94% | 1.26% | 7.96% | 8.62% | 0.66% | 1.25% |
| 16 | 1995 | 6.88% | 7.89% | 8.29% | 1.01% | 1.41% | 7.59% | 8.20% | 0.61% | 1.32% |
| 17 | 1996 | 6.71% | 7.75% | 8.17% | 1.04% | 1.46% | 7.37% | 8.05% | 0.68% | 1.34% |
| 18 | 1997 | 6.61% | 7.60% | 7.95% | 0.99% | 1.34% | 7.26% | 7.86% | 0.60% | 1.25% |
| 19 | 1998 | 5.58% | 7.04% | 7.26% | 1.46% | 1.68% | 6.53% | 7.22% | 0.69% | 1.64% |
| 20 | 1999 | 5.87% | 7.62% | 7.88% | 1.75% | 2.01% | 7.04% | 7.87% | 0.83% | 2.00% |
| 21 | 2000 | 5.94% | 8.24% | 8.36% | 2.30% | 2.42% | 7.62% | 8.36% | 0.74% | 2.42% |
| 22 | 2001 | 5.49% | 7.78% | 8.02% | 2.29% | 2.53% | 7.08% | 7.95% | 0.87% | 2.46% |
| 23 | 2002 | 5.42% | 7.36% | 8.02% | 1.94% | 2.60% | 6.49% | 7.80% | 1.31% | 2.38% |
| 24 | 2003 | 4.96% | 6.57% | 6.83% | 1.61% | 1.87% | 5.67% | 6.77% | 1.10% | 1.81% |
| 25 | 2004 | 5.05% | 6.14% | 6.37% | 1.09% | 1.32% | 5.63% | 6.39% | 0.58% | 1.34% |
| 26 | 2005 | 4.65% | 5.66% | 5.93% | 1.01% | 1.29% | 5.24% | 6.06% | 0.59% | 1.41% |
| 27 | 2006 | 4.99% | 6.07% | 6.32% | 1.08% | 1.33% | 5.59% | 6.48% | 0.60% | 1.49% |
| 28 | **Average** | **7.86%** | **9.44%** | **9.80%** | **1.58%** | **1.94%** | **8.66%** | **9.74%** | **1.07%** | **1.90%** |

### Yield Spreads

**Treasury Vs. Corporate & Treasury Vs. Utility**




Notes:

[1] St. Louis Federal Reserve Bank.

[2] Mergent Public Utility Manual 2003. Moodys Daily News Reports.

Michael Gorman
Schedule MPG-11

# Aquila Networks

## Series "A" and "Baa" Utility Bond Yields

| Line | Date | "A" Rating Utility Bond Yield (1) | "Baa" Rating Utility Bond Yield (2) |
|---|---|---|---|
| 1 | 12/29/06 | 5.95% | 6.18% |
| 2 | 12/22/06 | 5.82% | 6.06% |
| 3 | 12/15/06 | 5.85% | 6.09% |
| 4 | 12/08/06 | 5.79% | 6.03% |
| 5 | 12/01/06 | 5.68% | 5.93% |
| 6 | 11/24/06 | 5.75% | 5.99% |
| 7 | 11/17/06 | 5.80% | 6.05% |
| 8 | 11/10/06 | 5.80% | 6.04% |
| 9 | 11/03/06 | 5.93% | 6.16% |
| 10 | 10/27/06 | 5.92% | 6.17% |
| 11 | 10/20/06 | 6.04% | 6.30% |
| 12 | 10/13/06 | 6.06% | 6.33% |
| 13 | 10/06/06 | 5.97% | 6.24% |
| 14 | **Average** | **5.87%** | **6.12%** |

Source:
www.moodys.com, Bond Yields and Key Indicators.

# Aquila Networks

## Comparable Group Beta

| Line | Electric Utility | Historical Beta 2001 (1) | 2002 (2) | 2003 (3) | 2004 (4) | 2005 (5) | 5-Yr. AVG (6) | Current Beta (7) |
|---|---|---|---|---|---|---|---|---|
| 1 | Ameren Corp. | 0.55 | 0.60 | 0.65 | 0.75 | 0.75 | 0.66 | 0.75 |
| 2 | DTE Energy | 0.55 | 0.60 | 0.60 | 0.65 | 0.70 | 0.62 | 0.75 |
| 3 | FirstEnergy Corp. | 0.55 | 0.55 | 0.70 | 0.75 | 0.75 | 0.66 | 0.80 |
| 4 | IDACORP, Inc. | 0.50 | 0.60 | 0.75 | 0.85 | 0.95 | 0.73 | 1.00 |
| 5 | NiSource Inc. | 0.45 | 0.50 | 0.65 | 0.75 | 0.80 | 0.63 | 0.90 |
| 6 | OGE Energy | 0.45 | 0.55 | 0.60 | 0.70 | 0.75 | 0.61 | 0.75 |
| 7 | Pinnacle West Capital | 0.45 | 0.55 | 0.70 | 0.85 | 0.90 | 0.69 | 1.00 |
| 8 | Puget Energy Inc. | 0.55 | 0.60 | 0.65 | 0.75 | 0.80 | 0.67 | 0.80 |
| 9 | Xcel Energy Inc. | N/A | 0.60 | 0.70 | 0.80 | 0.80 | 0.73 | 0.90 |
| 10 | **Average** | **0.51** | **0.57** | **0.67** | **0.76** | **0.80** | **0.67** | **0.85** |
| 11 | **Median** | **0.53** | **0.60** | **0.65** | **0.75** | **0.80** | **0.66** | **0.80** |

Source:
The Value Line Investment Survey; September 29, November 10, Decmeber 1, 2006.

# Aquila Networks

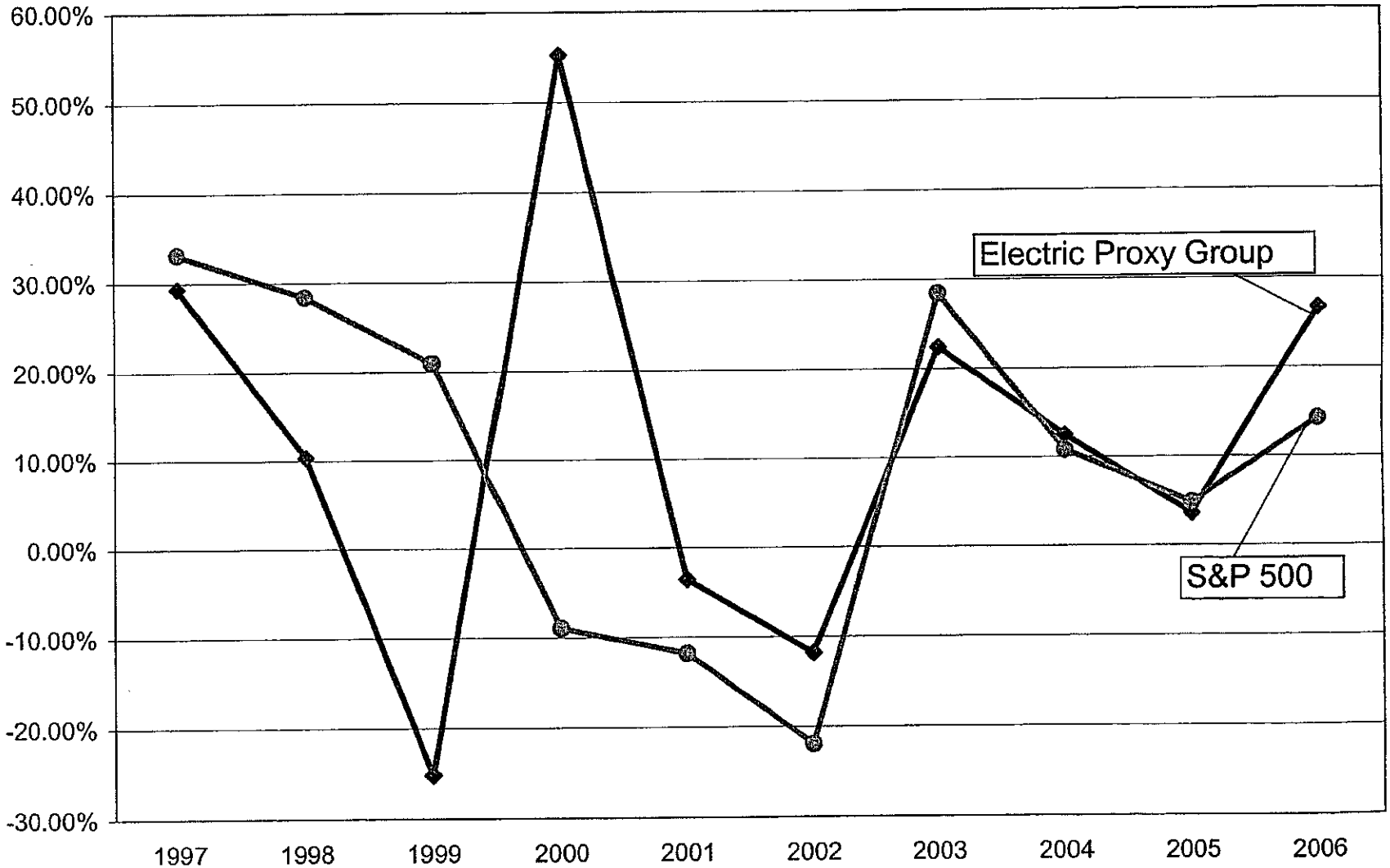
## Comparable Group Beta

| Line | Hadaway's Comp. Group | Historical Beta 2001 (1) | 2002 (2) | 2003 (3) | 2004 (4) | 2005 (5) | 5-Yr. AVG (6) | Current Beta (7) |
|---|---|---|---|---|---|---|---|---|
| 1 | Alliant Energy | 0.55 | 0.65 | 0.70 | 0.80 | 0.85 | 0.71 | 0.90 |
| 2 | Ameren Corp. | 0.55 | 0.60 | 0.65 | 0.75 | 0.75 | 0.66 | 0.75 |
| 3 | American Electric Power | 0.55 | 0.75 | 0.95 | 1.15 | 1.20 | 0.92 | 1.25 |
| 4 | CH Energy | 0.55 | 0.65 | 0.70 | 0.80 | 0.80 | 0.70 | 0.85 |
| 5 | Cent. Vermount P.S. | 0.50 | 0.50 | 0.45 | 0.50 | 0.50 | 0.49 | 0.70 |
| 6 | Consolidated Edison | 0.50 | 0.55 | 0.55 | 0.65 | 0.60 | 0.57 | 0.75 |
| 7 | DTE Enrgy | 0.55 | 0.60 | 0.60 | 0.65 | 0.70 | 0.62 | 0.75 |
| 8 | Duquesne Light | 0.45 | 0.55 | 0.65 | 0.75 | 0.85 | 0.65 | 1.00 |
| 9 | Empire District | 0.45 | 0.50 | 0.60 | 0.65 | 0.70 | 0.58 | 0.80 |
| 10 | Energy East Corp. | 0.60 | 0.65 | 0.70 | 0.80 | 0.80 | 0.71 | 0.90 |
| 11 | Green Mountain | 0.55 | 0.60 | 0.60 | 0.65 | 0.60 | 0.60 | 0.60 |
| 12 | Hawaiian Electric | 0.50 | 0.55 | 0.55 | 0.65 | 0.70 | 0.59 | 0.70 |
| 13 | MGE Energy | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.55 | 0.75 |
| 14 | NiSource Inc. | 0.45 | 0.50 | 0.65 | 0.75 | 0.80 | 0.63 | 0.90 |
| 15 | Northeast Utilities | 0.50 | 0.60 | 0.65 | 0.75 | 0.80 | 0.66 | 0.90 |
| 16 | NSTAR | 0.50 | 0.60 | 0.65 | 0.70 | 0.70 | 0.63 | 0.80 |
| 17 | Pinnacle West Capital | 0.45 | 0.55 | 0.70 | 0.85 | 0.90 | 0.69 | 1.00 |
| 18 | PPL Corporation | 0.65 | 0.75 | 0.85 | 0.95 | 0.95 | 0.83 | 0.95 |
| 19 | Progress Energy | N/A | N/A | 0.85 | 0.85 | 0.85 | 0.85 | 0.90 |
| 20 | Puget Energy, Inc. | 0.55 | 0.60 | 0.65 | 0.75 | 0.80 | 0.67 | 0.80 |
| 21 | SCANA Corp. | 0.45 | 0.55 | 0.60 | 0.70 | 0.75 | 0.61 | 0.85 |
| 22 | Southern Co. | N/A | N/A | 0.65 | 0.65 | 0.65 | 0.65 | 0.70 |
| 23 | Vectren Corp. | N/A | 0.70 | 0.75 | 0.75 | 0.80 | 0.75 | 0.85 |
| 24 | Xcel Energy, Inc. | N/A | 0.60 | 0.70 | 0.80 | 0.80 | 0.73 | 0.90 |
| 25 | **Average** | **0.52** | **0.60** | **0.66** | **0.75** | **0.77** | **0.67** | **0.84** |
| 26 | **Median** | **0.50** | **0.60** | **0.65** | **0.75** | **0.80** | **0.66** | **0.85** |

Source:
The Value Line Investment Survey; September 29, November 10, Decmeber 1, 2006.

# Aquila Networks

## Total Stock Return




Michael Gorman
Schedule MPG-14

# Aquila Networks

## CAPM Return Estimate

| Line | Description | Historical Premium (1) |
|---|---|---|
| 1 | Risk Free Rate[1] | 5.0% |
| 2 | Risk Premium[2] | 6.5% |
| 3 | Beta[3] | 0.80 |
| 4 | CAPM | 10.2% |

| Line | Description | Prospective Premium (1) |
|---|---|---|
| 5 | Risk Free Rate[1] | 5.0% |
| 6 | Risk Premium[2] | 6.6% |
| 7 | Beta[3] | 0.80 |
| 8 | CAPM | 10.3% |
| 9 | **CAPM Average** | **10.2%** |

Sources:

[1] Blue Chip Financial Forcasts; December 1, 2006 at 2.

[2] SBBI; 2006 at pp. 31 & 120.

[3] The Value Line Investment Survey; September 29, November 10, Decmeber 1, 2006.

# Aquila Networks

## CAPM Return Estimate

| Line | Description | Historical Premium (1) |
|---|---|---|
| 1 | Risk Free Rate[1] | 5.0% |
| 2 | Risk Premium[2] | 6.5% |
| 3 | Beta[3] | 0.85 |
| 4 | CAPM | 10.5% |

| Line | Description | Prospective Premium (1) |
|---|---|---|
| 5 | Risk Free Rate[1] | 5.0% |
| 6 | Risk Premium[2] | 6.6% |
| 7 | Beta[3] | 0.85 |
| 8 | CAPM | 10.6% |
| 9 | **CAPM Average** | **10.6%** |

Sources:

[1] Blue Chip Financial Forcasts; December 1, 2006 at 2.

[2] SBBI; 2006 at pp. 31 & 120.

[3] The Value Line Investment Survey; September 29, November 10, Decmeber 1, 2006.

# Aquila Networks

## S&P Financial Ratios at ROE of 9.8%

| Revenue Requirement | SJLP Retail Jurisdictional | MPS Retail Jurisdictional | S&P "BBB" Rating (BP: 6) Benchmark |
|---|---|---|---|
| Rate Base | 184,536,272 | 849,916,414 | |
| ROE | 10.00% | 10.00% | |
| Equity Ratio | 47.50% | 47.50% | |
| Debt Ratio | 52.50% | 52.50% | |
| Cost of Debt | 7.947% | 6.564% | |
| Income Tax Rate | 38.39% | 38.39% | |
| WACC | 8.92% | 8.20% | |
| Net Operating Income (NOI) Requirement | 16,464,649 | 69,658,399 | |
| NOI Available | 3,422,409 | 20,951,266 | |
| Additional NOI Needed | 13,042,240 | 48,707,133 | |
| Additional Current Tax Required | 10,080,125 | 38,959,556 | |
| Additional Gross Revenue Requirement | 23,122,365 | 87,666,689 | |
| **Funds from Operations (FFO)/Total Debt** | | | |
| Net Income Requested | 8,765,473 | 40,371,030 | |
| Regulatory Disallowances (after-tax) | 0 | 0 | |
| Depreciation & Amortization* | 11,557,296 | 46,762,155 | |
| Deferred Taxes & ITC | (799,370) | 951,902 | |
| Funds from Operations (FFO) | 19,523,399 | 88,085,087 | |
| Long-Term Debt | 96,881,543 | 446,206,117 | |
| FFO/Total Debt | **20.2%** | **19.7%** | **28% - 18%** |
| *Implied S&P Bond Rating (Business Position: 6)* | *BBB* | *BBB* | |
| **Funds from Operations (FFO) Interest Coverage** | | | |
| Funds from Operations (FFO) | 19,523,399 | 88,085,087 | |
| Interest Expense | 7,699,176 | 29,287,370 | |
| FFO Interest Coverage | **3.5** | **4.0** | **4.2x - 3.0x** |
| *Implied S&P Bond Rating (Business Position: 6)* | *BBB* | *BBB* | |
| **Total Debt/Total Capital** | | | |
| Total Debt/Total Capital | **53%** | **53%** | **48%-58%** |
| *Implied S&P Bond Rating (Business Position: 6)* | *BBB* | *BBB* | |

Source:
Schedule SCH-6, Page 1, Revised.
* Includes a depreciation adjustments for MPS and L&P of $2.102 million and $217,000, respectively.

**Michael Gorman**
**Schedule MPG-16**

**AQUILA NETWORKS - MISSOURI PUBLIC SERVICE**
**ER-2005-0436**

**Depreciation Rates and Expense for**
**Other Production Plant**

| Account Number | Description | Life (1) | Net Salvage (2) | Depreciation Rate (3) | Elec-Juris Adjusted Balance 12/31/05 (4) | Depreciation Expense (5) |
|---|---|---|---|---|---|---|
| | Aquila Networks - MPS | | | | | |
| 341.000 | Structures and Improvements | 60 | -4.9% | 1.75% | $ 8,872,163 | $ 155,263 |
| 342.000 | Fuel Holders, Producers and Access. | 34 | -4.9% | 3.09% | 7,777,342 | 240,320 |
| 343.000 | Prime Movers | 22 | -5.8% | 4.81% | 104,474,525 | 5,025,225 |
| 343.100 | Wind Turbines | 22 | -5.0% | 4.77% | 181,550 | 8,660 |
| 344.000 | Generators | 28 | -6.4% | 3.80% | 33,987,665 | 1,291,531 |
| 345.000 | Accessory Electric Equipment | 37 | -5.4% | 2.85% | 21,245,839 | 605,506 |
| 346.000 | Miscellaneous Power Plant Equipment | 28 | 0.0% | 3.57% | 69,704 | 2,488 |
| | Total Other Production Plant | | | | $ 176,608,788 | $ 7,328,993 |
| | MPG | | | | | |
| 341.000 | Structures and Improvements | 60 | -4.9% | 1.75% | $ 8,872,163 | $ 155,263 |
| 342.000 | Fuel Holders, Producers and Access. | 35 | -4.9% | 3.00% | 7,777,342 | 233,320 |
| 343.000 | Prime Movers | 35 | -5.8% | 3.02% | 104,474,525 | 3,155,131 |
| 343.100 | Wind Turbines | 22 | -5.0% | 4.77% | 181,550 | 8,660 |
| 344.000 | Generators | 35 | -6.4% | 3.04% | 33,987,665 | 1,033,225 |
| 345.000 | Accessory Electric Equipment | 35 | -5.4% | 3.01% | 21,245,839 | 639,500 |
| 346.000 | Miscellaneous Power Plant Equipment | 35 | 0.0% | 2.86% | 69,704 | 1,994 |
| | Total Other Production Plant | | | | $ 176,608,788 | $ 5,227,092 |
| | Reduction | | | | | $ 2,101,901 |

Source:
1. CS-95.1
2. Case No. ER - 2005 - 0436, Appendix B - MPS

**AQUILA NETWORKS - L & P ELECTRIC**
**ER-2005-0436**

**Depreciation Rates and Expense for**
**Other Production Plant**

| Account Number | Description | Life (1) | Net Salvage (2) | Depreciation Rate (3) | Elec-Juris Adjusted Balance 12/31/05 (4) | Depreciation Expense (5) |
|---|---|---|---|---|---|---|
| | Aquila Networks - L & P | | | | | |
| 341.000 | Structures and Improvements | 60 | -5.0% | 1.75% | $ 1,310,715 | $ 22,938 |
| 342.000 | Fuel Holders, Producers and Access. | 34 | -5.0% | 3.09% | 605,108 | 18,698 |
| 343.000 | Prime Movers | 22 | -5.1% | 4.78% | 10,843,896 | 518,338 |
| 344.000 | Generators | 28 | -15.2% | 4.11% | 3,112,011 | 127,904 |
| 345.000 | Accessory Electric Equipment | 37 | -5.0% | 2.84% | 1,149,311 | 32,640 |
| 346.000 | Miscellaneous Power Plant Equipment | 28 | 0.0% | 3.57% | - | - |
| | Total Other Production Plant | | | | $ 17,021,041 | $ 720,518 |
| | MPG | | | | | |
| 341.000 | Structures and Improvements | 60 | -5.0% | 1.75% | $ 1,310,715 | $ 22,938 |
| 342.000 | Fuel Holders, Producers and Access. | 35 | -5.0% | 3.00% | 605,108 | 18,153 |
| 343.000 | Prime Movers | 35 | -5.1% | 3.00% | 10,843,896 | 325,317 |
| 344.000 | Generators | 35 | -15.2% | 3.29% | 3,112,011 | 102,385 |
| 345.000 | Accessory Electric Equipment | 35 | -5.0% | 3.00% | 1,149,311 | 34,479 |
| 346.000 | Miscellaneous Power Plant Equipment | 35 | 0.0% | 2.86% | - | - |
| | Total Other Production Plant | | | | $ 17,021,041 | $ 503,272 |
| | Reduction | | | | | $ 217,246 |

Source:
1. CS-95.1
2. Case No. ER - 2005 - 0436, Appendix B - L & P