

Exhibit No.:	506NP
Witness:	Michael Gorman
Type of Exhibit:	Surrebuttal Testimony
Issues:	Rate of Return
Sponsoring Parties:	Enbridge Energy, LP Explorer Pipeline Company General Mills Praxair, Inc. Wal-Mart Stores, Inc.
Case No.:	ER-2008-0093

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of The Empire District	)	
Electric Company of Joplin, Missouri	)	
for Authority to File Tariffs Increasing	)	Case No. ER-2008-0093
Rates for Electric Service Provided to	)	
Customers in the Missouri Service	)	
Area of the Company	)	

Surrebuttal Testimony and Schedules of

**Michael Gorman**

On behalf of

**Enbridge Energy, LP  
Explorer Pipeline Company  
General Mills  
Praxair, Inc.  
Wal-Mart Stores, Inc.**

April 25, 2008

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

Project 8875

**NON-PROPRIETARY**

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

In the Matter of The Empire District )  
Electric Company of Joplin, Missouri )  
for Authority to File Tariffs Increasing )  
Rates for Electric Service Provided to )  
Customers in the Missouri Service )  
Area of the Company )

Case No. ER-2008-0093

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

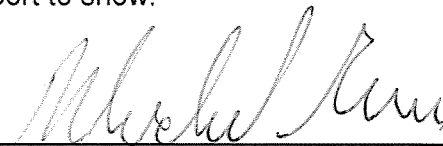
**Affidavit of Michael Gorman**

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

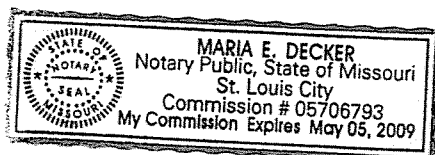
1. My name is Michael Gorman. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 1215 Fern Ridge Parkway, Suite 208, St. Louis, Missouri 63141-2000. We have been retained by Enbridge Energy, LP; Explorer Pipeline Company; General Mills; Praxair, Inc. and Wal-Mart Stores, Inc. in this proceeding on their behalf.

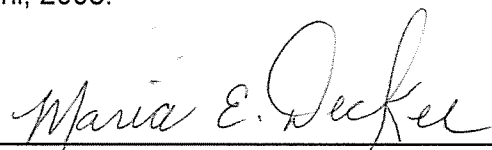
2. Attached hereto and made a part hereof for all purposes are my surrebuttal testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2008-0093.

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

  
\_\_\_\_\_  
Michael Gorman

Subscribed and sworn to before me this 25th day of April, 2008.



  
\_\_\_\_\_  
Notary Public

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

<b>In the Matter of The Empire District Electric Company of Joplin, Missouri for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in the Missouri Service Area of the Company</b>	<b>) ) ) ) ) )</b>	<b>Case No. ER-2008-0093</b>
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**Surrebuttal Testimony of Michael Gorman**

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

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

4    **Q     ARE YOU THE SAME MICHAEL GORMAN THAT FILED DIRECT AND REBUTTAL**  
5         **TESTIMONY IN THIS PROCEEDING?**

6    A     Yes.

7    **Q     WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

8    A     I will respond to the rebuttal testimony of The Empire District Electric Company  
9         (Empire or Company) witnesses Dr. H. Edwin Overcast, Dr. James H. Vander Weide,  
10        and Robert W. Sager.

1    **Response to Empire Witness Dr. H. Edwin Overcast**

2    **Q     WHAT ISSUES IN DR. OVERCAST’S REBUTTAL TESTIMONY DO YOU WISH TO**  
3       **RESPOND?**

4    A     Dr. Overcast disputes my recommendation that a return on equity adjustment is  
5           necessary if the Commission approves a fuel adjustment clause in this proceeding.  
6           In support of this assertion, Dr. Overcast reviews the comparable group Staff witness  
7           Matthew J. Barnes and I relied on to support our return on equity recommendations.  
8           He finds that utility affiliates of most of those companies have fuel adjustment  
9           mechanisms. Therefore, he asserts that the return on equity he measured for Empire  
10          would be appropriate if a fuel adjustment clause is adopted because that is consistent  
11          with the same regulatory mechanisms that many of the companies in our proxy group  
12          have.

13   **Q     IS DR. OVERCAST’S ASSESSMENT OF A RETURN ON EQUITY ADJUSTMENT**  
14       **BASED ON A COMPLETE AND ACCURATE ANALYSIS?**

15   A     No. Dr. Overcast has not done a complete and accurate assessment of the operating  
16          risk of Empire relative to the operating risk of the companies included in my proxy  
17          group and the proxy group of Staff witness Mr. Barnes. Further, Dr. Overcast has not  
18          done any analysis of the total investment risk which includes a combination of  
19          financial and operating risk, in support of his testimony. Without a complete  
20          assessment of the total investment risks of Empire relative to those of the proxy  
21          group, Dr. Overcast's assessment of an appropriate return on equity is not reliable  
22          and is based only on his opinion and speculation.

1   **Q     WHAT WOULD BE THE CIRCUMSTANCE UNDER WHICH A RETURN ON**  
2       **EQUITY ADJUSTMENT WOULD BE APPROPRIATE IF CHANGES IN THE**  
3       **REGULATORY MECHANISMS UNDERLYING EMPIRE'S OPERATIONS ARE**  
4       **APPROVED?**

5   **A**My proxy group and that of Staff witness Mr. Barnes were both selected based on a  
6       comparison of Empire's current total investment risks relative to those of the proxy  
7       group. Empire's current investment risk does not include the operating risk reduction  
8       created by implementing a fuel adjustment mechanism.

9           Regulatory mechanisms are an important assessment made by credit analysts  
10       in assigning the operating risk of a utility company, which goes into its overall credit  
11       rating. Specifically, Standard & Poor's (S&P) notes that the regulatory mechanisms  
12       are an important factor in determining the overall business risk assessment of a utility  
13       company.<sup>1</sup> In assigning a utility's business profile score, S&P reviews the utility's  
14       business risk using the following categories: management risk, regulatory risk,  
15       market risk, operations and competitive position risk. Regulatory risk includes  
16       responsiveness of the regulator to adjust rates to meet the utility's changed cost of  
17       service.

18           Empire's current regulatory mechanisms do not include a fuel adjustment  
19       clause; therefore, it is beyond dispute that its current total investment risk and bond  
20       rating does not reflect the risk reduction (or transfer to customers of risk) of fuel cost  
21       recovery. Importantly, if a fuel adjustment mechanism is implemented for Empire, its  
22       operating risk will be reduced, and a lower return on equity would be appropriate.

23           This is not to say that only downward return on equity adjustments are  
24       appropriate. If the Commission decided to make a change to another aspect of the

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<sup>1</sup> Key Credit Factors: Assessing U.S. Vertically Integrated Utilities' Business Risk Drivers.

1 Company that caused a material increase in risk from the current status quo, then an  
2 upward adjustment to the recommended return on equity would be appropriate.

3 **Q DID DR. OVERCAST ATTEMPT TO SUPPORT HIS CONCLUSION THAT**  
4 **EMPIRE'S OPERATING RISK WOULD NOT BE REDUCED WITH THE**  
5 **IMPLEMENTATION OF A FUEL ADJUSTMENT MECHANISM?**

6 A No. In response to the Staff and Mr. Brubaker's proposed fuel adjustment  
7 mechanisms, Dr. Overcast simply asserts that a fuel adjustment clause can be used  
8 to ensure the utility recovers its prudent fuel costs. However, he ignores the fact that  
9 Empire does not need a single-issue ratemaking fuel adjustment mechanism to  
10 properly set rates. Empire can file a complete rate case where the Commission can  
11 fully evaluate all revenues and costs to ensure rates are no higher or lower than  
12 necessary to fully recover prudent costs. This full cost review is needed to determine  
13 whether or not Empire's rates are just and reasonable.

14 A fuel adjustment mechanism, in contrast, allows a utility to increase fuel  
15 prices to customers without a full review of all other revenues and operating  
16 expenses. Hence, a fuel adjustment clause may allow a utility to increase fuel prices  
17 when a price increase would not be justified if a full review of all revenues, expenses,  
18 and rate base items were examined. As such, a fuel adjustment mechanism can  
19 result in excessive charges.

20 Therefore, a single-issue fuel adjustment mechanism such as the one  
21 advocated by Dr. Overcast reduces a utility's operating risk because it provides a  
22 much lower threshold for increasing prices to customers relative to the traditional  
23 method of reviewing all revenues and expenses. As such, Dr. Overcast's support for  
24 a fuel adjustment mechanism does not result in an improvement in the development  
25 of just and reasonable rates. In fact, his proposal would produce just the opposite

1 and potentially allow Empire to earn more than its authorized return on equity, by  
2 charging excessive rates.

3 **Response to Empire Witness Dr. James H. Vander Weide**

4 **Q DID DR. VANDER WEIDE SPONSOR REBUTTAL TESTIMONY?**

5 A Yes. Dr. Vander Weide offered testimony to respond to the return on equity  
6 recommendations made by Staff witness Matthew J. Barnes and me. Mr. Barnes  
7 recommended a return on equity of 10.28% and I recommended a return on equity of  
8 10%. Dr. Vander Weide concludes that our recommended returns on equity  
9 understate Empire's current market cost of equity, and he continues to support his  
10 original recommended return on equity of 11.6%.

11 **I. PROXY GROUP**

12 **Q IS THERE ANY MERIT TO DR. VANDER WEIDE'S ARGUMENT THAT THE**  
13 **PROXY GROUP YOU HAVE USED UNDERSTATED EMPIRE'S COST OF**  
14 **EQUITY?**

15 A No. In my rebuttal testimony to Dr. Vander Weide, I applied my cost of equity models  
16 to his proxy group and produced results that are very similar to the results I produced  
17 when those models were applied to my proxy group. Hence, the difference between  
18 my proxy group and the proxy group used by Dr. Vander Weide is not a material  
19 issue in estimating Empire's cost of equity in today's marketplace. Rather, the  
20 difference is in the implementation of the DCF, risk premium and CAPM studies.

1        **II.        CONSTANT GROWTH DCF**

2        **Q        PLEASE DESCRIBE THE ISSUES SURROUNDING THE RELIABILITY OF YOUR**  
3        **CONSTANT GROWTH DCF RESULT.**

4        A        My constant growth DCF analysis produced a return on equity estimate of 11.54%.  
5                That DCF return was based on a growth rate of 7.4%. In my direct testimony (pages  
6                19 through 23), I explained in detail why that return on equity was not reliable or  
7                rational for estimating a DCF return. Hence, since this growth rate was too high to be  
8                a reasonable and rational estimate of long-term sustainable growth, I did not place  
9                any weight on this DCF return in forming my recommended return on equity. In  
10              response to that, Dr. Vander Weide disagreed with this conclusion stating the  
11              following:

- 12                      1. Analyst growth rate projections do not need to be rational in order to  
13                      reflect investors' expectations (at 26 and 27).  
14                      2. It was not appropriate to adjust a growth rate in the DCF model without  
15                      also adjusting the stock price (at 27).

16        **Q        DOES DR. VANDER WEIDE PROVIDE ADEQUATE RESPONSE TO YOUR**  
17        **RATIONALE FOR NOT RELYING ON THE CONSTANT GROWTH DCF MODEL IN**  
18        **THIS CASE?**

19        A        No. Indeed, he provides very little response at all, much less a justification for relying  
20                on a DCF return estimate that is clearly out of line with today's low-cost capital  
21                market. First, there is academic and practical justification for rejecting growth rate  
22                estimates that do not reflect rational expectations. The DCF model itself is premised  
23                on an efficient market hypothesis. In an efficient market, investors would make  
24                rational investment decisions based on reasonable and rational estimates of  
25                investment performance, and stock value would be based on rational expectations.



1 Stocks would not be valued on the basis of irrational expectations as Dr. Vander  
2 Weide suggests.

3 Second, a stock price would reflect rational expectations of future growth.  
4 Stock price would not reflect a growth rate that is irrationally high, or irrationally low.  
5 Therefore, there is no need to adjust the stock price, in attempting to estimate what a  
6 rational investment market would use in valuing a utility stock. To the contrary, it  
7 would be inappropriate and erroneous to conclude that rational investors would rely  
8 on irrational long-term growth rate estimates in valuing a stock, as Dr. Vander Weide  
9 asserts.

10 Indeed, when a utility is not in a constant growth payment period because of  
11 declining ratios, or increasing capital expenditure programs, and issuing large  
12 amounts of common stock at prices above book value, a multi-stage growth DCF  
13 model is necessary in order to reasonably estimate the utility's cost of equity. This is  
14 advocated in many financial textbooks including one written by Dr. Roger Morin in  
15 which he states as follows:

16 That investors, in fact, evaluate common stocks in the classical  
17 valuation framework, and trade securities rationally at prices reflecting  
18 their perceptions of value. Given the universality and pervasiveness of  
19 the classical valuation framework in investment education and in the  
20 professional investment community, this assumption is plausible.<sup>2</sup>

21 \* \* \*

22 If investors expect growth patterns to prevail in the future other than  
23 constant infinite growth, more complex DCF models are available. For  
24 example, investors may expect dividends to grow at a relatively  
25 modest pace for the first 5 years and to resume a higher normal  
26 steady-state course thereafter, or conversely. The general valuation  
27 framework of Equation 8-5 can handle such situations. The "non-

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<sup>2</sup> Roger A. Morin, Ph.D, *New Regulatory Finance* (Public Utilities Reports, Inc., June 2006), at 252, emphasis added.

constant growth” model presented later in the chapter is a popular version of the DCF model.<sup>3</sup>

\* \* \*

Dividends need not be, and probably are not, constant from period to period. Moreover, there are circumstances where the standard DCF model cannot be used to assess investor return requirements. For example, if a utility company is in the process of altering its dividend payout policy and dividends are not expected to grow at the same rate as earnings during the transition period, the standard DCF model is inapplicable. This is because the expected growth in stock price has to be different from that of dividends, earnings, and book value if the market price is to converge toward book value.<sup>4</sup>

Hence, there is academic and practical support and justification for not relying on a constant growth DCF model if the proxy group’s dividend payout ratios are declining, the group’s capital expenditures are increasing, and the companies are issuing common stock above book value to fund capital improvements. All of this is the case in this proceeding. This indicates that the three- to five-year growth rates are abnormally high during this time period, but will eventually decline to more reasonable sustainable level. Therefore, a multi-growth DCF model is needed to accurately estimate Empire’s cost of equity.

### **III. MULTI-STAGE DCF**

**Q PLEASE DESCRIBE THE ISSUES DR. VANDER WEIDE RAISED WITH RESPECT TO YOUR TWO-STAGE DCF MODEL.**

**A** He asserts that I did not provide any evidence to support my assumption that the long-term sustainable growth rate would be proxied by the GDP growth. However, he does not take issue with my general conclusion that it is rational to expect that a company’s stock price, earnings and dividends cannot grow, indefinitely, at a growth

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<sup>3</sup> *Id.* at 256, emphasis added.

<sup>4</sup> *Id.* at 264, emphasis added.

1 rate greater than the growth rate of the U.S. economy. Nevertheless, he takes issue  
2 with the use of a two-stage growth DCF model that incorporates this assumption.

3 **Q DO YOU DISPUTE DR. VANDER WEIDE'S CLAIM THAT THE STOCK MARKET**  
4 **GENERALLY RELIES ON ANALYST GROWTH FORECASTS IN VALUING STOCK**  
5 **PRICES?**

6 A No. Indeed, I recognize that most of the financial literature suggests that analyst  
7 growth forecasts have a lot of influence on utility stock price valuations. Because I  
8 agree with this suggestion, I did not reject analyst growth forecasts in either my  
9 constant growth or two-stage growth DCF models. Rather, I relied on them.  
10 However, there are periods where analyst three- to five-year growth projections  
11 simply reflect abnormally high growth periods for utility companies. This is particularly  
12 the case when utilities are in a high capital expenditure period and rate base is  
13 growing significantly, which will create strong earnings and dividend growth over the  
14 next three to five years.

15 During those times, analysts' growth rate projections are reasonable estimates  
16 for the short-term. However, they are not reasonable estimates for long-term  
17 sustainable growth. Given that DCF analyses are long term, even perpetual in  
18 derivation, the use of such abnormal short-term growth estimates in a long-term  
19 model produces unreliable and flawed estimates. Relying on three- to five-year  
20 growth rate projections as long-term sustainable growth would be irrational and  
21 indicate that the utility stock market is not capable of making intelligent, informed  
22 assessments of the utility's earnings outlooks, and stock price values. I reject that  
23 premise because the market in general makes rational investment decisions. In any  
24 event, if you cannot accept the premise that the market is generally efficient, then the  
25 DCF and CAPM models simply cannot produce reliable results.

1    **Q     DR. VANDER WEIDE ALSO PROVIDED A STATISTICAL TEST THAT HE CLAIMS**  
2           **TO SHOW THAT I/B/E/S GROWTH RATES PROVIDE A BETTER PRESENTATION**  
3           **OF INVESTOR VALUE THAN YOUR TWO-STAGE DCF MODEL.    PLEASE**  
4           **RESPOND.**

5    **A     Dr. Vander Weide attempted to demonstrate that a two-stage growth DCF model**  
6           **growth rate does not explain as much of changes to price-to-earnings (P/E) ratios and**  
7           **dividend payout ratios as does his constant growth DCF model.    He asserts that he**  
8           **performed this study using the data in my two-stage DCF model.    Dr. Vander Weide's**  
9           **model should be rejected for several reasons, including the following.**

10           First, the  $R^2$  factor in both of these models is very low, indicating that there is a  
11           very weak relationship between the growth rates in the constant growth and two-  
12           stage growth DCF models and the P/E ratios.    This corroborates my finding that  
13           three- to five-year growth forecasts are not a very good indicator of long-term  
14           sustainable growth for these companies.    Nevertheless, the coefficient for the two-  
15           stage growth rate estimates implies a stronger correlation with P/E than the I/B/E/S  
16           growth rates.    Again, this supports the use of a two-stage growth model.

17           But more importantly, Dr. Vander Weide did not perform the analysis he  
18           claimed he did.    This analysis was not performed on my two-stage DCF analysis.    In  
19           my proxy group, I included 16 companies.    In Dr. Vander Weide's study, he included  
20           over 37 companies.    Hence, his study was not performed on my proxy group and  
21           cannot be used in the manner he suggests.

1        **IV.     RISK PREMIUM**

2        **Q        WHAT ISSUES DID DR. VANDER WEIDE TAKE WITH YOUR RISK PREMIUM**  
3        **STUDY?**

4        A        Dr. Vander Weide takes primarily two issues with my risk premium study. First, he  
5        asserts that the equity returns are not based on independent evaluations since they  
6        are derived from commission authorized returns on equity for utility companies  
7        nationwide.

8                Second, he asserts that I should have reflected an inverse relationship  
9        between the equity risk premium and interest rates in developing my return on equity  
10       for Empire.

11       **Q        IS DR. VANDER WEIDE'S CORRECT THAT THE COMMISSION AUTHORIZED**  
12       **RETURNS ON EQUITY DO NOT REFLECT AN INDEPENDENT ASSESSMENT OF**  
13       **THE MARKET COST OF EQUITY?**

14       A        It is not an independent assessment to the extent that it is not based on current  
15       market information such as a DCF, two-stage DCF, or CAPM study. However, it is an  
16       independent assessment of the historical relationship commissions have found  
17       between the current market cost of common equity and contemporary utility bond  
18       yields. Since the cost of common equity cannot be observed it must be  
19       approximated, and there is significant controversy in estimating the current market  
20       cost of equity. Commission-authorized returns on equity are one proxy for the  
21       contemporary market required return on common equity and a reasonable approach  
22       for estimating contemporary market risk premiums.

23                As such, it is a valid and appropriate methodology for estimating how cost of  
24       equity changes in relationship to cost of debt. Therefore, this study does provide an

unbiased assessment of historical equity risk premiums and thus provides meaningful information in estimating Empire's current cost of equity in this proceeding.

**Q IS IT APPROPRIATE TO REFLECT AN INVERSE RELATIONSHIP BETWEEN THE EQUITY RISK PREMIUM AND INTEREST RATES WHEN USING YOUR RISK PREMIUM DATA AS DR. VANDER WEIDE IMPLIES?**

A No. Dr. Vander Weide's belief that there is a simplistic inverse relationship between equity risk premiums and interest rates is not supported by academic research. While academic studies have shown that, in the past, there has been an inverse relationship with these variables, researchers have found that the relationship changes over time and is influenced by changes in perception of the risk of bond investments relative to equity investments, and not simply changes to interest rates.<sup>5</sup>

In the 1980s, equity risk premiums were inversely related to interest rates but that was likely attributable to the interest rate volatility that existed at that time. Interest rate volatility currently is much lower than it was in the 1980s.<sup>6</sup> As such, when interest rates were more volatile, the relative perception of bond investment risk increased relative to the investment risk of equities. This changing investment risk perception caused changes in equity risk premiums.

In today's marketplace, interest rate variability is not as extreme as it was during the 1980s. Nevertheless, changes in the perceived risk of bond investments relative to equity investments still drive changes in equity premiums. However, a relative investment risk differential cannot be measured simply by observing nominal

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<sup>5</sup> "The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts," Robert S. Harris and Felicia C. Marston, *Journal of Applied Finance*, Volume 11, No. 1, 2001 and "The Risk Premium Approach to Measuring a Utility's Cost of Equity," Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *Financial Management*, Spring 1985.

<sup>6</sup> *SBBi 2007 Yearbook* (Morningstar, Inc.) at 112.

1 interest rates. Changes in nominal interest rates are highly influenced by changes to  
2 inflation outlooks, which also change equity return expectations. As such, the  
3 relevant factor needed to explain changes in equity risk premiums is the relative  
4 changes to the risk of equity versus debt securities investments, not simply changes  
5 to interest rates.

6 Importantly, Dr. Vander Weide's analysis ignores investment risk differentials.  
7 He bases his adjustment to the equity risk premium exclusively on changes in  
8 nominal interest rates. This is a flawed methodology and does not produce accurate  
9 or reliable risk premium estimates. His results should be rejected.

10 **Q DOES DR. VANDER WEIDE'S REGRESSION STUDY OF THE DATA USED IN**  
11 **YOUR RISK PREMIUM STUDY INDICATE THAT THERE IS AN INVERSE**  
12 **RELATIONSHIP BETWEEN EQUITY RISK PREMIUMS AND INTEREST RATES?**

13 **A** Statistically it does; however, a common sense approach to this data indicates Dr.  
14 Vander Weide's analysis is providing a false conclusion. Specifically, Commission-  
15 authorized returns have been declining over the years, in some cases while interest  
16 rates have been relatively flat. In reality, Commissions have reduced authorized  
17 returns on equity slower than the market has reduced bond interest rates. This gives  
18 the impression of an inverse relationship, but the reality is that it is simply reflecting  
19 Commissions' conservative nature in authorizing returns on equity in setting rates.

1        **V.        CAPITAL ASSET PRICING MODEL (CAPM)**

2        **Q        WHAT ISSUES DOES DR. VANDER WEIDE TAKE WITH YOUR CAPM**  
3        **ANALYSIS?**

4        A        Dr. Vander Weide's primary argument with my CAPM analysis is he believes I have  
5        understated the market risk premium. He believes that using Morningstar data, the  
6        market risk premium should be 7.1%, and not the 6.5% I developed.

7                The differences between the two market risk premiums are as follows. The  
8        Morningstar estimate for the market risk premium of 7.1% as proposed by Dr. Vander  
9        Weide is based on the difference between the total market return on common stocks  
10       (price appreciation, reinvestment return and coupon yields), less the income return on  
11       Treasury bond investments (coupon yield only). In comparison, my 6.5% market risk  
12       premium is based on the difference between the total return on common stock, less  
13       the total return on Treasury bonds (coupon yield, reinvestment return, and price  
14       appreciation).

15              My market risk premium reflects the actual real experienced risk return  
16       premium investors would have experienced by investing in common stock relative to  
17       Treasury bonds. In contrast, Dr. Vander Weide's proposed 7.1% market risk  
18       premium reflects a contrived estimate of the market risk premium over a nonexistent  
19       risk-free rate estimate. Hence, the primary difference reflects the reality that a risk-  
20       free rate does not exist, and the determination of the risk premium actually earned  
21       over the proxy for the risk-free rate over historical time periods. As such, my return  
22       reflects real market experiences, and Dr. Vander Weide's proposed premium does  
23       not.



1   **Q     DO YOU BELIEVE YOU HAVE UNDERSTATED THE MARKET RISK PREMIUM**  
2   **AS ASSERTED BY DR. VANDER WEIDE?**

3   A     No. Even using Morningstar data, there are two market risk premiums that this  
4     publication recommends. First, it recommends a 7.1% market risk premium based on  
5     the S&P 500 and Treasury bond income returns as identified by Dr. Vander Weide.  
6     However, Morningstar also identifies market risk premiums of 6.83% and 6.35% using  
7     the New York Stock Exchange as market indexes rather than the S&P 500.<sup>7</sup> As such,  
8     Morningstar found that the market risk premium can change based on the stock  
9     market index.

10           Further, Morningstar acknowledges that the price-to-earnings ratios in the  
11     S&P 500 have exhibited abnormal growth during the 1980 to 2001 period, which  
12     impacted its market risk premium estimate. Morningstar offered an alternative market  
13     risk premium of 6.2%<sup>8</sup> based on a correction to the abnormal P/E ratio growth.  
14     Hence, Morningstar's studies indicate a range of market risk premium of 6.2% to  
15     7.1%. Dr. Vander Weide is only recognizing Morningstar's business risk premium  
16     estimates.

17   **Q     HOW WOULD YOUR CAPM RETURN ESTIMATE CHANGE IF THE RANGE IN**  
18   **MORNINGSTAR'S ESTIMATED MARKET RISK PREMIUM WERE USED IN YOUR**  
19   **CAPM ANALYSIS RATHER THAN THE HIGHEST ESTIMATE MADE BY**  
20   **MORNINGSTAR AS RELIED ON BY DR. VANDER WEIDE?**

21   A     Adjusting my CAPM study to reflect a market risk premium in the range of 6.2% to  
22     7.1% would produce an indicated CAPM return of 10.1% to 10.8% with a midpoint of

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<sup>7</sup> *Ibbotson SBBI 2008 Valuation Yearbook* (Morningstar, Inc.) at 72.

<sup>8</sup> *Id.* at 92-98.

1 10.5%. I would note that this result is the same CAPM result I offered in my rebuttal  
2 testimony, 10.46%.

3 **Q DO YOU BELIEVE IT IS APPROPRIATE TO INCLUDE A SMALL**  
4 **CAPITALIZATION RETURN ON EQUITY ADJUSTMENT TO YOUR CAPM**  
5 **RETURN ESTIMATE AS PROPOSED BY DR. VANDER WEIDE?**

6 A No. Small company risk is part of a company's total investment risk. By selecting  
7 companies with similar risk to Empire, the proxy group can be used to estimate a fair  
8 return to compensate investors for Empire's total investment risk, including those  
9 risks related to its size.

10 **Q HOW WOULD A COMPANY'S SIZE IMPACT ITS RISK?**

11 A A company's size would impact its operating risk in the following ways:

- 12 1. Small companies typically have less ability to attract qualified  
13 management.
- 14 2. Small companies usually do not have the economies of scale to minimize  
15 operating expenses by spreading expertise over a larger customer base  
16 and buying materials and supplies in larger quantities.
- 17 3. Small companies do not have the geographic diversification to mitigate  
18 sales variations caused by weather and local economic cycles.

19 **Q CAN ONE SELECT A COMPARABLE GROUP THAT ENCAPSULATED EMPIRE'S**  
20 **SMALL COMPANY RISK IN ESTIMATING A FAIR RETURN FOR EMPIRE IN THIS**  
21 **CASE?**

22 A Yes. These small company risk factors certainly are considered by credit rating  
23 analysts and security analysts in assessing a utility's investment risk and valuation.  
24 Hence, when selecting a group of comparable risk companies, if one relies on a group

1 of companies with risk characteristics that are comparable to the proxy company, then  
2 the proxy group itself would reflect these risk factors.

3 As such, it is unreasonable and would be redundant to add a size premium to  
4 a proxy group return if that proxy group already reasonably captures Empire's total  
5 investment risk. For example, Empire's small company risk can be offset by  
6 differences in other risk elements. As such, focusing on a single aspect of investment  
7 risk, rather than reviewing proxy groups on the basis of total investment risk, is  
8 inappropriate and produces unreasonable results.

9 Since the overall risk profiles of my proxy group and Dr. Vander Weide's proxy  
10 group are reasonably comparable to Empire, the proxy group reasonably captures  
11 Empire's small size risk and all other risk factors. As such, there is no need to add a  
12 size premium to the return on equity estimated from this proxy group.

13 **Q DID DR. VANDER WEIDE OFFER ANY CRITICISMS OF YOUR RETURN ON**  
14 **EQUITY ADJUSTMENT TO REFLECT A FUEL ADJUSTMENT MECHANISM THAT**  
15 **YOU HAVE NOT ALREADY RESPONDED TO WITH RESPECT TO EMPIRE**  
16 **WITNESS OVERCAST?**

17 **A** No. Dr. Vander Weide's arguments are nearly identical to those of Dr. Overcast.  
18 Dr. Vander Weide's arguments are flawed for the same reasons. Therefore, my  
19 criticisms of Dr. Overcast equally apply to the flawed arguments offered by  
20 Dr. Vander Weide.

1    **Response to Empire Witness Robert W. Sager**

2    **Q     WHAT ARE THE ISSUES WITH MR. SAGER'S REBUTTAL TESTIMONY TO**  
3       **WHICH YOU WILL RESPOND?**

4    A     I will respond to Mr. Sager's proposed regulatory plan amortization (RPA) expense of  
5       \$19.8 million as he offers in his rebuttal testimony. That regulatory amortization  
6       expense was based on an analysis agreed to in principle by Staff, OPC and the  
7       Company.

8    **Q     DO YOU GENERALLY AGREE WITH THE SPREADSHEET UNDERLYING THIS**  
9       **RPA DEVELOPMENT SETTLEMENT?**

10   A     Generally, yes. However, there are adjustments I propose in order to accurately  
11       estimate the amount of regulatory amortization expense that is necessary.

12   **Q     PLEASE EXPLAIN YOUR PROPOSED ADJUSTMENT TO MR. SAGER'S**  
13       **ESTIMATED REGULATORY AMORTIZATION SCHEDULES.**

14   A     First, I provided the Company with the S&P document which outlines S&P's  
15       methodology for including imputed purchased power adjustment (PPA) debt  
16       amortization expense in its credit metric calculations. As I understand it, this was  
17       provided to the Company, and I am not sure why Mr. Sager did not receive this  
18       workpaper. Nevertheless, it was provided to the Company and the PPA debt  
19       amortization should be reflected in the regulatory amortization calculation.

20       Second, the amount of imputed debt associated with PPA obligations is  
21       overstated for test year conditions. Specifically, the Company included an imputed

1 debt equivalent for purchased power obligations of \*\*\_\_\_\_\_\*\*. This overstates  
2 the amount of purchased power obligation expenses the Company has incurred in  
3 2007 and 2008. Excluding the purchased power obligation which the Company  
4 would put into effect in 2009, one year after the rate effective year in this proceeding,  
5 would reduce the off-balance-sheet PPA debt to \*\*\_\_\_\_\_\*\*, the 2008 balance.  
6 I recommend that the development of the regulatory amortization expense should be  
7 based on jurisdictional cost of service as the Regulatory Plan prescribes. Going  
8 beyond the rate effective year to increase the off-balance-sheet debt equivalent  
9 distorts the regulatory balance objective of the Regulatory Plan. The 2008 PPA debt  
10 equivalent is developed on Schedule MPG-1HC.

11 Third, S&P's methodology prescribes that the imputed interest expense on the  
12 off-balance-sheet debt and lease obligations should be set at the same interest rate  
13 as the discount rate. As such, on lines 39 and 40 of Mr. Sager's schedule, RWS-1,  
14 the interest adjustment for off-balance-sheet obligations should be based on an  
15 interest rate of 6.8% and not 10%. S&P prescribes the use of a discount rate as the  
16 interest expense in these calculations, as set forth on my Schedule MPG-2.

17 Finally, I developed an imputed amortization expense associated with PPA  
18 based on the Company's workpapers used to develop the test year off-balance-sheet  
19 debt equivalents for PPAs. Based on S&P's methodology and the Company's test  
20 year PPA obligations, an imputed amortization expense of \*\*\_\_\_\_\_\*\* Total  
21 Company is appropriate. Development of this off-balance-sheet PPA debt equivalent  
22 is set forth on my Schedule MPG-1HC.

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**Michael Gorman**  
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1           Next, I estimated the amount of regulatory amortization expense based on  
2           Staff's filing in this case and not the Company's. Importantly, this spreadsheet should  
3           be updated based on the Commission's authorized return on equity, and other  
4           regulatory findings in this case, at the conclusion of this proceeding.

5   **Q       WHAT REGULATORY AMORTIZATION EXPENSE WOULD BE APPROPRIATE**  
6   **BASED ON YOUR ADJUSTMENTS TO THE COMPANY'S RECOMMENDATION?**

7   A       As shown on my Schedule MPG-3HC, reflecting all the adjustments to Mr. Sager's  
8           rebuttal Schedule RWS-1 described above, the appropriate amount of regulatory  
9           amortization expense for the Company would be \$2,910,076.

10 **Q       DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

11 A       Yes.

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The Empire District Electric Company

Purchased Power Debt Equivalent

<u>Line</u>	<u>Year</u>	<u>NPV</u> (1)	<u>30%</u> <u>Imputed Debt</u> (2)	<u>Annual Payment</u>			<u>Risk Factor</u> <u>30% x Col. 5</u> (6)	<u>Interest</u> <u>6.8% x Col. 2</u> (7)	<u>Depreciation</u> <u>Col. 6 - Col. 7</u> (8)
				<u>Westar</u> (3)	<u>Wind</u> (4)	<u>Total</u> (5)			
1	2008			Highly Confidential					

Source:

Empire's Response to Praxair/Explorer DR 113.

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## Ratings

# Standard & Poor's Methodology For Imputing Debt For U.S. Utilities? Power Purchase Agreements

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### Standard & Poor's Methodology For Imputing Debt For U.S. Utilities' Power Purchase Agreements

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For many years, Standard & Poor's Ratings Services has viewed power supply agreements (PPA) in the U.S. utility sector as creating fixed, debt-like, financial obligations that represent substitutes for debt-financed capital investments in generation capacity. In a sense, a utility that has entered into a PPA has contracted with a supplier to make the financial investment on its behalf. Consequently, PPA fixed obligations, in the form of capacity payments, merit inclusion in a utility's financial metrics as though they are part of a utility's permanent capital structure and are incorporated in our assessment of a utility's creditworthiness.

We adjust utilities' financial metrics, incorporating PPA fixed obligations, so that we can compare companies that finance and build generation capacity and those that purchase capacity to satisfy customer needs. The analytical goal of our financial adjustments for PPAs is to reflect fixed obligations in a way that depicts the credit exposure that is added by PPAs. That said, PPAs also benefit utilities that enter into contracts with suppliers because PPAs will typically shift various risks

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to the suppliers, such as construction risk and most of the operating risk. PPAs can also provide utilities with asset diversity that might not have been achievable through self-build. The principal risk borne by a utility that relies on PPAs is the recovery of the financial obligation in rates.

## The Mechanics Of PPA Debt Imputation

A starting point for calculating the debt to be imputed for PPA-related fixed obligations can be found among the "commitments and contingencies" in the notes to a utility's financial statements. We calculate a net present value (NPV) of the stream of the outstanding contracts' capacity payments reported in the financial statements as the foundation of our financial adjustments.

The notes to the financial statements enumerate capacity payments for the five years succeeding the annual report and a "thereafter" period. While we have access to proprietary forecasts that show the detail underlying the costs that are amalgamated beyond the five-year horizon, others, for purposes of calculating an NPV, can divide the amount reported as "thereafter" by the average of the capacity payments in the preceding five years to derive an approximate tenor of the amounts combined as the sum of the obligations beyond the fifth year.

In calculating debt equivalents, we also include new contracts that will commence during the forecast period. Such contracts aren't reflected in the notes to the financial statements, but relevant information regarding these contracts are provided to us on a confidential basis. If a contract has been executed but the energy will not flow until some later period, we won't impute debt for that contract until the year that energy deliveries begin under the contract if the contract represents incremental capacity. However, to the extent that the contract will simply replace an expiring contract, we will impute debt as though the future contract is a continuation of the existing contract.

We calculate the NPV of capacity payments using a discount rate equivalent to the company's average cost of debt, net of securitization debt. Once we arrive at the NPV, we apply a risk factor, as is discussed below, to reflect the benefits of regulatory or legislative cost recovery mechanisms.

Balance sheet debt is increased by the risk-factor-adjusted NPV of the stream of capacity payments. We derive an adjusted debt-to-capitalization ratio by adding the adjusted NPV to both the numerator and the denominator of that ratio.

We calculate an implied interest expense for the imputed debt by multiplying the same utility average cost of debt used as the discount rate in the NPV calculation by the amount of imputed debt. The adjusted FFO-to-interest expense ratio is calculated by adding the implied interest expense to both the numerator and denominator of the equation. We also add implied depreciation to the equation's numerator. We calculate the adjusted FFO-to-total-debt ratio by adding imputed debt to the equation's denominator and an implied depreciation expense to its numerator.

Our adjusted cash flow credit metrics include a depreciation expense adjustment to FFO. This adjustment represents a vehicle for capturing the ownership-like attributes of the contracted asset and tempers the effects of imputation on the cash flow ratios. We derive the depreciation expense adjustment by multiplying the relevant year's capacity payment obligation by the risk factor and then subtracting the implied PPA-related interest expense for that year from the product of the risk factor times the scheduled capacity payment.

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## Risk Factors

The NPVs that Standard & Poor's calculates to adjust reported financial metrics to capture PPA capacity payments are multiplied by risk factors. These risk factors typically range between 0% to 50%, but can be as high as 100%. Risk factors are inversely related to the strength and availability of regulatory or legislative vehicles for the recovery of the capacity costs associated with power supply arrangements. The strongest recovery mechanisms translate into the smallest risk factors. A 100% risk factor would signify that all risk related to contractual obligations rests on the company with no mitigating regulatory or legislative support.

For example, an unregulated energy company that has entered into a tolling arrangement with a third-party supplier would be assigned a 100% risk factor. Conversely, a 0% risk factor indicates that the burden of the contractual payments rests solely with ratepayers. This type of arrangement

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is frequently found among regulated utilities that act as conduits for the delivery of a third party's electricity and essentially deliver power, collect charges, and remit revenues to the suppliers. These utilities have typically been directed to sell all their generation assets, are barred from developing new generation assets, and the power supplied to their customers is sourced through a state auction or third parties, leaving the utilities to act as intermediaries between retail customers and the electricity suppliers.

Intermediate degrees of recovery risk are presented by a number of regulatory and legislative mechanisms. For example, some regulators use a utility's rate case to establish base rates that provide for the recovery of the fixed costs created by PPAs. Although we see this type of mechanism as generally supportive of credit quality, the fact remains that the utility will need to litigate the right to recover costs and the prudence of PPA capacity payments in successive rate cases to ensure ongoing recovery of its fixed costs. For such a PPA, we employ a 50% risk factor. In cases where a regulator has established a power cost adjustment mechanism that recovers all prudent PPA costs, we employ a risk factor of 25% because the recovery hurdle is lower than it is for a utility that must litigate time and again its right to recover costs.

We recognize that there are certain jurisdictions that have true-up mechanisms that are more favorable and frequent than the review of base rates, but still don't amount to pure pass-through mechanisms. Some of these mechanisms are triggered when certain financial thresholds are met or after prescribed periods of time have passed. In these instances, in calculating adjusted ratios, we will employ a risk factor between the revised 25% risk factors for utilities with power cost adjustment mechanisms and 50%.

Finally, we view legislatively created cost recovery mechanisms as longer lasting and more resilient to change than regulatory cost recovery vehicles. Consequently, such mechanisms lead to risk factors between 0% and 15%, depending on the legislative provisions for cost recovery and the supply function borne by the utility. Legislative guarantees of complete and timely recovery of costs are particularly important to achieving the lowest risk factors.

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### Illustration Of The PPA Adjustment Methodology

The calculations of the debt equivalents, implied interest expense, depreciation expense, and adjusted financial metrics, using risk factors, are illustrated in the following example:

#### Example Of Power-Purchase Agreement Adjustment

(\$000s)	Assumption	Year 1	Year 2	Year 3	Year 4	Year 5	Thereafter
Cash from operations	2,000,000						
Funds from operations	1,500,000						
Interest expense	444,000						
<b>Directly issued debt</b>							
Short-term debt	600,000						
Long-term due within one year	300,000						
Long-term debt	6,500,000						
Shareholder's Equity	6,000,000						
Fixed capacity commitments	600,000	600,000	600,000	600,000	600,000	600,000	4,200,000*
<b>NPV of fixed capacity commitments</b>							
Using a 6.0% discount rate	5,030,306						
Application of an assumed 25% risk factor	1,257,577						
Implied interest expense¶	75,455						
Implied depreciation expense	74,545						
<b>Unadjusted ratios</b>							
FFO to interest (x)	4.4						
FFO to total Debt (%)	20.0						
Debt to capitalization (%)	55.0						

**Ratios adjusted for debt imputation**

FFO to interest (x)§	4.0
FFO to total debt (%)**	18.0
Debt to capitalization (%)¶¶	59.0

\*Thereafter approximate years: 7. ¶The current year's implied interest is subtracted from the product of the risk factor multiplied by the current year's capacity payment. §Adds implied interest to the numerator and denominator and adds implied depreciation to FFO. \*\*Adds implied depreciation expense to FFO and implied debt to reported debt. ¶¶Adds implied debt to both the numerator and the denominator. FFO--Funds from operations. NPV--Net present value.

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## Short-Term Contracts

Standard & Poor's has abandoned its historical practice of not imputing debt for contracts with terms of three years or less. However, we understand that there are some utilities that use short-term PPAs of approximately one year or less as gap fillers pending the construction of new capacity. To the extent that such short-term supply arrangements represent a nominal percentage of demand and serve the purposes described above, we will neither impute debt for such contracts nor provide evergreen treatment to such contracts.

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## Evergreen Treatment

The NPV of the fixed obligations associated with a portfolio of short-term or intermediate-term contracts can lead to distortions in a utility's financial profile relative to the NPV of the fixed obligations of a utility with a portfolio of PPAs that is made up of longer-term commitments. Where there is the potential for such distortions, rating committees will consider evergreen treatment of existing PPA obligations as a scenario for inclusion in the rating analysis. Evergreen treatment extends the tenor of short- and intermediate-term contracts to reflect the long-term obligation of electric utilities to meet their customers' demand for electricity.

While we have concluded that there is a limited pool of utilities whose portfolios of existing and projected PPAs don't meaningfully correspond to long-term load serving obligations, we will nevertheless apply evergreen treatment in those cases where the portfolio of existing and projected PPAs is inconsistent with long-term load-serving obligations. A blanket application of evergreen treatment is not warranted.

To provide evergreen treatment, Standard & Poor's starts by looking at the tenor of outstanding PPAs. Others can look to the "commitments and contingencies" in the notes to a utility's financial statements to derive an approximate tenor of the contracts. If we conclude that the duration of PPAs is short relative to our targeted tenor, we would then add capacity payments until the targeted tenor is achieved. Based on our analysis of several companies, we have determined that the evergreen extension of the tenor of existing contracts and anticipated contracts should extend contracts to a common length of about 12 years.

The price for the capacity that we add will be derived from new peaker entry economics. We use empirical data to establish the cost of developing new peaking capacity and reflect regional differences in our analysis. The cost of new capacity is translated into a dollars per kilowatt-year (kW-year) figure using a weighted average cost of capital for the utility and a proxy capital recovery period.

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## Analytical Treatment Of Contracts With All-In Energy Prices

The pricing for some PPA contracts is stated as a single, all-in energy price. Standard & Poor's considers an implied capacity price that funds the recovery of the supplier's capital investment to be subsumed within the all-in energy price. Consequently, we use a proxy capacity charge, stated in \$/kW, to calculate an implied capacity payment associated with the PPA. The \$/kW figure is multiplied by the number of kilowatts under contract. In cases of resources such as wind power that exhibit very low capacity factors, we will adjust the kilowatts under contract to reflect the anticipated capacity factor that the resource is expected to achieve.

We derive the proxy cost of capacity using empirical data evidencing the cost of developing new peaking capacity. We will reflect regional differences in our analysis. The cost of new capacity is translated into a \$/kW figure using a weighted average cost of capital and a proxy capital recovery

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period. This number will be updated from time to time to reflect prevailing costs for the development and financing of the marginal unit, a combustion turbine.

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## Transmission Arrangements

In recent years, some utilities have entered into long-term transmission contracts in lieu of building generation. In some cases, these contracts provide access to specific power plants, while other transmission arrangements provide access to competitive wholesale electricity markets. We have concluded that these types of transmission arrangements represent extensions of the power plants to which they are connected or the markets that they serve. Irrespective of whether these transmission lines are integral to the delivery of power from a specific plant or are conduits to wholesale markets, we view these arrangements as exhibiting very strong parallels to PPAs as a substitute for investment in power plants. Consequently, we will impute debt for the fixed costs associated with long-term transmission contracts.

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## PPAs Treated As Leases

Several utilities have reported that their accountants dictate that certain PPAs need to be treated as leases for accounting purposes due to the tenor of the PPA or the residual value of the asset upon the PPA's expiration. We have consistently taken the position that companies should identify those capacity charges that are subject to operating lease treatment in the financial statements so that we can accord PPA treatment to those obligations, in lieu of lease treatment. That is, PPAs that receive operating lease treatment for accounting purposes won't be subject to a 100% risk factor for analytical purposes as though they were leases. Rather, the NPV of the stream of capacity payments associated with these PPAs will be reduced by the risk factor that is applied to the utility's other PPA commitments. PPAs that are treated as capital leases for accounting purposes will not receive PPA treatment because capital lease treatment indicates that the plant under contract economically "belongs" to the utility.

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## Evaluating The Effect Of PPAs

Though history is on the side of full cost recovery, PPAs nevertheless add financial obligations that heighten financial risk. Yet, we apply risk factors that reduce debt imputation to recognize that utilities that rely on PPAs transfer significant risks to ratepayers and suppliers.

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# NON-PROPRIETARY

## The Empire District Electric Company

### Calculation of Amortization to meet Financial Ratio Targets

#### Case No. ER-2008-0093

		Total Company	Juris Alloc
Additional Net Balance Sheet Investment	(numeric value for this case only)		94,500,000
Rate Base	Staff Acct. Schedule 2 *		679,960,138
Jurisdictional Allocation for Capital			0.837404
Total Capital	L5+L6		774,460,138
Equity	Barnes Workpapers	0.5082	393,580,642
Trust Preferred	Barnes Workpapers	0.0458	35,470,274
Long-term Debt	Barnes Workpapers	0.4461	345,486,668
Cost of Debt	Barnes Workpapers		6.80%
Interest Expense	L12 * L13 (+\$2,125,000 (TOPRs))		25,618,093
Electric Sales Revenue	Staff Acct. Schedule 9, L.1-2, + Rate Increase		358,933,949
Other Electric Operating Revenue	Staff Acct. Schedule 9, L.3		3,010,138
Water Revenue			
Operating Revenue	L16 + L17		361,944,087
Operating and Maintenance Expense	Staff Acct. Schedule 9, L.94 (less cust. deposits)		218,313,347
Depreciation	Staff Acct. Schedule 9, L.97		34,764,791
Amortization	Staff Acct. Schedule 9, L.99-100		13,909,452
Interest on Customer Deposits	Staff Acct. Schedule 10, Adj. S-82.1		527,165
Taxes Other than Income Taxes	Staff Acct. Schedule 9, L.101		12,481,678
Federal and State Income Taxes	Staff Acct. Schedule 9, L.112 (plus rate incr. impact)		23,131,102
Gains on Disposition of Plant			
Total Water Operating Expenses			
Total Electric/Water Operating Exp	Sum of L. 21-28		303,127,535
Operating Income - Electric	L19 - L29		58,816,552
Operating Income - Water			
less: Interest Expense	L14		-25,618,093
Depreciation	L22		34,764,791
Amortization			13,909,452
Deferred Taxes	Staff Acct. Schedule 9, L111		-2,884,453
Funds from Operations (FFO)	Sum of L31-36		78,988,249
<b>Additional Financial Information Needed for Calculation of Ratios</b>			
Capitalized Lease Obligations	EDE Accounts 227 + 243		
Short-term Debt Balance	EDE Form 10-Q, p. 8		
Short-term Debt Interest	EDE Accounts 417.891 + 431.400		
Cash Interest Paid	Information Supplied by EDE		
AFUDC Debt (capitalized interest)	EDE Form 10-Q, p. 4		
<b>Imputed PPA Debt Amortization</b>			
<b>Adjustments Made by Rating Agencies for Off-Balance Sheet Obligations</b>			
Debt Adj for Off-Balance Sheet Oblig			
Operating Lease Debt Equivalent	Information Supplied by EDE		
Purchase Power Debt Equivalent	Information Supplied by EDE		
Total OSB Debt Adjustment	L52 + L53		
Operating Lease Deprec Adjustment	Information Supplied by EDE		
<b>Interest Adjustments for Off-Balance Sheet Obligations</b>			
Present Value of Operating Leases	L52 * 6.8%		
Purchase Power Debt Equivalent	L53 * 6.8%		
Total OSB Interest Adjustment	L59 + L60		
<b>Ratio Calculations</b>			
Adjusted Interest Expense	L14 + L46 + L61		
Adjusted Total Debt 12/31/07	(L11/2) + L12 + L44 + L45 +L54		
Adjusted Total Debt 12/31/06	Same as L65, but for prior year		
Adjusted Total Capital	L9 + L44 + L45 + L54		
Adj. FFO Interest Coverage	(L37 + L56 + L64+L49)/L64		
Adj. FFO as a % of Average Total Debt	(L37 + L56+L49)/L65		
Adj. Total Debt to Total Capital	L65/L67		
<b>Changes Required to Meet Ratio Targets</b>			
Adj. FFO Interest Coverage Target			
FFO Adjustment to Meet Target	(L74 - L69) * L64		
Interest Adjustment to Meet Target	L37 * (1/L74 - 1) - 1/L69 - 1)		
Adj. FFO as a % of Average Total Debt			
FFO Adjustment to Meet Target	(L78 - L70) * L65		
Debt Adjustment to Meet Target	L37 * (1/L78 - 1/L70)		
Adj. Total Debt to Total Capital Target			
Debt Adjustment to Meet Target	(L82 - L71) * L67		
Total Capital Adjustment to Meet Target	L65/L82 - L67		
<b>Amortization and Revenue Needed to Meet Targeted Ratios</b>			
FFO Adj Needed to Meet Target Ratios	Maximum of L75, L79 or zero		
Effective Income Tax Rate			
Deferred Income Taxes	L87 * L88/(1 - L88)		
Total Amortization Req for FFO Adj	L87 - L89		2,910,076

\* All references to Staff Acct. Schedules tie to schedules supporting amounts reflected in the Accounting Schedules distributed 4/4/08

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