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

**In the Matter of Laclede Gas Company's
 Request to Increase its Revenues for Gas
 Service**

Case No. GR-2017-0215
 Tariff No. YG-2017-0195

**In the Matter of Laclede Gas Company d/b/a
 Missouri Gas Energy's Request to Increase
 its Revenues for Gas Service**

Case No. GR-2017-0216
 Tariff No. YG-2017-0196

Surrebuttal Testimony of

Michael P. Gorman

On behalf of

**The Office of Public Counsel and
 Missouri Industrial Energy Consumers**

November 21, 2017



ORC Exhibit No. 416
 Date 12-11-17 Reporter O.H.
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1 Q WHAT IS THE SUBJECT MATTER OF YOUR SURREBUTTAL TESTIMONY?

2 A I will be responding to the rebuttal testimony offered by Laclede/MGE witness Ms.
3 Pauline Ahern. Specifically, I will be responding to her criticisms of my recommended
4 return on equity offered in my direct testimony, and her comments concerning the
5 market models and market data I relied on to support my recommended return on
6 equity. My silence with regard to any particular issue should not be construed as
7 acceptance.

8 **I. SUMMARY**

9 Q PLEASE SUMMARIZE YOUR RESPONSE TO MS. AHERN.

10 A In rebuttal, Ms. Ahern offered several criticisms of my application of various market
11 models in determining a just and reasonable return on equity and my interpretation of
12 the model results. After a review of her testimony, I conclude that Ms. Ahern's
13 arguments are either based on erroneous information or without merit. After a review
14 of Ms. Ahern's rebuttal testimony, I continue to recommend that a just and reasonable
15 return on equity for Laclede/MGE, which is based on current market cost of capital
16 evidence, falls within the range of 8.9% to 9.4%. My recommended return on equity
17 of 9.20% will fairly compensate Laclede/MGE's investors and will support the
18 Companies' financial integrity.

19 **II. RESPONSE TO MS. AHERN**

20 Q PLEASE SUMMARIZE MS. AHERN'S CONCERNS WITH YOUR DCF ANALYSES.

21 A Ms. Ahern concludes that my recommended DCF return of 8.9% is reasonable.
22 (Ahern Rebuttal at 48). However, Ms. Ahern disagrees with my position that

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1 academic and investment practitioners opine that a GDP growth rate is not a
2 reasonable maximum long-term sustainable growth rate for a DCF study.

3 **Q PLEASE DESCRIBE THE ARGUMENTS OFFERED BY MS. AHERN**
4 **CONCERNING A LONG-TERM MAXIMUM SUSTAINABLE GROWTH**
5 **APPROPRIATE FOR USE IN A CONSTANT GROWTH DCF STUDY.**

6 A Ms. Ahern makes two arguments concerning a long-term sustainable growth rate.
7 These comments respond to my testimony that a constant growth DCF analysis must
8 be based on a growth rate that is sustainable over a long-term time period. I observe
9 that because security analysts' growth rate projections are made to reflect growth
10 over the next 3-5 years, these short-term growth rates may not be reasonable
11 estimates of the long-term sustainable growth. The constant growth DCF model
12 requires a long-term sustainable growth to accurately estimate a market required
13 equity return. Ms. Ahern disagrees with my testimony, and argues that the 3-5 year
14 analysts' growth rates are the best estimate of investors' outlook and are, therefore,
15 reasonable estimates of long-term sustainable growth without regard to rational
16 expectations.

17 Ms. Ahern also argues that it is not reasonable to expect that the GDP growth
18 rate is a reasonable expectation of a maximum sustainable growth rate. She reached
19 this conclusion by a review of historical information. Her argument is without merit.

20 **Q WHAT INFORMATION DOES MS. AHERN OFFER TO SUPPORT HER BELIEF**
21 **THAT UTILITIES CAN GROW AT RATES ABOVE THE U.S. GDP GROWTH?**

22 A Ms. Ahern contends that the Utilities Sector "value added" component of the U.S.
23 GDP over the 1947-2016 period has outpaced the full growth in the U.S. GDP. She

1 implies from this that it is reasonable to expect that analysts' 3-5 year growth rates
2 can outpace the U.S. GDP growth.

3 **Q PLEASE RESPOND.**

4 **A** There are several flaws in Ms. Ahern's logic that are evident from a review of her own
5 data. First, a review of Ms Ahern's data shows that the growth in utility value added
6 does not outpace the U.S. GDP over recent decades. Second, her data shows that
7 GDP growth changes over time and supports the expectations that growth over short
8 periods of time, such as 3-5 years, is not a reliable basis to form an outlook for long-
9 term sustainable growth. This is the mathematic assumption underlying the DCF
10 model.

11 For example, a review of Ms Ahern's Schedule PMA-R6 shows that the
12 utilities sector growth outpaced growth in total GDP on average over the 70-year
13 period, but trailed GDP growth over the last three decades as shown below in
14 Table 1. As can be seen in Table 1 below, the utilities sector grew slower than
15 overall GDP in the 1990s, 2000s, and since 2010. Notably, GDP growth has been
16 considerably greater than the utilities sector since the 1990s.

TABLE 1		
Value Added GDP Growth GDP vs. Utilities		
Period	CAGR	
	GDP	Utilities
1947-1959	6.34%	10.13%
1960-1969	6.92%	6.36%
1970-1979	9.95%	10.16%
1980-1989	7.95%	9.96%
1990-1999	5.50%	2.63%
2000-2009	4.09%	3.37%
2010-2016	3.68%	2.00%
Full Period (1947-2016)	106.22%	119.02%

Source:
Schedule PMA-R6, page 1.

Note:
CAGR = Compound Annual Growth Rate

1 As shown in Table 1 above and on Ms. Ahern’s Schedule PMA-R6, utilities did
2 slightly outpace the U.S. value-added GDP over the period 1947-2016. However,
3 that growth is largely attributable to a time period including 1947-1959, 1970-1979,
4 and 1980-1989.

5 Since 1990, the growth in U.S. electric utilities has trailed growth in the U.S.
6 GDP. This trend reflects the more modern – and current – outlook for the utility
7 industry.

1 Q DID MS. AHERN ALSO TAKE ISSUE WITH YOUR RELIANCE ON THE
2 *FUNDAMENTALS OF FINANCIAL MANAGEMENT* TEXTBOOK FOR
3 SUPPORTING THE EXPECTATION THAT A GDP LONG-TERM GROWTH
4 REFLECTS A MAXIMUM SUSTAINABLE GROWTH IN A DCF MODEL?

5 A Yes and no. Ms. Ahern did not dispute the fact that the authors of this textbook
6 recommend use of a GDP growth rate in a multi-stage growth DCF model. However,
7 she offers selective reading of the textbook in suggesting the authors recommended
8 an 8% GDP growth outlook for such DCF studies, rather than use the current outlook
9 for GDP growth that is projected by independent economists for GDP growth.

10 Specifically, Ms. Ahern observes that the authors of the *Fundamentals of*
11 *Financial Management* (Brigham & Houston) recommend a long-term GDP growth
12 rate of 8% as a sustainable growth rate. Ms Ahern observes that the authors state:
13 "On this basis, one might expect the dividends of an average, or 'normal,' company to
14 grow at a rate of 5 to 8 percent a year." The basis the authors are referring to is the
15 nominal long-term projected GDP growth.

16 Q PLEASE RESPOND.

17 A What Ms. Ahern fails to acknowledge or understand is that the authors made this
18 statement based on market information that was available when the textbook was
19 originally published, in or around the late 1980s/early 1990s. The textbook cited by
20 Ms. Ahern is the 11th edition of this textbook. The original edition was published In
21 the late 1980s or early 1990s when the U.S. was experiencing GDP growth of 5% to
22 8%. The U.S. GDP is not growing, nor is it expected to grow, at a rate of 5% to 8% in
23 the current market.

1 Regardless, the salient point the authors made in the full quote shown on
2 page 49 of Ms. Ahern's rebuttal is "Expected growth rates vary somewhat among
3 companies, but dividend growth for most mature firms is generally expected to
4 continue to the future at about the same rate as nominal gross domestic product (real
5 GDP plus inflation)." [Emphasis added] Hence, this textbook supports the
6 assumption underlying my multi-stage growth DCF model. Ms. Ahern's reliance on
7 GDP growth that is now at least 30 years old is not credible.

8 **Q DID MS AHERN MAKE ANY OTHER COMMENTS CONCERNING A DCF**
9 **SUSTAINABLE GROWTH?**

10 A Yes. Ms. Ahern also questions whether or not a DCF result can provide fair
11 compensation to a utility company when the proxy group market price exceeds the
12 book value of the utility or the market-to-book ratio is greater than 1. She observes
13 that the current market-to-book ratio is greater than 1, and suggests that the
14 authorized return on equity should not be set equal to the DCF return because that
15 could result in a decline in the market price of utility stock down toward its book value.
16 She therefore opines that an authorized return on equity set equal to the DCF return
17 will penalize utility investors. (Ahern Rebuttal at 51).

18 **Q PLEASE COMMENT ON MS. AHERN'S OUTLOOK ON WHETHER OR NOT THE**
19 **DCF PROVIDES FAIR COMPENSATION TO THE UTILITY.**

20 A Ms. Ahern's assessment of a DCF as it relates to the market-to-book ratio of utility
21 companies is simply in error. A DCF and a risk premium reflect marginal cost of
22 common equity for a utility. That is, a DCF and a risk premium estimate the expected

1 return an investor demands in order to make an investment in a utility stock. The
2 DCF and risk premium studies do not estimate return on stock previously bought.

3 As such, in order to ensure that the utility has the ability to earn the same rate
4 of return available when purchasing a stock, or making utility plant investment, then
5 the authorized return on equity should reflect the marginal cost of capital available in
6 the market. Importantly, on the margin, the market-to-book ratio between a utility
7 stock investment and the book value of plant investment is always 1.

8 If a utility is deciding on how to invest its internal cash, it could choose
9 between two comparable risk alternatives of: (1) purchasing its own stock, or
10 (2) investing in new utility plant and equipment. If these incremental comparable risk
11 investment options provide the same rate of return, then the utility is incented to make
12 economic investment decisions. Specifically, if a utility can earn the same rate of
13 return on incremental plant investments as it can repurchasing its own stock, then it
14 will have an economic incentive to invest in utility plant when needed to provide
15 reliable service.

16 The basic flaw in Ms. Ahern's argument is she does not recognize that the
17 market-to-book ratio about which she is commenting concerns marginal investment
18 decisions and not embedded investment decisions.

19 However, a fair rate of return not only provides economic incentive to make
20 incremental marginal investments, but the return will also ensure a rate of return that
21 is sufficient to provide fair compensation to the utility and maintain its financial
22 integrity. All of this must be done at just and reasonable prices to retail customers.

23 These are the standards outlined in the Supreme Court's *Hope* and *Bluefield*
24 decisions. For these reasons, there can be instances where a recommended return
25 on equity would be above the results of the DCF model. In the current marketplace,

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1 based on my judgment and studies of market capital costs, I find that a return above
2 my DCF result is reasonable in this market. However, there can be instances where
3 the DCF return is more or less than a return needed to both provide fair
4 compensation to the utility and to also maintain its financial integrity. As such,
5 determining the authorized return on equity requires the use of informed judgment, as
6 well as sound estimates from market based models that provide accurate estimates
7 of the current cost of equity capital. Ms. Ahern's rejection of the DCF results based
8 purely on these market-to-book ratios is misplaced, fundamentally inaccurate, and
9 does not produce a reasonable and fair rate of return that should be used for
10 ratemaking purposes.

11 **Q WHAT ISSUES DOES MS. AHERN TAKE WITH YOUR RISK PREMIUM STUDY?**

12 **A** Ms. Ahern identifies three concerns she has with my risk premium analysis: (1) the
13 1986-2017 period which my study utilized; (2) my application of the risk premium
14 methodology, which she asserts ignored a simple inverse relationship, and; (3) my
15 application of the U.S. Treasury bond and public utility bond methods.

16 **Q DID YOU RESPOND TO THE LENGTH OF THE PERIOD USED IN YOUR RISK**
17 **PREMIUM STUDY?**

18 **A** Yes. In my direct testimony at pages 39-40, I commented on the appropriateness of
19 the time period used in my study, but Ms. Ahern failed to acknowledge or respond to
20 this testimony. In that testimony, I explained that there are two types of equity risk
21 premium studies. First, there are risk premium studies based on actual realized
22 historical investment returns, which is the risk premium study used in the Ibbotson
23 reference book cited by Ms. Ahern. Second, an expectational equity risk premium

1 study, which is the study I offered, estimates a risk premium based on expected
2 returns, which are derived from shorter periods of time.

3 An equity risk premium based on historic actual realized investment returns
4 typically requires a very long time period of return data to smooth out annual
5 variations in the return data. This allows for the development of a reasonable
6 forward-looking equity risk premium estimate. I did not perform a historic return risk
7 premium analysis. This is the type of risk premium analysis used and described by
8 the Ibbotson source as cited by Ms. Ahern, but it does not relate to my study.

9 My expectational risk premium study was based on a shorter time period,
10 which is generally consistent with expectational risk premium studies. Indeed, one of
11 the sources referenced by Ms. Ahern recognizes the two types of risk premium
12 studies I just described. In his textbook *New Regulatory Finance*, Dr. Roger Morin
13 finds that historical risk premium studies require long-term time periods in order to
14 produce reliable estimates of forward-looking expectations. However, Dr. Morin also
15 recognizes that expectational risk premium studies can be performed on relatively
16 short time periods.¹

17 Ms. Ahern's testimony in this regard simply is inaccurate because she fails to
18 recognize different types of equity risk premium studies, and fails to differentiate the
19 proper constructs of a risk premium study.

¹*New Regulatory Finance*, Roger A. Morin, PhD, 2006 Public Utilities Reports, Inc., Vienna, Virginia, at 110-123.

1 Q DO YOU BELIEVE MS. AHERN'S PROPOSAL TO ADJUST YOUR EQUITY RISK
2 PREMIUM FOR AN INVERSE RELATIONSHIP BETWEEN INTEREST RATES AND
3 EQUITY RISK PREMIUMS IS REASONABLE?

4 A No. Academic literature has supported the notion that equity risk premiums change
5 over time, and largely relate to the difference in investment risk of an equity versus a
6 debt security. Indeed, Ms. Ahern's own PRPM™ study attempts to measure an
7 equity risk premium relative to differences in investment risk by measuring the
8 variability of historical achieved returns. But her study is flawed because she failed to
9 reflect the true investment return variability and risk of bond investments in her study.

10 While a change in interest rates is a factor that can help describe an
11 appropriate equity risk premium, interest rate changes are not the only risk factor that
12 can affect the relative risk differentials between equity and debt securities. Therefore,
13 Ms. Ahern's proposal to measure an equity risk premium based on only changes in
14 nominal interest rates is not accurate and does not produce a useful or accurate
15 estimate of a fair return for Laclede/MGE.

16 Q CAN YOU PROVIDE AN EXAMPLE OF FACTORS OTHER THAN CHANGES IN
17 NOMINAL INTEREST RATES THAT TRANSLATE INTO CHANGES IN EQUITY
18 RISK PREMIUMS?

19 A Yes. One factor can be simply a change in outlook for inflation expectations. If
20 everything else is held constant, and inflation outlooks are changed from 4% down to
21 3%, then the 1 percentage point decline in inflation outlooks would cause a decrease
22 in the equity and debt security in a comparable manner if a long-term debt instrument
23 is used in risk premium measurement. Specifically, equity and debt required returns
24 are composed of: (1) a real return, and (2) an inflation return. If the real return

1 components of the equity and debt required return are left unchanged because risks
2 did not change, and inflation outlook rates declined by 1 percentage point, then the
3 equity risk premium would not change even though the expected return on equity and
4 debt securities declined by 1 percentage point.

5 In this case, the equity risk premium would stay the same, but Ms. Ahern's
6 flawed inverse relationship regression study would suggest that the equity risk
7 premium would increase only because nominal interest rates had declined.
8 Ms. Ahern's inverse relationship method is too simplistic, and does not consider
9 changes in investment risk, which is the critical factor in measuring risk premiums.

10 **Q WHAT ISSUES DOES MS. AHERN TAKE WITH YOUR CAPM STUDY?**

11 **A** Ms. Ahern has three specific issues with my CAPM analysis: (1) my calculation of the
12 historical market risk premium that relied upon total returns on long-term government
13 bonds and not the income returns; (2) the fact that I did not include a forecasted
14 market risk premium, and; (3) the fact that I did not include an empirical CAPM
15 ("ECAPM").

16 **Q PLEASE RESPOND TO MS. AHERN'S COMMENTS ON YOUR HISTORICAL**
17 **MARKET RISK PREMIUM.**

18 **A** Ms. Ahern chose to rebut the CAPM analysis using a 6.0% market risk premium that I
19 ultimately did not rely on. Ms. Ahern's criticisms, although misplaced, are moot
20 because I did not rely on the results of the version of the CAPM model that used the
21 historical market risk premium, and so I will not respond to her testimony discussing
22 it.

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1 Q PLEASE RESPOND TO MS. AHERN'S COMMENTS ON YOUR FAILURE TO
2 INCLUDE A FORECASTED MARKET RISK PREMIUM.

3 A This argument is simply in error. I did produce a market risk premium based on a
4 projected market return less a forward-looking risk-free rate. I estimated a forward
5 return on the market using a risk premium methodology. My forward market return of
6 11.5% was based on a historical real market return and a long-term inflation
7 projection. This is a forward-looking market return. Ms Ahern's apparent attack on
8 the use of a risk premium methodology to estimate a current market return contradicts
9 her own studies' use of risk premium methodologies to estimate a return for
10 Laclede/MGE. Her argument here should be rejected as contradictory to her own
11 studies and in error.

12 Q PLEASE RESPOND TO MS. AHERN'S COMMENTS ON YOUR FAILURE TO
13 INCLUDE AN ECAPM ANALYSIS.

14 A I responded to Ms. Ahern's use of the ECAPM extensively in my rebuttal testimony. I
15 am unaware of any academic literature that concludes an ECAPM is more accurate
16 when an adjusted beta is used. Hence, the only way to correctly apply an ECAPM is
17 by using an unadjusted regression beta. She quotes the Dr. Roger Morin textbook
18 which asserts that an ECAPM analysis adjusts the CAPM results for something other
19 than an adjusted beta result. However, I have been in regulatory proceedings with
20 Dr. Morin, and he has failed to provide any academic support for the assertions
21 contained in his textbook. Further, Ms. Ahern provided no academic literature subject
22 to academic peer review that supports her development of an ECAPM study using
23 adjusted utility betas.

1 Further, Dr. Morin's assertion that an ECAPM analysis adjusted CAPM results
2 differently than adjusted betas simply makes no sense from a mathematical point of
3 view. The mathematical makeup of an ECAPM analysis with unadjusted betas
4 produces a similar impact on the Security Market Line and the resulting CAPM return
5 estimate as using a traditional CAPM analysis using the *Value Line* adjusted betas.
6 The suggestion that ECAPM is a different adjustment to the CAPM results, simply
7 defies mathematical reality.

8 I would also note that Ms. Ahern's quotation of Dr. Morin does not constitute
9 reliance on independent academic literature on this issue. Rather, Ms. Ahern and Dr.
10 Morin are both utility rate of return witnesses. The articles she is quoting are from
11 utility trade organizations, and a book designed to describe a utility rate of return
12 witness's perspective on estimating a return on equity for a utility. There has been no
13 proof that the academic community accepts Dr. Morin's notion that an ECAPM with
14 an adjusted beta produces a reliable estimate of a fair return for a company.
15 Therefore, this methodology should be disregarded as unaccepted by independent
16 authoritative sources.

17 For these reasons, Ms. Ahern's ECAPM analysis is fundamentally flawed
18 because it includes adjusted betas rather than raw betas, and produces an inflated
19 return on equity estimate.

20 **Q MS. AHERN TAKES ISSUE WITH YOU NOT ADJUSTING YOUR BASE COST OF**
21 **EQUITY RECOMMENDATIONS FOR FLOTATION COSTS OR BUSINESS RISK**
22 **ASSOCIATED WITH LACLEDE/MGE'S SMALL SIZE. PLEASE RESPOND**

23 **A** I discussed at length in my rebuttal testimony (pages 19-23) on why each of these
24 proposed adders is inappropriate for Laclede/MGE. Ms. Ahern's proposal to adjust

1 my recommendations for these adders is not persuasive and should be rejected by
2 the Commission.

3 Q DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

4 A Yes, it does.

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