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OFFICE OF CONSUMER ADVOCATE

DIRECT TESTIMONY

OF

MARCOS MUNOZ

MIDAMERICAN ENERGY COMPANY
DOCKET NO. RPU-2014-0002

November 14, 2014

Q: What is your name and business address?

A: My name is Marcos Munoz. My business address is 1375 East Court Avenue, Room 63, Des Moines, Iowa 50319-0063.

Q: By whom are you employed?

A: I am employed by the Office of Consumer Advocate (OCA) of the Iowa Department of Justice as a Utility Analyst.

Q: Please describe your educational background.

A: I received Bachelor's and Master's degrees in Economics from New Mexico State University in 2007 and 2010 respectively. My Master's degree focused on Public Utility Regulation and emphasized National Association of Regulatory Utility Commissioners (NARUC) ratemaking techniques in the application and simulation of revenue requirement and cost of service studies.

My academic experience includes applied econometric analysis in financial and cost economics. I performed research regarding the financial consequences of utility restructuring and its risks, specifically the implications of removing ring-fencing mechanisms that pertain to the repeal of the Public Utility Holding Company Act (PUHCA). I also performed research regarding return expectations and the effects of public expenditure programs in the reduction of market volatility.

Q: Please describe your professional background.

A: Prior to joining the OCA in June 2010, I worked for a financial and research firm. While in college, I had the opportunity to participate in the formulation of

a feasibility study for the development of a wind farm facility intended to provide distributed generation to the border states of Chihuahua, Mexico and New Mexico. I primarily concentrated on analyzing the social and political regulatory environment in Mexico. I also assisted in designing finance strategies for the promotion of wind energy in developing countries through a Kyoto protocol program called, "Clean Development Mechanisms."

Since joining the OCA, I have concentrated on equity return research and assisting other staff in the development and implementation of cost of equity and cost of capital valuation models. I have analyzed avoided cost studies (including escalation rates), O&M calculations, demand projections, and fuel cost projections. I have also been responsible for analyzing transmission costs and planning, general class cost of service issues, and interconnection tariff revisions. I have also reviewed purchased gas adjustment filings and natural gas hedging plans.

In addition to my employment at OCA, I have taught economics at Grandview University and Des Moines Area Community College in Des Moines.

Q: Have you prepared an exhibit?

A: Yes. I prepared OCA Exhibit ___ (MM-1) consisting of Schedules A through F.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to address MidAmerican Energy Company (MidAmerican or MEC) Wind IX Project advance ratemaking principle 5.5 and

recommend a reasonable return on common equity (ROE) capital that the Iowa Utilities Board (IUB) should approve for the entire useful life of the Wind IX Project.

Summary of Recommendations

Q: What ROE do you recommend the IUB apply to the Wind IX Project?

A: Based on the results of my market-based models that reflect current investor expectations, the possibility of changing market conditions, as well as the economic and societal benefits of renewable energy, I recommend that the IUB set the ROE for the Wind IX Project at 11.3%.

Q: How did you calculate the ROE that you recommend the IUB approve as an advance rate making principle for the Wind IX Project?

A: First, I examined current return expectations given current capital market conditions. I relied on the continuous compounding discounted cash flow (DCF) model to estimate the current cost of common equity for MEC. I applied the Capital Asset Pricing Model (CAPM) to check my DCF results. Next, I analyzed historical dividend yield data to determine an ROE that reflects the cost of equity over an extended period and more accurately reflects investors' changing return expectations under changing market conditions. My recommendation is based upon the serial-historical relationship between interest rates and ROEs and is used to develop a long-term ROE forecast that will be sufficient to apply over the entire life of the Wind IX Project.

To estimate both MEC's current cost of equity and the appropriate fixed long-term ROE MEC will apply over the entire life of the Wind IX Project, I selected a group of ten publicly traded companies with similar risk profiles and up-to-date *Value Line* market information. Since capital markets should efficiently reflect all publicly available information through prices, I applied the DCF model to my proxy group.

Return on Common Equity Capital

Q: What is the cost of common equity capital, and why is it important in the regulatory process?

A: The cost of equity capital is the investor's expected return on his or her equity investment in a regulated public utility. Regulation provides public utilities with the opportunity to recover their reasonably incurred costs including a reasonable return on their investment. A reasonable rate of return allowed on an equity investment should be equal to the cost of the equity capital.

Rates designed to generate a return on common equity exceeding the utility's cost of common equity capital are unreasonable and will result in windfall profits paid by the ratepayers to the regulated public utility. The opposite is true if the allowed return on common equity capital is below the cost of the equity capital investment. If the allowed return is less than the utility's cost of capital, a regulated public utility will realize challenges in acquiring equity capital to meet its service obligation.

Q: Can you describe the principles used to estimate the cost of common

equity?

A: Yes. Under the rate making process, a regulated utility is allowed the opportunity to earn a fair and reasonable rate of return on its investment used to provide safe and reliable service. A fair and reasonable rate of return is established by considering, among other things, the reasonable and comparable cost of equity of similar-risk companies, the sufficiency of the rate of return to preserve a company's financial integrity, and the ability of the rate of return to sustain capital attraction in the future.

Q: Can one estimate the cost of equity with the same precision used in determining the cost of debt?

A: No. The cost of debt is precisely measurable by analyzing interest payments, maturities, and issue prices. The cost of equity takes into account subjective parameters such as relative risks and investor expectations.

<u>The Proxy Group</u>

Q: How did you select the sample utilities you relied upon to estimate the cost of common equity?

A: I began by examining MEC witness Dr. Vander Weide's 34 utility proxy companies. I subsequently adjusted Dr. Vander Weide's 34 utility proxy companies to eliminate those companies that are dissimilar to MEC. My adjustments were based on two criteria: 1) company size, 2) similar common equity ratios. I also eliminated companies that are not combination utilities

(companies that earn operating revenues generated by both regulated electric and gas sales).

On the issue of company size, utilities included in Dr. Vander Weide's 34 utility proxy companies have market capitalization as low as $1.06 billion and as high as $56.35 billion even though MEC's market capitalization is only $6.8 billion. I believe companies with market capitalization sizes within that large a range are not of similar risk to MEC. Thus, I only included companies in my proxy group whose size and risk level is comparable with MEC's size and risk level. The ten companies in my proxy group fall between market capitalization ranges of $3.6 billion and $18.0 billion. The median market capitalization for the companies in my proxy group is $10.3 billion, and the average is $10.7 billion. Moreover, Dr. Vander Weide's 34 utility proxy companies included companies with common equity ratios as high as 58.5% and as low as 31.0%. MEC's common equity ratio is 52.5%. The ten companies in my proxy group have an average common equity ratio of 49.6%, which is reasonably similar to MEC's common equity ratio. Lastly, I eliminated Great Plains Energy Company from my proxy group since it is not a combination utility. I consider my selected ten combination- utility proxy group to be more representative of MEC's financial and business risk than Dr. Vander Weide's.

Q: What combination electric and gas utilities met your size and risk criteria?

A: The ten combination electric and gas utilities that I selected were Alliant Energy, SCANA, TECO Energy, DTE Energy, Vectren Corporation, Excel

Energy, Ameren Corporation, Consolidated Edison, Wisconsin Energy, and Northeast Utilities. The risk profile of this sample of utilities is representative of MEC's risk profile. OCA Exhibit ___ (MM-1), Schedule A, pages 1-11 show the summary details of these utilities and their respective *Value Line* information.

Q: Why did you only rely on combination gas and electric utilities for your proxy group and omit the electric-only utilities and non-utility companies?

A: First, MEC is a combination electric and gas utility that has an economy of scope not available to electric-only utilities. MEC can utilize its expertise and resources in customer service, billing and other departments across both its electric and gas utility operations. Second, firms with both electric and gas operations have two seasons of peak utility revenues during the year, thereby reducing risk. Third, a combination utility may procure natural gas to both generate electricity and to sell to its customers. Because of these differences, the business and economic risks associated with electric-only utilities significantly differ from those associated with combination utilities such as MEC.

The DCF Model

Q: What is the economic foundation for using the DCF model?

A: The price an investor is willing to pay for an investment under any market condition depends on, and is equal to, the present value of the expected future income stream the investment generates. The DCF model accurately reflects

price based upon the present value of expected future income streams. The freely traded common stock investment market price reflects the present value of the expected income stream. The future income stream may take the form of cash dividends or capital gains. The combination of current and future income streams is what the investor relies upon in determining the investors' expected return on investment. Thus, in the DCF model, the discount rate measures the expected market return on an equity investment and reflects the cost of the equity investment.

Q: Why is the DCF model used to estimate the cost of common equity?

A: Investors use the DCF model as a tool to calculate expected returns on common equity and assist financial decision making. The DCF model considers market prices that reflect the most current information. Investors rely on the same market information incorporated in the DCF model to determine the discount rate they expect to apply to their equity investments.

Q: Are capital markets efficient?

A: Yes. Participant competition and free flow of information make capital markets, such as the New York Stock Exchange, efficient. When information becomes available, competition between participants will drive the price of an investment to the point where investors have the opportunity to earn their cost of common equity, but no more.

Q: Would you explain how the DCF model works?

A: Yes. The DCF model considers the cash flows that investors expect to receive.

The cost of common equity, expressed as K, is equal to D/P + G, where D is the dividend, P is the price of the investment, and G is the expected growth rate.

Q: Does the DCF analysis take into account other investment opportunities?

A: Yes. Investor interaction in capital markets drives prices that the DCF Model incorporates. The markets and prices should reflect all of the investors' opportunities.

Q: Please explain why it is appropriate to rely on the continuous compounding DCF model in estimating a utility's cost of common equity.

A: Continuous compounding is widely used to measure the time value of a long-term holding period investment such as debt and/or equity. As opposed to the discrete DCF model (which incorrectly assumes that a company accrues revenues and compounds dividends in discrete quarterly intervals), the continuous compounding DCF model assumes that companies actually earn, accrue, and receive revenues continuously throughout the year on a daily or continuous basis (not just quarterly basis). This continuous stream of revenues compound over time, and shareholders are later paid compounded earnings through dividends.

Current Cost of Equity

Q: Earlier you stated that the first thing you did was estimate the current cost of common equity for MEC using the DCF model. What price did you use in your DCF calculations?

A: As shown in OCA Exhibit ___ (MM-1), Schedule B, page 1, col. (A), I

calculated an average weekly price for the twelve-month period ending September 2, 2014, for each company included in my proxy group and used this price in my DCF calculation. An average price over this recent 12-month period is more likely to be representative and conform to current market conditions than a single price in time or a monthly average price and is less likely to be influenced by short-term market aberrations.

Q: What dividend did you use in your DCF analysis to calculate the current cost of common equity for MEC?

A: I used the indicated dividend for each of the companies in my proxy group. The indicated dividend is the most recently declared quarterly dividend annualized (or multiplied by four). The indicated dividend reflects the fact that firms generally pay dividends four times per year. Thus, the indicated dividend is the best information available to investors for estimating the expected future annual dividends. OCA Exhibit ___ (MM-1), Schedule B, page 1, col. (B), shows the average indicated dividend for each company included in my proxy group.

Q: Why is the indicated dividend the best measure available to determine the expected dividend?

A: The indicated dividend measures investors' expected dividend payment based upon the following four assumptions:

(1) indicated dividends reflect the most recently declared quarterly dividend annualized as though the same amount was paid each quarter for the entire year,

(2) firms are not required to increase their dividends,

(3) dividends are normally increased if the firm believes the increase is sustainable in the future, and

(4) dividends are not lowered in low earning periods unless the lowered earnings are expected to continue.

As a result, the indicated dividend is the most recent and most accurate indicator available to investors regarding a firm's prospective annual dividend payments.

Q: How did you calculate the dividend yield?

A: I calculated the dividend yield by dividing the indicated dividend by the average 52-week closing stock prices between September 3, 2013 and September 2, 2014. My dividend yield calculations are shown in OCA Exhibit ___ (MM-1), Schedule B, page 1, column (C).

Q: What dividend yield do you use in your DCF model?

A: I used a dividend yield of 4.0%, which is the average dividend yield of the ten companies included in my proxy group.

Q: What are the characteristics of the appropriate growth rate to incorporate into the DCF model?

A: The DCF model should incorporate long-term and sustainable growth rates expected over the life of the investment.

In steady state equilibrium, the perpetual sustainable growth in earnings per share (EPS), dividend per share (DPS), and book value per share (BVPS) will equal the internal growth rate (br). On the other hand, businesses operate

under changing economic and market circumstances, not in perpetual steady state equilibrium. Thus, in the immediate term, the growth in EPS, DPS, BVPS, and the internal growth (br) rate will not be the same. As a result, one has to determine the measures of dividend growth that are most representative of the long–run sustainable future given the performance of the company in the particular period being evaluated.

Q: Did you rely on EPS as your sole basis for determining a sustainable growth rate?

A: No. Focusing solely on EPS to determine growth rates can lead to unsustainable results. Cyclical market conditions influence EPS. Market cyclicality can cause EPS to drastically change over time and affect EPS growth trends.

Q: Please describe how you determined the growth rate you incorporated in your DCF Model to determine MEC's current cost of equity.

A: I determined the long-run sustainable growth rate for each company in my proxy group by examining each company's historical financial performance, the factors that influenced that performance, and the factors that could and/or would affect each company's future performance. I examined each company's historical EPS, BVPS, and DPS data, and the internal growth rate set forth in each company's *Value Line* survey in an effort to determine reasonable measurements of sustainable growth. I looked at the historical trends of dividend growth and selected those measures of dividend growth that are representative of sustainable growth in perpetuity.

Q: How did you calculate your expected sustainable growth rates for EPS, BVPS and DPS?

A: I calculated the growth rates for EPS, BVPS, and DPS for each company included in my proxy group using a log-linear approach. The log-linear growth rates for EPS, DPS, and BVPS for each company in the proxy group were calculated over five- and ten-year periods using regression analysis. The regression analysis results reflect the growth averages for all three measures: EPS, DPS, and BVPS. OCA Exhibit ___ (MM-1), Schedule B, pages 3 to 12 shows the historical financial information for EPS, DPS and BVPS and the results of my log-linear growth calculations.

Q: How did you estimate the internal growth rate?

A: I estimated the internal growth rate (br) by looking at the historical payout policy of each of the utilities in the proxy group. The percentage difference between the historical dividend payments and earnings is known as the payout ratio *(1-b)*, where 1 represents 100% of earnings paid and *(b)* is the ratio of dividends retained by the company (also known as the retention ratio). Since there are no accurate measures for either a company's future dividend-payout policy or its retention ratio *(b)*, I relied on the historical five- and ten-year measures of the retention ratio *(b)* as a reasonable estimate. Next, I multiplied the retention ratio *(b)* for each of the past ten years by the historical achieved return on book equity (*r*) to arrive at the five- and ten-year internal growth rate (br) for each company as shown in OCA Exhibit ___ (MM-1), Schedule B,

pages 3 through 12**.**

Q: Does a firm's historical performance provide data to better estimate a sustainable growth rate than analysts' growth rate forecasts?

A: Yes. Analysts tend to overstate growth rate forecasts, because analysts tend to be overly optimistic with their EPS and DPS growth forecasts. In addition, forecasts of DPS and EPS growth rates focus on short-term projections. Short-term growth rate projections do not accurately reflect the DCF model's assumed perpetual holding period of an equity investment. Moreover, the assumptions and data used in short-term growth forecasts are rarely available for public consumption. This means that the public has to rely on the analysts' forecasted EPS information without being able to determine if the assumptions, data, or analysis relied upon to generate these forecasts are accurate.

Q: How did you determine the appropriate long-run sustainable growth rate?

A: Judgment and analysis of the historical log-linear results were used to select those growth rates that are most representative of sustainable dividend growth. OCA Exhibit ___ (MM-1), Schedule B, pages 13 to 18, shows the growth rates that I determined to be representative of sustainable growth and the explanation for my sustainable growth selection. Ultimately, I arrived at a range of sustainable growth rates for the proxy group.

Q: What long-run sustainable growth rate range did you determine to be sustainable?

A: I determined that a sustainable growth rate range for the companies in my proxy

group ranges between a low of 0.7% and a high of 7.0%. Since the result of my growth rate range is large, I selected a growth rate range based on the mid-point for each company included in my proxy. I eliminated the proxy companies' mid-point growth rate outliers of 1.8% and 6.4% as highlighted in OCA Exhibit ___ (MM-1), Schedule B, page 1. Both growth rates are outside of the midpoint growth-rate distribution and should not be included as reasonable parameters.

Ultimately, I believe that a reasonable growth range for MEC would fall between 4.5% and 5.2% representing the difference between the proxy companies' median and high mid-points as shown on OCA Exhibit ___ (MM-1), Schedule B, page 1.

Q: Based upon using the DCF model and the above information, what is MEC's current cost of common equity?

A: I relied on my selected growth rate ranges of 4.5% and 5.2% in my DCF model and concluded that the current DCF cost of equity of the companies in my proxy group is between 8.5% and 9.2% as shown on OCA Exhibit __ (MM-1), Schedule B, page 1.

Q: What is your conclusion?

A: A current cost of common equity as calculated by the DCF model that falls between 8.5% and 9.2% is reasonable for MEC.

Q: Did you use the CAPM to check your DCF model cost of common equity calculation?

A: Yes. By applying the CAPM to the proxy group of comparable companies, I calculated the current cost of common equity rate to be between 8.3% and 9.4%.

Q: How is the cost of common equity estimated using the CAPM?

A: The CAPM Model adds the company's specific risk premium to the risk-free interest rate. The CAPM equation is:

$$K = I + (b * RP), \text{ where}$$

- K is the cost of common equity,
- I is the risk-free interest rate,
- b is beta,
- and RP is the market risk premium.

The market risk premium is the market return (MR) less the risk-free interest rate.

Q: How did you calculate the risk-free interest rate component of the risk premium?

A: U.S. Treasury securities are commonly used to measure the risk-free rate of return. According to Morningstar, the geometric mean of annual total returns for long-term government bonds (*i.e.*, those with a 20-year maturity) for the period 1926-2013 is 5.5%. I believe that this 5.5% return is a reliable indicator of the risk-free interest rate. Historical total annual returns are composed of income, capital appreciation, and reinvestment income. Using historical total returns provided by U.S. Treasury bonds as the measure of the risk-free rate of return better reflects investors' expected return on bond holdings than do current

treasury bond yields that change on a daily basis. Using U.S. Treasury bond yields that change continuously would distort the risk-free calculation results. Using historical total annual returns eliminates the external distortion included when using current yields on U.S. Treasury bonds. Moreover, using historical total annual returns also eliminates the need to rely on speculative projected yields.

Q: Is the average 30-day yield on 10-year, 20-year, and 30-year US Treasury bonds a reliable indicator of the risk-free rate?

A: No. The average 30-day yield on 10-year, 20-year, and 30-year U.S. Treasury bonds is not reflective of long-term trends. Current and average 30-day yields on 10-year, 20-year, and 30-year U.S. Treasury bonds are a function of the Federal Reserve Board's policy to increase nominal GDP by maintaining low interest rates from monetary easing through the purchasing of 10-year, 20-year, and 30-year long-term U.S. Treasury bonds. In addition to the Federal Reserve Board's policy, the current yields on 10-year, 20-year, and 30-year U.S. Treasury bonds are distorted because of the increased demand in U.S. Treasury bond with longer maturities.

Q: On what market return did you rely?

A: I relied on Morningstar's geometric mean of the total market returns from the Standard & Poor's 500 (S&P 500) between 1926 and 2013. The geometric mean of Morningstar's S&P 500 total market return is 10.1%. My reliance on a 10.1% market return is consistent with Dr. Ibbotson and Dr. Chen's long-run

market outlook. Dr. Ibbotson and Dr. Chen, financial experts and authors of Morningstar's Ibbotson Classic Year Book and Valuation series, publish historical data based on a projected supply-side model market that predicts a total market return that will average 9.4% over the long run, assuming historical inflation rates.[1]

Q: Why is the geometric mean a good indicator of market return?

A: The geometric mean accurately measures historical rate of return averages of an investment over time. Because it smoothes out the non-normal distribution of compounded total return averages, it is a reliable indicator of expected returns.

Q: What market risk premium did you assume in your analysis?

A: I assumed a market risk premium of 4.6%. I calculated this 4.6% risk premium by taking the difference between the estimated geometric market return of 10.1% and the 20-year U.S. Treasury bonds geometric mean return of 5.5%, as shown in OCA Exhibit ___ (MM-1), Schedule C, Table I.

Q: Do you believe the market risk premium is a reliable measure of the cost of equity for MEC?

A: No. There is significant empirical evidence of historical volatility in the market risk premium. Over time, the relationship between the market risk premium and interest rates has changed as the volatility in equity market return has decreased and volatility in the bond market has increased. As shown in OCA Exhibit __ (MM-1), Schedule D, the changes in risk of U.S. Treasury bills

[1] Ibboston, Roger G. and Peng, Chen. 2014 Ibboston® SBBI® Classic Year Book. Morningstar. Supply Model, pages 155-158.

between 1926 and 2013 has produced a distribution of the risk premiums ranging from a negative 44.4% to a positive 53.5% with a risk premium standard deviation of approximately 20%. The standard deviation of the market risk premium is more than half the risk premium average. If the average of the historical risk premiums has a variance of this magnitude, then the result is not statistically significant, and inferences based on this data would not be reliable.

Q: What are betas, and how did you calculate them?

A: Betas are a measure of a company's systemic non-diversifiable equity risk. Betas measure the price movements of a firm's stock in relation to the price movements of the overall stock market. Thus, betas measure a security's risk relative to the overall market. The overall market has a beta of one. Securities that are riskier than the market will have betas that are greater than one. Securities that are less risky than the market will have betas that are less than one. Betas can also be used to measure the relative riskiness between firms. For example, a firm that has a beta of 0.4 is typically less risky than a firm that has a beta of 0.6.

I used *Value Line's* adjusted betas for my proxy group of combination electric and gas utilities. The adjusted beta for my proxy group of companies falls within a range between 0.60 and 0.85. The proxy group average beta is 0.74 as shown in OCA Exhibit ___ (MM-1), Schedule C, Table II. Since betas indicate relative estimates of risk, the higher the beta, the higher the risk and the higher the cost of common equity. These betas, ranging from 0.60 to 0.85,

reflect a lower risk than the Standard & Poor's 500 that has a beta of 1.0.

Q: What is MEC's current cost of common equity as calculated using the CAPM model?

A: Using the CAPM model on my proxy group, I calculated MEC's current cost of equity to be between 8.3% and 9.4% as shown in OCA Exhibit ___ (MM-1), Schedule C, Table III.

Q: What did you conclude about your DCF model results based upon the results from the CAPM model?

A: My calculated DCF range for the proxy group between 8.5% and 9.2% falls within my CAPM range of 8.3% and 9.4%. I concluded that the DCF model range of 8.5% to 9.2% reasonably reflects MEC's current cost of common equity.

Q: Do you believe a flotation cost adjustment is applicable to the Wind IX Project's cost of equity?

A: No. A flotation cost adjustment is not applicable for several reasons. First, and most importantly, flotation costs are only relevant when there is an issuance of new common equity shares. MEC did not issue any new common equity shares in 2013, and MEC is not proposing to issue new shares for the Wind IX Project. Second, any return rate adjustment in the Wind IX Project cost of common equity is speculative since no MEC-specific data or calculation of new share issuance cost is apparent. If financing the Wind IX Project requires the issuance of new shares and the incurrence of flotation costs, the requirement should be

explicit and the cost should be included above-the-line after it is placed in-service and not included in the calculation of the ROE. Lastly, the argument for a flotation cost adjustment in the market-determined costs of equity because of market pressure is a *non-sequitur*. The average price-to-book ratio of the utilities in my proxy group is 1.79. This ratio indicates that share equity prices trade far above book value and already account for any market pressure of new share issuance.

<u>Other ROE Considerations</u>

Q: Did you limit your analysis to determining MEC's current cost of common equity?

A: No. Because of the objectives set forth under the framework of advance rate making principles and changing economic and financial market conditions, one cannot solely rely on the current market-based cost of equity to determine the appropriate ROE that will be fixed for the entire life of the Wind IX Project. Thus, one must analyze and determine what ROE will be reasonable under different and changing market conditions. The allowed ROE should provide a fair rate of return to shareholders, sustain the attraction of adequate capital to provide safe and reliable service, and protect ratepayers from providing unreasonable profits.

Q: **What should one consider when determining a single reasonable ROE for the Wind IX Project over its entire useful life?**

A: Given that the ROE determined under advance ratemaking principles will be fixed over the life of the plant, one should consider the possibility of changing market conditions and consider whether the recommended ROE is reasonable over the 30-year life of the Wind IX Project. To examine the reasonableness of my recommended ROE, I considered the possibility of changing interest rates and their relationship between current and historical levels of ROE as well as investors' reactions to market changes as reflected by changes in the dividend yield.

Q: How did you reflect the possibility of changing market conditions?

A: Instead of relying primarily on current dividend yields, I relied upon 12 to 14-year historical dividend yield ranges for each of the similar risk companies included in my proxy group.

Q: Why did you incorporate the historical dividend yields into your traditional DCF model to calculate the appropriate ROE for the Wind IX Project?

A: I incorporated the historical 12 to 14-year dividend yields to reflect investor's expectations of changing market conditions. Using the historical 12 to 14-year dividend yield and reflecting similar risk companies' yield changes over a period of more than 14 years can provide a snapshot of investors' return expectations during changing market conditions. I used 12 to 14-year dividend yields because there is no *Value Line* data available for the companies included in my proxy group beyond 14 years since most of these companies have only been in existence for 14 years or less.

Q: How did you calculate the historical dividend yield?

A: I relied upon *Value Line's* historical 12 to 14-year dividend yield ranges for each of the companies included in my proxy group. I selected both the historical 12 to 14-year maximum and minimum dividend yields for each of the companies included in my proxy group as relevant high-end and low-end parameters of investors' expected return. The historical 12 to 14-year dividend yield range for each of my proxy companies is shown on OCA Exhibit ___ (MM-1), Schedule B, page 2, columns (C) and (D).

Q: What dividend yield did you ultimately incorporate in your DCF model?

A: As shown in OCA Exhibit ___ (MM-1), Schedule B, page 2, columns (C) and (D), I incorporated the historical 12 to 14-year dividend yield range for each of my proxy companies. The resulting range is between 1.9% and 8.5%. Nevertheless, the range represents historical perspectives of changing yields at both the high and low end. Therefore, a mid-point within this range will reflect the historical central tendency of the company's dividend yields. Using the median high and low dividend yields, the dividend yield range is between 3.9% and 6.5%.

Q: What long-run sustainable growth rate range did you rely upon for your long-term ROE?

A: I relied upon the sustainable growth rate range for the companies in my proxy group and used that growth rate range in the formulation of my current market DCF as shown on OCA Exhibit ___ (MM-1), Schedule B, page 13. However,

the ranges reflect low-end and high-end parameters of sustainable growth. Therefore, I decided to use the midpoint of the sustainable growth rate ranges as the long-term horizon growth rates. OCA Exhibit ___ (MM-1), Schedule B, page 2, column (E), shows the results of my selected growth rates. The average mid-point growth rate of 4.2% represents normalized high and low yield market conditions.

Q: Based on your analysis, what return on common equity did you conclude reasonably reflects the long-term ROE required for the entire useful life of the Wind IX Project?

A: A shown in OCA Exhibit ___ (MM-1), Schedule B, page 2, I believe a midpoint DCF result range of 7.5% to 10.8% best reflects changing market conditions and normalizes high and low dividend yield periods. However, the low end of this range is too low assuming a historical perspective. Based on these historical perspectives, I concluded that a common equity return between the proxy companies' median and high mid-points of 9.3% 10.8% best reflects the return required over the entire useful life for a generation project such as MEC's Wind IX Project. My recommended cost of common equity rate is at the upper end of the midpoint range, and specifically, I concluded that a cost of common equity of 10.8%, given the historical relationship between ROE and interest rate, is reasonable, as shown in OCA Exhibit ___ (MM-1), Schedule E.

Q: Is a return on common equity of 10.8% representative of the long-run period given the possibility of changing interest rates over the life of the plant?

A: Yes. In my direct testimony in the Wind VIII case, Docket No. RPU-2013-0003, I analyzed the relationship between interest rates as measured by the historical yield on A-rated public utility bonds and allowed ROEs. I updated the analysis in this Docket. OCA Exhibit ___ (MM-1), Schedule E shows the results of both analysis. OCA Exhibit ___ (MM-1), Schedule E shows that over the past 30-plus years, for every 1 percent change in interest rates, ROE will change between 38 and 39 basis points.[2] OCA Exhibit ___ (MM-1), Schedule E, shows that if interest rates, as reflected by the yield on A-rated utility bonds, were to move closer to a 20-year historical average, the ROE will be higher than the current cost of common equity. Therefore, my recommended long-term ROE should satisfy the investors' return expectation in a higher interest rate environment.

Q: How does a return on common equity of 10.8% compare to common equity returns approved in other jurisdictions?

[2] About 89% of the 30-year historical variation in ROE is explained by changing interest rates. This led me to conclude that regulators use interest rates as a relevant reference when looking at the fair and reasonable ROE for a regulated utility and therefore, future interest rates can affect investors' future return expectation.

A: My 10.8% return on common equity conclusion is just under to the 11.00% median allowed ROE over the past 20 years as granted by other commissions across the country.[3]

Q: How does your analysis and recommendation of 10.8% compares with your analysis and recommendation in the Wind VIII proceeding, Docket No. RPU-2013-0003?

A: My analysis and recommendations are consistent between cases. For example, in the Wind VIII case, my long-term ROE range was between 8.3% and 11.1%, which demonstrates remarkable consistency. In this proceeding, my recommended long-term ROE of 10.8% falls well within the long-term ROE range that I testified as reasonable in the Wind VIII case. Additionally, as OCA Exhibit ___ (MM-1), Schedule E shows, the results of my analysis of the relationship between interest rates and allowed ROE were within 20 basis points between the two cases.

Q: Is the long-term common equity return of 10.8% the appropriate final common equity return for the proposed Wind IX project?

A: No.

Q: What is the common equity return that OCA recommends as the appropriate ratemaking principle for the Wind IX project?

A: OCA is recommending a common equity return for the Wind IX project of 11.30%.

[3] EEI Q2 2014 Financial Update "Rate Case Summary".

Q: What is the basis for the adjustment?

A: This is a ratemaking principle proceeding involving wind generation facilities. The Legislature (in sections 476.53 and 476.53A of the public utilities chapter of the code) has indicated its intent to attract the development of electric power generating facilities to Iowa and in particular to encourage the development of renewable electric power. To that end, the OCA finds it reasonable to recognize that wind (i) is an available resource in Iowa for the development of electric power generation, (ii) does not fluctuate with fossil fuel and transportation prices, (iii) is a zero emission energy resource that reduces Iowa's carbon footprint, and (iv) makes customers less susceptible to future carbon legislation and carbon-related cost increases. The Board has also indicated that it might be appropriate to adjust the ROE upward in recognition of these and potentially other positive externalities. For these reasons, OCA has determined that an incentive component is justified to recognize the economic and social impact of wind and to be consistent with past decisions of the Board. Specifically, OCA is recommending an adjustment upward by 50 basis points to 11.30% to recognize the economic and societal benefits of the proposed Wind IX renewable energy project.

<u>Capital Structure</u>

Q: Are you or MidAmerican recommending a specific capital structure, or equity ratio, as a ratemaking principle in this proceeding?

A: No. Although Principle 5.5, Return on Equity, as proposed by MidAmerican refers to "50% of the capital invested" that tends to create some confusion in this regard, MidAmerican's response to OCA Data Request No. 11 clarifies that the language is not meant to imply a principle that seeks a 50% common equity capital structure for the life of the investment. I have included a copy of MidAmerican's response to OCA Data Request No. 11 as OCA Exhibit __ (MM-1), Schedule F.

Q: Do you have a recommendation to eliminate any confusion in this regard?

A: Yes. I recommend the language below instead of the specific language proposed by MidAmerican in this proceeding. According to the response to OCA Data Request No. 11, the language (with the value deleted) is also acceptable to MidAmerican.

> The allowed return on the common equity portion of the wind projects, constructed pursuant to this Ratemaking Principles Application, that is included in Iowa electric rate base shall be ___%.

Q: Does this conclude your direct testimony?

A: Yes.

STATE OF IOWA)
) SS: AFFIDAVIT OF MARCOS MUNOZ
COUNTY OF POLK)

I, Marcos Munoz, being first duly sworn on oath, depose and state that I am the same Marcos Munoz identified in the foregoing Direct Testimony; that I have caused the foregoing Direct Testimony to be prepared and am familiar with the contents thereof, and that the foregoing Direct Testimony as identified therein is true and correct to the best of my knowledge, information and belief as of the date of this Affidavit.

/s/ Marcos Munoz
Marcos Munoz

Subscribed and sworn to before me, A Notary Public, in and for said County and State, this 12th day of November, 2014.

/s/ Craig F. Graziano
Notary Public

My Commission expires: June 14, 2017.