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## IOWA UTILITIES BOARD

Docket No.: RPU-2013-0003  
Utility: MidAmerican Energy Company  
File Date: May 10, 2013  
Memo Date: August 2, 2013

**To:** The Board

**From:** Brandon Mauch (Team Leader)  
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**Subject:** Settlement Post-Hearing Memo

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## **INTRODUCTION**

### **Parties' Overall Positions**

#### **MidAmerican**

MidAmerican is planning to build up to 1050 MW of wind generation (Wind VIII) in western Iowa as part of a long term strategy of environmental compliance with future carbon regulations. The goal of Wind VIII is to add wind power in a manner that will not negatively affect ratepayers. This is possible if MidAmerican can take advantage of the production tax credit (PTC) which is set to expire at the end of the year. MidAmerican must have a decision by the Board soon in order to make substantial progress on Wind VIII by the end of the year.

MidAmerican argued that wind power is good for economic development in Iowa and that Iowa energy policy promotes wind power. MidAmerican has extensive experience building wind power projects and assures the Board that it will only build wind when conditions are favorable to the ratepayers. Wind VIII will not degrade grid reliability due to the large pool of resources within the Midcontinent Independent System Operator (MISO) footprint. MidAmerican joined MISO in 2009.

MidAmerican proposed nine ratemaking principles for the treatment of Wind VIII which are discussed in detail later. Included in the ratemaking principles is a proposed cost cap of \$1825/kW, including AFUDC (allowance for funds used during construction), transmission costs, and a return on equity (ROE) of 11.75%. MidAmerican proposed to record revenues from the PTC, renewable energy certificates (RECs), capacity sales, and net system benefits (described later) above the line to be included in revenue sharing calculations. Prior to the projects being placed in rate base MidAmerican proposes to flow to ratepayers retail fuel cost savings and an additional amount up to \$10 million per year (customer rate relief principle) via a proposed energy adjustment clause (EAC)<sup>1</sup>. Prior to the units being placed in rate base, customers would not directly benefit from PTCs, RECs, capacity sales, or net system benefits over and above retail fuel cost savings.

#### **OCA**

The Office of Consumer Advocate generally agreed with the Wind VIII proposal with the exception of the ROE. Testimony provided by the OCA suggested that an ROE of 11.5% was more appropriate and that AFUDC costs should be treated differently with an ROE of 9.89%. The OCA had no concerns with any other aspects of Wind VIII.

#### **Settlement Agreement**

The two parties entered a settlement agreement which included a compromise on the ROE. They agreed to an 11.625% ROE on capital costs and a 10% ROE for calculating AFUDC.

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<sup>1</sup> MidAmerican proposed an EAC as part of its current rate case, Docket No. RPU-2013-0004.

## Overview of Staff Findings and Recommendations

### Need for Wind VIII

MidAmerican demonstrated that Wind VIII is part of a long-term strategy to comply with future environmental regulations. Wind VIII will diversify MidAmerican's generation portfolio and provide a hedge against fossil fuel price swings. Iowa energy policy promotes wind development in the state. Staff agrees MidAmerican has demonstrated a need for the units and that MidAmerican has considered other sources for long-term electric supply and that Wind VIII is reasonable when compared to other sources of supply.

### Timing Issues

MidAmerican is pushing for an expedited procedural schedule in order to begin work in time to receive the production tax credit (PTC)<sup>2</sup>.

### Economic Analysis

Staff's primary concern with Wind VIII was how the economic benefits of the project would be split between MidAmerican and its ratepayers prior to the units being reflected in rate base and rates. It was clear from MidAmerican's initial filing that ratepayer benefits would include the proposed Customer Rate Relief amounts of up to \$3.3 million in 2015, \$6.6 million in 2016, and \$10 million per year thereafter. However, it was not clear from the initial filing if any additional benefits would flow to customers during this period. Subsequent to its initial filing, MidAmerican stated in response to Board orders and to Board questions at hearing that ratepayer benefits prior to the units being placed in rate base will include retail fuel cost savings and potential contributions to revenue sharing in addition to the Customer Rate Relief benefits mentioned above. Based on the benefit values submitted by MidAmerican, Staff feels the sharing of benefits is fair and advantageous for ratepayers.

### Ratemaking Principles

*1-Iowa Jurisdiction Allocation:* This principle is not controversial and has not been contested in previous advanced ratemaking dockets. Staff has no concerns regarding this principle.

*2-Cost Cap:* MidAmerican's previous experience with wind projects gives staff confidence in MidAmerican's ability to build Wind VIII below the cost cap in a reasonable length of time. However, Staff has some concern with the proposed \$1825/kW cost cap. MidAmerican justified the proposed cap value by estimating the maximum installed price for Wind VIII that would not negatively affect ratepayers. However, MidAmerican estimates the actual cost of Wind VIII is likely to be around [REDACTED], including AFUDC and transmission costs. Staff recommends that the Board

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<sup>2</sup> The production tax credit is a per-kWh federal tax credit for electricity generated during the first ten years of operation by qualified energy resources. The per-kWh credit for qualified wind generation facilities is currently \$.023.

consider reducing the cost cap to \$1650/kW based on actual Wind VII experience and [REDACTED]. Staff notes that the proposed cost cap principle provides MidAmerican an opportunity to establish prudence in a future proceeding if actual costs exceed the cost cap.

*3-Size Cap:* The size cap is based upon the maximum amount of wind that MidAmerican feels it can develop in time to qualify for the PTC. Staff has no concerns regarding this principle.

*4-Depreciation:* Staff finds that a 30-year depreciation schedule is reasonable based on the information provided by GE Energy and Siemens.

*5-Return on Equity:* Staff sees little reason to object to the Settlement's ROE of 11.625%. While prior settlements are not accorded precedential value, it is worth noting that the Board has accepted numerous settlements for wind generation that allowed higher fixed ROEs.

*6-Cost Cancellation Recovery:* Staff agrees that the cost cancellation recovery principle is reasonable. The Board approved a similar ratemaking principle in Wind VII.

*7-Renewable Energy and CO<sub>2</sub> Credits and the Like:* Benefits from RECs or other related credits will be recorded above the line and will be included in MidAmerican's revenue sharing calculations. There will be no direct benefit to ratepayers from RECs until the units are in rate base. Staff has no concerns with this principle when it is considered in the context of the overall split in benefits.

*8-Production Tax Credits:* Similar to the RECs, PTC benefits will not flow directly to ratepayers, but will be recorded above the line and included in revenue sharing calculations. There will be no direct benefit to ratepayers from PTCs until the units are in rate base. Staff has no concerns with this principle when it is considered in the context of the overall split in benefits.

*9-Customer Rate Relief:* Prior to the Wind VIII units going into rate base and being recovered in rates, customers will benefit directly from a reduction in the proposed EAC up to \$3.3 million in 2015, \$6.6 million in 2016, and \$10 million per year thereafter. This principle is conditioned on MidAmerican placing at least 350 MW of capacity in service by 2015. The 350 MW threshold and \$10 million per year are based on MidAmerican's judgment and are not directly supported by any calculations. Staff has no concerns with this principle when it is considered in the context of the overall split in benefits.

Staff presents two options regarding the proposed settlement agreement between MidAmerican and OCA. The two options are either to approve the agreement as is, or approve the agreement with an adjusted cost cap. Under either option, Staff recommends that the Board require periodic reports from MidAmerican to document ratepayer benefits from Wind VIII. Staff also recommends that the Board Order note MidAmerican's assurance regarding treatment of future capital structure and costs.

## **Introduction and Procedural History**

On May 10, 2013, MidAmerican Energy Company (MidAmerican) filed with the Utilities Board (Board) a request for advance ratemaking principles that would apply to a future wind power project (Wind VIII). The advance ratemaking principles docket is identified as Docket No. RPU-2013-0003. MidAmerican asked for an expedited decision from the Board so as to take advantage of the PTC which expires at the end of 2013.

On May 15, 2013, the Board issued an order accepting the filing, setting procedural schedule, and setting intervention deadline.

The Office of Consumer Advocate (OCA) and Deere & Company petitioned to intervene in the docket on May 14, 2013 and May 16, 2013 respectively.

On June 5, 2013, the Board issued an order requiring additional information. MidAmerican filed responses on June 13, 2013.

On June 17, 2013, the OCA filed direct testimony, with underlying work papers and exhibits.

On June 19, 2013, the Board issued a second order requiring additional information. MidAmerican filed responses on June 24, 2013.

On June 26, 2013, the Board issued a third order requiring additional information. MidAmerican filed responses on July 1, 2013.

On June 26, 2013 MidAmerican and the OCA filed a settlement agreement with the Board resolving all issues contested between MidAmerican and the OCA. In the motion, MidAmerican said that it was authorized by Deere & Company, the only other intervener, to state that Deere & Company has no objection to the proposed stipulation and agreement. MidAmerican also included a motion in the filing to suspend the procedural schedule.

Also on June 27, 2013 the Board issued an order modifying the procedural schedule. The Board modified the procedural schedule to eliminate any further requirements for filing testimony, an issues list, or pre-hearing and post-hearing briefs.

Pursuant to Iowa Code § 476A.4(4), a hearing was held on July 15, 2013, in Des Moines, Iowa. During the hearing, MidAmerican was ordered to provide post-hearing information. MidAmerican filed the post-hearing information on July 17, 2013.

On July 31, 2013 the Alliance for Wise Energy Decisions (AWED) filed comments in opposition to the project. AWED did not intervene in the case. AWED's comments were filed past the intervention deadline and the hearing date so they cannot be considered.

## **Settlement Agreement**

The Board has the authority to resolve contested cases by settlement. In evaluating a proposed settlement, the Board examines whether the settlement is reasonable in light of the whole record, consistent with law, and in the public interest. Iowa Code § 17A.12(5) (2013); 199 IAC 7.18(6).

In evaluating a settlement, the Board looks at the settlement as a whole. The Board has recognized that a settlement may be reasonable and in the public interest even though the settlement might not resolve each issue the same way the Board would in a contested hearing. MidAmerican Energy Company, “Order Approving Stipulation and Agreement,” Docket No. RPU-03-1 (10/17/2003), p. 10.

On June 26, 2013 MidAmerican and the OCA filed a joint motion for approval of a settlement agreement. The agreement resolves all issues between MidAmerican and the OCA. In the motion MidAmerican said that Deere & Company did not object to the settlement agreement. The settlement agreement changed only one of MidAmerican’s proposed ratemaking principles, the return on equity (ROE). MidAmerican initially proposed an ROE equal to 11.75% while OCA proposed an ROE of 11.5%. The agreement proposed a compromise of 11.625%. In addition, the settlement specifies an ROE of 10.0% for use in calculating the AFUDC rate. MidAmerican did not address a separate rate to be applied to the AFUDC in its initial filing (it proposed the same ROE applied to the entire project including AFUDC). The OCA had recommended an AFUDC ROE rate of 9.89 or whatever the Board approves in the current MidAmerican rate case (Docket RPU-2013-0004). The OCA accepted all other ratemaking principles contained in MidAmerican’s application.

## **REVIEW OF WIND VIII PROJECT**

### **Overview of Wind VIII (Brandon)**

#### **MidAmerican Position**

Tr. 33-35, 216-217, 221-222, 230-231

Wright Response to Q 1 and Q 5 in June 5, 2013 Board Order

MidAmerican will own and operate the proposed Wind VIII Iowa Project (Wind VIII). It will likely utilize turbine vendors or an experienced third-party during the turbine warranty period for all or a portion of the operation and maintenance requirements. There will be no purchased power contracts associated with Wind VIII, but a portion of the renewables attributes will be associated with Facebook’s new data center to be constructed in Altoona. MidAmerican expects to obtain rights to situate the Wind VIII turbines, related equipment and access roads by means of voluntary easements. Additional substations required for Wind VIII will be located on property owned by MidAmerican. MidAmerican will construct the Wind VIII project in phases. Existing staff

from other MidAmerican wind projects, new employees, and other third party providers will operate the Wind VIII sites.

MidAmerican has been in discussions with wind project developers who have interconnection rights and land holdings in several Iowa counties. MidAmerican has reviewed more than 1250 MW of potential sites and identified five potential projects of varying size that it believes can be developed in time to meet the qualification requirements for the PTC and have relative certainty in regards to interconnection costs and timing. One site is a [REDACTED]. MidAmerican also recently purchased the [REDACTED]. Two additional sites are located in northwestern Iowa and one site is in southwestern Iowa. MidAmerican will obtain all appropriate transmission interconnection, service and other related authorizations required prior to operating Wind VIII regardless of the sites selected. If the Board wishes to have additional information regarding sites, MidAmerican will make arrangements under confidentiality agreements with the wind developers.

The number and size of the wind turbines has yet to be determined. Energy generated from the turbines will be sent through collector lines connected to substations which in turn will be connected to the transmission system. Collector lines will be constructed so that each line transmits 25 MW or less of wind power. In Docket DRU-03-03, the Board issued a Declaratory Order holding that MidAmerican was not required under Iowa Code 476A.1 and 476A.2 to obtain a generating certificate prior to commencing construction of the original Wind Power Project. MidAmerican believes that all the relevant facts and law with respect to the Wind VIII project are indistinguishable from those on which the declaratory order in DRU-03-03 was based. MidAmerican was not required to obtain siting certificates for any of its prior seven wind projects.

MidAmerican estimates the annual hours of operation of the Wind VIII sites will be approximately 7,000 hours with an average capacity factor of approximately 36%. Capacity factors are dependent on the wind characteristics and the size and model of wind turbine deployed. Based on information provided by turbine suppliers, MidAmerican believes that capacity factors in excess of 40% are possible at potential Wind VIII sites. The average annual capacity factors for all Iowa wind sites operated by MidAmerican were 32%, 35% and 38% for 2010, 2011 and 2012. Each turbine in the Wind VIII project will be equipped with state of the art Supervisory Control and Data Acquisition (SCADA) systems. SCADAs will allow MidAmerican to record data on wind conditions, line parameters, power output, fault status and other performance indicators. The SCADAs will also allow MidAmerican to remotely curtail energy production and perform turbine shutdowns when required.

## Facebook Contract

Wright Response to Q 2 in June 5, 2013 Board Order



### Staff Analysis

Wind VIII is very similar to previous wind projects proposed and built by MidAmerican. A comparison of the advanced ratemaking principles application for Wind VIII with that of Wind VII shows significant overlap in the project descriptions. In both cases, MidAmerican had not yet identified the final sites and was planning to build roughly 1000 MW of wind capacity.

### **Need for the units (Brandon)**

#### MidAmerican Position

Tr. 14-17, 30-31

MidAmerican gave the following reasons to pursue further wind power in Iowa.

1. The state of Iowa is encouraging renewable generation.
2. MidAmerican is continuing a strategy to reduce its carbon footprint.
3. MidAmerican has had positive experiences with wind projects.
4. The proposed ratemaking principles regarding size and cost cap allow MidAmerican the flexibility to develop Wind VIII sites when timing and economics are advantageous for MidAmerican customers.
5. MidAmerican wants to take advantage of the PTC extension.
6. Wind VIII sites are projected to provide net benefits to MidAmerican customers.
7. Wind VIII would provide a partial offset to the reduced energy production associated with 540 MW of retirements due to EPA regulations.

To support the first reason above, MidAmerican points to comments from State officials regarding wind power and to Section 476.53A of the Iowa Code:

*It is the intent of the general assembly to encourage the development of renewable electric power generation. It is also the intent of the general assembly to encourage the use of renewable power to meet local electric needs and the development of transmission capacity to export wind power generated in Iowa.*

As for the second reason listed above, MidAmerican points to Section 476.53(1) of the Iowa Code.

*It is also the intent of the general assembly to encourage rate-regulated public utilities to consider altering existing electric generating facilities, when reasonable, to manage carbon emission intensity in order to facilitate the transition to a carbon-constrained environment.*

MidAmerican states that the proposed Wind VIII project and the previous wind projects are precisely the kind of development the State sought to attract with the above sections of the Iowa Code. [Staff Comment: The remaining reasons to build Wind VIII are covered in detail in later sections of this memo.]

MidAmerican believes that now is the time to consider building wind power in Iowa. Wind VIII will benefit the state in the following way:

1. In the current environment, wind sites can be developed cost-effectively.
2. Environmental regulations will likely increase the value of wind generating resources.
3. Wind VIII will provide \$360 million in property tax revenues over the 30-year life of the project.
4. Renewable energy adds to the economic development of the state by attracting new businesses interested in utilizing energy from renewable sources.
5. Wind VIII will increase the supply of the lowest cost form of energy.
6. Wind VIII capacity contributes to reducing future capacity deficits.
7. Wind VIII provides revenue streams that are projected to offset the costs of the project and provide an alternative to carbon-based alternatives.

For these reasons, MidAmerican believes that Wind VIII is in the public interest.

### Staff Analysis

Capacity needs are not the primary driver of the Wind VIII project. The primary drivers appear to be a long term environmental compliance strategy coupled with the expectation that the economics of the project will benefit customers. The primary driver for adding more wind now is the availability of the PTC. The future availability of the PTC is highly uncertain. Staff believes that MidAmerican has provided adequate justification of the need for Wind VIII.

## **Timing Issues for Application and Approval (Ellen)**

### MidAmerican Position

Tr. 34-35, 218-221

MidAmerican response to Board Order during the July 15, 2013 hearing

MidAmerican commented that a Board ruling on the application by September 1, 2013, would be ideal in order for MidAmerican to take advantage of short-term cost-effective market opportunities and to meet qualification requirements for the PTC. Subsequently, after the hearing, MidAmerican asked for a decision by August 5, 2013 citing it is ahead of schedule and would like to move sooner than expected. The opportunities to construct additional economical wind power facilities are accompanied by significant payments required of MidAmerican relating to turbine supply, development activities, and long lead time substation equipment. By receiving definitive rate making principles before very significant costs and commitments must be undertaken, and before economic opportunities are missed, MidAmerican can minimize risks and costs for MidAmerican and its customers. Significant financial commitments to a project developer(s), turbine manufacturer(s), and a balance of plant contractor(s) will be required soon in order to construct Wind VIII in a timely manner and deliver benefits to customers. Additionally, Wind VIII is of importance to Facebook and its new facility in Altoona, and Google has expressed interests in Wind VIII as part of its plans for expansion in Council Bluffs.

MidAmerican commented that its economic opportunities are anchored by the short-term extension of the PTC. The extension of the PTC was signed into federal law in January 2013, and MidAmerican waited for the Internal Revenue Service (IRS) to provide taxpayer guidance on the requirement that the PTC applicant “begin construction” prior to January 1, 2014. On April 15, 2013, the IRS described the “begin construction” requirement as physical work of a significant nature, or incurring five percent of the total cost of the project (including taking delivery of the assets represented by the five percent) by December 31, 2013, and making continuous progress toward completion. MidAmerican must achieve this between the time of Board approval and December 31, 2013, in order to qualify for the PTC. Winter weather that can arrive in Iowa as early as November may be another potential time constraint to meeting the PTC qualifications.

### Staff Analysis

The Board’s procedural schedule was established consistent with MidAmerican’s request for expedited review and a decision date of September 1. On July 17, 2013, MidAmerican asked to further shorten the procedural schedule and requested a decision by August 5, 2013. Staff agrees that an expedited decision is in the best interest of both MidAmerican and its customers.

## Economic Analysis of Wind VIII (Brandon)

### MidAmerican Position

Tr. 119-120, 169-173, 186-209, 245-249  
Confidential Tables 2.1-1(a), 2.1-1(b), 2.1-1(c) and 2.1-2  
Response to Q2 and Q4 of the Board's request for post hearing information

Witness Yocum provided Excel files containing an economic analysis of Wind VIII which was similar to information provided in the Wind VII docket (RPU-2009-0003). This analysis begins with estimates of investment costs, operating costs, return requirements, and incremental benefits. MidAmerican then determined the net present value of the costs and benefits of the Wind VIII project, and showed that the net benefits levelized over a 30 year lifespan for Wind VIII are [REDACTED] based on the assumptions used.

Economic benefits from Wind VIII accrue from net system energy benefits, capacity benefits, REC sales and PTC benefits. In order to estimate the net system energy benefit from Wind VIII, MidAmerican conducted a PROMOD<sup>3</sup> analysis with and without Wind VIII in the model. In the PROMOD analysis, assumptions were entered for annual load growth, fuel prices, wind capacity factor and future resource construction. The PROMOD model simulated dispatch of all MidAmerican resources with and without Wind VIII based on assumptions supplied by MidAmerican. The model results show that Wind VIII brings [REDACTED] (levelized value) annually to MidAmerican.

MidAmerican assumes that Wind VIII will provide 132 MW of capacity credit worth [REDACTED] annually over the thirty year life of the project. Income from REC sales is shown in the analysis to bring in roughly [REDACTED] per year. MidAmerican assumed the value of RECs to be [REDACTED] in the first year with a small escalation rate over the next thirty years. PTCs are valued at \$23/MWh in MidAmerican's model with increases every other year for ten years. The annual value of the PTCs is [REDACTED] when spread out over a thirty-year period<sup>4</sup>.

MidAmerican also provided the annual values of the revenue from Wind VIII and the revenue requirement if Wind VIII is put in the rate base immediately. This was in response to the June 5 Board Order requesting additional data. MidAmerican uses the term "net revenue requirement" to indicate the revenue requirement minus the income from energy sales, capacity sales, PTCs and RECs. A negative net revenue requirement value indicates that the income from Wind VIII is greater than the revenue requirement. Witness Specketer presented a confidential table showing annual values of each benefit along with the revenue requirement and net revenue requirement for Wind VIII. Values from the table are shown graphically in figure 1.

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<sup>3</sup> PROMOD is a common software tool used for production cost modeling in electric grids

<sup>4</sup> Staff note: The PTC values are "grossed up" to show the pre-tax value of the PTC. This is done with the formula  $PTC/(1-\text{tax rate})$ .

During the hearing, Witness Specketer discussed the different economic benefits directly applicable to ratepayers. He stated that prior to Wind VIII assets placed into rate base, ratepayers will likely benefit from 1) lower fuel costs assigned to retail load, 2) revenue sharing, and 3) customer rate relief (Tr. 206). Part of the net system benefit is due to fuel cost savings for MidAmerican's generation portfolio. In a post hearing filing, MidAmerican filed a confidential table showing annual estimates of the breakdown in how net system benefits will be shared, as long as Wind VIII is not in rate base, with ratepayers. This information is shown graphically in figure 2. Additionally, all revenue streams from Wind VIII (Net sys. benefits, REC sales, PTC, capacity sales) will be recorded above the line and included in revenue sharing calculations (Tr. 206). Customer rate relief is discussed later in ratemaking principle 9. After Wind VIII is placed into rate base, ratepayers will benefit directly via reductions in the EAC from all revenue streams; PTC, RECs, net system benefits, and capacity sales.

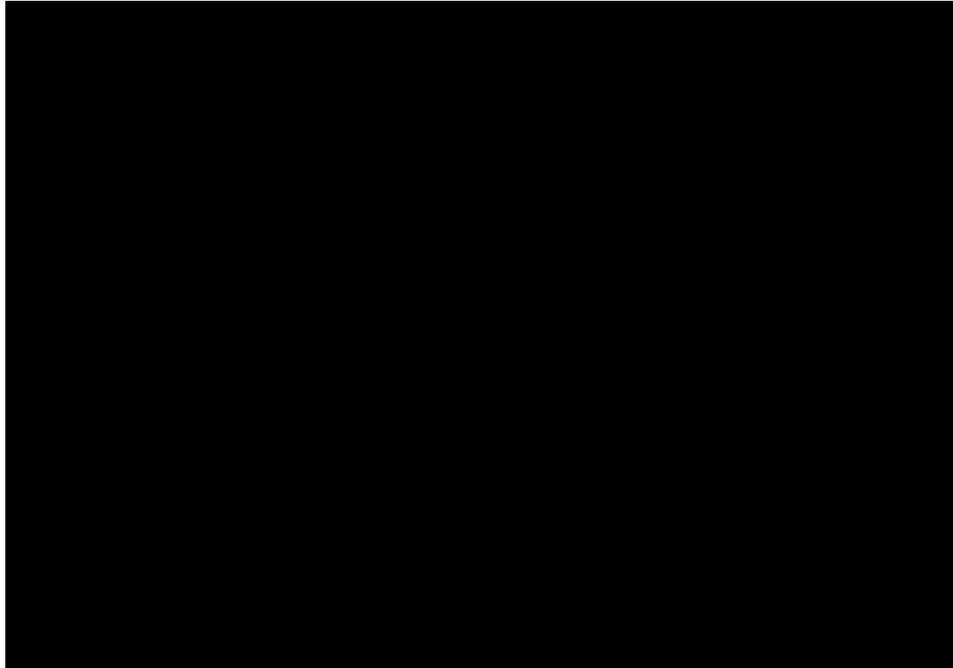


Figure 1: Annual Revenue Requirements shown with annual values of PTC, RECs, Capacity Sales, and Net System Benefits. The Net Revenue Requirement shown at the bottom is the revenue requirement minus the benefits from PTC, RECs, Capacity Sales, and Net System Benefits. Note that benefits from RECs and Capacity are much smaller than the PTC and Net System Benefits.



Figure 2: Breakdown of Net System Benefits between wholesale and retail benefits.

### Staff Analysis

The Excel files provided by Witness Yocum are consistent with the evidence provided in the Wind VII ratemaking principles application. The capital cost assumption used in the model was [REDACTED]. For comparison, the proposed cost cap is \$1825/kW and the actual cost of the Wind VII project was \$1621/kW<sup>5</sup>. During the hearing, Witness Wright stated that MidAmerican has turbine supply agreements in place that set the price for turbines at [REDACTED] (Tr. 246). Considering this information, the cost assumption, which includes transmission and AFUDC costs, seems reasonable for economic modeling purposes.

MidAmerican assumes annual capital expenditures for equipment replacement (mainly gearboxes) starting at [REDACTED] in 2015 and escalating by [REDACTED] annually. These costs are in line with the assumptions used in Wind VII. Fixed and variable annual costs are estimated to be [REDACTED] in 2015, [REDACTED] in 2016, [REDACTED] in 2017 and increasing roughly [REDACTED] thereafter. Staff thinks these estimates are reasonable for modeling purposes.

Energy and capacity price forecasts used in the modeling are more difficult to judge. MidAmerican assumes a capacity price of roughly [REDACTED] in 2015 and an

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<sup>5</sup> Values reported by MidAmerican in the February 12, 2013 Wind VII Iowa Project Status Update for the Iowa Utilities Board, filed in response to the Board's Final Order for Docket RPU-2009-0003, show the portion of the project installed in 2011 had a cost of \$1628/kW, and the 2012 portion had a cost of \$1610/kW



Prior to the Wind VIII units being reflected in base rates, MidAmerican proposes to flow up to ten million dollars annually to customers through the proposed Energy Adjustment Clause (EAC) contained in its recently filed rate case (RPU-2013-0004) (Tr. 206). Customers will also benefit from lower retail fuel costs that flow through the EAC (Tr. 207). Additionally, all revenue streams will be recorded above the line and factor into potential revenue sharing which occurs if MidAmerican profits reach a threshold value (Tr. 206). Witness Specketer stated that “net system benefits would be included in the revenue sharing calculation proposed by MidAmerican in Docket No. RPU-2013-0004 prior to the Wind VIII units being reflected in base rates” (Response to question 1 of June 26 Board Order). Specketer also stated that “Customers will directly benefit from lower retail fuel costs (i.e., cheaper wind energy displacing energy derived from more expensive fuels or sources) from Wind VIII that would flow through the fuel adjustment clause proposed by the Company...” (Response to question 2 of June 26 Board Order) However, there was no mention of revenue sharing or the direct benefit from lower retail fuel costs in the Company’s direct testimony and Witness Specketer’s response to question 5 was not clear on this matter. During the hearing, Specketer confirmed that reduced retail fuel costs will likely result from Wind VIII along with potential revenue sharing.

Staff calculated the annual direct benefits for ratepayers from Wind VIII using the numbers provided by MidAmerican. These are shown in figure 3. Each line represents the cumulative annual net present value (NPV) direct benefits for ratepayers over the 30 year life of Wind VIII under different assumptions as to when Wind VIII would be included in rate base. The solid line, representing the scenario in which Wind VIII is never placed in rate base, provides the most benefits for ratepayers over the life of the assets. The dashed line, representing traditional rate base treatment, has the least benefits. MidAmerican will likely want to include Wind VIII assets in rate base sooner rather than later. The majority of benefits for ratepayers come from the reduced fuel cost portion of the net system benefits (shown in figure 1). These benefits are significant and will flow to ratepayers without ratepayers shouldering the cost of the Wind VIII project until it is included in rate base.

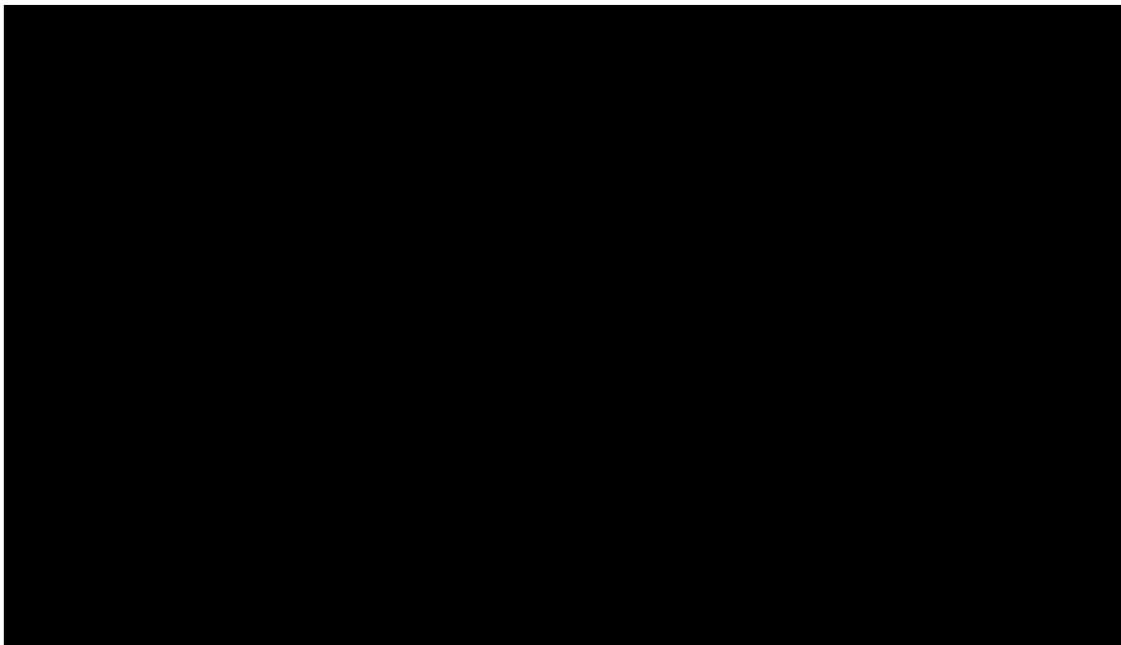


Figure 3: Cumulative direct benefits for MidAmerican ratepayer from Wind VIII over a 30-year life for three different assumptions on when Wind VIII enters rate base.

Staff concludes that the benefit split prior to the units being placed in rate base is fair and beneficial to ratepayers. Staff also concludes that the Wind VIII project is beneficial to rate payers overall, regardless of when it is added to rate base. However, Staff recommends that the Board Order include provisions to verify the pre rate base benefit split once Wind VIII is operational.

### **MidAmerican Experience with Wind Power (Brandon)**

#### MidAmerican Position

Tr. 3-5, 227-228

At the end of 2012, MidAmerican owned and operated approximately 2,285 MW of nameplate wind-powered generation that was the subject of seven prior ratemaking principles proceedings. These proceedings are summarized in the table below.

Table 2: Previous MidAmerican wind projects with advanced ratemaking principles.

Project	Year	Size cap (MW)	Cost cap (\$/kW)	Amount Built (MW)	Year Complete
Initial Wind Project	2003	310	\$1079	310.5	2005
Expansion Project	2004	30 to 90	\$1258	50	2005
2006-07 Wind Project	2005	545	\$1811	222	2007
Wind IV	2007	540	\$2090 - \$2481	540	2008
Wind V	2008	108	\$2297	108	2008
Wind VI	2008	52.5	\$2293	52.5	2008
Wind VII	2009	1001	\$2050 - \$2300	1000.3	2012

The Wind IV and Wind VII projects had cost caps that varied over a few years. In all of the projects listed above, MidAmerican was able to stay at or under the respective cost cap. For this reason, MidAmerican is confident that it can stay under the cost cap for Wind VIII if allowed to move quickly.

### Staff Analysis

MidAmerican has a good record with previous wind projects. As stated in the testimony, MidAmerican has been able to complete all seven previous projects under the cost cap. Staff sees no reason why this project would be different, especially since the previous wind project, Wind VII, was roughly the same size as Wind VIII.

### **Wind VIII is a reasonable option (Brandon)**

#### MidAmerican Position

Tr. 14-15, 18-20, 22, 25-27, 76-85, 105-118  
Stevens Response to Q 6 in June 5, 2013 Board Order

The proposed Wind VIII project is expected to help MidAmerican meet the following needs:

- Environmental compliance: Wind VIII will increase the supply of zero-emissions electricity which helps MidAmerican meet expected future legislative and regulatory requirements limiting carbon and other emissions.
- Customer pricing: Wind VIII provides revenue streams that are likely to offset the costs of generation and/or provide a reasonably priced energy source necessary to displace energy from carbon-based generation resources.
- Fuel diversity: Wind VIII reduces customer exposure to volatile cost sources of energy.
- Economic development: Wind VIII promotes economic development in Iowa.
- Iowa energy policy: Wind VIII supports Iowa's role as a renewable energy leader.
- Energy needs: Wind VIII increases the supply of low cost energy.
- Capacity needs: Wind VIII defers projected capacity deficits by one year.

Wind generation is primarily an energy related resource. Wind VIII will add 132 MW of capacity credits to MidAmerican’s portfolio. This value assumes a 14.7% wind capacity credit<sup>6</sup> and that 900 MW of the nameplate capacity in Wind VIII are designated as a network resource while 150 MW are designated as an energy resource<sup>7</sup>. MidAmerican does not expect a capacity shortfall within the near future. Table 3 shows a capacity surplus out to the year 2025<sup>8</sup>.

As stated above, MidAmerican feels that Wind VIII has many other benefits aside from its capacity value. For example, Wind VIII will help MidAmerican comply with future environmental regulations. MidAmerican feels that now is time given the short extension of the PTC.

Table 3: MidAmerican projected peak demand and capacity obligation from 2013 to 2025.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Peak Forecast (MW) (Normal Weather)	4,631	4,744	4,816	4,872	4,920	4,977	5,036	5,100	5,158	5,200	5,240	5,287	5,337
MISO coincident peak forecast (MW)	4,376	4,483	4,551	4,604	4,649	4,703	4,759	4,819	4,874	4,914	4,951	4,996	5,043
Net coincident peak with EE and DR (MW)	4,148	4,254	4,322	4,375	4,421	4,474	4,530	4,591	4,645	4,685	4,723	4,767	4,815
Capacity Obligation (MW)	4,737	4,858	4,936	5,996	5,048	5,110	5,173	5,242	5,305	5,350	5,394	5,444	5,498
Net Capability (MW)	5,565	5,566	5,097	5,166	5,229	5,302	5,377	5,459	5,534	5,581	5,582	5,583	5,584
Surplus based on Obligation (MW)	828	707	161	169	180	192	204	216	229	231	189	139	86

MidAmerican considered several alternatives to wind. Natural gas-fired generation is the only viable alternative to wind prior to the 2020 timeframe. New coal plants will have difficulty meeting the EPA’s proposed New Source Performance Standard carbon emissions limit of 1,000 pounds/MWh. This is only possible with carbon capture and sequestration which is not yet commercially available. Renewable options aside from wind include biomass, hydroelectric and solar generation. Biomass emits various pollutants and will require costly emissions controls to meet environmental standards. Hydroelectric also has environmental issues, and hydroelectric sites in Iowa have been shown not to be economically feasible at this time. Solar power at the utility scale is becoming more viable, but it is still not an alternative to wind in Iowa.

MidAmerican used nine criteria to evaluate the attractiveness of different generation resources: (1) cost robustness, (2) reasonable cost, (3) system reliability, (4)

<sup>6</sup> Staff Note: The value of 14.7% used by MidAmerican is outdated. The current wind capacity credit is 13.3% which means about 120 MW of Wind VIII will be credited towards MidAmerican’s capacity requirements.

<sup>7</sup> Staff Note: Network resources are deliverable to any load in MISO while energy resources have limited transmission capacity.

<sup>8</sup> The original table in Stevens’ testimony (Tr. 82) shows a capacity shortfall in 2023, but he provided the updated table in response to the Board’s first request for additional material. This updated table is based on the new resource adequacy construct in MISO.

environmental reasonableness, (5) flexibility/optionality, (6) diversity, (7) economic development, (8) geo-political uncertainty, (9) resource availability/stability.

Wind compares favorably to other alternatives in the nine criteria used by MidAmerican. This is primarily due to the facts that wind has no pollution, no fuel price volatility, provides significant economic benefits to landowners, and is abundant in Iowa. The only criteria where wind was not favorable were system reliability and flexibility/optionality. MidAmerican compared wind with other renewable forms of energy generation based on availability, economics, and maturity of technology. It determined that wind is the most cost-effective renewable energy option in Iowa.

Additional wind in the MidAmerican portfolio will likely displace coal-fired generation since that is often the marginal fuel in MISO. All generation owned by MidAmerican is sold into the MISO markets and Wind VIII will not be different. As a result, energy generated by Wind VIII will likely displace coal generation on a regional level while MidAmerican coal plants will decrease output only modestly. Table 4 was provided by MidAmerican to show estimated generation by resource in 2020 with and without Wind VIII.

Table 4: MidAmerican projection of energy generation by source in 2020 with and without Wind VIII.

	Without Wind VIII		With Wind VIII	
	Production (MWh)	Percentage of Energy	Production (MWh)	Percentage of Energy
Coal	17,278,523	59.4%	17,241,523	53.2%
Natural Gas	460,243	1.6%	484,312	1.5%
Nuclear	3,964,841	13.6%	3,964,871	12.2%
Wind	7,340,630	25.3%	10,663,627	32.9%
Other	26,163	0.1%	26,147	0.1%
Total	29,070,400	100%	32,380,480	100%

### Staff Analysis

MidAmerican's analysis is largely qualitative and is very similar to that used in the Wind VII ratemaking principles filing with the addition of the ninth criterion, resource availability/stability. MidAmerican did not use results from a resource expansion model to determine the cost of future generation however, MidAmerican did provide a comparison to other sources of supply.

Wind VIII, if built, will contribute a relatively small amount of capacity credit for MidAmerican's capacity obligations in MISO. Witness Stevens stated that Wind VIII, like all wind generation, is primarily an energy-related resource. The MISO wind capacity credit is updated annually, and, consistent with previous years, MISO expects the capacity credit to decline slightly as more wind is added to the system. This is an artifact of the method used to determine wind capacity credit. Additionally, the

independent market monitor has stated that he feels MISO overestimates the capacity contribution for wind generation. While MidAmerican's assumptions are valid now, there is uncertainty over the 30 year life of the project. However, capacity sales income from Wind VIII is minor compared with the other expected sources of income.

MidAmerican's analysis of future generation by fuel in its fleet indicates that Wind VIII will primarily displace generation outside of MidAmerican's territory. MidAmerican estimated no change in coal generation within its own fleet in 2016 and a small drop in coal generation due to Wind VIII in 2020 as shown above. The drop in MidAmerican coal generation is made up with an increase in natural gas generation.

## **Transmission and Reliability Issues (Brandon)**

### MidAmerican Position

Tr. 20-21, 54-72, 86-87, 245  
Stevens Response to Q 3 and Q 20 in June 5, 2013 Board Order  
Schuster Response to Q 19 in June 5, 2013 Board Order

MidAmerican feels that the addition of Wind VIII will improve the diversity of its portfolio without degrading the transmission network in Iowa or regionally. The addition of Wind VIII will diversify MidAmerican's generation portfolio by increasing the amount of renewable energy<sup>9</sup>. Greater generation diversity, especially non-carbon emitting resources, provides protection against the volatility of coal and natural prices. Diversification of utility generation is a priority of Iowa law as stated in Iowa Code section 476.53(2)(b)

*The general assembly's intent with regard to the development of electric power generating and transmission facilities...shall be implemented by considering the diversity of the types of fuel used to generate electricity, the availability and reliability of fuel supplies, and the impact of the volatility of fuel costs.*

Since joining MISO, MidAmerican became a part of a large balancing area reducing the impacts of wind volatility. This occurs in part due to regional wind diversity and the large number of resources available for balancing wind. As such, MISO is responsible for ensuring the additional wind generation in MidAmerican's portfolio will be managed in a manner that does not compromise grid reliability.

MidAmerican expressed its commitment to the Board that it will meet all pertinent transmission requirements with respect to the Wind VIII sites. As with previous wind projects, MidAmerican must receive approval from MISO before interconnecting the Wind VIII sites to the transmission system. MidAmerican will work with MISO to perform

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<sup>9</sup> Staff note: While the testimony does not address coal output, it is clear from Confidential Table 2.1-2 that MidAmerican is not planning to run coal plants less due to the addition of Wind VIII. MidAmerican is expecting to retire 540 MW of coal in 2016 due to EPA regulations, but this is not related to Wind VIII.

all required analysis. The MISO studies will include the cumulative effects of all generator interconnection requests in MISO and neighboring systems to significantly decrease the probability of multiple transmission providers simultaneously allowing incompatible generator interconnections.

Once the analysis is complete, MISO will identify transmission facilities required to interconnect each Wind VIII site. These facilities include interconnection facilities, new transmission lines, substation facilities and miscellaneous facilities. Most of the facilities are expected to be located on property owned by MidAmerican or another transmission owner which means that no easements will be required. However, there may be some facilities that will not be located on property owned by MidAmerican or another transmission owner in Iowa. All easements required for these facilities will be obtained in accordance with Chapter 478 of Iowa Code and 199 IAC 11. This is consistent with some of MidAmerican's past wind projects. All MidAmerican transmission facilities other than facilities located entirely on MidAmerican property will be addressed in separate Board dockets focused on those facilities.

MidAmerican believes that transmission uncertainty is significantly mitigated via the extensive MISO studies. Additionally, the dispatchable intermittent resource (DIR) program in MISO further enhances transmission reliability. Also, significant improvements in the transmission system in the form of MISO multi-value projects (MVPs) will add more transmission capacity to deliver wind power to loads in and out of Iowa.

Transmission network upgrade costs will be recovered through the transmission rider proposed in MidAmerican's current rate case. Interconnection costs are expected to be included in rate base in a future rate case. [REDACTED]

### Staff Analysis

MidAmerican started the transmission analysis process with MISO in 2012. There are currently five potential sites in the advanced stages of analysis. Based on MidAmerican's record with the previous seven wind projects and the fact that MidAmerican started the MISO analysis last year, Staff is convinced that MidAmerican will be able to connect Wind VIII projects to the MISO grid without any delays due to transmission issues.

Transmission costs are not well known at this time. MISO has studied a portion of the projects for Wind VIII and the cost estimates seem to be on track thus far. Transmission costs are included in the proposed cost cap and Staff does not have significant concerns.

## **Environmental Issues (Ellen)**

### **Raw Materials Used and Wastes Created, and Transportation Facilities**

#### MidAmerican Position

Tr. 222-224

As with MidAmerican's prior wind projects, there will be no principal raw materials used to produce electricity at Wind VIII sites. Similar to the prior wind projects, chemicals will be used for the cleaning of equipment, such as lubricating and insulating oils and greases; and buildings, such as office and janitorial supplies incidental to operations. MidAmerican will use all such materials in accordance with applicable laws and regulations and will collect and recycle spent lubricants, degreasers and solvents in accordance with applicable regulations and laws.

Wind VIII will have no air emissions or wastewater effluent discharges. Similar to MidAmerican's prior wind projects, MidAmerican anticipates that the existing transportation facilities will be adequate to serve the construction and operation of Wind VIII. Temporary and/or permanent private access roads and, in certain cases, public road improvements will be constructed where necessary to provide access to the wind turbine locations.

#### Staff Analysis

MidAmerican's commitment for Wind VIII to comply with disposal and recycling regulations and laws is similar to MidAmerican's commitment for Wind VII. Staff has no concerns in this area.

### **Environmental Permits and Approvals, Impact**

#### MidAmerican Position

Tr. 37-42

MidAmerican anticipates that each Project site will require very few environmental approvals for construction because of the agricultural nature of the likely turbine locations, and will require no environmental permits for operation. The construction contractor will need to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Iowa Department of Natural Resources (IDNR) for project-related construction storm water discharges. MidAmerican will obtain all necessary construction and operating permits and approvals in a timely manner and abide by all such terms and conditions. Construction, maintenance and operation of the Project will be in accordance with planning and zoning requirements.

MidAmerican expects that the construction and operation of Wind VIII will not have a significant impact on agricultural production, plants or wildlife. A relatively small amount of property (approximately four-tenths of an acre) would no longer be available for agricultural production after MidAmerican obtains the easements, and MidAmerican will purchase land for any necessary substations. Each parcel of property will be evaluated to ensure that the proposed siting of the facilities will not have a detrimental impact to any threatened or endangered species or critical habitat. Since the turbine locations will maximize each turbine's wind profile, they will not be in areas with trees and associated habitat necessary to support avian or bat species. The operation of Wind VIII will not result in any impact to air quality or water quality; consequently, the operation of Wind VIII will not result in any significant impacts to terrestrial and aquatic plants and wildlife and compares favorably to fossil fuel generation.

MidAmerican projected the 2015 emissions rates per MWh of all its previously approved generation in service by December 31, 2012, then factored in the completion of Wind VIII and projected the 2015 emissions rates per MWh, and compared the results.<sup>10</sup> MidAmerican's projected emissions rates per MWh in 2015 for sulfur dioxide (SO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), and carbon dioxide (CO<sub>2</sub>) each decreased after factoring in the operation of Wind VIII.

#### Staff Analysis

MidAmerican made similar commitments in Wind VII concerning compliance with construction and operating permits and approvals, and compliance with planning and zoning requirements. Staff has no concerns in this area.

### **Economic Development – Community Impact (Jane)**

#### MidAmerican Position

Tr. 123, 229-230

MidAmerican believes the benefits from Wind VIII construction, maintenance, and operation will be similar to prior Wind Power Projects and the benefits are consistent with the primarily agricultural land use and environment policies of Iowa. MidAmerican believes the benefits will (1) provide low cost renewable energy for Iowa customers; (2) provide additional Iowa jobs and economic development opportunities; (3) diversify MidAmerican's generation portfolio; (4) protect customers from potential increases in natural gas prices and the costs of satisfying more stringent carbon emission standards; and (5) provide rental payments to landowners for the wind energy sites, which is beyond the landowners' farming operations income. The local and state expenditures associated with the installation of 1,050 MW of wind generation assets could approach \$330 million. The estimated total payroll is expected to approach approximately \$30

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<sup>10</sup> MidAmerican noted that the emissions reductions benefits are not solely for MidAmerican's rate base customers.

million during construction. Additionally, a project of this size is estimated to generate property tax revenues for local tax districts in excess of \$360 million over 30 years.

### Staff Analysis

MidAmerican has identified a number of economic benefits to Iowa. Staff has no concerns in this area.

## **Regulatory and Legislative Drivers (Ellen)**

### MidAmerican Position

Tr. 42-51

MidAmerican commented that Wind VIII represents a sound investment in preparation for future carbon regulations and legislation.

### **Regulatory drivers:**

In 2007, the United States Supreme Court held that greenhouse gas emissions, including CO<sub>2</sub>, are air pollutants covered by the Clean Air Act. In June 2010, the Environmental Protection Agency (EPA) finalized a greenhouse gas emissions Tailoring Rule that phases in permitting requirements for sources of the emissions. In 2012, the EPA released proposed new source performance standards for greenhouse gases and noted that the proposal reflects the ongoing trend in the power sector towards cleaner power plants that take advantage of modern technologies.<sup>11</sup>

The EPA recently indicated that it may initiate a rule making that would base compliance with greenhouse gas emission standards for existing sources on a generating fleet's average CO<sub>2</sub> emission rate, or carbon intensity, from all types of electric generation. MidAmerican commented that low- or zero-carbon emission sources (such as Wind VIII) would be beneficial to achieving compliance with this type of greenhouse gas regulation. MidAmerican believes that the trend of regulations will continue to tighten restrictions on greenhouse gas emissions.

Additional EPA regulations: The Mercury and Air Toxics Standards target a 90 percent reduction in mercury emissions, an 88 percent reduction in acid gas emissions, and a 41 percent reduction in SO<sub>2</sub> emissions beyond the reductions expected from interstate-transport rules for air emissions. The Coal Combustion Residuals proposed rule would regulate the handling and disposal of coal combustion byproducts and impose more stringent requirements for new (or expanding) ash landfills. The Effluent Limitation Guidelines proposed rule would limit mercury, zinc, phosphorous, selenium, and other pollutant discharges to surface waters through wastewater, coal ash ponds, and flue gas desulfurization systems.

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<sup>11</sup> As of the time of MidAmerican's filing, the EPA had not finalized the proposed rules.

MidAmerican commented that because wind generation is a zero-emission and zero-discharge source of generation, current and proposed regulations increase the competitive value and customer benefits of wind generation compared to fossil-fueled sources of generation.

### **Legislative drivers:**

In 2010, the United States Congress considered significant measures to regulate greenhouse gas emissions, but no comprehensive climate change regulation has been adopted. In 2011, The United States House of Representatives voted on a bill that would prevent the EPA from regulating greenhouse gas emissions, and no action has been taken by the Senate on the bill. Various states and regions that include four Canadian provinces have developed climate registries and climate action plans, and few states have progressed to requiring binding emissions regulations. Neither the Midwest Greenhouse Gas Accord nor the policy options developed by the Iowa Climate Change Advisory Council have moved forward with any binding emission reductions for Iowa.

MidAmerican supports the development of a responsible climate policy that addresses global climate change and reduces greenhouse gas emissions while ensuring reasonably priced energy for consumers. MidAmerican follows climate change policies closely to determine the impact on its facilities and on planning for future facilities.

### **Staff Analysis**

MidAmerican's conclusion that Wind VIII represents a sound investment in preparation for future carbon regulations and legislation is similar to the company's conclusion in its testimony for Wind VII. The addition of Wind VIII would be consistent with the trend of emissions regulations, since wind generation produces no air emissions or wastewater effluent discharges.

### **Overall conclusion regarding the need for, and reasonableness of Wind VIII**

Staff is satisfied that MidAmerican's proposal to add more wind to its generation portfolio is reasonable for the following reasons:

1. Increasing the amount of low carbon generation in MidAmerican's portfolio reflects prudent planning for potential future carbon regulations.
2. The possible expiration of the PTC supports the concept of making investments in wind generation now while the PTC opportunity exists.
3. Wind power is the best option for providing significant quantities of economical, carbon free energy.
4. The project is expected to be economically beneficial to ratepayers.
5. Iowa energy policy supports wind development in the state.

For the reasons listed above, Staff believes that MidAmerican has demonstrated a need for the units and that MidAmerican has considered other sources for long-term electric supply and that Wind VIII is reasonable when compared to other sources of supply.

## **RATEMAKING PRINCIPLES**

### **Introduction (Gary)**

Iowa Code § 476.53 provides that a rate-regulated electric utility may request ratemaking principles that will apply when the costs of certain new defined generation, which encompasses Wind VIII, are included in electric rates. The ratemaking principles established by the Board in this proceeding are binding (if accepted by the utility) with regard to the specific electric power generating facility in any subsequent rate proceeding. In making its ratemaking principles determination, the Board is not limited to traditional ratemaking principles or cost recovery mechanisms. Iowa Code § 476.53(3)“b.” The General Assembly said that the advance ratemaking principles were designed to:

[A]ttract the development of electric power generating and transmission facilities within the state in sufficient quantity to ensure reliable electric service to Iowa consumers and provide economic benefits to the state. Iowa Code § 476.53(1).

The Board has said that if a facility does not meet the needs of Iowa consumers, it is not eligible for ratemaking treatment. However, the Board has said that need does not mean an immediate need, such as a showing that the lights would go out if a facility is not built, because that would not be a prudent planning criterion. MidAmerican Energy Company, “Order Approving Stipulation and Agreement,” Docket No. RPU-05-4 (April 18, 2006), p. 6. The Board has also said that the ratemaking principles statute does not refer to the least-cost alternative or least-cost planning, so the proposed facility need only be reasonable when compared to other sources of supply. MidAmerican Energy Company, “Order,” Docket No. RPU-01-9 (May 29, 2002), p. 6.

### **RPU Conditions Precedent**

The Board must make two findings before it can award ratemaking principles. First, the utility must have a Board-approved energy efficiency plan pursuant to Iowa Code § 476.6(16). Second, the utility must demonstrate that it has considered other sources for long-term electric supply and that the facility or lease is reasonable when compared to other sources of supply. Iowa Code § 476.53(3)“c”(1-2).

**Issue 1: Does the rate-regulated public utility have in effect a board-approved energy efficiency plan?**

MidAmerican Position

Tr. 33-35

MidAmerican's current energy efficiency plan (Docket No. EEP-08-2) was filed on April 30, 2008, and approved by the Board on March 9, 2009. The plan will remain in effect through December 31, 2013. During 2009 through 2012, MidAmerican spent 96 percent of its budgeted amount on energy efficiency and has reached 82 percent of planned electric savings and 105 percent of its peak shaving goal. Total electric savings between 2009 and 2012 were 897,866,566 kWh with a reduction in peak load of 460 MW.

Staff Analysis

This condition precedent has been satisfied and no party claimed otherwise. MidAmerican filed a new energy efficiency plan for 2014 through 2018 (EEP-2012-0002) that is currently before the Board.

**Issue 2: Has the rate-regulated public utility considered other sources for long-term electric supply and is the proposed facility reasonable when compared to other sources of supply?**

MidAmerican's discussion of alternative sources is covered in other sections of the memo. Staff agrees that MidAmerican has demonstrated a need for the units and that MidAmerican has considered other sources for long-term electric supply and that Wind VIII is reasonable when compared to other sources of supply.

**Ratemaking Principle 1 – Iowa Jurisdictional Allocation (Gary)**

*The Wind VIII Iowa Project will be allocated to Iowa in the same manner as the Greater Des Moines Energy Center, Walter Scott Jr. Energy Center Unit No. 4, and prior wind projects.*

MidAmerican Position

Tr. 13

MidAmerican proposes to allocate Wind VIII in the same manner as it has other new generation (Greater Des Moines Energy Center, Walter Scott Jr. Energy Center Unit No. 4, and all previous MidAmerican wind projects) built since the passage of the ratemaking principles statute, and in the same manner as the Board approved in ratemaking principles dockets for such new generation. MidAmerican said that Wind VIII would be built in response to Iowa energy policy, and therefore Iowa customers should receive the appropriate benefits of Iowa's forward-looking energy policy.

## Staff Analysis

This principle is uncontested and has not been contested in any prior proceeding. The following is a history of the allocation method that has been used in MidAmerican's ratemaking principle cases:

The Iowa jurisdictional allocation method for "New Generation" in Docket Nos. SPU-05-9 and SPU-05-12 allocated what otherwise would have been the Illinois jurisdictional share (approximately 11 percent) to the Iowa jurisdiction (increasing it from approximately 87 to 98 percent). The rationale for this treatment was that the "New Generation" was in response to Iowa legislation that promoted the expansion of rate-regulated generation in Iowa (i.e., the advance ratemaking principles statute – Iowa Code § 476.53), and which enabled the transfer of 40 MW of retail load (IPSCO Steel) from Eastern Iowa Light and Power Cooperative to MidAmerican (the subject of Docket Nos. SPU-05-9 and SPU-05-12). The "New Generation" specified in SPU-05-9 and SPU-05-12 consisted of: 1) Greater Des Moines Energy Center; 2) Council Bluffs (n/k/a Walter Scott) Energy Center Unit 4; 3) a 250 MW power purchase agreement with Nebraska Public Power District; and 4) wind projects totaling approximately 360 MW covered by the ratemaking principles approved in Docket Nos. RPU-03-1 and RPU-04-3.

Later ratemaking principles settlements extended this treatment to additional MidAmerican wind projects in Docket Nos. RPU-05-4, RPU-07-2, RPU-08-2, RPU-08-4, and RPU-2009-0003. The settlements in RPU-05-4, RPU-07-2, RPU-08-2, and RPU-08-4 adopted the same jurisdictional allocation used for "New Generation" in SPU-05-9 and SPU-05-12. The settlement in RPU-2009-0003 adopted the same allocation method used for Greater Des Moines Energy Center and Walter Scott Jr. Energy Center Unit No. 4 (in SPU-05-9 and SPU-05-12) and prior wind projects.

Recommendation: Staff recommends acceptance of the Iowa jurisdictional allocation.

## **Ratemaking Principle 2 – Cost Cap (Dan)**

*The cost cap for the Wind VII Iowa Project (including AFUDC) is:*

- *\$1.825m per MW (including AFUDC) for completed sites.*

*In the event that actual capital costs of a given Wind VIII site are lower than the projected capital costs, rate base shall consist of actual costs. In the event actual capital costs exceed the cost cap, MidAmerican shall be required to establish the prudence and reasonableness of such excess before it can be included in rates.*

## MidAmerican Position

Tr.170-172, 231-232

Response to Q1 of the Board's request for post hearing information  
Confidential Attachment 1 provided with the post hearing information

MidAmerican is proposing to install up to 1,050 MW of new wind capacity with a proposed cost cap of \$1,825/kW. The cap is designed at a price that provides customer

benefits over the life of the facilities and adds no net costs to customers. The cost cap for Wind VIII is less than the approved cap for Wind VII by \$475/kW, or 20.6 percent. The cost cap principle includes transmission costs (Tr. 199) as well as AFUDC

MidAmerican believes that the cost cap will allow it to earn the minimum cost of capital while providing the ability to pursue projects that will add incremental renewable energy at no net cost to customers. MidAmerican estimates that its final costs will be below the cost cap and within close proximity to the final costs realized in Wind VII.

It is the goal of MidAmerican that the retail customer not be adversely affected by the additional 1,050 MW of new wind. The cost cap was determined to be at a level that would meet this criterion.

### Staff Analysis

MidAmerican's proposed cap is based on the maximum cost at which the project can be built and not harm retail customers. In Wind VII, the approved cost cap was \$2,300/kW. MidAmerican stated in its reporting requirements for Wind VII that Wind VII actual costs were approximately \$1,621/kW installed<sup>12</sup>, significantly below the Wind VII cost cap level. MidAmerican states that the proposed cost cap in Wind VIII is less than what was approved in Wind VII. However, it is clear that the requested cap level for Wind VIII is \$200/kW above the actual installed cost for Wind VII. MidAmerican Witness Wright testified that MidAmerican has [REDACTED]. (Tr. 246) Witness Wright added that the overall installed price is estimated to be [REDACTED]. (Tr. 247)

Table 5: Comparison of cost values for Wind VII and Wind VIII.

Item	Value (\$/kW)
Wind VII Approved Cap	2300
Wind VIII Proposed Cap	1825
Staff Proposed Alternative Cap	1650
Wind VII Actual Costs	1621

Note: MidAmerican's best estimate of actual cost for Wind VIII is [REDACTED].

Staff believes that the cost cap should be based on supportable estimates of actual cost, not a breakeven cost analysis. MidAmerican has provided supportable cost estimates for significant portions of the Wind VIII project. Staff believes that it is reasonable to consider modifying the cost cap based on [REDACTED] and actual Wind VII cost experience. If the Board determines that the proposed cost cap is too high, Staff believes that a cost cap of \$1,650/kW is

<sup>12</sup> Values reported by MidAmerican in the February 12, 2013 Wind VII Iowa Project Status Update for the Iowa Utilities Board, filed in response to the Board's Final Order for Docket RPU-2009-0003, show the portion of the project installed in 2011 had a cost of \$1628/kW, and the 2012 portion had a cost of \$1610/kW.

reasonable. If MidAmerican experiences costs above \$1,650/kW that are reasonable and justified, it will have the ability to ask for recovery of those costs in a future rate proceeding.

Recommendation: Staff recommends adjusting the cost cap to \$1650/kW.

### **Ratemaking Principle 3 – Size Cap (Dan)**

*The ratemaking principles shall be applicable to all new MidAmerican wind capacity, up to 1,050 MW, built as a part of the Wind VIII Iowa Project.*

#### MidAmerican Position

Tr. 232-233

MidAmerican is requesting that all ratemaking principles be applicable to the installation of up to 1,050 MW of new wind capacity. MidAmerican believes that this is the maximum amount of new capacity that can be installed and still meet the PTC qualification guidelines.

#### Staff Analysis

Staff has no concerns with the size cap, and notes that MidAmerican is still in the process of siting and procuring wind turbines.

Recommendation: Staff recommends acceptance of the size cap.

### **Ratemaking Principle 4 – Depreciation (Dan)**

*The depreciation life of the Wind VIII Iowa Project for ratemaking purposes shall be 30 years. MidAmerican shall be able to revise the depreciable life in the event an independent depreciation expert provides support for a different useful life.*

#### MidAmerican Position

Tr. 233; Exh. ALW-1, Schs. 1-2

MidAmerican is proposing to depreciate the Wind VIII assets over 30 years. MidAmerican believes that the improvements in technology have extended the useful life of wind turbines to 30 years, and in most cases, beyond 30 years.

#### Staff Analysis

MidAmerican provided letters from Siemens Energy and GE Energy. Both companies have significant experience building wind turbines and both state that if properly maintained, the current versions of wind turbines should have no problems reaching 30 years of continued service. Witness Wright also stated in the hearing that [REDACTED]



Based upon financial economics and Supreme Court guidance<sup>13</sup>, the allowed ROE should reflect the cost of capital. In particular, the cost of equity capital is an economic and financial concept, not an accounting concept, and necessarily entails estimation. Witnesses use a variety of cost of equity models to make their educated guesses. The objective is to estimate the minimum rate of return necessary to attract equity capital to the utility.

In setting out its basic ROE approach in Docket No. RPU-89-7, Iowa Southern, the Board noted it “is obligated to make its decision in each case based on the specific facts and arguments presented in that case.” It also added, “the final determination should not be the result of a rigid and mechanical application of a particular formula.”

While the ROE allowance should reflect the equity cost of capital, commissions can allow more or less if justification so warrants. For example, commissions might consider a managerial efficiency award or penalty, adjustments for rate stability concerns, and/or special incentives. It can be argued that past ROE allowances of advance ratemaking cases for wind have at least implicitly included some positive incentive adder, not inconsistent with the state policy to encourage generation and, in particular, renewables.

It is also worth noting a difference in the ROE allowances for traditional and advanced rate cases. The ROE allowance for traditional rate cases is set until another subsequent rate case is filed and will tend to follow, albeit with a possible lag, cost of equity capital up and down over time. On the other hand, utilities in the advanced rate cases have proposed, and the Board has accepted, that the ROE allowance is fixed for the life of the plant.

Below is a table that shows the ROE allowances accepted by the Board for prior cases filed under the Advance Ratemaking as per Iowa Code § 476.53. Only two (shown in bold) were fully litigated cases. All the rest were at least partially settled. In settled cases, the ROE is only one part of what is generally presented as an “all or nothing” package and therefore is generally presented, and accepted, as having no precedential value.<sup>14</sup>

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<sup>13</sup> Additional discussion of legal guidance can be found in the Appendix.

<sup>14</sup> Docket No. RPU-2009-0003 (MidAmerican) was only partially settled.

Table 6: Prior ROE allowances under Iowa Code § 476.53

Year	Docket No.	Fuel	Approved ROE
<b>2001</b>	<b>RPU-2001-0009</b>	<b>Gas</b>	<b>12.23%</b>
2002	RPU-2002-0006	Gas	12.23%
2002	RPU-2002-0010	Coal	12.29%
2003	RPU-2003-0001	Wind	12.20%
2004	RPU-2004-0003	Wind	12.20%
2005	RPU-2005-0004	Wind	11.90%
2007	RPU-2007-0002	Wind	11.70%
2007	RPU-2007-0005	Wind	11.70%
<b>2008</b>	<b>RPU-2008-0001**</b>	<b>Coal</b>	<b>10.10%</b>
2008	RPU-2008-0002	Wind	11.70%
2008	RPU-2008-0004	Wind	11.70%
2009	RPU-2009-0003	Wind	12.20%
	Average		<b>11.85%</b>
	Average for Plants Built		<b>12.00%</b>

\*\*Upon receiving allowed principles, Interstate Power & Light (IPL) chose not to build the coal plant.

### MidAmerican Position

Tr. 23-24, 121-168; Ex. \_ (JHV-1), Schs. 1-10

MidAmerican's proposed principle includes an allowed return on common equity of **11.75%**. Both Witness Crist and Vander Weide attest that the proposed 11.75% is justified. First, it is a fixed rate for the life of the plant and will not change even if capital costs rise, as they are apt to do over time from the current low levels. (Crist, Tr. 24; Vander Weide, Tr. 152) Second, both argue that a higher ROE is warranted to encourage investment in renewables as desired by public policy.

Dr. Vander Weide first (1) estimates MidAmerican's cost of equity using various standard cost of equity methodologies as applied to proxy groups of comparable utilities, arriving at **10.8%**. He then (2) adds a return differential of 100 to 150 basis points to satisfy the goals and intent of Iowa Code 476.53. Based on this, he concludes that MidAmerican's requested **11.75%** ROE is fair and reasonable.

Dr. Vander Weide uses the following three cost of common equity models in estimating MidAmerican's current cost of equity.

- Quarterly Discounted Cash Flow (DCF)
- Risk Premium Model (RPM), both ex ante and ex post
- Capital Asset Pricing Model (CAPM)

His results are as follows:

Table 7: Summary of results from Vander Weide

Witness	Methods Used	Results	Proposed ROE
Vander Weide - MidAmerican (Tr. 140; JHV-1, Sch. 1)	Quarterly DCF Return Rate	10.4%	<b>11.75%</b>
(Tr. 150; JHV-1, Sch. 2)	Ex Ante Risk Premium	11.2%	
(Tr. 155; JHV-1, Sch. 3-4)	Ex Post Risk Premium	10.8%	
(Tr. 156; JHV-1, Sch. 5-8)	CAPM—Historical	10.4%	
(Tr. 163; JHV-1, Sch. 9)	CAPM—DCF Based	10.7%	
(Tr. 164)	Cost of Equity Conclusion	10.8%	
(Tr. 165)	& Return Differential	1.0 to 1.5 %	

### OCA Position

Tr. 262-287; Ex. \_ (MM-1), Sch. A-E

Based on (1) the cost of equity results of his market-based models that reflect current investors' expectations, (2) the possibility of changing market conditions, and (3) the economic and societal benefits of renewable energy, Witness Munoz recommends that the Board set the ROE for the Wind VIII Project at **11.50%**.

1. To determine the current cost of equity capital, Mr. Munoz uses the continuous compounding discounted cash flow (DCF) model as his main market-based model. Using the mid-point of each firm's growth range and informed judgment, he concludes that the current DCF cost of equity of the companies in his proxy group is between 8.2% and 9.6%. (Tr. 275; Sch. B, p. 1) As a check on his DCF results, he uses the Capital Asset Pricing Model (CAPM), producing an 8.2 to 9.4% range. (Tr. 276-280; Sch. C)
2. However, given that it will be fixed for the life of the plant, the allowed ROE should consider more than just the current cost of equity. To consider the possibility of changing market conditions, Mr. Munoz substitutes 10 to 13-year historical dividend yields in lieu of current dividend yields (D/P) into his DCF analysis of each of his proxy companies. He also uses the midpoint of the sustainable growth rate ranges as estimates of the long-term horizon growth rates. This analysis leads to a DCF range of 8.3% to 11.1% that he believes best reflects changing market conditions. He concludes that a common equity return of 11.0% reflects the return required over the entire useful life of Wind VIII. He notes that this is similar to the 11.05% median allowed ROE granted by other commissions across the country over the past 20 years. (Tr. 284)
3. In addition, Mr. Munoz proposes an additional 50 basis points upward adjustment to the ROE to recognize the economic and societal benefits of the proposed Wind VIII renewable energy project, noting that Iowa Code § 476.53 and § 476.53A promotes the development of generating facilities in Iowa and, in particular, renewable generation.

This adjustment of 50 basis points brings the OCA’s proposed ROE allowance up to **11.50%**. (Tr. 286-289)

His results can be as summarized below:

Table 8: Summary of results from Munoz

<b>Witness</b>	<b>Methods Used</b>	<b>Results</b>	<b>Proposed ROE</b>
Munoz – OCA			
Current Cost of K (Tr. 276)	DCF of Utility Proxies	8.2 – 9.6%	<b>11.50%</b> (Tr. 263, 286)
(Tr. 280)	CAPM of Utility Proxies	8.2 – 9.4%	
Long-term Cost of K (Tr. 284)	DCF based on Long-Term Dividend Yields of Proxies	11.0%	
Incentive Adjustment (Tr. 287)	In acknowledgement of Legislative Intent	0.50%	

Staff Analysis

The parties’ recommended ROE only differs by 25 basis points: 11.75% from MidAmerican and 11.50% from the OCA. The settlement splits the difference at 11.625%. Both parties argue that the cost of equity finding should be higher than currently low capital costs since the ROE allowance will be fixed over the 30-year life of plant. Both also agree that legislative intent embodied in Iowa Code § 476.53 and § 476.53A and past Board decisions justify some incentive return differential.

History: The 11.625% is well short of the 12.00% average ROE allowed on the eleven advance ratemaking projects that were built. However, that average is only 11.85% if IPL’s coal plant in Docket No. RPU-2008-000, which was not built, is also included with its more modest 10.1% ROE allowance.

Only two of the 12 advance ratemaking cases were litigated (the initial Docket No. RPU-2001-9, MidAmerican, and Docket No. RPU-2008-1, IPL); the others all included settlements. Settlements are generally not considered precedential.

All 12 advance ratemaking cases with final orders were filed under Iowa Code § 476.53, which seeks to “attract the development of electric power generating and transmission facilities within the state in sufficient quantity to ensure reliable electric service to Iowa consumers and provide economic benefits to the state.” These cases, which included two gas and two coal plants, preceded the 2011 passage of Iowa Code § 476.53A that explicitly encourages the “development of renewable electric power generation.” It also encourages the “development of transmission capacity to export wind power generated in Iowa.” In other words, the legislative intent to support renewables (and Wind VIII) has only increased with the additional code. Given this, the 11.625% for wind generation does not seem unreasonable when compared to the 12.0% average allowed ROE for all generation built under advance ratemaking principles since 2001.

Cost of Equity Capital: Prior to settling on the incentive return differential, both parties estimate the cost of equity. Both parties recognize that a fixed ROE for the life of the plant needs to exceed current cost of equity levels to recognize that cost of capital is apt to rise from current low levels as markets change over time. Dr. Vander Weide's cost of equity conclusion, taking into account his DCF, Risk Premium, CAPM analyses and the fixed nature of ROE, is 10.8%. His analysis in a number of places uses forecasted values, which arguably allows his analysis to transcend the low results the models would otherwise produce. Mr. Munoz, on the other hand, while finding the current cost of capital is only in the 8.2 to 9.6% range, concludes after considering long-term dividend yields that 11.0% is a more reasonable long-term cost of equity capital. In other words, the two parties are very close (10.8% versus 11.0%) for the cost of equity estimation applicable for a ROE fixed for 30 years.

While the Board generally uses current market data as the best indicator of the future, it may want to make an exception at this time of low capital costs, especially since the allowed ROE will be fixed for 30 years and cannot be reset in subsequent rate cases. As noted in the record, "(O)ver the last 30 years, the average allowed return on equity for electric utilities has ranged between 10 and 16%; and long term yield on 30-year A-rated utility bonds have ranged between 4% and 16%." (Vander Weide, Tr. 125) Also, according to responses to the Board's June 5<sup>th</sup> order requiring additional information, the average allowed ROE granted by states in 2012 was 10.15% and the most recent 12-month A-rated utility bond average was 4.08%. Taken together, this evidence suggests the capital market is at the bottom of its cycle. The OCA analysis also seems to support this observation. (Munoz, Tr. 285) Moreover, in response to a hearing question about treatment of ratepayers if capital costs continue to stay low, Witness Munoz asserted that ratepayers would benefit from this settlement even if capital costs stayed low for the 30 year period. (Tr. 290-292)

In MidAmerican's only fully litigated advanced ratemaking case, Docket No. RPU-2001-0009, the Board granted 12.23 percent for the ROE allowance, adding a risk premium of 450 basis points onto the A-rated average yield of 7.73%. Based upon the most recent 12-month A-rated utility bond average yield of 4.08%, adding 450 basis points only provides an estimated ROE allowance of 8.58%. However, if the Board agrees with the parties that the current low cost of capital is inappropriate given the 30-year fixed nature of the proposed ROE, then it might judge the forecasted A-rated utility bond of 6.55% as more reasonable to use than the recent 12-month A-rated utility bond average yield in this market extreme. While staff does not necessarily recommend the Board adopt this method, it is nevertheless interesting that adding this 6.55% debt rate to the top of the Board's RP range of 450 basis points would support 11.05% cost of equity estimation.

Return Differential: After estimating the cost of equity by analyzing proxy companies presented as comparable to MidAmerican and adjusting, as needed, for the fixed nature of the proposed ROE, both parties add an additional return to acknowledge legislative intent in Iowa Code § 476.53 and § 476.53A that encourages the development of generation, especially of renewables. Both parties are cognizant of past Board ROE decisions that arguably exceed the actual cost of equity at that time and at least

implicitly incorporate just such an incentive return differential. Dr. Vander Weide's return differential is 95 basis points while Mr. Munoz recommends 50 basis points.

Dr. Vander Weide, by adding 95 basis points to his cost of equity findings of 10.8%, produces his proposed ROE of 11.75%. Similarly, Mr. Munoz, by adding 50 basis points to his 11.0% long-term cost of equity, produces his proposed ROE of 11.50%. Both recommendations are slightly below the average advance ratemaking ROEs of 11.85% (12.00% average for those plants actually built) that the Board has allowed since the inception of advance ratemaking.

Part of the 11.625% ROE proposed by the settlement can be easily attributed to a return differential to reflect the intent of Iowa Code § 476.53 and especially Iowa Code § 476.53A. Dr. Vander Weide shows that the past advance ratemaking decisions by the Board allowed ROEs that exceed the average ROE allowed in other states by 139 basis points. (Tr. 166) Staff notes that all of these were before the passage of 476.53A that arguably increases the rationale for granting an incentive for a wind project. While the Board seldom gives any weight to other states' decisions, it is nevertheless of interest that the 11.625% is 148 basis points above the 2012 average ROE allowance of 10.15%.

Summary: Given that the Board has accepted numerous settlements for wind generation that allowed higher fixed ROEs, and given that settlements are not accorded precedential value, staff sees little reason to object to 11.625% based upon the cost of equity capital record before the Board, especially given the expressed legislative intent in Iowa Code § 476.53 and § 476.53A and the Board's own past decisions in accordance with that intent. In particular, the 11.625% for wind generation does not seem unreasonable when compared to the average ROE since 2001 of 12.0% (table 7).

Recommendation: Staff does not recommend rejection of the settlement based upon the settlement's proposed 11.625 % ROE.

## B. Equity Ratio

The originally proposed ROE Ratemaking Principle 5.5 reads as follows:

*The allowed return on the common equity portion of the wind projects, 50% of the capital invested, constructed pursuant to this Ratemaking Principles Application, that is included in Iowa electric rate base shall be 11.75%. (Emphasis added.)*

MidAmerican's application does not explicitly propose a capital structure principle, although ROE Ratemaking Principle 5.5 (by inserting the clause "50% of the capital invested" as qualifier to its preceding prepositional phrase "on the common equity portion of the wind projects") could conceivably be interpreted as proposing a fixed 50 percent equity ratio for calculation of plant-specific revenue requirement for the life of the plant. However, MidAmerican's response to the Board's June 21 Order requiring additional information gave a resounding and clear "No" to that interpretation.

To elaborate, MidAmerican's Witness Specketer provides assurance that MidAmerican's "current proposal is not intended to differ from the ratemaking principle approved by the Board in Docket No. RPU-2001-0009 whereby the capital structure and costs (except for the cost of common equity) shall be determined in each rate proceeding by the Board in a fashion identical to the capital structure used for the remainder of MidAmerican's electric operations."

In addition, the settlement's ROE principle removes the phrase of "50% of the capital invested." This, plus the assurances offered in response to the Board's June 21 Order, provides the needed clarity to the record and removes staff's concerns in this regard.

Recommendation: If the Board accepts the settlement, staff recommends that its order note MidAmerican's assurance regarding treatment of future capital structure and costs.

### C. AFUDC

The Settlement's ROE Principle also includes the following:

*An AFUDC rate that recognizes a return on common equity rate of 10.0% shall be applied to construction work in progress for Wind VIII generation.*

Allowance for Funds Used During Construction (AFUDC) reflects the capital costs incurred during the construction phase of building a future plant. The issue between the parties concerns what ROE to use in calculating the AFUDC rate. Should it reflect the current cost of equity, or should it be the full incentive-enhanced ROE proposed for the 30-year life of the plant?

#### MidAmerican Position

In response to an OCA data request, MidAmerican Witness Yokum states: "Consistent with the treatment of prior generation projects subject to ratemaking principles identified in MidAmerican Energy Company's Settlement Agreement with the Office of Consumer Advocate in Docket No. FCU-04-17, the Company proposes to use a cost of common equity of 11.75% in its AFUDC rate to be applied to Wind VIII investment during construction. The 11.75% is based on the cost of common equity requested for approval in this proceeding." (OCA Ex. \_\_ (BWT-1), Sch. A)

#### Consumer Advocate Position

Tr. 251-258; Ex. \_\_ (BWT-1), Schs. A-B

OCA Witness Turner takes issue with MidAmerican's proposal to use an 11.75% ROE in the calculation of the AFUDC rate. Instead, he proposes that the AFUDC rate uses a ROE "equal to either the current 3-year average electric ROE earned by MidAmerican after revenue sharing or the current actual ROE approved by the IUB in a rate case to be decided before the Wind VIII is placed in-service." (Tr. 252)

The 11.75 percent ROE rate proposed by MidAmerican does not properly reflect the rate most likely to match the 2014 to 2015 construction period, but instead matches the longer and more distant in-service period. Therefore, it is more appropriate to use a current ROE in the AFUDC calculation that reflects current market conditions. Mr. Turner recommends 9.89%, which is the average imputed ROE after sharing for the years 2010, 2011, and 2012. He adds that if the IUB were to approve an ROE in Docket No. RPU-2013-0004 that is different, then the AFUDC calculation should recognize that newly approved ROE rate.

### Staff Analysis

The only AFUDC issue in contention is the question of what ROE rate to use in calculating the AFUDC rate. MidAmerican originally proposed 11.75%, and the OCA originally proposed 9.89% until updated by the ROE granted in Docket No. RPU-2013-0004. The settlement of 10.0% is near the bottom of this range and reflects a current cost of common equity, instead of an ROE that is enhanced to account for the 30-year investment life and including an incentive for renewables. The settlement's proposed 10.0% does not seem unreasonable to staff.

Recommendation: Staff does not recommend rejection of the settlement based upon its proposed 10.0% ROE for AFUDC calculation.

### **Ratemaking Principle 6 – Cancellation Cost Recovery (Ellen)**

*In the event MidAmerican cancels any Wind VIII site for good cause, MidAmerican's prudently incurred costs shall be amortized over a period of ten years beginning no later than six months after cancellation. The annual amortization shall be recorded above-the-line and included in MidAmerican's revenue sharing or revenue requirement calculations, but the unamortized balance shall not be included in rate base in any such calculations.*

### MidAmerican

Tr. 177-178

MidAmerican proposed the cost cancellation ratemaking principle in the unlikely event that the Company cancels one or more Wind VIII sites. Reasons for cancellation may include a decision by MidAmerican not to move forward after the Board issues an order in this proceeding, too high of costs for wind equipment or site development, or other reasonable costs for cancellation. The prudence of the costs and the good cause for cancellation may be disputed by any party and shall be subject to determination by the Board.

This proposed ratemaking principle is consistent with legislative intent to encourage new generation by contributing to a utility's decision to undertake such a project. The Board has approved this provision in numerous ratemaking principles proceedings. MidAmerican has a good track record of building new wind generation and has never cancelled any prior wind projects.

## Staff Analysis

The Board approved a similar ratemaking principle for Wind VII and commented, “The principle is reasonable and a restatement of current Board policy with respect to project cancellation costs; the prudence of such costs must be established before any recovery.” (RPU-2013-0003) The Board approved similar principles in multiple prior ratemaking principles dockets (for both wind and non-wind generation projects) over the last 12 years. Staff agrees the cancellation cost principle is reasonable for Wind VIII.

Recommendation: Staff recommends acceptance of the cancellation cost recovery.

## **Ratemaking Principle 7 – Renewable Energy and CO<sub>2</sub> Credits and the Like (Ellen)**

*The Iowa portion of any revenues from the sale of renewable energy credits, carbon dioxide credits or other environmental related benefits associated with Wind VIII will be recorded above-the-line in FERC accounts 456, 411.8 and 411.9. However, the Iowa jurisdictional portion of any revenues from the sale of renewable energy credits, carbon credits or other environmentally related benefits associated with Wind VIII will be excluded from the Iowa Energy Adjustment Clause proposed in MidAmerican’s 2013 Iowa electric rate filing. For subsequent rate proceedings, the Iowa jurisdictional portion of the investment and all other costs and benefits of the Wind VIII project shall be included in base rates, and the Iowa jurisdictional portion of any revenues from the sale of renewable energy credits, carbon credits or other environmentally related benefits associated with Wind VIII shall be included in an Iowa Energy Adjustment Clause.*

## MidAmerican Position

Tr. 178-181, 206

Response to June 5, 2013, Board Order, p. 11

Response to June 26, 2013, Board Order, pp. 1-2

MidAmerican proposed that the Iowa portion of any revenues or other benefits from the sale of the environmental attributes of Wind VIII will be recorded in MidAmerican’s Iowa electric operating income and reflected in future rate proceedings (post Docket No. RPU-2013-0004).<sup>15</sup> MidAmerican commented that its proposed ratemaking principle avoids a mismatch that would be created if the benefits from the sale of environmental attributes were provided to customers without MidAmerican’s corresponding recovery of its investment in Wind VIII and other related costs and benefits. By recognizing all costs and benefits of Wind VIII at the time of a future rate proceeding, there will be a proper matching of the customer benefits and expenses of the Project.

MidAmerican suggested that it may not need to file another Iowa electric rate case for several years after the conclusion of Docket No. RPU-2013-0004. As a result, MidAmerican may experience several years of unrecovered Wind VIII returns, unrecovered depreciation, and unrecovered operations and maintenance expenses.

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<sup>15</sup> Witness Crist’s direct testimony (Tr. 19-20) described an arrangement with Facebook that would have MidAmerican assume a Facebook option on a wind farm site and then develop it as part of Wind VIII, and in exchange provide RECs to Facebook in relation to the value of the transferred site.

MidAmerican noted that the company will propose in Docket No. RPU-2013-0004 implementation of the Energy Adjustment Clause (EAC) that will include the revenues from the sale of renewable energy credits (RECs)<sup>16</sup>, CO<sub>2</sub> credits or other environmentally related benefits associated with past wind projects (prior to Wind VIII) as recorded in accounts 456, 411.8, and 411.9. In MidAmerican's June 26, 2013, response to the Board's questions, MidAmerican indicated that the revenue-sharing mechanism proposed in the docket includes the net system benefits of Wind VIII in the revenue sharing calculation prior to the project being reflected in base rates.

In MidAmerican's June 5, 2013, response to the Board's questions, MidAmerican indicated that the company annually reviews environmental and other assumptions used for long-term planning, and MidAmerican's last updated planning assumed the company would stop selling RECs by at least 2017 as the result of a federal renewable portfolio standard, or other mandate, in order to claim the environmental benefits on behalf of customers. If this does not happen, MidAmerican will continue selling RECs.

### Staff analysis

MidAmerican's ratemaking principles proceedings for each of its seven prior wind projects recorded revenues from the sale of RECs, CO<sub>2</sub> credits, and other similar credits above-the-line and were included in MidAmerican's revenue sharing calculations. In Docket No. RPU-2013-0004, which is currently a contested rate proceeding, MidAmerican proposed implementation of the EAC mechanism and requested a rule waiver that would allow the company to flow to customer bills the revenues and benefits from the sale of the RECs, CO<sub>2</sub> credits and other environmentally related benefits that result from its seven prior wind projects. MidAmerican also proposed in Docket No. RPU-2013-0004 the continuation of the revenue sharing mechanism, tied to approval of the EAC, until the company files another rate increase request.

MidAmerican's proposed "matching" principle regarding the treatment of the RECs, CO<sub>2</sub> credits and other similar credits resulting from Wind VIII operations appears to assume that MidAmerican would continue to have excess RECs to sell at the time, if ever, Wind VIII is added to the rate base in a future rate proceeding. Changes in environmental regulations over the life of Wind VIII may affect the extent that MidAmerican could benefit customers through selling RECs or CO<sub>2</sub> credits.<sup>17</sup> The language included in the ratemaking principle that takes into account other similar credits can help alleviate future changes in environmental regulations but is no guarantee that MidAmerican would continue to have environmental attributes available for sale.

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<sup>16</sup> RECs are measured in single MWh increments generated from renewable energy sources, and are issued and sold through regional tracking systems. Utilities may purchase RECs to help meet energy-based state mandates for renewable portfolio standards. Iowa's alternate energy requirements are capacity-based, not energy-based, and are related to specific facilities.

<sup>17</sup> MidAmerican indicated in Docket No. RPU-2013-0004 that the company does not currently receive any CO<sub>2</sub> credits or other environmentally related benefits other than RECs or PTCs that are associated with renewable power generation. (MidAmerican Direct, Kutsunis, p. 31)

The treatment of MidAmerican's investment in, and the benefits from the environmental attributes resulting from, the company's prior wind projects, will be addressed in Docket No. RPU-2013-0004, as will MidAmerican's proposed implementation of an EAC mechanism and revenue sharing mechanism.

Recommendation: Staff recommends acceptance of the treatment of REC sales.

### **Ratemaking Principle 8 – Federal Production Tax Credits (Ellen)**

*The Iowa jurisdictional portion of any federal production tax credits associated with Wind VIII will be recorded above-the-line in FERC account 409.1. However, the Iowa jurisdictional portion of any federal production tax credits associated with Wind VIII will be excluded from the Iowa Energy Adjustment Clause proposed in MidAmerican's 2013 Iowa electric rate filing. For subsequent rate proceedings, the Iowa jurisdictional portion of the investment and all other costs and benefits of the Wind VIII project shall be included in base rates, and the Iowa jurisdictional portion of any federal production tax credits associated with Wind VIII shall be included in an Iowa Energy Adjustment Clause.*

### MidAmerican Position

Tr. 181-182

Specketer Response to Q5 in June 26, 2013 Board Order

MidAmerican proposed that the Iowa portion of the federal PTC benefits associated with Wind VIII will be recorded in MidAmerican's Iowa electric operating income and reflected in future rate proceedings (post Docket No. RPU-2013-0004). MidAmerican commented that its proposed ratemaking principle avoids a mismatch that would be created if the benefits of the PTCs were provided to customers without the corresponding recovery of the investment in Wind VIII and other related costs and benefits. By recognizing all costs and benefits of Wind VIII at the time of a future rate proceeding, there will be a proper matching of the customer benefits and expenses of the Project. MidAmerican suggested that it may not need to file another Iowa electric rate case for several years after the conclusion of Docket No. RPU-2013-0004. As a result, MidAmerican may experience several years of unrecovered Wind VIII returns, unrecovered depreciation, and unrecovered operations and maintenance expenses (since Wind VIII would not be included in rates in between the next rate proceeding).

MidAmerican noted that the company will propose in Docket No. RPU-2013-0004 implementation of the EAC that will include PTCs for past wind projects (prior to Wind VIII) at the pre-tax level as recorded in account 409.1. In MidAmerican's June 26, 2013, response to the Board's questions, MidAmerican indicated that the revenue-sharing mechanism proposed in the docket includes the net system benefits of Wind VIII in the revenue sharing calculation prior to the project being reflected in base rates.

### Staff analysis

MidAmerican's ratemaking principles proceedings for each of its seven prior wind projects recorded the PTCs above-the-line and were included in MidAmerican's revenue

sharing calculations. In Docket No. RPU-2013-0004, which is currently a contested rate proceeding, MidAmerican proposed implementation of the EAC mechanism and requested a rule waiver that would allow the company to flow to customer bills the PTC benefits that result from its seven prior wind projects. MidAmerican also proposed in Docket No. RPU-2013-0004 the continuation of the revenue sharing mechanism, tied to approval of the EAC, until the company files another rate increase request.

The duration of the PTC credit is ten years after the date the qualified facility is placed into service. MidAmerican's economic analysis included PTC revenues starting at [REDACTED] in 2015, growing to [REDACTED] in 2016, and reaching its highest of [REDACTED] in 2024. Depending on the timing of reflecting Wind VIII investment in rate base, customers may or may not receive a benefit of the PTC credits passed through the proposed EAC, depending on whether or not MidAmerican has exhausted the ten-year eligibility for PTCs by that time.

The treatment of MidAmerican's investment in, and the PTCs resulting from, the company's prior wind projects, will be addressed in Docket No. RPU-2013-0004, as will also MidAmerican's proposed implementation of an EAC mechanism and revenue sharing mechanism.

Recommendation: Staff recommends acceptance of the treatment of PTCs.

### **Rate-making Principle 9 – Customer Rate Relief (Ellen)**

*Until MidAmerican's first general Iowa electric rate case where Wind VIII assets are reflected in rates, customers shall benefit through a reduction in the EAC. The customer benefit shall be capped at a \$3.3 million reduction for the 2015 calendar year, \$6.6 million for the 2016 calendar year, and \$10.0 million for each calendar year thereafter, conditioned upon MidAmerican having completed at least 350 megawatts ("MW") of Wind VIII. All other Wind VIII costs and benefits shall be included in base rates and an EAC at the time the Wind VIII assets are first included in a general rate case filed by the Company. In MidAmerican's first general rate case that includes the Wind VIII assets, actual Wind VIII capital costs, depreciation expense and operations and maintenance expenses consistent with the other rate-making principles shall be reflected in base rates, except for production tax credits and renewable energy credit benefits which shall be included in an EAC.*

### MidAmerican Position

Tr.183-185, 194-196  
Spekter Response to Q2 in June 26, 2013 Board Order

MidAmerican proposed a three-year phase-in of customer rate relief that is conditioned upon MidAmerican completing at least 350 MW of Wind VIII. MidAmerican's proposal caps the annual customer benefit at \$3.3 million for the 2015 calendar year, \$6.6 million for the 2016 calendar year and \$10 million for each calendar year thereafter. MidAmerican's proposed customer rate relief credits are not based on specific calculations. MidAmerican selected the annual credit of \$10 million per year based on the company's belief that the project will deliver net customer benefits over the life of the

assets and phased in the credit over three years, until reaching \$10 million annually, in recognition that the project may be completed over a multi-year period. MidAmerican noted that the customer benefits proposed are phased in over the same three-year period that the company proposes to phase-in its rate increase request in Docket No. RPU-2013-0004.

The EAC that MidAmerican proposes to implement in Docket No. RPU-2013-0004 would be the mechanism through which MidAmerican would provide its proposed rate relief to customers. MidAmerican conditioned the customer rate relief upon completion of a minimum of 350 MW of Wind VIII. The condition of the 350 MW minimum threshold is MidAmerican's attempt to avoid a situation in which MidAmerican must issue rate relief even though a limited number of MW are constructed due to circumstances beyond the company's control. MidAmerican commented that completion of 350 MW is a reasonable threshold and appropriately aligns providing customer benefits with completion of a significant portion of the Project.

Prior to the time that MidAmerican files a rate case that would include Wind VIII costs in rates, the rate base associated with Wind VIII will be reduced by book depreciation and deferred income taxes that will accumulate from the in-service date of the Project until the rate case is filed. The reduction in rate base would result in lower revenue requirements in a future rate case and provides customer benefits, as compared to including all costs and benefits of Wind VIII in rates beginning with the in-service date of the Project. In MidAmerican's response to the Board's June 26, 2013, order, MidAmerican added that customers will directly benefit from lower retail fuel costs (via cheaper wind energy displacing energy derived from more expensive fuels or sources) that would flow through the fuel adjustment clause proposed in Docket No. RPU-2013-0004. MidAmerican also indicated that any Wind VIII benefits beyond lower fuel costs and customer rate relief would be included in the revenue sharing calculation proposed by MidAmerican in Docket No. RPU-2013-0004.

#### Staff analysis

MidAmerican came to the \$10 million amount based on simply looking at the annual numbers, not on modeling or other calculations (Tr. 195-195). The \$10 million may appear insignificant when considering the potential REC, PTC, and other revenues that MidAmerican would receive until the project is reflected in rate base. However, the reasonableness of the proposed customer rate relief principle must be considered in the context of the other benefits that customers receive while Wind VIII is excluded from rate base such as lower fuel costs and potential revenue sharing. The customers will also not be paying for Wind VIII capital costs or expenses while it is not in rate base. Additionally, as staff commented under the Economic Analysis of Wind VIII, all five scenarios for the timing of reflecting Wind VIII in rates resulted in a positive customer impact.

MidAmerican's proposed implementation of an EAC mechanism and proposed continuation of revenue sharing will be addressed in Docket No. RPU-2013-0004. If the

EAC in RPU-2013-0004 is not accepted by the Board, MidAmerican is willing to use an EAC specific to Wind VIII to implement this principle (Tr. 198-199).

Recommendation: Staff recommends acceptance of the customer rate relief.

### **OVERALL RECOMMENDATION**

Staff is providing two options for the Board to consider. The first option is to accept the Settlement Agreement between MidAmerican and OCA. No parties objected to the settlement agreement. The second option is to approve a modified agreement in which the cost cap is adjusted down to \$1650/kW. If the Board chooses the second option, the parties to the agreement are able to walk away from the agreement if not satisfied.

Scenario 1 – Approve settlement

Direct General Counsel to draft an order for Board review that approves the Settlement Agreement reached between MidAmerican and OCA. The order will require MidAmerican to file reports twice annually with the Board until Wind VIII assets are included in rate base. The reports must document the following:

1. Actual costs of Wind VIII (operating costs and capital costs)
2. Customer rate relief amount applied to the EAC
3. Retail fuel cost reduction attributed to Wind VIII
4. Income attributed to PTCs, REC sales, capacity sales and net system benefits

Additionally, Staff recommends the order include language addressing the possibility that the EAC will not be accepted as proposed in the current MidAmerican rate case, Docket No. RPU-2013-0004. This would affect MidAmerican's proposal to flow benefits from decreased fuel costs and customer rate relief to customers via the EAC. Staff also recommends that the order note MidAmerican's assurance regarding treatment of future capital structure and costs.

**Scenario 1 Approval**

**RECOMMENDATION APPROVED**

**IOWA UTILITIES BOARD**

/s/ Elizabeth S. Jacobs                      8-2-13  
Date

/s/ Nick Wagner                              8/6/13  
Date

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Date

*Libby Jacobs' Comments:*

*Given this is a proposed settlement, one must look at it from a holistic lens. There are items which I may like or dislike, but on the whole, I am supportive of the settlement.*

*That said, the issue of the cost cap looms large. MidAmerican Energy indicates its estimates for the project show the actual cost for Wind VIII is \$█/kW. Despite that, the settlement agrees to the \$1825/kW amount.*

*Based upon MidAmerican's experience with Wind VII, I fully anticipate Wind VIII to come in well under the \$1825/kW. The Order should note this expectation. While setting a lower cap is proposed by some, the arbitrary approach to the numbers gives me pause for concern.*

*Libby Jacobs 8-2-2013.*

*Nick Wagner's Comments:*

*The legislative intent to incent renewable generation in the Iowa Code is understood and I am concerned with the process of arbitrarily increasing the allowed ROE in due simply to the type of generation in this case. Rate payers are providing for some level of the production tax credits through payment of federal taxes and if a higher ROE is allowed they could then also be paying higher rates due to a higher ROE. This leads to my concern on behalf of the rate payer. In this case, MidAmerican Energy Company has shown that there is a high likelihood that ratepayers will be protected from higher rates through customer rate relief and possible earnings sharing.*

*As a protection to the ratepayer, I am concerned that the settled cost cap of \$1.825 million per MW is too high based on actual costs of past projects. The settled cost cap a maximum cost level at which the retail customer would not be adversely affected based on testimony by MidAmerican Energy Company. Installed costs in 2011 and 2012 were \$1.625 million per MW and \$1.610 million per MW respectively. Given that turbine costs were shown to decrease since 2012, allowing an increase in costs to 2011 levels plus the same percentage increase again, a cap of \$1.650 million per MW would allow for increases in costs and reasonable contingency and protect the rate payer. A review of construction cost indices as shown by the Engineering News Record (ENR) shows a yearly increase of 2.5%. A 2.5% increase in construction costs from the previous installation of the last MEC wind project yields an installation cost of \$1.651 per MW. Thus a cost cap of \$1.650 million per MW would seem reasonable and still provide for an increase in construction costs and contingency. As MidAmerican Energy Company has shown, construction costs for wind projects have historically been significantly lower than the cost cap. I expect that the same will hold true in this case and constructions costs will be at or near \$1.650 million per MW. Although an argument can be made for establishing a lower cost cap, I am not inclined to do so in this decision due to the settlement agreement between the parties.*

*Nick Wagner 8-6-13*

Scenario 2 – Modify cost cap

Direct General Counsel to draft an order for Board review that modifies the cost cap principle in the Settlement Agreement reached between MidAmerican and OCA. The modified cost cap will be \$1650/kW. The order will require MidAmerican to file reports twice annually with the Board until Wind VIII assets are included in rate base. The reports must document the following:

1. Actual costs of Wind VIII (operating costs and capital costs)
2. Customer rate relief amount applied to the EAC
3. Retail fuel cost reduction attributed to Wind VIII
4. Income attributed to PTCs, REC sales, capacity sales and net system benefits

Additionally, Staff recommends the order include language addressing the possibility that the EAC will not be accepted as proposed in the current MidAmerican rate case, Docket No. RPU-2013-0004. This would affect MidAmerican's proposal to flow benefits from decreased fuel costs and customer rate relief to customers via the EAC. Staff also recommends that the order note MidAmerican's assurance regarding treatment of future capital structure and costs.

**Scenario 2 Approval**

**RECOMMENDATION APPROVED**

**IOWA UTILITIES BOARD**

\_\_\_\_\_  
Date

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Date

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Date

## APPENDIX A: ROE SUB-ISSUES

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### Legal Guidance

The U.S. Supreme Court, in its 1942 decision in *Hope Natural Gas Company* (320 US 591) (*Hope*), held that "...the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. The return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise so as to maintain credit and attract capital . . . ."

A number of standards of fairness and reasonableness regarding the allowed rate of return flow from the U.S. Supreme Court's judicial decisions: (1) a standard of capital attraction, (2) a standard of comparable earnings, (3) financial integrity, and (4) balancing of consumer and investor interests.

As based especially on the capital attraction approach, the cost of equity is an economic and financial concept that refers to an expected or required return. It is an opportunity cost that cannot be measured but rather must be **estimated**. Analysts make an educated guess using theories and models that can be somewhat complex and sophisticated. This estimation is **not precise** and involves the exercise of **judgment** by the analyst, and ultimately by the Board.

Support for the notion of Board judgment is also found in the *Hope* case in the end-result doctrine. It is the end result that is important and not the methods used to arrive at the rates. In addition, *Permian Basin* (1968) added, "the 'end-result' of the Commission's orders must be measured as much by the success with they protect those (broad public) interests as by the effectiveness with which they 'maintain credit . . . and . . . attract capital'."<sup>18</sup>

The generally accepted interpretation of the Court rulings is that no particular method or rate of return is required. Plus, the allowance will vary with economic conditions.

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<sup>18</sup> 390 U.S. 747, 20 L. ed. 349-350.

Therefore, many models and differing procedures may be used to generate cost of equity estimates.

### **Appropriate proxies**

Since MidAmerican is not traded in the open market, there is no MidAmerican stock price that can be used to reveal its investors' expectations. Therefore, market-based models like DCF and CAPM cannot be applied directly to MidAmerican. They, however, can be applied to comparable companies whose stock does trade publicly to estimate the return for MidAmerican. The selection of proxy groups significantly affects the outcome of any cost of equity analysis. If the proxy groups are riskier than the target company being analyzed, then the resulting analysis will tend to overstate the cost of equity for that target, and vice versa.

### MidAmerican Position

Tr. 147-148, 157, 159, 164; Ex. \_\_ (JHV-1), Schs. 1, App. 4

For his DCF analysis, Dr. Vander Weide uses a set of 30 electric utilities followed by *Value Line*, each of which has paid and did not decrease dividends every quarter of the last two years, has an IBES long-term growth forecast, has an investment grade bond rating and Value Line Safety Rank of 1, 2, or 3, and is not subject to an outstanding merger offer. He uses the same group in his CAPM analysis.

For his ex ante Risk Premium Analysis, he uses Moody's group of twenty-four electric utilities (Tr. 150; Table 1 of Appendix 4). He asserts this is a widely followed group of electric utilities.

### OCA Position

Tr. 264-267; Ex. \_\_ (MM-1), Sch. A

Witness Munoz proposes the use of 13 combination electric and gas utilities as his proxy group. He argues this group is more representative of MidAmerican financial and business risk than that used by Dr. Vander Weide. In fact, his proxy group is the surviving subset of Dr. Vander Weide's 30 electric companies after the elimination of companies dissimilar to MidAmerican in company size, common equity ratios, and for not being a combination gas-electric utility. The surviving subset has a market capitalization range of \$3.0 to \$13.9 billion (instead of \$1.07 to \$50 billion shown by MidAmerican's proxies) and 45.3% to 60.6% equity ratio range (instead of 33.6% to 66.6%).

## Discounted Cash Flow (DCF) Models

The discount rate that equates expected dividends and expected future selling price to the current market price is the cost of common equity. Mathematically, the basic DCF formula becomes:

$$K = D/P + g, \text{ where}$$

K is the cost of equity,  
D is the expected dividend  
P is expected price, and  
g is expected growth.

### MidAmerican Position

Tr. 140-148; Ex. \_ (JHV-1), Sch. 1; App. 2

Dr. Vander Weide uses a quarterly DCF methodology in estimating the cost of equity for his group of 30 electric companies. The quarterly DCF model differs from the annual DCF model in that it has dividend data on the quarterly basis instead of the annual basis.

For each firm's growth (g), he uses analysts' estimates of future earnings per share. This is also used to grow recent dividends to produce the estimated quarterly dividends (D) used in the model. And, lastly, for price (P) he uses a simple average of the monthly high and low stock prices for each firm for the three-month period ending Feb. 2013. He also includes a 5% allowance for floatation costs in his DCF calculations.

This approach, applied to his 30 proxy companies, produces an average DCF of 10.4%.

### OCA Position

Tr. 267-276; Ex. \_\_\_ (MM-1), Sch. B

Mr. Munoz relies upon the continuous compounding version of the DCF model in estimating MidAmerican's cost of common equity. It assumes that companies actually earn, accrue, and receive revenues continuously throughout the year on a continuous basis. He applies this to each of his proxy companies. He uses the following in his calculations:

- For each firm's price (P), he calculates an average weekly price for the twelve-month period ending April 29, 2013, for each company in his proxy group.
- For each firm's dividend (D), he uses the most recently declared quarterly dividend annualized.
- For each firm's growth (g), he analyzes the growth rates of earnings per share (EPS), dividends per share (DPS), and book value per share (BVPS) data over

five- and ten-year periods using regression analysis. He also calculates an internal growth rate for each proxy company, multiplying the historical achieved return on book equity by the historical retention ratio (percentage of earnings that is retained). He argues that historical performance provides better data to estimate a sustainable growth rate than do analysts' growth rate forecasts.

Based upon the use of these data, using the mid-point of each firm's growth range and informed judgment, he concludes that the current DCF cost of equity of the companies in his proxy group is between 8.2% and 9.6%. (Tr. 275; Sch. B, p. 1)

### **Risk Premium Models (RPM)**

A risk premium is the difference in required or expected returns between two specific securities with different risks. The simple RPM takes an interest rate and adds an appropriately matched risk premium to estimate the cost of equity. The method is rooted in the conceptual framework of capital market theory. Simply put, investors require a premium to assume additional risk. Equity investment is generally thought to be riskier than debt because bonds have contractual agreements while equity investors are not guaranteed dividends and are last in line in case of bankruptcy. Thus, investors in common equity require a higher expected return.

While the RPM has some conceptual appeal as well as being easy to understand, its theoretical and empirical underpinnings swirl with complexities and controversy. Concerns about measurement, stability, and risk adjustment all complicate the process. In light of these concerns, the method is generally used only as a subsidiary method for estimating the cost of equity. Despite its limitations, the method seems to gain in attraction at times of market extremes, with either very low or very high capital costs. This is perhaps because risk premium can take a broader time-series perspective, while the DCF is more of a snapshot point-of-view of the capital markets.

### MidAmerican Position

Tr. 148-156, 166; Ex. \_\_ (JHV-1), Schs. 2-4, 10; Apps. 4-5

Dr. Vander Weide uses a basic RPM, which takes an interest rate and adds a risk premium to estimate the cost of equity. The method is based on the principle that investors expect to earn a return on an equity investment that reflects a "premium" over the interest rate they expect on an investment in bonds.

For the interest rate, he uses the forecasted yield to maturity rate on A-rated utility bonds, averaging forecasts from "Value Line" and the U.S. Energy Information Administration for the 6.55% he uses. For the risk premium, he uses two different methods to estimate: (1) the ex ante risk premium method and (2) the ex post risk premium method.

His ex ante risk premium method is calculated by comparing the average DCF estimated cost of equity on a group of electric companies with the interest on Moody's A-rated utility bonds, yielding a 4.64% risk premium estimate. Added to the 6.55% interest rate, this produces an 11.2% cost of equity estimate. (Sch. 2, App. 4)

His ex post risk premium method is calculated by comparing the historical stock returns to historical bond returns, using stock price and dividend yield data on the S&P 500 and bond yield data on Moody's A-rated Utility Bonds. This comparison yields a 4.4% risk premium based on the S&P 500 stock portfolio and 3.7% based on the S&P Utility stock portfolio. Added to the 6.55% interest rate, this risk premium range produces an expected return on equity ranging from 10.3% to 10.9%. By also adding a 24 basis point allowance for flotation costs, he obtains a midpoint estimate of 10.8%. (Sch. 3-4, App. 5)

In somewhat related analysis, Dr. Vander Weide also calculates that the allowed returns on MidAmerican's previous advance ratemaking applications exceed the average yield on Moody's A-rated utility bonds in the twelve months prior to the date of the order by 5.58%. (Sch. 10) Adding this premium to his 6.55% forecasted yield on A-rated utility bonds produces a ROE estimate of 12.13%, providing further evidence of the reasonableness of the requested 11.75%. (Tr. 166)

### OCA Position

Mr. Munoz does not use any risk premium analysis other than the CAPM in his estimation of the cost of equity capital.

### Staff Analysis

Dr. Vander Weide's risk premium methods provide estimates much higher than the Board's risk premium method that adds 250 to 450 basis points to 12-month average A-rated bond rate. His ex ante risk premium is predicated upon DCF estimates and, as such, reflect any distortions in the contributing DCF analysis. While Dr. Vander Weide's ex ante risk premium of 4.64% and his ex post risk premium range of 3.7% to 4.4% compares well with the Board's own risk premium range of 250 to 450 basis points, there is a big difference between his forecasted A-rated utility bond rate of 6.55% and the actual most recent 12-month A-rated utility bond average of 4.08%. (June 13 MidAmerican response to Board June 5 Order)

### **Capital Asset Pricing Model (CAPM)**

The CAPM formula can be shown as:  $K = R_F + \beta (R_M - R_F)$

K = required rate of return

$R_F$  = risk-free rate

$\beta$  = beta

$R_M$  = expected return on the market portfolio

The basic concept is that an investor's expected return on an equity investment should be enough to cover what is available on a risk-free investment plus to earn a premium for bearing additional risk of equity investment. That risk premium for a given stock reflects two things: (1) an estimate of the overall market risk premium given that market risk cannot be avoided; and (2) beta, a measure of how the price of a particular stock tends to move with changes in the value of the overall market. Therefore, a utility whose stock price does not change much as the overall market swings up and down will have a low beta, and investors cannot expect as much of a risk premium as for investment in the general market. Utilities tend to have low betas.

Published evidence suggests that, while many corporations do use the CAPM for estimating the cost of equity, a lot of variability exists in its application. That is, the lack of consensus on the use of this methodology in this record is not atypical. It is not unusual for variation to exist in the choices of the risk-free rate, beta, and the equity market risk premium. These are all the major input variables into the CAPM analysis.

The Board traditionally did not place much reliance upon CAPM analysis. However, testimony in the last 10 years or so has often included it; perhaps because the DCF analysis, which is influenced more by current capital costs, recently has produced results lower than some feel justified. The CAPM is now a routine model offered for the Board's consideration.

#### MidAmerican Position

Tr. 156-164; Ex. \_\_\_(JHV-1), Schs.5-9

For his estimate of the risk-free rate, Dr. Vander Weide uses a forecasted yield to maturity on 20- year Treasury bonds of 5.25%. For his company-specific risk, or beta, he uses the average 0.73 Value Line beta for his group of electric utilities. For his market risk premium, he uses two methods: (1) estimated risk premium on the market portfolio using historical risk premium data; and (2) estimated risk premium on the market portfolio from the difference between the DCF cost of equity for the S&P 500 and the forecasted yield to maturity on 20-year Treasury bonds.

Historical CAPM: Using a risk-free rate equal to 5.25%, an electric utility beta equal to 0.73, and a risk premium on the market portfolio equal to 6.7%, and a flotation cost allowance equal to 24 basis points, Dr. Vander Weide obtains an historical CAPM estimate of the cost of equity equal to 10.4% for his electric utility group ( $5.25 + 0.73 \times 6.7 + 0.24 = 10.4$ ). (Sch. 6) If he uses a beta of 0.89 (obtained by comparing the historical returns on utilities to historical returns on the S&P 500), he instead obtains a CAPM of 11.5%. (Sch. 8) He argues that the average utility beta of 0.73 at this time significantly underestimates the cost of equity.

DCF-based CAPM: He estimates the market risk premium from the difference between the DCF cost of equity for the S&P 500 and the forecasted yield to maturity on 20-year

Treasury bonds, obtaining a market risk premium of 7.2%. (Sch. 9) Using a risk-free rate of 5.25%, the current electric utility beta of 0.73 for electric utilities, a risk premium on the market portfolio of 7.2%, and a flotation cost allowance of twenty-four basis points, he obtains a CAPM result of 10.7% for his electric utility group ( $5.25 + 0.73 \times 7.2 + 0.24 = 10.7$ ). If he uses 0.89 instead of 0.73 for beta (in an effort to adjust for tendency of CAPM to underestimate for companies with betas less than 1.0), he obtains instead a CAPM of 11.9%.

### OCA Position

Tr. 276-280; Ex. \_\_ (MM-1), Sch. C

Mr. Munoz applies a basic CAPM, with the following inputs:

- For the risk-free interest rate, he uses the geometric mean of annual total returns (income, capital appreciation, and reinvestment income) of 20-year government bonds for the period 1926-2012, resulting in a 5.7% estimate. He believes this better reflects investors' expected return on bond holdings than do current Treasury bond yields or speculative forecasted values.
- For the market return, he uses the geometric mean of the total market returns from the Standard & Poor's 500 between 1926 and 2012, resulting in a 9.8% estimate. He argues that geometric averages are more accurate to measure historical rate of return averages over time.
- For the market risk premium, he uses 4.1%, which is the difference between the estimated geometric market return of 9.8% and the 20-year U.S. Treasury bonds geometric mean return of 5.7%.
- For betas, he uses *Value Lines*'s adjusted betas, which falls within a range of 0.60 and 0.90 for his proxy group.

Using this data in his CAPM on his proxy group, he calculates MidAmerican's current cost of equity to be between 8.2% and 9.4%.

### **Flotation Costs**

Flotation costs refer to the various types of costs associated with the issuance of new common equity shares. Some witnesses argue that the allowed ROE should be increased to cover these costs in addition to the cost of equity.

The Board has generally not seen fit to grant any flotation adjustment. This is especially the case when no recent or planned issuance of common equity is present. However, each decision has been rooted in the evidence of the specific case. The Board decision in Docket No. RPU-86-11, Peoples Natural Gas Company, issued March 30, 1987, did accept a small flotation adjustment as proposed by the OCA in that case. Another exception is the decision in Docket No. RPU-91-5, Midwest Gas, issued May 15, 1992, where the Board considered the effect of a 2 percent adjustment to the price used in the DCF analysis. It was, however, not deterministic to the final cost of equity decision.

### MidAmerican Position

Tr. 146, 156, 159; Ex. \_\_ (JHV-1), Schs. 1-2, App. 3

All firms that have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, printing expense, etc.

Dr. Vander Weide uses a 5% flotation cost in his DCF calculations, increasing the estimated DCF cost of equity accordingly. This also impacts the ex ante risk premium analysis, which is based on DCF analysis. However, for the ex post risk premium and CAPM analysis, he instead just adds a straight 24 basis points to those cost of equity estimates.

### OCA Position

Tr. 280-281

Mr. Munoz argues that a flotation cost adjustment is not applicable in this case. First, flotation costs are only relevant when there is an issuance of new common equity shares; in this case there were none in 2012 and none planned. Second, if there were issuance of new shares for the Wind VIII, those costs should be included above-the-line after it is placed in service and not included in the calculation of the ROE. Third, utility share equity prices trade far above book value and already account for any market pressure of new share issuance.

### **Incentive Adder**

Issue: Should the ROE allowance be adjusted upwards to provide an incentive for building wind generation?

### MidAmerican Position

Tr. 16-17, 165; Ex. \_\_ (JHV-1), Sch. 10

Witness Crist argues that state law makes Iowa public policy regarding renewable generation pretty clear. It is state policy to encourage the development of renewable electric power generation and development of transmission capacity to export wind power generated in Iowa. (Section 476.53A) And it is state policy to facilitate the transition to a carbon-constrained environment. (Section 476.53(1))

Dr. Vander Weide, to satisfy the goals and intent of Iowa Code § 476.53, proposes a return differential of 100 to 150 basis points, noting that the proposed 11.75% ROE is only 95 basis points above his cost of equity finding of 10.8%. He believes this ROE adder of 95 basis points is conservative given that the Board's ROE allowances in MidAmerican's previous advance ratemaking cases averaged 139 basis points above

the allowed returns on equity granted in other state electric utility rate cases at that time. (Table 4, p. 46)

### OCA Position

Tr. 286-287

Witness Munoz recommends a positive incentive adjustment of 50 basis points, over and above the cost of common equity. This is justified to recognize the economic and societal benefits of the proposed Wind VIII renewable energy project and to be consistent with past decisions of the Board. Furthermore, the legislature's intent to attract the development of electric power generating facilities in Iowa and in particular to encourage the development of renewable electric power is well revealed in Iowa Code ¶ 476.53 and ¶ 476.53A. During hearing, he elaborates that benefits include the hedging value for fuel and transportation prices, zero carbon emissions, and no fuel waste. (Tr. 288-289)

### Staff Analysis

There are two main reasons for consideration of a ROE allowance above the current cost of equity. First, the Board may agree that the current cost of equity due to a period of historically low capital costs is not appropriate as a fixed ROE for the life of the plant. (This has been integrated into cost of equity analysis above.) And second, the Board may be persuaded to consider an incentive adder to help further the intent of the general assembly to encourage renewable and carbon-constrained generation.

In the first litigated advance ratemaking docket (Docket No. RPU-2001-0009, filed by MidAmerican), the Board allowed 12.23 percent (the top of its risk premium range of adding 250 to 450 basis points to the 12-month average for the A-rated bond yield) taking "into account the risks associated with new generation, the intent of section 476.53, and the current state of the capital markets." Since then the legislature has also added Iowa Code ¶ 476.53A which expresses "the intent of the general assembly to encourage the development of renewable electric power generation... and the development of transmission capacity to export wind power generated in Iowa." It would not be unreasonable for the Board to deem it appropriate to offer some slight incentive to encourage state policy, keeping in mind that ratepayers may have to pay for the largess.

It is also perhaps not unreasonable of MidAmerican to argue that the Board's record of accepting settlements for wind generation with ROE allowance that exceed the cost of capital is suggestive of at least a willingness to allow wind generation to enjoy an incentive. However, as the Board well knows, settlements are not precedents to justify future decisions. Still, the ease and frequency of the Board acceptance of these settlements that have arguably included generous ROE allowances does imply at least an implicit acceptance of an incentive adder to encourage renewables. Moreover, the more recent law 476.53A that explicitly supports renewables could be considered additional rationale to maintain some sort of incentive.