

September 1, 2015

IOWA UTILITIES BOARD

RPU-2014-0002

**Wind VIII Update
September 1, 2015****A. Background**

This is MidAmerican Energy Company's ("MidAmerican") status update for the Iowa Utilities Board ("Board") in response to the Board's August 9, 2013, *Order Approving Settlement and Requiring Reports*, in Docket No. RPU-2013-0003. This document is offered in fulfillment of the requirements established in the said Board order.

B. Status for Wind VIII Iowa Project (Docket No. RPU-2013-0003)

In 2013, MidAmerican installed 44.6 MW of wind-powered generation (Vienna II) as part of the Wind VIII Iowa Project, an expansion of the existing Vienna wind farm site. Total costs for the 44.6 MW, including allowance for funds used during construction and other costs not under contract, are approximately \$65.7 million. The two largest components of the \$65.7 million total are: (i) a 44.6 MW turbine supply agreement in the amount of \$ [REDACTED] million; and (ii) the balance of plant construction costs of \$ [REDACTED] million. (An unredacted copy of this page has been provided pursuant to a Request for Confidential Treatment.) The remaining Vienna II costs are currently estimated to total less than 4.2% of the overall Vienna II costs. Based on this overall projection of costs, the per kW cost of the first 44.6 MW of the Wind VIII Iowa Project will be approximately \$1,473/kW, as compared to MidAmerican's cost cap of \$1,825/kW. However, please note that this 44.6 MW represents an expansion of an existing site and therefore costs for site acquisition, third-party development work, and interconnection were not necessary for this site—Vienna II—and therefore the cost per/kW for Vienna II is not representative of the estimated overall cost per/kW for the aggregate Wind VIII project.

In 2014, MidAmerican installed 511.4 MW of wind-powered generation (Lundgren 251 MW, Macksburg 119.6 MW and Wellsburg 140.8 MW) as part of the Wind VIII Iowa Project. Total costs for the 511.4 MW, including allowance for funds used during construction and other costs not under contract, through June 30, 2015, are approximately \$818.9 million. The three largest components of the this total are: (i) amounts incurred for the 511.4 MW turbine supply agreement in the amount of \$ [REDACTED] million; (ii) the balance of plant construction costs of \$ [REDACTED] million; and (iii) site acquisition costs of \$ [REDACTED] million. (An unredacted copy of this page has been provided pursuant to a Request for Confidential Treatment.) The remaining costs on these 511.4 MW are currently estimated to total less than 8.8% of the overall costs for the Lundgren, Macksburg and Wellsburg wind farms. Based on costs to date, the per kW cost of this 511.4 MW of the Wind VIII Iowa Project are approximately \$1,601/kW, as compared to MidAmerican's cost cap of \$1,825/kW.

In 2013, MidAmerican began development towards an additional 495 MW at the Highland site, as a part of Wind VIII. Through June 30, 2015, MidAmerican has

incurred \$463.0 million in capital costs for this site. This site is planned to be completely in-service in late 2015. Additional information will be provided in future updates as this site progresses.

Actual Operating and Capital Costs of Wind VIII

Operating costs, through June 30, 2015, for the portions of Wind VIII which are in-service totaled \$ [REDACTED] million. (An unredacted copy of this page has been provided pursuant to a Request for Confidential Treatment.) These costs are in line with the economic assumptions used in the Wind VIII ratemaking principles application.

Note: Development capital costs are covered in the first three paragraphs under “B,” above. There have been no additional operational capital costs associated with Wind VIII in 2015.

Amount of Customer Rate Relief Flowed Through the EAC or Returned to Ratepayers in Some Other Manner.

Through June 30, 2015, customer rate relief flowed through the EAC totaled \$1.1 million.

Retail Fuel Cost Reduction Attributable to Wind VIII.

Through June 30, 2015, the retail fuel cost reduction attributable to Wind VIII totaled \$16.1 million.

Income from PTCs, REC Sales, Capacity Sales, and Net System Benefits Attributed to Wind VIII.

Through June 30, 2015, PTC’s generated from Wind VIII totaled \$24.1 million. REC sales totaled \$118.1 thousand. There were no capacity sales associated with these new wind assets, and net system benefits totaled \$14.3 million. No permanent capacity accreditations are expected for Wind VIII sites until 2018 and beyond, due to the provisional and/or conditional generator interconnection agreements (GIAs). A provisional GIA means that all of the transmission studies are not deemed complete by MISO. A conditional GIA means that all transmission studies are deemed complete by MISO. With either a provisional or conditional GIA, there are upgrades or contingent facilities that have not been completed. MISO has proposed the addition of a resource adequacy annual study process for generating facilities with conditional GIAs that could start in June 2016 and result in capacity accreditations at some level for the Wind VIII sites, with conditional GIAs, on an annual basis until the conditional status is removed from the GIAs.

C. Transmission Studies and Off-site transmission

Below is a summary, by wind farm site, of the status of the transmission studies and off-site system upgrades associated with the various Wind VIII sites. These sites in the aggregate will host 1,051 MW.

Note: Due to the final contracted turbine nameplate capacity of 2.346 MW/turbine, and the fact that fractions of turbines cannot be installed, it is important to note that the final turbine layout at each of the remaining Project sites will result in a total nameplate capacity, for Wind VIII, of 1,051 MW, not 1,050 MW as initially proposed in MidAmerican's ratemaking principles filing.

Status for the 1,051 MW Wind VIII Iowa Project (Docket No. RPU-2013-0003)

As stated above, in addition to the 44.6 MW completed in 2013, MidAmerican also completed 511.4 MW in 2014. MidAmerican has also completed development and begun construction of another 495 MW. All of the Wind VIII sites are covered below and will result in a total of 1,051 MW.

44.6 MW Vienna II Site

No added transmission studies were required beyond what was completed for the pre-existing Vienna wind farm as part of the Vienna I project covered in the Wind VII update.

251 MW Lundgren Site

The Lundgren Site, located in Webster County, is a wind farm acquired from EDF Renewable Development, Inc. that interconnects to the 345 kV system at the Lehigh Substation that is jointly owned by MidAmerican Energy Company and several other parties. Construction activities began in Fall 2013. Work continued in 2014 and all 251 MW of the wind farm's wind turbine nameplate capacity were placed in-service by November 20, 2014.

MISO had previously, substantially completed transmission studies with the August 2012 Definitive Planning Phase (DPP) that included the 251 MW Lundgren Site; however, because of various rounds of withdrawals of additional higher queued projects, MISO was required to complete another restudy. MISO completed a restudy of the prior transmission studies, and the restudy is available at the following MISO link:

<https://www.misoenergy.org/Planning/GeneratorInterconnection/Pages/ActiveStudyReportsandPolicyStatements.aspx>. Once on the MISO site, go to the Definitive Planning Phase (DPP) heading, then go to +August 2012 and expand it, then go to +West and expand it, then select the GI DPP 2012 August Restudy 10062014 SIS Report zip file. See also the one page addendum GI DPP 2012 AUG West Area

Restudy SIS Addendum that is located two files below the GI DPP 2012 August Restudy 10062014 SIS Report zip file. (The size of some of these documents is prohibitively large to provide in hard copy.)

MISO tendered a revised GIA in February 2015 for negotiations, and the revised GIA was executed on May 29, 2015. This process changed the provisional GIA to a conditional GIA.

Operation of the site is guided by the GIA. Until the identified upgrades and contingent facilities are completed, output may be limited on an annual basis through the MISO Annual ERIS Evaluation or on a quarterly basis through the MISO Quarterly Operating Limit (QOL) review that could reduce output by as much as it's fully requested output. As reported in previous updates, in response to input from stakeholders, including MidAmerican, MISO reviewed its QOL review process. MISO's revised process reduces, but does not eliminate, the possibility of any future limitations at the site while the site is part of the QOL review.

140.8 MW Wellsburg Site

This site is a 140.8 MW wind farm in Grundy County that was acquired from RPM Access, LLC. The project interconnects into the 161 kV system at the Wellsburg Substation owned by ITC-Midwest. Civil work commenced in Fall 2013, and all 140.8 MW of the wind farm's wind turbine nameplate capacity were placed in-service by December 10, 2014.

MISO had previously, substantially completed transmission studies with the August 2012 Definitive Planning Phase (DPP) that included the Wellsburg site; however, because of various rounds of withdrawals of additional higher queued projects, MISO was required to complete another restudy. MISO completed a restudy of the prior transmission studies, and the restudy is available at the following MISO link:

<https://www.misoenergy.org/Planning/GeneratorInterconnection/Pages/ActiveStudyReportsandPolicyStatements.aspx>. Once on the MISO site, go to the Definitive Planning Phase (DPP) heading, then go to +August 2012 and expand it, then go to +West and expand it, then select the GI DPP 2012 August Restudy 10062014 SIS Report zip file. See also the one page addendum GI DPP 2012 AUG West Area Restudy SIS Addendum that is located two files below the GI DPP 2012 August Restudy 10062014 SIS Report zip file. (The size of some of these documents is prohibitively large to provide in hard copy.)

MISO tendered a revised GIA in February 2015 for negotiations, and the revised GIA was executed on May 6, 2015. This process changed the provisional GIA to a conditional GIA.

Operation of the site is guided by the GIA. Until the identified upgrades and contingent facilities are completed, output may be limited on an annual basis through the MISO Annual ERIS Evaluation or on a quarterly basis through the MISO Quarterly Operating Limit (QOL) review that could reduce output by as much as it's fully requested output. As reported previously, MISO has reviewed its QOL review process. MISO's revised process reduces, but does not eliminate, the possibility of any future limitations at the site while the site is part of the QOL review.

495 MW Highland Site

The Highland Site, located in O'Brien County, is a wind farm acquired from Invenergy, LLC. The site interconnects to the 345 kV line at a new substation between the Raun Substation and the Lakefield Junction Substation. Construction activities commenced in Fall 2013 and all 211 wind turbine foundations have been completed. Wind turbine deliveries and erection work began in May 2015. All 495 MW of the wind farm's Wind VIII nameplate capacity is scheduled to be placed in-service by December 31, 2015.

The transmission studies have been completed for 500 MW of wind generation interconnection at the Highland Site and were previously provided as part of the Wind IX ratemaking principles filing (Docket No. RPU-2014-0002). An amended and restated GIA was completed with MISO and executed on July 22, 2014. This is a conditional GIA.

Operation of the site is guided by the GIA. Until the identified upgrades and contingent facilities are completed, output may be limited on an annual basis through the MISO Annual ERIS Evaluation or on a quarterly basis through the MISO Quarterly Operating Limit (QOL) review that could reduce output by as much as it's fully requested output. As reported previously, MISO has reviewed its QOL review process. MISO's revised process reduces, but does not eliminate, the possibility of any future limitations at the site while the site is part of the QOL review.

119.6 MW Macksburg Site

This site is a 119.6 MW wind farm in Madison County acquired from RPM Access, LLC. The site interconnects into the 161 kV line at a new substation between the Winterset Junction Substation and Creston Substation via two distinct provisions in the same generator interconnection agreement as discussed below. All 119.6 MW of the wind farm's nameplate capacity were placed in-service by December 13, 2014.

MISO had previously, substantially completed the transmission studies with the August 2013 Definitive Planning Phase (DPP) that included 100 MW of the Macksburg site; however, because of various rounds of withdrawals of additional

higher queued projects, MISO was required to complete another restudy. MISO completed a restudy of the prior transmission studies, and the restudy is available at the following MISO link:

<https://www.misoenergy.org/Planning/GeneratorInterconnection/Pages/ActiveStudyReportsandPolicyStatements.aspx>. Once on the MISO site, go to the Definitive Planning Phase (DPP) heading, then go to +August 2013 and expand it, then go to +West and expand it, then select the GI DPP 2013 AUG West SIS ReStudy 150527 Final file. See also the addendum GI DPP 2013 AUG West SIS ReStudy Addendum. (The size of the main document is prohibitively large to provide in hard copy.)

MISO tendered a revised GIA in February 2015 for negotiations, and the revised GIA was executed on June 6, 2015, for the initial 100 MW. This process changed the provisional GIA to a conditional GIA.

An additional 20 MW of interconnection rights are being studied in the DPP transmission studies commenced in August 2014. Given the need for restudies in the preceding DPP cycles, this study is ongoing. However, an optional study for the full 120 MW was completed to facilitate issuance of a provisional GIA for the additional 20 MW similar to the interconnection agreements currently in place for other sites. Once detailed facilities studies, if necessary after the DPP study, are completed by the transmission owners for the additional 20 MW interconnection request, the cost for any transmission network upgrades will be determined. The facilities studies for the additional 20 MW interconnection are expected to be completed in the second quarter of 2016.

MISO tendered a revised GIA in February 2015 for negotiations, and the revised GIA was executed on June 6, 2015, for the additional 20 MW. This is a provisional GIA. Once the above DPP process is complete, MISO will change the existing provisional GIA to a conditional GIA.

Operation of the site is guided by the GIA. Until any identified upgrades and contingent facilities are completed, output may be limited on an annual basis through the MISO Annual ERIIS Evaluation or on a quarterly basis through the MISO Quarterly Operating Limit (QOL) review that could reduce output by as much as it's fully requested output. As reported previously, MISO has reviewed its QOL review process. MISO's revised process reduces, but does not eliminate, the possibility of any future limitations at the site while the site is part of the QOL review.

120 MW Scranton Sites

The Scranton sites, located in Greene County, were acquired from Volkswind USA. The wind farm is no longer being pursued at this time due to certain environmental concerns at the site.

Next Report

MidAmerican's next update is due March 1, 2016.