

Wind VII 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 orders in Docket No. RPU-2009-0003. This document is offered in fulfillment of the requirements established in the Board's Final Order and the January 25, 2011 compliance filing order in the above-mentioned docket.

B. Status for Wind VII Iowa Project (Docket No. RPU-2009-0003)

In 2011 and 2012, MidAmerican installed 1,000.3 MW of wind-powered generation as part of the Wind VII Iowa Project.

Total costs for the 1,000.3 MW, including allowance for funds used during construction are approximately \$1,632 million. Based on these costs, the per kW cost of the 1,000.3 MW Wind VII Iowa Project is \$1,632/kW, as compared to MidAmerican's cost cap of \$2,300/kW.

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 VII sites.

Status for the Wind VII Iowa Project (Docket No. RPU-2009-0003)

MidAmerican has two self-developed sites that currently accommodate 473.8 MW of new wind generation: (i) the Rolling Hills Site mentioned below, and (ii) the expansion of the Pomeroy Site also mentioned below. MidAmerican also acquired a third party-developed 119.6 MW site (Laurel) in Marshall County. These three (3) sites represent the 593.4 MW of wind generation placed into service in 2011. In addition, MidAmerican acquired the Eclipse (200.1 MW), Morning Light (101.2 MW) and Vienna (105.6 MW)¹ wind farm sites, each a third party-developed site. These latter sites were placed into service in 2012, which allowed MidAmerican to achieve construction of 1,000.3 MW of the 1,001 MW of Wind VII capacity authorized by the Board.

443.9 MW Rolling Hills Site

The Rolling Hills Site, located in Adair, Adams and Cass Counties, is a wind farm which interconnects to the 345 kV line between the Council Bluffs Substation and the Madison County Substation via three distinct sections in the generation interconnection agreement (GIA) with MISO as further discussed below. All 443.9 MW of the farm's current wind turbine capacity were in-service by December 31, 2011.

¹ The Vienna wind farm site was acquired with a capacity of up to 150 MW. However, only 105.6 MW were developed under Wind VII. Development of the remaining capacity was completed as part of the Wind VIII project.

The transmission studies have been completed for 250.7 MW of wind generation interconnection at the Rolling Hills Site and were previously provided to the Board with the February 2011 update.

MISO had previously, substantially completed transmission studies with the August 2012 Definitive Planning Phase (DPP) that included the two additions at the Rolling Hills Site, of 92 MW and 101.2 MW; 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 to change the GIA from provisional to conditional for the two expansions. The GIA was executed on May 5, 2015. With either a provisional or conditional GIA, there are upgrades or contingent facilities that have not been completed.

Operation of the two additions (92 MW and 101.2 MW) 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 the nameplate capacity of the two wind additions (92 MW and 101.2 MW), resulting in a maximum output of 250.7 MW at the site. As reported previously, 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.

29.9 MW Expansion at Pomeroy Site

This project is a 29.9 MW expansion of MidAmerican's existing Pomeroy Site. The initial 256.5 MW were built as part of Wind III, Wind IV and Wind V. The 29.9 MW expansion project was partially studied as part of Wind IV but was ultimately built as part of Wind VII. All turbines at the Pomeroy Site are in-service and operate under three distinct sections in the GIA with MISO as further discussed below.

An amended and restated GIA with MISO was executed in October 2011 for a total of 292 MW. However, the injection was limited to 280 MW of net output until the additional studies were complete. A total of 286.4 MW have been installed through the Wind III, IV, V and VII projects.

MISO had previously, substantially completed transmission studies with the August 2012 DPP; 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 5, 2015. This process changed the provisional GIA section for 6.4 MW above the 280 MW, at Pomeroy, 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 6.4 MW, resulting in a maximum output of 280 MW at the site. As reported previously, 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.

119.6 MW Laurel Site

The Laurel Site, located in Marshall County, is a wind farm that was developed by RPM Access, LLC ("RPMA"). The site interconnects to the ITC Midwest 161 kV line between the Marshalltown Substation and the Jasper Substation. All turbines at the Laurel Site are in-service. All system studies, on-site upgrades, and off-site upgrades required for this site have been completed and were previously submitted in prior updates. A MISO conditional GIA was executed on July 15, 2010. MISO had previously, substantially completed transmission studies with the August 2012 DPP; 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 5th, 2015. 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 119.6 MW, resulting in a maximum output of 0 MW at the site. As reported previously, 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.

200.1 MW Eclipse Site

The Eclipse Site, located in Audubon and Guthrie Counties, is a wind farm that was developed by Clipper Windpower Development Company Inc. ("Clipper") and acquired and constructed by MidAmerican. This project interconnects to the transmission system at the Fallow Avenue Substation that tapped the 345 kV line between Council Bluffs Substation and Grimes Substation. In addition to the Fallow Avenue Substation, the construction of the Eclipse Substation (the wind farm collector substation) and the 345 kV generation tie-line from Eclipse Substation to Fallow Avenue Substation were required. MidAmerican and MISO completed an amended and restated interconnection agreement in March 2012. The wind farm was placed in-service in October 2012.

101.2 MW Morning Light Site

The Morning Light Site, located in Adair County, is a wind farm that was also developed by Clipper and acquired and constructed by MidAmerican. This project interconnects to the 345 kV Fallow Avenue Substation that taps the 345 kV line between Council Bluffs Substation and Grimes Substation. In addition to the Morning Light wind farm collector facilities at the Fallow Avenue Substation, expansion of the 345 kV bus at the Fallow Avenue Substation was required. MidAmerican and MISO completed an amended and restated interconnection agreement in March 2012. The wind farm was placed in-service in October 2012.

105.6 MW Vienna Site

The Vienna Site, located in Tama and Marshall Counties, is a wind farm that was developed by RPMA and acquired and constructed by MidAmerican. The Wind VII project included 105.6 MW. (Wind VIII included another 44.6 MW.) The site interconnects to the ITC Midwest 161 kV line between the Marshalltown Substation and the Traer Substation.

A provisional GIA was in place, with MISO and ITC Midwest, having been negotiated by RPMA, until December 2012 for 150 MW. MidAmerican and MISO completed an amended provisional interconnection agreement in December 2012 to show the change in ownership from RPMA to MidAmerican and to account for revisions to certain equipment specifications such as transformer size, wind turbine blade length, and wind turbine generator size. The wind farm was placed in-service in November 2012.

MISO had previously, substantially completed transmission studies with the August 2012 DPP that included the Vienna site rated at 150 MW. 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 5, 2015. This process changed the 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 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, 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.

Next Report: March 1, 2016