



Kari Valley
Managing Sr. Corporate Counsel
Direct Dial: 651-832-8474
E-mail: kvalley@misoenergy.org

September 10, 2019

VIA ELECTRONIC FILING

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**Re: Filing of the Midcontinent Independent System Operator, Inc.
Regarding Local Resource Zone CONE Calculation
Docket No. ER19-____-000**

Dear Secretary Bose:

Pursuant to Section 205 of the Federal Power Act ("FPA"), 16 U.S.C. § 824d, Part 35 of the Federal Energy Regulatory Commission's ("FERC" or "Commission") regulations, 18 C.F.R. § 35, et. seq., and in compliance with Section 69A.8 of the Midcontinent Independent System Operator, Inc.'s ("MISO") Open Access Transmission, Energy and Operating Reserves Markets Tariff ("Tariff"), MISO respectfully files the annual calculation of the Cost of New Entry value ("CONE")¹ for each Local Resource Zone ("LRZ") in the MISO Region. MISO requests an effective date 60 days from the date of filing, November 10, 2019, to inform Market Participants of the value well in advance of the 2020/2021 Planning Resource Auction.

I. BACKGROUND

On April 21, 2010, the Commission issued an "Order on Compliance Filing" directing MISO to file a permanent solution to ensure the deliverability of Load Modifying Resources in MISO's voluntary capacity auction.² On June 8, 2010, the Commission issued a Market Mechanisms Order which required, in part, that MISO and its stakeholders develop a plan that details the steps that will be taken to incorporate locational capacity market mechanisms into the Resource Adequacy Plan and to submit its plan and a discussion of stakeholder perspectives to the Commission.³

¹ Capitalized terms not otherwise defined herein have the meanings ascribed thereto in the Tariff.

² *Midwest Indep. Transmission Sys. Operator, Inc.*, 131 FERC ¶ 61,057 at P 19 (2010).

³ *Midwest Indep. Transmission Sys. Operator, Inc.*, 131 FERC ¶ 61,228 at P 24 (2010).

On July 20, 2011, MISO filed proposed revisions to its resource adequacy construct with the Commission by proposing a permanent solution to ensure the deliverability of Load Modifying Resources in MISO's voluntary capacity auction and to incorporate locational capacity market mechanisms, as contained in proposed new Module E-1 to the Tariff. The Commission conditionally accepted in part, and rejected in part, MISO's July 20, 2011 filing and required MISO to submit a compliance filing on various issues. MISO submitted a proposed compliance filing on July 11, 2012 in Docket No. ER11-4081-002, which was conditionally accepted by the Commission on November 20, 2015, requiring further compliance. MISO submitted another compliance filing on December 18, 2015 which was accepted by the Commission on March 15, 2016.

On August 16, 2013, MISO submitted proposed CONE values for the MISO Southern Region⁴ to enable New LSEs to participate in a Transitional Planning Resource Auction, in accordance with Section 69A.11.9 of the Tariff. This filing was accepted by the Commission on September 19, 2013.

On September 3, 2013, MISO submitted its annual calculation of the CONE values for each LRZ in the MISO Region in Docket No. ER13-2310-000. The Commission issued a letter order accepting MISO's filing on October 31, 2013.

On September 8, 2014, MISO submitted its annual calculation of the CONE values for each LRZ in the MISO Region in Docket No. ER14-2808-000. The Commission issued a letter order accepting MISO's filing on October 30, 2014.

On May 22, 2015, MISO submitted a filing to create a separate zone for Mississippi (LRZ 10) in Docket No. ER15-1771-000. The Commission issued a letter order accepting MISO's filing on July 21, 2015.

On September 16, 2015, MISO submitted its annual calculation of the CONE values for each LRZ in the MISO Region in Docket No. ER15-2660-000. The Commission issued a letter order accepting MISO's filing on November 10, 2015.

On September 23, 2016, MISO submitted its annual calculation of the CONE values for each LRZ in the MISO Region in Docket No. ER16-2662-000. The Commission issued a letter order accepting MISO's filing on November 21, 2016.

On September 1, 2017, MISO submitted its annual calculation of the CONE values for each LRZ in the MISO Region in Docket No. ER16-2416-000. The Commission issued a letter order accepting MISO's filing on October 26, 2017.

⁴ On July 22, 2013, MISO submitted with the Commission a filing to establish two new LRZs in the MISO Southern Region, to be designated as LRZ 8 and LRZ 9. This filing was accepted by the Commission on September 26, 2013.

On September 5, 2018, MISO submitted its annual calculation of the CONE values for each LRZ in the MISO Region in Docket No. ER18-2381-000. The Commission issued a letter order accepting MISO's filing on October 22, 2018.

II. CONE for Each Local Resource Zone

MISO has calculated and is filing CONE values on an LRZ basis. Section 69A.8.a of Module E-1 of the Tariff requires, in part, that MISO and the Independent Market Monitor ("IMM") determine the CONE value for each LRZ, as follows:

[C]onsider factors, including, but not limited to: (1) physical factors (such as, the type of Generation Resource that could reasonably be constructed to provide Planning Resources, costs associated with locating the Generation Resource within the Transmission Provider Region, the estimated costs of fuel for the Generation Resource); (2) financial factors (such as, the hypothetical debt/equity ratio for the Generation Resource, the cost of capital, a reasonable return on equity, applicable taxes, interest, insurance); and (3) other costs (such as, costs related to permitting, environmental compliance, operating and maintenance expenses). In calculating the CONE, the Transmission Provider and the IMM shall not consider the anticipated net revenue from the sale of capacity, Energy or Ancillary Services. CONE values will be calculated for each LRZ.

In addition, Section 69A.10 of the Tariff provides that MISO "will impose a Capacity Deficiency Charge on an [Load Serving Entity] that has not demonstrated, at the close of the Planning Resource Auction, to the Transmission Provider, through the MECT, that it has arranged sufficient zonal capacity resources to meet its PRMR. The annual Capacity Deficiency Charge will be calculated as follows: The CONE value for the LRZ where the LSE has not arranged through the MECT sufficient ZRCs will be multiplied by 2.748 times the number of Zonal Resource Credits that the LSE is deficient."

Thus, MISO is required to calculate and submit for Commission approval a CONE value for each of the LRZs in the MISO Region.⁵

⁵ MISO is required to consult with the IMM in the development of these values on an annual basis by September 1. See Tariff, Section 69A.8.a. MISO consulted with the IMM in August 2019, and thus is in compliance with this Tariff requirement.

III. CONE CALCULATION PROCESS

A. Approach Followed by MISO

MISO analyzed the appropriate CONE value in each LRZ⁶ based upon the costs associated with an advanced combustion turbine (“CT”).⁷ MISO used the following approach: First, MISO began with an estimate of a CONE value not specific to local zone. Next, MISO used “the law of one price” where applicable (*e.g.*, turbines that are sold competitively). Next, MISO developed zonal differences to reflect different locational costs (*e.g.*, labor, technical enhancements and others) using a recent United States Energy Information Administration (“EIA”) document. Finally, MISO used the Net Present Value (“NPV”) algorithm to calculate locational CONE values for each of the LRZs⁸.

MISO estimates its most recent CONE value for the entire MISO Region to be \$89,610/MW.⁹ This number was developed in concert with the IMM and serves as the basis for developing regional values.

Next, based upon the economic principle known as the “law of one price,”¹⁰ MISO allowed factors such as the weighted average cost of capital, escalation rates (and others factors where global competition drives prices to have no locational differences) to be constant.

In order to determine the appropriate CONE value for each of the LRZs, MISO relied upon the most recent EIA report on Capital Cost Estimates for Utility Scale Electricity

⁶ See Attachment VV, which is a map of the ten (10) LRZ boundaries and a description of the states that are in each of the LRZs.

⁷ Combustion turbines have been used as the basis for determining the cost of new entry in other RTOs and ISOs. See *PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275 at P 39 (2009); *New York Indep. Sys. Operator Inc.*, 123 FERC ¶ 61,206, P 24 (2008). The subject LRZ CONE values were based upon data for advanced CTs because such facilities are more likely to actually be constructed in the MISO Region, due to the more economic capital requirements and fuel costs of advanced CTs, which are more efficient and have a lower heat rate than conventional CTs.

⁸ See the Business Practices Manual 011 for Resource Adequacy, Appendix R, for a complete step-by-step explanation of the CONE calculation process.
<https://www.misoenergy.org/legal/business-practice-manuals/>.

⁹ 2018 State of the Market Report for the MISO Electricity Market, Analytic Appendix, Potomac Economics, July 2019, page 9 at https://www.potomaceconomics.com/wp-content/uploads/2019/08/2018-SOM-Appendix_Final.pdf

¹⁰ The law of one price states, in essence, that in an efficient market, all identical goods must have only one price.

Generation Plant (“EIA Report”).¹¹ The EIA Report contains detailed specifications for a hypothetical advanced CT, including information regarding the differences in project costs for an advanced CT with a nominal capacity of 237 MW, based upon the state where the facility is constructed.¹²

MISO used a NPV analysis to determine an appropriate CONE value for hypothetical advanced CTs located in each of the LRZs. In accordance with Section 69A.8.a of the Tariff, MISO considered many factors in its calculation of the CONE value, including the following: (1) physical factors (such as, the type of Generation Resource that could reasonably be constructed to provide Planning Resources, costs associated with locating the Generation Resource within the Transmission Provider Region, the estimated costs of fuel for the Generation Resource); (2) financial factors (such as, the hypothetical debt/equity ratio for the Generation Resource, the cost of capital, a reasonable return on equity, applicable taxes, interest, insurance); and (3) other costs (such as, costs related to permitting, environmental compliance, operating and maintenance expenses). MISO did not consider the anticipated net revenue from the sale of capacity, Energy or Ancillary Services.

The results shown on enclosed Attachment B were derived by MISO and comport with computations made by the IMM. Attachment A was based, in part, upon data supplied by the EIA in year 2016 dollars, which were adjusted using the implicit price deflator from the Bureau of Economic analysis in order to convert EIA cost data from 2016 dollars into 2020 dollars. In order to produce the annualized CONE value for each of the LRZs from these cost numbers, MISO assumed: a 55/45 debt to equity ratio; a 20-year project life and loan term; a 6.20 percent debt interest rate;¹³ a 2.37 percent Operation and Maintenance escalation factor; a 2.37 percent GDP deflator; a 26.9 percent combined effective federal and state tax rate; property tax and insurance costs of 1.5 percent of the capital costs; a calculated weighted average cost of capital of 8.52 percent; and a 13.4 percent after tax internal rate of return on equity. Except for variations in state tax rates (which affects the calculated weighted average cost of capital in each LRZ), which have been accounted for, the rest of these factors do not vary by LRZ to any significant degree that is discernible in available data. MISO will continue to examine these factors in the future in order to determine if any LRZ-specific modifications are indicated. These factors and assumptions are comparable to those used by other RTOs in the development of CONE estimates.

¹¹ See Energy Information Administration, *Capital Cost Estimates for Utility Scale Electricity Generation Plants* (November 2016) (available at: https://www.eia.gov/analysis/studies/powerplants/capitalcost/pdf/capcost_assumption.pdf).

¹² See EIA Report Table 11-2. (The Total Location Project Costs for the states that comprise the ten (10) LRZs are shown in enclosed Attachment A, as well as the average Project Costs for each of the LRZs).

¹³ This figure was developed based upon current information regarding interest rates on 20-year bonds.

The most recent estimate of CONE for each LRZ in the MISO Region are consistent with and normalized around the CONE calculation provided by the IMM in the 2018 State of the Market Report for the entire MISO Region.¹⁴ In that Report, the IMM presented information regarding the annual costs associated with two types of Generation Resources: gas combined-cycle Generation Resources and gas combustion turbine Generation Resources.

The LRZ CONE values established and shown in enclosed Attachment B for the 2020/2021 Planning Year are just and reasonable, for use in the annual resource adequacy construct. The calculations are based on the same principles as those previously used to determine CONE values for the entire MISO footprint, but have been modified to include specifically estimated costs that vary by location. Other costs included in the determination of CONE are not believed to vary by location at this time.

B. Result

MISO, in concert with the IMM, proposes that the LRZ CONE values for the next Planning Year (June 1, 2020 through May 31, 2021) should be set at the values shown on Attachment B.

IV. EFFECTIVE DATE

MISO respectfully requests an effective date of November 10, 2019 for the subject LRZ CONE values. It is important for MISO's LSEs to know the CONE value for each of the LRZs well in advance of the 2020/2021 Planning Resource Auction that will be conducted in April 2020.

V. NOTICE AND SERVICE

MISO notes that it has served a copy of this filing electronically, including attachments, upon all Tariff Customers, MISO Members, Member representatives of Transmission Owners and Non-Transmission Owners, as well as all state commissions within the Region, and the Organization of MISO States. In addition, the filing has been posted electronically on MISO's website at <https://www.misoenergy.org/legal/ferc-filings/> for other interested parties in this matter.

¹⁴ 2018 State of the Market Report for the MISO Electricity Market, June 2019, Section VII, C, https://www.potomaceconomics.com/wp-content/uploads/2019/06/2018-MISO-SOM_Report_Final2.pdf. See supra n. 9.

VI. COMMUNICATIONS

All communications related to this filing should be directed to:

Kari Valley
Midcontinent Independent
System Operator, Inc.
2985 Ames Crossing Road
Eagan, MN 55121
Telephone: 651.632.8474
kvalley@misoenergy.org

VII. CONCLUSION

For the foregoing reasons, MISO respectfully requests that the Commission find that MISO has complied with the requirements in Section 69A.8 of the Tariff and approve the LRZ CONE values as described on Attachment B for each of the LRZs in the MISO Region, for the Planning Year that will commence on June 1, 2020.

Respectfully submitted,

/s/ Kari Valley
Kari Valley

Midcontinent Independent
System Operator, Inc.
2985 Ames Crossing Road
Eagan, MN 55121
Telephone: 651.632.8474
kvalley@misoenergy.org

*Attorney for the Midcontinent
Independent System Operator, Inc.*

ATTACHMENT A

Total Location Project Cost (2020 \$*kW⁻¹) Values for Local Resource Zones Reflecting the Energy Information Administration's Capital Cost Estimates for Electricity Generation Plants

<u>Local Resource Zone 1 -</u>	Minnesota	\$ 766
	<u>North Dakota</u>	<u>\$ 717</u>
	Average	\$ 741.50
<u>Local Resource Zone 2 -</u>	Wisconsin	\$ 728
<u>Local Resource Zone 3 -</u>	Iowa	\$ 740 (Davenport)
	<u>Iowa</u>	<u>\$ 721 (Waterloo)</u>
	Average	\$ 730.50
<u>Local Resource Zone 4¹⁵ -</u>	Indiana	\$ 735
	Iowa	\$ 731
	<u>Missouri</u>	<u>\$ 756</u>
	Average	\$ 740.50
<u>Local Resource Zone 5 -</u>	Missouri	\$ 756 (St. Louis)
<u>Local Resource Zone 6 -</u>	Indiana	\$ 735
<u>Local Resource Zone 7 -</u>	Michigan	\$ 759 (Detroit)
	<u>Michigan</u>	<u>\$ 730 (Grand Rapids)</u>
	Average	\$ 744.50
<u>Local Resource Zone 8 -</u>	Arkansas	\$ 705
<u>Local Resource Zone 9 -</u>	Louisiana	\$ 672
	<u>Texas</u>	<u>\$ 676</u>
	Average	\$ 674
<u>Local Resource Zone 10 -</u>	Mississippi	\$ 700

¹⁵ The EIA Report only included data for Chicago, Illinois, which is not located within LRZ 4 (it is in the PJM Interconnection, L.L.C. region). Accordingly, MISO used EIA Report data from the 3 states bordering the non-Chicago area of Illinois to calculate the Total Location Project Cost for LRZ 4, which is located in Illinois.

ATTACHMENT B

CONE VALUES (\$/MW-vr.) FOR LOCAL RESOURCE ZONES
FOR PLANNING YEAR 2020/2021

Local Resource Zone 1	\$ 93,470
Local Resource Zone 2	\$ 91,860
Local Resource Zone 3	\$ 91,330
Local Resource Zone 4	\$ 92,960
Local Resource Zone 5	\$ 95,190
Local Resource Zone 6	\$ 93,030
Local Resource Zone 7	\$ 94,000
Local Resource Zone 8	\$ 89,660
Local Resource Zone 9	\$ 86,350
Local Resource Zone 10	\$ 89,410