

For the reasons set forth below, ITC Midwest respectfully requests that the Commission find that ATC has not complied with the express terms and conditions of: (a) the Midwest Independent Transmission System Operator, Inc.’s (“MISO”) Open Access Transmission Energy and Operating Reserve Markets Tariff (“Tariff”);³ (b) the Agreement of the Transmission Facilities Owners to Organize the Midwest Independent Transmission System Operator, Inc., a Delaware Non-Stock Corporation (“Transmission Owners Agreement” or “TOA”),⁴ and (c) the MISO designations for Multi-Value Project (“MVP”) Project 5 (with the identification number 3127), the Dubuque-Cardinal Line as specified in the 2011 MISO Transmission Expansion Plan (“MTEP11”);⁵ Appendix A.⁶ ITC Midwest also respectfully requests that the Commission direct ATC to enter into negotiations with ITC Midwest to develop final terms and conditions for the shared ownership and construction of the Dubuque-Cardinal Line in a manner compliant with the Tariff and TOA. Such relief will be fully consistent with the relief granted by the Commission in recent cases involving similar MISO MVP disputes.⁷ Finally, ITC Midwest respectfully requests that the Commission grant its requested relief on an expedited basis such that answers are due within 20 days and Commission action is taken no later than December 24, 2012.

³ Midwest Independent Transmission System Operator, Inc., FERC Electric Tariff.

⁴ Midwest ISO, FERC Electric Tariff, Fifth Revised Volume No. 1, Rate Schedule 1.

⁵ The MTEP is set forth in Attachment FF to the MISO Tariff and provides for the regional transmission planning process by which MISO determines the transmission facilities to be constructed in the region.

⁶ See Midwest Independent Transmission Operator, Inc., MISO Transmission Expansion Plan, Appendix A, available at: <https://www.misoenergy.org/layouts/MISO/ECM/Redirect.aspx?ID=113909>. Provided as Exhibit 2 to this Complaint.

⁷ *Xcel Energy Svcs. Inc. and Northern States Power Co. v. American Transmission Co., LLC*, 140 FERC ¶ 61,058 (2012) (“Xcel Order”); *Pioneer Transmission, LLC v. Northern Indiana Public Service Co. and Midwest Indep. Transmission Sys. Operator, Inc.*, 140 FERC ¶ 61,057 (2012) (“Pioneer Order”).

I. EXECUTIVE SUMMARY

ITC Midwest seeks relief from the Commission in order to ensure that the Dubuque-Cardinal Line, a MISO-approved MVP project, may be completed as soon as possible, to bring needed reliable transmission to the integrated MISO-controlled grid, to alleviate congestion, and to facilitate the interconnection of significant amounts of renewable resources. The Commission has already decided that the currently-effective MISO TOA: (1) contains a right of first refusal (“ROFR”); and (2) that a project that runs between the facilities of two MISO transmission owners be “shared equally” between them unless otherwise agreed.⁸ To be clear, this complaint was decided by the Commission in the Xcel Order and the Pioneer Order referenced in footnote 7 as it involves:

- the same Regional Transmission Organization (“RTO”), MISO;
- the same specific provisions in the same currently-effective TOA, which the Commission found to be clear and unambiguous;⁹
- the same 2011 MISO Transmission Expansion Plan process (“MTEP11”);¹⁰
- the same approval in Appendix A of that plan;¹¹ and
- even the same overall MVP project that was at issue in the Xcel Order in Docket No. EL12-28.

MVP Project 5 is shown on the map in Figure 1. There are three segments of the project. First, there is the segment at issue in the Xcel proceeding involving the portion of MVP Project 5

⁸ Xcel Order at P 60; Pioneer Order at P 96.

⁹ Xcel Order at P 60; Pioneer Order at PP 96-97.

¹⁰ The MTEP is set forth in Attachment FF to the MISO Tariff and provides for the regional transmission planning process by which MISO determines the transmission facilities to be constructed in the region.

¹¹ See Midwest Independent Transmission Operator, Inc., MISO Transmission Expansion Plan, Appendix A, available at: https://www.misoenergy.org/_layouts/MISO/ECM/Redirect.aspx?ID=113909. Provided as Exhibit 2.

from Xcel’s North LaCrosse (Briggs Road) substation, to ATC’s North Madison substation.¹² The second segment runs between ATC’s North Madison substation and ATC’s Cardinal substation. This segment belongs 100% to ATC.¹³ This proceeding involves the third segment, the portion of MVP Project 5 that runs from the ATC’s Cardinal substation to the ITC Midwest substation in Dubuque, Iowa.¹⁴ In Appendix A of MTEP11, MISO appropriately designated this project as belonging equally to ATC and ITC Midwest.¹⁵ After the Xcel Order, there should be no argument over the joint development rights and responsibilities shared equally by ITC Midwest and ATC. Even ATC has recognized that the Xcel Order represents “the law of the case” and “there can be no substantive argument as to the intent of the provision, how it operates, or whether it is legally enforceable.”¹⁶

¹² Midwest Independent Transmission System Operator, Inc., Multi Value Project Analysis Report at p. 28 (Jan. 10, 2012), provided as Exhibit 3 (“MVP Analysis”).

¹³ See Xcel Energy Motion for Leave to Answer and Answer, Docket No. EL12-28 dated March 20, 2012 at page 27 (“Notably Xcel Energy makes no claim on the portion of this MVP beyond ATC’s North Madison Substation to ATC’s Cardinal Substation as the TOA mandates that ownership for this facility belongs to ATC”).

¹⁴ *Id.* at p. 29.

¹⁵ See Exhibit 2. See also MVP Analysis provided as Exhibit 3 at p. 29.

¹⁶ See *American Transmission Company LLC v. Midwest Independent Transmission System Operator, Inc., and Xcel Energy Services Inc., Northern States Power Company, a Wisconsin corporation, and Northern States Power Company, a Minnesota Company*, Complaint and Request for Fast Track Processing, Docket No. EL13-9, at p. 19, dated October 1, 2012.

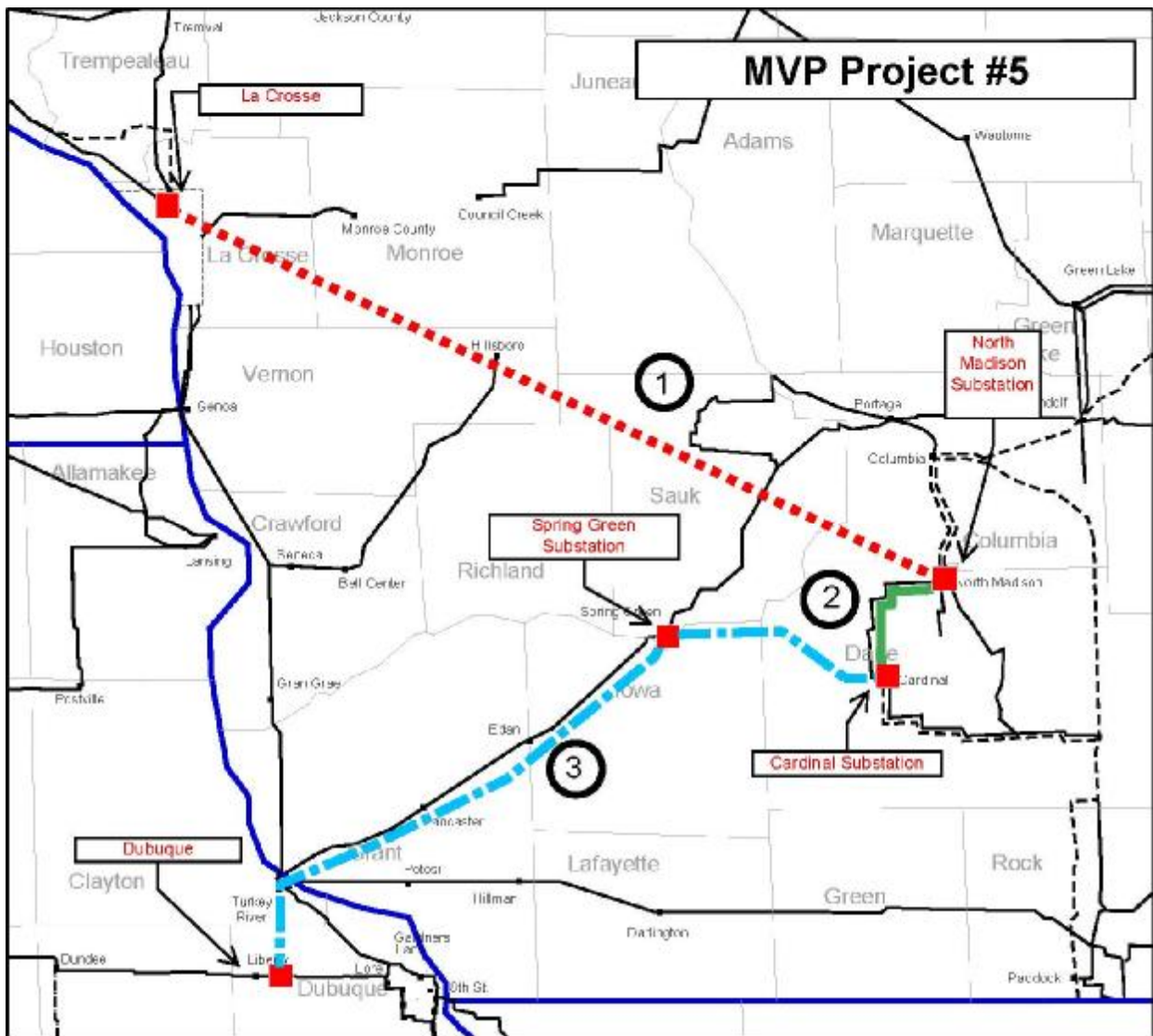


Figure 1
MVP Project 5¹⁷

- ① - - - - - Portion of Project 5 from La Crosse to the North Madison Substation
- ② ————— Portion of Project #5 from North Madison Substation to the Cardinal Substation
- ③ - - - - - Portion of Project #5 from the Cardinal Substation to Dubuque

¹⁷ Figure 1 reflects MVP Project 5 as represented and approved by MISO in MTEP11. Line routing and locations of planned facilities may be altered as the project is further developed.

By refusing to negotiate on a joint development agreement with ITC Midwest, ATC is in effect acting to stay the effectiveness of the prior Commission determination and thereby delay necessary planning and engineering work. Such an action is in direct contravention of the MISO TOA which requires that “Ownership and the responsibility to construct facilities which are connected between two (2) or more Owners’ facilities belong equally to each Owner”¹⁸ The TOA also states that “[t]he affected Owner(s) shall make a good faith effort to design, certify, and build the designated facilities to fulfill the approved Midwest ISO Plan.”¹⁹ ATC, a signatory to the TOA, has not respected this commitment.²⁰ Moreover, ATC’s recalcitrance is in stark contrast to the settlement achieved by Pioneer Transmission, LLC (“Pioneer”) and Northern Indiana Public Service Company (“NIPSCO”), following the Commission’s orders to reach agreement on a joint development agreement.²¹

The Dubuque-Cardinal segment is an approximately 136 mile, 345 kV transmission line, approved through MTEP11.²² As required by the Tariff,²³ MISO designated ITC Midwest and ATC as joint owners in and developers of the Project (identification number 3127).²⁴ MISO’s

¹⁸ Appendix B, Section VI of the TOA.

¹⁹ *Id.*

²⁰ ATC has argued to the Commission that the MISO TOA permits “third-parties” to participate in the financing construction and ownership of transmission facilities specified in the MISO plan. *See* Xcel Oder at P 23. Such an argument overlooks the fact that ATC is not a Third-Party but an existing MISO Transmission Owner contractually bound to the benefits and burdens of the TOA. In addition, the Commission determined the provision permitting third party participation must be read in conjunction with the share equally provisions. *Id.* at P 62.

²¹ *See* Docket No. EL12-24, Offer of Settlement, Aug. 20, 2012.

²² *See* Midwest Independent Transmission Operator, Inc., MISO Transmission Expansion Plan, Appendix A, available at: <https://www.misoenergy.org/layouts/MISO/ECM/Redirect.aspx?ID=113909>. Provided as Exhibit 2.

²³ Tariff, Attachment FF, Section V.

²⁴ *See* Midwest Independent Transmission Operator, Inc., MISO Transmission Expansion Plan, Appendix A, available at: <https://www.misoenergy.org/layouts/MISO/ECM/Redirect.aspx?ID=113909>. Provided as Exhibit 2.

analysis supporting the MVP designation for the Project also confirmed ITC Midwest and ATC as owners of the Project.²⁵

Pursuant to the plain terms of the TOA, and MISO's corresponding ownership designation in MTEP11, ITC Midwest seeks to assume its responsibilities to participate in the Project. Appendix B, Section VI of the TOA provides in part:

Ownership and the responsibility to construct facilities which are connected to a single Owner's system belong to that Owner, and that Owner is responsible for maintaining such facilities. Ownership and the responsibility to construct facilities which are connected between two (2) or more Owners' facilities belong equally to each Owner, unless such Owners otherwise agree and the responsibility for maintaining such facilities belongs to the Owners of the facilities unless otherwise agreed by such Owners. Finally, ownership and the responsibility to construct facilities which are connected between an Owner(s)' system and a system or systems that are not part of the MISO belong to such Owner(s) unless the Owner(s) and the non-MISO party or parties otherwise agree; however, the responsibility to maintain the facilities remains with the Owner(s) unless otherwise agreed.

In addition, Section V of Attachment FF of the Tariff provides:

For each project included in the recommended MTEP, the plan shall designate, based on the planning analysis performed by the Transmission Provider and based on other input from participants, including, but not limited to, any indication of a willingness to bear cost responsibility for the project; and any applicable provisions of the ISO Agreement, one or more Transmission Owners or other entities to construct, own and/or finance the recommended project.

As described in the attached affidavit of Douglas C. Collins,²⁶ President of ITC Midwest, ITC Midwest has diligently engaged in negotiations with ATC in order to determine the terms and conditions of ownership and construction of the Project in accordance with the Tariff and TOA. However, ATC has not recognized ITC Midwest's rights and obligations under the Tariff.

²⁵ Exhibit 3, MVP Analysis at p. 29.

²⁶ See Exhibit 1 at PP 7, 14-23.

Based on ATC's actions, ITC Midwest hereby brings this Complaint to the Commission for adjudication of ITC Midwest's obligations and rights to participate in the Project in accordance with the terms of the TOA, Tariff and MTEP11. ITC Midwest respectfully requests that the Commission: (1) find ATC has not complied with the express terms and conditions of the TOA and the Tariff; and (2) direct ATC to enter into negotiations with ITC Midwest to develop the final terms and conditions for the shared ownership of the Dubuque-Cardinal Line. Such an action is fully consistent the Commission's decisions in the Xcel Order and Pioneer Order, in which the Commission found that Appendix B, section VI of the Transmission Owners Agreement is unambiguous as to ownership and the responsibility of owners to build facilities, and that the complainant parties were entitled to jointly own and construct the MVP projects at issue.²⁷

In order to ensure that the Project is placed in-service at the date planned by MISO and given the similarity of issues to the recently decided complaint against ATC, ITC Midwest respectfully requests that the Commission act on this Complaint no later than December 24, 2012. Action by this date will ensure that the dispute can be resolved and the parties can engage in the significant joint planning, preparation, permitting and pre-construction activities necessary for the Project. Accordingly, ITC Midwest respectfully requests Fast Track Processing of the Complaint.

²⁷ Xcel Order at P 60; Pioneer Order at PP 96-97.

II. CORRESPONDENCE AND COMMUNICATIONS

All correspondence and communications concerning the above-captioned proceeding should be addressed to the following persons:

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III. BACKGROUND

A. Description of Parties

1. ITC Midwest

ITC Midwest is a fully-independent transmission company operating within MISO. ITC Midwest was founded in 2007 when Interstate Power and Light Company sold its transmission assets to ITC Midwest, then a newly-formed subsidiary of ITC Holdings Corp. ITC Midwest owns more than 6,800 miles of transmission lines and 208 electric transmission substations in Iowa, Minnesota, Illinois and Missouri, and maintains operating locations at Dubuque, Iowa City and Perry, Iowa, and Albert Lea and Lakefield, Minnesota. ITC Midwest is a transmission owning member of MISO and a signatory to the TOA. ITC Midwest provides service over its transmission facilities pursuant to the MISO Tariff.

2. ATC

ATC is a Wisconsin corporation and a creature of Wisconsin law.²⁸ ATC is a Commission jurisdictional, transmission only, public utility created by the transfer of transmission assets of a number of public utilities, municipal electric companies and electric cooperatives in eastern and central Wisconsin. ATC also owns facilities in the Upper Peninsula of Michigan and certain limited transmission facilities in the surrounding states of Minnesota and Illinois. According to public information, ATC owns 9,440 circuit miles of transmission lines and 515 substations (either wholly or jointly). ATC is a transmission owning member of MISO and a signatory to the TOA. ATC provides service over its transmission facilities pursuant to the MISO Tariff.

B. Project

The Dubuque-Cardinal Line, as designated in MTEP11, is an approximately 136 mile, 345 kV transmission line from ITC Midwest's Dubuque substation in Iowa through ATC's Spring Green substation to ATC's Cardinal substation in southwestern Wisconsin.²⁹ Figure 2 illustrates how the Dubuque-Cardinal Line (the bottom line of Project 5) works with the portfolio of other MVP projects, most notably the North La Crosse to Cardinal line (the top line of Project 5).

²⁸ See Wis. Stat. § 196.485(3m) (2011).

²⁹ MVP Analysis at p. 30.

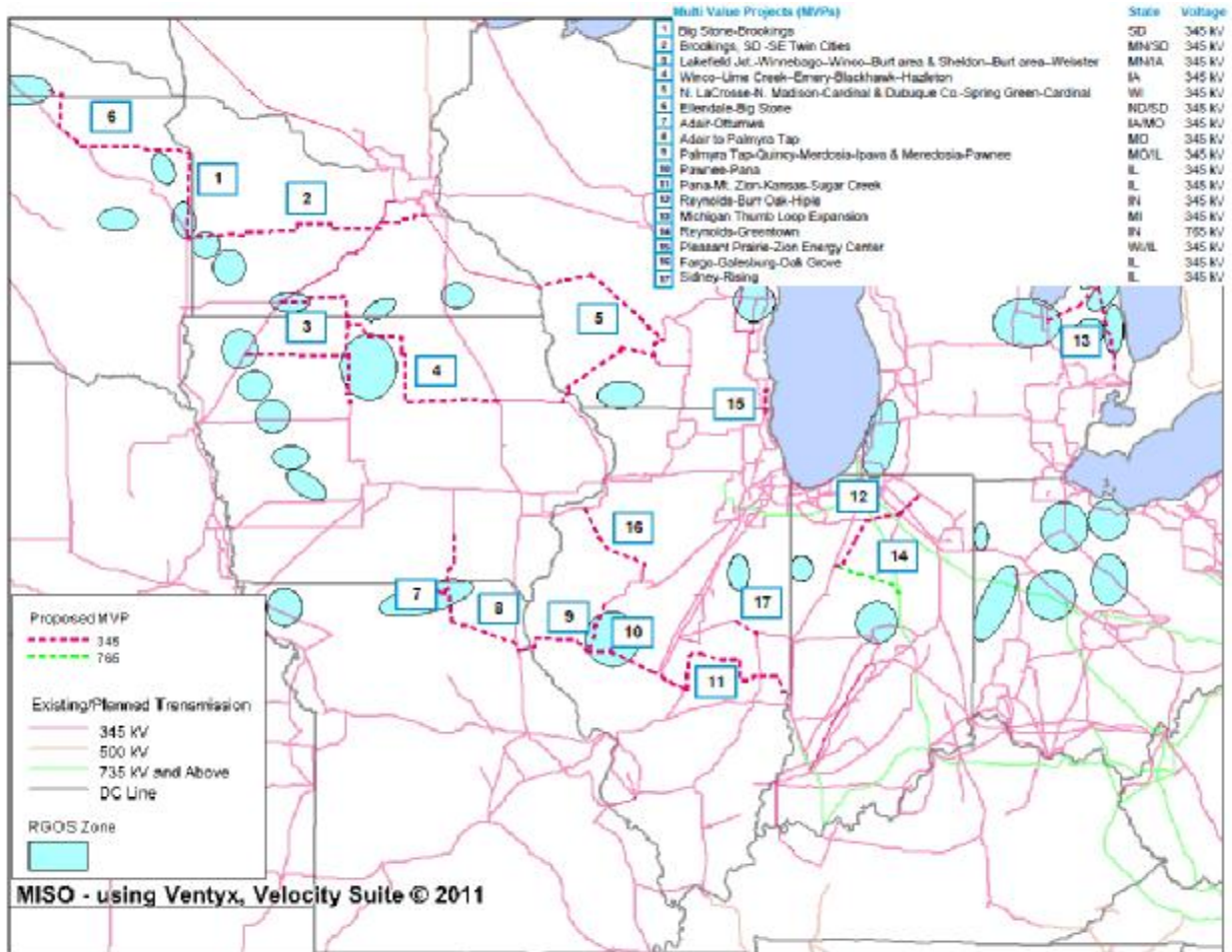


Figure 2

As part of the Project, a new Dubuque County 345 kV switching station will be created on the ITC Midwest Salem-Hazleton 345 kV transmission line, and the Spring Green substation and the Cardinal substation on ATC’s transmission system will be upgraded. The 345 kV line from Dubuque to Spring Green to Cardinal will create a tie between the 345 kV network in Iowa to the 345 kV network in south-central Wisconsin. Among other things, this expansion will create an additional wind outlet path across Wisconsin, bringing power from Iowa into southern Wisconsin, where it can then be transmitted east into Milwaukee or south toward Chicago providing access to less expensive wind power in two major load centers. In combination with another MVP, the Oak Grove – Galesburg – Fargo 345 kV line, the Project will enable 1,100

MW of wind power transfer capability.³⁰

From a reliability perspective, the addition of the Dubuque – Spring Green – Cardinal 345 kV path will help relieve constraints on the 345 kV system parallel to the project to the north and south of the new line, as well as 138 kV system constraints in the aforementioned areas and to the west of the new line. “The 138 kV system in southwest Wisconsin and nearby in Iowa is also overloaded during certain contingent events, and the new Project will relieve those constraints.”³¹

As noted above, the Project was approved through MTEP11, and its expected in-service date has been advanced from December 2020 as approved in MTEP11 to December 2018 as proposed in the recent draft MTEP 2012 report.³²

C. FERC Orders

FERC recently concluded in the Pioneer Order and Xcel Order that the TOA includes a ROFR for incumbent transmission owners to build and own transmission projects in MISO.³³ In the Xcel proceeding, Xcel filed a complaint – on behalf of itself and its affiliate Northern States Power Company (“Northern States”) – against ATC, opposing ATC’s claim to construction and ownership of the entirety of the La Crosse-Madison Line, a proposed 145-mile, 345 kV electric transmission line connecting Northern States’ facilities near La Crosse, Wisconsin with ATC’s

³⁰ Exhibit 3, MVP Analysis at pp. 29-30.

³¹ *Id.* at p. 30.

³² See Midwest Independent Transmission System Operator, Inc., MISO Transmission Expansion Plan 2012, available at <https://www.misoenergy.org/layouts/MISO/ECM/Redirect.aspx?ID=113909>. Provided as Exhibit 2; see also MISO Transmission Expansion Plan 2011 at 43, available at <https://www.midwestiso.org/Library/Repository/Study/MTEP/MTEP11/MTEP11%20Draft%20Report.pdf> (“MTEP11”).

³³ While the Commission did not consolidate the proceedings, it did release both of its orders during its July 19, 2012 monthly meeting.

facilities near Madison, Wisconsin.³⁴ Similar to this Complaint, Xcel asked FERC to find that ATC had not complied with the Tariff and TOA, and that FERC should direct ATC to enter into negotiations with Xcel to develop final terms and conditions for the ownership and construction of the La Crosse-Madison Line.³⁵

In its answer to Xcel's complaint, ATC argued that: (1) the right to build language cited by Xcel in Appendix B of the TOA only applied to projects that MISO "creates," and not those that the transmission owners proposed to build, (2) ATC did not have to surrender 50 percent ownership in the transmission project merely because the La Crosse-Madison Line "interconnects" with another transmission owner's facilities, and (3) that FERC previously found ROFRs to be unjust and unreasonable in Order No. 1000.³⁶

ITC Midwest filed an intervention in the Xcel docket. ITC expressed support for Xcel's position and noted:

In accordance with the TOA, ITC sought discussions with ATC regarding shared ownership and construction of the Dubuque-Madison segment of this line. ATC initially was unwilling to discuss this with ITC. Now, however, discussions between ATC and ITC Midwest are underway. ITC is hopeful that these discussions will result in a mutually acceptable ownership agreement without the need for Commission intervention. If not, however, ITC may need to seek Commission enforcement of the terms of the Midwest ISO TOA, as Xcel has sought.³⁷

Meanwhile, in the Pioneer Order, Pioneer filed a complaint against NIPSCO alleging that NIPSCO did not have any ownership and investments rights to any of the investment associated

³⁴ Xcel Order at P 1.

³⁵ Xcel argued in its complaint that while MISO previously approved the La Crosse-Madison line as an MVP and designated both Northern States and ATC as joint owners of the line, ATC disputed MISO's designation and commenced development work on the project without Xcel's involvement. *Id.* at PP 1,4.

³⁶ *Id.* at PP 19-27.

³⁷ *See* Docket No. EL12-28-000, Motion for Leave To Intervene and Comments of ITC, ITC Transmission, METC, and ITC Midwest, at 4, dated March 5, 2012.

with the MISO-segment of the “Pioneer Project” that MISO included in its MTEP as an MVP.³⁸ Originally, Pioneer (a joint venture of Duke Energy Corporation (“Duke”) and American Electric Power Company, Inc. (“AEP”)) submitted a section 205 filing with FERC requesting approval of formula rates in both PJM and MISO for the Pioneer Project, a 765 kV transmission project in the State of Indiana that would connect with both PJM and MISO substations.³⁹ According to Pioneer, the MISO-segment of the project changed from originally running from a substation owned by AEP to a substation owned by NIPSCO.⁴⁰

NIPSCO subsequently informed Pioneer that, pursuant to Appendix B of the TOA, NIPSCO was entitled to 50 percent of the investment and ownership of the MISO-segment.⁴¹ In turn, Pioneer argued, among other things, that: (1) NIPSCO did not have any investment or ownership rights because the project would not connect with any existing NIPSCO facilities, (2) Pioneer should have the exclusive right to build and own the project since it was the project developer and sponsor, and (3) FERC already found ROFRs to be unjust and unreasonable in Order No. 1000.⁴²

In both the Xcel Order and Pioneer Order, FERC concluded that the plain terms of Appendix B of the TOA grants ownership and the responsibilities to construct equally to the owners of the substations involved in the project.⁴³ Furthermore, the Commission specifically

³⁸ Pioneer Order at P 1.

³⁹ *Id.* at P 3.

⁴⁰ Specifically, the MISO-segment of the Pioneer project originally would run from an existing AEP Rockport substation to Duke’s Greentown substation, but was changed by MISO planners to run from the existing Reynolds substation, which is owned by NIPSCO. *Id.* at P 5.

⁴¹ *Id.* at P 6.

⁴² Pioneer Order at PP 8-11.

⁴³ *Id.* at P 96; Xcel Order at PP 59-60.

noted that the provisions of Appendix B of the TOA were both clear and unambiguous.⁴⁴ The Commission also held that the owner of the interconnecting facilities was determinative of the issue; it does not matter if the project will not connect with any other existing facilities.⁴⁵ Finally, FERC concluded that even though it ordered the elimination of the ROFR in Order No. 1000, it did so on a prospective basis, and as such, the elimination of ROFRs under Order No. 1000 was not applicable.⁴⁶

D. Events Leading to the Complaint

On July 15, 2010, MISO and the MISO Transmission Owners adopted revisions to the MISO Tariff to establish the MVP category of transmission projects and corresponding cost allocation provisions.⁴⁷ MVPs are transmission facilities that MISO identifies to “enable the reliable and economic delivery of energy in support of documented energy policy mandates” or laws that “address, through the development of a robust transmission system, multiple reliability and/or economic issues affecting multiple transmission zones.”⁴⁸ In MTEP11, the MISO Board of Directors approved a portfolio of 17 MVPs with a total cost of approximately \$5.6 billion.⁴⁹ MISO has deemed these MVPs necessary for a number of interrelated reasons, including

⁴⁴ As such, FERC concluded that the terms of the TOA controlled and it would not consider parol evidence to interpret the meaning of the TOA. Pioneer Order at P 97; Xcel Order at P 60. FERC also added in both orders that simply because transmission owners may have not previously enforced the equal ownership provisions of the TOA does not take away the legal force of those provisions. Pioneer Order at P 100; Xcel Order at P 63.

⁴⁵ Pioneer Order at P 99. In the Xcel Order FERC outright rejected ATC’s argument that the relevant portion of the TOA only applies to a small subset of projects proposed by MISO planning staff. Xcel Order at P 61.

⁴⁶ Pioneer Order at PP 101-103; Xcel Order at PP 64-66.

⁴⁷ See *Midwest Independent Transmission System Operator, Inc. and the MISO Transmission Owners*, Docket No. ER10-1791-000 at 1, July 15, 2010 (“MVP Filing”). The MVP filing was conditionally accepted by the Commission on December 16, 2010. *Midwest Indep. Transmission Sys. Operator, Inc.*, 133 FERC ¶ 61,221 (2010) (“MVP Order”), *order on reh’g*, 137 FERC ¶ 61,074 (2011) (“MVP Rehearing Order”).

⁴⁸ See MVP Filing at 2; see also *id.* at 20 (“[T]he MVP planning and cost allocation category is designed, among other purposes, to facilitate the interconnection of location-constrained resources (including renewable generation) in the MISO footprint and to satisfy other existing and potential future public policy requirements by removing cost barriers currently impeding such development.”).

⁴⁹ MTEP11 at 1. The \$5.6 billion figure includes the costs associated with two MVP projects that were approved earlier, but are considered part of the MVP portfolio.

increasing market efficiency by reducing congestion and fuel costs, delivering low-cost generation, reducing generation reserves, reducing transmission losses, deferring future generation investment, maintaining reliability, and incorporating public policy requirements.⁵⁰

As described in the Affidavit of Douglas Collins, even before MISO Board approval, ITC Midwest sought to work with ATC on a joint development agreement for the Dubuque-Cardinal Line.⁵¹ When ATC refused to recognize ITC Midwest's rights under the TOA, ITC sought assistance from MISO to resolve the dispute.

On September 15, 2011, Clair J. Moeller, Vice President of Transmission Asset Management at MISO, sent ATC and ITC Midwest a letter expressly stating that, in accordance with Appendix B of the TOA, ITC Midwest and ATC had equal ownership rights for the Dubuque-Cardinal Line. The letter also urged ATC to proactively address the issue with ITC Midwest.⁵² ATC sent a response letter to MISO on October 4, 2011, stating that: (1) Mr. Moeller's letter misinterpreted the TOA, (2) ITC Midwest did not have an ownership claim in the Project, and (3) ATC was not required to resolve any ownership claim before MISO would approve the MVPs in December 2011. Additionally, ATC asked for further information and clarification regarding MISO's interpretation of the relevant provisions of the TOA.⁵³

Meanwhile, ITC Midwest responded to Mr. Moeller's letter on October 5, 2011.⁵⁴ ITC Midwest stated in the letter that it agreed with MISO that ownership of the Project needed to be resolved so that the Project could move forward without delay. ITC Midwest's letter also stated

⁵⁰ *Id.*

⁵¹ *See* Exhibit 1 at P 14.

⁵² Incidentally, Mr. Moeller also stated that Xcel and ATC had equal ownership of the La Crosse-Madison Line, and that ATC should address those ownership issues as well. A copy of the letter is provided as Attachment A to Mr. Collins' Affidavit.

⁵³ A copy of the letter is provided as Attachment B to Mr. Collins' Affidavit.

⁵⁴ A copy of the letter is provided as Attachment C to Mr. Collins' Affidavit.

that ITC Midwest agreed with MISO's interpretation of the TOA, that ITC Midwest was fully able to fulfill its responsibilities under the TOA, and that ITC Midwest stood ready to begin ownership discussions with ATC regarding the Dubuque-Cardinal Line.

On October 28, 2011, Mr. Moeller sent ATC a second letter, stating that: (1) the Dubuque-Cardinal Line would be submitted to the MISO Board at its December 2011 meeting for approval, (2) dispute resolution procedures under Attachment HH of MISO's Tariff are permissible for resolving disputes involving the obligation to build or enlarge transmission facilities, and (3) under the TOA, ITC Midwest had an equal ownership claim in the Project.⁵⁵

MTEP11 was approved by the MISO Board of Directors on December 8, 2011. The MISO Board of Directors' approval certifies MTEP11 as MISO's regional transmission plan.⁵⁶ As explained by Mr. Collins, since that time, ITC Midwest has repeatedly tried to negotiate the rights and ownership of the Project with ATC to no avail. ITC Midwest believed it had reached an agreement on ownership shortly after the Xcel and Pioneer Orders were issued, only to have ATC decide later it would be premature to sign an agreement with ITC Midwest while they were requesting rehearing of the Xcel Order.⁵⁷

As recently as September 27, 2012, ITC Midwest sent an offer to ATC regarding the Project. ITC Midwest forwarded a proposed Memorandum of Understanding under which ATC and ITC Midwest would each own a portion of the Dubuque to Cardinal line equal to 50% of the overall project investment.⁵⁸ ATC has rejected ITC Midwest's proposal. ATC provided a

⁵⁵ The October 28, 2011 letter also stated that Xcel had an equal ownership claim to the La Crosse-Madison Line. A copy of the letter is provided as Attachment D to Mr. Collins' Affidavit.

⁵⁶ Under the MISO TOA, the "Midwest ISO Transmission Plan" is the document certified by the Board as "meeting the transmission needs of all stakeholders subject to any required approvals by federal or state regulatory authorities." MISO TOA, Appendix B, Section VI.

⁵⁷ See Exhibit 1 at P. 20.

⁵⁸ *Id.* at P 21.

counter proposal that was well below the 50/50 allocation called for by the shared equally provision of the MISO TOA.⁵⁹ Based on its own experience and given ATC's positions and requests for delay in the Xcel Docket, ITC does not believe ATC will enter into a project agreement in accordance with the express provisions of the TOA as confirmed by the Commission in the Xcel and Pioneer Orders, absent Commission action on this complaint.

IV. ARGUMENT

A. The TOA Provides for Equal Ownership and Construction Rights

The plain language of the TOA grants equal ownership and construction rights to ITC Midwest and ATC for the Project and is controlling in this case. Both ITC Midwest and ATC are signatories to the TOA. Appendix B, Section VI of the TOA provides as follows:

Ownership and the responsibility to construct facilities which are connected to a single Owner's system belong to that Owner, and that Owner is responsible for maintaining such facilities. Ownership and the responsibility to construct facilities which are connected between two (2) or more Owners' facilities belong equally to each Owner, unless such Owners otherwise agree and the responsibility for maintaining such facilities belongs to the Owners of the facilities unless otherwise agreed by such Owners. Finally, ownership and the responsibility to construct facilities which are connected between an Owner(s)' system and a system or systems that are not part of the MISO belong to such Owner(s) unless the Owner(s) and the non-MISO party or parties otherwise agree; however, the responsibility to maintain the facilities remains with the Owner(s) unless otherwise agreed.⁶⁰

Under a plain reading of this language, if a project approved through MISO's MTEP process connects the facilities of two transmission owners, each of those transmission owners would have an equal right to own and corresponding responsibility to construct the project, with the possibility that the owners may mutually agree to some other arrangement.

⁵⁹ *Id.*

⁶⁰ TOA, Appendix B, Section VI (emphasis added).

In the instant case, all necessary elements have been met to invoke the aforementioned provision. First, the Dubuque-Cardinal Line was approved through MTEP11 on December 8, 2011. The Project will connect the facilities of two MISO members, those of ITC Midwest and ATC. MISO has appropriately designated ITC Midwest and ATC as developers of the project,⁶¹ and ITC Midwest and ATC have not agreed otherwise as to alternative ownership rights and construction responsibilities. Thus, as discussed in more detail in Section IV.B *infra*, all elements of the TOA's provision are satisfied and the obligation to own and construct the Project rests equally with both ITC Midwest and ATC. Indeed, MISO informed ATC over 11 months ago:

MISO is aware of ATC's position with regard to ownership of these two projects, However, without agreement between ATC and the other Transmission Owners to which each of these projects will connect, MISO believes that ATC's position contradicts the Transmission Owners Agreement, specifically Part IV of Appendix B. The Dubuque-Spring Green-Cardinal MVP connects ATC and ITC. The North Cross-Madison MVP connects ATC and Xcel. Thus, absent agreement otherwise, the transmission Owners share equal ownership.⁶²

The "shared equally" provision represents the agreement among all MISO transmission owners, accepted by the Commission, as to allocation of ownership rights and construction responsibilities for all projects approved in the MTEP. MISO has recognized that this provision means "that under the TOA ITC and Xcel are half owners of the new facilities. ATC may

⁶¹ See Midwest Independent Transmission Operator, Inc., MISO Transmission Expansion Plan, Appendix A, available at: <https://www.misoenergy.org/layouts/MISO/ECM/Redirect.aspx?ID=113909>. Provided as Exhibit 2. Section V of Attachment FF of the Tariff provides MISO with authority to designate the entity responsible for the funding, ownership and construction of a project approved in MTEP:

For each project included in the recommended MTEP, the plan shall designate, based on the planning analysis performed by the Transmission Provider and based on other input from participants, including, but not limited to, any indication of a willingness to bear cost responsibility for the project; and any applicable provisions of the ISO Agreement, one or more Transmission Owners or other entities to construct, own and/or finance the recommended project.

⁶² Letter from Clair Moeller to John Procario dated September 15, 2011, a copy of which is provided as Attachment A to Mr. Collins' Affidavit.

acquire a greater ownership *if* ITC and Xcel agree.”⁶³ The Commission has found such provision to be just and reasonable,⁶⁴ and as discussed further below, has enforced ITC Midwest’s interpretation of the provision in the recent Xcel and Pioneer Orders.

B. The Relief Requested is Supported by FERC’s Recent Precedent

The applicable text of the MISO TOA is clear. The Commission has issued two decisions that settled any question about this point and, therefore, this case should be decided on the basis of the Commission’s recent precedent, which is not only instructive, but directly on point. In *Xcel* and *Pioneer*, the Commission applied the same provision of the MISO TOA to MVPs approved in the MTEP11 process. In those cases, the Commission held that the TOA was unambiguous on the critical question here – when a new transmission project interconnects the transmission systems of two MISO transmission owners, the TOA grants ownership and the responsibilities to construct equally to the owners of those two systems. ITC asks the Commission to enforce the same provision of the same TOA in the same manner here, for the following reasons.

The same legal foundation for the Commission’s finding in *Xcel* and *Pioneer* is present here. In both *Xcel* and *Pioneer*, the Commission found that “Appendix B, section VI of the Transmission Owners Agreement is unambiguous as to ownership and the responsibility of owners to build facilities.”⁶⁵ Citing judicial precedent, the Commission has found that, “when the terms of a contract are clear and unambiguous, the terms of the contract control and the

⁶³ Letter from Clair Moeller to John Procaro dated October 28, 2011, a copy of which is provided as Attachment D to Mr. Collins’ Affidavit (emphasis added).

⁶⁴ *Midwest Indep. Transmission Sys. Operator, Inc.*, 103 FERC ¶ 61,169 (2003).

⁶⁵ Pioneer Order at P 97; Xcel Order at P 60.

Commission is not to consider parol evidence to interpret the contract's intention.”⁶⁶ Rejecting arguments that MISO lacks the authority to order construction and ownership, the Commission found that “MISO has exercised its designation authority in accordance with section VI of the Transmission Owners Agreement and the Tariff in designating” NIPSCO and Duke, jointly, as the parties responsible for the Reynolds-Greentown Line and ATC and Xcel, jointly, as the parties responsible for the La Crosse-Madison Line. MISO's legal right and ability to designate construction and ownership responsibility for MTEP11 projects extends to the Dubuque-Cardinal Line. Appendix B, Section VI of the TOA applies to the Dubuque-Cardinal Line because both ATC and ITC Midwest are signatories to the TOA and are bound by its terms.

Xcel and *Pioneer* were effectively applications of the filed rate doctrine. The filed rate doctrine “forbids a regulated entity [from charging] rates for its services other than those properly filed with the appropriate federal regulatory authority.”⁶⁷ Because the Commission found the TOA to be unambiguous on this point, it found no need to consider any extrinsic evidence to interpret the agreement and instead enforced its explicit terms. Having enforced the clear intent of the filed rate in those cases, only a meaningful factual distinction between the Reynolds-Greentown Line and the La Crosse-Madison Line on the one hand, and the Dubuque-Cardinal Line on the other, would defeat the applicability of the Commission's decisions in *Pioneer* and *Xcel* to this case. As discussed next, there is no such meaningful factual distinction.

⁶⁶ Pioneer Order at P 97; Xcel Order at P 60, both citing *Transmission Agency of N. Cal. v. FERC*, 628 F.3d 538, 547 (D.C. Cir. 2010) (when a contract is unambiguous, that language controls and the court “must give effect to the unambiguously expressed intent of the parties”); *Pac. Gas & Elec. Co.*, 107 FERC ¶ 61,154, at P 19 (2004) (stating “when the language of a contract is explicit and clear . . . then the court may ascertain the intent from its written terms and not go further”); *Mid-Continent Area Power Pool*, 92 FERC ¶ 61,229, at 61,755 (2000) (stating when a contract's terms are clear, it is to be construed according to its literal terms and extrinsic evidence cannot be used to alter or contradict the contract's express terms).

⁶⁷ *Arkansas Louisiana Gas Co. v. Hall*, 453 U.S. 571 (1981).

The same factual foundation for the Commission’s finding in *Xcel* and *Pioneer* is satisfied here. *Pioneer* and *Xcel* implicitly created a three-part test for the applicability of the “share equally” provision of Appendix B, Section VI of the TOA. The first threshold question is whether the both parties are “owners.” Here, they are. Like *Xcel*, ATC, NIPSCO, and Duke Energy Indiana, ITC Midwest is also a signatory to the TOA, so the share equally provision applies to an MTEP-planned project that interconnects ITC Midwest to another transmission owner. The second question is whether the project is “connected between two (2) or more Owners’ facilities.” There is no dispute that the Dubuque-Cardinal Line interconnects the systems of ITC Midwest near Dubuque, Iowa to ATC’s system in Wisconsin. The third question is whether “MISO has exercised its designation authority in accordance with Section VI of the Transmission Owners Agreement and the Tariff in designating” ITC Midwest and ATC to construct the Dubuque-Cardinal Line. MISO has unambiguously made such a designation. Just like the Reynolds-Greentown and La Crosse-Madison Lines at issue in *Pioneer* and *Xcel*, respectively, MISO approved the Dubuque-Cardinal Line as an MVP in MTEP11 and listed it in Appendix A and listed ITC Midwest as a responsible transmission owner.⁶⁸ Indeed, the Dubuque-Cardinal Line came from the same planning process, in the same year, and was included in the same MVP portfolio as the Reynolds-Greentown and La Crosse-Madison Lines. These three projects were therefore studied together to derive the portfolio of benefits to justify regional cost allocation. In fact, the Dubuque-Cardinal Line interconnects with the La Crosse-Madison Line.

While the Commission did not opine on whether and how the share equally provision of the TOA will apply to future MVP projects developed in the MTEP process, in light of

⁶⁸ See MTEP11, Appendix A.

upcoming Order No. 1000 compliance filings, what is abundantly clear from *Xcel* and *Pioneer* is that the share equally provision of the TOA applies to MTEP11. As such, straightforward application of this precedent to the Dubuque-Cardinal Line requires the same result – ATC and ITC Midwest should be afforded joint construction, and ownership responsibility for the line.

C. Any Delay in Issuing an Order Will Cause Harm

Although ATC may argue that the Commission should refrain from processing the instant complaint until it has acted on ATC’s rehearing request of the Xcel Order, such a delay is unwarranted and will prejudice ITC Midwest’s development of the Project. Delaying action on the instant complaint during pendency of the ATC rehearing of the Xcel Order⁶⁹ effectively acts as a *de facto* stay of that order because the facts of this case and in *Xcel* are virtually identical, as noted above. Indeed, the full benefits of the Xcel-ATC project cannot be realized without the ITC Midwest-ATC project.

First, under FPA Section 313(c),⁷⁰ Commission orders such as the Xcel Order cannot be stayed during rehearing unless the Commission makes a finding that a stay is appropriate. Here, the Commission has made no such finding.

Second, the Commission recently clarified that under FPA Section 313(c) “a party must specifically request a stay”⁷¹ in order for the effectiveness of a Commission order to be held in abeyance pending rehearing. While ATC has requested a “provisional stay” of the Xcel Order,

⁶⁹ *Xcel Energy Services Inc. and Northern States Power Company, a Wisconsin Corporation v. American Transmission Company, LLC*, Docket No. EL12-28-001, Petition for Rehearing, Request for Expedited Action, and Provisional Motion for Stay of American Transmission Company LLC, dated Aug. 20, 2012 (“ATC Rehearing Request”).

⁷⁰ “The filing of an application for rehearing under subsection (a) of this section shall not, unless specifically ordered by the Commission, operate as a stay of the Commission’s order. The commencement of proceedings under subsection (b) of this section shall not, unless specifically ordered by the court, operate as a stay of the Commission’s order.” 16 U.S.C. § 8251.

⁷¹ *Black Oak Energy, L.L.C., et al.*, 140 FERC ¶ 61,003 (2012).

such a stay is not warranted in this case. Moreover, the Commission recently noted it “typically does not stay its orders.”⁷²

Third, if the Commission delays action on the instant complaint, it will have essentially stayed the effectiveness of the Xcel Order as to ITC Midwest. Putting aside the procedural and substantive problems with staying the Xcel Order’s effectiveness noted above, stays can only be granted if, inter alia, third parties such as ITC Midwest are unharmed.⁷³ Here, ITC Midwest will be harmed if ATC does not follow the holding of the Xcel Order. Under the MISO’s rules,⁷⁴ as well as the Commission’s Order No. 1000 requirements,⁷⁵ regional planning requires joint action among joint development partners. If ATC chooses to ignore the Commission’s Xcel Order, it will harm ITC Midwest (as well as regional customers) because development of a needed regional grid facility will be delayed. ATC should not put its own interests ahead of needed progress in the development of regional MISO transmission.

This latter point is critical. The MVP portfolio has been developed and analyzed based on a combined purpose.⁷⁶ With regard to the integrated nature of the MVP portfolio, MISO has maintained,

...when integrated into the existing transmission system, acts as a unit to create economic benefits a subset of the portfolio would not provide as large of benefits and may cause reliability problems. It would also not efficiently enable low cost energy to be delivered throughout the footprint. As such, the economic benefits

⁷² *Id.* at P 29 (citing *City of Vernon*, 116 FERC ¶ 61,091 at P 11 (2006)).

⁷³ *Virginia Petroleum Jobbers Asso. v. Federal Power Com.*, 259 F.2d 921 (D.C. Cir. 1958)(consideration of third party interests must be taken into account when granting a stay).

⁷⁴ MISO Tariff, Attachment FF.

⁷⁵ *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, FERC Stats. & Regs. ¶ 31,323 (2011), *order on reh’g*, Order No. 1000-A, 139 FERC ¶ 61,132 (2012).

⁷⁶ Indeed, the Commission required development of the MVP projects as a portfolio. See *Midwest Independent Transmission System Operator, Inc.*, 133 FERC ¶ 61,221 at PP 222-23 (2010), *order on reh’g*, 137 FERC ¶ 61,074 (2011).

from individual projects within the portfolio would be understated at best or misleading at worst, as the project synergies would be lost.⁷⁷

MISO has expedited the proposed completion date for the project from 2020 in MTEP11 to 2018 in the recently-released draft of MTEP12.

ATC's contention in its rehearing that "granting a stay will not adversely affect any third party"⁷⁸ is false. The "status quo" delays the in-service date for this necessary facility. MISO has stated that the Dubuque – Cardinal line in combination with another MVP project "enables 1,100 MW of wind power transfer capability" and that:

This new path will help offload the lines that feed the Quad City (Iowa) area by bringing power flow to the north. From a reliability perspective, the addition of the Dubuque – Spring Green – Cardinal 345 kV path helps relieve constraints on the 345 kV system parallel to the project to the north and south of the new line, as well as 138 kV system constraints in the aforementioned areas and to the west of the new line. The 138 kV system in southwest Wisconsin and nearby in Iowa is also overloaded during certain contingent events, and the new line relieves those constraints. Those overloaded facilities that are not relieved by the 345 kV project are relieved by upgrades to the lower voltage transmission system, including converting part of the 69 kV system to operate at 138 kV. This project will mitigate eight bulk electric system (BES) NERC Category B thermal constraints and ten NERC Category C constraints. It will also relieve two non-BES NERC Category B and two NERC Category C constraints.

Given the clear, unambiguous, and binding determinations in the Xcel and Pioneer Orders and the clear harm to new and existing wind resources and transmission customers in the MISO market from the delay in this needed transmission capacity, ITC Midwest respectfully requests that the Commission take swift action to compel the negotiation of a joint development

⁷⁷ MTEP11 Report Overview Board of Directors dated December 8, 2011 at 16.

⁷⁸ ATC Rehearing Request at 5. In addition, ATC's stated concerns that there will need to be delays to accommodate the drafting of a joint development agreement, ATC Rehearing Request at 5, 22, and 24, fail to recognize the delays that would occur through continued protracted litigation of an issue the Commission correctly decided based on the plain meaning of the governing documents. Moreover, there may not be disputes as to routing over the Dubuque to Cardinal segment; though this does not preclude disagreements from outside parties expressed in the Certificate of Public Convenience and Necessity proceeding. A joint development agreement can be in place very quickly once the overall division of the project is confirmed. The settlement filed in the Pioneer case in Docket No. EL12-24 confirms that parties can move expeditiously once they know their rights and obligations.

agreement consistent with the principles of the TOA. ATC's unilateral rejection of the Commission's prior direction must be addressed promptly.

D. ATC's Arguments In the Xcel Docket Do Not Withstand Scrutiny

In his affidavit, Mr. Collins states that ATC has referred to the pending litigation in the Xcel complaint docket (EL12-18) as a basis for not moving forward in a joint development agreement with ITC Midwest. As discussed in the following sections, the basis of the ATC rehearing request is without merit. ATC's arguments are legally and substantively flawed. Accordingly, the Commission should move expeditiously in granting this complaint.

1. ATC's Rehearing Represents an Impermissible Collateral Attack on Order No. 1000

First, ATC claims that the Xcel Order "contravenes Section 206" in that it supported the application of the existing ROFR provision of the MISO Tariff while confirming the determination in Order No. 1000 that such provisions are unjust and unreasonable.⁷⁹ This argument is without merit and should be dismissed.

The Commission's determination in Order No. 1000 is consistent with the Xcel Order and rooted in the Commission's broad authority to fashion appropriate remedies. The D.C. Circuit has held that "the breadth of agency discretion is, if anything, at [its] zenith when the action assailed relates primarily not to the issue of ascertaining whether conduct violates the statute, or regulations, but rather to the fashioning of policies, remedies and sanctions...in order to arrive at maximum effectuation of Congressional objectives."⁸⁰ In Order No. 1000, the Commission used this authority to implement a prospective remedy while determining it was not reasonable to delay or disturb current planning cycles for important infrastructure. Specifically,

⁷⁹ ATC Rehearing Request at 2.

⁸⁰ *Niagara Mohawk Power Corp. v. FPC*, 379 F.2d 153, 159 (1967).

the Commission stated that the Final Rule should “not delay current studies being undertaken pursuant to existing regional transmission planning processes or impede progress on implementing existing transmission plans.”⁸¹ As such, the Commission set forth a compliance schedule in which ROFRs were to be addressed by October 11, 2012,⁸² and stated that the new rule applied only to “new transmission facilities” – facilities evaluated or reevaluated after “the effective date of the [RTO’s] filing adopting the relevant requirements” of Order No. 1000.⁸³

This decision is consistent with the Xcel Order, which addressed an already existing project and terms of an agreement, the TOA, not yet subject to the Order No. 1000 compliance requirements. The Commission made abundantly clear in *California ISO*, that ROFR rights, to the extent they exist, need not be removed until Order No. 1000 compliance filings are due.⁸⁴ In that case, the Western Independent Transmission Group (“WITG”) attacked certain proffered tariff provisions as forms of impermissible ROFRs. The Commission disagreed, stating:

[W]e find that WITG’s [the intervenor group] request is a collateral attack on Order No. 1000. Although Order No. 1000 requires the elimination of federal rights of first refusal for projects selected in a regional transmission plan for purposes of cost allocation, *it does so on a prospective basis*. Order No. 1000 *compliance filing[s] with respect to elimination of federal rights of first refusal for projects selected in a regional transmission plan for purposes of cost allocation are due on October 11, 2012. If WITG objected to the compliance date set by the Commission, either in general or specifically with respect to the CAISO, its remedy was to request rehearing of Order No. 1000 on that basis. It did not.* Further, we find that granting WITG’s request would effectively require us to apply Order No. 1000 to CAISO in an unduly discriminatory manner. The fact that CAISO had pending revisions to its transmission planning process on the effective date of Order No. 1000 does not justify holding CAISO to an

⁸¹ Order No. 1000 at P 65.

⁸² *Id.* at P 792.

⁸³ *Id.* at P 65.

⁸⁴ *Cal. Indep. Sys. Operator Corp.*, 138 FERC ¶ 61,075 at P 25 (2012) (citations omitted).

abbreviated compliance schedule when other public utility transmission providers have the full 12 months.⁸⁵

The Commission clearly has the discretion to make the determination as to an appropriate remedy and did so consistently in the Xcel Order and Order No. 1000.

Second, ATC's argument that "Section 206 does not permit the Commission to leave an unjust and unreasonable provision in place or to enforce such a provision"⁸⁶ also lacks merit.

The Commission has repeatedly issued orders which may leave what the Commission deems to be an "unjust and unreasonable" rate in effect until a new rate or new process can be established on a prospective basis. For instance, in Order No. 888⁸⁷ and Order No. 890,⁸⁸ the Commission had long lead times until compliance filings were due. In Order No. 890 in particular, the Commission recognized that:

[C]ertain non-rate terms and conditions, such as Attachment C (relating to the transmission provider's ATC calculation methodology) and Attachment K (relating to the transmission provider's transmission planning process) may require more than 60 days to prepare. Accordingly, we will require non-ISO/RTO transmission providers to file their Attachment C within 180 days after the publication of the Final Rule in the Federal Register and their - Attachment K (or the transmission providers' equivalent thereof) within 210 days after the publication of the Final Rule in the Federal Register.⁸⁹

⁸⁵ *Id.* at P 25 (emphasis added).

⁸⁶ ATC Rehearing Request at 3.

⁸⁷ *Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. [Regs. Preambles 1991-1996] ¶ 31,036 (1996), *on reh'g*, Order No. 888-A, FERC Stats. & Regs. [Regs. Preambles 1996-2000] ¶ 31,048 (1997), *on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in part and remanded in part, sub nom., Transmission Access Policy Study Group, et al., v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd, New York v. FERC*, 535 U.S. 1 (2002).

⁸⁸ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 FR 12266 (Mar. 15, 2007), FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, 73 FR 2984 (Jan. 16, 2008), FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g and clarification*, Order No. 890-B, 73 FR 39092 (July 8, 2008), 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 74 FR 12540 (Mar. 25, 2009), 126 FERC ¶ 61,228 (2009), *order on clarification*, Order No. 890-D, 74 FR 61511 (Nov. 25, 2009), 129 FERC ¶ 61,126 (2009).

⁸⁹ Order No. 890 at P 140.

These lead times were established despite the Commission’s finding that there were “inadequacies of the existing pro forma OATT provisions” and reforms were “necessary to remedy undue discrimination or otherwise provide for rates, terms and conditions of service under the pro forma OATT that are just and reasonable.”⁹⁰

Overall, ATC’s challenge to the ROFR determination in this docket represents an impermissible collateral attack on Order No. 1000.⁹¹ The Commission has recognized that collateral attacks are “generally prohibited,”⁹² and should do the same in this case. While ATC did file a rehearing request of Order No. 1000,⁹³ it took no issue with the effective date of the Order or the application of the ROFR. If it desired for a different compliance date to be established with respect to the ROFR, it could have taken such a position in its Order No. 1000 rehearing request and chose not to do so. Accordingly, ATC’s arguments in the instant docket as to the applicability and prospective nature of the ROFR should be dismissed.

2. ATC’s Misuses Order No. 1000 Which Does Not Provide For a Right of Sponsorship

In its rehearing request, ATC contends “ATCLLC would not receive the benefits of its efforts in designing and promoting this Project.”⁹⁴ Stated plainly, ATC is claiming a sponsorship right to the Dubuque-Cardinal Line. Even assuming arguendo that the Dubuque-Cardinal Line

⁹⁰ *Id.* at P 43.

⁹¹ *See, e.g., California Independent System Operator Corporation*, 138 FERC ¶ 61,075 at PP 24-25 (2012); *Trans-Allegheny Interstate Line Co.*, 126 FERC ¶ 61,286 at P 34 (2009); *ISO New England Inc., New England Power Pool Participants Committee*, 126 FERC ¶ 61,115 at P 30 (2009); and *California Independent System Operator, Inc.*, 115 FERC ¶ 61,300 at P 35 (2006).

⁹² *ISO New England, Inc.*, 138 FERC ¶ 61,238 at P 17 (2012), *citing New England Conf. of Pub. Utils. Commrs. v. Bangor Hydro-Electric Co.*, 135 FERC P 61,140, at P 27 (2011) (*citing Wall v. Kholi*, 131 S. Ct. 1278, 179 L. Ed. 2d 252, 2011 U.S. LEXIS 1906 at *12 (2011)).

⁹³ *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Order No. 1000*, Docket No. RM10-23-000, Request for Clarification or in the Alternative Request for Rehearing of American Transmission Company, LLC, dated Aug. 22, 2011.

⁹⁴ ATC Rehearing at 4.

was not part of a MISO-led regional planning process in which ITC Midwest and numerous other entities were active participants and ATC was the project “Sponsor,” the Commission cannot award development rights to ATC on that basis.

First, MISO has stated it “does not support a queue process for new AC transmission facilities or intellectual property rights for competing transmission owners” and “[r]egional transmission expansion should be driven solely by the regional transmission plan.”⁹⁵

As for intellectual property rights for entities proposing specific transmission projects that may be identified in the regional plan, the Midwest ISO believes that focusing on a specific project may undermine the Midwest ISO’s planning process. The Midwest ISO, in its transmission planning process, evaluates a number of alternative, sometime competing proposals, and develops a solution that best supports the needs of the region. The Midwest ISO vehemently disagrees with any proposal that would hamstring the Midwest ISO’s process with concerns over whether the project has previously been brought forth in some other year or is subject to someone’s claims as to origination.”⁹⁶

Second and more importantly, the Commission has considered and *expressly rejected* the ongoing sponsor-right approach. Order No. 1000 states plainly:

With regard to ongoing sponsorship rights, the Commission concludes on balance that granting transmission developers an ongoing right to build sponsored transmission projects could adversely impact the transmission planning process, potentially leading to transmission developers submitting a multitude of possible transmission projects simply to acquire future development rights. The Commission appreciates that not granting such a right causes some risk for transmission developers in disclosing their transmission projects for consideration in the regional transmission planning process. That risk is outweighed, however, by the potentially negative impacts such a rule could have on regional transmission planning.⁹⁷

⁹⁵ See *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, Docket No. RM10-23-000, Comments of the MISO, at 13, Sept. 29, 2010.

⁹⁶ *Id.* at 13-14.

⁹⁷ Order No. 1000 at P 340.

Thus, the Commission expressly rejected ATC’s view of the sponsorship rights model, lest competing developers begin massive project grabs, proposing and asserting rights to any one of a variety of potential upgrades that may be needed in the future. In fact, it appears ATC is already doing just that. ATC’s pleading in the Xcel case demonstrates that Duke and ATC are following this “squatter’s rights” strategy. In its Answer, Duke-American Transmission Company (“DATC”) discloses it has submitted to MISO for consideration in MISO’s MTEP \$4.2 billion in new transmission projects that includes seven new transmission line projects in five Midwestern states.⁹⁸

ATC is asking the Commission not only to compel a particular outcome to MISO’s Order No. 1000 compliance process by choosing a sponsorship model over a competitive model, but they ask FERC to impose their preferred result before Order No. 1000 compliance filings are even due. The MISO Tariff does not contain a sponsorship rights model – explicit, implicit, or otherwise – and FERC should reject ATC’s request to impose one.

3. ATC Offers No Reasoned Basis for the Commission To Overturn the Determination that the Unambiguous Language of the TOA Supports ITC Midwest’s Position

ATC contends that it “always understood” that Appendix B, Section VI of the TOA provided a “responsibility” to construct and not a ROFR.⁹⁹ As noted above, MISO expressly rejected this interpretation. MISO has called the right of its Transmission Owning members to build upgrades connected to their facilities “a fundamental component of the organizational structure of the Midwest ISO as an RTO” and explained that “the obligation of its Transmission Owning members to build transmission facilities identified through the Midwest ISO planning

⁹⁸ *Pioneer Transmission, LLC v. Northern Indiana Public Service Company and Midwest Independent Transmission System Operator, Inc.*, Docket No. EL12-24-000, Motion to Intervene and Comments of Duke-American Transmission Company, at 9, Feb. 28, 2012.

⁹⁹ ATC Rehearing Request at 15.

process was, and remains, one of the key considerations for its Transmission Owners to have formed, and to remain a part of, the voluntary RTO organization.”¹⁰⁰

In a joint pleading in Docket No. EL12-28, twenty-two MISO Transmission Owners maintained that the TOA, “is clear and unambiguous, and means that if a transmission project connects between two or more Owners’ facilities, the Owners share equally in the responsibility to construct, own, and maintain the facilities, unless otherwise agreed.”¹⁰¹ Given the clear language of the TOA, the Commission appropriately determined that Appendix B, Section VI of the Transmission Owners Agreement is unambiguous as to ownership and the responsibility of owners to build facilities, and that the parties were entitled to jointly own and construct the MVP projects at issue.¹⁰² Furthermore, “when the terms of a contract are clear and unambiguous, the terms of the contract control and the Commission is not to consider parol evidence to interpret the contract’s intention.”¹⁰³

¹⁰⁰ *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Docket No. RM10-23-000, Comments of the MISO, at 12, Sept. 29, 2010; *see also Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Docket No. RM10-23-000, Request for Rehearing of MISO, at 5-7, Aug. 22, 2011.

¹⁰¹ *See* Docket No. EL12-28-000, Motion to Intervene and Comments of the MISO transmission owners, at 6, March 5, 2012. The Transmission Owners supporting this interpretation were: Ameren Services Company, as agent for Union Electric Company d/b/a Ameren Missouri, Ameren Illinois Company d/b/a Ameren Illinois and Ameren Transmission Company of Illinois; Big Rivers Electric Corporation; City Water, Light & Power (Springfield, IL); Dairyland Power Cooperative; Great River Energy; Hoosier Energy Rural Electric Cooperative, Inc.; Indiana Municipal Power Agency; Indianapolis Power & Light Company; International Transmission Company d/b/a ITCTransmission; ITC Midwest LLC; Michigan Electric Transmission Company, LLC; Michigan Public Power Agency; MidAmerican Energy Company; Minnesota Power (and its subsidiary Superior Water, L&P); Montana-Dakota Utilities Co.; Northwestern Wisconsin Electric Company; Otter Tail Power Company; Southern Illinois Power Cooperative; Southern Indiana Gas & Electric Company (d/b/a Vectren Energy Delivery of Indiana); Southern Minnesota Municipal Power Agency, Wabash Valley Power Association, Inc.; and Wolverine Power Supply Cooperative, Inc.

¹⁰² Xcel Order at P 60; Pioneer Order at PP 96-97. The Xcel Order is also consistent with the Commission interpretation of the Southwest Power Pool (“SPP”) Tariff. The Commission approved SPP’s proposal to designate two Transmission Owners to build a planning-approved project that interconnected the two Transmission Owners’ systems: “Further, we find reasonable the requirement for SPP to initially issue Notifications to Construct to transmission owners to whose facilities a new project will interconnect. As SPP explains, such transmission providers are most directly affected by new projects that interconnect to their facilities.” *Southwest Power Pool*, 127 FERC ¶ 61,171 at P 43 (2009).

¹⁰³ *Duquesne Light Co.*, 138 FERC ¶ 61,111 at P 25 (2012).

In the Xcel Order the Commission stated:

American Transmission argues that prior to the approval of the MISO MVP process, there are no identified instances in the history of MISO's implementation of the Appendix B planning framework where MISO or any of the transmission owners have taken a position that compels one transmission owner to give another transmission owner 50 percent ownership rights in a locally planned project, and thus Xcel's position is neither consistent with the original intent of the language nor how ownership has been historically attributed to projects in the MISO region. American Transmission argues that in its Complaint, Xcel made no policy arguments in support of its interpretation. Despite American Transmission's assertions, the plain language of the Transmission Owners Agreement prevails. The fact that MISO or the transmission owners may not have previously enforced a provision because circumstances had not previously arisen that required MISO or the transmission owners to do so, does not take away the legal force of that provision.¹⁰⁴

ATC continues to maintain that “[t]he Commission has no basis for adopting an interpretation that is inconsistent with prior actions of the parties over one that comports with prior MISO practice.”¹⁰⁵

Considering the MTEP11 planning cycle was the first to include high value MVP projects, it is arguable whether there was any prior practice. In addition, the language in the TOA provides for “shared equally” unless the respective Transmission Owners “otherwise provide.” Furthermore, Article IX, Section E of the TOA states explicitly,

The failure of an Owner or the Midwest ISO to insist upon or enforce strict performance of any of the specific provisions of this Agreement at any time shall not be construed as a waiver or relinquishment to any extent of such Owner's or the Midwest ISO's right to assert or rely upon any such provisions, rights, or remedies in that or any other instance, or as a waiver to any extent of any specific provision of this Agreement; rather the same shall be and remain in full force and effect.

¹⁰⁴ Xcel Order at P. 64.

¹⁰⁵ ATC Rehearing Request at 17.

Accordingly, the Commission was absolutely correct in stating, “[A] provision because circumstances had not previously arisen that required MISO or the transmission owners to do so, does not take away the legal force of that provision.”¹⁰⁶

4. ATC’s Recent Complaint Supports ITC Midwest’s Position

On October 1, 2012, ATC filed a complaint against MISO and Xcel over the development rights to the Twin Cities (Hampton Corner) – LaCrosse Project approved in MTEP08.¹⁰⁷ ATC claims that, because this line will connect to the same Xcel North LaCrosse substation as the portion of MVP Project 5 running between North LaCrosse and ATC’s Cardinal substation, it should be entitled to half of the combined projects. According to ATC,

The two line segments were approved by MISO in different planning cycles, but that does not change the essential fact that neither segment of the interconnecting 345kV line will provide the anticipated regional reliability and economic benefits identified by MISO to justify construction at 345 kV without the construction of the other segment. As shown below, Xcel Energy consistently has argued that the two segments of this interconnection are both necessary to provide sufficient benefits to justify regulatory approval, and the relevant studies reach the same conclusion. Accordingly, the applicable “facilities” for purposes of applying the Share Equally Provision consist of the entire 345 kV line that will interconnect NSPM’s facilities with ATC’s facilities. Under the Share Equally Provision as interpreted and applied by the Commission in the *Xcel Order*, ATC and Xcel Energy (on behalf of NSPM and NSPW) are each entitled to own and construct fifty percent of the 345 kV facilities.

ATC is overreaching in trying to assert a claim to a line approved in MTEP 2008 while at the same time ignoring its responsibility to negotiate with ITC Midwest over the Dubuque to Cardinal Line approved in the same MTEP11 and given the same MISO project number as the North La Crosse to Cardinal line. In 2008, MISO designated five transmission owners to develop the Twin Cities (Hampton Corner) – North La Crosse line: Xcel, Southern Minnesota

¹⁰⁶ Pioneer Order at P 100; Xcel Order at P 63.

¹⁰⁷ The Complaint was filed in Docket No. EL13-9. Midwest Independent Transmission Operator, Inc., MISO Transmission Expansion Plan 2008, Appendix A at p. 36, *available at* <https://www.midwestiso.org/Library/Repository/Study/MTEP/MTEP08/MTEP08%20Report.pdf>.

Municipal Power, Rochester Public Utilities, WPPI Energy, and Dairyland Power Cooperative.¹⁰⁸ No party challenged this determination.¹⁰⁹ The project was approved as a Baseline Reliability Project “needed to resolve a lengthy list of NERC contingency based violations.”¹¹⁰

Three years later, it was appropriate in MTWP11 for MISO to divide MVP Project 5 into 3 segments: (1) the line from Xcel’s new North LaCrosse substation to ATC’s North Madison substation to be shared between Xcel and ATC; (2) the line between ATC’s North Madison substation and ATC’s Cardinal substation to be built by ATC; and (3) the line from ATC’s Cardinal substation and ITC Midwest’s Dubuque substation to be shared between ATC and ITC Midwest. The differences between the MTEP08 and MTEP11 projects are illustrated in Figure 3.

¹⁰⁸ MTEP08 at Appendix A, page 25. Under Section VI, Appendix B of the TOA, “Ownership and the responsibilities to construct facilities which are connected between two (2) or more Owners’ facilities belong equally to each Owner, *unless such Owners otherwise agree.*” In this case, the designation above reflects that other agreement.

¹⁰⁹ The Twin Cities (Hampton Corner) – LaCrosse line is connected to other projects approved in MTEP08: (1) a 225 mile line running from Fargo, North Dakota to the Twin Cities substation and (2) a line running from Brookings County, South Dakota to the Twin Cities substation.

¹¹⁰ MTEP08 at page 6.

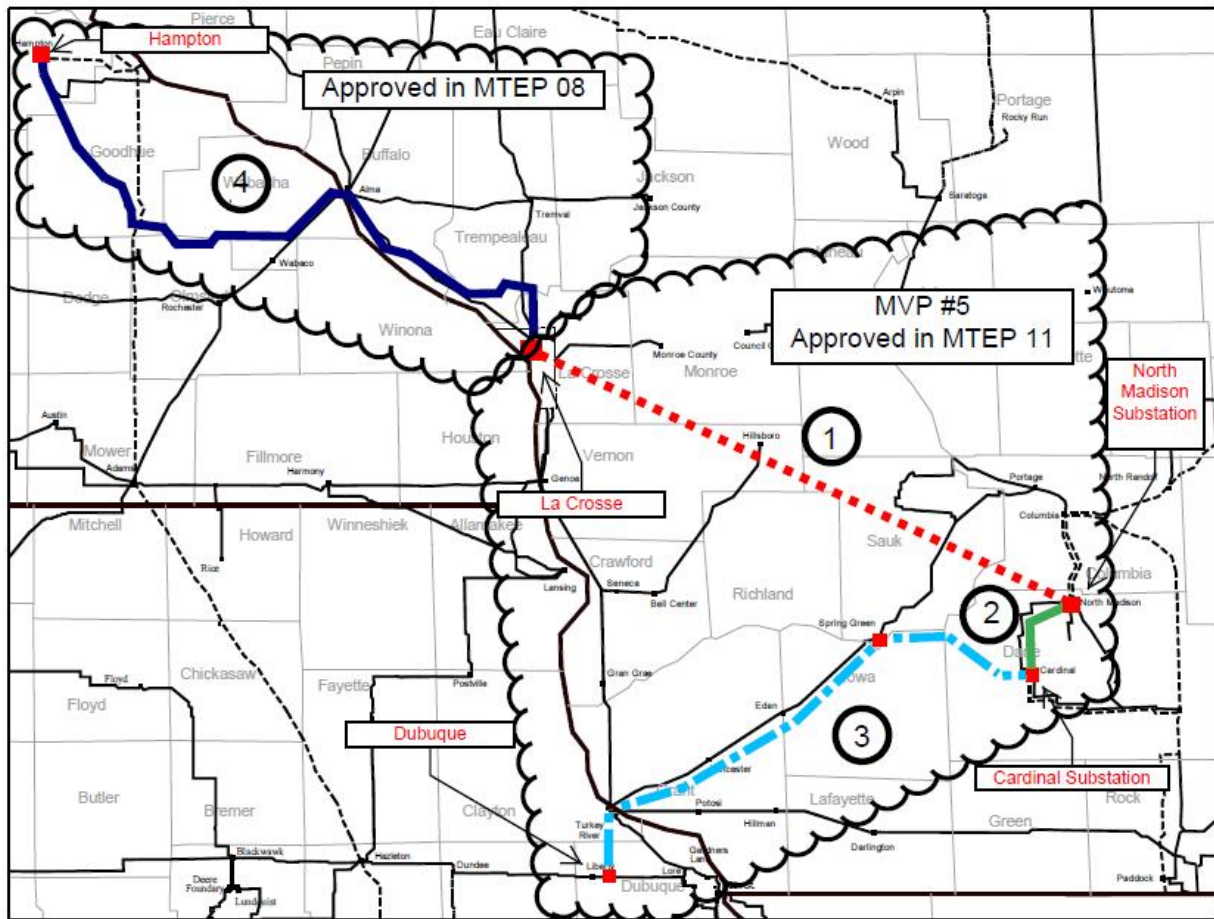


Figure 3

- ① - - - - - Portion of Project 5 from La Crosse to the North Madison Substation
- ② ————— Portion of Project #5 from North Madison Substation to the Cardinal Substation
- ③ - - - - - Portion of Project #5 from the Cardinal Substation to Dubuque
- ④ ————— La Crosse to Hampton Project

Simply stated, ATC cannot be permitted to abuse the provisions of the TOA by attempting to seek development rights to a project approved in a prior planning cycle while ignoring the interconnected project between itself and ITC authorized in the same MTEP11

planning cycle. MISO has correctly interpreted the governing documents in designating the associated development rights. The Commission should uphold MISO's determination.

In summary, ATC's failure to engage in a joint planning process with ITC Midwest with respect to the Dubuque-Cardinal Line is in direct contravention to the TOA, and ATC offers no basis to delay or overturn the Commission's orders interpreting the specific provisions of that agreement. Moving forward on a joint basis is necessary to ensure timely completion of the project and full realization of the benefits of the MVP portfolio. Current and prospective users of the MISO-controlled transmission grid need access to this additional capacity. ATC's actions stand in stark contrast to those of all the other transmission owners that are working jointly to develop projects.

V. RELIEF REQUESTED

ITC Midwest requests that the Commission:

- Confirm ITC Midwest's right to develop its portion of the Project;
- Find that ATC has not complied with the express terms and conditions of (a) MISO Tariff; and (b) the TOA;
- Order ATC to enter into negotiations with ITC Midwest to develop final terms and conditions for the equal ownership and construction of the Dubuque-Cardinal Line in a manner compliant with the Tariff and TOA.

VI. OTHER MATTERS

A. Identification of Violation of Regulatory Requirement (18 C.F.R. § 385.206(b)(1))

ITC Midwest has identified above the tariff violations committed by ATC, namely that ATC has failed to follow the Tariff and TOA and subsequent Commission precedent enforcing the terms of those Commission-approved filings.

B. Explanation of the Violation (18 C.F.R. § 385.206(b)(2))

As described more fully throughout this Complaint, ATC has violated the terms of the Tariff and TOA by failing to engage in negotiations with ITC Midwest regarding the Dubuque-Cardinal Line.

C. Economic Interest Presented (18 C.F.R. § 385.206(b)(3))

Absent Commission action to order ATC to comply with the terms of the Tariff and TOA, ITC Midwest will suffer material financial harm. The Dubuque-Cardinal Line is estimated to cost approximately \$324 million. If ITC Midwest is allowed to comply with its responsibility to share equally in construction and ownership of the Project, ITC Midwest will be responsible to fund 50% of the cost of the Project and then earn a Commission authorized rate of return on that investment, with recovery through the MISO Tariff. Conversely, if ITC Midwest is precluded from complying with its obligations under the Tariff and TOA, it would mean that ITC Midwest would lose \$162 million of investment and the revenues associated with that investment. Such an investment would be in the best interests of ITC Midwest's customers as it would allow ITC Midwest to participate fully in this MVP project and would provide substantial value to ratepayers.

D. Financial Impact (18 C.F.R. § 206(b)(4))

See Section VI.C *supra*.

E. Practical Impact (18 C.F.R. § 385.206(b)(5))

The practical and other non-financial impacts associated with ATC's actions include a failure to build needed and reliable transmission to serve customers in Iowa and Wisconsin.

F. Other Pending Proceedings (18 C.F.R. § 385.206(b)(6))

The issues presented in this Complaint are not pending in an existing Commission proceeding in which the Complainant is a party.

G. Relief Requested (18 C.F.R. § 385.206(b)(7))

ITC Midwest has described the relief they are requesting from the Commission in Section V of this Complaint.

H. Attachments (18 C.F.R. § 385.206(b)(8))

ITC Midwest has attached, herein labeled as Exhibits 1-4, all attachments referenced within this complaint, including:

Exhibit 1 – Affidavit of Douglas C. Collins

Exhibit 2 – MTEP Appendix A

Exhibit 3 – Multi-Value Project Portfolio Results and Analysis dated January 10, 2012

Exhibit 4 – Form of Notice

I. Other Processes to Resolve Complaint (18 C.F.R. § 206(b)(9))

ITC Midwest has worked with ATC on these issues as described in this complaint and the attached Affidavit of Doug C. Collins but has been unable to reach an appropriate outcome. Accordingly, ITC Midwest believes this Complaint presents the most appropriate avenue for resolving this issue and is necessary to protect its rights.

J. Notice of Complaint (18 C.F.R. § 385.206(b)(10))

A form of notice is attached hereto as Exhibit 4.

K. Request for Fast Track Processing (18 C.F.R. § 385.206(b)(11))

ITC Midwest asserts that time is of the essence for resolving the instant dispute. The Dubuque-Cardinal Line is expected to be placed in service in 2018. To meet this date,

significant pre-construction activities still need to occur, including final engineering work and state-level permitting. In addition, a Certificate of Public Convenience and Necessity is necessary in Wisconsin in addition to other state commission approvals. Thus, ITC Midwest respectfully requests that the Commission act on this Complaint no later than December 24, 2012 in order to resolve the disputed issues so it may begin pre-construction activities for the needed transmission line.

VII. CONCLUSION

Based on the foregoing, ITC Midwest respectfully request that the Commission grant the relief requested in the Complaint.

Respectfully Submitted,

/s/ David B. Rubin

David B. Rubin
Rebecca R. Blitstein
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Stephen J. Videto
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Novi, MI 48377
Phone: 248-946-3536
Fax: 248-946-3552

Counsel for ITC Midwest LLC

Dated: October 24, 2012
Washington DC

EXHIBIT 1

AFFIDAVIT OF DOUGLAS C. COLLINS

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ITC Midwest LLC)
)
)
 Complainant,)
)
)
 v.)
)
 American Transmission Company, LLC) **Docket No. EL13-____-000**
)
 Respondent.)
)
)
)

AFFIDAVIT OF DOUGLAS C. COLLINS

I. BACKGROUND

1. My name is Douglas C. Collins. My business address is 6750 Chavenelle Road, Dubuque, Iowa, 52002.
2. I am the President of ITC Midwest LLC (“ITC Midwest”).
3. I received a Bachelor of Science degree in Electrical Engineering from Iowa State University in 1983.
4. I began my utility career in 1983 as a Planning Engineer for Interstate Power Company of Dubuque, Iowa. In 1993, I was named Director of System Planning for Interstate. Following the merger of three utility holding companies in 1998 to form Alliant Energy Corp., I was named General Manager of Transmission Services. Later, I became Director of System Planning, responsible for distribution and transmission planning for Alliant Energy, including its reporting and compliance with operating standards established by the North American Electric Reliability Corporation.
5. I am a past Chairman of the Mid-Continent Area Power Pool Regional Transmission Committee and have served as the Midwest Independent Transmission System Operator, Inc. (“MISO”) Transmission Owners representative on the Advisory Committee and as a past Chair of the MISO Transmission Owners’ Committee, as well as a past Vice-Chair for the Midwest ISO Advisory Committee.
6. In December 2007, upon completion of the sale of the transmission assets of Alliant Energy – Interstate Power & Light Co. to ITC Midwest, I became the Executive Director of ITC Midwest and in February 2011, I became President of ITC Midwest, the position I currently hold.

II. PURPOSE

7. The purpose of my affidavit is to describe the events surrounding the rights and obligations of ITC Midwest and American Transmission Company LLC (“ATC”) regarding the construction and ownership of a proposed 136-mile, 345 kV electric transmission line connecting ITC Midwest’s Dubuque substation in Iowa to ATC’s Cardinal substation in southwestern Wisconsin (the “Dubuque-Cardinal Line” or “Project”). In addition, my affidavit will explain the ways in which ITC Midwest has diligently tried to negotiate with ATC in order to resolve these issues in accordance with the MISO Tariff (“Tariff”) and the Agreement of the Transmission Facilities Owners to Organize the Midwest Independent Transmission System Operator, Inc. (“TOA”), as well as ATC’s refusal to negotiate any such resolution.

III. BACKGROUND

8. MISO’s currently-effective, FERC-approved transmission planning process is contained in Section VI of the MISO TOA and Attachment FF of the MISO Tariff. The process is further clarified in MISO’s Transmission Planning Business Practices Manual, BPM-020-r6. These documents identify the planning cycle overseen by the MISO staff that leads to MISO Board approval of projects specified in Appendix A of the MISO Transmission Expansion Plan (“MTEP”).

9. Under the TOA, there is no right of sponsorship in which the party that proposes a particular project maintains a subsequent right to develop that upgrade or a similar upgrade. Rather, the planning process develops a plan that provides an optimal solution to the reliability and market needs. Appendix B, Section VI of the MISO TOA states:

In the course of this process, the Planning Staff shall seek out opportunities to coordinate or consolidate, where possible, individually defined transmission projects into more comprehensive cost-effective developments subject to the limitations imposed by prior commitments and lead time constraints. This multi-party collaborative process is designed to ensure the development of the most efficient and cost-effective Midwest ISO Plan that will meet reliability needs and expand trading opportunities, better integrate the grid, and alleviate congestion, while giving consideration to the inputs from all stakeholders.

The MISO Plan is the set of projects approved by the MISO Board. The designated responsible party to construct a project is neither delineated in Attachment FF of the MISO Tariff nor MISO's Transmission Planning Business Practices Manual. Instead, the responsibility to construct is based on the ownership of the facilities that the project connects to as specified in Appendix B, Section VI of the FERC-approved MISO TOA:

Ownership and the responsibility to construct facilities which are connected to a single Owner's system belong to that Owner, and that Owner is responsible for maintaining such facilities. Ownership and the responsibilities to construct facilities which are connected between two (2) or more Owners' facilities belong equally to each Owner, unless such Owners otherwise agree, and the responsibility for maintaining such facilities belongs to the Owners of the facilities unless otherwise agreed by such Owners. Finally, ownership and the responsibility to construct facilities which are connected between an Owner(s)' system and a system or systems that are not part of the Midwest ISO belong to such Owner(s) unless the Owner(s) and the non-Midwest ISO party or parties otherwise agree; however, the responsibility to maintain the facilities remains with the Owner(s) unless otherwise agreed.

Accordingly, there is no right of project sponsorship in the FERC-approved MISO TOA or MISO Tariff. Development rights are based on the physical interconnection of facilities.

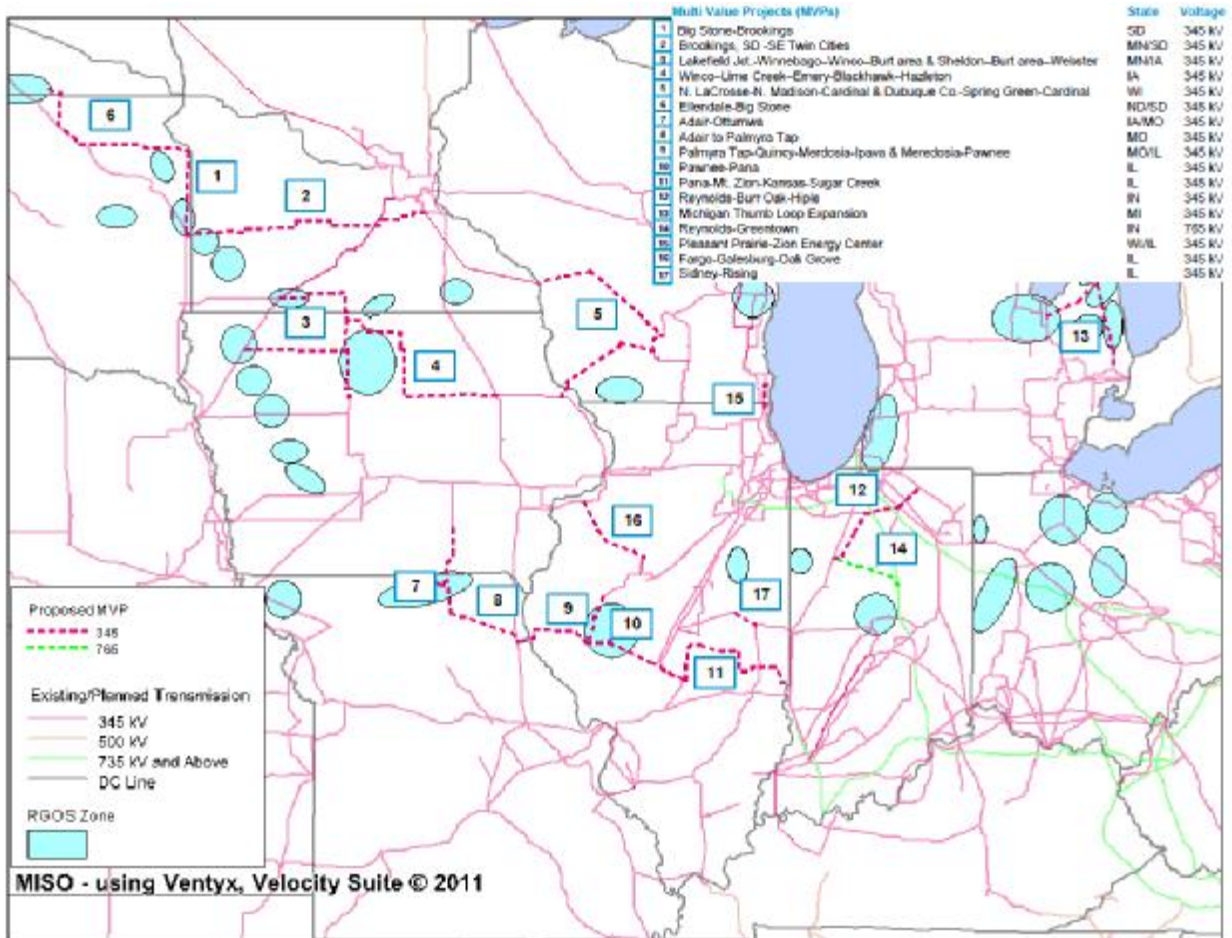
10. In July 2010, MISO, ITC Midwest, ATC, and other MISO Transmission Owners submitted a proposal in Docket ER10-1791 to establish a new category of transmission projects referred to as Multi-Value Projects or MVPs. On September 23, 2010, MISO

formed the Candidate MVP Portfolio Technical Studies Task Force, “Candidate MVP Task Force” to develop the slate of MVPs that met the proposed criteria. In an Order issued December 16, 2010, the Commission conditionally accepted the proposal.

11. The Candidate MVP Task Force considered projects from a variety of sources and built upon a prior history of cooperative planning activities. For example, ITC Midwest cooperated with ATC in the Western Wisconsin Transmission Reliability Study released in September 2010. That study evaluated the base case and 15 different transmission options. The conclusion of the study was that a proposed 345 kV line from North La Crosse – North Madison – Cardinal (Badger Coulee) and Dubuque – Spring Green – Cardinal provided the most reliability benefit to the western Wisconsin area.

12. The Candidate MVPs were evaluated by means of steady state load-flow analysis, stability performance analysis, energy delivery analysis, economic analysis, and short circuit performance analysis. On December 8, 2011, the MISO Board approved a portfolio of 17 MVPs. These are shown in Figure 1.

Figure 1



13. Specifically, the MISO Board approved and placed in Appendix A of the MTEP 2011 MVP Project #5 above, a line from Xcel’s North LaCrosse substation to ATC’s North Madison substation (the Xcel Energy Services, Inc. and ATC project); a line from ATC’s North Madison substation to ATC’s Cardinal substation (the ATC project) and a line from ATC’s Cardinal substation to ITC Midwest’s Dubuque substation (the ATC and ITC Midwest project). Notably, Appendix A lists ATC LLC, XEL, and ITC Midwest as the responsible Transmission Owners.

IV. ATTEMPTS TO NEGOTIATE WITH ATC

14. In the Fall of 2011, as the candidate list of MVPs moved towards MISO Board approval, ITC Midwest contacted ATC regarding joint development of the Dubuque-Cardinal line. ATC responded that they disagreed that ITC Midwest had a development right to the Project. The parties involved MISO and this led to an exchange of letters.

15. On September 15, 2011, Clair J. Moeller, Vice President of Transmission Asset Management at MISO, sent ATC and ITC Midwest a letter expressly stating that, in accordance with Appendix B of the TOA, ITC Midwest and ATC had equal ownership in the Dubuque-Cardinal Line. A copy of the letter is provided as Attachment A. The letter also urged ATC to proactively address the issue with ITC Midwest. Incidentally, Mr. Moeller also stated that Xcel and ATC had equal ownership of the La Crosse-Madison Line, and that ATC should address those ownership issues as well.

16. ATC sent a response letter to MISO on October 4, 2011, alleging that: (1) Mr. Moeller's letter misinterpreted the TOA, (2) neither ITC Midwest or Xcel had an ownership claim in either project, and (3) ATC was not required to resolve any ownership claim before MISO would approve the MVPs in December 2011. Additionally, ATC asked for further information and clarification regarding MISO's interpretation of the relevant provisions of the TOA. A copy of the letter is provided as Attachment B.

17. Meanwhile, I responded to Mr. Moeller's letter on behalf of ITC Midwest on October 5, 2011. In my response letter, I stated that ITC Midwest agreed with MISO that ownership of the Project needed to be resolved so that the Project could move forward without delay. My letter also stated that ITC Midwest agreed with MISO's interpretation

of the TOA, that ITC Midwest was fully able to fulfill its responsibilities under the TOA, and that ITC Midwest stood ready to begin ownership discussion with ATC and Xcel regarding both the Dubuque-Cardinal Line and the La Crosse-Madison Line. A copy of the letter is provided as Attachment C.

18. On October 28, 2011, Mr. Moeller sent ATC a second letter, stating that: (1) both the Dubuque-Cardinal Line and the La Crosse-Madison Line would be submitted to the MISO Board at its December 2011 meeting for approval, (2) dispute resolution procedures under Attachment HH of MISO's Tariff are permissible for resolving disputes involving the obligation to build or enlarge transmission facilities, and (3) under the TOA, ITC Midwest and Xcel have equal ownership claims in their respective projects. A copy of the letter is provided as Attachment D.

19. ITC Midwest was aware that while it was attempting to negotiate an agreement with ATC, Xcel was in a similar position and that on February 14, 2012, Xcel filed a complaint at FERC seeking to enforce the TOA. In its intervention, ITC expressed support for Xcel's position and noted,

In accordance with the TOA, ITC sought discussions with ATC regarding shared ownership and construction of the Dubuque-Madison segment of this line. ATC initially was unwilling to discuss this with ITC. Now, however, discussions between ATC and ITC Midwest are underway. ITC is hopeful that these discussions will result in a mutually acceptable ownership agreement without the need for Commission intervention. If not, however, ITC may need to seek Commission enforcement of the terms of the Midwest ISO TOA, as Xcel has sought.

20. On July 19, 2012, the Commission issued orders granting the complaint by Xcel against ATC and denying the complaint against Northern Indiana Public Service


Company by Pioneer Transmission, LLC. The Commission upheld the plain meaning of the TOA's "shared equally" provision.

21. Following the issuance of the orders, I met with ATC's Director of Business Development. My hope was that given the Commission's clear direction, we could move expeditiously to reach a joint development agreement. While we made some initial progress, I was informed by ATC as the date for ATC's rehearing in the Xcel case approached that they would not pursue the joint development agreement. ATC decided that it would be premature to sign an agreement with ITC Midwest while they were requesting rehearing of the Xcel Order

22. As recently as September 27, 2012, ITC Midwest sent an offer to ATC regarding the Project. ITC Midwest forwarded a proposed Memorandum of Understanding under which ATC and ITC Midwest would each own a portion of the Dubuque to Cardinal line equal to 50% of the overall project investment. ATC has rejected ITC Midwest's proposal. ATC provided a counter proposal that was well below the 50/50 allocation called for by the shared equally provision of the MISO TOA. Based on this experience as well as ATC's positions and requests for delay in the Xcel docket, ITC does not believe ATC will enter into a project agreement in accordance with the express provisions of the TOA as confirmed by the Commission in the Xcel Order and the Pioneer Order absent Commission action on this Complaint.

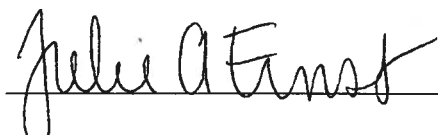
23. ATC is a signatory to the TOA. ATC's failure to abide by its obligations under the TOA, as confirmed by FERC, will delay the completion of this important transmission project.

I, Douglas C. Collins, hereby certify that the foregoing affidavit has been prepared under my supervision and control, and is true and accurate to the best of my knowledge, information, and belief.



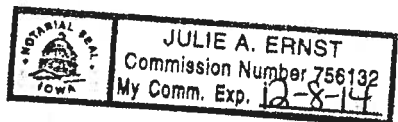
Douglas C. Collins

SUBSCRIBED AND SWORN to me, this 22nd day of October, 2012.



Notary Public

My Commission expires on 12-8-14



ATTACHMENT A

SEPTEMBER 15, 2011 LETTER FROM CLAIR MOELLER



Clair J. Moeller
Vice President, Transmission Asset Management
Direct Dial: 651-632-8441
E-mail: cmoeller@misoenergy.org

September 15, 2011

American Transmission Company LLC
Attn: John Procario, President and CEO
W234 N2000 Ridgeview Parkway Court
Waukesha, WI 53188-1022

RE: Dubuque-Spring Green-Cardinal MVP and North La Cross-Madison MVP

Dear John:

The MISO Board of Directors is scheduled to review and vote on the current candidate Multi-Value Project (MVP) portfolio in December 2011. The Dubuque-Spring Green Cardinal MVP and the North La Cross-Madison MVP are two of the projects in that portfolio. Ownership of these projects is an important aspect to the Board's evaluation because ownership, whether solely or jointly, affects the cost estimates provided by each Transmission Owner. Ownership and cost estimates are issues to be resolved to provide finality to the current portfolio analysis. Attachment FF to the tariff requires that:

For each project included in the recommended MTEP, the plan shall designate, [] one or more Transmission Owners or other entities to construct, own and/or finance the recommended project.

While this language will not preclude seeking Board approval of the candidate projects absent resolution of the ownership question, the dispute could create uncertainty with respect to the expected costs and construction of the projects. It is, therefore, in the interest of the involved Transmission Owners to resolve this issue expeditiously.

MISO is aware of ATC's position with regard to ownership of these two projects. However, without agreement between ATC and the other Transmission Owner to which each of these projects will connect, MISO believes that ATC's position contradicts the Transmission Owners Agreement, specifically Part IV of Appendix B. The Dubuque-Spring Green Cardinal MVP connects ATC and ITC. The North La Cross-Madison MVP connects ATC and Xcel. Thus, absent agreement otherwise, the Transmission Owners Agreement provides that the Transmission Owners share equal ownership in the MVPs. Part IV of Appendix B states:

Ownership and the responsibilities to construct facilities which are connected between two (2) or more Owners' facilities belong *equally* to each Owner, *unless such Owners otherwise agree*, and the responsibility for maintaining such facilities belongs to the Owners of the facilities unless otherwise agreed by such Owners. (emphasis added)



Clair J. Moeller
Vice President, Transmission Asset Management
Direct Dial: 651-632-8441
E-mail: cmoeller@misoenergy.org

If ATC seeks more than equal ownership in either of these two MVPs, ITC and/or Xcel must agree to it. Because ownership will affect the cost estimates for the projects and potentially introduce uncertainty in the approval process, ownership must be resolved and preferably before MISO finalizes the MVP portfolio for Board consideration. Thus, we encourage ATC to contact both ITC and Xcel to resolve ownership issues immediately. MISO notes that in the event of a dispute involving any element of the MTEP, Part IV of Appendix B provides an opportunity for the parties to utilize the MISO Dispute Resolution process under Attachment HH of the Tariff. In this regard, Part IV provides:

If the [MISO] Planning Staff and any Owner's planning representatives cannot reach agreement on any element of the Midwest ISO Plan, the dispute may be resolved through the Dispute Resolution process provided in Attachment HH of the Tariff or by the FERC or state regulatory authorities, where appropriate.

MISO strongly encourages ATC to proactively address this issue with ITC and Xcel. We request that ATC initiate such discussion within thirty (30) business days of this letter, after which MISO will provide a dispute letter to the ADR Committee under Attachment HH of the Tariff to initiate alternative dispute resolution procedures among ATC, ITC and Xcel to resolve this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Clair Moeller".

Clair Moeller
Vice President, Transmission Asset Management

CC: Paul Jett (ATC LLC)
Dan Sanford (ATC LLC)
Teresa Mogensen (Xcel)
Priti Patel (Xcel)
Doug Collins (ITCM)
Tom Vitez (ITCM)

ATTACHMENT B

OCTOBER 4, 2011 LETTER FROM ATC



Legal Department
Direct Line: (262) 506-6957
E-Mail: dsanford@atcllc.com

October 4, 2011

Via Federal Express

Mr. Stephen G. Kozey
Vice President, General Counsel and Secretary
Midwest Independent Transmission System Operator, Inc.
720 City Center Drive
Carmel, IN 46032-7574

**Re: Dubuque-Spring Green-Cardinal MVP and North La Cross-Madison MVP
(also known as Badger-Coulee)**

Dear Mr. Kozey:

This follows the September 15, 2011 letter from Clair Moeller, the Midwest ISO's VP of Transmission Asset Management, to John Procario, American Transmission Company LLC's (ATC) CEO directing ATC to "proactively address" ownership issues with Xcel Energy (Xcel) and International Transmission Company (ITC) regarding ATC's proposed Badger-Coulee and Dubuque – Spring Green¹ transmission lines, respectively, and our conversation on September 21st regarding that letter.

During our discussion on September 21st, you indicated that the Midwest ISO was interested in receiving ATC's analysis of the claims made by Xcel and ITC and would respond in writing once the Midwest ISO considered ATC's position. As further discussed below, ATC believes that Mr. Moeller's September 15th letter misinterprets the Midwest ISO Transmission Owner's Agreement (TO Agreement) and the Midwest ISO's Tariff and the position set forth is thereby incorrect in asserting that 1) any other party has an ownership claim to the Badger Coulee and Dubuque – Spring Green transmission projects or that 2) ATC must obtain agreement from Xcel and ITC to allow ATC to own more than 50% of those projects.

You also indicated, the Midwest ISO would not submit the Badger Coulee or Dubuque – Spring Green transmission line projects for approval by the Midwest ISO Board at its December meeting unless the ownership issue was resolved, thereby affording ATC less than 90 days to resolve this matter. For the reasons set forth below, neither Xcel nor ITC have any claim to an ownership interest in the Badger Coulee or Dubuque – Spring Green transmission projects. Moreover, there is nothing in the Midwest ISO Tariff, the Transmission Owners' Agreement or elsewhere that requires any ownership claim to be resolved before the Midwest ISO Board can

¹ The Badger-Coulee line is also known as the North La Cross-Madison MVP.

Mr. Steve Kozey
October 4, 2011
Page 2 of 10

or should approve transmission projects that are found by the Midwest ISO planning staff to be electrically necessary to meet the Midwest ISO's and the Transmission Owners' respective obligations to provide transmission service, alleviate congestion and to meet public policy requirements.

Thus, ATC requests that the Midwest ISO 1) clarify its September 15 letter; and 2) continue to process the Badger Coulee and Dubuque – Spring Green transmission projects for approval by the Midwest ISO Board at its December 2011 meeting. If there is an ownership claim being asserted by any party, that claim can be resolved separate and apart from the Midwest ISO Attachment FF and Transmission Owners' Agreement Appendix B planning approval process, which the Midwest ISO is obligated to carry out.

Based on the legal authority set forth below, the Midwest ISO is not required to resolve any disagreement concerning ownership of the Badger Coulee and Dubuque – Spring Green transmission projects, nor should it have taken a position on this issue. Finally, ATC requests further information and clarification of the Midwest ISO's interpretation of the relevant provisions of the TO Agreement and Tariff, as noted below.

I. Background

The Badger-Coulee line is a proposed 150 mile, 345 kV transmission line that will interconnect with a proposed Xcel-owned transmission facility. The proposed Xcel facility has not yet been approved by the Public Service Commission of Wisconsin (PSCW) and the exact point of interconnection between Xcel and ATC has not yet been determined. The Badger Coulee line will be wholly within Wisconsin. The Dubuque – Spring Green line is a proposed 104 mile 345 kV transmission line that will likely interconnect with an ITC owned facility and will be constructed primarily in Wisconsin and partially in Iowa. After evaluating both projects in ATC's own FERC-approved local planning process beginning in 2008, ATC submitted its proposals for the Badger Coulee line to the Midwest ISO in September 2009 and for the Dubuque – Spring Green line in September 2010.

Both proposed lines have been reviewed by the Midwest ISO as projects to be included in the first portfolio of multi-value projects (MVP) under the Midwest ISO's MVP cost allocation methodology recently approved by FERC. The Midwest ISO's MVP analysis of the portfolio, of which both the Badger Coulee and Dubuque – Spring Green are a part, is expected to be submitted to the Midwest ISO Board for approval in December 2011.² Other than the Midwest ISO's request to accelerate the proposed in-service date for both lines, from the time ATC submitted the Badger Coulee line or the Dubuque – Spring Green line to the Midwest ISO for inclusion in the Midwest ISO Transmission Expansion Plan (MTEP), no change has been

² The Midwest ISO recently requested that ATC consider accelerating the in-service dates for both lines. The Midwest ISO's planning analysis has indicated that the lines would be needed to provide appropriate reliability and reduce congestion in conjunction with other transmission lines proposed in the first portfolio of MVP projects. The request to accelerate ATC's projects was made by Digaunto Chaterjee of the Midwest ISO planning staff to ATC's planning staff on September 6, 2011.

Mr. Steve Kozey
October 4, 2011
Page 3 of 10

requested to either project and neither project been combined with any other proposed project to form a different proposed transmission line project.

ATC has been the sole proponent of the projects. ATC has spent considerable time and resources planning, developing and engaging in community outreach to support the construction of this line in the near future.³ To date, ATC has spent nearly \$4 million in developing the project, including conducting community outreach efforts involving communication directly with the public, together with state-required siting evaluation and agency consultation. ATC has budgeted up to \$15 million for further outreach for both the Badger Coulee and Dubuque-Spring Green projects, including \$400,000 in 2012 on the Dubuque – Spring Green line for similar initial project development activities. To ATC’s knowledge, no money, effort or planning evaluations have been conducted by any party other than ATC concerning either proposed transmission line.

II. Analysis of Section VI, Appendix B, Midwest ISO Transmission Owners’ Agreement

According to the September 15th letter, both Xcel and ITC’s ownership claims arise from language in the Transmission Owners’ Agreement, Appendix B, Section VI,⁴ which states:

Ownership and the responsibilities to construct facilities which are connected between two (2) or more Owners’ facilities belong equally to each Owner, unless such Owners otherwise agree, and the responsibility for maintaining such facilities belongs to the Owners of the facilities unless otherwise agreed by such Owners.

This language is contained in the section of Appendix B that provides the procedures by which the Midwest ISO Planning Staff will develop the MTEP. This language, however, must be considered and interpreted in the context of the rest of Section VI.5

The Appendix B provision quoted above was developed so that the Midwest ISO could carry out its regional planning function and ensure that new projects that are needed for reliability are built, in conjunction with the local planning obligations of the respective Transmission Owners.⁶ Section VI of Appendix B specifically directs that the Midwest ISO’s

³ For more details, see www.atc-projects.com/BadgerCoulee.shtml.

⁴ Mr. Moeller mistakenly references Appendix B, Section IV for this language.

⁵ In our September 21st discussion, you confirmed that no other dispute resolution or other determination has been made by the Midwest ISO in connection with this language or its applicability.

⁶ See, e.g., Transmission Owner’s Agreement, Article Three, Section I.C: “The Midwest ISO shall engage in such planning activities as are necessary to fulfill its obligations under this Agreement and the Tariff. Such planning shall conform to applicable reliability requirements of NERC . . . , each Owner’s specific reliability requirements and operating guidelines, and all applicable requirements of federal or state laws or regulatory authorities.”

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Planning Staff “shall seek out opportunities to coordinate or consolidate, where possible, individually defined transmission projects into more comprehensive cost-effective developments subject to the limitations imposed by prior commitments and lead time constraints.”

While the import of this language is clear, its application is limited only to a small set of transmission projects to be included in the Midwest ISO MTEP. If the Midwest ISO, by virtue of its planning analysis, modifies or consolidates projects that were originally proposed by individual transmission owners into a separate and different transmission project to be included in the Midwest ISO MTEP, there is a risk that the original proponents will no longer want to construct the facility, either because of the specific modifications or because of increased costs. Section VI of the Appendix B gives the Midwest ISO the authority to direct construction of such “combined” projects and assign ownership based on how the new facility will be interconnected.⁷

Therefore, the language quoted by Mr. Moeller in the September 15th letter is not a general “grant” of ownership entitlement simply because a transmission line proposed by one Transmission Owner may interconnect with facilities owned (or in the case of Badger Coulee, proposed) by another Transmission Owner. The language quoted above applies only in instances where the Midwest ISO Planning Staff modifies or consolidates one or more proposed projects such that the resulting project is different from the ones originally proposed by one or more Transmission Owners. In that instance, and that instance only, the Midwest ISO may assign the “obligation to build” to both Transmission Owners as contemplated in Section VI of Appendix B. As we discussed, you characterized the provisions of Section VI of Appendix B as an “obligation to build” not a right-of-first refusal. ATC’s interpretation of Section VI is consistent with an “obligation to build” under the limited circumstances contemplated by Section VI.

As noted above, ATC has proposed, has endeavored to seek approval for, and is fully prepared to construct, own and operate the Badger Coulee and Dubuque – Spring Green transmission lines. No changes, like the changes contemplated in Section VI of Appendix B have been made or requested to either transmission line project by any party, including the Midwest ISO planning staff.

Mr. Moeller’s interpretation of the Section VI language is neither consistent with the original intent of Appendix B nor how ownership has been historically attributed to projects built in the Midwest ISO region under the Transmission Owners’ Agreement (or, indeed, anywhere else in the country). There are a number of projects that have been proposed in the MTEP that connect between the “facilities” of more than one Transmission Owner. As you noted in our conversation on September 21, there are no instances in which ownership has been “ordered” by the Midwest ISO using its current interpretation of Section VI of Appendix B as the basis for such ownership allocation.

There are a number of examples in which the Midwest ISO and the other Transmission Owners have not invoked the language of Section VI to claim ownership of projects that

⁷ App. B, Section VI. Similar language is contained in Midwest ISO’s Attachment FF, Section I.B.

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interconnect with another transmission owners' facilities. For example, ATC has recently constructed projects, such as the Arrowhead-Weston line that was approved in the MTEP and *that connects to more than one Transmission Owner, including Xcel*. The Arrowhead-Weston line, like the Badger Coulee and Dubuque – Spring Green lines, was proposed by ATC, included in the Midwest ISO MTEP and neither Xcel nor any other party asserted an ownership interest in that line, nor did the Midwest ISO “allocate” any ownership or construction rights prior to its approval by the Midwest ISO Board for inclusion in the MTEP. In addition, ATC has currently proposed the Monroe County – Council Creek 138 kV line that has been approved in the Midwest ISO MTEP planning process that interconnects to Xcel’s existing Monroe County substation with a new ATC transmission line. Xcel has not demanded an ownership interest, nor has the Midwest ISO sought to allocate ownership using the language of Section VI.

As a result, the correct reading of Section VI of Appendix B of the Transmission Owners’ Agreement is not that the Midwest ISO can determine which Transmission Owner can build any proposed facility included the Midwest ISO MTEP, but that where the Midwest ISO, through appropriate planning, proposes a more efficient or cost effective transmission project than what may have been proposed by the transmission owners *and includes that combined project in the MTEP*, the Midwest ISO can, allocate the “obligation” to build the combined project in the manner set forth in Section VI, unless the Transmission Owners determine differently. The *combined projects* that the Midwest ISO proposes are the only projects to which the allocation of the “obligation to build” applies. Applying that “obligation to build” to a broader category of projects affords the Midwest ISO more authority than as set forth in Appendix B and is contrary to the directives and orders of the FERC.

III. The FERC’s Review and Modification of Section VI of Appendix B, Order Nos. 890 and 1000, and The Green Power Express Proceedings Support ATC’s Interpretation of the Provisions of Section VI.

The only change that has been made to Section VI of Appendix B since it was first drafted supports ATC’s interpretation. On December 20, 2001, in the Order Granting RTO Status to the Midwest ISO, FERC discussed whether the Midwest ISO’s transmission planning and expansion provisions (including the Appendix B Planning Framework in the Transmission Owners’ Agreement) measured up to the Order 2000 requirements for becoming an RTO.⁸ FERC generally interpreted the Transmission Owners’ Agreement provision more broadly (*e.g.*, to allow third parties to construct and own only if the TOs agreed), but nevertheless required further changes to remove obstacles to third party construction and ownership, thus narrowing the express interests or rights of the transmission owners:

Second, we find that the Planning Framework appears to limit construction and ownership of new transmission facilities identified by the plan to TOs only. Merchant transmission projects are only possible if the TOs in direct contact with the proposed project are financially incapable of carrying out the construction or would suffer demonstrable financial harm from such construction. As in *PJM*, we

⁸ *Midwest Independent Transmission System Operator, Inc.*, 97 FERC ¶ 61,326 (2001).

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find that the principle of third-party participation is important even though we recognize practical obstacles may prevent third parties from competing effectively with incumbent TOs, at least in the short-run. For example, obtaining rights-of way under eminent domain authority may not be possible for some third parties. Nevertheless, as in *PJM*, we find that our long term competitive goals are better served by RTO expansion plans that allow for third party participation as well as permit merchant projects outside the plan. ***Accordingly, Midwest ISO must revise its Planning Framework to make it possible for third parties to participate in constructing and owning new transmission facilities identified by the plan.***⁹

The Midwest ISO Transmission Owners submitted a compliance filing with changes to the Transmission Owners' Agreement. Specifically, the Transmission Owners proposed the following changes to the Appendix B Planning framework in Section VI:

Third-parties shall be permitted and are encouraged to participate in the financing, construction and ownership of new transmission facilities as specified in the Midwest ISO Plan.¹⁰

In its 2003 order on compliance, FERC accepted the proposed changes to the Appendix B Planning Framework.¹¹ The Commission summarized its prior directive to remove the limitation on third party construction and ownership as follows:

We ... found that the planning process appeared to limit construction and ownership of new transmission facilities identified by the plan to TOs only. We found that our goal of competitive markets is better served by RTO expansion plans that allow for third party participation as well as permit merchant projects outside the plan. Accordingly, we directed Midwest ISO to allow for third parties to participate in construction and ownership of new transmission facilities identified by the plan.¹²

The Commission then accepted the Midwest ISO's proposed tariff language noting that the Midwest ISO had "added language to Appendix B to allow and encourage third parties (including merchant transmission) to fully participate in the planning process including participation in the financing, construction and ownership of new transmission facilities."¹³

The interpretation provided in the September 15th letter is inconsistent with any party participating in the construction of transmission facilities except the Transmission Owners to

⁹ *Id.* at p. 62,521 (emphasis added).

¹⁰ See TO Agreement submitted in a compliance filing on Jan. 28, 2002 in Docket No. RT01-87-006.

¹¹ *Midwest Independent Transmission System Operator, Inc.*, 103 FERC ¶ 61,169 (2003).

¹² *Id.* at P 43.

¹³ *Id.* at P 45.

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whose facilities the proposed line would interconnect. Under the interpretation in the September 15th letter, so long as a proposed transmission line interconnects between the existing (or proposed) facilities of one or more Midwest ISO Transmission Owners, then the Transmission Owners would have the “right” to construct the proposed facility. No “third party” would have the right to construct and own facilities in the Midwest ISO unless they were an owner of the transmission facilities to which the proposed transmission line would interconnect. The September 15th interpretation therefore imparts a “right of first refusal,” not an “obligation to construct” contrary to the characterization that you provided, and is inconsistent with the view of the FERC in approving the language that was inserted in Section VI expressly for the purpose of allowing third parties to construct and own transmission facilities. ATC’s interpretation of Section VI not only appropriately limits the “obligation” to build to those facilities for which that obligation was intended, but also gives meaning to the language that was inserted to fulfill the FERC’s directive. Interpreting Section VI in the manner set forth in the September 15th letter renders the language added to meet the FERC’s directive difficult, if not impossible to implement, which was not the intent of the FERC and was not in compliance with the FERC’s order directing that Section VI be revised.

Furthermore, in Order 890, FERC required RTOs to encourage participation and investment by third parties in transmission planning. FERC held that:

the focus of Order No. 890 was to facilitate the ability of all stakeholders to participate in the planning process and to offer solutions to reliability and economic concerns on the grid. More broadly, the Commission has encouraged the construction and ownership of facilities by third party transmission owners.¹⁴

FERC’s policy allowing third parties to own transmission facilities directly contradicts the Midwest ISO’s position that interconnecting Transmission Owners are entitled to half of projects they may have little or nothing to do with in terms of either planning or development, as is the case with the Badger Coulee and Dubuque – Spring Green lines. In ATC’s view, the interpretation of Section VI in the September 15th letter is contrary to FERC’s Order No. 890 directives.

Other examples of the Midwest ISO not interpreting Section VI in the manner set forth in the September 15th letter also exist. In *Green Power Express LP*, FERC found that the proposed 765 kV transmission line project would have to be evaluated through a Commission-approved transmission planning process (*i.e.*, the Midwest ISO’s MTEP), just like any other proposed project, but that such evaluation was not a prerequisite to the Commission granting rate incentives for the project.¹⁵ The issue of which Transmission Owner would be “obligated to construct” the line should it be approved in the MTEP planning process, was never raised by

¹⁴ *Southwest Power Pool, Inc.*, 124 FERC ¶ 61,028 at P 40 (2008).

¹⁵ *Green Power Express LP*, 127 FERC ¶ 61,031 (2009).

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either the Midwest ISO or any Transmission Owner. However, the FERC granted rate incentives to ITC that would only be applicable if ITC owned and constructed the line.

Finally, in Order 1000, FERC made it clear that transmission providers cannot have tariff provisions and agreements that allow for a right of first refusal for transmission facilities selected in regional transmission plans.¹⁶ If Section VI of Appendix B is interpreted in the manner set forth in the September 15th letter, it is more appropriately construed as a “right of first refusal” rather than an “obligation to construct” because, as interpreted in the September 15th letter, Section VI authorizes the Midwest ISO to *automatically* assign ownership to Xcel and ITC irrespective of any obligation or action on their part in connection with the proposed transmission lines. The September 15th letter specifically provides that Xcel and ITC are entitled to 50% ownership in the respective projects, notwithstanding that no change, modification or revision has been made to either of them, and notwithstanding that neither has done anything to advance the planning, development, approval or construction of either project. This interpretation is inconsistent with the FERC orders directing changes to the language of Section VI, and with both Order Nos. 890 and 1000. ATC’s interpretation eliminates all of those inconsistencies, and interprets the language of Section VI in the manner it was intended.

IV. Attachment FF Does Not Support the Position Set Forth in the September 15th Letter.

Mr. Moeller further states that “ownership of these projects is an important aspect to the [MISO] Board’s evaluation because ownership, whether solely or jointly, affects the cost estimates provided by each Transmission Owner.” In support of this contention, he quotes from Attachment FF of the tariff:

For each project included in the recommended MTEP, the plan shall designate, [] one or more Transmission Owners or other entities to construct, own and /or finance the recommended project.

Mr. Moeller appears to interpret this section to mean that the Midwest ISO must affirmatively designate a Transmission Owner to construct the project and such designation may include a Transmission Owner or Transmission Owners other than the Transmission Owner that had proposed the project to be included in MTEP. This interpretation is not supported in Attachment FF. First, the language above states that “the plan” shall designate one or more TOs or other entities. In ATC’s view, this merely means that the plan must *specify* the owner or owners that will construct the project. This language does not convey a “right” to the Midwest ISO to determine which Transmission Owner or Owners are to construct a proposed project. This language does not require – or even allow – Midwest ISO to change the ownership of a line from that which was proposed when the project was submitted to the MTEP, unless, as discussed below, MISO changes the project significantly from that which was proposed.

¹⁶ Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Final Rule, Order No. 1000, 76 Fed. Reg. 49842 (2011).

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In addition, it is not clear what relevance ownership of the Badger-Coulee or Dubuque – Spring Green lines has to the ability of the Midwest ISO Board to act on their inclusion in the MTEP. Mr. Moeller makes inconsistent statements regarding the need for resolution of the ownership issue prior to the Board decision. First, Mr. Moeller states: “[w]hile this language will not preclude seeking Board approval of the candidate projects absent resolution of the ownership question, the dispute could create uncertainty with respect to the expected costs and construction of the project.”¹⁷ On the other hand, he also states that “[b]ecause ownership will affect the cost estimates for the projects and potentially introduce uncertainty in the approval process, ownership must be resolved and preferably before MISO finalizes the MVP portfolio for Board consideration.” In our discussion, you indicated that the Badger Coulee line and the Dubuque – Spring Green line will not be offered to the Midwest ISO Board for approval until the ownership has been determined.

ATC has reviewed all elements of the Midwest ISO planning requirements under Attachment FF of the Tariff, as well as the provisions of the applicable Business Practice Manuals and can find nothing that gives the Midwest ISO the authority to refuse to advance to the Board ATC’s two transmission line projects. The position of the Midwest ISO in the September 15th letter is unsupported in any manner.

V. Dispute Resolution

The September 15th letter directs ATC to engage in dispute resolution under Attachment HH of the Midwest ISO Tariff. The dispute resolution provisions of Section VI of Appendix B of the Transmission Owners’ Agreement, however, would not appear to apply to a possible ownership disagreement. Appendix B states that disputes between Midwest ISO’s Planning Staff and any Transmission Owner “on any element of the Midwest ISO Plan,” may be resolved by the dispute resolution provisions in Attachment HH of the Midwest ISO Tariff, or by FERC or state regulatory authorities.¹⁸ Attachment HH states that it will apply to “all disputes relating to any matter governed by the ISO Agreement.” However, Attachment HH does not apply to “any Dispute involving the obligation to build or enlarge transmission facilities,” which dispute “shall be subject to resolution by the appropriate regulatory authority.”¹⁹ Thus, the dispute resolution provisions do not apply in this instance.

VI. Request for Midwest ISO Action

Based on the foregoing, ATC requests that the Midwest ISO clarify its position as set forth in the September 15th letter and rescind the demand for determination of ownership interests in Badger Coulee and Dubuque – Spring Green lines. The September 15th letter is based on an erroneous interpretation of Section VI of Appendix B of the Midwest ISO

¹⁷ There is no uncertainty as to the costs estimated by ATC for the construction of these projects. As with all other projects proposed by ATC for inclusion in the MTEP process, ATC has provided the Midwest ISO with the necessary cost estimates.

¹⁸ Appendix B, Section VI.

¹⁹ Attachment HH, Section IV.A.

Mr. Steve Kozey
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Transmission Owners' Agreement. ATC also requests that the Midwest ISO advise ATC in writing that the Badger Coulee and Dubuque – Spring Green transmission projects will be submitted for approval by the Midwest ISO Board at its December 2011 meeting.

ATC requests the Midwest ISO's written response by October 10, 2011. If this matter is not resolved by that time such that the Midwest ISO reconsiders its demand for dispute resolution and its demand that ATC agree to assigning 50% ownership of the Badger Coulee and Dubuque – Spring Green lines to others, ATC will be required to take such other action as is necessary to protect its interests to advance these two projects important the for grid and to insure that the projects proposed are appropriately included in the Midwest ISO MTEP.

If you have any questions, or care to discuss any aspect of this letter, please feel free to contact me.

Sincerely,



Dan L. Sanford
Interim General Counsel
ATC Management Inc.,
Corporate manager for
American Transmission Company LLC

cc: John Procario, President and CEO
John Flynn, Vice President of Business Development
John Bear, President and CEO, Midwest ISO
Clair Moller, Vice President of Transmission Asset Management, Midwest ISO

ATTACHMENT C

OCTOBER 5, 2011 LETTER FROM ITC MIDWEST



ITC MIDWEST
6750 Chavenelle Road
Dubuque, IA 52002
phone: 563.585.3600
www.itctransco.com

October 5, 2011

Clair J. Moeller
Vice President, Transmission Asset Management
1125 Energy Park Drive
St. Paul, Minnesota 55108

Dear Mr. Moeller:

I appreciate receiving a copy of your letter to John Procario, dated September 15, 2011. ITC agrees that the ownership of these projects need to be determined so that the projects can move forward without delay once approved by the MISO Board for Appendix A of the MTEP. These projects have been identified through the MISO planning process as adding value to the customers in the region and as such any delays will deny those benefits to those customers. ITC also understands that these MVP projects work together to achieve those benefits and delay of any of the projects will also delay some of the benefits that are desired.

ITC agrees with the MISO interpretation of the MISO Transmission Owners agreement and I want to assure you that ITC is aware of its responsibility under that agreement to construct and own part of the Dubuque – Spring Green Cardinal – Madison – North La Crosse MVP. ITC stands ready to begin ownership discussion with ATC and Xcel and further we are ready, willing, and able to fulfill our responsibilities under the MISO TO agreement.

Sincerely,

A handwritten signature in blue ink that reads "Douglas C. Collins".

Douglas C. Collins
President, ITC Midwest

John Procario (ATC LLC)
Paul Jett (ATC LLC)
Dan Sanford (ATC LLC)
Teresa Mogensen (Xcel)
Priti Patel (Xcel)
Tom Vitez (ITC)

we're your energy superhighway

ATTACHMENT D

OCTOBER 28, 2011 LETTER FROM CLAIR MOELLER



Clair J. Moeller
Vice President, Transmission Asset Management
651.632.8441
cmoeller@misoenergy.org

October 28, 2011

American Transmission Company LLC
Attn: John Procario, President and CEO
W234 N2000 Ridgeview Parkway Court
Waukesha, WI 53188-1022

RE: Dubuque-Spring Green-Cardinal MVP and North La Cross-Madison MVP

Dear John:

MISO has received ATC's October 4, 2011 letter regarding the Dubuque-Spring Green-Cardinal MVP and North La Cross-Madison MVP (also known as Badger-Coulee). MISO would like to correct several of ATC's statements and misunderstandings in this letter.

1. Both projects will be presented to the Board.

Both of these projects will be submitted to the MISO Board at its December meeting for approval. MISO has never stated otherwise. MISO did state that resolving ownership prior to the meeting is preferred and would be helpful for the Board's review.

MISO specifically stated in its letter, "While this language [regarding ownership as stated in the TOA] will not preclude seeking Board approval of the candidate projects absent resolution of the ownership question, the dispute could create uncertainty with respect to the expected costs and construction of the projects."

As stated previously, MISO will submit both of these projects to the Board for approval regardless of whether the ownership issue is resolved prior to the Board meeting.

2. Attachment HH Dispute Resolution Procedures are permissible for resolving disputes involving the obligation to build or enlarge transmission facilities.

Attachment HH does not state that its procedures are prohibited in a "dispute involving the obligation to build or enlarge transmission facilities." Instead, it says that these disputes are "subject to resolution by the appropriate regulatory authority" *if* additional criteria are met. One of the criteria is that "at least one (1) of the Parties to the Dispute demands that the matter be submitted to such regulatory authority." Therefore, resolving expansion disputes under Attachment HH is not prohibited, and Attachment HH may be an appropriate means for resolving these disputes. MISO understands that both ITC and Xcel dispute ATC's interpretation of Appendix B to the TOA and are prepared to work with ATC and MISO to resolve this matter.

Mr. John Procaro
RE: Dubuque-Spring Green-Cardinal MVP and North La Cross-Madison MVP
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3. Under the TOA, ITC and Xcel have an ownership claim.

The TOA specifically states:

Ownership and the responsibilities to construct facilities which are connected between two (2) or more Owners' facilities belong **equally** to each Owner, **unless such Owners otherwise agree**, and the responsibility for maintaining such facilities belongs to the Owners of the facilities unless otherwise agreed by such Owners. (emphasis added)

MISO interprets this to mean that under the TOA, ITC and Xcel are half owners of the new facilities. ATC may acquire a greater ownership interest *if* ITC and Xcel agree. MISO finds nothing in ATC's letter or in the TOA itself to support that the above language does not apply under these circumstances. This language is not limited to only certain MTEP projects, as ATC suggests.

MISO disagrees with ATC's position on the ownership issue and hopes that ATC will resolve the ownership issue with Xcel and ITC directly. MISO will report to the Board in December that ownership of the individual projects at issue will be shared between ATC and Xcel and ITC respectively. If unable to resolve the ownership, MISO recommends ATC utilize the Alternative Dispute Resolution Procedures of Attachment HH to resolve the ownership issue.

Respectfully,



Clair J. Moeller
Vice President, Transmission Asset Management

CJM/kaw

cc: Paul Jett (ATC LLC)
Dan Sanford (ATC LLC)
Teresa Mogensen (Xcel)
Priti Patel (Xcel)
Doug Collins (ITCM)
Tom Vitez (ITCM)

EXHIBIT 2

MTEP APPENDIX A

Appendices A, B, C: Project Table 9/26/2012

Target Appendix	App ABC	Planning Region	Geographic Location by TO Member System	PriJD	Project Name	Project Description	State1	State 2	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)	Min of Plan Status	Max kV	Min kV	MISO Facility
A in MTEP12	C>B>A	Central	AmerenIL	3338	Lanesville Transformer Replacement	Replace existing transformer with 560 MVA unit	IL	IL	BaseRel	Not Shared		\$4,417,000	6/1/2013	Planned	345	138	Y
A in MTEP12	C>B>A	Central	AmerenIL	3350	East Kewanee-Princeton Tap of Hennepin-East Kewanee Reconnector	Reconductor 477 kcmil ACSR conductor to 1200 A summer emergency capability. Replace terminal equipment at East Kewanee to 1200 A capability.	IL	IL	BaseRel	Not Shared		\$0	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenIL	3352	West Tilton 138 kV Capacitor Banks	Install 2-25 MVAR capacitor banks, two 138kV breakers	IL	IL	BaseRel	Not Shared		\$3,356,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenIL	3362	H100 Generator connection - California Ridge	Install 138 kV PCB and line terminal at Vermilion Switchyard	IL	IL	GIP	Not Shared		\$1,430,000	12/1/2012	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenIL	3369	Quincy, East Sub. - Replace Transformer #3	Replace 138-34.5 kV Transformer Bank #3 with a 112 MVA unit. Replace 600 A, 138 kV disconnect switch with minimum 800 A capability	IL	IL	Other	Not Shared	Distribution	\$100,000	5/24/2012	In Service	138		Y
A in MTEP12	C>B>A	Central	AmerenIL	3690	Hoopston Wind (H094) Generator Connection	MISO Project H094 Generator Connection - establish a 3-breaker 138 kV ring bus in the Hoopston-Vermillion 138 kV line to establish a connection to the wind farm. Need 3-2000 A, 138 kV PCB's. Reconductor 12.73 miles of 350 kcmil CU in Paxton, East-Rantoul Jct. 138 kV line.	IL	IL	GIP	Not Shared		\$9,697,000	12/1/2014	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenIL	3705	New Windsor Substation	Establish a 3-position 161 kV ring bus in the Oak Grove-E. Galesburg-1 161 kV line to supply the New Windsor 161/69 kV Substation. Install 3-161 kV PCB's initially needed for initial ring bus development at New	IL	IL	Other	Not Shared	Distribution	\$2,985,000	6/1/2014	Planned	161		Y
A in MTEP12	C>B>A	Central	AmerenIL	3706	Mississippi River to Hull 138 kV Reconnector	Replace ~53 miles of paralleled Cu conductor with single ACSR conductor on Sioux-Meppen and Meppen-South Quincy 138 kV lines. Install new shield wire with fiber optic cable.	IL	IL	Other	Not Shared	Condition	\$16,525,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenIL	3846	Kansas, West-Hutsonville 138 kV Line Rebuild	Replace existing 350 kcmil Copper conductor with conductor capable of carrying 1600 A under summer emergency conditions. Upgrade terminal equipment at Kansas, West Substation and Hutsonville switchyard to meet or exceed the line conductor ratings.	IL	IL	Other	Not Shared	Condition	\$22,585,000	12/31/2012	Planned	138		Y
A in MTEP12	B>A	Central	AmerenMO	2971	Rolla Alfermann Substation	Rolla Alfermann Substation - Tap Clark-Osage-2 and Rivermines-Maries-1 138 kV lines to establish 138 kVsupplies to new 138-34.5 kV Alfermann Substation, owned by City of Rolla. Ameren to construct tapping structures. 2-138 kV, 1200 A disconnect switches	MO	MO	Other	Not Shared	Reliability	\$963,000	12/1/2011	In Service	138		Y
A in MTEP12	C>B>A	Central	AmerenMO	3356	Tegeler-Osage Disconnect Switch Replacement	Replace 138 kV disconnect switch at Freeburg with new 1200 A switch	MO	MO	Other	Not Shared	Condition	\$200,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenMO	3364	Prairie Dell Substation	Install 138 kV breakers, build 2.5 miles of new single circuit 138 kV and 3.1 miles of new 138 kV double circuit line	MO	MO	Other	Not Shared	Distribution	\$20,763,000	6/1/2018	Planned	138		Y
A in MTEP12	C>B>A	Central	AmerenMO	3366	Wallen Creek Substation High-Side Transfer	Install 2-2000 A,138 kV PCBs	MO	MO	Other	Not Shared	Reliability	\$2,635,000	12/1/2014	Planned	138		Y
A in MTEP12	B>A	West	ATC LLC	1270	Rebuild Arcadian-Waukesha 138 kV lines	Rebuild the two Arcadian-Waukesha 138 kV lines	WI	WI	BaseRel	Shared		\$14,831,968	6/1/2016	Planned	138		Y
A in MTEP12	C>B>A	West	ATC LLC	2779	New Chandler-18th Road 138 kV line + 18th Road 138/69 kV SS and xfmr	Build a new 6-mile 138 kV line from Chandler to 18th Road, add a new 138/69 kV SS and 138/69 kV 60 MVA xfmr at 18th Road	MI	WI	Other	Not Shared	Reliability	\$22,000,000	11/1/2014	Planned	138	69	Y
A in MTEP12	B>A	West	ATC LLC	3089	Uprate Nine Springs Pflaum Area 69 kV	Uprate Fitchburg-Nine Springs and Royster-Pflaum lines to 275 deg F SE clearance and move AGA load onto Femrite-Royster line and install 2-16.33 Mvar cap banks at Nine Springs	WI	WI	Other	Not Shared	Reliability	\$4,400,000	6/1/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3125	Install Arnold 345/138 kV Transformer	Tap the Plains-Dead River 345 kV line into the Arnold 138 kV substation and add a 345/138 kV transformer	MI	MI	BaseRel	Shared		\$15,810,000	6/1/2014	Planned	345	138	Y

Appendices A, B, C: Project Table 9/26/2012

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A in MTEP12	C>B>A	West	ATC LLC	3209	Replace Edgewater 138/69 kV Transformers	Replace the Edgewater 138-69 kV transformers with 60 MVA units; Replace the 4/0 Cu strain bus sections 1 & 2 with conductor capable of 75 MVA SE; Remove 69 kV by-pass switches 1666A, 359A, 460A, and 368A; Replace the following 69 kV disconnect switches with new GOAB switches: 359L, 359B, 368L and 368B; Add line side surge arresters to 69 kV lines Y-31, Y-55, and Y-142; Upgrade and/or replace relaying and protection systems; Install new GCBs to the low side (69 kV) positions of T31 and T32; and Replace T31 and T32 transformer 69 kV disconnect switches 315A and 337A.	WI	WI	Other	Not Shared	Condition	\$5,400,000	6/28/2013	Planned	138	69	Y
A in MTEP12	C>B>A	West	ATC LLC	3490	Rebuild Y-20 Doylestown-Rio Pumping Station 69 kV	Asset Management project to Rebuild Y-20 Doylestown to Rio Pumping Station 69 kV	WI	WI	Other	Not Shared	Condition	\$7,400,000	4/15/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3506	Construct Vinburn T-D Interconnection 69 kV	Construct a 69 kV loop through Vinburn distribution Substation on line Y104. This project also includes rerouting the Hampden tap into Vinburn Substation.	WI	WI	Other	Not Shared	Distribution	\$3,360,000	10/1/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3507	Uprate Shoto-Manrap 69 kV	This project is a thermal uprate of C-55 (Manrap-Shoto 69 kV)	WI	WI	Other	Not Shared	Condition	\$320,000	2/27/2012	In Service	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3508	Uprate Revere-Northeast 69 kV	This project is a thermal uprate of C-103 (Revere-Northeast 69 kV)	WI	WI	Other	Not Shared	Reliability	\$171,475	1/2/2012	In Service	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3514	Reconfigure 96th St 138 kV sub to an 8 position ring bus	Create 96ST 138 kV 8 position ring bus for zoo interchange relocation project	WI	WI	Other	Not Shared	Relocation	\$42,450,000	12/1/2013	Planned	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3515	Granville Economic Project 138 kV	Uprate 3443 Granville-Tosa 138 kV and 3453 Granville-Butler 138 kV	WI	WI	Other	Not Shared	Economic	\$1,136,322	11/30/2011	In Service	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3519	Construct RiverBend T-D load interconnection 138 kV	Construct a 138 kV loop through River Bend distribution Substation on line 731.	WI	WI	Other	Not Shared	Distribution	\$3,020,000	12/31/2012	Planned	138	24.9	Y
A in MTEP12	A	West	ATC LLC	3679	Green Bay to Morgan 345 kV project and Menominee Co to Delta Co 138 kV line	New Green Bay sub to Morgan 345 kV line and new 138 kV line from Holmes to 18th road	MI	WI	BaseRel	Shared		\$280,000,000	12/31/2016	Planned	345	69	Y
A in MTEP12	C>B>A	West	ATC LLC	3682	Uprate Oak Creek-Bluemound 230 kV	Uprate Oak Creek to Bluemound 230 kV line	WI	WI	Other	Not Shared	Condition	\$1,410,000	8/10/2012	In Service	230		Y
A in MTEP12	C>B>A	West	ATC LLC	3683	Uprate Sycamore-East Towne 69 kV Cable	Replace underground cables from Sycamore to East Towne	WI	WI	Other	Not Shared	Condition	\$5,460,000	4/17/2012	In Service	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3757	Replace Chalk Hills 138/69 kV Transformer	Replace Chalk Hills Tranformer with existing spare transformer from Ontonagon 138/69 kV	WI	WI	Other	Not Shared	Reliability	\$1,290,000	10/1/2012	Planned	138	69	Y
A in MTEP12	C>B>A	West	ATC LLC	3758	Rebuild Paris-Albers 138 kV	Rebuild and reconductor 9.33 mile section of Prais-Albers 138 kV	WI	WI	Other	Not Shared	Condition	\$9,284,155	6/1/2016	Planned	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3781	Construct J084 Red Oak Wind 69 kV	50 MW generator addition	WI	WI	GIP	Shared		\$5,000,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3798	Uprate X-58 Ohmstead to Rienzi Rd. 138 kV	Replace Ohmstead OCB's, arrestors and relay upgrade	WI	WI	Other	Not Shared	Condition	\$501,486	12/20/2011	In Service	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3799	Uprate B-106 Okray to Whiting Ave 115 kV, Phase 1	Improve Line clearance to 147 deg F	WI	WI	Other	Not Shared	Condition	\$41,221	1/8/2012	In Service	115		Y
A in MTEP12	C>B>A	West	ATC LLC	3800	Uprate L-142 Stiles to Oconto 138 kV	Replace Line and bus disconnects for L-142 & 644451 at Stiles	WI	WI	Other	Not Shared	Condition	\$198,070	3/16/2012	In Service	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3801	Uprate U-11 Maine to Hilltop 115 kV	Restore Line U-11 conductor to the original SELD rating (200°F at 4.4 fps)	WI	WI	Other	Not Shared	Condition	\$333,000	3/23/2012	In Service	115		Y
A in MTEP12	C>B>A	West	ATC LLC	3802	Uprate Y-MRP11 Manrap to Custer 69 kV	Improve line clearance to 200 deg F	WI	WI	Other	Not Shared	Condition	\$243,782	3/15/2012	In Service	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3803	Uprate X-43 Saratoga to Badger West to Petenwell 138 kV, Phase 1	Improve line clearance to 143 deg F	WI	WI	Other	Not Shared	Condition	\$1,090,000	11/23/2012	Under Constr	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3804	Uprate 3453 Granville to Butler 138 kV	Line 3453 Rerate involves (6) clearance issues which need to be corrected to bring the line rating to the current SELD rating at 300 deg F.	WI	WI	Other	Not Shared	Condition	\$32,191	3/28/2012	In Service	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3805	Uprate U-47 Finger Rd. to Highway V 69 kV	Replace 800A Trap	WI	WI	Other	Not Shared	Condition	\$131,965	5/4/2012	In Service	69		Y
A in MTEP12	C>B>A	West	ATC LLC	3806	Uprate B-106 Okray to Whiting Ave 115 kV, Phase 2	Improve Line clearance to 154 deg F	WI	WI	Other	Not Shared	Condition	\$488,000	3/26/2012	In Service	115		Y

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A in MTEP12	C>B>A	West	ATC LLC	3807	Uprate X-43 Saratoga to Badger West to Petenwell 138 kV, Phase 2	Improve line clearance to 164 deg F	WI	WI	Other	Not Shared	Condition	\$1,086,500	11/23/2012	planned	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3809	Uprate X-33 Arpin-Sigel 138 kV phase 1	Restore line clearance to SN/SE/SFN/SFE/WW/WE = 293/293/338/338/377/381 MVA	WI	WI	Other	Not Shared	Condition	\$381,432	5/1/2012	In Service	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3810	Uprate X-33 Arpin-Sigel 138 kV phase 2	Restore line clearance to SN/SE/SFN/SFE/WW/WE = 293/403/338/403/381/403	WI	WI	Other	Not Shared	Condition	\$640,000	12/1/2012	planned	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3818	Uprate NW Beloit-Blackhawk 138 kV phases 1-3	Restore Clearance to SN/SE/SFN/SFE/WW/WE = 293/403/338/432/381/461 MVA	WI	WI	Other	Not Shared	Condition	\$490,000	3/15/2012	In Service	138		Y
A in MTEP12	C>B>A	West	ATC LLC	3952	Green Bay - Morgan 138 kV line	Green Bay - Morgan 138 kV line	WI	WI	Other	Not Shared	Reliability	\$60,300,000	12/31/2016	Planned	345	138	Y
A in MTEP12	A	Central	BREC	3792	Wilson-Matanzas 161 kV Interconnection	Create a new 161 kV BREC-LG&E/KU interconnection by looping the Wilson-Paradise portion of the three terminal interconnection through a new Matanzas substation (LG&E/KU) The loop will require 600 feet of new 954 MCM ACSS construction and will be located 10.5 miles from Wilson. The new LG&E/KUMatanzas station will include 2 161/138 kV transformers, (2) 161 kV line terminals, (2) 138 kV line terminals, (6) 138 kV breakers, and (6) 161 kV breakers.	KY	KY	Other	Not Shared	Reliability	\$0	12/1/2012	Planned	161		Y
A in MTEP12	C>B>A	Central	DEM	3536	WVPA Laf. Monitor sub 69kV - 7.2MVAR capacitor	Install a 7.2MVAR 69kV switched cap bank in the WVPA Lafayette Monitor sub	IN	IN	Other	Not Shared	Reliability	\$400,000	6/1/2015	Planned	69		Y
A in MTEP12	C>B>A	Central	DEM	3538	J053 Gen Inter at Whitesville S. 230kV	Install 3 - 230kV breakers to complete a 4 br ring bus for J053 - 200MW wind generator at existing Whitesville S. 230kV sub and upgrade bus equipment at Bloomington 230kV sub with minimum rating 1600A between bus 1 and bus 2.	IN	IN	GIP	not Shared		\$2,807,000	12/31/2013	Planned	230		Y
A in MTEP12	C>B>A	Central	DEM	3540	Newberry - Bloomfield 69kV Rebuild Phase 3	Rebuild 69kV - 6959 line from Newberry to Bloomfield - 477acsr26x7 at 100C	IN	IN	Other	Not Shared	Condition	\$3,083,000	12/31/2012	Planned	69		Y
A in MTEP12	C>B>A	Central	DEM	3541	Hillsdale - Clinton Lilly 69kV Rebuild Phase 3	Rebuild 69kV - 6906 line from Hillsdale Switching Station to Clinton Eli Lilly - 477acsr26x7 at 100C	IN	IN	Other	Not Shared	Condition	\$2,430,000	12/31/2012	Planned	69		Y
A in MTEP12	C>B>A	Central	DEM	3542	New Castle Ingersoll 1 Bank 2 Repl	New Castle Ingersoll 1 Bank 2 Repl - Replace 34/12kV bank w/22MVA 69/12kV Bank. Add 69kV tap line.	IN	IN	Other	Not Shared	Distribution	\$436,068	6/1/2014	Planned	69	12	Y
A in MTEP12	C>B>A	Central	DEM	3543	HE Salisbury - Georgetown 69kV rebuild	Reconductor 5.65 miles of 69kV - 6973 ckt - 4/OACSR with 477ACSR conductor between HE Salisbury and Georgetown	IN	IN	Other	Not Shared	Condition	\$1,665,000	6/1/2013	Planned	69		Y
A in MTEP12	C>B>A	Central	DEM	3546	Wabash River 230KV Gen Sta. Phase I	Wabash Riv 230KV Gen Sta. Phase I (North & Transfr Bus): Inst new 230/138kV Relay House and Perform Line associated relay work. Repl. breakers: 230 TIE, 23001 and DS Switches. Repl Bus Insulators.	IN	IN	Other	Not Shared	Condition	\$2,470,000	12/31/2013	Planned	230		Y
A in MTEP12	C>B>A	Central	DEM	3547	Wabash River 230KV Gen Sta Phase II	Wabash Riv 230KV Gen Sta. Phase II (South Bus):Perform Line associated relay work. Rep. breakers: 230138-10, 23002, 23025 and DS Switches. Replace Bus Insulators.	IN	IN	Other	Not Shared	Condition	\$2,625,000	12/31/2014	Planned	230		Y
A in MTEP12	C>B>A	Central	DEM	3548	WVPA Lafayette Wea 138kV distribution sub	Install two way 138kV switching in the 13819 line for transmission source to new Tipmont Wea sub; Tipmont secured line easement between existing transmission ROW and sub property.	IN	IN	Other	Not Shared	Distribution	\$234,789	2/1/2012	In Service	138	12	Y
A in MTEP12	C>B>A	Central	DEM	3549	Morgantown 69kV Dist. Sub.	Construct new substation on short radial 69kV tap in Morgantown, Indiana. 10.5MVA, 69/12kV to be located at E. Washington St/700W on the east side of town near 6949 line. Load will be transferred from the Bean Blossom 1201 and Martinsville East 1207 to the new sub.	IN	IN	Other	Not Shared	Distribution	\$603,000	6/1/2014	Planned	69	12	Y
A in MTEP12	C>B>A	Central	DEM	3555	Weisburg Rd. 138-12kV Dist. Sub.	construct new 138-12kV distribution sub in the 13832 ckt between DEM Wilmington Jct and HE Hubbell (NERC tie line)	IN	IN	Other	Not Shared	Distribution	\$250,000	6/1/2014	Planned	138	12	Y

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A in MTEP12	C>B>A	Central	DEM	3558	Lafayette S. to Concord Jct. 138kV line uprate	Lafayette S. to Concord Jct. 138kV 100C line uprate; 13808 ckt; 397ACSR conductor; 1.82 miles	IN	IN	BaseRel	Not Shared		\$36,400	6/1/2014	Planned	138		Y
A in MTEP12	C>B>A	Central	DEM	3559	Westwood to W. Lafayette 138kV line uprate	Westwood to W. Lafayette 138kV 100C line uprate; 13806 ckt; 954ACSR conductor; 3.16 miles	IN	IN	BaseRel	Not Shared		\$63,200	6/1/2014	Planned	138		Y
A in MTEP12	C>B>A	Central	DEM,HE	3539	HE Vesta Rd 138kV Distribution Sub	Install 2-138kV substation switches and bus within new Hoosier Energy (HE) Vesta Rd sub located between Memphis Rd Jct and Bethlehem in the 13857 ckt. (8.7 mi. +/- from Memphis Rd Jct)	IN	IN	Other	Not Shared	Distribution	\$1,070,638	5/25/2012	In Service	138	12	Y
A in MTEP12	B>A	West	GRE	2098	G390, A252, A253	Network upgrades for tariff service request for G390, A252, A253	MN	MN	GIP	Not Shared		\$175,000	5/1/2012	Under Constr	69		Y
A in MTEP12	B>A	West	GRE	2569	Shoal Lake (Lawrence Lake) 115 kV line	Shoal Lake (Lawrence Lake) 115 kV line	MN	MN	Other	Not Shared	Distribution	\$4,801,267	12/31/2012	Under Constr	115		Y
A in MTEP12	C>B>A	West	GRE	2738	Ramsey Transformer Capacity Increase	Replace the existing Ramsey 84 MVA transformer with a 140 or 187 MVA unit	ND	ND	Other	Not Shared	Reliability	\$2,600,000	11/1/2013	Planned	230	115	Y
A in MTEP12	B>A	West	GRE	3393	Peterson 115 kV Distribution	Convert Peterson Substation from 24 kV to 115 kV operation	MN	MN	Other	Not Shared	Reliability	\$742,690	11/1/2013	Planned	115		Y
A in MTEP12	C>B>A	West	GRE	3470	MISO G667		MN	MN	GIP	Not Shared		\$180,000	12/1/2012	Under Construction			Y
A in MTEP12	C>B>A	West	GRE	3573	Paynesville - Hawick	A 69 kV transmission line from NSP's Paynesville bulk substation to GRE owned 69 kV line around Hawick. Interconnecting MCLPA's new Lake Koronis distribution substation with the Paynesville - Hawick 69 kV line. Construct about 10 mile, 69 kV line with 477 ACSS conductor from NSP owned Paynesville 115/69 kV substation to a 3-way switch near Hawick on the Hawick - Green Lake (SH Line) 69 kV line. Construct a 69 kV line with 336 ACSR conductor from Lake Koronis Tap to Lake Koronis distribution substation high side structure.	MN	MN	Other	Not Shared	Distribution	\$5,161,607	9/10/2013	Planned	69		Y
A in MTEP12	C>B>A	West	GRE	3574	Worthington 69 kV to 115 kV Spec's	GRE plans to rebuild the 2.01 mile 69 kV NO-WR line (Switch C255—C530), the 1.09 mile 69 kV NO-WT line (Switch C534—Conductor Change), the 1.06 mile 69 kV NO-WT line (Switch C530—Conductor Changer), and the 0.1 mile 69 kV NO-WR line (Switch C535—C536) to 115 kV specs.	MN	MN	Other	Not Shared	Reliability	\$3,770,708	11/1/2014	Planned	69		Y
A in MTEP12	B>A	Central	IPL/Vectren	3212	MTEP11 TCFS Option 3A	rating to 1386MVA on Breed-Wheatland-Petersburg 345kV. Increase rating to 285MVA on Petersburg-Cato Tap-Duff 138kV.	IN	IN	MEP	Shared		\$14,500,000	1/1/2015	Planned	345		Y
A in MTEP12	C>B>A	East	ITC	3496	NERC Alert Facility Ratings for 2012	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	MI	Other	not shared	Reliability	\$2,280,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	East	ITC	3497	NERC Alert Facility Ratings for 2013	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	MI	Other	not shared	Reliability	\$2,040,000	12/31/2013	Planned			Y
A in MTEP12	C>B>A	East	ITC	3498	NERC Alert Facility Ratings for 2014	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	MI	Other	not shared	Reliability	\$1,440,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3576	Monroe 345 kV Station Equipment (Bayshore Circuit) Upgrade	Replace 345kV terminal equipment at Monroe on the Monroe - Bayshore circuit	MI	MI	BaseRel	Not Shared		\$120,000	6/1/2013	Planned	345		Y
A in MTEP12	C>B>A	East	ITC	3579	Bismarck - Stephens #2 120kV Rebuild	Replace the station equipment at Bismarck and Stephens and also a small section of 795 ACSR outside of the Bismarck station at the point where the 795 ACSR meets the 954 ACSR, and then 6-wire the remaining 795 ACSR with the de-energized conductor on the other side of the towers containing the remaining 795 ACSR (about 5 miles).	MI	MI	BaseRel	Not Shared		\$500,000	12/31/2015	Planned	120		Y
A in MTEP12	C>B>A	East	ITC	3580	Bloomfield 120kV Section 3-5 Equipment Replacement	Replace the 120kV station equipment at Bloomfield on the 103-105 bus section.	MI	MI	BaseRel	Not Shared		\$350,000	12/31/2013	Planned	120		Y
A in MTEP12	C>B>A	East	ITC	3581	Bloomfield 120kV Section 4-5 Equipment Replacement	Replace the 120kV station equipment at Bloomfield on the 104-105 bus section.	MI	MI	BaseRel	Not Shared		\$170,000	12/31/2013	Planned	120		Y

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A in MTEP12	C>B>A	East	ITC	3591	St. Clair 345 kV Station Equipment Upgrades	Replace 345kV station equipment in the B, C and D rows at St. Clair.	MI	MI	BaseRel	not shared		\$840,000	12/31/2014	Planned	345		Y
A in MTEP12	C>B>A	East	ITC	3596	Trenton Channel Reactors Replacement	Replace both oil filled reactors with one air-core dry type set of reactors.	MI	MI	Other	not shared	Condition	\$850,000	12/1/2013	Planned	120		Y
A in MTEP12	C>B>A	East	ITC	3598	Wayne 345 kV Line Re-Terminations	Re-terminate the Brownstown 2 circuit at Position DI and the Wixom 1 circuit at Position CQ.	MI	MI	BaseRel	not shared		\$700,000	6/1/2013	Planned	345		Y
A in MTEP12	C>B>A	East	ITC	3600	ITCT Annual Battery Replacement Program 2012	Annual battery replacement program	MI	MI	Other	not shared	Condition	\$500,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	East	ITC	3601	ITCT Annual Battery Replacement Program 2013	Annual battery replacement program	MI	MI	Other	not shared	Condition	\$500,000	12/31/2013	Planned			Y
A in MTEP12	C>B>A	East	ITC	3602	ITCT Annual Battery Replacement Program 2014	Annual battery replacement program	MI	MI	Other	not shared	Condition	\$500,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3603	ITCT Annual Breaker Replacement Program 2014	Annual breaker replacement program	MI	MI	Other	not shared	Condition	\$9,000,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3604	ITCT Annual Potential Device Replacement Program 2014	Annual potential device replacement program.	MI	MI	Other	not shared	Condition	\$300,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3605	ITCT Pole Top Switches Additions	Install 120 kV, 2-way, full-load-break pole top switches at the following tap points: Houston 1 & 2, Long Lake 1 & 2, Seville 1 & 2, Grayling 1, and Lake Huron Pumping 1. Install 120 kV, 1-way, full-load-break pole top switches at the following tap points: Malta 2, Sport 2, and Topaz 2.	MI	MI	Other	not shared	Operation	\$2,000,000	6/1/2013	Planned	120		Y
A in MTEP12	C>B>A	East	ITC	3606	ITCT Annual Relay Betterment Program 2014	Annual relay betterment program	MI	MI	Other	not shared	Condition	\$3,000,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3607	ITCT Annual Relay Betterment Program 2015	Annual relay betterment program	MI	MI	Other	not shared	Condition	\$3,600,000	12/31/2015	Planned			Y
A in MTEP12	C>B>A	East	ITC	3608	ITCT Annual Surge Arrestor Replacement Program 2012	Annual surge arrestor replacement program	MI	MI	Other	not shared	Condition	\$240,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	East	ITC	3609	ITCT Annual Surge Arrestor Replacement Program 2013	Annual surge arrestor replacement program	MI	MI	Other	not shared	Condition	\$240,000	12/31/2013	Planned			Y
A in MTEP12	C>B>A	East	ITC	3610	ITCT Annual Surge Arrestor Replacement Program 2014	Annual surge arrestor replacement program	MI	MI	Other	not shared	Condition	\$240,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3611	ITCT Annual Wood Pole Replacement Program 2014	Annual wood pole replacement program	MI	MI	Other	not shared	Condition	\$6,000,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	ITC	3624	ITCT Customer Interconnections - Year 2016	Distribution Interconnection Request	MI	MI	Other	not shared	Distribution	\$2,000,000	12/31/2016	Planned	120		Y
A in MTEP12	A	East	ITC	3836	Vital 120kV Load Interconnection	Serve increased load in Dundee MI by looping in the Fermi-Radka 120-kV circuit into a new 120kV station. 0.9 miles of new 120kV double circuit structures will be needed to cut the new station in.	MI	MI	Other	Not Shared	Distribution	\$4,050,000	12/20/2013	Planned	120		Y
A in MTEP12	C>B>A	East	ITC	3837	G867-Fermi 3 Nuclear Plant	1563 MW nuclear plant connecting at a new ITCT owned 345 kV substation named LeRoux.	MI	MI	GIP	Shared		\$161,628,000	7/15/2021	Planned	345		Y
A in MTEP12	C>B>A	East	ITC	3839	Zenon (formerly Karma)	Loop the existing Alfred - River Rouge 120kV line into a new 120kV station called Zenon.	MI	MI	Other	Not Shared	Distribution	\$3,000,000	12/1/2013	Planned	120		Y
A in MTEP12	C>B>A	East	ITC	3919	J122-Sigel Wind Farm	60 MW wind farm connecting at a new ITCT 120kV substation named 'MINDEN'	MI	MI	GIP	Shared		\$4,879,184	11/2/2012	Planned	120		Y
A in MTEP12	B>A	West	ITCM	1147	G298, 37061-02	Net: The Transmission Owner shall install a new 161 kV line breaker on the Triboji- Wisdom Line and a new 161 kV transformer breaker located on the existing #1 Triboji 161/69 kV transformer and are shown in Exhibit A2.	IA	IA	GIP	Shared		\$2,300,000	5/1/2013	In Service	161		Y
A in MTEP12	C>B>A	West	ITCM	3500	NERC Alert Facility Ratings for 2012	Verify and remediate facilities as required due to the industry-wide NERC alert	IA	IA	BaseRel	Not Shared		\$14,880,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3501	NERC Alert Facility Ratings for 2013	Verify and remediate facilities as required due to the industry-wide NERC alert	IA	IA	BaseRel	Not Shared		\$15,600,000	12/31/2013	Planned			Y

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A in MTEP12	C>B>A	West	ITCM	3502	NERC Alert Facility Ratings for 2014	Verify and remediate facilities as required due to the industry-wide NERC alert	IA	IA	BaseRel	Not Shared		\$14,400,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3527	Lore-Seippel 69 kV Rebuild	Rebuild the Lore-Seippel 69 kV line.	IA	IA	Other	Not Shared	Reliability	\$940,000	6/1/2012	In Service	69		Y
A in MTEP12	C>B>A	West	ITCM	3528	Heron Lake 50 Mvar Cap	Add a 161 kV 50 Mvar Cap at Heron Lake and convert 161 kV to breaker and a half	MN	MN	BaseRel	Shared		\$6,000,000	12/31/2015	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3530	Creston Substation Upgrades	Joint project between non-MISO WAPA & CIPCO and ITCM to upgrade both Creston TRFs to 150MVA, add 161 kV back to back bus tie breaker, a 69 kV bus tie breaker, high and low side breakers for the new TRFs, and upgrade the 69 kV cap to 30 Mvar.	IA	IA	Other	Not Shared	Reliability	\$3,501,800	12/31/2012	Planned	161	69	Y
A in MTEP12	C>B>A	West	ITCM	3626	Wyoming South Tap	Construct a new 0.11 mile 69 kV tap for the new Wyoming South distribution substation.	IA	IA	Other	Not Shared	Distribution	\$215,000	12/31/2013	Planned	34		Y
A in MTEP12	C>B>A	West	ITCM	3627	Chariton-Corydon 69 kV Rebuild	Rebuild the 69 kV line from Chariton to Corydon.	IA	IA	Other	Not Shared	Condition	\$6,475,000	12/31/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3628	Relocate Lehigh Switch Station	Construct a new Lehigh Switch Station and retire the existing site. This will require a new 69 kV line from the General Food sub to the Northwest sub.	IA	IA	Other	Not Shared	Relocation	\$3,200,000	12/31/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3629	8th Street-Salem 161 kV line	Build a new 8th Street-Salem 161 kV line. This will require -3.5 miles of new 161 kV line to tie to an existing 69 kV line out of 8th Street that is constructed to 161 kV standards. A new 161 kV terminal will be required at Salem and 8th Street. A 2nd 161 kV Salem bus tie will also be installed in series with the existing Salem 161 kV bus tie breaker.	IA	IA	BaseRel	Shared		\$5,500,000	12/31/2014	Planned	161	69	Y
A in MTEP12	C>B>A	West	ITCM	3630	Adams to Stewartville 69 kV Rebuild	Rebuild the ~35 mile line section due to age &	IA	IA	Other	Not Shared	Reliability	\$12,200,000	12/31/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3631	Rock Creek to Mill Creek 69 kV Rebuild	Rebuild the ~5 mile line section to T2-477 ACSR	IA	IA	Other	Not Shared	Reliability	\$2,500,000	12/31/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3632	Arnold 161kV Bus Upgrades	Move the Arnold-Hiawatha 161 kV line terminal to a new terminal position next to the Arnold-6th Street 161 kV line by adding 2 new 161 kV breakers.	IA	IA	BaseRel	Not Shared		\$2,400,000	5/31/2014	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3633	Delevan 69 kV Tap	Add a 69 kV switch and tap for new load and retire Delavan-Easton tap.	MN	MN	Other	Not Shared	Distribution	\$150,000	9/30/2012	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3634	DuPont 69 kV substation & 69 kV capacitor bank	CIPCO will construct a new 69kV Dupont substation tap with 69kV in and out breakers and 20 MVAR capacitor bank. The new sub will tap the Barilla-Nevada North 69kV line.	IA	IA	Other	Not Shared	Distribution	\$0	3/31/2013	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3635	Marshalltown Sub Expansion	Expand the Marshalltown 5 position 161 kV ring bus to a breaker and a half, re-route existing 161 kV lines as needed to optimize reliability of the new breaker and a half configuration in preparation for current and future connections. Install a new control building to house the 161 kV relay equipment as well as the new 115 kV relay equipment.	IA	IA	Other	Not Shared	Reconfig	\$9,251,290	12/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3636	EIC Capacitor Bank Zero Crossing Breaker	Replace the EIC 69 kV cap breaker 7840 with a zero crossing breaker.	IA	IA	Other	Not Shared	Reliability	\$312,000	12/31/2012	Planned		69	Y
A in MTEP12	A	West	ITCM	3637	Dubuque 8th Street 161-69 kV Transformers	ITC will add a Dubuque 8th Street 161/69 kV 150 MVA transformer with new high side and low side breakers. A new 161kV bus tie breaker will also be installed to separate the 161 kV bus. A new 69 kV bus tie breaker will also be installed. The existing 8th Street 161/69 kV transformer will then be upgraded to 150 MVA with new high side and low side breakers.	IA	IA	Other	Not Shared	Reliability	\$9,240,000	12/31/2013	Planned	161	69	Y
A in MTEP12	C>B>A	West	ITCM	3638	Corydon 69 kV Sub Rebuild	Complete rebuild of the substation with all new equipment.	IA	IA	Other	Not Shared	Condition	\$2,000,000	12/31/2014	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3639	Chariton 69 kV Sub Rebuild	Complete rebuild of the substation with all new equipment.	IA	IA	Other	Not Shared	Condition	\$2,000,000	12/31/2014	Planned	69		Y

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A in MTEP12	C>B>A	West	ITCM	3640	Belmond-Meservey	Rebuild the 4.65 mile section old line to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$1,627,500	12/31/2014	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3641	Lucas County to Woodburn Jct. 69 kV Rebuild	Rebuild the ~15 mile section old line to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$5,250,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3642	Chariton-Melrose 69 kV Rebuild	Rebuild the ~13.5 mile section old line to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$4,760,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3643	Osceola Rec. to Woodburn Jct. 69 kV Rebuild	Rebuild the 5.5 mile section old line to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$1,950,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3644	Knoxville to Lucas County 69 kV Rebuild	Rebuild 10.6 miles of old line to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$3,750,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3645	Triboji 6750 (Oleas Tap) 69 kV Rebuild	Rebuild ~9.5 miles of old line to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$3,350,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3646	DPC to Thompson Jct. Radial 69 kV Rebuild	Rebuild 3.5 miles radial tap to new T2-4/0 ACSR.	IA	IA	Other	Not Shared	Condition	\$1,250,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3647	Eastern Iowa Project Rebuilds	Rebuild the 34.5 kV line sections to 69 kV construction and operate at 34.5 kV until conversion.	IA	IA	Other	Not Shared	Condition	\$30,625,000	12/31/2016	Planned	34		Y
A in MTEP12	C>B>A	West	ITCM	3648	Marshalltown-Grand Junction Area Conversion	Rebuild the 34.5 kV line sections to 69 kV construction and operate at 34.5 kV until conversion.	IA	IA	Other	Not Shared	Condition	\$24,885,000	12/31/2015	Planned	34		Y
A in MTEP12	C>B>A	West	ITCM	3649	Plaza Interconnection	The Marshalltown - Timber Creek 161 kV line will be tapped in & out of the new Plaza substation, with line terminals including breakers and a bus tie breaker.	IA	IA	Other	Not Shared	Distribution	\$1,750,000	12/31/2013	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3650	Annual Misc Line Equipment Replacement	Replace defective cross arms, damaged or defective line insulators, failed line arrestors, and damaged, defective or non-code compliant pole guys.	IA	IA	Other	Not Shared	Reliability	\$4,000,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3651	Breaker Replacement Program	Replace the breakers with new breakers. Prioritized replacement of breakers identified as high-maintenance or over-duty with modern technology circuit breakers should continue in order to improve the reliability of the transmission system. Adoption of this alternative is consistent with industry wide trend towards the use of low/no-maintenance SF6 gas puffer-style dead tank circuit breakers with built in bushing current transformers and very low SF6 gas emissions.	IA	IA	Other	Not Shared	Reliability	\$6,600,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3652	PCB Equipment Replacement Program	Replace the PCB equipment as other project work allows for outages.	IA	IA	Other	Not Shared	Environmental	\$1,800,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3653	Pole Top Switch Replacement Program	Annual program to replace pole top switches that are inoperable, unreliable, or that cannot be adequately adjusted.	IA	IA	Other	Not Shared	Reliability	\$960,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3654	Relay Betterment Program	Improve some of the existing relay protection systems and replace end-of-life relays with new microprocessor based relays. Add fiber optics to improve communication between stations where the previously installed pilot scheme is defective.	IA	IA	Other	Not Shared	Reliability	\$1,500,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3655	SMART GRID Project	Replace, upgrade, or install TELECOM, RTUS, Relay, etc.	IA	IA	Other	Not Shared	Metering	\$4,800,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3656	SPCC Program	Spill Prevention Control and Countermeasure (SPCC) Program	IA	IA	Other	Not Shared	Environmental	\$1,500,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3657	Wood Pole Replacement Program	Replace aging wood poles, cross arms, and pole guys with like-for-like poles and equipment.	IA	IA	Other	Not Shared	Condition	\$6,000,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	West	ITCM	3783	H008-Bethel 69 kV Switch Station	Construct a new 3 terminal 69 kV switch station tapping the Windsor-Tripoli 69 kV line.	IA	IA	GIP	Shared		\$2,396,337	10/31/2012	Planned	69		Y
A in MTEP12	C>B>A	West	ITCM	3784	H009-Abbott 161 kV Switch Station	Construct a new 3 terminal 161 kV switch station tapping the Marshalltown-Traer 161 kV line.	IA	IA	GIP	Shared		\$5,436,771	10/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3785	H021-Wellsburg 161 kV Terminal	Add a 161 kV terminal at Wellsburg.	IA	IA	GIP	Not Shared		\$0	10/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3786	H078-Laurel 161 kV Switch Station	Construct a new 3 terminal 161 kV switch station tapping the Marshalltown-Jasper 161 kV line.	IA	IA	GIP	Shared		\$3,468,732	9/20/2011	In Service	161		Y

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A in MTEP12	C>B>A	West	ITCM	3787	H096-Karma 161 kV Switch Station	Construct a new 3 terminal 161 kV switch station tapping the Grand Junction-Perry 161 kV line.	IA	IA	GIP	Shared		\$4,670,229	10/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	ITCM	3825	G540/548 Interconnect Facilities	Construct a new Barton 161kV 3 terminal switch station and upgrade the Adams 161kV line terminal equipment on the Adams-Barton 161kV line terminal.	IA	MN	GIP	Shared		\$4,586,186	10/31/2012	In Service	161		Y
A in MTEP12	C>B>A	West	ITCM	3826	Freeborn-Hayward 161kV Rebuild	Rebuild the Freeborn-Hayward 161kV line to 446 MVA line capacity and upgrade the Hayward 161kV bus tie to 335MVA.	MN	MN	GIP	Not Shared		\$0	6/6/2012	In Service	161		Y
A in MTEP12	C>B>A	West	ITCM	3827	G947 Interconnect Facilities	Install circuit breaker, switches, bus, dead end structure, surge arrestors, etc. at Whispering Willows	IA	IA	GIP	Shared		\$1,180,445	10/1/2012	Planned	161	161	Y
A in MTEP12	C>B>A	West	MDU	3563	Heskett 230 kV Sub line re-route	Re-route existing 230 kV lines terminating at Heskett 230 kV bus to the Mandan 230 kV bus less than 1 mile away	ND	ND	Other	Not Shared	Reliability	\$1,500,000	12/31/2013	Planned	230		Y
A in MTEP12	C>B>A	West	MDU	3564	NE Bismarck	New ring bus on the Stein-Century CEC 115 kV line with radial 115 kV line to Sunrise distribution substation	ND	ND	Other	Not Shared	Distribution	\$5,100,000	7/15/2012	Planned	115	12.5	Y
A in MTEP12	C>B>A	West	MEC	2947	Highways 141 & 44 161-13 kV Substation	Construct the North Grimes Substation by tapping the Bittersweet Road-Granger Tap 161 kV line with in and out breakered line terminals. The Granger Tap is located on the Grimes-100th & 54th 161 kV line.	IA	IA	Other	Not Shared	Distribution	\$1,400,000	12/1/2012	Planned	161	13.2	Y
A in MTEP12	C>B>A	West	MEC	3214	Sub 17 and Sub 39 Replace Relays 161-17-39-1	Replace relaying and remove wave trap	IL	IL	Other	Not Shared	Condition	\$225,000	12/31/2011	Under Constr	161		Y
A in MTEP12	C>B>A	West	MEC	3709	Salix-Kellogg 161 kV line	Construct Salix to Kellogg 161 kV line and rebuild Kellogg-Leeds 161 kV line	IA	IA	Other	Not Shared	Reliability	\$23,800,000	12/31/2015	Planned	161		Y
A in MTEP12	C>B>A	West	MEC	3710	Norwalk	Add 33 MVA 161-13 kV transformer at existing substation	IA	IA	Other	Not Shared	Distribution	\$660,000	6/1/2014	Planned	161	13.2	Y
A in MTEP12	C>B>A	West	MEC	3711	Alice's Road 2nd 161-13 kV Xfmr	Add 33 MVA 161-13 kV transformer at existing substation. Add two 161 kV line circuit breakers	IA	IA	Other	Not Shared	Distribution	\$571,663	6/1/2013	Planned	161	13.2	Y
A in MTEP12	C>B>A	West	MEC	3712	CBEC 345 kV Bus Upgrade--Bay 3	Replace 345 kV double-end break switches, wavelrap, bus and bus support insulators	IA	IA	Other	Not Shared	Condition	\$800,000	12/1/2012	Planned	345		Y
A in MTEP12	C>B>A	West	MEC	3713	CBEC WSEC3 Terminal Rebuild	Replace 345 kV double-end break switches, bus and bus support insulators on the terminal of WSEC Unit 3	IA	IA	Other	Not Shared	Condition	\$353,000	12/1/2015	Planned	345		Y
A in MTEP12	C>B>A	West	MEC	3714	CBEC: Replace 161 kV Breakers WL806 and WL808	Replace two 161 kV oil circuit breakers WL806 and WL808 at the CBEC Substation	IA	IA	Other	Not Shared	Condition	\$364,000	12/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	MEC	3715	CBEC: Replace 161 kV Breakers WL804, WL813 and WL814	Replace three 161 kV oil circuit breakers WL804, WL813 and WL814 at the CBEC Substation	IA	IA	Other	Not Shared	Condition	\$590,000	12/31/2013	Planned	161		Y
A in MTEP12	C>B>A	West	MEC	3716	CBEC: Replace 345 kV Switches WL923, WL929 and WL930	Replace three 345 kV vertical reach switches at the CBEC Substation	IA	IA	Other	Not Shared	Condition	\$336,000	12/31/2011	Planned	345		Y
A in MTEP12	C>B>A	West	MEC	3717	Sub 93 - Replace 345 kV Breaker 944	Replace 345 kV breaker in Sub 93 (Louisa) ring	IA	IA	Other	Not Shared	Condition	\$468,000	12/31/2011	Under Constr	345		Y
A in MTEP12	C>B>A	West	MEC	3718	Sub 71: Second 161-13 kV Xfmr	Install a second 33 MVA 161-13 kV transformer at existing substation	IA	IA	Other	Not Shared	Distribution	\$686,000	6/1/2014	Planned	161	13.2	Y
A in MTEP12	C>B>A	West	MEC	3719	Sub 48: Retire 161 kV Breakers	Retire two 161 kV circuit breakers in Sub 48 ring bus.	IL	IL	Other	Not Shared	Retire	\$97,000	12/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	MEC	3720	Wright Substation: Add 161 kV breaker	Install a 161 kV circuit breaker on the Wall Lake terminal at Wright Substation.	IA	IA	Other	Not Shared	Reliability	\$222,500	3/1/2012	Under Constr	161		Y
A in MTEP12	C>B>A	West	MEC	3721	Fallow Avenue Substation	Interconnection substation and 345 kV line taps	IA	IA	GIP	Shared		\$6,580,000	9/15/2012	Planned	345		Y
A in MTEP12	C>B>A	West	MEC	3723	Shaulis Road 161-13 kV Substation	Construct the Shaulis Road Substation by tapping the Electriform-Washburn 161 kV line with in and out breakered line terminals.	IA	IA	Other	Not Shared	Distribution	\$5,207,000	6/1/2013	Planned	161	13.8	Y
A in MTEP12	C>B>A	West	MEC	3724	Black Hawk: Replace 161 kV Breaker	Replace 161 kV oil circuit breaker 9100 at the Black Hawk Substation	IA	IA	Other	Not Shared	Condition	\$185,000	12/31/2012	Planned	161		Y
A in MTEP12	C>B>A	West	MEC	3728	Hills 161 kV circuit breakers	Replace 161 kV circuit breakers 8204, 8214, and 8174 at Hills Substation	IA	IA	Other	Not Shared	Condition	\$505,000	10/31/2012	Planned	161		Y
A in MTEP12	A	West	MEC	3949	Pony Creek Substation	Interconnection substation and 345 kV line taps	IA	IA	Other	Not Shared	Distribution	\$12,550,000	4/1/2013	Planned	345		Y
A in MTEP12	C>B>A	West	MEC	3998	Sugar Creek Substation	Interconnection substation and 161 kV line taps	IA	IA	Other	Not Shared	Distribution	\$2,809,000	10/1/2013	Planned	161		Y

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A in MTEP12	C>B>A	West	MEC	4006	Harvest Avenue substation	The Harvest Ave. 161-13.2 kV Substation consisting of two 161-13.8 kV 20/26.7/33.3 MVA transformers, two 161 kV line breakers, and two 161 kV 25 MVAR capacitors; the new Harvest Ave.—Tate & Lyle 161 kV line and extension of an existing 161 kV line to form the new Harvest Ave.—Hayes 161 kV line.	IA	IA	Other	Not Shared	Distribution	\$5,200,000	6/1/2013	Planned	161	13.2	Y
A in MTEP12	C>B>A	East	METC	3103	Gallagher 345 kV Breaker-and-Half Bus Installation	Install a 345 kV breaker-and-half configuration at Gallagher substation. This project includes: two new 345 kV breakers, six 345 kV disconnect switches, two 345 kV buses, and associated protection and control equipment at Gallagher, Livingston, and Tittabawassee. The entire Gallagher station will still trip for any fault between Tittabawassee and Livingston.	MI	MI	Other	Not Shared	Operation	\$5,500,000	6/1/2014	Planned	345		Y
A in MTEP12	C>B>A	East	METC	3492	NERC Alert Facility Ratings for 2012	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	MI	Other	not shared	Reliability	\$4,320,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	East	METC	3493	NERC Alert Facility Ratings for 2013	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	MI	Other	not shared	Reliability	\$7,080,000	12/31/2013	Planned			Y
A in MTEP12	C>B>A	East	METC	3494	NERC Alert Facility Ratings for 2014	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	MI	Other	not shared	Reliability	\$6,000,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3575	Batavia - Moore Rd 138 kV Pilot Relay Protection Scheme Installation	Install dual pilot relay protection schemes on the Batavia - Coldwater and Coldwater - Project 1 138kV circuits. Coordinate the installation of a dual pilot relay protection scheme on the Moore Rd to Project 1 138kV circuit with Consumers Energy.	MI	MI	Other	Not Shared	Reliability	\$1,450,000	12/31/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3577	Beecher 138kV Station Equipment Upgrade (Whiting circuit)	Upgrade the 138kV terminal equipment at Beecher on the Beecher - Whiting circuit	MI	MI	BaseRel	Not Shared		\$100,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3583	Canal Jct. - Delhi 138 kV Sag Remediation	Remediate the remaining 6 sag limits to bring the circuit section rating up to the 4/0 ACSR conductor rating of 117 MVA summer normal, 131 MVA summer emergency. Replace structures with those capable of supporting 954 ACSR in the future.	MI	MI	BaseRel	Not Shared		\$540,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3584	Cornell 138 kV Bus Rebuild and Switch Replacement	Replace both blue and white buses and switches 505 and 506 at Cornell substation.	MI	MI	Other	Not Shared	Operation	\$2,600,000	12/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3585	Delhi - Tompkins #1 and #2 138 kV Rebuild	Complete structure replacement on the double-circuit line from Delhi substation to the north and running south to Tompkins substation.	MI	MI	Other	Not Shared	Condition	\$15,700,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3588	Keystone 138 kV Breaker Additions	Install 138kV circuit breakers in the Transformer 1 and 2 positions (15B7 and 7W8) at Keystone. Also install 138kV disconnect switches on the transformer side of each breaker	MI	MI	Other	not shared	Reliability	\$1,100,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3590	SVC at Tippy	Install Static Var Compensator (SVC) at Tippy	MI	MI	BaseRel	Shared		\$28,500,000	6/1/2015	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3592	Stronach - Pere Marquette 138 kV Pilot Relay Protection Scheme Installation	Install a dual pilot relay protection scheme on the Stronach to Pere Marquette 138 kV circuit	MI	MI	Other	not shared	Reliability	\$550,000	12/31/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3595	Tompkins 138 kV Station Equipment Upgrades	Replace the 138 kV station equipment that is on the low side of transformer #1 at Tompkins.	MI	MI	BaseRel	not shared		\$90,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3599	Palisades 345 kV Station Equipment Upgrades	Upgrade the station equipment at Palisades in rows 25, 27, and 29.	MI	MI	BaseRel	not shared		\$4,000,000	12/31/2014	Planned	345		Y
A in MTEP12	C>B>A	East	METC	3612	METC Annual Battery Replacement Program 2014	Annual battery replacement program	MI	MI	Other	not shared	Condition	\$125,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3613	METC Annual Breaker Replacement Program 2014	Annual breaker replacement program	MI	MI	Other	not shared	Condition	\$6,000,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3614	METC Annual Potential Device Replacement Program 2014	Annual potential device replacement program	MI	MI	Other	not shared	Condition	\$300,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3615	METC Annual Power Plant Control Relocation Program 2014	Annual power plant control relocation program	MI	MI	Other	not shared	Reconfig	\$1,500,000	12/31/2014	Planned			Y

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A in MTEP12	C>B>A	East	METC	3616	METC Pole Top Switches Additions	Install a new 138 kV, 3-way, full-load-break pole top switch at the Parkville junction, and install a new 138 kV, 1-way, full-load-break pole top switch at the Camelot Lake junction (on Bullock – Camelot Lake 138 kV section)	MI	MI	Other	not shared	Operation	\$360,000	6/1/2013	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3617	METC Annual Relay Betterment Program 2014	Annual relay betterment program	MI	MI	Other	not shared	Condition	\$3,600,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3618	METC Annual Relay Betterment Program 2015	Annual relay betterment program	MI	MI	Other	not shared	Condition	\$3,600,000	12/31/2015	Planned			Y
A in MTEP12	C>B>A	East	METC	3619	METC Annual Surge Arrestor Replacement Program 2012	Annual surge arrestor replacement program	MI	MI	Other	not shared	Condition	\$240,000	12/31/2012	Planned			Y
A in MTEP12	C>B>A	East	METC	3620	METC Annual Surge Arrestor Replacement Program 2013	Annual surge arrestor replacement program	MI	MI	Other	not shared	Condition	\$240,000	12/31/2013	Planned			Y
A in MTEP12	C>B>A	East	METC	3621	METC Annual Surge Arrestor Replacement Program 2014	Annual surge arrestor replacement program	MI	MI	Other	not shared	Condition	\$240,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3622	Whiting Transformer #8 Replacement	Replace Whiting transformer bank #8 with ITC standard 138/120kV, 300 MVA transformer that utilizes modern technological advances in current transformer design. This unit would be similar to the Atlanta-AKT transformer which does not possess an LTC or forced	MI	MI	Other	not shared	retire	\$1,900,000	6/1/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3623	METC Annual Wood Pole Replacement Program 2014	Annual wood pole replacement program	MI	MI	Other	not shared	Condition	\$4,800,000	12/31/2014	Planned			Y
A in MTEP12	C>B>A	East	METC	3625	METC Customer Interconnections - Year 2016	Distribution Interconnection Request	MI	MI	Other	not shared	Distribution	\$2,500,000	12/31/2016	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3834	J052 & J201-Tuscola Bay Wind Farm	Base 100 MW wind farm (J052) with a provisional 20 MW expansion phase (J201) totaling 120 MW of generation connecting to the existing METC 138kV Manning substation	MI	MI	GIP	Shared		\$8,329,000	9/30/2012	Planned	138		Y
A in MTEP12	C>B>A	East	METC	3835	J132-Beebe Wind Farm	125 MW wind farm connecting at a new METC owned 345kV substation named 'SLATE'	MI	MI	GIP	Shared		\$10,066,800	10/15/2012	Planned	345		Y
A in MTEP12	B>A	West	MP	1292	Raise tower height on ETCO-Forbes 115 kV line	Raise tower height on ETCO-Forbes 115 kV line so the 336 ACSR conductor rating can reach 122/134 MVA	MN	MN	Other	Not Shared	Reliability	\$400,000	12/1/2013	Planned	115		Y
A in MTEP12	C>B>A	West	MP	3532	25 Line tap (Maturi 115/34.5 kV Substation)	Tap of MP Hibbing – Virginia Line #25 to serve new load	MN	MN	Other	Not Shared	Distribution	\$1,583,101	9/1/2012	Under Constr	115	34.5	Y
A in MTEP12	C>B>A	West	MP	3534	Verndale 115/34.5 Transformer	Add Transformer Capacity at Verndale Substation	MN	MN	Other	Not Shared	Reliability	\$499,300	12/30/2013	Planned	115	34.5	Y
A in MTEP12	C>B>A	West	MP	3842	Bison4 Cap	Add a new 40 Mvar Cap bank at Bison 230 kV sub	MN	MN	BaseRel	Not Shared		\$596,685	8/31/2012	Planned	230		Y
A in MTEP12	C>B>A	West	MP	3843	Arrowhead4 Cap	Add a new 40 Mvar Cap bank at Arrowhead 230 kV sub	MN	MN	BaseRel	Not Shared		\$778,377	9/30/2012	Planned	230		Y
A in MTEP12	C>B>A	West	MRES	3535	Alexandria Switching Station - Alexandria (OTP) Upgrade	Upgrade Alexandria Switching Station - Alexandria (OTP) 115 kV by raising 5 towers.	MN	MN	Other	Not Shared	Reliability	\$250,000	3/1/2013	Planned	115		Y
A in MTEP12	B>A	East	NIPS	3154	Sheffield Substation - 13877 Reactors	Add 0.795 Ohm reactor on BP Whiting to Sheffield	IN	IN	BaseRel	Not Shared		\$807,141	12/1/2012	Planned	138		Y
A in MTEP12	C>B>A	East	NIPS	4002	Burnham (ComEd) to Munster 345 kV Line Thermal Rating Upgrade	This project entails the upgrade of communications equipment at Burnham and Munster Substations and upgrade of relaying at Munster to increase the emergency thermal rating of this line to 1195 MVA.	IN	IN	Other	Not Shared	MP funded	\$0	3/31/2012	Planned	345		Y
A in MTEP12	C>B>A	East	NIPS	4003	Re-sag the Crete (ComEd) to St. John 345 kV Line for Thermal Rating Upgrade	This project entails the re-sagging of the Crete to St. John 345 kV Line to increase the emergency thermal rating to 1399 MVA.	IN	IN	Other	Not Shared	MP funded	\$0	3/31/2012	Planned	345		Y
A in MTEP12	C>B>A	East	NIPS	4004	Re-configure the Existing Burr Oak Substation to a 345 kV Ring Bus	The addition of one 345 kV breaker at Burr Oak Substation will alter the existing 345 kV bus configuration to a ring bus configuration. A ring bus configuration will increase the thermal rating of the Burr Oak to R.M. Schafer 345 kV line.	IN	IN	Other	Not Shared	MP funded	\$0	3/31/2013	Planned	345		Y
A in MTEP12	C>B>A	East	NIPS	4005	Replace Existing Burr Oak Substation 345/138 kV Transformer	Replace the existing Burr Oak transformer with a 560 MVA 345/138 kV transformer.	IN	IN	Other	Not Shared	MP funded	\$0	3/31/2013	Planned	345		Y

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A in MTEP12	B>A	West	OTP	585	Pelican Rapids 115 kV Load Conversion	Pelican Rapids - Pelican Rapids Turkey Plant 115 kV line, and upgrade load to 115/12.5 kV service	MN	MN	Other	Not Shared	Reliability	\$858,869	12/31/2014	Planned	115		Y
A in MTEP12	C>B>A	West	OTP	2857	Green Valley 41.6 kV Line Upgrade	Rebuild Existing 2.5-Mile 41.6 kV Line	MN	MN	Other	Not Shared	Reliability	\$550,000	7/1/2012	In Service	41.6		Y
A in MTEP12	C>B>A	West	OTP	3431	Hankinson 230/41.6 kV Transformer Addition	Add a second 230/41.6 kV transformer at Hankinson Substation which will include the addition of 2 new 230 kV breakers.	ND	ND	Other	Not Shared	Reliability	\$860,000	10/1/2012	Planned	230	41.6	Y
A in MTEP12	C>B>A	West	OTP	3462	Project G-968 100 MW Wind Farm near Viking MN	Add 3 breaker 115 kV ring bus	MN	MN	GIP	Not Shared		\$3,060,000	10/30/2013	Planned	115	115	Y
A in MTEP12	B>A	West	OTP	3464	Project G-873 20 MW Wind Farm on Donaldson 41.6 kV Line	Add 3 Way Switch on 41.6 kV line between Donaldson 115 kV substation to Donaldson distribution sub.	MN	MN	GIP	Not Shared		\$160,000	12/1/2012	Planned	41.6		Y
A in MTEP12	B>A	West	OTP	3465	Project G-875 80 MW Wind Farm at Donaldson 115/41.6 kV Substation	Add 3 new 115 kV Breakers & expand substation to accommodate wind farm interconnection. GIA executed on March 25, 2011	MN	MN	GIP	Not Shared		\$1,522,125	12/31/2014	Planned	115	41.6	Y
A in MTEP12	C>B>A	West	OTP	3658	Oakes 230/41.6kV Substation	New 230 kV Ring Bus, Add 2nd 230/41.6 kV Xfmr, Build new 8 mile 41.6 kV line	ND	ND	Other	Not Shared	Reliability	\$7,115,000	9/30/2014	Planned	230	41.6	Y
A in MTEP12	C>B>A	West	OTP	3665	Herman - Nashua 41.6 kV Line Rebuild	Repole 16 miles of 41.6 kV line to higher capacity	MN	MN	Other	Not Shared	Reliability	\$450,000	10/1/2013	Planned	41.6	41.6	Y
A in MTEP12	C>B>A	West	OTP	3790	Oakes - Forman 230 kV Line Rebuild	Rebuild 7.7 miles of 230 kV line. Replacing 795 ACSR conductor with 1272 ACSR conductor	ND	ND	Other	Not shared	Condition	\$3,000,000	12/30/2011	In Service	230	230	Y
A in MTEP12	C>B>A	East	WPSC	3565	Portland Transmission Upgrade	Upgrade to replace outdated equipment. Bus, breakers, relays, and other equipment as necessary.	MI	MI	Other	Not Shared	Condition	\$1,500,000	12/31/2012	Under Constr	69		Y
A in MTEP12	C>B>A	East	WPSC	3566	Portland to North Shade	Portland to North Shade line rebuild	MI	MI	Other	Not Shared	Condition	\$13,800,000	12/31/2015	Planned	69		Y
A in MTEP12	C>B>A	East	WPSC	3568	Atlanta Station Modification 2012	Breaker Replacement and Relay Upgrade	MI	MI	Other	Not Shared	Condition	\$200,000	12/31/2012	Under Constr	69		Y
A in MTEP12	C>B>A	East	WPSC	3569	Atlanta Station Modification 2013	Breaker Replacement	MI	MI	Other	Not Shared	Condition	\$125,000	12/31/2013	Planned	69		Y
A in MTEP12	C>B>A	East	WPSC	3570	Airport Station Modification 2012	Install Back Up Relay for the Airport to Mio 138kV circuit and rebuild the LTC	MI	MI	Other	Not Shared	Operation	\$125,000	12/31/2012	Planned	69		Y
A in MTEP12	C>B>A	East	WPSC	3571	Airport Station Modification 2014	Breaker Replacement and Protective Equipment upgrade	MI	MI	Other	Not Shared	Condition	\$900,000	12/31/2014	Planned	69		Y
A in MTEP12	C>B>A	West	XEL	3760	Kohlman lake Overstressed Breakers	Replace the overstressed Kohlman lake breakers 5P105 and 5P99	MN	MN	Other	Not Shared	Reliability	\$460,000	6/1/2012	In Service	115		Y
A in MTEP12	C>B>A	West	XEL	3761	Wilmarth breakers Overstresses Breakers	Replace the overstressed Wilmarth breakers 5S16 and 5S21.	MN	MN	Other	Not Shared	Reliability	\$750,000	6/1/2012	In Service	115		Y
A in MTEP12	C>B>A	West	XEL	3762	U.S. Rubber Breaker Replacement Project	Replace the overstressed U.S Rubber breakers 535 and 536.	WI	WI	Other	Not Shared	Reliability	\$400,000	6/30/2012	Planned	69		Y
A in MTEP12	C>B>A	West	XEL	3763	Medford Breaker Replacement Project	Replace the overstressed Medford breaker 4E254.	WI	WI	Other	Not Shared	Reliability	\$180,000	6/1/2012	In Service	69		Y
A in MTEP12	C>B>A	West	XEL	3764	T-Corners Breaker Replacement Project	Replace the overstressed T-Corners breakers 4E23 and 4E24.	WI	WI	Other	Not Shared	Reliability	\$375,000	12/30/2012	Planned	69		Y
A in MTEP12	C>B>A	West	XEL	3765	Inver hills Breaker Replacement Project	Replace the overstressed Inver hills breaker 5P147	MN	MN	Other	Not Shared	Reliability	\$300,000	6/1/2012	In Service	115		Y
A in MTEP12	C>B>A	West	XEL	3766	Minn Valley Breaker Replacement Project	Replace the overstressed Minn Valley breaker 470	MN	MN	Other	Not Shared	Reliability	\$420,000	6/1/2012	In Service	69		Y
A in MTEP12	C>B>A	West	XEL	3767	Grassland Second Transformer/Cap bank	Install a 7.2 MVAR Cap bank at Grassland and upgrade buses to include a second distribution transformer	WI	WI	Other	Not Shared	Distribution	\$750,000	6/1/2012	In Service	69		Y
A in MTEP12	C>B>A	West	XEL	3768	Twin Cities High voltage mitigation	Install 40 MVAR inductor at Chisago County, 30 MVAR inductor at Kohlman Lake and 30 MVAR inductor at Red Rock substation	MN	MN	BaseRel	Not Shared		\$1,500,000	6/1/2015	Planned	34.5		Y
A in MTEP12	C>B>A	West	XEL	3769	Mankato - Twin Cities through flow mitigation	Re-build 13 miles of 69 kV line from Carver County substation to Arlington to 477 ACSR conductor and Install 5.4 MVAR capacitor at Crystal Foods substation along with Auto transfer switch.	MN	MN	Other	Not Shared	Reliability	\$6,000,000	6/1/2014	Planned	69		Y
A in MTEP12	C>B>A	West	XEL	3770	US Rubber - New 14 MVA TR	Build a new US Rubber substation on the existing footprint with a single 14 MVA transformer	WI	WI	Other	Not Shared	Distribution	\$550,000	10/1/2012	Planned	69		Y
A in MTEP12	C>B>A	West	XEL	3771	Pipestone-Lyon County 115 kV Rebuild	Rebuild the existing 115 kV line from Pipestone-Buffalo Ridge-lake Yankton-Lyon County to 795 ACSS.	MN	MN	Other	Not Shared	Condition	\$25,804,000	8/1/2011	In Service	115		Y

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A in MTEP12	C>B>A	West	XEL	3772	Viking Distribution Substation	Tap the existing 115 kV line from Edina to Eden Prairie to build the new Viking distribution substation. Add one 115/13.8 kV, 70 MVA transformer with three 70's as an ultimate build out	MN	MN	Other	Not Shared	Distribution	\$2,400,000	6/1/2013	Planned	115	13.8	Y
A in MTEP12	C>B>A	West	XEL	3774	Weber Lake	115/34.5 kV connection in northern Wisconsin. Electrically it is 1/2 way between Ironwood and Park Falls. The existing 28 MVA 115/34.5 kV transformer at Park Falls will be moved to the new Weber Lake site. This substation will allow load serving due to increased cranberry bog farming. The 34.5 kV connection will be near the existing 34.5 kV Weber Lake regulator.	WI	WI	Other	Not Shared	Distribution	\$4,948,000	6/1/2012	In Service	115	34.5	Y
A in MTEP12	C>B>A	West	XEL	3775	Couderay - Osprey 161 kV line	This project will continue the 161 kV connection from Stone Lake - Couderay (Radisson) on to Osprey. This is needed to supply power to the eastern 115 kV line running between Bayfront - Ironwood - Chippewa falls during low hydro conditions. There will be a new 161/115 kV connection at Osprey	WI	WI	BaseRel	Shared		\$46,500,000	12/1/2014	Planned	161	115	Y
A in MTEP12	C>B>A	West	XEL	3776	Osprey - Park Falls 115 kV rebuild (161kV construction)	This 115 kV rebuild will allow for proposed load growth in the Park Falls area. This rebuild was part of the Park Falls Biorefinery project but is being separated for the 2012 MTEP process. The existing 115 line between Park Falls and Osprey is approximately 90 years old. It is in poor condition and needs to be rebuilt.	MN	MN	Other	Not Shared	Condition	\$19,000,000	6/1/2013	Planned	115		Y
A in MTEP12	C>B>A	West	XEL	3777	Meadow Lake Distribution Interconnection	Meadow Lake has been requested by NSP Distribution. It is located near Schmidt Lake Rd and Hwy 169 (just west of MPLS). The preferred plan is to construct an 8 mile line between Plymouth and Twin Lakes. The Meadow lake substation will be located in the center of this line.	MN	MN	Other	Not Shared	Distribution	\$16,500,000	6/1/2015	Planned	115	13.8	Y
A in MTEP12	C>B>A	West	XEL	3778	Eau Claire Breaker and 1/2	This project rebuilds the 161 kV at Eau Claire to a Breaker and 1/2	WI	WI	Other	Not Shared	Reliability	\$8,700,000	6/1/2013	Planned	161		Y
A in MTEP12	C>B>A	West	XEL	3779	Norrie 115 kV substation	This project is a new 115/88 kV substation near Ironwood MI. The 88 kV connection will be moved from Ironwood to Norrie.	MI	WI	Other	Not Shared	Reliability	\$10,600,000	6/1/2013	Planned	115	4.2	Y
A in MTEP12	C>B>A	West	XEL	3780	Orvana Mine	Construction of a new 115 kV distribution substation and feed line for a Michigan Mine	MI	MI	Other	Not Shared	Distribution	\$1,600,000	6/1/2013	Planned	115	13.8	Y
A in MTEP12	C>B>A	West	XEL	3797	Maple River - Red River 2nd 115 kV line	build 5 miles of new 115 kV circuit between Maple River and Red River substations	ND	ND	Other	Not Shared	Reliability	\$6,000,000	6/1/2015	Planned	115		Y
A in MTEP12	C>B>A	West	XEL	3821	Coulee Ave Ring Bus and TR Upgrade	This project converts the existing bus tie breaker at Coulee Ave into a 4 position ring bus. This project also upgrades the existing 70 MVA TR5 with a new 112 MVA TR.	WI	WI	BaseRel	Not Shared		\$4,785,000	4/13/2012	In Service	161	69	Y
A in MTEP05	A	Central	AmerenIL	726	LaSalle Area Development	Ottawa-Wedron Fox River 138 kV - Construct 9 miles new 138 kV line, 1 new 138 kV breaker at Ottawa	IL	IL	Other	Excluded		\$8,962,967	1/6/2013	Planned	138		Y
A in MTEP06	A	Central	AmerenIL	739	Franklin County Power Plant Connection	Franklin County Power Plant Connection - Tap 345 kV Line 4561 Tap, and install new 345 kV ring bus	IL	IL	Other	Not Shared (Pre-RECB 1)		\$6,410,900	11/1/2020	Planned	345		Y
A in MTEP10	A	Central	AmerenIL	2064	South Bloomington - Old Danvers 138 kV line - Reconductor	S Bloomington-Old Danvers 138 kV Line 1364 Reconductor 3.33 miles from S. Bloomington to West Washington (S Bloomington to Diamond Star Tap)	IL	IL	BaseRel	Not Shared		\$2,113,000	2/8/2013	Planned	138		Y
A in MTEP08	A	Central	AmerenIL	2068	Latham - Oreana 345 kV line	Convert Oreana 345 kV Bus to 6-Position Ring Bus with 3000 A Capability; Construct 8.5 miles of 345 kV line (2-954 kcmil ACSR conductor or equivalent capability) from Oreana Substation to 345 kV Line 4571 tap to Latham Substation. 3-345 kV PCB's at Oreana Substation.	IL	IL	BaseRel	Shared		\$35,077,000	12/1/2014	Planned	345		Y

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A in MTEP08	A	Central	AmerenIL	2069	South Bloomington - Install new 560 MVA 345 /138 Xfmr	South Bloomington Area 345/138 kV Substation - Install 345/138 kV, 560 MVA Transformer. Extend new 345 kV line approximately 5 miles from Brokaw Substation to South Bloomington Substation. Install 1-138 kV PCB at South Bloomington Substation, and 2-345 kV PCB's at Brokaw Substation	IL	IL	BaseRel	Shared		\$20,029,000	6/1/2015	Planned	345	138	Y
A in MTEP11	A	Central	AmerenIL	2239	MVP Portfolio 1 - Sidney to Rising 345 kV line	Sidney to Rising 345 kV line	IL	IL	MVP	Shared		\$83,000,000	11/15/2016	Planned	345		Y
A in MTEP09	A	Central	AmerenIL	2273	Supply to LaFarge Customer Substation	Provide 161 kV supply to customer substation	IL	IL	Other	Not Shared	Distribution	\$570,000	6/1/2013	Planned	161		Y
A in MTEP10	A	Central	AmerenIL	2288	Washington Street Substation 'In-Out'	Re-Route S. Bloomington to Danvers Line 1364 through the West Washington St. Substation with an "in-and-out" arrangement Replace existing tap to 138 kV Line 1326 with 'in and out' arrangement.	IL	IL	Other	Not Shared	Reliability	\$4,155,000	6/1/2013	Planned	138		Y
A in MTEP09	A	Central	AmerenIL	2472	New 345kV Supply at Fargo Substation	Tap existing 345kV line from Duck Creek to Tazewell and create new Maple Ridge Substation (\$6.5M)Build a new supply line to the Fargo Substation by extending 20 miles of 345kV from the new Maple Ridge Substation (\$50.1M)Create Fargo Station and install 560 MVA 345/138kV Transformer (\$9.4M)	IL	IL	BaseRel	Shared		\$78,168,000	12/1/2016	Planned	345	138	Y
A in MTEP10	A	Central	AmerenIL	2957	Edwards-Tazewell 138 kV Line 1373	Edwards-Tazewell 138 kV Line 1373 - Reconductor 1.57 miles of 795 kcmil ACSR conductor and 7.5 miles of 927 kcmil ACAR conductor with conductor capable of carrying 1600 A under summer emergency conditions. Replace a 1200 A wavelrap and CT's at the Edwar	IL	IL	BaseRel	Not Shared		\$121,000	12/31/2012	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	2980	Tazewell-San Jose Rail - Reconductoring	Tazewell-San Jose Rail Substation section of East Springfield-Tazewell-1384 138 kV Line - Reconductor 3.67 miles of 927 kcmil ACAR conductor at the Tazewell end of the line with conductor capable of carrying at least 1278 A under summer emergency	IL	IL	BaseRel	Not Shared		\$3,251,000	6/1/2013	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	2981	McLean-Oglesby 138 kV Reconductor	Replace 9.72 miles of 138 kV line on L1382, from McLean County Substation to El Paso Tap to a minimum 1200A SE capability	IL	IL	BaseRel	Not Shared		\$5,100,000	12/1/2013	Planned	138		Y
A in MTEP10	A	Central	AmerenIL	2986	North Alton Substation Supply	North Alton 138-34.5 kV Substation Supply - Supply new 138-34.5 kV Substation from an in-out by tapping the existing Wood River to Stallings 138 kV line ("in and out"). Build approximately 4 miles of double-circuit 138 kV line to the new North Alton Substation connection to the Wood River-Stallings-1456 138 kV line. Approximately 4 miles of double-circuit 138 kV line needed.	IL	IL	Other	Not Shared	Distribution	\$12,891,000	12/1/2017	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	2989	Sidney Transformer Addition	Sidney 345/138 kV Substation - Install a second 345/138kV, 560 MVA Transformer and establish 345 kV ring bus	IL	IL	Other	Not Shared	Reliability	\$14,200,000	6/1/2013	Planned	345	138	Y
A in MTEP10	A	Central	AmerenIL	2992	Bondville-S.W. Campus	Bondville-S.W. Campus 138 kV - Construct 8 miles of new 138 kV line. Construct 138 kV Ring Bus at Bondville (2 new PCB's) and a 138 kV Ring Bus at Champaign S.W. Campus (4 new PCB's).	IL	IL	Other	Not Shared	Distribution	\$10,000,000	6/1/2014	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	3017	MVP Portfolio 1 - Palmyra Tap -Quincy-Meredosia - Ipava & Meredosia-Pawnee 345 kV Line	Palmyra Tap to Quincy to Meredosia to Ipava 345 line and Meredosia to Pawnee 345 kV line. Install additional transformers at Quincy, Meredosia and Pawnee.	IL	IL	MVP	Shared		\$432,160,000	11/15/2017	Planned	345	138	Y
A in MTEP11	A	Central	AmerenIL	3169	MVP Portfolio 1 - Pawnee to Pana - 345 kV Line	Pawnee to Pana 345 kV line including additional transformer at Pana	IL	IL	MVP	Shared		\$99,360,000	11/15/2018	Planned	345	138	Y
A in MTEP11	A	Central	AmerenIL	3337	G931 Paxton-Gilman Reconductoring	Reconductor to 1200 A summer emergency capability	IL	IL	GIP	Not Shared		\$7,390,000	12/1/2013	Planned	138		Y

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A in MTEP11	A	Central	AmerenIL	3357	Hennepin-E. Kewanee L1552 - Increase Ground Clearance	G545 and G569 Increase ground clearance on 477 kcmil ACSR conductor to permit operation at 120 degrees C. Upgrade E. Kewanee breaker and terminal equipment to 1200 A capability	IL	IL	GIP	Not Shared		\$3,180,000	12/31/2012	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	3358	G545 Generator connection and bus rearrangement - E. Kewanee	Rearrange 138 kV bus at E. Kewanee and install terminal equipment (including 1200 A breaker) to connect wind farm (G545)	IL	IL	GIP	Not Shared		\$1,501,000	10/15/2012	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	3359	G569 Generator connection and bus upgrade - E. Galesburg	Upgrade 138 kV bus at E. Galesburg and install terminal equipment, including 1200 A breaker, to facilitate connection of wind farm (G569).	IL	IL	GIP	Not Shared		\$834,000	10/1/2012	Planned	138		Y
A in MTEP11	A	Central	AmerenIL	3370	Oreana Substation - Add 138-69 kV Transformer	To accommodate the installation of a new 138-69 kV transformer at Oreana, install 1-2000 A breaker and 2-2000 A disconnect switches to expand ring bus. Install 138 kV, 600 A motor operated disconnect switch at high-side of new 138-69 kV transformer.	IL	IL	Other	Not Shared	Condition	\$750,000	8/26/2016	Planned	138		Y
A in MTEP11	A	Central	AmerenIL, DEM	2237	MVP Portfolio 1 - Pana - Mt. Zion - Kansas Sugar Creek 345 kV line	Pana to Mt. Zion to Kansas to Sugar Creek 345 kV line. Install transformers at Mt. Zion and Kansas	IL	IL	MVP	Shared		\$318,410,000	11/15/2019	Planned	345	138	Y
A in MTEP11	A	Central	AmerenIL, MEC	3022	MVP Portfolio 1 - Fargo-Galesburg-Oak Grove 345 kV Line	Fargo-Galesburg-Oak Grove 345 kV Line - New 70 mile, 3000 A summer emergency capability line. 345 kV PCBs: 3-Fargo, 1-Oak Grove. 3-Galesburg. 560 MVA xfmr at Galesburg	IA	IL	MVP	Shared		\$221,952,952	6/1/2019	Planned	345	138	Y
A in MTEP08	A	Central	AmerenMO	1235	Fredericktown-AECI Fredericktown	Increase ground clearance on 12 miles	MO	MO	Other	Not Shared		\$1,200,000	6/1/2016	Planned	161		Y
A in MTEP11	A	Central	AmerenMO	2306	Northwest Cape Area 345/161 kV Substation	Install 560 MVA, 345/161 kV Transformer. Provide 345 kV supply from 11 mile 345 kV line extension from Lutesville Substation	MO	MO	BaseRel	Shared		\$30,751,000	6/1/2016	Planned	345	161	Y
A in MTEP10	A	Central	AmerenMO	2972	Sandy Creek-Joachim Reconductoring	Sandy Creek-Joachim-1 138 kV Line - Reconductor 6.2 miles of 795 kcmil ACSR with conductor having 1600 A summer emergency capability between Sandy Creek and Bailey Substations	MO	MO	BaseRel	Not Shared		\$3,305,700	8/6/2012	Under Construction	138		Y
A in MTEP10	A	Central	AmerenMO	2976	Central Substation Relocation	Central 138-34.5 kV Substation - Move Central 138-34 kV Substation approximately one-half mile and reterminate existing 138 kV supply lines (Cahokia-Central-1&2 and Central-Watson-1)	MO	MO	Other	Not Shared	Relocation	\$4,632,900	12/1/2012	Planned	138		Y
A in MTEP11	A	Central	AmerenMO	3170	MVP Portfolio 1 - Adair-Palmyra Tap 345 kV Line	Adair - Palmyra Tap 345 kV, 58 miles, 3000A. Establish a new 345 kV substation at Palmyra Tap	MO	MO	MVP	Shared		\$109,560,000	11/15/2018	Planned	345		Y
A in MTEP11	A	Central	AmerenMO, ITCM, MEC	2248	MVP Portfolio 1 - Adair - Ottumwa 345	Adair Substation - New 560 MVA, 345/161 kV Transformer. New 71 mile 345 kV line from Adair to Ottumwa with 3000 A summer emergency capability	IA	MO	MVP	Shared		\$171,114,904	11/15/2018	Planned	345	161	Y
A in MTEP11	A	West	ATC LLC	333	Hiawatha-Indian Lake conversion to 138 kV	Hiawatha-Indian Lake conversion to 138 kV	MI	MI	Other	Excluded	Condition	\$4,880,000	11/1/2013	Planned	138		Y
A in MTEP08	A	West	ATC LLC	356	Rockdale-West Middleton 345 kV	Construct a new 345/138 kV substation at Cardinal (next to the existing West Middleton sub), install a 345/138 kV 500 MVA transformer at Cardinal, construct 47.9 miles overhead 345 kV line from Albion to Cardinal/West Middleton, modifications to the existing West Middleton substation, construct a new Albion 345 kV switching station. Facility costs listed in the facility table are for the southern route.	WI	WI	BaseRel	Shared		\$219,124,872	6/1/2013	Planned	345	138	Y
A in MTEP08	A	West	ATC LLC	574	Monroe County - Council Creek 161 kV line projects	Monroe County - Council Creek 161 kV line, Council Creek 161/138 kV transformer; Council Creek-Petenwell uprate 138 kV	WI	WI	Other	Not Shared		\$35,363,363	12/31/2014	Planned	161	69	Y
A in MTEP11	A	West	ATC LLC	2037	Rebuild Dane-Okee 69 kV	Rebuild Dane-Okee 69 kV	WI	WI	Other	Not Shared	Reliability	\$11,013,735	8/31/2012	Planned	69		Y
A in MTEP11	A	West	ATC LLC	2844	MVP Portfolio 1 - Pleasant Prairie-Zion Energy Center 345 kV line	Construct a new Pleasant Prairie-Zion Energy Center 345-kV line	WI	IL	MVP	Shared		\$28,860,000	8/14/2013	Planned	345		Y

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A in MTEP11	A	West	ATC LLC	2846	Straits power flow control	Install AC-DC-AC Back to Back Voltage Source Converterpower (VSC) flow controller at the Straits 138-kV substation	MI	MI	BaseRel	Shared		\$130,300,000	7/19/2014	Planned	138	138	Y	
A in MTEP11	A	West	ATC LLC	3108	Rebuild Pine River-Straits 69kV dbl ckt line	Rebuild Pine River-Straits 69kV dbl ckt line with I2-477 ACSR	MI	MI	Other	Not Shared	Reliability	\$40,804,513	6/1/2014	Planned	69		Y	
A in MTEP11	A	West	ATC LLC	3206	G833-4_J022-3 Long Term Solution	1) Construct a new Barnhart 345 & 138 kV substation 2) Install a new 345/138 kV transformer at Barnhart 3) Loop Edgewater-South Fond du Lac, Edgewater-Cedarsauk, Sheboygan Energy Center-Granville 345 kV lines into Barnhart4) Loop the South Sheboygan Falls-Mullet River 138 kV line into Barnhart 138 kV 5) Construct a new 138 kV line from Barnhart to Plymouth #4 6) Construct a new 138 kV line from Plymouth #4 to Howards Grove 7) Construct a new 138 kV line from Howards Grove to Erdman 8) Convert the existing Forest Junction-Howards Grove-Plymouth #4 138 kV line and the northern portion of the existing Plymouth #4-Holland 138 kV line to 345 kV 9) Terminate the not-converted Holland 138 kV line at Barnhart 138 kV 10) Terminate the southern end of the converted 345 kV line at Barnhart 11) Construct a new Branch River 345 kV substation 12) Loop the converted 345 kV line into Branch River 345 kV substation 13) Loop the Point Beach-Forest Junction, Point Beach-Sheboygan Energy Center 345 kV lines into Branch River 14) Uprate Barnhart-Cedarsauk 345 kV line to 960 MVA for SN/SE	WI	WI	GIP	Shared			\$173,310,000	6/1/2018	Planned	345		Y
A in MTEP11	A	West	ATC LLC	3395	Milwaukee Co T-D	Install a new Milwaukee Co T-D substation by looping in line 5042 (Bluemound-Everett 138kV)	WI	WI	Other	Not Shared	Distribution	\$33,500,000	4/15/2015	Planned	138	13.2	Y	
A in MTEP11	A	West	ATC LLC	3449	Rebuild the Atlantic-M38 69kV line	Rebuild the Atlantic-M38 69kV line with a larger conductor	MI	MI	Other	Not Shared	Reliability	\$17,613,485	12/31/2013	Planned	69		Y	
A in MTEP11	A	West	ATC LLC	3472	Pleasant Prairie Bus Reconfiguration	Construct a new 6-rung breaker-and-a-half 345 kV bus at the P4 site adjacent to the existing P4 yard.	WI	WI	Other	Not Shared	Reliability	\$33,620,000	5/23/2013	Planned	345		Y	
A in MTEP11	A	West	ATC LLC	3480	Engadine Load Move	Construct a new radial 69-kV tap from the existing Indian Lake-Hiawatha 69-kV line 6913 to the Engadine Substation	WI	WI	Other	Not Shared	Reliability	\$683,816	10/1/2012	Planned	138		Y	
A in MTEP11	A	West	ATC LLC	3504	Y-80 Omro to Winneconne Rerate	Rerate Line Y-80 conductor from Omro sub to Winneconne sub to a rating of 580 amps	WI	WI	Other	Not Shared	Condition	\$1,496,511	3/1/2013	Planned	69		Y	
A in MTEP11	A	West	ATC LLC, XEL, ITCM	3127	MVP Portfolio 1 - N LaCrosse-N Madison-Cardinal - Dubuque area 345-kV	N LaCrosse - N Madison - Cardinal 345-kV & Dubuque County - Cardinal 345 kV line and Transformers needed for stepdown	WI	IA	MVP	Shared		\$757,177,681	12/31/2018	Planned	345	69	Y	
A in MTEP11	A	Central	BREC	3789	New Gilbertsville 161kV Sub for new customer load (190 MVA). Loop in and out the 161 kV line from Livingston Substation (BREC) into Gilbertsville Substation and loop out to the line to Marshall Substation (TVA).	Sever the Livingston Station (BREC) to Marshall (TVA) 161 kV line. Loop into Gilbertsville Station with 3 mile extension of the 161 kV section of 161 kV line to Livingston Station with 795 ACSR conductor. Loop out of Gilbertsville Station by extending 3 miles with 795 ACSR conductor the section of 161 kV line from Marshall Station. Install one 161 / 69 kV transformer, one 161 kV breaker and ??? 69 kV breakers.	KY	KY	Other	Not Shared	Distribution	\$7,660,000	9/1/2014	Planned	161		Y	
A in MTEP08	A	Central	DEM	834	Kingman 69kV Cap	Add 7.2 MVAR 69kV capacitor at Kingman.	IN	IN	Other	Not Shared		\$500,000	6/1/2016	Planned	69		NT	
A in MTEP08	A	Central	DEM	835	Pittsboro 69kV Cap	Add 14.4 MVAR 69kV capacitor at Pittsboro.	IN	IN	Other	Not Shared		\$422,362	6/1/2015	Planned	69		NT	
A in MTEP08	A	Central	DEM	841	Westwood Bk1 Limiting Equipment	Replace 1600A 138kV breaker with 3000A to allow full xfr rating.	IN	IN	BaseRel	Not Shared		\$141,623	6/1/2015	Planned	345	138	Y	
A in MTEP06	A	Central	DEM	851	Laf Cumberland to Laf AE Staley 138 Reconductor	Reconductor section of 13806 circuit with 954ACSR 100C.	IN	IN	BaseRel	Not Shared		\$1,074,000	12/31/2013	Planned	138		Y	

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A in MTEP07	A	Central	DEM	852	Crawfordsville to Tipmont Concord to Lafayette SE 138 Reconductor	Reconductor 13819 circuit with 954ACSR 100C.	IN	IN	BaseRel	Shared		\$5,351,838	6/1/2013	Planned	138		Y
A in MTEP06	A	Central	DEM	853	West Lafayette to Cumberland 138 Reconductor	Reconductor section of 13806 circuit with 954ACSR 100C.	IN	IN	Other	Not Shared		\$706,921	6/1/2015	Planned	138		Y
A in MTEP06	A	Central	DEM	1244	Cayuga to Frankfort 23013 Wave Trap Upgrade	Upgrade wave traps at Cayuga and Frankfort to increase line rating to 797 MVA.	IN	IN	BaseRel	Not Shared		\$167,560	6/1/2013	Planned	230		Y
A in MTEP08	A	Central	DEM	1245	Frankfort Jefferson to Potato Creek new 69kV Line	Construct new 69kV line from Frankfort Jefferson to new Potato Creek switching station.	IN	IN	Other	Not Shared		\$2,094,115	6/1/2014	Planned	69		NT
A in MTEP08	A	Central	DEM	1501	Carmel 146th St 69kV Cap 2	Added second 36 MVAR 69kV capacitor at Carmel 146th Street	IN	IN	Other	Not Shared		\$624,145	6/1/2014	Planned	69		NT
A in MTEP08	A	Central	DEM	1514	Wabash River to Staunton 230 100C Uprate	Uprate Wabash River to Staunton 23002 to 100C summer operating temperature and 80C winter (559MVA).	IN	IN	Other	Not Shared		\$2,248,000	12/31/2012	Under Constr	230		Y
A in MTEP08	A	Central	DEM	1519	Noblesville NE to Geist 69	Build a new 69kV line from Noblesville NE sub to tap the Fishers North - Geist 69kV line	IN	IN	Other	Not Shared	Reliability	\$2,640,107	12/31/2012	Planned	69		NT
A in MTEP10	A	Central	DEM	1520	Durbin 230/69	Construct a new Durbin 230/69kv 150mva substation with 2 69kv line terminals.	IN	IN	Other	Not Shared	Reliability	\$7,000,000	6/1/2017	Planned	230	69	Y
A in MTEP08	A	Central	DEM	1568	Qualitech 345/138KV Transformer and breakers	Qualitech Sub- Install one 345/138kv, 300Mva Xtr and 2-345kv Bkrs and 1-138kv Bkr to provide second 138kv source to proposed Hendricks Co 138kv system	IN	IN	Other	Not Shared	Reliability	\$4,561,674	6/1/2013	Planned	345	138	Y
A in MTEP08	A	Central	DEM	1569	Qualitech to Pittsboro new 138kv line	Construct new 138kv line, Qualitech to Pittsboro, and connect to the Pittsboro-Brownsbg line to provide new 954ACSR outlet line from Qualitech 345/138kv Bank	IN	IN	Other	Not Shared	Reliability	\$1,507,856	6/2/2013	Planned	138		Y
A in MTEP08	A	Central	DEM	1570	Plainfield South to Pittsboro 69KV to 138KV Conversion	Convert the existing 69KV (69144) line from Plainfield S. to Pittsboro (and 4 distribution subs) over to 138KV operation and connect to the new Qualitech to Pittsboro 138KV line	IN	IN	Other	Not Shared	Reliability	\$4,139,000	6/3/2013	Planned	138		Y
A in MTEP09	A	Central	DEM	1647	Carmel SE 69/12 KV new distribution substation	Construct Carmel SE Bank 1 22.4MVA bank with 2 exits - extend a new radial 69kv from Carmel 146th St (no new bkr - share dist bk terminal)	IN	IN	Other	Not Shared	Distribution	\$2,000,000	10/1/2012	Under Constr	69	12	NT
A in MTEP08	A	Central	DEM	1650	Fairview to HE Fairview 13854 Reconductor	Fairview to HE Fairview 13854 Reconductor with 954ACSR @ 100C	IN	IN	BaseRel	Not Shared		\$1,236,384	6/30/2014	Planned	138		Y
A in MTEP08	A	Central	DEM	1881	Bloomington Rogers St - replace 13836 breaker	Bloomington Rogers St - replace 13836 breaker and WT; replace 13871 breaker, WT, and disc sw's - All 2000Amp rated; Replace relays for 13836, 13837, 13871	IN	IN	Other	Not Shared		\$1,051,992	12/31/2012	Under Constr	138		Y
A in MTEP08	A	Central	DEM	1893	Mitchell Lehigh Portland to Bedford 25th St 6995 rebuild	Reconductor 10.3 miles of 69KV - 6995 line with 477 ACSR@100C	IN	IN	Other	Not Shared	Reliability	\$3,016,000	6/1/2014	Planned	69		NT
A in MTEP08	A	Central	DEM	1895	Brownsburg to Avon East 138kV Reconductor	Brownsburg to Avon East 138kV Reconductor 4.2 miles of 138kV line with 954 ACSR - AFTER 138KV CONVERSION	IN	IN	BaseRel	Not Shared		\$1,433,227	6/4/2013	Planned	138		Y
A in MTEP08	A	Central	DEM	1899	Macy to Rochester Metals Jct 69kV reconductor	Reconductor Macy to Rochester Metals Jct section of 6957 circuit with 477ACSR - approx 9.1 miles	IN	IN	Other	Not Shared	Reliability	\$3,102,711	6/1/2016	Planned	69		NT
A in MTEP08	A	Central	DEM	1901	Noblesville Station to Noblesville Jct 69kV line rebuild	Reconductor 69kV - 6984 & 6916 ckt. Noblesville Plant to Noblesville 8th St. to Noblesville Jct with 954ACSS @ 200C (5.47 miles)	IN	IN	Other	Not Shared	Reliability	\$1,510,946	6/1/2013	Planned	69		NT
A in MTEP10	A	Central	DEM	1903	Fishers N. to Fishers 69kV reconductor	Reconductor 1.05 miles 69kV line from Fishers No to Fishers with 954ACSR@100C conductor	IN	IN	Other	Not Shared	Reliability	\$455,229	6/1/2014	Planned	69		NT
A in MTEP09	A	Central	DEM	2127	Martinsville 69163-1 switch replacement	69163-1 switch replacement near tap to HE Cope with 1200A switch	IN	IN	Other	Not Shared	Reliability	\$40,000	12/31/2012	Planned	69		NT
A in MTEP09	A	Central	DEM	2133	Franklin to Forsythe new 69kV line	Franklin 230 sub to Forsythe 69 sub - Build new 3.5 mile 69kV line; new line terminal at Forsythe end only	IN	IN	Other	Not Shared	Reliability	\$1,030,000	9/1/2012	Under Constr	69		NT

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A in MTEP10	A	Central	DEM	2134	Bloomington 230 to Needmore Jct 69kV reconductor	Bloomington 230kV Sub to Needmore Jct (Pole #825-3379) reconductor 6949 line with 954ACSR 100C conductor and replace (2) Needmore Jct. 69kV - 600 amp switches with 1200 amp switches.	IN	IN	Other	Not Shared	Reliability	\$2,712,500	6/30/2013	Planned	69		NT
A in MTEP10	A	Central	DEM	2137	Greenwood Averitt Rd Jct to HE Honey Creek Jct 69 kV Uprate	Greenwood Averitt Rd Jct to HE Honey Creek Jct 69 kV - 69102 Uprate 1.05 mile line section of 477acsr for 100C conductor temperature operation	IN	IN	Other	Not Shared	Reliability	\$53,461	6/30/2020	Planned	69		NT
A in MTEP10	A	Central	DEM	2143	Frances Creek 345/69kV Bank 2	Add Frances Creek 345/69kV Bank 2 - 200MVA with LTC	IN	IN	Other	Not Shared	Reliability	\$6,887,000	6/1/2018	Planned	345	69	NT
A in MTEP09	A	Central	DEM	2148	Cadiz to Milner's Corner Jct 69kv reconductor	Cadiz to Markleville to Milner's Corner J - Reconductor 69kv - 69131 ckt - 9.24 mile section with 477ACSR@100C; Replace 69kv three way switch at Milner's Corner Jct with three one way 1200A switches; Upgrade the Markleville 600A switches #1 and #2 to 1200A	IN	IN	Other	Not Shared	Reliability	\$3,208,251	8/1/2012	Under Constr	69		NT
A in MTEP09	A	Central	DEM	2153	Mohawk to Lee Hanna 69kV reconductor	Mohawk to Lee Hanna 69kV reconductor 69130 ckt (5.27 mi) with 954acsr@100C	IN	IN	Other	Not Shared	Reliability	\$2,317,000	6/1/2017	Planned	69		NT
A in MTEP09	A	Central	DEM	2154	Carmel Rohrer Rd 69/12kv New Sub	Carmel Rohrer Rd 69/12-22.4MVA sub to looped through the 6989 ckt. at or near the existing Carmel Shell Oil tap	IN	IN	Other	Not Shared	Distribution	\$591,143	6/1/2016	Planned	69	12	NT
A in MTEP09	A	Central	DEM	2327	Speed to HE Bethany 69kV - 6955 Reconductor Ph1	Speed to HE Bethany 69kV - 6955 Reconductor Ph1 - Replace 5.2 miles of 3/0 ACSR with 477 ACSR (new limiter 4/0acsr @ 80C); additionally, Ph 2 will be done on this project: 6955 Reconductor - Replace 1.6 miles of 4/0 ACSR with 477 ACSR (new limiter 600A switches)	IN	IN	Other	Not Shared	Reliability	\$2,040,000	6/1/2013	Planned	69		NT
A in MTEP09	A	Central	DEM	2331	Shelbyville NE to Knauf 69kv - 6946 ckt. Reconductor	Shelbyville NE to Knauf Reconductor 1.75 miles of 397ACSR on 6946 ckt. with 954acsr@100C	IN	IN	Other	Not Shared	Reliability	\$1,028,319	6/1/2013	Planned	69		NT
A in MTEP09	A	Central	DEM	2332	Zionsville Turkeyfoot to Zionsville 96th St Jct 69kV - 69155 ckt. Reconductor	Zionsville Turkeyfoot to Zionsville 96th St Jct Reconductor 1.59 mile 69kV - 69155 ckt with 954ACSR@100C	IN	IN	Other	Not Shared	Reliability	\$704,000	12/31/2012	Planned	69		NT
A in MTEP09	A	Central	DEM	2334	Fishers 106th St 69/12kv New Sub	New Fishers 106th St 69/12 kv sub: Construct 69kV line in and out of sub and 69kv bus including 69kv breaker	IN	IN	Other	Not Shared	Distribution	\$174,000	6/1/2013	Planned	69	12	NT
A in MTEP10	A	Central	DEM	2858	Geist to Fortville 69kV - 69130 ckt. Reconductor	Reconductor 69kV 3.62 mile line from Geist sub to Fortville sub with 954ACSR conductor.	IN	IN	Other	Not Shared	Reliability	\$1,820,000	6/1/2017	Planned	69		NT
A in MTEP10	A	Central	DEM	2859	Peru Muni J to Wabash J 69kV - 6986 ckt. Reconductor	Peru Muni J to Wabash J 6986 Reconductor approx., 10.3 miles of 4/0 ACSR with 477 ACSR	IN	IN	Other	Not Shared	Reliability	\$4,352,593	12/31/2013	Planned	69		NT
A in MTEP10	A	Central	DEM	2860	Brazil East to Reelsville J 69kV - 6938 ckt. Reconductor	Reconductor 6938 line from Brazil East to Reelsville Jct. with 477ACSR 100C conductor. Replace Reelsville Jct switches with 1200 amp switches.	IN	IN	Other	Not Shared	Reliability	\$2,550,000	6/1/2012	Under Constr	69		NT
A in MTEP10	A	Central	DEM	2861	Greencastle Madison J to Greencastle East J 69kV - 6996 ckt. Reconductor	Reconductor 6996 line from Greencastle Madison Jct to Greencastle East Jct. with 954ACSR 100C conductor. Replace or upgrade 600 amp Greencastle East Jct switches to 1200amp.	IN	IN	Other	Not Shared	Reliability	\$1,482,000	12/31/2012	Planned	69		NT
A in MTEP10	A	Central	DEM	2863	Carmel SE to new Jct in 69145 ckt - new 69kV line	Build new 69kV-954ACSR circuit from Carmel SE to new Jct in the 69145 line, completing a loop from Carmel 146th St to Geist.	IN	IN	Other	Not Shared	Distribution	\$4,274,200	6/2/2013	Planned	69		NT
A in MTEP10	A	Central	DEM	2865	Frankfort Burlington to Middlefork 69kV - 69133 ckt Uprate	Frankfort Brngtn St to Midfrk - 69133 ckt - uprate 11.5 miles of 4/0ACSR to 100C and reconductor 1.0 mile of 2/0CUB7 to 954ACSR@100C	IN	IN	Other	Not Shared	Reliability	\$1,097,000	6/1/2012	Under Constr	69		NT
A in MTEP10	A	Central	DEM	2874	Noblesville to Geist 230kV - 23007 line relocate	Relocate section of 23007 between Noblesville and Geist to new RoW around expanding mine operation - approx. 0.6 mile of added line length	IN	IN	Other	Not Shared	Relocation	\$1,766,218	12/1/2012	Under Constr	230		Y

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A in MTEP10	A	Central	DEM	2875	Edwardsville 138kV switches and tap line	Construct new Edwardsville 138/12kV distribution substation - single 22.4 MVA transformer	IN	IN	Other	Not Shared	Reliability	\$467,387	9/1/2012	Under Constr	138	12	NT
A in MTEP10	A	Central	DEM	2879	Brazil West 69kV tap switches and tap line	Construct Brazil West 10.5MVA 69/12kV sub in the 6902 Line to be located on 900N east of 425W	IN	IN	Other	Not Shared	Reliability	\$150,000	12/31/2012	Planned	69	12	NT
A in MTEP11	A	Central	DEM	3377	Scottsburg 69kV - 28.8MVAR Capacitor	Replace Scottsburg 69kV - 7.2Mvar capacitor with a 28.8 Mvar capacitor and upgrade 69kV capacitor switching equipment	IN	IN	Other	Not Shared	Reliability	\$500,000	6/1/2013	Planned	69		Y
A in MTEP11	A	Central	DEM	3379	Shelbyville McKay Rd. 69kV Dist Sub	Shelbyville McKay Rd. - add new 69/12kV distribution sub in the 6976 ckt. Loop through with 954acsr and a set of 1200A line switches.	IN	IN	Other	Not Shared	Reliability	\$303,710	6/1/2016	Planned	69	12	Y
A in MTEP11	A	Central	DEM	3380	Noblesville Sta. 138kV Brkrs and 345kV Ckt Sws	Noblesville Gen. Sta. - Replace 138KV OB OCB: 138TR, 13869-9, 138230-7, 13886 and Circuit Switchers: 345230-11, 34519.	IN	IN	Other	Not Shared	Condition	\$3,455,845	12/31/2012	Planned	345	138	Y
A in MTEP11	A	Central	DEM	3384	Hortonville to Marathon Jct. 69kV Reconductor	Hortonville to Marathon Jct. section of ckt. 6917 - Replace 336ACSR and 477ACSR with 954ACSS@200C. Upgrade Marathon Jct 600A switches to 1200A.	IN	IN	Other	Not Shared	Reliability	\$1,409,099	12/31/2012	Planned	69		Y
A in MTEP11	A	Central	DEM	3385	Carmel Homeplace to Springmill Jct 69kV Reconductor	Carmel Homeplace to Springmill Jct. section of ckt. 69155 - Reconductor with 954ACSS@200C	IN	IN	Other	Not Shared	Reliability	\$1,691,315	12/31/2012	Planned	69		Y
A in MTEP11	A	Central	DEM	3386	Carmel Springmill Rd. to Hortonville 69kV Line and Brkrs	Carmel Springmill Rd. Sub - Add 3-69kV breakers in straight bus config and build new .23 mile 69kV 954ACSS@200C line from Springmill Sub to old Springmill Jct. to complete circuit to Hortonville. Change operating mode at Homeplace to close loop from 146th to Springmill.	IN	IN	Other	Not Shared	Reliability	\$3,000,000	6/1/2016	Planned	69		Y
A in MTEP11	A	Central	DEM	3387	West Point (previously Tri-County Wind Energy) 230kV Station - DPP J028	J028 - 230kV - Gen. interconnect sub - install three brkr ring bus for 200MW wind farm between Attica and Lafayette in the 23027 ckt.	IN	IN	GIP	Not Shared		\$3,778,246	12/31/2015	Planned	230		Y
A in MTEP11	A	Central	DEM	3388	Walton to Logansport S. 69kV Reconductor	Walton to Logansport S. - Reconductor 69kV - 69110 line with 477acsr at 100C	IN	IN	Other	Not Shared	Reliability	\$1,850,000	12/31/2013	Planned	69		Y
A in MTEP11	A	Central	DEM	3389	WVPA Center Valley 138kV Dist Sub	DEM to install new line switching in the 138kV - 13867 ckt. at intersection with SR39 for tap line to radially feed new WVPA Center Valley dist sub	IN	IN	Other	Not Shared	Reliability	\$236,677	9/1/2012	Under Constr	138	12	Y
A in MTEP11	A	Central	DEM	3392	DEM Speed to LGEE New Albany 345kV tie	New LGEE New Albany switching station will be a 4 brkr ring that will split the DEM Speed to HE Ramsey tie line and also split the LGEE Paddys West to LGEE Northside 345kV line; this will allow removal of the LGEE Northside 138kV reactor in the tie line to DEM Speed.	IN	IN	Other	Not Shared	Reliability	\$0	12/31/2013	Planned	345		Y
A in MTEP11	A	Central	DEM, NIPS	2202	MVP Portfolio 1 - Reynolds to Greentown 765 kV line	Reynolds to Greentown 765 kV line	IN	IN	MVP	Shared		\$330,435,360	6/1/2018	Planned	765	345	Y
A in MTEP11	A	West	DPC	3397	Genoa to La Crosse Tap 161 Rebuild	Rebuild of the 161 kV line from Genoa to the La Crosse tap.	WI	WI	BaseRel	Shared		\$22,130,000	6/1/2013	Planned	161		Y
A in MTEP11	A	West	DPC	3434	Lufkin 161 kV substation	Build a new 161 kV substation on the Alma to Elk Mound 161 line in the Eau Claire area.	WI	WI	Other	Not Shared	Reliability	\$2,164,000	2/1/2013	Planned	161		Y
A in MTEP05	A	West	GRE	599	Crooked Lake - Enterprise Park 115 kV line	Crooked Lake - Enterprise Park 115 kV line	MN	MN	Other	Excluded		\$7,850,957	10/1/2013	Planned	115		Y
A in MTEP10	A	West	GRE	1018	Little Falls - Pierz conversion to 115 kV	CWP Little Falls-MP Little Falls 115 kV line	MN	MN	Other	Not Shared	Distribution	\$2,057,126	12/31/2012	Under Constr	115		Y
A in MTEP09	A	West	GRE	2563	Athens to Martin Lake 69kV System Upgrades and Permitting	Athens to Martin Lake 69kV System Upgrades and Permitting	MN	MN	Other	Not Shared	Reliability	\$6,714,078	9/1/2014	Planned	69		NT
A in MTEP10	A	West	GRE	2564	Sartell (SEA) 3.0 mile, 115 kV line	Sartell (SEA) 3.0 mile, 115 kV line	MN	MN	Other	Not Shared	Distribution	\$1,385,861	8/1/2014	Planned	115		Y
A in MTEP10	A	West	GRE	2565	Frazer Bay Development	Frazer Bay Development	MN	MN	Other	Not Shared	Distribution	\$14,636,037	11/5/2012	Planned	115	69	Y
A in MTEP10	A	West	GRE	2567	Northport (BENCO) 1 mile, dbl ckt 115 kV line	Northport (BENCO) 1 mile, dbl ckt 115 kV line	MN	MN	Other	Not Shared	Distribution	\$1,149,664	10/31/2012	Under Constr	115		Y
A in MTEP10	A	West	GRE	2570	Ravenna (DEA) 161 kV Substation	Ravenna (DEA) 161 kV Substation	MN	MN	Other	Not Shared	Distribution	\$821,206	11/1/2015	Planned	161		Y

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A in MTEP11	A	West	GRE	2571	MN Pipeline-Menahga 8.0 mile line	MN Pipeline-Menahga 8.0 mile line. Built 115 kV but will be operated at 34.5.	MN	MN	Other	Not Shared	Distribution	\$4,199,990	6/30/2015	Planned	115		Y
A in MTEP10	A	West	GRE	2574	St. Lawrence Substation and Tap - MVEC	St. Lawrence Substation and Tap - MVEC	MN	MN	Other	Not Shared	Distribution	\$374,182	5/1/2017	Planned	115		Y
A in MTEP10	A	West	GRE	2577	Elmcrest (CE) 69 kV Substation	Elmcrest (CE) 69 kV Substation	MN	MN	Other	Not Shared	Distribution	\$140,000	6/1/2016	Planned	69		Y
A in MTEP10	A	West	GRE	2579	Foster Lake (WH) 69 kV Substation	Foster Lake (WH) 69 kV Substation	MN	MN	Other	Not Shared	Distribution	\$140,000	5/29/2015	Planned	69		Y
A in MTEP10	A	West	GRE	2589	Barnes Grove (DEA) 2.0 mile, 69 kV line	Barnes Grove (DEA) 2.0 mile, 69 kV line	MN	MN	Other	Not Shared	Distribution	\$115,001	3/25/2014	Planned	69		Y
A in MTEP11	A	West	GRE	2599	Shell Lake (IM) 5.0 mile, 115 kV line	Shell Lake (IM) 5.0 mile, 115 kV line	MN	MN	Other	Not Shared	Distribution	\$3,409,989	12/31/2013	Planned	115		Y
A in MTEP10	A	West	GRE	2621	Effie 230/69 kV source	Effie 230/69 kV transformer, Effie-Big Fork 69 kV line, Wirt Tap 3-way switch, Jessie Lake 3-way switch, Big Fork 3-way switch	MN	MN	Other	Not Shared	Reliability	\$11,062,259	11/1/2013	Planned	230	69	Y
A in MTEP10	A	West	GRE	2624	Hudson 115 kV conversion	115 kV conversion	MN	MN	Other	Not Shared	Distribution	\$359,225	12/12/2012	Under Constr	115		Y
A in MTEP10	A	West	GRE	2630	Resag Big Fork-Wirt Tap-Jessie Lake Retemp	Resag Big Fork-Wirt Tap-Jessie Lake Retemp	MN	MN	Other	Not Shared	Reliability	\$1,289,999	10/30/2015	Planned	69		Y
A in MTEP10	A	West	GRE	2631	Resag Deer River-Jessie Lake Retemp	Resag Deer River-Jessie Lake Retemp	MN	MN	Other	Not Shared	Reliability	\$1,339,996	10/30/2015	Planned	69		Y
A in MTEP11	A	West	GRE	2643	Parkers Prairie 115 kV conversion	Parkers Prairie 115 kV conversion, New Distribution tap	MN	MN	Other	Not Shared	Distribution	\$1,237,077	5/1/2013	Planned	115		Y
A in MTEP10	A	West	GRE	2670	Schuster Lake 115/41.6 Source	Schuster Lake 115/41.6 Source	MN	MN	Other	Not Shared	Reliability	\$4,480,714	4/14/2020	Planned	115	41.6	Y
A in MTEP11	A	West	GRE	2679	Ramsey-Grand Forks (81.02 mi.) 230 kV Rebuild	Ramsey-Grand Forks (81.02 mi.) 230 kV Rebuild	MN	MN	Other	Not Shared	Condition	\$40,500,000	11/1/2019	Planned	230		Y
A in MTEP10	A	West	GRE	2731	Blomkest (KEPCA) 3.0 mile, 69 kV line	Blomkest (KEPCA) 7.0 mile, 69 kV line	MN	MN	Other	Not Shared	Distribution	\$1,781,208	9/3/2012	Under Constr	69		Y
A in MTEP10	A	West	GRE	2833	Lake Caroline	Lake Caroline (WH) 69 kV Distribution Substation	MN	MN	Other	Not Shared	Distribution	\$617,998	12/13/2013	Planned	69		NT
A in MTEP10	A	West	GRE	3106	Tamarac MISO Interconnection (G619)	Tamarac-Cormorant Junction	MN	MN	GIP	Shared		\$728,000	9/3/2012	Planned	115		Y
A in MTEP11	A	West	GRE	3454	Pomerleau Lake Line Termination	Terminate the Parkers Lake - Elm Creek 115 kV line to the Pamerleau Lake breaker station that Xcel Energy plans to establish in the 2013 timeframe	MN	MN	Other	Not Shared	Reliability	\$26,443,069	6/1/2014	Planned	115	13.8	Y
A in MTEP11	A	West	GRE	3469	MISO H061	Connect H061 Wind generation	MN	MN	GIP	Not Shared		\$240,000	12/1/2012	Under Constr	69		Y
A in MTEP08	A	West	GRE, XEL, OTP, MP, MRES	286	Fargo, ND - St Cloud/Monticello, MN area 345 kV project	Bison - AlexandriaSS - Waite Park - Monticello 345 ckt 1, Sum rate 2085	MN	ND	BaseRel	Shared		\$439,816,500	3/31/2015	Planned	345	115	Y
A in MTEP11	A	West	GRE/MP	2634	Savanna-Cromwell	Savanna-Cromwell	MN	MN	BaseRel	Shared		\$29,653,085	12/1/2015	Planned	115		Y
A in MTEP08	A	Central	HE	1929	Georgetown Primary Ring Bus	138kV Ring Bus addition / Modification to Georgetown Primary	IN	IN	Other	Not Shared	Reliability	\$1,250,000	9/1/2012	Planned	138		Y
A in MTEP08	A	Central	IPL	1639	General IPL Capacitor Additions	Add capacitors to the IPL General Distribution System	IN	IN	Other	Not Shared		\$50,000	6/1/2013	Planned			Y
A in MTEP09	A	Central	IPL	2053	Petersburg 345/138kV East and West Autotransformers and 345 kV breaker	Replace and upgrade existing East and West 345/138kV autotransformer at Petersburg Substation. Add 345kV breaker.	IN	IN	BaseRel	Shared		\$8,700,000	12/1/2013	Planned	345	138	Y
A in MTEP10	A	Central	IPL	2900	Northwest - Southwest 138 kV line rating upgrade	Increase line rating from 242 to 382 MVA	IN	IN	BaseRel	Not Shared		\$1,500,000	6/1/2012	Planned	138		Y
A in MTEP11	A	Central	IPL	3273	Southwest - Stout CT Line Rating Upgrade	Increase line rating above 322 MVA to mitigate the potential overload	IN	IN	Other	Not Shared	Reliability	\$300,000	12/31/2014	Planned	138		Y
A in MTEP11	A	Central	IPL	3274	South - Stout S Line Rating Upgrade	Increase line rating above 272 MVA to mitigate the potential overload	IN	IN	Other	Not Shared	Reliability	\$350,000	12/31/2014	Planned	138		Y
A in MTEP11	A	East	ITC	1868	Cato GIS replacement	Replace GIS Equipment	MI	MI	Other	Not Shared	Condition	\$9,810,000	6/1/2013	Planned	120		Y
A in MTEP08	A	East	ITC	1870	Clyde	Distribution Interconnection to add a new 120/41kV transformer at Clyde. Taps the Placid-Durant 120kV circuit	MI	MI	Other	Not Shared		\$2,750,000	6/1/2013	Planned	120		Y
A in MTEP09	A	East	ITC	1872	Scio	Distribution Interconnection to add new 120/41kV transformer. Loops the Lark-Spruce 120kV circuit into the station.	MI	MI	Other	Not Shared	Distribution	\$3,000,000	6/1/2013	Planned	120		Y
A in MTEP08	A	East	ITC	1873	Tahoe	Distribution Interconnection to add a new 120/13.2kV transformer at Tahoe.	MI	MI	Other	Not Shared		\$2,800,000	5/31/2013	Planned	120		Y
A in MTEP10	A	East	ITC	2918	Breaker Replacement Program 2012	Replace defective, damaged, or over dutied breakers throughout system.	MI	MI	Other	Not Shared	Condition	\$6,000,000	12/31/2012	Planned	345	120	Y
A in MTEP10	A	East	ITC	2919	NERC Relay Loadability Compliance 2012	Upgrade relays throughout system	MI	MI	Other	Not Shared	Reliability	\$2,400,000	12/31/2012	Planned	345	120	Y
A in MTEP10	A	East	ITC	2920	Potential Device Replacement 2012	Replace aging potential devices	MI	MI	Other	Not Shared	Condition	\$300,000	12/31/2012	Planned	345	120	Y

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A in MTEP10	A	East	ITC	2921	Relay Betterment Program 2012	Replace aging and electromechanical relays throughout the system. Add OPGW where needed.	MI	MI	Other	Not Shared	Condition	\$1,200,000	12/31/2012	Planned	345	120	Y
A in MTEP10	A	East	ITC	2922	Wood Pole Replacement 2012	Replace deteriorating wood pole	MI	MI	Other	Not Shared	Condition	\$4,800,000	12/31/2012	Planned	120		Y
A in MTEP10	A	East	ITC	2923	Capacitor Replacement 2012	Replace capacitor banks	MI	MI	Other	Not Shared	Condition	\$600,000	12/31/2012	Planned	120		Y
A in MTEP10	A	East	ITC	2926	Blanket for Customer Interconnection 2012	Throughout system	MI	MI	Other	Not Shared	Distribution	\$2,000,000	12/31/2012	Planned	120		Y
A in MTEP10	A	East	ITC	2927	Blanket for Customer Interconnection 2013	Throughout system	MI	MI	Other	Not Shared	Distribution	\$2,000,000	12/31/2013	Planned	120		Y
A in MTEP10	A	East	ITC	2928	Blanket for Customer Interconnection 2014	Throughout system	MI	MI	Other	Not Shared	Distribution	\$2,000,000	12/31/2014	Planned	120		Y
A in MTEP10	A	East	ITC	2929	Ariel Substation (formerly Holland)	Distribution Interconnection to add two new 120/13.2kV transformers at Holland. Connects to the Wheeler to Troy 120kV circuit.	MI	MI	Other	Not Shared	Distribution	\$2,800,000	9/1/2014	Planned	120		Y
A in MTEP10	A	East	ITC	3168	MVP Portfolio 1 - Michigan Thumb Wind Zone	The proposed transmission line will connect into a new station to the south and west of the Thumb area that will tap three existing 345 kV circuits; one between the Manning and Thetford 345 kV stations, one between the Hampton and Pontiac 345 kV stations and one between the Hampton and Thetford 345 kV stations. Two new 345 kV circuits will extend from this new station, to be called Baker (formerly Reese), up to a new station, to be called Rapson (formerly Wyatt or Wyatt East) that will be located to the north and east of the existing 120 kV Wyatt station. In order to support the existing 120 kV system in the northern tip of the Thumb, the two existing 120 kV circuits between the Wyatt and Harbor Beach stations, one that connects	MI	MI	MVP	Shared		\$510,000,000	12/31/2015	Planned	345	120	Y
A in MTEP11	A	East	ITC	3276	ITCT Annual Breaker Replacement Program for 2013	Annual Breaker Replacement Program	MI	MI	Other	Not Shared	Condition	\$9,000,000	12/31/2013	Planned			Y
A in MTEP11	A	East	ITC	3277	ITCT Annual NERC Relay Loadability Compliance Program for 2013	Annual NERC Relay Loadability Program	MI	MI	Other	Not Shared	Reliability	\$2,400,000	12/31/2013	Planned			Y
A in MTEP11	A	East	ITC	3278	ITCT Annual Potential Device Replacement Program for 2013	Annual Potential Device Replacement Program	MI	MI	Other	Not Shared	Condition	\$300,000	12/31/2013	Planned			Y
A in MTEP11	A	East	ITC	3279	ITCT Annual Relay Betterment Program for 2013	Annual Relay Betterment Program	MI	MI	Other	Not Shared	Condition	\$2,400,000	12/31/2013	Planned			Y
A in MTEP11	A	East	ITC	3280	ITCT Annual Wood Pole Replacement Program for 2013	Annual Wood Pole Replacement Program	MI	MI	Other	Not Shared	Condition	\$3,000,000	12/31/2013	Planned			Y
A in MTEP11	A	East	ITC	3281	Lima Substation	Distribution Interconnection Request	MI	MI	Other	Not Shared	Distribution	\$8,400,000	12/31/2013	Planned	120		Y
A in MTEP11	A	East	ITC	3283	Dexter Township Substation	Distribution Interconnection Request	MI	MI	Other	Not Shared	Distribution	\$2,676,000	6/1/2013	Planned	120		Y
A in MTEP11	A	East	ITC	3284	ITCT Customer Interconnections - Year 2015	Distribution Interconnection Request	MI	MI	Other	Not Shared	Distribution	\$2,000,000	12/31/2015	Planned			Y
A in MTEP11	A	East	ITC	3285	Fermi & Shoal 120kV Capacitors	33.3 Mvar Capacitors at Fermi and Shoal 120kV	MI	MI	BaseRel	Not Shared		\$3,800,000	6/1/2014	Planned	120		Y
A in MTEP11	A	East	ITC	3286	Fermi 345kV Disconnect Replacement Project - 3rd Row	Replace 345kV Disconnects, add 3rd 345kV Row	MI	MI	Other	Not Shared	Condition	\$950,000	12/31/2013	Planned	345		Y
A in MTEP11	A	East	ITC	3503	Air Flow Spoilers Installation	Install air flow spoilers on approximately 15 miles of the targeted areas of the Belle River-Greenwood-Pontiac and Belle River-Blackfoot 345 kV double circuit tower lines.	MI	MI	Other	Not Shared	Reliability	\$1,620,000	11/1/2012	Planned	345		Y
A in MTEP06	A	West	ITCM	1289	Marshalltown - Toledo - Belle Plaine - Stoney Point 115 kV line rebuild	Marshalltown - Toledo - Belle Plaine - Stoney Point 115 kV line will be rebuilt/upgraded between 2008 and 2011	IA	IA	Other	Not Shared		\$5,445,000	12/31/2013	Planned	161		Y
A in MTEP08	A	West	ITCM	1340	Hazleton - Salem 345 kV line with a 2nd Salem 345/161 kV 448 MVA transformer.	Build a new Hazleton - Salem 345 kV line. Expand the Hazleton 345kV bus to a 5 position ring and expand the Salem 345kV ring to allow for a 2nd Salem 345/161 kV 448 MVA transformer. (option 1) The route will follow the existing Hazleton-Dundee-Liberty-Lore 161kV route.	IA	IA	Other	Not Shared		\$124,934,000	5/1/2013	Planned	345	161	Y

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A in MTEP06	A	West	ITCM	1342	Coffey (formerly Lewis Fields) 161 kV substation which taps the SwampFX - Coggon 115 kV line	Construct a new Coffey (formerly Lewis Fields) substation with 161/115kV transformer & a single 161kV line to feed to Hiawatha and 2 115kV lines to Swamp Fox & Coggon. Future configuration will allow for a single 115kV line to feed to Swamp Fox and 2 161kV lines to Hiawatha & Coggon. A new ~9 mile 161 kV line from Hiawatha to Coffeybe built.	IA	IA	BaseRel	Not Shared		\$24,120,360	12/31/2014	Planned	161	115	Y
A in MTEP06	A	West	ITCM	1344	Build a new 345 kV Morgan Valley (Beverly) substation which taps the Arnold - Tiffin 345 kV line	Build a new 345 kV Morgan Valley (Beverly) Tap substation and tapped to 345 kV line Arnold - Tiffin at 40% distance away from Arnold. Add a new 335 MVA 345/161 kV transformer and build a new 161 kV line connecting the new substation to Beverly 161 kV bus. Tap Arnold-Fairfax 161kV line for in and out feeds from Morgan Valley	IA	IA	Other	Not Shared		\$14,580,000	12/31/2014	Planned	345	161	Y
A in MTEP08	A	West	ITCM	1618	Hrn Lk-Lkfld 161kV Ckt 1 Rbld	Rebuild Heron Lake-Lakefield 161kV line, sum rate 446 MVA	MN	MN	BaseRel	Shared		\$14,000,000	6/1/2013	Planned	161		Y
A in MTEP08	A	West	ITCM	1640	Marshalltown-Franklin 115kV conversion to 161kV.	Rebuild Marshalltown-Wellsburg-Eldora-Iowa Falls Industrial-Iowa Falls-Franklin 115kV to 161kV. This will also convert the Wellsburg, Eldora, Iowa Falls Industrial, and Iowa Falls substations to 161kV operation on the high side. The 161-115kV source at Franklin will be eliminated.	IA	IA	Other	Not Shared		\$21,580,000	12/31/2013	Planned	161	34	Y
A in MTEP08	A	West	ITCM	1744	Maquoketa-Grand Mound 161kV Reconductor	Reconductor 161kV from Maquoketa to Grand Mound (old East Calamus-Maquoketa 161kV line)	IA	IA	BaseRel	Not Shared		\$10,150,000	12/31/2016	Planned	161		Y
A in MTEP08	A	West	ITCM	2108	G358-Fairbault County	Network upgrades for tariff service request	MN	MN	GIP	Shared		\$3,966,848	7/31/2012	Under Constr	161	34.5	Y
A in MTEP09	A	West	ITCM	2339	G612-Marshalltown-Boone 115kV to 161kV	Construct a new Story Co 161kV switching station and rebuild the Marshalltown-Boone 115kV to 161kV.	IA	IA	GIP	Shared		\$3,640,000	12/31/2013	Planned	161		Y
A in MTEP09	A	West	ITCM	2340	Grand Junction-Paton REC tap 34kV Rebuild	Rebuild the 34kV line from Grand Jct-Paton REC tap to 69kV. Retire Dana 34kV/dist sub and construct in & out taps for new Grand Jct North 69kV/dist. Sub. (still operate at 34kV)	IA	IA	Other	Not Shared	Condition	\$1,103,527	12/31/2013	Planned	34		NT
A in MTEP09	A	West	ITCM	2341	Monticello-Amber Conversion & Lovell REC Rebuild	Rebuild 8.5 miles Monticello-Amber 34kV to 69kV, add 69kV bkr at Sand Springs, Monticello Industrial, & Amber. Operate Sand Springs-Amber at 69kV. Also rebuild 2.21 miles of 34kV to 69kV east of Lovell REC but continue operation of this portion at 34kV in 2009.	IA	IA	Other	Not Shared	Condition	\$594,968	10/30/2011	Under Constr	34		NT
A in MTEP09	A	West	ITCM	2344	Wyoming-Massillon 34kV Rebuild	Rebuild 12 miles of 34kV line from Wyoming-Massillon to 69kV standards. This line will continue to be operated at 34kV.	IA	IA	Other	Not Shared	Condition	\$4,020,000	12/31/2012	Planned	34		NT
A in MTEP09	A	West	ITCM	2345	Eldora Area Rebuild & Breaker Station	Rebuild approx 20 miles of 34kV to 69kV from the Hubbard Rural sub to a new 4-terminal Eldora North 69kV switching station and operate at 69kV. The new switching station will tap the CBPC Pleasant-CBPC Eldora 69kV line. The 4th terminal will be needed in the near future to feed the Eldora North-Union-Conrad 69kV line after substaitons are ready for conversion. This line will be rebuilt to 69kV standard in 2009.	IA	IA	Other	Not Shared	Condition	\$16,511,000	12/31/2013	Under Constr	69		NT
A in MTEP09	A	West	ITCM	2353	Big River 69kV 3-terminal Switching Station	Construct a new 3-terminal 69kV switching station where the Big River REC line taps the Agency-Sawyer 69kV line.	IA	IA	Other	Not Shared	Reliability	\$1,666,427	12/31/2011	Under Constr	69		NT
A in MTEP09	A	West	ITCM	2357	Hazleton-Fairbank REC 69kV line & breaker station	Construt a 69kV Hazleton-Fairbank line and a new 3-terminal 69kV switching station.	IA	IA	Other	Not Shared	Distribution	\$5,731,385	12/31/2013	Planned	69		NT
A in MTEP09	A	West	ITCM	2358	Hazleton-Blackhawk 161kV Rebuild	Rebuild 12 miles of the Hazleton-Blackhawk 161kV line (ITC owned portion)	IA	IA	BaseRel	Shared		\$5,400,000	12/31/2013	Planned	161		Y
A in MTEP09	A	West	ITCM	2364	Thompson 2 mile 69kV dbl ckt	Rebuild 69kV double circuit line near Thompson, IA	IA	IA	Other	Not Shared	Reliability	\$460,000	12/31/2012	Planned	69		NT

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A in MTEP09	A	West	ITCM	2367	Anita Area 34kV to 69kV Rebuilds	Rebuild 5 miles from the Anita-Exira REC to 69kV. Also rebuild 4.7 miles of the Anita to the Anita-Wiota Joint sub. Rebuild 21.9 miles from Thompson- Redfield. These lines will continue to operate at 34kV.	IA	IA	Other	Not Shared	Condition	\$7,895,000	12/31/2013	Planned	34		NT
A in MTEP09	A	West	ITCM	2369	Fairfax-Williamsburg 34kV to 69kV Rebuilds	Rebuild 26.6 miles of 34kV line from the Fairfax sub to the Williamsburg115kV sub to 69kV. These lines will continue to operate at 34kV.	IA	IA	Other	Not Shared	Condition	\$6,903,000	12/31/2013	Planned	34		NT
A in MTEP09	A	West	ITCM	2370	Andrew Tap & Monmouth Rebuilds	Rebuild the 5.75 mile Andrew Tap & 2 miles of line in the Monmouth area. These lines will continue to operate at 34kV.	IA	IA	Other	Not Shared	Condition	\$1,869,250	12/31/2011	Under Constr	34		NT
A in MTEP09	A	West	ITCM	2371	New Marengo 69kV Switching Station	Construct a new 3-terminal 69kV switching station at the existing Marengo 34kV sub.	IA	IA	Other	Not Shared	Condition	\$1,900,000	12/31/2013	Planned	69		NT
A in MTEP10	A	West	ITCM	3046	SW Cedar Rapids 69kV System Upgrade (Phase 1) Near ADM	Re-route 69kV lines near the load to connect to the 161/69kV transformer at the Beverly substation. Install two breaker terminals and a main breaker to connect the re-routed lines. This adds significant capacity to the 69kV system with minimal line construction and no new transformer purchases.	IA	IA	Other	Not Shared	Reliability	\$1,800,000	12/31/2012	Planned	69		Y
A in MTEP10	A	West	ITCM	3048	Jefferson Co-Perlee 69kV Rebuild	Rebuild the Jefferson Co-Perlee 69kV line section.	IA	IA	Other	Not Shared	Condition	\$2,700,000	12/31/2013	Planned	69	69	Y
A in MTEP10	A	West	ITCM	3049	Huxley Industrial Park Terminal Addition	Add a 161kV line terminal to tie to the rerouted Boone Jct-Huxley Park Ind 161kV line.	IA	IA	Other	Not Shared	Reliability	\$750,000	12/31/2012	Planned	161	161	Y
A in MTEP10	A	West	ITCM	3053	Keokuk Hydro-Carbide 69kV Dbl Ckt	Build a new 69kV circuit from Keokuk Hydro-Carbide.	IA	IA	Other	Not Shared	Reliability	\$3,240,000	12/31/2013	Planned	69	69	Y
A in MTEP10	A	West	ITCM	3054	Swisher Breaker Station	Construct a new 3 terminal breaker station.	IA	IA	Other	Not Shared	Reliability	\$2,152,000	12/31/2012	Planned	69	69	Y
A in MTEP10	A	West	ITCM	3055	Cedar Rapids 34kV Conversion Plan	ITCM, working with IP & L, has formed a plan to better serve Cedar Rapids load with new larger, 2-transformer substations that will allow retirement of the 4kV system along with several other small distribution substations. Most of these new substations will be served from a new 69 kV and 161 kV Cedar Rapids transmission system that will use the existing 34.5 kV system right-of-way. This will allow retirement of several existing 34.5kV lines while shifting distribution load to a higher voltage to allow better normal and contingency performance.	IA	IA	Other	Not Shared	Reliability	\$24,760,000	12/31/2014	Planned	161	69	Y
A in MTEP10	A	West	ITCM	3056	Grundy Center-Reinbeck-Hicks tap 69kV line.	Construct a 16 mile 69kV line between Grundy Center and the Hicks tap 69kV line. Constructing this line will allow consolidation of the Dike and Morrison substations into a single new distribution substation and will allow retirement of more than 30 miles of 50 year old 34.5kV line.	IA	IA	Other	Not Shared	Distribution	\$5,760,000	12/31/2012	Planned	69	69	Y
A in MTEP10	A	West	ITCM	3057	West Branch 34kV Load Shift Projects	Construct 69kV taps for the Moscow & New Liberty dist. Subs	IA	IA	Other	Not Shared	Distribution	\$2,505,000	12/31/2015	Planned	69	34	Y
A in MTEP10	A	West	ITCM	3058	Vinton-Hazleton 34kV Conversion Plan	The plan includes rebuilding a line between Dundee and Vinton substations and converting this line to 69 kV operation. In order to operate this line at 69 kV a 161/69 kV transformer will need to be installed at Vinton. Also, an approximatley 6 mile line will be built to connect the Hazleton source to the Dundee - Vinton line. This plan also includes rebuilding a line between Coggon and Hiawatha substations and converting this line to 69 kV operation. A 161/69 kV transformer will need to be installed at Coggon.	IA	IA	Other	Not Shared	Distribution	\$26,816,000	12/31/2014	Planned	161	69	Y
A in MTEP10	A	West	ITCM	3059	West Branch & West Liberty Switch Stations	Construct two new 3 terminal 69kV breaker stations at West Branch and at West Liberty.	IA	IA	Other	Not Shared	Reliability	\$4,888,800	12/31/2012	Planned	69	69	Y

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A in MTEP11	A	West	ITCM	3407	Bluff Substation Additions	Add 69kV breakers to the Bluff Substation 69kV and install associated relay equipment.	IA	IA	Other	Not Shared	Distribution	\$2,520,000	12/31/2012	Planned	69		Y
A in MTEP11	A	West	ITCM	3408	BooneQuartz Sustation	This project performs the conversion of the Boone Quartz substation from 34.5kV to 69kV as part of the overall rebuild and conversion of the 34.5kV system. The Boone Quartz substation was constructed with a dual high side transformer and the high side was laid out for 69kV operation in preparation for the conversion. Two 69kV line breakers will be installed at the Boone Quartz substation. Existing 69kV lines and 34.5kV lines already constructed for 69kV operation will be re-configured along with installation of 69kV taps into the Boone Quartz substation to make the change to 69kV. No new load is being added during the conversion to 69kV.	IA	IA	Other	Not Shared	Reliability	\$1,810,800	11/30/2012	Planned	69		Y
A in MTEP11	A	West	ITCM	3409	Bricelyn-Walters Rebuild	The recommended project is to completely rebuild a 5 mile section of the Bricelyn - Walters 69 kV line with standard T2-477 construction and shield wire.	MN	MN	Other	Not Shared	Condition	\$1,980,000	12/31/2013	Planned	69		Y
A in MTEP11	A	West	ITCM	3412	Fort Madison Interconnection	Install tap capable of double circuit 69kV to Fort Madison substation and install associated relay equipment.	IA	IA	Other	Not Shared	Distribution	\$1,740,000	12/31/2013	Planned	69		Y
A in MTEP11	A	West	ITCM	3413	Gladbrook 161kV tap	Install a 161kV tap pole in the Marshalltown to Traer line with two line switches. Construct a 161kV tap line to the new Gladbrook substation.	IA	IA	Other	Not Shared	Distribution	\$300,000	12/1/2014	Planned	161	161	Y
A in MTEP11	A	West	ITCM	3414	Magnolia 7.1 MVAR 69kV Cap	ITCM will move the existing Lewisville 69kV 7.1 MVAR capacitor to the 69kV bus at Magnolia. Recent system changes have opened up a 69kV bay at Magnolia and this will be used for the capacitor bank and 69kV breaker.	IA	IA	Other	Not Shared	Reliability	\$600,000	12/31/2012	Planned	69		Y
A in MTEP11	A	West	ITCM	3416	Marion Circuit 0410 Rebild to 69kV	This project rebuilds the sections (approximately 25 miles) of Marion circuit 0410 that will be utilized in the overall 34.5kV to 69kV conversion plan but have not yet been constructed for 69kV operation.	IA	IA	Other	Not Shared	Distribution	\$5,227,200	12/31/2012	Planned	34	34	Y
A in MTEP11	A	West	ITCM	3418	Mount Vernon Circuit 6420 Rebild to 69kV	This project rebuilds the sections (approximately 17 miles) of Mount Vernon circuit 6420 that will be utilized in the overall 34.5kV to 69kV conversion plan but have not yet been constructed for 69kV operation.	IA	IA	Other	Not Shared	Distribution	\$7,150,000	12/31/2015	Planned	34	34	Y
A in MTEP11	A	West	ITCM	3419	Bertram 69kV tap	The new transformer high side voltage is 69/34.5kv; it will need a 0.5 mile tap line built to the substation from the existing 34.5kV system with the future plans of 69kV rebuild. Adding the double-circuit tap to the substation will allow connection to the new transformers. The double circuit tap will provide additional reliability, with switching, to have the ability to separate the parallel transformers in the situation a transformer fails, no load will be lost.	IA	IA	Other	Not Shared	Distribution	\$270,000	12/31/2012	Planned	69		Y
A in MTEP11	A	West	ITCM	3421	Centerville 7.1 MVAR 69kV Cap	nstall a 7 MVAR 69 kV capacitor, breaker with synchronous closing control, switch, and 0.5 mH reactor. 69 kV breakers 0-6961-1 and 0-6921-2 will be replaced due to condition. A 69 kV bus tie breaker and switch will be added for reliability between transformers 2 and 3.	IA	IA	Other	Not Shared	Reliability	\$2,250,000	12/31/2012	Under Constr	69		Y
A in MTEP11	A	West	ITCM	3422	South Broadway TEQ	Upgrades terminal equipment. Change out existing relays, add new control building, add 69kV bus.	IA	IA	Other	Not Shared	Distribution	\$852,000	5/31/2014	Planned	69		Y

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A in MTEP11	A	West	ITCM	3426	DPC/ITC Interconnect move	The recommended project is to move the existing interconnection point approximately 0.6 miles south. ITC will install a laminate structure and associated equipment to accommodate DPC's project.	IA	IA	Other	Not Shared	Distribution	\$0	12/31/2013	Planned	69		Y
A in MTEP09	A	West	MDU	1355	Heskett - Additional 230/115 kV Switchyard and 115 kV Capacitor	Heskett - Additional 230/115 kV Switchyard 230 115 Switchyard in parallel w/ existing Heskett switchyard and Cap Bank	ND	ND	BaseRel	Shared		\$4,000,000	12/31/2014	Planned	115		Y
A in MTEP11	A	West	MDU	3199	G359, 38073-01	230 kV line from project interconnection to Ellendale Jct substation and new 230/115 kV transformer at	ND	ND	GIP	Not Shared		\$17,055,000	9/1/2012	Under Constr	230		Y
A in MTEP11	A	West	MEC	3268	Lehigh: 345 kV 50 MVAR Reactor	Add a 345 kV, 50 MVAR reactor	IA	IA	BaseRel	Not Shared		\$1,373,000	8/1/2012	Planned	345		Y
A in MTEP11	A	West	MEC, ITCM	3205	MVP Portfolio 1: Lakefield Jct. - Winnebago - Winco - Kossuth County & Obrien Coutny - Kossuth County - Webster 345 kV line	New 345 kV line from Lakefield Junction to Kossuth County via Winnebago and Winco and a new 345 kV line from Obrien County to Webster via Kossuth County. Includes 161 kV rebuild as underbuild along portions of the route.	MN	IA	MVP	Shared		\$514,069,787	12/1/2016	Planned	345	161	Y
A in MTEP11	A	West	MEC, ITCM	3213	MVP Portfolio 1 - Winco to Hazleton 345 kV line	Winco to Lime Creek to Killdeer to Blackhawk to Hazleton 345 kV line and Lime Creek, Killdeer and Black Hawk transformers	IA	IA	MVP	Shared		\$444,413,190	12/31/2015	Planned	345	161	Y
A in MTEP09	A	East	METC	662	Weeds Lake	Loop the 345kV Argenta - Robinson Park 345kV circuit into a new 345/138kV EHV substation called Weeds Lake. Build 4 new (approximately 6 miles) 138kV circuits to loop the two Argenta-Milham 138kV lines into the substation.	MI	MI	BaseRel	Shared		\$45,026,457	12/31/2014	Planned	345	138	Y
A in MTEP06	A	East	METC	988	Simpson - Batavia 138 kV line	Simpson - Batavia 138 kV line - Build 30 miles new 138 kV line, 795 ACSS	MI	MI	BaseRel	Shared		\$37,100,000	10/31/2012	Under Constr	138		Y
A in MTEP06	A	East	METC	1408	RTU / SCADA Re-direction Program	Install and/or upgrade RTU's and SCADA points throughout system	MI	MI	Other	Not Shared		\$801,000	6/30/2013	Under Constr	345	138	Y
A in MTEP06	A	East	METC	1445	Emmet	Install a second distribution transformer at Emmet	MI	MI	Other	Not Shared		\$2,750,000	12/31/2016	Planned	138		Y
A in MTEP08	A	East	METC	1448	Simpson	Project to connect a distribution transformer at Simpson	MI	MI	Other	Not Shared		\$2,200,000	6/1/2016	Planned	138	12.5	Y
A in MTEP11	A	East	METC	1809	Keystone-Hodenpyl 138 kV Rebuild	Rebuild the 27 mile Keystone to Hodenpyl 138 kV line to 954 ACSR (Pre-build to 230 kV construction).	MI	MI	BaseRel	Shared		\$32,600,000	12/31/2013	Planned	138		Y
A in MTEP08	A	East	METC	1814	Tippy - Chase 138kV	Rebuild 30 miles of 138kV 110 CU to 954 ACSR. Prebuild to 230kV construction.	MI	MI	BaseRel	Shared		\$26,970,000	3/31/2013	Planned	138		Y
A in MTEP08	A	East	METC	1820	METC Communication and Relaying Upgrade	Throughout system	MI	MI	Other	Not Shared		\$10,000,000	12/31/2012	Planned			Y
A in MTEP08	A	East	METC	1841	Eagles Landing	New Distribution Interconnection served from losco - Karn 138kV circuit	MI	MI	Other	Not Shared		\$178,188	6/1/2013	Planned	138		Y
A in MTEP09	A	East	METC	2475	Titus Lake	Distribution interconnection to add a second transformer at Titus Lake.	MI	MI	Other	Not Shared	Distribution	\$4,200,000	6/1/2015	Planned	138		Y
A in MTEP09	A	East	METC	2478	Capital Ave	New distribution interconnection served from Battle Creek - Verona #2 138kV (Line connection change to Battle Creek to Island Road)	MI	MI	Other	Not Shared	Distribution	\$178,188	6/1/2015	Planned	138		Y
A in MTEP09	A	East	METC	2481	Forrest Grove	New distribution interconnection served from Campbell-Ransom 138kV circuit.	MI	MI	Other	Not Shared	Distribution	\$170,000	6/1/2014	Planned	138		Y
A in MTEP09	A	East	METC	2482	Hawthorne	New distribution interconnection served from Four Mile - Blendon 138kV circuit.	MI	MI	Other	Not Shared	Distribution	\$170,000	5/31/2013	Planned	138		Y
A in MTEP09	A	East	METC	2483	Maines Road	New distribution interconnection served from Marshall - Blackstone 138kV circuit	MI	MI	Other	Not Shared	Distribution	\$176,386	6/1/2013	Planned	138		Y
A in MTEP09	A	East	METC	2484	Scenic Lake	New distribution interconnection served from Cornell-Tihart 138kV circuit	MI	MI	Other	Not Shared	Distribution	\$176,386	6/1/2013	Planned	138		Y
A in MTEP09	A	East	METC	2485	Ironwood	New distribution interconnection served from CE's 138kV spur on the Ransom-Buck Creek 138kV.	MI	MI	Other	Not Shared	Distribution	\$12,000	6/1/2013	Planned	138		Y
A in MTEP09	A	East	METC	2486	Haakwood	New distribution interconnection served from Riggsville-Livingston 138kV (on the Rondo-Vanderbilt section)	MI	MI	Other	Not Shared	Distribution	\$170,000	5/31/2014	Planned	138		Y
A in MTEP09	A	East	METC	2492	Battle Creek - Verona 138kV ckt. #2	Upgrade terminal equipment.	MI	MI	BaseRel	Not Shared		\$200,000	6/1/2013	Planned	138		Y

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A in MTEP09	A	East	METC	2496	Bullock - Tittabawassee 138kV	Upgrade terminal equipment.	MI	MI	BaseRel	Not Shared		\$360,000	6/1/2013	Planned	138		Y
A in MTEP09	A	East	METC	2501	Northern Reactive	Install 3 capacitors in the northern part of Michigan	MI	MI	BaseRel	Not Shared		\$2,700,001	6/1/2015	Planned			Y
A in MTEP10	A	East	METC	2502	McGulpin Shunt Reactor	Install shunt reactor McGulpin	MI	MI	BaseRel	Not Shared		\$3,000,000	12/31/2014	Planned	138		Y
A in MTEP11	A	East	METC	2812	Twining - Alcona 138kV Rebuild	Rebuild the Twining-Mio 138kV 38 mile line to 954 ACSR future-double-circuit (pre-built to 230kV)	MI	MI	BaseRel	Shared		\$43,300,000	12/31/2013	Planned	138		Y
A in MTEP10	A	East	METC	2903	Battery Replacement 2012	Replace batteries and chargers	MI	MI	Other	Not Shared	Condition	\$300,000	12/31/2012	Planned			Y
A in MTEP10	A	East	METC	2904	Breaker Replacement Program 2012	Replace defective, damaged, or over dutied breakers throughout system.	MI	MI	Other	Not Shared	Condition	\$6,000,000	12/31/2012	Planned			Y
A in MTEP10	A	East	METC	2905	NERC Relay Loadability Compliance 2012	Upgrade relay throughout system	MI	MI	Other	Not Shared	Reliability	\$2,400,000	12/31/2012	Planned			Y
A in MTEP10	A	East	METC	2906	Potential Device Replacement 2012	Replace aging potential devices	MI	MI	Other	Not Shared	Condition	\$300,000	12/31/2012	Planned			Y
A in MTEP10	A	East	METC	2907	Power Plant Control Relocation 2012	Relocate substation controls currently located in power plants control rooms	MI	MI	Other	Not Shared	Condition	\$4,400,000	12/31/2012	Planned			Y
A in MTEP10	A	East	METC	2908	Relay Betterment Program 2012	Replace aging and electromechanical relays throughout the system. Add OPGW where needed.	MI	MI	Other	Not Shared	Condition	\$1,200,000	12/31/2012	Planned			Y
A in MTEP10	A	East	METC	2909	Sag clearance 2012	Identify and remediate inherent sag limitations on heavily loaded METC transmission lines throughout the system.	MI	MI	Other	Not Shared	Clearance	\$3,600,000	12/31/2012	Planned	345	138	Y
A in MTEP10	A	East	METC	2910	Wood Pole Replacement 2012	Replace deteriorating wood pole	MI	MI	Other	Not Shared	Condition	\$4,800,000	12/31/2012	Planned	138		Y
A in MTEP10	A	East	METC	2913	Blanket for Customer Interconnections 2012	Throughout system	MI	MI	Other	Not Shared	Distribution	\$2,500,000	12/31/2012	Planned	138		Y
A in MTEP10	A	East	METC	2914	Blanket for Customer Interconnections 2013	Throughout system	MI	MI	Other	Not Shared	Distribution	\$2,500,000	6/1/2013	Planned	138		Y
A in MTEP10	A	East	METC	2915	Blanket for Customer Interconnections 2014	Throughout system	MI	MI	Other	Not Shared	Distribution	\$2,500,000	12/31/2014	Planned	138		Y
A in MTEP10	A	East	METC	2916	Livingston - Vanderbilt 138 kV Rebuild	Rebuild 9.7 miles of 138 kV 266 ACSR to 954 ACSR FDC 230 kV construction.	MI	MI	BaseRel	Shared		\$12,734,400	10/31/2012	Planned	138		Y
A in MTEP11	A	East	METC	3139	Tippy-Wexford 138 kV Circuit Upgrade	Terminal Equipment upgrade at Tippy	MI	MI	Other	Not Shared	Reliability	\$20,000	5/31/2013	Planned	138		Y
A in MTEP11	A	East	METC	3288	METC Annual Breaker Replacement Program for 2013	Annual Breaker Replacement Program	MI	MI	Other	Not Shared	Condition	\$6,000,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3289	METC Annual NERC Relay Loadability Compliance Program for 2013	Annual NERC Relay Loadability Program	MI	MI	Other	Not Shared	Reliability	\$2,400,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3290	METC Annual Potential Device Replacement Program for 2013	Annual Potential Device Replacement Program	MI	MI	Other	Not Shared	Condition	\$300,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3291	METC Annual Relay Betterment Program for 2013	Annual Relay Betterment Program	MI	MI	Other	Not Shared	Condition	\$3,000,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3292	METC Annual Wood Pole Replacement Program for 2013	Annual Wood Pole Replacement Program	MI	MI	Other	Not Shared	Condition	\$4,800,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3293	METC Annual Battery Replacement Program for 2013	Annual Battery Replacement Program	MI	MI	Other	Not Shared	Condition	\$100,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3294	METC Annual Power Plant Control Relocation Program for 2013	Annual Power Plant Control Relocation Program	MI	MI	Other	Not Shared	Operation	\$3,700,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3295	METC Sag Clearance Program for 2013	Sag Clearance Program	MI	MI	Other	Not Shared	Clearance	\$3,600,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3297	METC Spill Prevention Control and Countermeasure Program for 2012	Annual SPCC Program	MI	MI	Other	Not Shared	Condition	\$3,100,000	12/31/2012	Planned			Y
A in MTEP11	A	East	METC	3298	METC Spill Prevention Control and Countermeasure Program for 2013	Annual SPCC Program	MI	MI	Other	Not Shared	Condition	\$3,100,000	12/31/2013	Planned			Y
A in MTEP11	A	East	METC	3299	METC Customer Interconnections - Year 2015	Distribution Interconnection Request	MI	MI	Other	Not Shared	Distribution	\$2,500,000	12/31/2015	Planned			Y
A in MTEP11	A	East	METC	3303	Cottage Grove-East Tawas 138 kV Rebuild	Rebuild 12.3 miles of 138 kV line	MI	MI	BaseRel	Shared		\$11,400,000	12/31/2013	Planned	138		Y
A in MTEP11	A	East	METC	3304	Croton-Nineteen Mile 138 kV Rebuild	Rebuild 21.5 miles of 138 kV 110 CU to 954 ACSR (Pre-build to 230 kV construction).	MI	MI	BaseRel	Shared		\$26,600,000	12/31/2013	Planned	138		Y
A in MTEP11	A	East	METC	3306	Karn-Cottage Grove 138 (Karn Position 488) Relay Replacement Project		MI	MI	Other	Not Shared	Reliability	\$200,000	12/31/2012	Planned	138		Y

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A in MTEP11	A	East	METC	3308	Livingston to Gaylord 138 kV Dual Pilot Relay Protection Scheme Installation	Install new dual pilot relay scheme on 138kV circuit	MI	MI	Other	Not Shared	Reliability	\$315,000	12/31/2012	Planned	138		Y
A in MTEP11	A	East	METC	3505	Eaton Rapids Load Interconnection	Serve new load in Eaton Rapids with 2 new 138kV circuits from Clinton Jct. and the Delhi-Tompkins circuit	MI	MI	Other	Not Shared	Distribution	\$28,500,000	5/31/2014	Planned	138		Y
A in MTEP11	A	East	METC	3517	G905-Gratiot County Wind Generation	200 MW wind farm connecting at the new METC owned Redstone substation	MI	MI	GIP	Shared		\$16,914,000	12/31/2012	Planned	138		Y
A in MTEP11	A	East	METC	3520	NERC Alert Facility Ratings for 2011: Eureka - Vestaburg 138 kV line upgrade	Eureka - Vestaburg 138 kV line upgrade: Remediate sag limits to conductor rating of circuit	MI	MI	BaseRel	Not Shared		\$1,100,000	6/1/2012	Planned	138		Y
A in MTEP11	A	East	METC	3521	NERC Alert Facility Ratings for 2011: Bullock - Summerton 138 kV line upgrade	Bullock - Summerton 138 kV line upgrade: Remediate sag limits to conductor rating of circuit	MI	MI	BaseRel	Not Shared		\$3,600,000	10/31/2012	Planned	138		Y
A in MTEP07	A	West	MP	1025	G519 - Mesaba	Network Upgrades associated with 600 MW coal gasification generating facility at the proposed Mesaba generating station. There is a G477 alternate site which is not described here.	MN	MN	GIP	Shared		\$76,319,541	7/1/2014	Planned	230	115	Y
A in MTEP10	A	west	MP	2547	Essar	Essar project adds a 95 MW new mine and taconite plant load in fall 2011 with 50 MW DRI facility fall of 2012 total demand to 145 MW. Future load additions could increase total demand to 300 MW	MN	MN	Other	Not Shared	Distribution	\$40,716,407	12/31/2014	Planned	230	14	Y
A in MTEP11	A	West	MP	2549	15L Upgrade	Thermal Upgrade of MP Line #15	MN	MN	Other	Not Shared	Reliability	\$3,179,000	12/1/2014	Planned	115		Y
A in MTEP09	A	West	MP	2552	Skibo	Skibo-Hoyt Lakes 138 ckt 1, Sum rate 202	MN	MN	BaseRel	Not Shared		\$2,540,000	12/31/2014	Planned	138		Y
A in MTEP09	A	West	MP	2759	Laskin	Move Virginia 115/46 kV Transformer to Laskin	MN	MN	Other	Not Shared	Distribution	\$500,000	10/1/2013	Planned	115	46	Y
A in MTEP10	A	West	MP	2761	Polymet	add new 138/14 kV substaion off MP 138 KV Line #1	MN	MN	Other	Not Shared	Distribution	\$3,242,847	12/31/2014	Planned	115	14	Y
A in MTEP10	A	West	MP	2762	Airpark	New 115/34.5 and 115/14 kV Substation	MN	MN	Other	Not Shared	Distribution	\$5,766,298	3/31/2013	Under Constr	115	14	Y
A in MTEP10	A	West	MP	3091	28L reroute	MP's 115 kV Line #28 (28L) must be moved as it crosses the area that Essar will be mining.	MN	MN	Other	Not Shared	Relocation	\$4,719,891	4/1/2013	planned	115		Y
A in MTEP11	A	West	MP	3373	9 Line	Thermal Upgrade	MN	MN	BaseRel	Shared		\$5,312,291	5/1/2014	Planned	115		Y
A in MTEP05	A	West	MP, GRE	600	Baxter - Southdale 115 kV line	Southdale-Scearcyville 115 kV line	MN	MN	Other	Excluded		\$7,497,025	7/1/2012	Under Constr	115		Y
A in MTEP10	A	East	MPPA	3074	TC East - Parsons TLine	New 4.1 mi 69kV transmission line from new TC East Sub to existing Parsons Sub	MI	MI	Other	Not Shared	Reliability	\$1,600,000	12/31/2012	Planned	69		NT
A in MTEP10	A	East	MPPA, METC	3073	TC East Substation	New 138/69kV Substation Interconnection	MI	MI	Other	Not Shared	Reliability	\$8,413,791	12/31/2012	Planned	138	69	Y
A in MTEP10	A	West	MPW	2934	Add second 75 MVA transformer	Add a second 75 MVA transformer at South Sub (633301-633501).	IA	IA	Other	Not Shared	Reliability	\$5,400,000	6/1/2015	Planned	161	69	Y
A in MTEP08	A	East	NIPS	1996	Circuit 6980 - Angola Sub to Sw #644 - Rebuild w 336 KCM ACSR	Rebuild and upgrade 12 miles of Circuit 6980's existing 2/0 Cu to 336.4 kCM ACSR.	IN	IN	Other	Not Shared		\$2,465,948	12/1/2012	Under Constr	69		Y
A in MTEP08	A	East	NIPS	1997	Circuit 6977 - Goshen Jct to Model Sub Tap - Recond. 1.5 Miles	Upgrade (reconductor) 1.5 miles of 69 KV line to 336.4 KCM ACSR.	IN	IN	Other	Not Shared		\$357,000	12/1/2015	Planned	69		Y
A in MTEP11	A	East	NIPS	3203	MVP Portfolio 1 - Reynolds to Burr Oak to Hiple 345 kV	Reynolds to Burr Oak to Hiple 345 kV line and tie in second AEP 345 kV circuits at Reynolds and Hiple	IN	IN	MVP	Shared		\$271,000,000	12/31/2019	Planned	345		Y
A in MTEP06	A	West	non MISO, XEL, OTP, MP	279	Bemidji-Grand Rapids 230 kV Line	Boswell - Wilton 230 ckt 1, Sum rate 495, Addition of a 187 MVA 230/115 kV transformer at Cass Lake	MN	MN	BaseRel	Shared		\$98,530,747	12/31/2012	Planned	230		Y
A in MTEP08	A	West	NWE	2011	Frederic-Lewis 34.5KV Rebuild	Rebuild the 34.5kV system between Frederic and Lewis sub at 69KV with 477ASCR and horizontal post construction.	WI	WI	Other	Not Shared		\$350,000	6/1/2011	Planned	69		Y
A in MTEP08	A	West	NWE	2012	Falun-Penta 34.5KV Rebuild	Rebuild the 34.5kV system between Falun and Penta sub at 69KV with 477ASCR and horizontal post construction.	WI	WI	Other	Not Shared		\$538,000	9/1/2011	Under Constr	69		Y
A in MTEP08	A	West	NWE	2013	Penta-Siren Tap 34.5KV Rebuild	Rebuild the 34.5kV system between Penta sub and Siren Tap at 69KV with 477ASCR and horizontal post construction.	WI	WI	Other	Not Shared		\$175,000	6/1/2011	Planned	69		Y
A in MTEP08	A	West	NWE	2016	Frederic-Coffee Cup 69KV reconductor	Reconductor 69KV line with 477ACSR	WI	WI	Other	Not Shared		\$100,000	1/1/2013	Planned	69		Y
A in MTEP08	A	West	NWE	2018	Balsam Lake-Centuria 69KV line	Build new 69KV line to Centuria and build Distribution Sub	WI	WI	Other	Not Shared		\$1,200,000	6/1/2011	Planned	69	12.5	Y
A in MTEP10	A	West	NWE	3092	Webb Lake 69KV line	Rebuild 34.5KV line to Webb Lake at 69KV with horizontal post construction and #4/0 ACSR	WI	WI	Other	Not shared	Condition	\$425,000	6/1/2012	Planned	69		Y

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A in MTEP09	A	West	OTP	2751	New Perham 115/12.5 kV Substation	Build New 115/12.5 kV Substation at Perham to Serve as a Back-up Source for Outage of Primary Source	MN	MN	Other	Not Shared	Distribution	\$974,628	11/1/2014	Planned	115	12.5	Y
A in MTEP10	A	West	OTP	3156	Cass Lake -Nary-Helga -Bemidji 115	Capacity upgrade: Cass Lake-Bemidji 115 kV	MN	MN	BaseRel	Shared		\$10,650,000	12/31/2013	Planned	230	115	Y
A in MTEP11	A	West	OTP	3481	Buffalo - Cassellon 115 kV Line	Construct 16 mile 115 kV line from Buffalo - Cassellon (ND); Replace Buffalo 345/115 kV Transformer; Rebuild portion of Sheyenne - Mapleton 115 kV Line	ND	ND	BaseRel	Shared		\$15,500,000	11/1/2014	Planned	345	115	Y
A in MTEP11	A	West	OTP, MDU	2220	MVP Portfolio 1 - Ellendale to Big Stone South	Big Stone to Ellendale 345 kV line	SD	ND	MVP	Shared		\$330,670,000	12/31/2019	Planned	345	230	Y
A in MTEP10	A	West	OTP, non MISO	2826	Enbridge Load Expansion Support	Install Capacitor Bank on 115 kV at Clearbrook, MN. One 34 MVAR. Install Capacitor Bank on 115 kV at Karlstad. One 20 MVAR. Install Capacitor Bank on 115 kV at Thief River Falls. One 15 MVAR.	MN	MN	BaseRel	Not Shared		\$1,300,000	11/15/2013	Planned	115		Y
A in MTEP11	A	West	OTP, XEL	2221	MVP Portfolio 1 - Big Stone South to Brookings	Brookings to Big Stone 345 kV line (double ckt capable)	SD	SD	MVP	Shared		\$226,720,000	12/31/2017	Planned	345	230	Y
A in MTEP03	A	Central	SIPC	81	Carrier Mills 161kV	A new 25-mile 161kV transmission line from Southern Illinois Power Cooperative's power plant to a new 161/69kV substation located north of Carrier Mills, IL.	IL	IL	Other	Excluded		\$10,200,000	9/1/2012	Planned	161	69	Y
A in MTEP10	A	West	SMP	2167	City of Redwood Falls, MN load serving upgrades	Adding approx 5.2 miles of new 115kV transmission line and a new load serving substation (Estimated in service Dec 2011)	MN	MN	Other	Not Shared	Distribution	\$4,000,000	9/2/2012	Under Constr	115		NT
A in MTEP06	A	Central	Vectren (SIGE)	1257	New Transmission Line Gibson (Cinergy) to AB Brown (Vectren) to Reid (BREC)	New 345 kV transmission line Gibson (Cinergy) to AB Brown (Vectren) to Reid (BREC)	IN	KY	BaseRel	Shared		\$55,900,000	10/1/2012	Under Constr	345		Y
A in MTEP08	A	Central	Vectren (SIGE)	1782	NorthEast Sub Bus re-config	Rebuild existing straight bus with more reliable breaker and half scheme	IN	IN	Other	Not Shared	Reliability	\$8,000,000	12/31/2014	Planned	138		Y
A in MTEP08	A	Central	Vectren (SIGE)	1784	Jasper#3 Sub Exp-Victory Line	Extend existing Victory line to new term at existing sub	IN	IN	Other	Not Shared		\$3,625,000	6/1/2016	Planned	69		NT
A in MTEP08	A	Central	Vectren (SIGE)	1785	Z83 Upgrade	Upgrade terminal equipment at NE and NW.	IN	IN	Other	Not Shared		\$300,000	12/31/2012	Planned	138		Y
A in MTEP08	A	Central	Vectren (SIGE)	1787	Y75 - Dale to Santa Clause	New 69kV line from Dale Sub to Santa Clause Sub	IN	IN	Other	Not Shared	Reliability	\$5,000,000	6/1/2014	Planned	69		NT
A in MTEP08	A	Central	Vectren (SIGE)	1788	Y34 - St. Wendel to Mohr Rd	New 69kV line from St. Wendel Sub to Mohr Rd Sub	IN	IN	Other	Not Shared	Reliability	\$2,750,000	6/1/2015	Planned	69		NT
A in MTEP08	A	Central	Vectren (SIGE)	1789	Y56 - City of Boonville Loop	New 69kV line from Boonville Sub to Boonville Pioneer Sub	IN	IN	Other	Not Shared	Reliability	\$1,400,000	6/1/2014	Planned	69		NT
A in MTEP08	A	Central	Vectren (SIGE)	1790	Y52 rebuild and Sunbeam loop	Rebuild/Reconductor existing Y52 and loop into Sunbeam	IN	IN	Other	Not Shared	Reliability	\$2,550,000	6/1/2014	Planned	69		NT
A in MTEP11	A	Central	Vectren (SIGE)	2460	Leonard Rd 69kV Substation	Add new 69kV switching substation near Leonard Rd	IN	IN	Other	Not Shared	Reliability	\$2,150,000	6/1/2014	Planned	69		NT
A in MTEP09	A	Central	Vectren (SIGE)	2461	Dubois Sub Z84 terminals	Add 1 new 138kV terminal to existing sub to avoid 3 term line, breaking up Duff - Dubois - Culley 138kV line	IN	IN	BaseRel	Not Shared		\$1,000,000	6/1/2014	Planned	138		Y
A in MTEP11	A	Central	Vectren (SIGE)	2462	Y53 Stringtown to Folz Reconductor	Reconductor existing 69kV line for more capacity	IN	IN	Other	Not Shared	Condition	\$2,500,000	6/1/2014	Planned	69		NT
A in MTEP11	A	Central	Vectren (SIGE)	2463	Y31 Mt Vernon to Givens 69kV recon.	Reconductor existing 69kV line for more capacity	IN	IN	Other	Not Shared	Condition	\$5,700,000	6/1/2015	Planned	69		NT
A in MTEP11	A	Central	Vectren (SIGE)	2464	Y33 Mt Vernon to New Harmony 69kV recon.	Reconductor existing 69kV line for more capacity	IN	IN	Other	Not Shared	Condition	\$10,350,000	6/1/2015	Planned	69		NT
A in MTEP09	A	Central	Vectren (SIGE)	2466	Roesner Rd 138/12kV Substation	New 138/12kV Substation for load growth	IN	IN	Other	Not Shared	Distribution	\$3,000,000	6/1/2017	Planned	138	12.5	NT
A in MTEP06	A	East	WPSC	1272	Redwood 75MVA Transformer	Add 75MVA Transformer at Redwood Substation separate line from Redwood Junction will be ran to energize the transformer.	MI	MI	Other	Not Shared	Reliability	\$3,000,000	12/31/2014	Planned	138	69	Y
A in MTEP08	A	East	WPSC	1274	Blendon to Osipoff	Blendon to Osipoff line rebuild	MI	MI	Other	Not Shared	Reliability	\$7,400,000	12/31/2013	Planned	69		Y
A in MTEP08	A	East	WPSC	1311	Copemish to Grawn	Copemish to Grawn line rebuild	MI	MI	Other	Not Shared	Reliability	\$9,100,000	12/31/2013	Planned	69		Y
A in MTEP08	A	East	WPSC	1313	Plains X to Hersey	Plains X to Hersey line rebuild	MI	MI	Other	Not Shared	Reliability	\$8,550,000	12/31/2014	Planned	69		Y
A in MTEP08	A	East	WPSC	1586	Gaylord to Advance 69 kV line rebuild, Advance to Petoskey 69 kV line rebuild, Petoskey to Oden 69 kV line rebuild	Rebuild Overloaded line	MI	MI	Other	Not Shared	Reliability	\$7,200,000	12/31/2014	Planned	69		Y
A in MTEP08	A	East	WPSC	1967	Wayland to Portland	Rebuild Outdated line	MI	MI	Other	Not Shared	Reliability	\$14,542,000	12/31/2013	Planned	69		Y
A in MTEP09	A	East	WPSC	2735	Alba-Westwood Line Rebuild	Alba - Mancelona - Westwood 69 kV line rebuild (11 miles) to 143 MVA	MI	MI	Other	Not Shared	Reliability	\$4,800,000	12/31/2016	Planned	69		Y
A in MTEP09	A	East	WPSC	2736	East Bay-South Boardman Line Rebuild	East Bay - South Boardman Dist - South Boardman 69 kV line rebuild (16 miles) to 143 MVA	MI	MI	Other	Not Shared	Reliability	\$6,500,000	12/31/2016	Planned	69		Y

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A in MTEP09	A	East	WPSC	2770	Gilmore	New distribution interconnection served from Hersey to Vestaburg circuit.	MI	MI	Other	Not Shared	Distribution	\$200,000	6/1/2013	Planned	69		Y
A in MTEP10	A	East	WPSC	3060	Morley Capacitor Bank	Install a Capacitor Bank tap at the Morley substation	MI	MI	Other	Not Shared	Reliability	\$260,000	12/31/2020	Planned	69		Y
A in MTEP10	A	East	WPSC	3062	Blendon Transformer Upgrade	Replace Blendon Transformer with a larger transformer	MI	MI	Other	Not Shared	Reliability	\$3,750,000	12/31/2013	Planned	138	69	Y
A in MTEP10	A	East	WPSC	3068	South Boardman Capacitor Bank	Install a Capacitor Bank at the South Boardman substation	MI	MI	Other	Not Shared	Reliability	\$260,000	12/31/2015	Planned	69		Y
A in MTEP10	A	East	WPSC	3069	Weidman Capacitor Bank	Install a Capacitor Bank at the Weidman substation	MI	MI	Other	Not Shared	Reliability	\$260,000	12/31/2020	Planned	69		Y
A in MTEP11	A	East	WPSC	3329	Burnips to Wayland	Rebuild the Burnips to Wayland line section with a larger conductor	MI	MI	Other	Not Shared	Reliability	\$7,150,000	12/31/2012	Under Constr	69		Y
A in MTEP11	A	East	WPSC	3331	Redwood to Hart	Rebuild the Redwood to Hart line section with a larger conductor	MI	MI	Other	Not Shared	Reliability	\$750,000	12/31/2014	Planned	69		Y
A in MTEP11	A	East	WPSC	3335	Burnip Transmission Station Upgrade	Upgrade to replace outdated equipment. Bus, breakers, relays, and other equipment as necessary.	MI	MI	Other	Not Shared	Condition	\$750,000	12/31/2013	Planned	69		Y
A in MTEP08	A	West	XEL	675	Rebuild Westgate to Scott County 69 kV to 115 kV	Upgrade 20.1 miles Westgate-Deephaven-Excelsior-Scott County 69kV to 115 kV using 795 ACSS conductor, Upgrade 2 miles Westgate-Eden Prairie 115kV #1 and #2 to 400MVA (PrjID 606), Substation work at Deephaven, Excelsior and Scott County.	MN	MN	Other	Not Shared		\$14,000,000	6/1/2014	Planned	115		Y
A in MTEP08	A	West	XEL	1487	Somerset - Stanton 69 kV line 84 MVA	Construct 7 miles of 69 kV line using 477 SSAC conductor traveling north along 210th Avenue, interconnecting with a new stanton 69 kV substation on the Clear Lake - New Richmond 69 kV line and the New Summerset substation on the DPC Roberts - St. Croix Falls 69 kV line	WI	WI	Other	Not Shared	Reliability	\$9,247,500	8/1/2012	Planned	69		NT
A in MTEP08	A	West	XEL	1957	New 161/69 kV Sub SW of Eau Claire where Alma - Elk Mound 161 kV intersects Shawtown - Naples 69 kV line. Rebuild 69 kV London/Madison to new substation. New 69 kV from new substation - DPC Union Sub. New 69 kV to DPC Brunswick Sub	New 161/69 kV Substation southwest of Eau Claire where Alma - Elk Mound 161 kV line intersects with Shawtown - Naples 69 kV line. Rebuild 69 kV line from London/Madison Tap to new substation. Construct 69 kV line from new substation to DPC Union Substation. Construct 69 kV line from new substation to DPC Brunswick Substation	WI	WI	Other	Not Shared	Reliability	\$7,080,000	4/30/2013	Planned	161	69	Y
A in MTEP08	A	West	XEL	1958	Stone Lake-Edgewater 161 kV line. A new radial 161 kV line and substation in Sawyer County, Wisconsin	Expand 161 kV ring bus at Stone Lake to accept new line termination. Construct 161 kV line from Stone Lake to Couderay Substation. Install 161/69 kV transformer at Couderay Substation. Install the following substation equipment at Couderay: -161 kV MOD -69 kV low-side transformer breaker -69 kV line breaker	WI	WI	Other	Not Shared	Reliability	\$26,185,641	12/1/2012	Planned	161		Y
A in MTEP09	A	West	XEL	2156	North Mankato 115 kV project	1) New 345/115 kV TR at the proposed Helena 345 kV switching station. 2) New 115 kV line from Helena - St. Thomas. 3) New 115/69 kV substation near St. Thomas. 4) New 69 kV switchig station at Lesueur Tap.	MN	MN	Other	Not Shared	Reliability	\$12,770,159	4/1/2013	Planned	345	69	Y
A in MTEP09	A	West	XEL	2307	St. Cloud Loop	(1) New 4 mile 115 kV line from St. Cloud tap tap to Mayhew Lake substation.(2) Convert Benton Co - St. Cloud double circuit to bifurcated line and reterminarte into Mayhew Lake substation (3) Convert St. Cloud tap to Granite City into bifurcated line (this results in single 115 kV circuit from St. Cloud to Granite City).	MN	MN	BaseRel	Shared		\$6,100,000	4/1/2013	Planned	115		Y
A in MTEP09	A	West	XEL	2309	Maple Lake - Watkins line rebuild	This project is to rebuild 20 miles of 69 kV line from Maple Lake to Watkins in west Central Minnesota	MN	MN	Other	Not Shared	Reliability	\$2,487,000	6/1/2013	Planned	69		NT
A in MTEP09	A	West	XEL	2772	South Minneapolis	New 115 kV distribution substation with four terminations tapping the Elliot Park - Southtown line, 1.25 new miles of double circuit 795 SAC to a new 115 kV distribution sustation	MN	MN	Other	Not Shared	Distribution	\$26,890,000	6/20/2013	Planned	115	13.8	Y
A in MTEP10	A	West	XEL	3097	Monroe County 2nd Transformer	Install second 161/69 kV 70 MVA transformer at Monroe County substation	WI	WI	Other	Not Shared	Reliability	\$3,000,000	10/1/2012	Planned	161	69	Y

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A in MTEP11	A	West	XEL	3310	Highway 212 Corridor upgrade	This project is to complete the conversion of 69 kV line between Scott County and West Waconia substation to 115 kV. The scope also involves building new West Creek distribution substation and converting the Chaska, Victoria and Augusta substations to 115 kV.	MN	MN	Other	Not Shared	Distribution	\$19,816,231	12/1/2013	Planned	115		Y
A in MTEP11	A	West	XEL	3312	Minn Valley - Maynard - Kerkhoven tap upgrade	This project is to upgrade the Minn Valley - Maynard - Kerkhoven tap 115 kV line to 795 ACSS conductor	MN	MN	BaseRel	Shared		\$13,660,000	6/1/2014	Planned	115		Y
A in MTEP11	A	West	XEL	3313	New Prague switch	This project is to install a 69 kV 1 way switch to provide SMMPA's New Prague substation a new interconnection point. The existing interconnection would require cutting the line jumpers physically when the New Prague - Veslie line is out of service.	MN	MN	Other	Not Shared	Reliability	\$180,000	12/1/2012	Planned	69		Y
A in MTEP11	A	West	XEL	3314	Kohlman Lake - Long Lake 2nd circuit	This project is to convert the Kohlman Lake - Long Lake 115 kV bifurcated line to double circuit with separate line terminations at Kohlman Lake and Long	MN	MN	BaseRel	Not Shared		\$3,000,000	6/1/2014	Planned	115		Y
A in MTEP11	A	West	XEL	3315	Chisago County 2nd 345/115 kV transformer	This project is to install a 2nd 345/115 kV transformer at Chisago County	MN	MN	BaseRel	Not Shared		\$7,000,000	6/1/2014	Planned	345	115	Y
A in MTEP11	A	West	XEL	3316	Riverside - Apache lie upgrade	This project is to upgrade Riverside - Apache line to 360 MVA and upgrade Apache switch to 2000A	MN	MN	BaseRel	Not Shared		\$3,000,000	6/1/2014	Planned	115		Y
A in MTEP11	A	West	XEL	3317	Goose Lake - Kohlman Lake 2nd circuit	This project is to convert the single circuit line between Goose Lake and Kohlman Lake to double circuit.	MN	MN	BaseRel	Shared		\$6,000,000	6/1/2014	Planned	115		Y
A in MTEP11	A	West	XEL	3322	Cedar Falls - Clear Lake Rebuild	Rebuild 43 Miles of 69 kV line to 477 ACSR	WI	WI	Other	Not Shared	Reliability	\$14,000,000	12/1/2014	Planned	69		Y
A in MTEP11	A	West	XEL	3323	Park Falls Bio-Refinery	Build radial 115 kV line from Park Falls sub to a new customer and install a new distribution sub for the customer	WI	WI	Other	Not shared	Distribution	\$23,769,000	6/1/2013	Planned	115	13.8	Y
A in MTEP11	A	West	XEL	3325	Orono 115 kV conversion	This project will move the supply for Orono from its current 69 kV supply to the 115 kV line from Medina to Crow River	MN	MN	Other	Not Shared	Reliability	\$5,340,000	12/1/2012	Planned	115		Y
A in MTEP11	A	West	XEL	3326	Black Dog Outlet	This line will rebuild the 115 kV line from Black Dog to Savage to 795 ACSS conductor.	MN	MN	BaseRel	Not Shared		\$4,564,000	6/1/2013	Planned	115		Y
A in MTEP11	A	West	XEL	3473	Sioux Falls 115 kV Phase 1	This project re-constructs 10 miles of existing 69 kV line in Sioux Falls, SD to 115 kV; 6 miles of the new line will be double circuit with existing 69 kV.	SD	SD	Other	Not Shared	Reliability	\$35,300,000	6/1/2014	Planned	115	13.8	Y
A in MTEP11	A	West	XEL	3474	Adams 345 kV Reactor Installation	Installing a 50 MVAR reactor at Adams substation on the Pleasant Valley line, along with a breaker and disconnect switch	MN	MN	Other	Not Shared	Reliability	\$2,260,000	10/1/2012	Planned	345		Y
A in MTEP11	A	West	XEL	3475	Prairie 3rd transformer	This project is to install a 3rd 230/115 kV transformer at Prairie substation	ND	ND	BaseRel	Not Shared		\$12,000,000	6/1/2014	Planned	230	115	Y
A in MTEP11	A	West	XEL	3509	Stinson to Bayfront 115 kV line rebuild	Rebuild approximately 33 miles of 115 kV line from 336 ACSR to 795 ACSR	WI	WI	Other	Not Shared	Condition	\$15,400,000	6/1/2014	Planned	115		Y
A in MTEP11	A	West	XEL, GRE	1203	MVP Portfolio 1 - Brookings, SD - SE Twin Cities 345 kV	Brookings Cty-Lyon Cty (Single Ckt 345 kV); Lyon Cty-Cedar Mountain-Helena (Double Ckt 345 kV); Helena-Chub Lake-Hampton Corner (Single Ckt 345 kV); Lyon Cty-Hazel (Single Ckt 345 kV); Hazel-Minnesota Valley (Single Ckt 345 kV, initially operate at 230 kV); Cedar Mountain-Franklin (Single Ckt 115 kV)	MN	SD	MVP	Shared		\$735,000,000	2/13/2015	Planned	345	69	Y
A in MTEP09	A	West	XEL, GRE	1952	Plato capacitor bank	This project is to add a 10 MVAR cap bank at Plato. This project is required to convert the existing 69 kV line from Young America - Glencoe to 115 kV (part of Glencoe - West Waconia 115 kV line project).	MN	MN	Other	Not Shared	Reliability	\$700,000	6/1/2013	Planned	69		NT

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A in MTEP08	A	West	XEL, SMP, Non-MISO	1024	SE Twin Cities - Rochester, MN - LaCrosse, WI 345 kV project	Construct Hampton Corner-North Rochester-Chester-North LaCrosse 345 kV line, North Rochester - N. Hills 161 kV line, North Rochester-Chester 161 kV line, Hampton Corner 345/161 transformer, North Rochester 354/161 transformer, North LaCrosse 345/161 transformer	MN	WI	BaseRel	Shared		\$444,999,999	9/30/2015	Planned	345	161	Y
B	B	Central	AmerenIL	1234	Havana, South-Mason City, West 138 kV	Increase ground clearance on 18.4 miles	IL	IL	BaseRel			\$642,300	6/1/2017	Proposed	138		Y
B	B	Central	AmerenIL	1537	Mt. Vernon, West-S. Centralia - Upgrade Terminal Equipment	Replace terminal equipment at S. Centralia	IL	IL	BaseRel			\$180,000	6/1/2013	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	1538	Pana, North-Ramsey, East - Rebuild Line	Reconductor 18.43 miles of line to 2000 A summer emergency capability.	IL	IL	Other		Reliability	\$22,100,000	6/1/2015	Proposed	138		Y
B	B	Central	AmerenIL	2280	LaSalle-Oglesby Main 138 kV Line 1496	Reconductor 2.16 miles of 477 kcmil ACSR and 336 kcmil ACSR to 1200 A summer emergency capability	IL	IL	BaseRel	Not Shared		\$900,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	2283	South Bloomington 138-34.5 kV Substation	Install 2 new 2000 A, 138 kV Bus-Tie breakers	IL	IL	Other			\$1,030,000	6/1/2014	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	2290	Joppa 345 kV Switching Station 2nd. Xfmr	Add 2nd. 345/161 kV, 560 MVA Transformer	IL	IL	Other	Not Shared	Reliability	\$4,000,000	6/1/2015	Proposed	345	161	Y
B in MTEP12	C>B	Central	AmerenIL	2293	N. LaSalle-LaSalle Jct. 138 kV Line 1556A	Reconductor 9.68 miles of 477 kcmil ACSR to 1600 A summer emergency capability	IL	IL	BaseRel			\$2,515,000	6/1/2018	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	2295	W. Mt. Vernon-E. W. Frankfort 345 kV	Upgrade terminal equipment to 3000 A continuous capability	IL	IL	Other			\$1,366,000	6/1/2015	Proposed	345		Y
B in MTEP12	C>B	Central	AmerenIL	2299	Fargo 138-69 kV Substation	Install 138 kV Capacitor Bank	IL	IL	BaseRel			\$1,500,000	6/1/2013	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	2300	Hennepin Plant - 138 kV Bus-Tie Breakers	Install 2-3000 A, 138 kV Breakers as Bus-Ties in the Hennepin North and South Buses. Swap connection to Transformer TT2 with breaker position 1556 or 6101.	IL	IL	BaseRel	Shared		\$0	6/1/2099	Conceptual	138		Y
B in MTEP12	C>B	Central	AmerenIL	2301	Hennepin-Oglesby 138 kV Line 1556	Reconductor 8.37 miles of 477 kcmil ACSR to 1600 A summer emergency capability	IL	IL	BaseRel			\$4,215,000	6/1/2018	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	2302	Madison Industrial-Madison State Street 138 kV	Reconductor 2.35 miles of 795 kcmil SAC conductor to 1200 A summer emergency capability	IL	IL	BaseRel			\$710,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	2305	Monmouth Substation 138 kV Capacitor Bank	Install 30 Mvar, 138 kV capacitor bank	IL	IL	BaseRel			\$1,022,000	6/1/2015	Proposed	138		Y
B in MTEP10	B	Central	AmerenIL	2964	Secure Energy Connection	Secure Energy - Provide connection to Secure Energy coal gasification plant with 5 PCB 138 kV ring bus substation. Plant would connect in the Decatur area to ADM North-North 27th Street 138 kV Line 1604 between ADM North and Caterpillar Substations.	IL	IL	Other	Not Shared		\$5,966,000	6/1/2013	Proposed	138	1	Y
B in MTEP11	B	Central	AmerenIL	2967	Grand Tower and Carbondale Capacitor Bank	Install 1-40 Mvar capacitor bank at Grand Tower and 1-40 Mvar capacitor bank at Carbondale NE. 2-138 kV PCBs required	IL	IL	BaseRel	Not Shared		\$2,715,000	6/1/2013	Proposed	138		Y
B in MTEP11	B	Central	AmerenIL	2977	LaSalle Substation Relocation	LaSalle 138-34.5 kV Substation - Relocate Substation to avoid flooding and to permit remediation of manufactured gas plant site.	IL	IL	Other	Not Shared		\$1,347,000	6/1/2015	Proposed	138		Y
B in MTEP10	B	Central	AmerenIL	2978	ESK Capacitor Bank	ESK Customer Substation - Install 32 Mvar, 138 kV capacitor bank to improve customer load power factor.	IL	IL	BaseRel	Not Shared		\$1,521,000	6/1/2017	Proposed	138		Y
B	B	Central	AmerenIL	3009	Newton-Robinson Area-Merom 345 kV Line	Newton-Robinson Area 345 kV line - New 40 mi. 3000 A summer emergency capability line. Robinson Area-Merom 345 kV line - New 12 mi. 3000 A summer emergency capability line Install a 345/138 kV, 560 MVA transformer at Robinson Area	IL	IL	Other		Reliability	\$0	6/1/2099	Conceptual	345	138	Y
B	B	Central	AmerenIL	3010	Baldwin-Grand Tower-N.W. Cape 345 kV Line	New 69 mile, single-circuit line (possible double circuit), 3000 A SE capability (Baldwin-Grand Tower - 45 miles; Grand Tower-N.W. Cape - 24 miles). Grand Tower 345/138 kV Substation - 1-560 MVA transformer, 345 kV Ring bus	IL	IL	Other		Reliability	\$5,000,000	6/1/2099	Conceptual	345	138	Y

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B in MTEP12	C>B	Central	AmerenIL	3013	Turkey Hill-Cahokia Reinsulation to 345 kV and Cahokia 345/138 kV Transformer Replacement	Convert the Turkey Hill-Cahokia 138kV line 1492 line to 345kV operation (approximately 19 miles). Install a new 345kV breaker position at both Turkey Hill and Cahokia to accommodate this new line. Install a new 345kV breaker on the line to Baldwin at both Cahokia and Turkey Hill Substations. Replace XFMR #8 at Cahokia with 700 MVA unit. Install additional 345 kV bus tie breaker at Cahokia. Upgrade position 4592 at Baldwin Substation to 3000A SE capability.	IL	IL	BaseRel			\$14,899,000	6/1/2015	Planned	345	138	Y
B in MTEP12	C>B	Central	AmerenIL	3336	Gilman-Waseka Reconductoring	Reconductor to 1600 A summer emergency capability	IL	IL	BaseRel			\$4,763,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3339	Pana, North-Taylorville, South Reconductoring	Reconductor to 1600 A summer emergency capability. Upgrade terminal equipment to match.	IL	IL	BaseRel			\$9,400,000	6/1/2014	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3340	Pawnee, West-Taylorville, South Terminal Equipment	Replace bus conductor at both terminals to 1200 A summer emergency capability	IL	IL	BaseRel			\$100,000	6/1/2016	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3341	Diamond Star-West Washington Street Reconductoring	Reconductor 336 kcmil ACSR conductor to 1200 A summer emergency capability	IL	IL	BaseRel			\$938,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3342	Diamond Star-McClearn County Sw. Station - Increase Ground Clearance	Increase ground clearance on 2.4 miles of 477 kcmil ACSR conductor	IL	IL	BaseRel			\$240,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3344	Increase Ground Clearance - El Paso Tap-Minonk	Increase ground clearance on 13.88 miles of 477 kcmil ACSR conductor	IL	IL	BaseRel			\$1,300,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3345	Increase Ground Clearance - R.S. Wallace-E. Peoria	Increase ground clearance on 0.6 mile of 477 kcmil ACSR conductor.	IL	IL	BaseRel			\$0	6/1/2099	Conceptual	138		Y
B in MTEP12	C>B	Central	AmerenIL	3346	Reconductor Mason-Holland	Reconductor 0.05 mile 795 kcmil ACSR to 1200 A summer emergency capability	IL	IL	BaseRel			\$25,000	6/1/2016	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3347	Reconductor Mason-San Jose Rail	Reconductor 0.05 mile 795 kcmil ACSR to 1200 A summer emergency capability	IL	IL	BaseRel			\$25,000	6/1/2016	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3351	Wood River 138 kV Bus-Tie Breakers	Install 2-2000 A, 138 kV bus-tie breakers	IL	IL	BaseRel			\$2,000,000	6/1/2014	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3353	Edwards-Keystone 138 kV - Breaker Replacement at Keystone	Replace 138 kV, 1200 A breaker and terminal equipment at Keystone terminal to 2000 A capability	IL	IL	BaseRel			\$1,100,000	6/1/2013	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3354	Edwards-Caterpillar Sub 1 - Increase Ground Clearance	Increase ground clearand on 795 kcmil ACSR and 927 ACAR conductor	IL	IL	BaseRel			\$950,000	6/1/2014	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3684	Sidney 345/138kV Substation - Replace 138 kV circuit breakers	Sidney 345/138 kV Substation - Replace circuit breaker 1651 in the Paxton-Sidney 138 kV line and breaker 1653 in the Murdock-Sidney 138 kV line each with a minimum 2000 A continuous 40 kA interrupting 138 kV circuit breaker. Upgrade other limiting terminal equipment to a minimum of 2000 A.	IL	IL	Other		Reliability	\$1,000,000	6/1/2014	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3685	East Springfield 138/34 kV Substation - Replace 138 kV circuit breakers	East Springfield 138-34 kV Substation - Replace circuit breaker 1422 in the Havana-Springfield 138 kV line and bus-tie breaker 1390 each with a minimum 2000 A continuous 40 kA interrupting 138 kV circuit breaker. Upgrade other limiting terminal equipment to a minimum of 2000 A.	IL	IL	Other		Reliability	\$1,000,000	6/1/2013	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3686	East Galesburg 138/69 kV Substation - Replace 138 kV circuit breakers	East Galesburg 138-69 kV Substation - Replace 138 kV circuit breakers 1366 in the East Kewanee line, 1392 in the Monmouth line, and B020 on the high side of the East Galesburg 138-69 kV Xfmr #2 each with minimum 2000 A continuous 40 kA interrupting circuit breaker. Upgrade other limiting terminal equipment to a minimum of 2000 A.	IL	IL	Other		Reliability	\$1,500,000	6/1/2018	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3687	North Decatur 138-34 kV Substation - Replace 138 kV Breakers	North Decatur 138-34 kV Substation - Replace 138 kV circuit breaker 1313 in the North Decatur-Clinton Route 54 line with a minimum 2000 A continuous 40 kA interrupting circuit breaker. Upgrade other limiting terminal equipment to a minimum of 2000 A.	IL	IL	Other		Reliability	\$500,000	6/1/2019	Proposed	138		Y

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B in MTEP12	C>B	Central	AmerenIL	3688	Ipava South 138/69 kV Substation - Replace 138 kV breakers	Ipava South 138-69 kV Substation - Replace 138 kV circuit breakers 1501 in the Canton line, 1504 in the Macomb West line, and 1503 in the Frederick line each with minimum 2000 A continuous 40 kA interrupting circuit breaker. Upgrade other limiting terminal equipment to a minimum of 2000 A. replace 138 kV circuit breakers 1500 and 1505 on the high side of the Ipava 138-69 kV transformers with minimum 1200 A continuous 40 kA interrupting circuit	IL	IL	Other		Reliability	\$2,000,000	6/1/2018	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3689	Keystone 138/34 kV Substation - Replace 138 kV breaker	Keystone 138-13.8 kV Substation - Replace 138 kV circuit breaker 1396 in the Wallace-Keystone line with a minimum 2000 A continuous 40 kA interrupting circuit breaker	IL	IL	Other		Reliability	\$500,000	6/1/2018	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3691	East Springfield Switch Status	East Springfield 138-34.5 kV Substation - Open 138 kV switch 38-32 and close 138 kV switch 38-31 to transfer the Interstate-Springfield 138 kV Line 1338 from the East Springfield East 138 kV bus to the West 138 kV bus.	IL	IL	BaseRel			\$10,000	9/6/2012	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3696	Mt. Vernon, West Bus-Tie Breakers	Mt. Vernon, West Substation - Install 2-138 kV, 2000 A PCB's as new bus-tie breakers.	IL	IL	BaseRel			\$0	6/1/2099	Conceptual	138		Y
B in MTEP12	C>B	Central	AmerenIL	3697	Baldwin 345/138 kV Transformer Replacement	Baldwin Plant 345/138 kV Transformer - Replace existing 448 MVA transformer with a 560 MVA unit.	IL	IL	BaseRel			\$5,000,000	6/1/2018	Proposed	345	138	Y
B in MTEP12	C>B	Central	AmerenIL	3703	New Berlin 138-69 kV Sub	New Berlin 138-69 kV Substation - Install new 112 MVA, 138-69 kV Substation. Connect to Auburn, North-Jacksonville Industrial 138 kV Line 1306.	IL	IL	Other		Distribution		6/1/2014	Proposed	138	69	Y
B in MTEP12	C>B	Central	AmerenIL	3704	G598 Wind Farm Connection	G598 Wind Farm Connection - Install 3-position ring bus on the East Quincy-Meredosia-1 138 kV line to connect new wind farm.	IL	IL	GIP			\$5,026,500	12/1/2013	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenIL	3707	Hutsonville Capacitor Bank	Hutsonville Plant - Install 40 Mvar, 138 kV Capacitor Bank and 138 kV PCB.	IL	IL	BaseRel			\$1,500,000	6/1/2013	Planned	138		Y
B in MTEP12	C>B	Central	AmerenMO	2296	Belleau 345/138 kV Substation - Second Transformer	Install 2nd. 560 MVA, 345/138 kV Transformer and Complete 345 kV Ring Bus	MO	MO	BaseRel	Not Shared		\$9,223,000	6/1/2016	Proposed	345	138	Y
B in MTEP12	C>B	Central	AmerenMO	2297	Belleau 345/138 kV Substation - Install 138 kV capacitor bank	Install 138 kV, 120 Mvar capacitor bank (as 2-60 Mvar stages) At Belleau Substation	MO	MO	Other		Reliability	\$3,071,000	6/1/2017	Proposed	138		Y
B	B	Central	AmerenMO	2774	Adair Wind Farm	Connect Wind Farm at Adair Substation	MO	MO	GIP	In Suspension			11/1/2020	Proposed	161		Y
B in MTEP10	B	Central	AmerenMO	2970	Apache Flats - Scruggs Delivery Point	Apache Flats 161 kV Substation - Install 1-161 kV, 2000 A PCB and necessary metering and relaying to provide a delivery point for Associated Electric's Scruggs 161-69 kV Substation.	MO	MO	Other	Not Shared		\$1,035,000	6/1/2013	Planned	161		Y
B in MTEP11	B	Central	AmerenMO	2973	Howard Bend Substation Connection	Howard Bend 138-12 kV Substation - Provide 138 kV ring bus connection from Mason-Carrollton-8 138 kV line to new Howard Bend Substation. Install 1-138 kV, 2000 A PCB at Carrollton Substation as a bus-tie.	MO	MO	Other	Not Shared	Distribution	\$1,371,000	12/1/2016	Proposed	138		Y
B in MTEP11	B	Central	AmerenMO	2979	Enon 345 kV Breaker Addition	Enon 345/161 kV Substation - Install 2-345 kV PCB's on incoming 345 kV lines.	MO	MO	BaseRel	Not Shared		\$0	6/1/2099	Conceptual	345		Y
B in MTEP11	B	Central	AmerenMO	2988	Warrenton-Lincoln Bulk 161 kV Line	Warrenton-Lincoln Bulk Substation 161 kV - Establish a second 161 kV supply to Lincoln Bulk Substation from Warrenton Substation. 10 miles of new 161 kV line, 2-161 kV, 2000 A PCBs at Warrenton Substation.	MO	MO	BaseRel	Shared		\$12,000,000	6/1/2016	Proposed	161		Y
B in MTEP12	C>B	Central	AmerenMO	2991	Mason Transformer Replacement	Mason 345/138 kV Substation - Replace 345/138 kV, 560 MVA Transformer #2 with a 700 MVA unit	MO	MO	BaseRel			\$5,000,000	6/1/2021	Proposed	345	138	Y
B in MTEP12	C>B	Central	AmerenMO	2998	Overton Transformer Replacement	Replace existing 300 MVA transformer with a new 560 MVA transformer	MO	MO	BaseRel			\$5,000,000	6/1/2014	Planned	345	161	Y

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B in MTEP12	C>B	Central	AmerenMO	3007	Camden-Ullman 138 kV Line	Camden-Ullman 138 kV Line - Construct approximately 16 miles of 138 kV line between Camden Substation and Ullman (switching station connecting to Maries-Osage-1 138 kV line), with 1600 A summer emergency capability. Install 300 MVA, 161/138 kV transformer	MO	MO	BaseRel			\$29,000,000	6/1/2019	Proposed	161	138	Y
B in MTEP12	C>B	Central	AmerenMO	3020	Overton-Columbia Terminal Upgrade	Overton-Huntsdale-Columbia 161 kV - Replace 800 A CT at Overton Terminal with 1200 A unit.	MO	MO	BaseRel			\$50,000	6/1/2018	Proposed	161		Y
B in MTEP12	C>B	Central	AmerenMO	3030	Labadie-Mason 345 kV Line #3	Labadie-Mason 345 kV Line #3 - New 25 mi. 3000 A summer emergency capability line designed for double-circuit. 345 kV PCBs: 1-Labadie, 1- Mason. Install WAMS - PMU at Labadie on new line terminal	MO	MO	Other		Reliability	\$0	6/1/2099	Conceptual	345		Y
B in MTEP12	C>B	Central	AmerenMO	3367	Pershall Substation	Install 4-2000 A breaker ring bus and connect to Berkeley-Sioux-1 138 kV to establish 138 kV connections for Pershall 138-12.47 kV Sub	MO	MO	Other		Distribution	\$4,631,000	6/1/2017	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenMO	3693	Maurer Lake 161 kV Breaker	Maurer Lake 161-69 kV Substation - Install 161 kV PCB on the Missouri City line terminal. Minimum capability - 1200 A.	MO	MO	BaseRel			\$1,775,260	6/1/2013	Proposed	161		Y
B in MTEP12	C>B	Central	AmerenMO	3695	Mason-Carrollton-8 Increase Relay Limit	Mason-Carrollton-8 138 kV Line - Increase relay load limit on Mason-Mason 34 kV Substation segment of line to permit carrying full line capability	MO	MO	BaseRel			\$50,000	6/1/2016	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenMO	3699	Bland 345/138 kV Substation	Bland 345/138 kV Substation - Install new 345/138 kV, 560 MVA transformer at Bland Substation. Supply new substation from 4th position at the Bland 345 kV ring bus. Install 138 kV bus at Bland Substation. The Tegeler-Osage 138 kV line will be split into a Tegeler-Bland 138 kV line and a Bland-Osage 138 kV line.	MO	MO	BaseRel			\$13,537,780	12/1/2015	Proposed	345	138	Y
B in MTEP12	C>B	Central	AmerenMO	3701	Cotter Creek 138-34.5 kV Substation Supplies	Cotter Creek 138-34.5 kV Substation - Provide 138 kV supplies to new Cotter Creek Substation. This will consist of installing a 2000 A, 138 kV PCB at Joachim Substation, and extending new 138 kV line from Joachim to Cotter Creek Substation. Also, for the second 138 kV supply to Cotter Creek, a new 3-2000 A breaker 138 kV switching station (Olympian Village) will be established in the Joachim-St. Francois-2 138 kV line, with a 138 kV line extended from Olympian Village Switching Station to Cotter Creek Substation.	MO	MO	Other		Distribution	\$31,230,640	6/1/2017	Proposed	138		Y
B in MTEP12	C>B	Central	AmerenMO	3702	Viaduct-Clark 161 kV Conversion	Cape Area (Viaduct and Cape Clark Substations) - Convert radial 115 kV line to 161 kV and remove 115 kV facilities at Viaduct and Cape Clark Substation. Install 5-161 kV breakers at Viaduct	MO	MO	Other		Distribution	\$6,325,700	6/1/2015	Proposed	161		Y
B in MTEP12	C>B	Central	AmerenMO	3708	Fountain Lake 2nd. Transformer	Install 2nd. 138-12.5 kV Transformer	MO	MO	Other		Distribution		6/1/2018	Proposed	138	12.5	Y
B	B	West	ATC LLC	1269	Replace Arcadian 345/138 kV transformer	Replace Arcadian 345/138 kV transformer #3 with a 500 MVA transformer.	WI	WI	BaseRel	Shared		\$3,500,000	6/1/2020	Conceptual	345	138	Y
B	B	West	ATC LLC	1284	Tie the 138kV radial line Racine - Somers - Albers to the 138kV substation at Albers. Also upgrade the 138kV radial line to 345/477 summer normal/emergency ratings.	Tie the 138kV radial line Racine - Somers - Albers to the 138kV substation at Albers. Also upgrade the 138kV radial line to 345/477 summer normal/emergency ratings.	WI	WI	BaseRel	Shared			6/1/2050	Conceptual	138		Y
B	B	West	ATC LLC	1624	Uprate X-67 Portage-Trienda 138 kV line	Increase clearance and uprate SS equipment	WI	WI	BaseRel	Shared		\$2,595,876	6/1/2022	Conceptual	138		Y
B	B	West	ATC LLC	1687	Metomen 138-69 kV Transformer Replacement	Replace the Metomen 138-69 kV transformer to achieve a higher emergency rating	WI	WI	Other	Not Shared	Reliability	\$4,700,000	6/1/2017	Planned	138	69	Y
B in MTEP12	C>B	West	ATC LLC	1689	Install Ripon 69 kV Capacitor Banks	Upgrade 4.1 MVAR capacitor bank to 8.2 MVAR and install a new 8.2 MVAR capacitor bank at Ripon 69 kV substation	WI	WI	Other	Not Shared	Reliability	\$930,000	6/1/2018	Conceptual	69		Y

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B	B	West	ATC LLC	2454	G590 Stony Brook	G590 G-T Interconnection From Techumseh Rd 138 kV bus. Upgrade Kaukauna Central tap - Tayco 138 kV line.	WI	WI	GIP	In Suspension		\$1,600,000	2/1/2014	Planned	138		Y
B	B	West	ATC LLC	2799	Kinross Load Interconnection	Construct a 3 mile line to connect the Kinross load	MI	MI	Other	Not Shared	Reliability	\$3,882,248	6/1/2015	Conceptual	69		Y
B in MTEP12	C>B	West	ATC LLC	3096	Uprate Inland line Munising-Blaney Park 69 kV	Increase ground clearance for the Inland line Munising-Blaney Park 69 kV to 167 deg F (37 MVA) clearance	MI	MI	Other	Not Shared	Reliability	\$21,010,000	6/1/2015	Conceptual	69		Y
B	B	West	ATC LLC	3119	Uprate 6923 Pine River-9mile 69kV	Increase ground clearance for 6923 Pine River-9Mile 69kV line to 167 deg f clearance	MI	MI	Other	Not Shared	Reliability	\$2,000,000	6/1/2016	Proposed	69		Y
B in MTEP12	C>B	West	ATC LLC	3158	Replace Petenwell 138/69 kV Transformer	Petenwell 138/69 kV Transformer Replacement	WI	WI	Other	Not Shared	Reliability	\$3,250,000	11/13/2014	proposed	138	69	Y
B in MTEP12	C>B	West	ATC LLC	3159	Uprate West Middleton-Timberlane-Stage Coach 69 kV	West Middleton-Timberlane-Stage Coach 69 kV line uprate	WI	WI	Other	Not Shared	Reliability	\$874,469	12/31/2016	Conceptual	69		Y
B in MTEP12	C>B	West	ATC LLC	3510	Rebuild Mukwonago-St Martins 138 kV	Rebuild Mukwonago-Edgewood-St. Martins 138 kV Line, includes replacing jumpers at Edgewood and Mukwonago	WI	WI	Other	Not Shared	Condition	\$19,200,000	6/1/2017	Proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3522	Rebuild St Lawrence-Hartford 138 kV	Rebuild 5.2 mile section of the 8031 STL-HTF 138 kV, tr	WI	WI	Other	Not Shared	Condition	\$3,840,000	12/31/2014	Proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3523	Rebuild Concord-Cooney 138 kV	Rebuild 10.9 mile section of the 9042 CCD-CNY 138 kV	WI	WI	Other	Not Shared	Condition	\$7,140,000	12/31/2015	Proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3524	Rebuild Rubicon-Butler 138 kV	Rebuild 3.1 mile section of the RUBG11 Rubicon-Butler Ridge 138 kV, transfer existing 795 kcmil 26/7 conductor and uprate to 200/300F	WI	WI	Other	Not Shared	Condition	\$2,108,847	5/31/2016	Proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3525	Rebuild Rubicon-Concord 138 kV	Rebuild 12.1 mile section of the 9061 CCD-Rubicon 138	WI	WI	Other	Not Shared	Condition	\$6,670,264	5/31/2016	Proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3526	Rebuild Hartford-Butler Ridge 138 kV	Rebuild 2.5 mile section of the HTFG51 Butler Ridge-Hartford 138 kV, transfer existing 795 kcmil 26/7 conductor and uprate to 200/300F	WI	WI	Other	Not Shared	Condition	\$1,626,330	5/31/2016	Proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3808	Construct Bain-Spring Valley-North Lake Geneva 138 kV	Reconductor Bain-Spring Valley 138; construct a 138-69 kV Geneva substation; construct a new Spring Valley-Geneva 138 kV line; construct a new Geneva-North Lake Geneva 138 kV line; construct Twin Lakes-Geneva 138 kV line; reconductor Katzenberg-Richmond 69 kV line; and reconductor Richmond-Twin Lakes 69 kV line	WI	WI	Other	Not Shared	Reliability	\$82,456,469	6/1/2019	proposed	138	69	Y
B in MTEP12	C>B	West	ATC LLC	3811	Reconductor 9341 Kenosha-Lakeview 138 kV	Reconductor with T2 477 9341 Kenosha-Lakeview 138 kV	WI	WI	Other	Not Shared	Condition	\$2,028,185	12/31/2014	proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3812	Uprate OACG48 Nicholson Tap-Barland 138 kV	Rebuild structures and reconductor with T2 477 kcmil "H"	WI	WI	Other	Not Shared	Condition	\$1,900,000	11/14/2014	proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3813	Rebuild Dam Heights-Portage 69 kV	Reconductor the entire Dam Heights - Portage 69 kV line	WI	WI	Other	Not Shared	Condition	\$14,834,641	12/31/2016	proposed	69		Y
B in MTEP12	C>B	West	ATC LLC	3814	Install Cottonwood 138 kV breakers	Add a bus tie and two line breakers at Cottonwood 138 kV	WI	WI	TBD	TBD		\$2,033,274	10/1/2012	proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3815	Install East Rockton 69 kV breakers	69 kV breaker addition and T-D rebuild	WI	WI	Other	Not Shared	Reliability	\$1,970,000	6/1/2016	Proposed	69		Y
B in MTEP12	C>B	West	ATC LLC	3816	Install East Krok 138 kV breaker	East Krok 138-69 kV transformer highside breaker addition	WI	WI	Other	Not Shared	Reliability	\$621,572	12/31/2014	proposed	138		Y
B in MTEP12	C>B	West	ATC LLC	3817	Install Shoto 138 kV breaker	Shoto 138-69 kV transformer highside breaker additions	WI	WI	Other	Not Shared	Reliability	\$2,195,361	12/31/2014	proposed	138		Y
B in MTEP10	B	West, Central, East	MISO	3202	RGOS Native Voltage Strategy. In AML,AMMO,MEC,XEL,OTP,ALTE,GRE,W EC,MDU,MGE,ALTW,DPC,DEM,IPL,ITCT, SIGE,FE,WPS	Build transmission throughout the Midwest ISO system that helps the facilitation of the collection and delivery of renewable energy to meet the current mandate needs. This strategy focuses on the development of transmission voltages that are already native to the areas. Further development and identification of timing needs will be dependent on further regional analysis and candidate MVP evaluation.	IA	WI	MVP			\$10,213,418,000	1/1/2025	Conceptual	765	115	Y
B	B	Central	DEM	1521	Bloomington 13836 Switches	Replace the 13836 bkr and its disconnect switches. Replace wave trap on companion 802H6946.	IN	IN	BaseRel	Not Shared		\$233,455	12/31/2012	Planned	138		Y
B	C>B	Central	DEM	3560	W. Laf. Purdue-Laf. Cincy St. 138kV rebuild	Reconductor W. Lafayette Purdue to Lafayette Cincinnati St. 138kV ckt. 13820 with 954 ACSR @ 100C replacing 600A switches and equipment	IN	IN	BaseRel	Not Shared		\$1,914,000	6/1/2018	Proposed	138		Y
B	C>B	Central	DEM	3561	Lafayette 230-W. Laf. 138kV Rebuild	Reconductor Lafayette 230 to Staley Sag. to Cumberland Ave. to W. Lafayette 13806 ckt. with 954 ACSR @ 100C and replace 600A switches and misc terminal equipment	IN	IN	BaseRel	Not Shared		\$6,197,000	6/1/2018	Proposed	138		Y

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B	B	Central	DEM, IPL	1558	Close Wheatland Breaker	Close the breaker at IPL's Wheatland - make upgrade to Petersburg - Francisco and the Petersburg - Thompson 345 kV to address 1st contingency	IN	IN	MEP	Shared		\$11,435,000	5/1/2013	Proposed	345		Y
B in MTEP11	B	West	GRE	2600	Big Sandy (LCP) 4.0 mile, 69 kV line	Big Sandy (LCP) 4.0 mile, 69 kV line	MN	MN	Other	Not Shared	Distribution	\$5,149,000	10/30/2015	Planned	69		Y
B in MTEP10	B	West	GRE	2632	Onigum 115 kV Conversion	Onigum 115 kV Conversion	MN	MN	Other	Not Shared	Distribution	\$5,300,000	12/1/2016	Proposed	115		Y
B in MTEP12	C>B	West	GRE	3782	Mantrap 115 kV Conversion	Convert Mantrap and Potalo Lkae Dist. Substation from 34.5 kV to 115 kV operation	MN	MN	Other	Not Shared	Distribution	\$2,800,000	11/1/2015	Planned	115		Y
B	B	Central	IPL, DEM	1557	Bloomington to Pritchard to Franklin to Hanna 345 kV line	Tap the Hanna - Stout 345 and Hanna - Francs 345 kV circuits into one new 345 kV Switching Station at the Franklin twp site and build station at Pritchard. Also adds 345 kV single circuit from Bloomington - Pritchard - Frankin Twp station.	IN	IN	MEP	Shared		\$41,750,000	1/1/2014	Proposed	345		Y
B in MTEP12	C>B	East	ITC	1295	Quaker to Southfield #2 120 kV	Rebuild the existing Quaker to Drexel to Southfield circuit utilizing 1431 ACSR conductor on double circuit 230 kV towers and add a second Quaker to Southfield circuit on this new tower line	MI	MI	BaseRel	Shared		\$51,050,000	12/31/2015	Proposed	120		Y
B	B	East	ITC	1850	Hancock 230/120kV Transformer	Cut the Wixom-Quaker 230kV circuit into Hancock Station, install a 230/120kV transformer.	MI	MI	BaseRel	Shared		\$9,000,000	12/31/2015	Proposed	230	120	Y
B in MTEP10	B	East	ITC	1856	Belle River - Greenwood - Pontiac 345kV cut into Jewell	Cut the Pontiac section of the Belle River-Greenwood-Pontiac 345kV circuit into and out of Jewell station. Utilize an existing unused side of 345kV tower for one of the circuits into Jewell, and relocate the Jewell-Spokane 230kV circuit	MI	MI	BaseRel	Shared		\$5,200,000	12/31/2015	Proposed	345		Y
B in MTEP10	B	East	ITC	2932	St Antoine-Essex #2 120 kV	Construct 2nd underground cable from St Antoine to Essex (5.1 miles).	MI	MI	BaseRel	Shared		\$54,800,000	6/1/2015	Proposed	120		Y
B in MTEP12	C>B	East	ITC	2933	Superior - Wayne 120 kV Reconductor	Re-conductor approximately 10.5 miles of 477 ACSR conductor of the Superior - Wayne 120 kV circuit to 795 ACSR.	MI	MI	BaseRel	Not Shared		\$6,000,000	6/1/2014	Proposed	120		Y
B in MTEP12	C>B	East	ITC	3282	Southfield - Sunset 120 kV Rebuild	Rebuild a 6.4 mile section of the Sunset to Cable Tower 17 section of the Sunset to Southfield circuit from 477 ACSR to 954 ACSR conductor utilizing new 230 kV double circuit structures	MI	MI	BaseRel	Shared		\$9,000,000	12/31/2015	Proposed	120		Y
B in MTEP12	C>B	East	ITC	3589	Lee - Menlo 120 kV Rebuild	Rebuild approximately 5.4 miles of 267 ACSR conductor to 954 ACSR between Lee and the Lake Huron Pumping Tap and approximately 6.4 miles of 267 ACSR conductor to 954 ACSR between Menlo and the Lake Huron Pumping Tap and replace station equipment Lee and Menlo	MI	MI	BaseRel	Shared		\$11,200,000	6/1/2014	Proposed	120		Y
B	B	West	ITCM	1741	G517: Dotson - Storden - Heron Lake 161 kV	Network upgrades for G517. Build a new Heron Lake - Cottonwood Co 161 kV line and a new Cottonwood Co 161 kV switch station. Build Cottonwood Co to Dotson 161 kV line.	MN	MN	GIP	Shared		\$36,719,820	12/31/2013	Planned	161		Y
B in MTEP10	B	West	ITCM	1746	Lakefield-Adams 161 kV Rebuild	Rebuild Lakefield-Fox Lake-Rutland-Winnebago-Hayward-Adams 161 kV line to double circuit 345 & 161 kV. Allow for a 345 kV line position for future use.	MN	MN	BaseRel			\$97,580,000	12/31/2018	Proposed	161		Y
B	B	West	MDU	1148	G297, 37664-01	Net: At the Glenham Jct Substation, two 115 kV line potential sources and sync-check relaying on breakers 7047 and 7050. - At the Bowdle Jct Substation, five 41.6 kV line potential sources and sync-check relaying on breakers 500, 510, 5049, 5050 and 6470. Int:	SD	SD	GIP	In Suspension			12/31/2012	Planned	115	1	Y
B	B	West	MDU	3083	Dickinson 115 kV Loop	Complete 115 kV loop & new 115/41.6 subsation in Dickinson area	ND	ND	TBD			\$11,150,000	10/1/2014	Planned	115	41.6	Y
B	B	West	MEC	2937	Sub 39: Second 345-161 kV Xfmr	Add a second 345-161 kV xfmr. Expand 345 kV and 161 kV buses.	IL	IL	BaseRel	Shared		\$15,500,000	6/1/2016	Proposed	345	161	Y
B	B	West	MEC	2938	Uprate Sub 39 - Cordova 345 kV Line	Change out structures to increase rating.	IL	IL	BaseRel	Shared		\$500,000	6/1/2017	Proposed	345		Y

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B	B	West	MEC	2941	Sub T - Boone Jct 161 kV Line Upgrade	Uprate MEC's portion of the Sub T - Boone Jct 161 kV line.	IA	IA	BaseRel	TBD		\$242,000	6/1/2016	Proposed	161		Y
B in MTEP11	B	West	MEC	3215	Sub 49 161 kV Capacitor	Add 50 MVar 161 kV capacitor	IL	IL	BaseRel	Not Shared		\$840,000	6/1/2014	Proposed	161		Y
B in MTEP11	B	West	MEC	3266	Sub 56-89 161 Line Uprate	Increase 161 kV line rating.	IA	IA	BaseRel	TBD		\$680,000	6/1/2021	Proposed	161		Y
B in MTEP11	B	East	METC	1803	Plum-Stover 138 kV Rebuild	Rebuild the 8.8 mile 138 kV line to 954 ACSR (Pre-build to 230 kV construction).	MI	MI	BaseRel	Shared		\$10,900,000	6/1/2015	Planned	138		Y
B in MTEP11	B	East	METC	1815	Chase - Mecosta 138kV Rebuild	Rebuild 7.2 miles of 138kV 110 and 115 CU to 954 ACSR. Prebuild to 230kV construction.	MI	MI	BaseRel	Shared		\$8,900,000	6/1/2015	Planned	138		Y
B	B	East	METC	2809	Garfield-Hemphill 138kV	Replace 9.1 miles of 336 ACSR with 1431 ACSR	MI	MI	Other	Excluded		\$11,740,000	6/1/2016	Proposed	138		Y
B in MTEP12	B	East	METC	2822	Edenville Jct. - Warren 138 kV Reconductor	Reconductor approximately 14.75 miles of the Edenville to Warren 138 kV section of the Bullock to Warren 138 kV circuit with 954 ACSR utilizing 230 kV double circuit structures prebuilt from MTEP project #646.	MI	MI	BaseRel	Not Shared		\$8,500,000	12/31/2013	Planned	138		Y
B in MTEP12	C>B	East	METC	3133	Bell Road - Cornell 138 kV Rebuild	Rebuild the 115 Cu portion of the Bell Road - Cornell 138 kV circuit to 954 ACSR. This Cu segment is approximately 4.2 miles long.	MI	MI	BaseRel	not shared		\$4,000,000	6/1/2014	Proposed	138		Y
B in MTEP12	C>B	East	METC	3137	Warren - Bard Road 138 kV Rebuild	Rebuild approximately 19.6 miles of the Warren to Bard Road 138 kV circuit to 230 kV double circuit construction using 954 ACSR. One side would be energized at 138kV, with the other side left vacant for future use. Also replace terminal equipment at Bard	MI	MI	BaseRel	Shared		\$27,800,000	6/1/2015	Planned	138		Y
B in MTEP10	B	East	METC	3210	Vanderbilt - Riggsville 138 kV Rebuild	Rebuild 30.3 miles of 138 kV 266 ACSR to 954 ACSR FDC 230 kV construction.	MI	MI				\$33,254,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	East	METC	3582	Bullock - Summerton 138 kV Rebuild	Rebuild the entire circuit between Bullock and Summerton to 954 ACSR on single-circuit, 138 kV steel pole structures and replace the terminal equipment at Bullock	MI	MI	BaseRel	Shared		\$20,000,000	6/1/2015	Proposed	138		Y
B in MTEP12	C>B	East	METC	3594	Tittabawassee 345 kV Station Equipment Upgrades	Replace 345kV station equipment in rows 34 and 36 at Tittabawassee.	MI	MI	BaseRel	not shared		\$3,500,000	6/1/2014	Proposed	345		Y
B in MTEP12	C>B	West	MP	3791	Mesabi 115 kV Project	115 kV Switching Station, Capacitor & T-Line	MN	MN				\$13,000,000	7/1/2014	proposed	115		Y
B in MTEP12	C>B	West	MP, MH	3562	MP-MH-230 kVTie	add 230 kV line between MP and MH	MH	MN	TBD				1/30/2020	Proposed	230		Y
B in MTEP12	C>B	West	MP, MH	3831	MH-MP 500-230 kV Tie	500kV Dorsey(Manitoba) - Iron Range(MN) with 500/230 kV transformation.	MH	MN					1/30/2020	Proposed	500	230	Y
B in MTEP10	B	West	MPW	2935	Reconductor 69 kV lines South - Wiggins - Power Plant (Lines 81 & 82)	MPW is looking at upgrading the 69 kV transmission lines from 633501 South Sub to 633511 Wiggins Road (Line 82) and from 633511 Wiggins Road to our 633408 Power Plant (Line 81) from 58 MW to at least 89 MW (636 ACSR).	IA	IA	Other	Not Shared	Reliability	\$300,000	6/1/2020	Proposed	69		Y
B	B	West	OTP	549	Jamestown Reactor Addition	Jamestown 115 kV 25 MVAR reactor	ND	ND	Other	Not Shared	Reliability	\$550,000	12/1/2015	Proposed	115		Y
B in MTEP12	C>B	West	OTP	3659	Roberts County 115/69/41.6 kV Substation	New 115/69/41.6 kV Substation (joint with WAPA and East River Electric Cooperative)	SD	SD	Other	Not Shared	Reliability	\$2,000,000	11/1/2014	Proposed	115	41.6	Y
B in MTEP12	C>B	West	OTP	3660	Summit 115/41.6 kV Substation	Replace 115/41.6 kV Transformer at Summit, SD (8 MVA to 25 MVA)	SD	SD	Other	Not shared	Reliability	\$1,200,000	7/1/2014	Planned	115	41.6	Y
B in MTEP12	C>B	West	OTP	3661	Grenville 69/41.6 kV Substation	Build a new 69/41.6 kV Substation between Otter Tail Power and East River Electric Systems	SD	SD	Other	Not Shared	Reliability	\$700,000	12/31/2015	Proposed	69	41.6	Y
B in MTEP12	C>B	West	OTP	3664	Mooreton - Roberts Jct (Abercrombie) 41.6 kV Line	Build 16 miles of new 41.6 kV line	ND	ND	Other	Not Shared	Reliability	\$3,800,000	12/31/2015	Proposed	41.6		Y
B in MTEP11	B	West	OTP, XEL	3204	Sheyenne - Audubon 230 kV line	Sheyenne - Audubon 230 kV line	MN	ND	GIP	not shared		\$1,250,000	12/31/2013	Planned	230		Y
B in MTEP12	C>B	East	WPSC	3567	Hersey to Weidman	Hersey to Weidman line rebuild	MI	MI	Other	Not Shared	Reliability	\$12,000,000	12/31/2015	Planned	69		Y
B	B	West	XEL	2107	G520	Network upgrades: Install new 3-position 115 kV substations (tapping Lake Yankton - Lyon County 115 kV line) with breakers, switches, bus work, steel, foundations, control house and associated equipment. Install new loop in-and-out tap, 3.5 miles of double circuit, 115 kV transmission line.	MN	MN	GIP	In Suspension		\$5,930,926	4/2/2009	Planned	115	34.5	Y

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B	B	West	XEL	2115	G491	G491: One new 120 MVA, 118-36.2 kV transformer, three new 115 kV breakers and associated disconnect switches, one new 34.5 kV transformer low side main breaker and associated disconnect switches, control house expansion, structural steel and foundations associated with this new equipment, control and protection equipment associated with these new installations	MN	MN	GIP	In Suspension		\$4,305,000	9/1/2010	Planned	115		Y
B in MTEP11	B	West, Central, East	XEL, MEC, AmerenIL, ATC LLC	3201	RGOS Identified DC transmission	Build transmission throughout the Midwest ISO system that helps the facilitation of the collection and delivery of renewable energy to meet the current mandate needs. This strategy focuses on the introduction of HVDC transmission throughout the Midwest ISO footprint. Further development and identification of timing needs will be dependent on further regional analysis and candidate MVP evaluation.	IA	SD	MVP			\$5,401,519,474	1/1/2025	Conceptual	800		Y
B in MTEP10	B	West, Central, East	MISO	3200	RGOS 765 kV Strategy. In AML,AMMO,MEC,XEL,OTP,ALTE,GRE,W EC,MDU,MGE,ALTW,DPC,DEM,IPL,ITCT, SIGE,FE,WPS,Non-MISO	Build transmission throughout the Midwest ISO system that helps the facilitation of the collection and delivery of renewable energy to meet the current mandate needs. This strategy focuses on the introduction of 765 kV transmission throughout the Midwest ISO footprint. Further development and identification of timing needs will be dependent on further regional analysis and candidate MVP evaluation.	IA	WI	MVP			\$11,746,928,502	6/1/2099	Conceptual	765	115	Y
C	C	Central	AmerenIL	1536	Latham-Mason City - Reconductor	Reconductor from Latham Tap to Kickapoo Tap	IL	IL				\$8,934,860	6/1/2015	Proposed	138		Y
C	C	Central	AmerenIL	1539	Roxford Substation - Install 345 kV PCB	Install 345 kV PCB on Roxford-Stallings line position	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	1540	Sidney-Windsor - Reconductor	Reconductor 14.6 miles to 1600 A Summer Emergency Capability	IL	IL				\$3,900,000	12/1/2015	Proposed	138		Y
C	C	Central	AmerenIL	2242	MTEP08 Reference Future EHV Overlay - Norris City to Albion	Build 345 kV circuit from Norris City to Albion in Illinois	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	2983	Mt. Carmel Capacitor Banks	Mt. Carmel - Install capacitor bank(s).	IL	IL				\$1,500,000	6/1/2014	Proposed	138		Y
C	C	Central	AmerenIL	2985	Monmouth Blvd. Capacitor Bank	Monmouth Blvd 138/69 kV Substation - Install 138 kV 30 Mvar capacitor bank and circuit breaker.	IL	IL				\$1,500,000	6/1/2015	Proposed	138		Y
C	C	Central	AmerenIL	2994	Gillespie Macoupin Substation - 2nd. Transformer	Gillespie Macoupin 138-34.5 kV Substation - Tap Wood River-North Staunton 138 kV Line 1436 and make a 138 kV 'in-out' arrangement at the substation with installation of the 2nd. 138-34.5 kV transformer. 2-2000 A, 138 kV PCB's needed.	IL	IL				\$2,000,000	6/1/2020	Proposed	138		Y
C	C	Central	AmerenIL	2995	Brokaw Substation Bus Conductor Replacment	Brokaw 345/138 kV Substation - Replace 477 kcmil ACSR Bus Conductor in Brokaw-Normal East 138 kV Line 1578 position with conductor capable of carrying 1200 A continuously.	IL	IL				\$100,000	6/1/2018	Proposed	138		Y
C	C	Central	AmerenIL	2999	LaSalle-Oglesby Main Line 1496 Reconductoring	LaSalle-Oglesby Main 138 kV Line 1496 - Reconductor 2.16 miles of 477 kcmil ACSR and 336 kcmil ACSR with conductor capable of carrying 1200 A under summer emergency conditions.	IL	IL				\$650,000	6/1/2015	Proposed	138		Y
C	C	Central	AmerenIL	3001	Mascoutah Area 345/138 kV Substation	Mascoutah Area 345/138 kV Substation - Install a new 345/138 kV Substation. Supply from the Baldwin-Prairie State 345 kV line. 1-560 MVA 345/138 kV transformer, 3-345 kV PCB's, 1-138 kV PCB.	IL	IL				\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenIL	3002	N. Decatur-Clinton Rt. 54 Line 1313 Reconductoring	N. Decatur-Clinton Rt. 54 138 kV Line 1313 - Reconductor 5.41 miles of 336 kcmil ACSR conductor in the N. Decatur-County Hwy. 20 line section with conductor capable of carrying 1200 A under summer emergency conditions.	IL	IL				\$1,650,000	6/1/2015	Proposed	138		Y

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C	C	Central	AmerenIL	3004	Gilman Capacitor Bank	Gilman 138-69 kV Substation - Install 138 kV capacitor bank and PCB	IL	IL				\$0	6/1/2099	Conceptual	138		Y
C	C	Central	AmerenIL	3005	S. Belleville-Tilden Terminal Equipment	S. Belleville-Tilden 138 kV Line 1526 - Replace 1200 A terminal equipment (PCB, CT's, and bus conductor) at S. Belleville Substation with equipment capable of carrying 2000 A continuously.	IL	IL				\$1,100,000	12/1/2022	Proposed	138		Y
C	C	Central	AmerenIL	3011	Joppa-Mound City 161 kV Line Reconductoring	Joppa-Mound City 161 kV Line - Reconductor 23.4 mi. 556 ACSR with conductor capable of carrying 1200 A under summer emergency conditions.	IL	IL				\$0	6/1/2099	Conceptual	161		Y
C	C	Central	AmerenIL	3012	Normal East Substation Terminal Upgrade	Normal East 138/34 kV Substation - Upgrade 600 A terminal equipment to minimum 1200 A SE capability in the Brokaw-Normal East 138 kV line terminal.	IL	IL				\$100,000	6/1/2017	Proposed	138		Y
C	C	Central	AmerenIL	3015	Grand Tower-E.W Frankfort 345 kV Line	Grand Tower-E.W. Frankfort 345 kV - New 41 mile, 345 kV, 3000 A line. 345 kV PCBs: 2-Grand Tower; 2- E.W. Frankfort	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	3018	Tazewell-Tremont 138 kV Line	Tazewell-Tremont 138 kV Line - Physically inspect 3 miles of existing deenergized 477 kcmil ACSR line near Tremont Tap (Havana-Danvers 138 kV Line 1352). Construct 3 miles of new 138 kV line with 1200 A summer emergency capability to extend line to Tazew	IL	IL				\$0	6/1/2099	Conceptual	138		Y
C	C	Central	AmerenIL	3019	Oglesby 345/138 kV Transformer Addition	Oglesby 345/138 kV Substation - 1-560 MVA 345/138 kV transformer, 1-138 kV PCB	IL	IL				\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenIL	3021	Mound City-Charleston 161 kV Line	Mound City-Charleston 161 kV Line - New 20 mile, 1200 A summer emergency capability line. 3-161 kV PCBs: 2-Mound City, 1-Charleston.	IL	IL				\$0	6/1/2099	Conceptual	161		Y
C	C	Central	AmerenIL	3023	E. Collinsville-Porter Road 138 kV Reconductoring	E. Collinsville-Porter Road 138 kV Line 1432 - Reconductor 5.15 miles of 477 kcmil ACSR with conductor capable of carrying 2000 A under summer emergency conditions.	IL	IL				\$1,600,000	6/1/2018	Proposed	138		Y
C	C	Central	AmerenIL	3024	Bunsonville 2nd. 345/138 kV Transformer	Bunsonville 345/138 kV Substation - Install 2nd. 560 MVA Transformer.	IL	IL	Other	Not Shared	Reliability	\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenIL	3026	Havana Plant-138 kV Connection for R.A.T.	Havana Plant 138 kV Switchyard - Add 138 kV Connection for new Reserve Auxiliary Transformer needed to supply new pollution control load.	IL	IL				\$0	6/1/2099	Conceptual	138		Y
C	C	Central	AmerenIL	3033	Dupo Area 345/138 kV Substation	Dupo Area 345/138 kV Substation - 1-560 MVA Transformer, 8-138 kV PCBs. New 8 mi. 3000 A 345 kV line from Cahokia Substation, 2-345 kV PCBs @ Cahokia, and 138 kV Outlet to Cahokia-Meramec circuits near Lemay Taps. New Dupo-Dupo Ferry 138 kV 2000 A line.	IL	IL				\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenIL	3035	Kinmundy-Salem, West 138 kV - Increase Ground Clearance	Kinmundy-Salem, West 138 kV line - Increase clearances to ground.	IL	IL				\$0	6/1/2099	Conceptual	138		Y
C	C	Central	AmerenIL	3036	Latham Substation 2nd. 345/138 kV Transformer	Latham 345/138 kV Substation - Install 2nd. 345/138 kV, 448 MVA Transformer. 1-345 kV PCB, 1-138 kV PCB.	IL	IL				\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenIL	3037	Rush Island-Dupo 345 kV Line	Rush Island-Dupo 345 kV Line - New 27 mile, 3000 A summer emergency capability line. Design for double-circuit. 2-345 kV PCBs: 1-Rush Island, 1-Dupo.	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	3039	Grand Tower-Joppa 345 kV Line	Grand Tower-Joppa 345 kV Line - New 50 mile 345 kV, 3000 A line. 345 kV PCBs: 2-Grand Tower; 1-Joppa.	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	3040	Tazewell-S. Bloomington 345 kV Line	Tazewell-South Bloomington 345 kV Line - New 35 mile, 345 kV, 3000 A line. 345 kV PCBs: 2 at Tazewell, 3 at South Bloomington switching station.	IL	IL				\$0	6/1/2099	Conceptual	345		Y

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C	C	Central	AmerenIL	3043	LaSalle-Oglesby 345 kV Line	LaSalle-Oglesby 345 kV Line - New 22 mi. 3000 A summer emergency capability line; 1-345 kV PCB at LaSalle, 1-138 kV PCB at Oglesby. Install 1-345 kV PCB at LaSalle	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	3044	Roxford-Pawnee 345 kV Line	Roxford-Pawnee 345 kV Line - New 60 mile, 3000 A summer emergency capability line. 3-345 kV PCBs (1-Roxford, 2-Pawnee). Install WAMS - PMU at Pawnee on new line terminal.	IL	IL				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenIL	3175	Palmyra Tap-Pawnee 765 kV Line	New 117 mile 765 kV, approx. 4000 A line	IL	IL				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenIL	3176	Pawnee-Breed 765 kV Line	New 140 mile 765 kV, approx. 4000 A line	IL	IL				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenIL	3177	Pawnee 765/345 kV Substation	New 2250 MVA, 765/345 kV Substation	IL	IL				\$0	6/1/2099	Conceptual	765	345	Y
C	C	Central	AmerenIL	3178	Pawnee-Powerton 765 kV Line	New 79 mile 765 kV, approx. 4000 A line	IL	IL				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenIL	3183	Grand Tower 765/345 kV Substation	New 2250 MVA, 765/345 kV Substation	IL	IL				\$0	6/1/2099	Conceptual	765	345	Y
C	C	Central	AmerenIL	3184	Grand Tower-Rockport 765 kV Line	New 172 mile 765 kV, approx. 4000 A line	IL	IL				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenIL	3343	Increase Ground Clearance - Raab Rd.-White Oak Tap	Increase ground clearance on 3.92 miles of 477 kcmil ACSR conductor	IL	IL	Other	Not Shared	Reliability	\$5,100,000	12/1/2013	Planned	138		Y
C	C	Central	AmerenIL	3349	East Galesburg Breaker Replacement	Replace breaker at East Galesburg with 1200 A breaker. Replace terminal equipment to 1200 A capability.	IL	IL				\$0	6/1/2099	Conceptual	138		Y
C	C	Central	AmerenIL	3845	Mt. Vernon, West Breaker Replacements	Replace 345 kV Breakers 4526, 4530, and 4534 with 3000 A, 41 kA interrupting capability breakers due to age and condition. Install new 345 kV, 3000 A, 41 kA interrupting capability breaker to complete 345 kV ring bus and separate the 345 kV transformer position from the Mt. Vernon, West-Prairie State 345 kV line position. Replace 138 kV Bus-Tie Breaker 1402 due to age and fault duty near capability. Replace disconnect switches, CTs and wavetrap in the Mt. Vernon, West-West Frankfort, East 345 kV line position to match or exceed line conductor ratings (2546 A summer emergency/2978 A winter emergency).	IL	IL				\$4,400,000	6/1/2013	Planned	345		Y
C	C	Central	AmerenIL	3872	MTEP11 TCFS Flowgate D Option 1	Upgrade Sparta Tap - Tilden 138kV to 287 MVA	IL	IL				\$5,350,000	1/1/2015	Proposed	138		Y
C	C	West	AmerenIL, ATC LI	2773	Green Power Express 765kV	Construct a 765kV network including 11 new 765/345kV substations (13 new 765/345kV TRFs) and approximately 3000 miles of new 765kV line. Proposed substation locations include 2 in North Dakota, 1 in South Dakota, 4 in Minnesota, and 3 in Iowa. This 765kV network will tie to the existing 765kV substations in Plano, IL and Sullivan, IN.	IA	WI				\$11,510,000,000	12/31/2020	Conceptual	765	345	Y
C	C	Central	AmerenIL, Non-MISO	2197	MTEP08 Reference Future EHV Overlay - St. Francois to Rockport	Builds 765 kV circuit from St. Francois Station in Missouri to Rockport Station in Indiana (Located in 3 States: 15% in MO, 56% in IL, 29% in IN	IL	MO, IN				\$599,000,000	6/1/2020	Conceptual	765		Y
C	C	Central	AmerenIL, Non-MISO	2215	MTEP08 Reference Future EHV Overlay - Coffeen to Sullivan	Build 765 kV circuit from Coffeen Station in Illinois to Sullivan Station in Indiana	IL	IN				\$322,000,000	6/1/2020	Conceptual	765		Y
C	C	Central	AmerenMO	2292	Kelso 345/161 kV Substation	Replace 336 MVA, 345/161 kV Transformer with 450 MVA Transformer	MO	MO	BaseRel			\$0	6/1/2099	Conceptual	345	161	Y
C	C	Central	AmerenMO	2975	Dupo Ferry-Selma-1 - Connection to Wings Enterprises	Dupo Ferry-Selma-1 138 kV Line - Install 3 position 138 kV ring bus and extend 138 kV line to serve a customer substation (Wings Enterprises). 3-138 kV, 1200A PCB's	MO	MO	Other	Not Shared	Distribution	\$1,141,000	12/1/2016	Proposed	138		Y
C	C	Central	AmerenMO	2987	Taum Sauk Capacitor Banks	Taum Sauk 138 kV Capacitor Banks - 2-30 Mvar banks; 2-138 kV synchronous PCBs.	MO	MO				\$0	6/1/2099	Conceptual	138		Y
C	C	Central	AmerenMO	2993	Dupo Ferry-Buck Knob Reconductoring	Dupo Ferry-Buck Knob 138 kV Line - Replace 22 mi. of 2-300 ACSR with maximum size conductor existing towers will support.	MO	MO				\$6,600,000	6/1/2016	Proposed	138		Y

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C	C	Central	AmerenMO	2996	Montgomery-Spencer Creek - Increase Ground Clearance	Montgomery-Spencer Creek 345 kV - Increase ground clearance on 28 miles of 795 kcmil ACSR conductor and upgrade terminal equipment at Montgomery Substation.	MO	MO				\$9,500,000	6/1/2016	Proposed	345		Y
C	C	Central	AmerenMO	3000	Miller Substation Transformer Addition	Miller 138/161 kV Substation - Install a new 300 MVA 138/161 kV transformer to convert Miller-Zion line to 161 kV operation and increase voltage support to Jefferson City, Missouri area.	MO	MO				\$0	6/1/2099	Conceptual	345	161	Y
C	C	Central	AmerenMO	3008	Overton Capacitor Bank	Overton 161 kV Capacitor Bank - 1-90 Mvar capacitor bank, 1-161 kV synchronous PCB, 1-161 kV reactor.	MO	MO				\$0	6/1/2099	Conceptual	161		Y
C	C	Central	AmerenMO	3025	Rivermines-N. Farmington - Second 138 kV Line	Rivermines-N. Farmington 138 kV Line - Construct a second 5.5 mile 138 kV line.	MO	MO				\$7,500,000	6/1/2019	Proposed	138		Y
C	C	Central	AmerenMO	3027	Campbell Substation 2nd. 345/138 kV Transformer	Campbell 345/138 kV Substation - 2nd 560 MVA transformer; New 12.8 mi. Roxford-Campbell 345 kV 3000 A summer emergency capability line; 2-345 kV PCBs (1-Campbell, 1-Roxford); 1-138 kV PCB @ Campbell.	MO	MO				\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenMO	3028	Campbell-Euclid-Page 138 kV Line Rebuild	Campbell-Euclid-Page 138 kV Line - Rebuild 5.25 mi. double-circuit 138 kV 2000 A SE capability. 3-138 kV PCBs (2-Campbell, 1-Page). Operate Euclid 138 kV Bus-Tie normally closed.	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3031	Page Area 345/138 kV Substation	Page Area 345/138 kV Substation - 2-560 MVA transformers. 9-138 kV PCBs: 2-transformer, 1-bus-tie, 6-line (2-Warson, 2-Page, 2-Hunter).	MO	MO				\$0	6/1/2099	Conceptual	345	138	Y
C	C	Central	AmerenMO	3032	Campbell-Page-Mason 345 kV Line	Campbell-Page-Mason 345 kV Line - New 16.5 mi. 3000 A summer emergency capability line, plus reutilization of 14.5 miles of existing Page-Sioux-4 at 345 kV.	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3034	Loose Creek-Kingdom City 345 kV Line	Loose Creek-Kingdom City 345 kV Line - New 25 mile 345 kV, 3000 A line. 2-345 kV PCBs at Loose Creek, 2-345 kV PCBs at Kingdom City..	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3038	Loose Creek-Barnett-Windsor-Pleasant Hill 345 kV Line	Loose Creek-Barnett-Windsor-Pleasant Hill 345 kV Line - New 138 mile 345 kV, 3000 A line. 560 MVA, 345/161 kV transformer at Barnett Substation. 345 kV PCBs: 2 at Loose Creek, 2 at Barnett, 2 at Windsor, 2 at Pleasant Hill.	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3042	Palmyra Tap-Thomas Hill-Fairport 345 kV Line	Palmyra Tap-Thomas Hill-Fairport - New 122 mile 345 kV, 3000 A line. 345 kV PCBs: 2 at Palmyra, 2 at Thomas Hill, 2 at Fairport.	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3045	St. Francois-Fletcher 345 kV Line	St. Francois-Fletcher 345 kV Line - New 48 mi. 3000 A SE capability. 345 kV terminals at St. Francois & Fletcher. Install WAMS - PMU at St. Francois on new line terminal.	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3171	West Adair-Fairport 345 kV Line	New 113 mile 345 kV, 3000 A line	MO	MO				\$0	6/1/2099	Conceptual	345		Y
C	C	Central	AmerenMO	3173	Fairport-Palmyra Tap 765 kV Line	New 176 mile 765 kV, approx. 4000 A line	MO	MO				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenMO	3174	Palmyra Tap 765/345 kV Substation	New 2250 MVA, 765/345 kV Substation	MO	MO				\$0	6/1/2099	Conceptual	765	345	Y
C	C	Central	AmerenMO	3179	Palmyra Tap-Montgomery 765 kV Line	New 68 mile 765 kV, approx. 4000 A line	MO	MO				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenMO	3180	Montgomery 765/345 kV Substation	New 2250 MVA, 765/345 kV Substation	MO	MO				\$0	6/1/2099	Conceptual	765	345	Y
C	C	Central	AmerenMO	3181	Montgomery-St. Francois 765 kV Line	New 104 mile 765 kV, approx. 4000 A line	MO	MO				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenMO	3182	St. Francois-Grand Tower 765 kV Line	New 63 mile 765 kV, approx. 4000 A line	MO	MO				\$0	6/1/2099	Conceptual	765		Y
C	C	Central	AmerenMO	3187	St. Francois 765/345 kV Substation	New 2250 MVA, 765/345 kV Substation	MO	MO				\$0	6/1/2099	Conceptual	765	345	Y
C	C	Central	AmerenMO	3692	Pike-Dundee-3 161 kV Relay Load Limit	Pike-Dundee-3 161 kV Line - Increase relay load limit on the Calumet Tap-Calumet 161 kV line section to permit utilizing full transformer capability at Calumet Substation.	MO	MO	Other	Not Shared	Reliability	\$100,000	6/1/2013	Proposed	161		Y

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C	C	Central	AmerenMO	3694	Clark-Pea Ridge-3 Reconductoring	Clark-Pea Ridge-3 138 kV Line - Replace 600 A disconnect switches and reconductor 17.7 miles of 336 kcmil ACSR conductor with conductor capable of carrying 1200 A under summer emergency conditions.	MO	MO	Other	Not Shared	Reliability	\$9,234,440	6/1/2016	Proposed	138		Y
C	C	Central	AmerenMO	3865	MTEP11 TCFS Flowgate C Option 1	Upgrade Fredericktown - Fredericktown Tap 161kV to 297 MVA	MO	MO				\$3,900,000	1/1/2015	Proposed	161		Y
C	C	Central	AmerenMO	3866	MTEP11 TCFS Flowgate C Option 2	Baldwin-Grand Tower-NW Cape 345 kV; Grand Tower 345/138kV Xfmr	MO	IL				\$162,500,000	1/1/2017	Proposed	345		Y
C	C	Central	AmerenMO	3867	MTEP11 TCFS Flowgate C Option 3	Grand Tower - EW Frankfurt 345kV line	MO	IL				\$80,000,000	1/1/2017	Proposed	345		Y
C	C	Central	AmerenMO	3868	MTEP11 TCFS Flowgate C Option 4	Grand Tower - Joppa 345kV line	MO	IL				\$100,000,000	1/1/2017	Proposed	345		Y
C	C	Central	AmerenMO	3869	MTEP11 TCFS Flowgate C Option 5	Norris City - Albion 345kV line	IL	IL				\$50,000,000	1/1/2017	Proposed	345		Y
C	C	Central	AmerenMO	3870	MTEP11 TCFS Flowgate C Option 6	Baldwin-Grand Tower-NW Cape 345 kV; Grand Tower - EW Frankfurt 345kV; Grand Tower - Joppa 345kV; Norris - Albion 345kV; Baldwin 345/138kV Xfmr	IL	MO				\$392,500,000	1/1/2017	Proposed	345		Y
C	C	Central	AmerenMO	3871	MTEP11 TCFS Flowgate C Option 7	Baldwin-Grand Tower-NW Cape 345 kV; Norris - Albion 345kV; Baldwin 345/138kV Xfmr	IL	MO				\$212,500,000	1/1/2017	Proposed	345		Y
C	C	Central	AmerenMO, AmerenIL	2195	MTEP08 Reference Future EHV Overlay - Montgomery to Coffeen	Builds 765 kV circuit from Montgomery Station in Missouri to Coffeen Station in Illinois	MO	IL				\$343,000,000	6/1/2020	Conceptual	765		Y
C	C	Central	AMIL, non-MISO	3676	DATC Project 6s: Lee County - New IL HVDC Substation	New dbl ckt 345kV connection from Lee Co to new IL HVDC substation	IL	IL				\$259,800,000	12/31/2018	Conceptual	345		Y
C	C	West	ATC LLC	89	Mill Road 345/138 kV substation and transformer	Mill Road transformer - 345/138 ckt , Sum rate 500	WI	WI				\$29,200,000	6/1/2050	Conceptual	345	138	Y
C	C	West	ATC LLC	341	Rockdale-Mill Road 345 kV line projects	Construct Rockdale-Concord 345 kV line in parallel with existing 138 kV on existing double-width right-of-way. Construct a 345 kV bus and install a 345/138 kV, 500 MVA transformer at Concord. Convert Bark River-Mill Road 138 kV line to 345 kV. Construct	WI	WI				\$94,600,000	6/1/2050	Conceptual	345	138	Y
C	C	West	ATC LLC	1621	New Birchwood-Lake Delton 138-kV line	Construct new Birchwood-Lake Delton 138-kV line	WI	WI				\$5,806,000	6/1/2020	Conceptual	138		Y
C	C	West	ATC LLC	1625	North Randolph Transformer	Install a 500 MVA 345/138 kV transformer at the North Randolph 138 kv SS by looping in the Columbia-South Fond du Lac 345-kV line	WI	WI	BaseRel	Shared		\$16,550,000	6/1/2025	Conceptual	345	138	Y
C	C	West	ATC LLC	1697	Brick Church-Walworth 69 kV line	Uprate Brick Church-Walworth 69 kV line to 115 MVA	WI	WI				\$716,000	6/1/2020	Conceptual	69		Y
C	C	West	ATC LLC	1703	Boscobel Capacitor Banks	Install one 8.16 MVAR capacitor bank at Boscobel 69 kV substation and upgrade existing 5.4 MVAR bank with an 8.16 MVAR bank	WI	WI				\$1,340,000	6/1/2014	Conceptual	69		Y
C	C	West	ATC LLC	1708	Metomen and Mackford Prairie area upgrades	Construct Fairwater-Mackford Prairie 69 kV line, Reconfigure the North Randolph-Ripon 69-kV line to form a second Ripon-Metomen 69-kV line and retire the circuit between Metomen and the Mackford Prairie tap	WI	WI	Other	Not Shared		\$8,879,773	6/1/2018	Conceptual	69		Y
C	C	West	ATC LLC	1709	Eden Capacitor Banks	Install two 16.33 MVAR 69 kV capacitor banks at Eden Substation	WI	WI				\$1,570,000	6/1/2022	Conceptual	69		Y
C	C	West	ATC LLC	1710	Mazomanie capacitor banks	Install two 12.25 MVAR 69 kV capacitor banks at Mazomanie substation	WI	WI				\$1,681,113	6/1/2023	Conceptual	69		Y
C	C	West	ATC LLC	1712	Horicon-East Beaver Dam 138 kV line	Construct a Horicon-East Beaver Dam 138 kV line	WI	WI				\$18,186,000	6/1/2022	Conceptual	138		Y
C	C	West	ATC LLC	1717	Glenview 138/69 kV transformers	Replace two existing 138/69 kV transformers at Glenview Substaion with 100 MVA transformers	WI	WI				\$3,440,000	6/1/2025	Conceptual	138	69	Y
C	C	West	ATC LLC	1718	Custer 138/69 kV transformer	Install a 138/69 kV transformer at Custer substation	WI	WI				\$4,904,268	6/1/2022	Conceptual	138	69	Y
C	C	West	ATC LLC	1719	Shoto-Custer 138 kV line	Construct a Shoto-Custer 138 kV line	WI	WI				\$22,938,000	6/1/2022	Conceptual	138		Y
C	C	West	ATC LLC	1720	Wautoma 138/69 kV transformer	Install a second 138/69-kV transformer at Wautoma Substation	WI	WI				\$1,440,000	6/1/2022	Conceptual	138	69	Y
C	C	West	ATC LLC	1721	Pulliam area 69 kV reconductor projects	Reconductor Pulliam-Danz 69kV line, reconductor Danz-Henry Street 69 kV line, reconductor Pulliam-Van Buren 69 kV line	WI	WI					6/1/2050	Conceptual	69		Y
C	C	West	ATC LLC	1723	Sunset Point transformer replacement	Replace two existing 138/69-kV transformers at Sunset Point Substation with 100 MVA transformers	WI	WI				\$3,540,000	6/1/2024	Conceptual	138	69	Y

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C	C	West	ATC LLC	1726	Uprate Royster-Sycamore 69 kV line	Uprate Royster-Sycamore 69 kV line to 115 MVA	WI	WI				\$1,621,935	12/31/2016	Conceptual	69		Y
C	C	West	ATC LLC	1730	Cardinal-Blount 138 kV line	Construct a Cardinal-Blount 138 kV line	WI	WI				\$60,810,000	6/1/2020	Conceptual	138		Y
C	C	West	ATC LLC	2029	Brick Church 138 & 69kV Caps	Install 1-24.5 Mvar 138-kV capacitor bank and 1-18 Mvar 69-kV capacitor bank at Brick Church	WI	WI					6/1/2017	Conceptual	138		Y
C	C	West	ATC LLC	2030	Concord 4x24.5 138 kV Caps	Install 4-24.5 Mvar 138-kV capacitor bank at Concord	WI	WI				\$3,360,000	6/1/2020	Conceptual	138		Y
C	C	West	ATC LLC	2031	Y-32 Rebuild (Colley Rd-Brick Church 69 kV)	Y-32 Rebuild (Colley Rd-Brick Church 69 kV)	WI	WI				\$11,220,000	6/1/2018	Conceptual	69		Y
C	C	West	ATC LLC	2034	Add a 2nd Cap to Veron 69 kV	Add a 2nd 16.2 Mvar Cap to Veron 69 kV							6/1/2014	Proposed	69		Y
C	C	West	ATC LLC	2040	Sun Prairie 69kV Caps	Install 2x16.33 Mvar 69 kV capacitor banks at Sun Prairie	WI	WI				\$2,570,000	6/1/2022	Conceptual	69		Y
C	C	West	ATC LLC	2042	Dam Heights 69kV Caps	Install 2x16.33 Mvar 69 kV caps at Dam Heights	WI	WI				\$2,900,000	6/1/2019	Conceptual	69		Y
C	C	West	ATC LLC	2043	Convert Necedah from 69 to 138 kV	Convert Necedah from 69 to 138 kV and tap into the Petenwell-Council Creek 138 kV line	WI	WI				\$760,000	6/1/2022	Conceptual	138		Y
C	C	West	ATC LLC	2046	North Monroe 69 kV Caps	Install 2x16.33 Mvar 69 kV capacitor banks at North Monroe	WI	WI				\$2,340,000	6/1/2021	Conceptual	69		Y
C	C	West	ATC LLC	2056	Uprate Oak Creek-Pennsylvania 138 kv	Uprate Oak Creek-Pennsylvania 138 kv	WI	WI				\$2,409,559	6/1/2020	Conceptual	138		Y
C	C	West	ATC LLC	2162	2nd McCue-LaMar 69 kV line	Construct a 2nd McCue-LaMar 69 kV line	WI	WI				\$5,010,000	6/1/2022	Conceptual	69		Y
C	C	West	ATC LLC	3117	Reconductor X-12 from Townline Rd to Bass Creek	Reconductor X-12 from Townline Rd to Bass Creek	WI	WI				\$1,900,000	6/1/2021	Conceptual	138		Y
C	C	West	ATC LLC	3164	Point Beach-Ludington HVDC line	Construct a HVDC line under Lake Michigan between Point Beach and Ludington and construct HVDC converter stations	WI	MI				\$828,000,000	6/1/2020	Conceptual	350		Y
C	C	West	ATC LLC	3165	Elm Rd- DC Cook HVDC line	Construct a HVDC line under Lake Michigan between Elm Road and DC Cook and construct HVDC converter stations	WI	MI				\$1,071,000,000	6/1/2020	Conceptual	765	345	Y
C	C	West	ATC LLC	3166	2nd Hillman 138/69kV transformer	Install a 2nd Hillman 138/69kV transformer	WI	WI				\$4,840,000	6/1/2018	Conceptual	138	69	Y
C	C	West	ATC LLC	3167	Y-87 North Monroe-South Monroe 69 kV Line Uprate	Y-87 North Monroe-South Monroe 69 kV Line Uprate	WI	WI				\$7,080,193	12/31/2018	Conceptual	69		Y
C	C	West	ATC LLC	3190	Rebuild line Y-103 from Sunset Point to Winneconne	Rebuild line Y-103 from Sunset Point to Winneconne to SN/SE = 200/300 deg F	WI	WI				\$3,868,404	12/31/2016	Conceptual	69		Y
C	C	West	ATC LLC	3207	Replace Harrison 138/69kV Tr	Replace the Harrison 56 MVA 138/69kV Tr with a 100 MVA unit	WI	WI				\$3,230,000	6/1/2022	Conceptual	138	69	Y
C	C	West	ATC LLC	3208	Replace Caroline 115/69kV Tr	Replace the Caroline 33 MVA 115/69kV Tr with a dual high side 138-115/69-kV 100 MVA unit	WI	WI				\$4,010,000	6/1/2022	Conceptual	115	69	Y
C	C	West	ATC LLC	3429	Sun ValleyTap-Oregon 69kV line rebuild	Rebuild the Sun ValleyTap-Oregon 69kV line	WI	WI				\$5,970,257	12/31/2016	Conceptual	69		Y
C	C	West	ATC LLC	3430	Dyckesville-Sawyer 69kV rebuild	Rebuild the Dyckesville-Brusbay-Sawyer 69 kV line	WI	WI				\$11,814,128	6/1/2016	Conceptual	69		Y
C	C	West	ATC LLC	3486	Oak Creek-Bluemound Uprate	Uprate 138 kV line to 275 F	WI	WI				\$1,400,000	6/1/2021	Conceptual	230		Y
C	C	West	ATC LLC	3487	West Middleton-Pheasant Branch 69 kV new circuit	Replace existing single circuit from WMD-Pheasant Branch 69 kV with double circuit 69 kV lines.	WI	WI				\$22,710,000	6/1/2022	Conceptual	69		Y
C	C	West	ATC LLC	3512	Pleasant Prairie-Cook HVDC line	Construct a HVDC line under Lake Michigan between Pleasant Prairie and Cook and construct HVDC converter stations	MI	WI					6/1/2020	Conceptual	350		Y
C	C	West	ATC LLC	3678	Marquette-Mackinac 138 kV project	Rebuilds Forsyth to Nine Mile as 138 kV line and rebuilds from Nine Mile to Straits area as 138 kV. This includes a new 138 kV connection between Seney and Roberts.	MI	MI	Other	Not Shared	Reliability	\$262,850,000	12/31/2020	Proposed	138	69	Y
C	C	West	ATC LLC	3681	Marathon-Marquette 345 kV Project	New Gardner Park - Plains 345 kV line and new Plains - National 345 kV line. Also includes a new 138kV line from Green Bay area to Morgan.	WI	MI	BaseRel	Shared		\$500,000,000	12/31/2020	Proposed	345	138	Y
C	C	West	ATC LLC	3838	Plains to National 345 kV project	New 345 kV line from Plains to National, including new National substation and transformers	MI	WI	BaseRel	Shared		\$180,800,000	12/31/2018	Proposed	345	138	Y
C	C	West	ATC LLC	3841	K115 line conversion	Convert Pulliam-Glory Road 69kV Line TO 138 kV	WI	WI				\$27,600,000	1/15/2016	Proposed	138	69	Y
C	C	West	ATC LLC	3884	Omro - Berlin 69-kV	Reconductor Omro-Berlin to meet line clearances needed for new rating	WI	WI				\$7,384,816	12/31/2014	Planned	69		Y
C	C	West	ATC LLC	3885	Crystal Falls - Aspen 69-kV	Uprate Crystal Falls- Aspen 69 kV line	WI	WI				\$4,703,072	12/31/2016	Planned	69		Y

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C	C	West	ATC LLC	3886	Oak Creek - St. Rita 138 kV	Reconductor Oak Creek- St. Rita 138 kV line	WI	WI				\$3,755,424	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3887	Ramsey - Barland 138-kV	Uprate Ramsey- Barland 138 kV line	WI	WI				\$1,267,178	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3888	Whitewater - University 138-kV	Uprate Whitewater- University 138 kV line	WI	WI				\$2,169,175	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3889	Morrison Ave - Sherman 115-kV	Uprate Morrison Ave- Sherman 115 kV line	WI	WI				\$3,766,983	12/31/2016	Planned	115		Y
C	C	West	ATC LLC	3890	Port Washington - Saukville 4 138 kV	Reconductor Port Washington-Saukville 138 kV line	WI	WI				\$2,048,971	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3891	Port Washington - Saukville 6 138 kV Line	Reconductor Port Washington-Saukville 138 kV line	WI	WI				\$1,818,147	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3892	Stagecoach - Wick Drive 69-kV	Uprate Stagecoach- Wick Drive 69 kV line	WI	WI				\$7,153,031	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3893	Racine - St. Rita 138-kV	Uprate Racine- St.Rita 138 kV line	WI	WI				\$7,090,544	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3894	Racine - Oak Creek 138 kV Line	Reconductor Racine-Oak Creek 138 kv line	WI	WI				\$3,366,311	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3895	Oak Creek - Kansas 138-kV	Reconductor Oak Creek - Ramsey - Kansas 138 kV line	WI	WI				\$280,000	11/14/2014	Planned	138		Y
C	C	West	ATC LLC	3896	Gran Grae - Boscobel 69-kV	Reconductor Gran Grae-Boscobel 69 kV line	WI	WI				\$10,854,764	12/31/2019	Proposed	69		Y
C	C	West	ATC LLC	3897	University - Bluff Creek Tap - Sugar Creek 138-kV	Uprate University-Bluff Creek Tap-Sugar Creek 138 kV line	WI	WI				\$9,489,187	12/31/2018	Proposed	138		Y
C	C	West	ATC LLC	3898	Pleasant Praire - Zion 345-kV	Reconductor Pleasant Praire-Zion 345 kV line	WI	WI				\$4,510,343	12/31/2016	Planned	345		Y
C	C	West	ATC LLC	3899	Rock Springs Tap - Kirkwood 138-kV line	Increase line conductor clearances Rock Springs Tap-Kirkwood 138 kV line	WI	WI				\$1,417,103	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3900	Bain - Albers 138-kV	Reconductor Bain-Albers 138 kV line	WI	WI				\$1,033,150	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3901	North Fond du Lac - Metomen 69-kV	Increase Line Clearance North Fond du Lac-Metomen 69 kV line	WI	WI				\$1,105,150	12/31/2018	Planned	69		Y
C	C	West	ATC LLC	3902	Waunakee - Westport 69-kV	Reconductor Waunakee-Westport 69 kV line	WI	WI				\$1,630,000	12/31/2017	Planned	69		Y
C	C	West	ATC LLC	3903	Wautoma - ACEC Wild Rose Pump 69-kV	Uprate Wautoma - ACEC Wild Rose Pump 69-kV	WI	WI				\$2,450,000	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3904	McCue - Red Hawk Tap 69-kV	Reconductor McCue-Red Hawk Tap 69 kV line	WI	WI				\$2,667,035	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3905	Boscobel - Muscoda 69-kV	Reconductor Boscobel-Muscoda 69 kV line	WI	WI				\$5,774,951	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3906	Albers - Kenosha 138-kV line	Uprate Kenosha- Albers 138 kV line	WI	WI				\$803,046	12/31/2014	Planned	138		Y
C	C	West	ATC LLC	3907	Danz - University 69-kV	Replace jumper at Danz Ave.	WI	WI				\$2,710,000	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3908	Northwest Ripon - Ripon 69-kV	Uprate Ripon-Northwest Ripon 69 kV line	WI	WI				\$496,958	12/31/2014	Planned	69		Y
C	C	West	ATC LLC	3909	Fitchburg-Nine Springs 69-kV	Rebuild and Reconductor Fitchburg-Nine Springs 69 kV line	WI	WI				\$3,560,000	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3910	Royster - Pflaum 69-kV	Rebuild and Reconductor Royster-Pflaum 69 kV line	WI	WI				\$1,010,000	12/31/2016	Planned	69		Y
C	C	West	ATC LLC	3911	Bunker Hill - Black Brook 115-kV	Rebuild 8-mile 115-kV line M-13 Bunker Hill-Black Brook	WI	WI				\$8,960,000	12/31/2017	Proposed	115		Y
C	C	West	ATC LLC	3912	Paddock - Shaw 69-kV	Reconductor Paddock-Shirland-Shaw 69 kV line	WI	WI				\$2,170,000	6/1/2014	Planned	69		Y
C	C	West	ATC LLC	3913	Branch - Kansas 138-kV	Uprate Branch- Kansas 138 kV line	WI	WI				\$268,349	12/31/2014	Planned	138		Y
C	C	West	ATC LLC	3914	ACEC Coloma Tap - Chaffee Creek 69-kV	Uprate Chaffee Creek- Acec Coloma Tap	WI	WI				\$969,694	6/1/2015	Planned	69		Y
C	C	West	ATC LLC	3915	Rocky Run - Plover 115-kV	Replace jumpers at Plover	WI	WI				\$1,184,287	12/31/2016	Planned	115		Y
C	C	West	ATC LLC	3916	Empire - Presque Isle 138-kV	Uprate Empire- Presque Isle 138 kV line	WI	WI				\$388,590	12/31/2015	Planned	138		Y
C	C	West	ATC LLC	3917	Manrap - Custer 69-kV	Uprate Manrap- Custer 69 kV line	WI	WI				\$307,815	12/31/2015	Planned	69		Y
C	C	West	ATC LLC	3918	Granville - Tamarack 138-kV	Uprate Granville- Tamarack 138 kV line	WI	WI				\$7,405,661	6/1/2016	Planned	138		Y
C	C	West	ATC LLC	3950	Morgan-Plains 2nd 345 kV line	Morgan-Plains 2nd 345 kV line	WI	MI				\$224,200,000	12/31/2017	Proposed	345	138	Y
C	C	West	ATC LLC	3951	Holmes-Chandler 138 kV	Holmes-Chandler 138 kV line	MI	MI				\$47,800,000	12/31/2016	Proposed	138		Y
C	C	West	ATC LLC	3953	National 138 kV SVC	National 138 kV SVC	MI	MI				\$25,800,000	12/31/2018	Proposed	138		Y
C	C	West	ATC LLC	3954	Russel- McCue 138 kV	Uprate Russell- McCue 138 kV line						\$2,249,283	3/21/2013	Proposed	138		Y
C	C	West	ATC LLC	3955	Oconto- Sherwood 138 kV	Fix 8 spans of Oconto- Sherwood 138 kV line						\$373,000	4/11/2013	Planned	138		Y
C	C	West	ATC LLC	3956	N. Appleton- Fitzgerald 345 kV	Fix 14 spans on N. Appleton- Fitzgerald 345 kV line	WI	WI				\$470,000	5/2/2013	Proposed	345		Y
C	C	West	ATC LLC	3957	New SW Sun Prairie substation	Tap Colorado-Burke 69 kV line with a new SW Sun Prairie substation	WI	WI				\$3,486,238	12/31/2013	Proposed			Y
C	C	West	ATC LLC	3958	Waukesha- Merrill Hills 138 kV	Rebuild Waukesha- Merrill Hills 138 kV line	WI	WI				\$6,525,087	5/30/2015	Proposed	138		Y
C	C	West	ATC LLC	3959	Lancaster Conversion	Convert Lancaster 69 kV line to 138 kV.						\$2,288,781	12/31/2015	Proposed	138		Y
C	C	West	ATC LLC	3960	Lakeview- Zion 138 kV	Reconductor Lakeview- Zion 138 kV line	WI	WI				\$2,310,000	6/1/2016	Proposed	138		Y
C	C	West	ATC LLC	3961	Merrill Hills- Summit 138 kV	Rebuild Merrill Hills- Summit 138 kV line						\$6,298,384	5/30/2017	Proposed	138		Y
C	C	West	ATC LLC	3962	Oak Creek- Hayes 138 kV	Rebuild Oak Creek- Hayes 138 kV line	WI	WI				\$13,743,440	12/31/2019	Proposed	138		Y
C	C	West	ATC LLC	3963	Rocky Run- North Point 115 kV	Improve clearance Rocky Run- North Point 115 kV line	WI	WI				\$870,000	12/21/2012	Proposed	115		Y
C	C	West	ATC LLC	3964	New Elk substation	New Elk substation						\$4,900,000	12/1/2014	Proposed			Y

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C	C	West	ATC LLC	3965	New Fitzgerald Transformer 345/138 kV	Fitzgerald 345 bus is expanded into a 4 section ring bus and the Fitzgerald 138 bus is split into two sections and a 138kV bus tie breaker is installed.	WI	WI					6/1/2015	Proposed	345	138	Y
C	C	West	ATC LLC	3966	Rerate Line Y-146	Line Clearances will be raised to meet line clearances for 550 A all seasons	WI	WI				\$874,000	10/1/2013	Proposed	69		Y
C	C	West	ATC LLC	3967	Winona T-D	New Winona Load addition	MI	MI				\$120,000	6/30/2013	Proposed	69		Y
C	C	West	ATC LLC	3968	Barnum T-D	New Barnum Load Addition	MI	MI				\$2,850,000	12/31/2014	Proposed	138	12.5	Y
C	C	West	ATC LLC, ALTW	2230	MTEP08 Reference Future EHV Overlay - Salem to West Middleton	Build 345 kV circuit from West Middleton in Wisconsin to Salem Station in Iowa	WI	WI				\$102,000,000	8/1/2018	Conceptual	345	138	Y
C	C	East	ATC LLC, ITC	2208	MTEP08 Reference Future EHV Overlay - Dead River to Livingston	Build 345 kV circuit from Dead River Station to Livingston Station in Michigan	MI	MI				\$329,000,000	8/1/2018	Conceptual	345		Y
C	C	West	ATC LLC, METC	3819	National-Livingston 345 kV line	Build a new 345 kV line from livingston to McGulpin, install underwatered 345 kV cable from McGulpin to Straits, build a 345 kV line from Straits to 9-Mile, step down to 138 kV at 9-Mile, build 345 kV line from 9-Mile to National	MI	MI				\$686,180,000	12/31/2016	Conceptual	345	138	Y
C	C	West	ATC LLC, METC	3820	Arnold-Livingston 345 kV line	Build a new 345 kV line from livingston to McGulpin, install underwatered 345 kV cable from McGulpin to Straits, build a 345 kV line from Straits to Hiawatha, step down to 138 kV at Hiawatha, build a 345 kV line from Hiawatha to Arnold	MI	MI				\$537,600,000	12/31/2016	Conceptual	345	138	Y
C	C	West	ATC LLC, MP	3833	Arrowhead-Plains 345 kV Project	New 345 kV Line from Arrowhead-Plains, with two step down locations to support regional reliability in Northern WI	WI	MN				\$959,307,798	12/31/2020	Proposed	345	115	Y
C	C	West	ATC LLC, non-MI	3677	DATC Project 7: Hanover, WI to Pleasant Valley, IL 345 kV	New 345 kV connection from Hanover, WI - Pleasant Valley, IL	WI	IL				\$110,800,000	12/31/2016	Proposed	345		Y
C	C	West	ATC LLC, XEL	2211	MTEP08 Reference Future EHV Overlay - Longwood to Greenwood	Build 345 kV circuit from Longwood Station to Greenwood Station in Wisconsin	WI	WI				\$200,000,000	8/1/2018	Conceptual	345		Y
C	C	Central	BREC	3435	Rome Junction to West Owensboro 69 kV reconductor.	Reconductor 5.8 miles of 3/0 and 267 MCM ACSR with 336 MCM ACSS	KY	KY	Other	Not Shared	Reliability	\$440,000	12/31/2017	Proposed	69		Y
C	C	Central	BREC	3436	Wilson to Sacramento 69 kV line addition	New 11 mile line and line terminal at Wilson	KY	KY	Other	Not Shared	Reliability	\$2,100,000	12/31/2018	Proposed	69		Y
C	C	Central	BREC	3437	Thruston Junction to East Owensboro reconductor.	Reconductor .4 miles of 3/0 ACSR with 336 MCM ACSR	KY	KY	Other	Not Shared	Reliability	\$40,000	12/31/2018	Proposed	69		Y
C	C	Central	BREC	3438	Daviess County to Philpot Tap reconductor.	Reconductor 7.7 miles of 267 MCM ACSR with 336 MCM ACSS	KY	KY	Other	Not Shared	Reliability	\$580,000	12/31/2018	Proposed	69		Y
C	C	Central	BREC	3439	Ensor 161/69 kV Substation	Construct new 161/69 kV substation with 56 MVA transformer.	KY	KY	BaseRel	Not Shared		\$6,200,000	12/31/2022	Proposed	161	69	Y
C	C	Central	BREC	3440	Reid EHV 161/69 kV transformer	Add a 56 MVA transformer to the existing Reid EHV substation.	KY	KY	BaseRel	Not Shared		\$5,000,000	12/31/2024	Proposed	161	69	Y
C	C	Central	BREC	3441	Olivet Church Road to Olivet Church Road Tap 69 kV reconductor.	Reconductor 1.4 miles of 4/0 ACSR with 336 MCM ACSS	KY	KY	Other	Not Shared	Reliability	\$150,000	12/31/2020	Proposed	69		Y
C	C	Central	BREC	3442	White Oak transformer addition	Add a second 56 MVA transformer to the White Oak 161/69 kV substation.	KY	KY	BaseRel	Not Shared		\$1,900,000	12/31/2024	Proposed	161	69	Y
C	C	Central	BREC	3443	Hardinsburg 161/69 transformer replacements	Replace both 50 MVA 161/69 kV transformers with 100 MVA transformers.	KY	KY	BaseRel	Not Shared		\$4,000,000	12/31/2017	Proposed	161	69	Y
C	C	Central	BREC	3444	Meade County 161/69 transformer addition	Add a third 56 MVA transformer to the existing Meade County substation.	KY	KY	BaseRel	Not Shared		\$700,000	12/31/2020	Proposed	161	69	Y
C	C	Central	BREC	3445	Brandenburg 69 kV capacitor addition	Add a 6 MVAR capacitor in the Brandenburg/Battletown area.	KY	KY	Other	Not Shared	Reliability	\$300,000	12/31/2020	Proposed	69		Y
C	C	Central	BREC	3446	Hardinsburg No. 1 to Harned 69 kV reconductor.	Reconductor 2 miles of 3/0 ACSR with 336 MCM ACSS	KY	KY	Other	Not Shared	Reliability	\$170,000	12/31/2022	Proposed	69		Y
C	C	West, Central	MISO	3671	DATC Project 4: HVDC backbone from Audobon Co, IA to McLean Co, IL project	New HVDC (+- 500kV) from Audobon Co, IA to McLean Co, IL	IA	IN				\$1,349,300,000	12/31/2018	Conceptual	500		Y

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C	C	Central, East	MISO	3674	DATC Project 5-st: Gwynneville-Star 345kV project	Loop in existing Greentown - Jefferson 765kV to Gwynneville substation and a new 345kV connection from Gwynneville-Greensboro and a new dbl ckt 345kV connection from Greensboro-Miami-Gallon-Star and a new 345kV connection from Fall Creek - Greensboro	IN	OH				\$696,350,000	12/31/2018	Conceptual	765	345	Y
C	C	Central	DEM	840	Rushville 69kV Cap	Add 14.4 MVAR 69kV capacitor at Rushville.	IN	IN	Other	Not Shared	Reliability	\$510,845	6/1/2016	Planned	69		NT
C	C	Central	DEM	1249	Frankfort 230 36MVAR 69kV capacitor	Install 36 MVAR 69kV capacitor	IN	IN	Other	Not Shared	Reliability	\$632,358	12/31/2016	Planned	69		NT
C	C	Central	DEM	1264	Speed	Replace existing 345/138 transformer at Speed with a new transformer rated at 3,000A or higher.	IN	IN	BaseRel	Shared		\$7,541,500	6/1/2022	Alternative	345	138	Y
C	C	Central	DEM	1571	Rockville (IPL) to Avon East new 138kV line	Construct 4.3 miles / 954ACSR of 138kv line from IPL Rockville to Avon East	IN	IN	BaseRel	Not Shared		\$2,980,000	6/1/2018	Alternative	138		Y
C	C	Central	DEM	1900	Avon Industrial Park 138 (or 69)-12kV new dist sub	Avon Industrial Park (aka Central Logistics) - Construct 69/138-12kV - 22.4 MVA sub and 2.6 mile - 69kV radial line from roughly the Avon South sub - unknown if this will be a 69 or 138 kv sub	IN	IN	Other	Not Shared	Distribution	\$923,000	6/1/2020	Proposed	138	12	NT
C	C	Central	DEM	1904	Batesville to Hillenbrand 69kV uprate	Uprate 69kV Batesville to Hillenbrand to 100C - 4/0acsr - 2.1 miles - 69107 ckt	IN	IN	Other	Not Shared	Reliability	\$115,961	6/1/2015	Planned	69		NT
C	C	Central	DEM	2124	Brooklyn to HE Brooklyn 69kV Reconductor	Brooklyn Sub to HE Brooklyn Sub reconductor 1.28 miles of 6940 line 4/0 Cu with 954ACSR@100C	IN	IN	Other	Not Shared	Reliability	\$320,000	6/1/2020	Planned	69		NT
C	C	Central	DEM	2125	Centerton 138/69kV Bk 1 replacement	Upgrade/replace existing 75MVA 138/69kV bank with 120MVA bank	IN	IN	Other	Not Shared	Reliability	\$3,091,000	6/1/2019	Planned	138	69	NT
C	C	Central	DEM	2129	Plainfield S. to HE Mooresville Jct 69kV reconductor	Plainfield South to HE Mooresville Jct 69kV reconductor 4/0Cu with 954ACSR - 2.03 miles	IN	IN	Other	Not Shared	Reliability	\$980,000	6/1/2020	Planned	69		NT
C	C	Central	DEM	2135	Franklin 230 Sub 69kV Cap	Franklin 230 Sub 69kV Cap - Install 36MVAR 69kV bus capacitor bank	IN	IN	Other	Not Shared	Reliability	\$400,000	6/15/2020	Planned	69		NT
C	C	Central	DEM	2139	Greenwood West Sub 69kV #2 switch upgrade	Greenwood West Sub - upgrade (or replace, if required) 69kV Loadbreak switch #2 for 1200amp capacity in the 6999 ckt.	IN	IN	Other	Not Shared	Reliability	\$50,000	6/30/2020	Planned	69		NT
C	C	Central	DEM	2140	Greenwood West to Lenore Jct 69kV reconductor	Greenwood West to Lenore Jct reconductor 69kV - 6999 ckt. with 477ACSR @ 100C conductor	IN	IN	Other	Not Shared	Reliability	\$1,377,500	6/30/2020	Planned	69		NT
C	C	Central	DEM	2144	Franklin 230 to Earlywood 69kV Reconductor	Franklin 230kV sub to Earlywood sub reconductor 1.06 mile - 69kV - 69165 line with 954ACSR@100C	IN	IN	Other	Not Shared	Reliability	\$424,000	6/30/2020	Planned	69		NT
C	C	Central	DEM	2145	Franklin 230/69 Bks 1&2 Replacement	Franklin 230 sub - Replace 230/69kV banks 1&2 each with a 200MVA LTC transformer	IN	IN	BaseRel	Not Shared		\$4,800,000	6/1/2020	Planned	230	69	Y
C	C	Central	DEM	2146	HE Honey Creek Jct to Frances Creek Jct 69kV reconductor	HE Honey Creek Jct to Frances Creek Jct. reconductor 69kV - 1.12 mile line section of the 69102 ckt. with 954ACSR 100C conductor.	IN	IN	Other	Not Shared	Reliability	\$420,000	6/30/2020	Planned	69		NT
C	C	Central	DEM	2147	Whiteland to Madison J 69kV reconductor	Whiteland Sub to Greenwood North Tap to Madison Ave Jct reconductor 3.44 mile 69kV - 6997 line with 954ACSR 100C conductor.	IN	IN	Other	Not Shared	Reliability	\$1,376,000	6/30/2020	Planned	69		NT
C	C	Central	DEM	2247	MTEP08 Reference Future EHV Overlay - 'Gwynn 765/345 Autotransformation	Add Gwynn 765/345 kV autotransformer in Indiana	IN	IN	MEP	Shared		\$20,000,000	8/1/2018	Conceptual	765	345	Y
C	C	Central	DEM	2329	Clarksville to Indiana Arsenal 69kV - 6955 ckt. reconductor	Clarksville to Indiana Arsenal 69kV - 6955 ckt. reconductor 1.1 miles of 4/0acsr with 477ACSR at 100C (this is Phase 2 remainder of 4/0ACSR in this line section)	IN	IN	Other	Not Shared	Reliability	\$330,000	6/1/2014	Planned	69		NT
C	C	Central	DEM	2330	New Albany to HE&DEI Georgetown 69kV - Reconductors	New Albany to HE Georgetown 69kV - 6970 ckt. Reconductor 1.24 miles of 4/0acsr with 477acsr@100C; New Albany to DEI Georgetown (6973 line) re-conductor 6.3 miles of 4/0 ACSR with 477 ACSR. These two lines are double circuited part of the way (1.08 miles)	IN	IN	Other	Not Shared	Reliability	\$3,221,000	6/1/2014	Planned	69		NT

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C	C	Central	DEM	2862	Staunton to Lonestar Jct 138kV - 13802 ckt. Uprate	Uprate Staunton to Greencastle Jct to Lonestar Jct 13802 circuit 336ACSR for 100C cond temp operation (Lone Star Jct switches may also need upgraded to 1200A)	IN	IN	BaseRel	Not Shared		\$350,000	6/1/2016	Planned	138		Y
C	C	Central	DEM	2864	Centeron to Martinsville 69kV - 69163 ckt. Reconductor	Reconductor the 69kV-69163 ckt - 3.47 miles of 366ACSR 80C and 0.23 miles of 477ACSR 80C to 954ACSR 100C	IN	IN	BaseRel	Not Shared		\$1,110,000	6/1/2018	Planned	69		NT
C	C	Central	DEM	2873	Danville E. 69kV looped feed	Construct new Danville East substation near HRH hospital - single 22.4MVA transformer - 6945 ckt to be looped through	IN	IN	Other	Not Shared	Distribution	\$500,000	6/1/2018	Proposed	69	12	NT
C	C	Central	DEM	3382	Vincennes Vigo St. 138kV Dist Sub	Build new radial 138kV line and add breaker at Vincennes 138kV sub to convert Vigo St. sub from 34kV to 138kV	IN	IN	Other	Not Shared	Distribution	\$1,800,000	12/31/2017	Planned	138	12	Y
C	C	Central	DEM	3544	Wabash River 138kV Gen Sta. Phase I	Wabash Riv 138kV Gen Sta. Phase I (Bus #1): Perform Line associated relay work. Repl. breakers: 13834-11, 138TR, 13845, 13846 and DS Switches. Replace Bus Insulators.	IN	IN	Other	Not Shared	Condition	\$2,500,000	12/31/2014	Planned	138		Y
C	C	Central	DEM	3545	Wabash Riv 138kV Gen Sta Phase II	Wabash Riv 138kV Gen Sta. Phase II (Bus #2 & Transfer Bus): Perform Line associated relay work. Repl. breakers: 138230-9, 13847 and DS Switches. Replace Bus Insulators.	IN	IN	Other	Not Shared	Condition	\$2,500,000	12/31/2015	Planned	138		Y
C	C	Central	DEM	3550	Martinsville 69kv Normally Open Loop	Construct approximately 2.57 mi of 69kv line to complete a normally open loop between Martinsville SE and Martinsville East distribution subs.	IN	IN	Other	Not Shared	Reliability	\$1,434,000	12/31/2016	Planned	69		Y
C	C	Central	DEM	3556	Greenwood South 69kV Dist. Sub.	Build a new 69-12kV 22.4MVA sub in the 69102 line adjacent +/- to the existing HE Gilmore 69kv sub	IN	IN	Other	Not Shared	Distribution	\$250,000	6/1/2015	Planned	69	12	Y
C	C	Central	DEM, IPL	2783	Wheatland - Bloomington 345 kV line	Build new 345 kV circuits from Wheatland Power Facility to Bloomington substation	IN	IN	MEP	Shared		\$105,000,000	5/1/2012	Conceptual	345		Y
C	C	Central, East	DEM, NIPS, Non-MISO	3847	Reynolds-Wilton Center 765 kV line	New 765 kV connection from Reynolds to Wilton Center	IN	IL				\$264,500,000	12/31/2018	Conceptual	765		Y
C	C	East	DEM, NIPS, Non-MISO, AMIL	4000	Extended 345 KV NWI Plan	LaSalle-Nelson, DavisCr-Schaher-BurrOak#2-Dumont, BurrOak-LeesBurg, Reynolds-FallCrk, Reynolds-Brokaw-Maple River	IN	IL				\$609,000,000	12/31/2018	Conceptual	345		Y
C	C	Central, East	DEM, NIPS, Non-MISO, IPL, MEC	3851	Schahfer-BurrOak #2-Stillwell 345 kV line plus Extended Wilton Center to Reynolds 765 kV line	New 345 kV connection from Schahfer to BurrOak to Stillwell plus new 765 KV connection from MEC-Wilton Center -Reynolds-IPL	IN	IL				\$69,500,000	12/31/2018	Conceptual	345		Y
C	C	Central, East	DEM, NIPS, Non-MISO, IPL, MEC	3852	Schahfer-BurrOak #2-Dumont 345 kV line plus Extended Wilton Center to Reynolds 765 kV line	New 345 kV connection from Schahfer to BurrOak to Dumont plus new 765 KV connection from MEC-Wilton Center -Reynolds-IPL	IN	IL				\$84,500,000	12/31/2018	Conceptual	345		Y
C	C	Central, East	DEM, NIPS, Non-MISO, IPL, MEC	3853	Babcock-Dumont 345 kV line plus Extended Wilton Center to Reynolds 765 kV line	New 345 kV connection from Babcock to Dumont plus new 765 KV connection from MEC-Wilton Center - Reynolds-IPL	IN	IL				\$177,000,000	12/31/2018	Conceptual	345		Y
C	C	Central, East	DEM, NIPS, Non-MISO, IPL, MEC	3854	Extended Wilton Center-Reynolds 765 kV line	New 765 KV connection from MEC-Wilton Center - Reynolds-IPL	IN	IL				\$464,500,000	12/31/2018	Conceptual	765		Y
C	C	East	DEM, NIPS, Non-MISO, IPL, MEC	3999	Extended Wilton Center-Reynolds 765 kV line Plus Reynolds-Brokaw 765 kv line	New 765 KV connection from MEC-Wilton Center - Reynolds-IPL plus Reynolds-Brokaw	IN	IL				\$761,500,000	12/31/2018	Conceptual	765		Y
C	C	Central	DEM, Non-MISO	2203	MTEP08 Reference Future EHV Overlay - Greentown to Blue Creek	Build 765 kV circuit from Greentown Station to Blue Creek Station in Indiana	IN	IN	MEP	Shared		\$191,000,000	8/1/2018	Conceptual	765		Y
C	C	West	DPC, ATC LLC	2231	MTEP08 Reference Future EHV Overlay - LaCrosse-Columbia	Build 345 kV circuit from LaCrosse to Columbia Station in Wisconsin	WI	WI				\$186,000,000	8/1/2018	Conceptual	345	138	Y
C	C	Central	Duke, NIPS	3668	DATC Project 1: Reynolds-Brookston-Qualitech new 345kV project	New 345 kV connection from Reynolds-Brookston-Frankfort-Thorntown-Qualitech and a new 230 kV connection from Frankfort-Thorntown	IN	IN	MEP	Shared		\$221,950,000	12/31/2016	Conceptual	345	230	Y

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C	C	Central	Duke, NIPS, AMIL	3669	DATC Project 2: HVDC backbone from McLean Co, IL to IN project	New HVDC (+-500kV) line from McLean Co, Illinois to Indiana (near Brookston) and a new 345kV connection from Tazewell (IL) - new IL HVDC substation - Brokaw (IL)	IL	IN	MEP	Shared		\$831,000,000	12/31/2017	Conceptual	500		Y
C	C	Central, East	Duke, non-MISO	3673	DATC Project 5-be: Gwynneville-Beatty 345kV project	Loop in existing Greentown - Jefferson 765kV to Gwynneville substation and a new 345kV connection from Gwynneville-Greensboro and a new double circuit 345kV connection from Greensboro-Miami-Beatty and a new 345kV connection from Fall Creek - Greensboro	IN	OH				\$472,350,000	12/31/2018	Conceptual	765	345	Y
C	C	West	GRE	2691	Orrock 345/115 kV source and Orrock-Waco-Liberty 115 kV line.	Orrock 345/115 kV source and Orrock-Waco-Liberty 115 kV line.	MN	MN				\$19,661,825	6/1/2017	Conceptual	345	69	Y
C	C	West	GRE/OTPMRES	3873	MTEP11 TCFS Flowgate E Option 1	Rebuild Ortonville-Johnson Jct.-Morris 115kV line	MN	MN				\$22,100,000	1/1/2016	Proposed	115		Y
C	C	West	GRE/OTPMRES	3874	MTEP11 TCFS Flowgate E Option 2	Big Stone - Johnson Jct. - Alexandria 345kV line	MN	MN				\$150,600,000	1/1/2019	Proposed	345		Y
C	C	West	GRE/OTPMRES	3875	MTEP11 TCFS Flowgate E Option 3	Big Stone - Canby - Hazel Creek 345kV line	MN	MN				\$160,200,000	1/1/2019	Proposed	345		Y
C	C	West	GRE/OTPMRES	3876	MTEP11 TCFS Flowgate E Option 4	Alexandria - Johnson Jct. - Big Stone -Canby - Hazel Creek 345kV	MN	MN				\$310,800,000	1/1/2019	Proposed	345		Y
C	C	West	GRE/OTPMRES	3877	MTEP11 TCFS Flowgate E Option 5	Rebuild Ortonville-Johnson Jct.-Morris 115kV line, Hankinson-Wahpeton 230kV line, add 2nd Big Stone 230/115 transformer, Ortonville-Big Stone 115kV line	MN	SD				\$32,950,000	1/1/2016	Proposed	230		Y
C	C	West	GRE/OTPMRES	3878	MTEP11 TCFS Flowgate E Option 6	Big Stone - Alexandria 345kV line	MN	MN				\$150,600,000	1/1/2019	Proposed	345		Y
C	C	Central	IPL	2246	MTEP08 Reference Future EHV Overlay - Pete 765/345 Autotransformation	Add Pete 765/345 kV autotransformer in Indiana	IN	IN	MEP	Shared		\$20,000,000	8/1/2018	Conceptual	765	345	Y
C	C	Central	IPL	2897	Petersburg - Frances Creek - Hanna 345 kV line rating upgrade	Increase line rating from 956 to 1195 MVA	IN	IN	BaseRel	Not Shared		\$1,000,000	6/1/2013	Proposed	345		Y
C	C	Central	IPL	2898	Hanna - Southeast 138 kV line rating upgrade	Increase line rating from 287 to 574 MVA. Remove operating guide # 2007-S-012-C Hanna-Southeast-138-IPL.	IN	IN	BaseRel	Not Shared		\$4,000,000	6/1/2015	Proposed	138		Y
C	C	Central	IPL	2899	Guion - Whitestown 345 kV line rating upgrade	Increase line rating from 956 to 1195 MVA	IN	IN	BaseRel	Not Shared		\$350,000	6/1/2013	Proposed	345		Y
C	C	Central	IPL	3857	MTEP11 TCFS Flowgate A Option 1	Upgrade Breed to Wheatland to Petersburg line rating from 956MVA to 1195MVA	IN	IN				\$1,500,000	1/1/2014	Proposed	345		Y
C	C	Central	IPL	3858	MTEP11 TCFS Flowgate A Option 2	Upgrade Breed to Wheatland to Petersburg line rating from 956MVA to 1195MVA, and close Wheatland tie breaker	IN	IN				\$1,500,000	1/1/2014	Proposed	345		Y
C	C	Central	IPL	3859	MTEP11 TCFS Flowgate A Option 3	Upgrade Breed to Wheatland to Petersburg line rating from 956MVA to 1386MVA	IN	IN				\$12,000,000	1/1/2014	Proposed	345		Y
C	C	Central	IPL	3860	MTEP11 TCFS Flowgate A Option 4	Upgrade Breed to Wheatland to Petersburg line rating from 956MVA to 1386MVA, and close Wheatland tie breaker	IN	IN				\$12,000,000	1/1/2014	Proposed	345		Y
C	C	Central	IPL	3861	MTEP11 TCFS Flowgate A Option 5	Upgrade Breed to Wheatland to Petersburg line rating from 956MVA to 1386MVA, Close Wheatland Tie Breaker; Tap Breed - Wheatland & Connect to Merom 345kV	IN	IN				\$26,000,000	1/1/2016	Proposed	345		Y
C	C	Central	IPL	3862	MTEP11 TCFS Flowgate A Option 6	Upgrade Breed to Wheatland to Petersburg line rating from 956MVA to 1386MVA, and close Wheatland tie breaker; Bloomington - Franklin Township - Hanna 345kV; Remove Stout - Hanna 345kV; Stout - Franklin Township 345kV	IN	IN				\$84,000,000	1/1/2016	Proposed	345		Y
C	C	Central	IPL	3863	MTEP11 TCFS Flowgate A Option 7	Build Meadow Lake to Sullivan 765kV line	IN	IN				\$375,000,000	1/1/2019	Proposed	765		Y
C	C	Central	IPL	3864	MTEP11 TCFS Flowgate A Option 9	Tap Rockport-Sullivan 765kV at Petersburg; add two 765/345kV Xfms at Petersburg; upgrade Petersburg 345/138/34.5 3-winding Xfmr to 560MVA	IN	IN				\$82,000,000	1/1/2019	Proposed	765	345	Y

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C	C	Central	IPL, HE	2901	Hanna - Bloomington 345 kV Line Economic Project Portfolio	Add a new 345 kV line from IPL Hanna - IPL Franklin Township - HE Bloomington Substation, Close the Duke Wheatland Substation Tie Breakers and Upgrade the rating of the 345 kV line from IPL Petersburg - Duke Wheatland - AEP Breed to 1386 MVA. Closing the Duke Wheatland bus tie breakers connects the IPL Petersburg-Duke Wheatland-AEP Breed line into the Duke Wheatland 345 kV substation.	IN	IN	MEP	Shared		\$70,900,000	1/1/2020	Proposed	345		Y
C	C	East	ITC	694	Saratoga Station	Saratoga 345/120 kV switching station	MI	MI					12/31/2018	Proposed	345	120	Y
C	C	East	ITC	908	Lulu Station	Tap the Majestic to Lemoyne and Milan to Allen Junction to Monroe 3-4 345 kV circuits into a new 345 kV Switching Station at the Lulu site. Project also adds three miles 345 kV double circuit tower from Monroe to cut the Lulu-Lemoyne circuit into Monroe, moving the Lemoyne 345 kV interconnection with First Energy to the Monroe 3-4 345 kV bus	MI	MI					6/1/2018	Proposed	345		Y
C	C	East	ITC	1012	Wayne - Newburgh Split	Establish new Wayne-Newburgh 120 kV circuit 3 using currently paralleled wire from existing Wayne-Newburgh circuit 2	MI	MI					6/1/2014	Proposed	120		Y
C	C	East	ITC	1382	Michigan 765 kV Backbone	Project constructs a 765 kV circuit from AEP's Cook station to a new 765 kV station at the Kenowa 345 kV (METC) station including one 765/345 kV transformer at Kenowa. A new 765 kV circuit from the Kenowa station to a new 765 kV station at the Denver location including a 765/138 kV transformer. A new 765 kV circuit from the Denver station to a new 765 kV station at the Sprague Creek location including a 765/345 kV transformer at Sprague Creek. A new 765 kV circuit from the Sprague Creek station to a new 765 kV station at the Bridgewater site including two 765/345 kV transformers. A new 765 kV circuit from Bridgewater to a new 765 kV station near the Indiana - Ohio border tapping the Dumont to Marysville 765 kV circuit. A new 765 kV circuit from the Bridgewater station to AEP's South Canton 765 kV station.	MI	IN, OH				\$2,500,000,000	12/31/2016	Proposed	765	138	Y
C	C	East	ITC	1550	Sunset to Hager Underground 120 kV Rebuild	Replace the 0.08 miles of underground 1500 KCM CU XLPE SSC 120 kV conductor from Sunset to Hager 120 kV with 2000 KCM CU XLPE 120 kV conductor. Also address clearance issues causing the sag limit on th 954 ACSR overhead conductor portion of this circuit.	MI	MI				\$650,000	6/1/2015	Proposed	120		Y
C	C	East	ITC	1854	Trenton Channel - Riverview 120kV	Install a new 120 kV circuit from Trenton Channel to Riverview utilizing the existing de-energized Trenton Channel to Jefferson circuit to get from Trenton Channel to Jefferson, or rebuild it if required, and then from Jefferson to Riverview either install a new 120 kV single circuit tower line or replace the existing double circuit towers with triple circuit towers. Also reconductor/rebuild Trenton Channel to Jefferson 120 kV #4 circuit (3.53 miles).	MI	MI					6/1/2016	Proposed	120		Y
C	C	East	ITC	1858	Wayne 345 kV Overloaded S.E. Replacement	Replace various pieces of station equipment that are overloaded at Wayne station under normal conditions and for various contingencies.	MI	MI					6/1/2013	Proposed	345		Y
C	C	East	ITC	2205	MTEP08 Reference Future EHV Overlay - Evans to Spreague	Build 765 kV circuit from Evans Station to Spreague Station in Michigan	MI	MI				\$304,000,000	8/1/2018	Conceptual	765		Y

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C	C	East	ITC	2206	MTEP08 Reference Future EHV Overlay - Spreague to Bridgewater	Build 765 kV circuit from Spreague Station to Bridgewater Station in Michigan	MI	MI				\$135,000,000	8/1/2018	Conceptual	765	345	Y
C	C	East	ITC	3129	Belle River - Bunce Creek 230 kV	Construct a new 230 kV line between Belle River and Bunce Creek substations. This project includes a 345/230 kV transformer at Belle River and 230/120 kV transformer at Bunce Creek (13.5 miles total).	MI	MI					6/1/2017	Proposed	345	230	Y
C	C	East	ITC	3130	Thumb Area 120 kV Capacitors	Install a 50 MVAR capacitor at the Stratford and Wabash 120 kV stations.	MI	MI					6/1/2013	Proposed	120		Y
C	C	East	ITC	3140	Belle River - St. Clair #2 345 kV	Build a second 345 kV circuit from Belle River to St. Clair (1.12 miles total).	MI	MI					6/1/2017	Proposed	345		Y
C	C	East	ITC	3141	Redrun - Chestnut #2 120 kV & L-N-NW - Lincoln 120 kV	Build a new 120 kV line between Redrun and Chestnut (5 miles total)	MI	MI					6/1/2014	Proposed	120		Y
C	C	East	ITC	3142	L-N-NW - Lincoln 120 kV	Rebuild 2.95 miles of 477 ACSR to 954 ACSR on the L-N-NW - Lincoln 120 kV line	MI	MI					6/1/2016	Proposed	120		Y
C	C	East	ITC	3143	Northwest - Southfield 120 kV	Rebuild 0.13 mile of 477 ACSR to 1431 ACSR and replace the line entrance at Northwest substation.	MI	MI					6/1/2019	Proposed	120		Y
C	C	East	ITC	3147	Phoenix 120 kV Capacitor	Install a 75 MVAR 120 kV capacitor at Phoenix.	MI	MI					6/1/2013	Proposed	120		Y
C	C	East	ITC	3148	Riverview - I-N-RV 120 kV	Replace wavetrap at Riverview.	MI	MI					6/1/2013	Proposed	120		Y
C	C	East	ITC	3930	Bloomfield to Auburn Heights 120 kV Rebuild	Replace 3 miles of 6-wired 3/0 CU conductor with 1431 ACSR on one side of 230 kV double circuit towers	MI	MI					6/1/2017	Proposed	120		Y
C	C	East	ITC	3931	Belle River to St. Clair 345 kV Reconductor	Reconductor Belle River to St. Clair 345 kV circuits (about 1.1 miles) utilizing bundled 1431 ACSR conductor. Project combined with St. Clair to Jewell cut into Belle River in Thumb area.	MI	MI					12/31/2018	Proposed	345		Y
C	C	East	ITC	3934	Bunce to Axle 120 kV Rebuild	Rebuild about 0.2 miles of 954 ACSR and about 0.6 miles of 250 CU with 1431 ACSR on 230 kV towers and replace 1200 amp wave trap and 954 ACSR line entrance at Axle. Rebuild about 0.2 miles of 795 ACSR and about 3.3 miles of 250 CU with 1431 ACSR on 230 kV towers replace 1200 amp wave trap and 954 ACSR line entrance at Bunce.	MI	MI					6/1/2019	Proposed	120		Y
C	C	East	ITC	3935	St. Clair to Axle 120 kV Rebuild	Rebuild about 7.7 miles of existing 795 ACSR and 954 ACSR to 1431 ACSR on 230 kV structures and replace station equipment at St. Clair and Axle.	MI	MI					6/1/2019	Proposed	120		Y
C	C	East	ITC	3936	Bunce to St. Clair 120 kV Rebuild	Reconductor/rebuild about 5.6 miles of 795 ACSR conductor on the Bunce Creek to Mohican section and replace station equipment. Reconductor/rebuild about 4.3 miles of 795 ACSR conductor on the Mohican to St. Clair section and replace station equipment.	MI	MI					6/1/2019	Proposed	120		Y
C	C	East	ITC	3937	Jewel to St. Clair tap into Belle River 345 kV	Tap the existing Jewell to St. Clair 345 kV circuit into the Belle River station.	MI	MI					6/1/2018	Proposed	345		Y
C	C	East	ITC	3938	Greenwood 54 MVar 120 kV capacitor	Install a 54 MVar capacitor at Greenwood 120 kV	MI	MI					6/1/2015	Proposed	120		Y
C	C	East	ITC	3939	DIG M to Navarre 230 kV	Rebuild the DIG M to Navarre 230 kV end (-1.2 miles) of the DIG M to Navarre to Waterman 230 kV circuit.	MI	MI					6/1/2016	Proposed	230		Y
C	C	East	ITC	3940	Caniff to Mack 2 120 kV	Construct a second 120 kV cable between Caniff and Mack (4.9 miles total).	MI	MI					6/1/2016	Proposed	120		Y
C	C	East	ITC	3941	Waterman 120 kV section breaker 3-4	Increase the CT ratio on the Waterman 120 kV section breaker 3-4.	MI	MI					12/31/2015	Proposed	120		Y
C	C	East	ITC	3942	Monroe 345/120 kV Transformer #304	Replace the 345/120 kV Transformer #304 at Monroe.	MI	MI					6/1/2019	Proposed	345	120	Y
C	C	East	ITC	3946	Custer to Monroe 120 kV	Rebuild Custer to North Star 120 kV (~2.7 miles). Rebuild North Star to Monroe 120 kV (~0.2 miles).	MI	MI					6/1/2019	Proposed	120		Y
C	C	East	ITC	3947	ITC Disconnect Switch Replacement Program	Replace problematic Pennsylvania Type A6A-2, EEE, RI&E, WESTINGHOUSE, HK-PORTER, AND DELTA-STAR disconnect switches (or any disconnect switches with problematic auxiliary latch assemblies)	MI	MI				\$750,000	12/31/2015	Proposed			Y

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C	C	East	ITC, Non-MISO	2204	MTEP08 Reference Future EHV Overlay - Cook to Evans	Build 765 kV circuit from Cook Station to Evans Station in Michigan	MI	MI				\$319,000,000	8/1/2018	Conceptual	765	345	Y
C	C	East	ITC, Non-MISO	2207	MTEP08 Reference Future EHV Overlay - Bridgewater to Blue Creek	Build 765 kV circuit from Bridgewater Station in Michigan to Blue Creek Station in Indiana (1% in Indiana, 26% in OH, 73% in MI)	MI	MI				\$447,000,000	8/1/2018	Conceptual	765	345	Y
C	C	East	ITC, Non-MISO	2209	MTEP08 Reference Future EHV Overlay - Bridgewater to South Canton	Build 765 kV circuit from Bridgewater Station in Michigan to South Canton Station in Ohio	MI	OH				\$538,000,000	8/1/2018	Conceptual	765		Y
C	C	West	ITCM	1738	Bertram-Hills 161 kV Reconductor	Reconductor 33 miles of 161 kV from Bertram to new Rose Hollow to Hills	IA	IA	BaseRel	Shared		\$22,540,000	12/31/2017	Proposed	161		Y
C	C	West	ITCM	1742	Split Rock-Heron Lake 161 kV Rebuild	Rebuild from Split Rock-Magnolia-Elk-Heron Lake 161 kV line.	MN	MN	BaseRel	Shared		\$33,404,000	12/31/2016	Proposed	161		Y
C	C	West	ITCM	2830	Lakefield Jct. - Rutland 345 kV	Build a new 345 kV station at Rutland and add a new 345/161 kV transformer. Build a new 345 kV circuit from Lakefield Jct station to Rutland 345 kV station.	MN	MN	BaseRel	Shared		\$98,500,000	1/1/2014	Proposed	345	161	Y
C	C	West	ITCM	3086	8th Street-Kerper-Lore 161 kV Rebuild	Rebuild the Dubuque area 8th Street-Kerper-Lore 161 kV line.	IA	IA	BaseRel	Shared		\$7,056,500	12/31/2014	Proposed	161		Y
C	C	West	ITCM	3087	Lansing-Harmony 161 kV Rebuild	Rebuild portion of the line in IA due to structure condition.	IA	IA	Other	Not Shared		\$30,000,000	12/31/2016	Proposed	161		Y
C	C	West	ITCM	3828	Lore-Turkey River-Stoneman 161kV Rebuild	Rebuild the Lore-Turkey River-Stoneman 161kV line to 446 MVA. Only the ITC owned portion of the Turkey River-Stoneman line will be rebuilt. This portion stops at the river crossing.	IA	IA	BaseRel	Shared		\$21,000,000	12/31/2016	Proposed	161		Y
C	C	West	ITCM	3829	E Ave-Stoney Point 69kV line Rebuild	Rebuild the E Ave-Stoney Point 69kV line.	IA	IA	BaseRel	Not Shared		\$576,000	12/31/2015	Proposed	69		Y
C	C	West	ITCM	3830	Green Street 69kV Terminal Upgrades	Upgrade the Green Street 69 kV terminal equipment to the conductor rating.	IA	IA	BaseRel	Not Shared		\$72,000	12/31/2015	Proposed	69		Y
C	C	West	ITCM	3972	Winnebago 161-69kV 75 MVA Transformer	Upgrade the Winnebago 161-69kV transformer to 75MVA. Move the Dubuque 8th Street TRF to Winnebago.	MN	MN				\$300,000	5/31/2014	Proposed	161	69	Y
C	C	West	ITCM	3973	Rock Creek-Dewitt 161kV Uprate	Raise structures to remove the sag limits on the 161kV Rock Creek-Dewitt line.	IA	IA				\$500,000	12/31/2020	Proposed	161		Y
C	C	West	ITCM	3974	Grand Mound 69kV 10MVAR Cap	Add a 10 MVAR 69kV capacitor bank at the Grand Mound substation.	IA	IA				\$500,000	12/31/2016	Proposed	69	69	Y
C	C	West	ITCM	3975	Triboji 161-69kV 150 MVA Transformer	Upgrade the Triboji 161-69kV transformer to 150MVA.	IA	IA				\$3,000,000	5/31/2014	Proposed	161	69	Y
C	C	West	ITCM	3976	Rock Creek 161-69kV 150 MVA Transformer	Upgrade the Rock Creek 161-69kV transformer to 150MVA.	IA	IA				\$3,000,000	12/31/2020	Proposed	161	69	Y
C	C	West	ITCM	3977	Decorah-Canoe Tap terminal equipment	Upgrade relays and CT limits at Decorah	IA	IA				\$50,000	12/31/2016	Proposed	69	69	Y
C	C	West	ITCM	3978	Hazleton 161-69kV Terminal Equipment	Upgrade terminal limits on both Hazleton 161-69kV transformers to be transformer limited at 75MVA.	IA	IA				\$200,000	12/31/2016	Proposed	161	69	Y
C	C	West	ITCM	3979	Hayward-Glenworth 69kV Terminal Equipment	Upgrade Hayward terminal equipment to the conductor limit of 86MVA.	MN	MN				\$150,000	12/31/2020	Proposed	69	69	Y
C	C	West	ITCM	3980	Hayward-County Line 69kV Rebuild	Rebuild the Hayward-County Line 69kV line to T2-4/0.	MN	MN				\$6,000,000	12/31/2020	Proposed	69	69	Y
C	C	West	ITCM	3981	Ellendale-West Owatonna 69kV Rebuild	Rebuild the Ellendale-Pratt Tap-West Owatonna 69kV line to T2-4/0.	MN	MN				\$5,300,000	12/31/2016	Proposed	69	69	Y
C	C	West	ITCM	3982	Wapello Sub Upgrades	Convert the Wapello 161kV ring bus to a breaker and a half design and upgrade both Wapello 161-69kV transformers to 200 MVA.	IA	IA				\$11,000,000	12/31/2016	Proposed	161	69	Y
C	C	West, Central, East	ITCM, AmerenIL	2785	Northwest Iowa (New Substation)-Sorenson HVDC	Build new +/- 800 kV bi-pole HVDC line from a new Northwest Iowa substation to the existing Sorenson substation. The project will be capable of transferring approximately 1,500 MW independently or up to 7,900 MW coupled with the complimentary project (ProjID 2794). The project(s) also envision a regional collector system that will be vetted through the RGOS stakeholder process.	IA	IN				\$1,900,500,000	5/1/2014	Proposed	800		Y

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C	C	Central	ITCM, Non MISO	2198	MTEP08 Reference Future EHV Overlay - Rockcreek to Pontiac	Builds 765 kV circuit from Rock Creek Station in Iowa to Pontiac Station in Illinois	IA	IL				\$378,000,000	8/1/2018	Conceptual	765	345	Y
C	C	West	ITCM, XEL	2223	MTEP08 Reference Future EHV Overlay - Lakefield to Adams	Build 345 kV double circuit line from Lakefield to Adams Station in Minnesota	MN	MN				\$334,000,000	8/1/2018	Conceptual	345	161	Y
C	C	West	MDU	3082	NW Bismarck Ring Bus	Install 115kV ring bus at the NW Bismarck substation	ND	ND				\$3,050,000	6/1/2014	Planned	115		Y
C	C	West	MDU	3084	East Bismarck Bus Split	Install 115 kV Bus Tie breaker and 2nd 115 kV WAPA Tie	ND	ND				\$2,500,000	12/1/2015	Proposed	115		Y
C	C	West	MDU	3456	Glenham transformer replacement	Replace the smaller Glenham transformer and rebuild Glenham 230 kV bus into a ring configuration	SD	SD				\$7,000,000	6/1/2016	Planned	230	115	Y
C	C	West	MDU, NON-MISO	2214	MTEP08 Reference Future EHV Overlay - Glenham to Ellendale	Build 345 kV circuit from Glenham in South Dakota to Ellendale in North Dakota	SD	ND				\$47,000,000	8/1/2018	Conceptual	345	230	Y
C	C	West	MEC	2939	Raun-Sioux City 345 kV Line	Construct a 23 mile 345 kV line between the Raun and Sioux City Substations	IA	IA	BaseRel	Shared		\$28,400,000	6/1/2021	Proposed	345		Y
C	C	West	MEC	2943	Hills 2nd 345-161 kV Transformer	Install 2nd 560 MVA 345-161 kV transformer at Hills Substation. Expand 345 and 161 kV ring busses to accommodate new transformer.	IA	IA	BaseRel	TBD		\$12,000,000	6/1/2023	Conceptual	345	161	Y
C	C	West	MEC	2944	Hills - Sub E 161 kV Line Reconnector	Reconnector the Hills - Sub E Iowa City 161 kV line.	IA	IA	BaseRel	TBD		\$1,800,000	6/1/2022	Conceptual	161		Y
C	C	West	MEC	2945	Grimes Sub Add 2nd 345-161 kV Transformer	Add a second transformer at the Grimes Substation and expand the 345 and 161 kV ring busses by one breaker.	IA	IA	BaseRel			\$11,900,000	6/1/2019	Conceptual	345	161	Y
C	C	West	MEC	2946	Reconnector Greenfield Plaza-Army Post-Ashawa 161 kV line.	Reconnector the Greenfield Plaza-Army Post-Ashawa 161 kV line.	IA	IA	BaseRel	TBD		\$2,200,000	6/1/2018	Proposed	161		Y
C	C	West	MEC	2948	West Waukee 161-13 kV Substation	Construct the West Waukee Substation. The Substation will tap (non-breakered in and out) a new 161 kV line from the Booneville Substation to the	IA	IA	Other	Not Shared	Distribution	\$10,650,000	6/1/2018	Proposed	161	13.2	Y
C	C	West	MEC	2949	West Waukee 161-69 kV Transformer	Add a 161-69 kV transformer and 161 kV circuit breakers at the West Waukee Substation.	IA	IA	Other	Not Shared	Reliability	\$3,100,000	6/1/2020	Conceptual	161	69	Y
C	C	West	MEC	2951	Boston 161-13 kV Substation	Contract the Boston Substation by tapping (non-breakered in and out) the Sycamore-Forest & Vermont 161 kV line.	IA	IA	Other	Not Shared		\$2,000,000	6/1/2018	Conceptual	161	13	Y
C	C	West	MEC	2952	East Altoona 161-13 kV Substation	Construct the East Altoona Substation	IA	IA	Other	Not Shared		\$11,340,000	6/1/2016	Conceptual	161	13	Y
C	C	West	MEC	2953	Page County 345-161 kV Substation	Construct a 345-161 kV Substation that taps the Atchison County-Booneville 345 kV line and the Clarinda-Hastings 161 kV line. The substation will consist of a three (3) breaker 345 kV ring bus, a three (3) breaker 161 kV ring bus, and a 345-161 kV autotransformer. Reconnector the Page County-Clarinda 161 kV line.	IA	IA	Other	Not Shared	Distribution	\$18,600,000	6/1/2022	Conceptual	345	161	Y
C	C	West	MEC	2954	Clarinda 161 kV Capacitor	Install a 50 MVAR, 161 kV capacitor at the Clarinda Substation	IA	IA	BaseRel	TBD		\$1,000,000	6/1/2023	Proposed	161		Y
C	C	West	MEC	3216	Plymouth-Sioux City 161 kV Line	Construct a 2 mile 161 kV line between the Plymouth and Sioux City Substations and associated substation equipment additions.	IA	IA	BaseRel	Not Shared		\$2,400,000	6/1/2014	Planned	161		Y
C	C	West	MEC	3217	Kewanee - Scott County 765 kV Line	Construct 765 kV line from new Kewanee 765 kV bus to Scott County Substation and associated substation equipment additions.	IA	IL				\$193,000,000	12/31/2019	Proposed	765		Y
C	C	West	MEC	3219	Kewanee - Louisa 765 kV Line	Construct 765 kV line from Kewanee to Louisa and associated substation equipment additions.	IA	IL				\$283,000,000	12/31/2019	Proposed	765	345	Y
C	C	West	MEC	3224	Woodbury County (Raun) - Hoskins 345 kV Lines	Construct double circuit 345 kV line from either Raun or new substation in Woodbury County to Hoskins Substation and associated substation equipment additions.	IA	NE				\$167,000,000	12/31/2019	Proposed	345		Y

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C	C	West	MEC	3225	Woodbury County (Raun) - Broadland 345 kV Lines	Construct double circuit 345 kV line from either Raun or new substation in Woodbury County to Broadland Substation and associated substation equipment additions.	IA	SD				\$591,000,000	12/31/2019	Proposed	345		Y
C	C	West	MEC	3226	Pocahontas Co. - Woodbury County (Raun) 765 kV Line	Construct 765 kV line from new Pocahontas County Substation to either Raun Substation or new substation in Woodbury County and associated substation equipment additions.	IA	IA				\$296,000,000	12/31/2024	Proposed	765	345	Y
C	C	West	MEC	3227	Pocahontas Co. - Hoskins 765 kV Line	Construct 765 kV line from new Pocahontas County Substation to Hoskins Substation and associated substation equipment additions.	IA	NE				\$461,000,000	12/31/2024	Proposed	765		Y
C	C	West	MEC	3229	Pocahontas Co. - Osceola Co. 765 kV Line	Construct 765 kV line from new Pocahontas County Substation to new Osceola County 765 kV substation and associated substation equipment additions.	IA	IA				\$220,000,000	12/31/2029	Proposed	765	345	Y
C	C	West	MEC	3230	Osceola Co. - Chanarambie 765 kV Line	Construct 765 kV line from new Osceola County substation to new Chanarambie substation and associated substation equipment additions.	IA	MN				\$366,000,000	12/31/2029	Proposed	765		Y
C	C	West	MEC	3231	Pocahontas Co. - Adair Co. 765 kV Line	Construct 765 kV line from new Pocahontas County Substation to new Adair County Substation and associated substation equipment additions.	IA	IA				\$499,000,000	12/31/2029	Proposed	765	345	Y
C	C	West	MEC	3232	Adair Co. - St. Joseph 765 kV Line	Construct 765 kV line from new Adair County Substation to St. Joseph Substation and associated substation equipment additions.	IA	MO				\$407,000,000	12/31/2029	Proposed	765		Y
C	C	West	MEC	3233	Adair Co. - Hills 765 kV Line	Construct 765 kV line from new Adair County Substation to Hills Substation and associated substation equipment additions.	IA	IA				\$691,000,000	12/31/2029	Proposed	765		Y
C	C	West	MEC	3234	Hills - Kincaid 765 kV Line	Construct 765 kV line from Hills to Kincaid Substation and associated substation equipment additions.	IA	IL				\$745,000,000	12/31/2029	Proposed	765		Y
C	C	West	MEC	3237	Avoca-Page County-Maryville 345 kV line	Construct a new 345 kV line from Avoca-Page County-Maryville with 161 kV underbuild and associated substation equipment additions.	IA	MO	BaseRel	TBD		\$203,000,000	6/1/2020	Conceptual	345	161	Y
C	C	West	MEC	3238	CBEC-S3456 345 kV Line	Construct second 345 kV line from CBEC-OPPD's 3456 Sub and associated substation equipment additions.	IA	NE	BaseRel	TBD		\$29,100,000	6/1/2019	Conceptual	345		Y
C	C	West	MEC	3239	Bunge-Hastings-Page County 161 kV Rebuild	Rebuild 161 kV Line from Bunge-Hastings and associated substation equipment additions.	IA	IA	BaseRel	TBD		\$29,100,000	12/1/2018	Conceptual	161		Y
C	C	West	MEC	3240	Denison-Avoca 161 kV Line	New 161 kV line from Denison-Avoca and associated substation equipment additions.	IA	IA	BaseRel	TBD		\$20,900,000	6/1/2020	Conceptual	161		Y
C	C	West	MEC	3241	CBEC-Sub 701 161 kV Line	Construct a 161 kV line from CBEC-Sub 701 and associated substation equipment additions.	IA	IA	BaseRel	TBD		\$4,600,000	6/1/2018	Conceptual	161		Y
C	C	West	MEC	3242	Quick-Sub 701 161 kV Line	Construct a 161 kV line from Quick to Sub 701 and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$7,700,000	6/1/2018	Conceptual	161		Y
C	C	West	MEC	3243	Quick-Avoca 161 kV line	Construct a 161 kV line from Quick to Avoca and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$11,700,000	6/1/2016	Conceptual	161		Y
C	C	West	MEC	3246	Webster South-Lehigh 161 kV line	Construct new 161 kV line between future 161 kV terminals at the Lehigh Substation and Webster South switching station and associated substation equipment additions.	IA	IA	BaseRel	Not Shared		\$3,500,000	6/1/2016	Conceptual	161		Y
C	C	West	MEC	3247	Lehigh 345-161 kV Transformer	Install a 345-161 kV transformer at the Lehigh Substation	IA	IA	BaseRel	TBD		\$7,500,000	6/1/2016	Conceptual	345	161	Y
C	C	West	MEC	3250	West Grand-88th St 161 kV Line	West Grand-88th St 161 kV Line and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$1,800,000	6/1/2018	Conceptual	161		Y
C	C	West	MEC	3251	Army Post-West Grand 161 kV Line	Army Post-West Grand 161 kV Line and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$4,400,000	6/1/2018	Conceptual	161		Y
C	C	West	MEC	3252	Norwalk-Scotch Ridge 161 kV Line	Norwalk-Scotch Ridge 161 kV Line and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$7,100,000	6/1/2020	Conceptual	161	13.2	Y

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C	C	West	MEC	3253	Scotch Ridge-Avon Lake 161 kV Line	Scotch Ridge-Avon Lake 161 kV Line and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$5,700,000	6/1/2020	Conceptual	161	13.2	Y
C	C	West	MEC	3254	Avon Lake-DPS 161 kV Line or SE Polk	Avon Lake-DPS 161 kV Line or SE Polk and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$1,400,000	6/1/2020	Conceptual	161		Y
C	C	West	MEC	3255	Sub 91 - Cordova 345 kV Line	345 kV line from Cordova - Sub 91, convert Sub 91 345 to ring bus and associated substation equipment additions.	IA	IL	BaseRel	TBD		\$23,400,000	6/1/2015	Conceptual	345		Y
C	C	West	MEC	3256	Sub 39 - Cordova 345 kV ckt 2	2nd 345 kV line from Sub 39 to Cordova and associated substation equipment additions.	IL	IL	BaseRel	TBD		\$20,800,000	6/1/2015	Conceptual	345		Y
C	C	West	MEC	3257	Eagle - LeMars - Spencer - Sioux County 161 kV Lines	Eagle - LeMars - Spencer - Sioux County 161 kV Line and associated substation equipment additions.	IA	IA	BaseRel	TBD		\$54,100,000	6/1/2016	Conceptual	161		Y
C	C	West	MEC	3258	Little Sioux-Monona 161 kV line	Little Sioux-Monona 161 kV line and associated substation equipment additions.	IA	IA	BaseRel	TBD		\$18,700,000	6/1/2020	Conceptual	161		Y
C	C	West	MEC	3259	Carroll-Denison 161 kV line	New Carroll County-Denison 161 kV line and associated substation equipment additions.	IA	IA	BaseRel	TBD		\$16,500,000	6/1/2020	Conceptual	161		Y
C	C	West	MEC	3260	Odebolt-Carroll 345 kV line	New Odebolt-Carroll County 345 kV line with 161 kV underbuild and associated substation equipment additions.	IA	IA				\$57,000,000	6/1/2020	Conceptual	345		Y
C	C	West	MEC	3261	Obrien Co.-Odebolt 345 kV line	Obrien County-Buena Vista-Sac-Odebolt 345 kV line with 161 kV underbuild and associated substation equipment additions.	IA	IA				\$168,300,000	6/1/2020	Conceptual	345		Y
C	C	West	MEC	3267	NW Sioux City 230-69 kV Substation	Add 230-69 kV sub and associated 230 kV and 69 kV ties and associated substation equipment additions.	IA	IA	Other	Shared	Reliability	\$10,500,000	6/1/2016	Conceptual	230	69	Y
C	C	West	MEC	3371	Hills-Parnell 161 kV Line Upgrade	Upgrade the Hills-Parnell 161 kV line	IA	IA	BaseRel	Not Shared		\$90,000	12/31/2014	Proposed	161		Y
C	C	West	MEC	3372	Parnell-Poweshiek 161 kV Line Upgrade	Upgrade the Parnell-Poweshiek 161 kV line	IA	IA	BaseRel	Not Shared		\$540,000	12/31/2014	Proposed	161		Y
C	C	West	MEC	3478	Webster-Black Hawk-Hazleton 161 kV Rebuild	Rebuild approx. 115 miles of existing 161 kV line from Webster to Black Hawk to Hazleton to increase	IA	IA	BaseRel	Shared		\$23,680,000	12/31/2018	Planned	161		Y
C	C	West	MEC	3722	Sub 77: Second 161-13 kV xfmr	Install a second 33 MVA 161-13 kV transformer and add two 161 kV circuit breakers at existing substation	IA	IA	Other	Not Shared	Distribution	\$680,000	6/1/2021	Proposed	161		Y
C	C	West	MEC	3725	Louisa-Adair County 765 kV Line	New Louisa to Adair County 765 kV line	IA	IA				\$528,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3726	Louisa-Blackhawk 765 kV Line	New 765 kV line from Louisa to Blackhawk	IA	IA				\$450,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3727	Webster-Franklin 345 kV line	New 345 kV line from Webster to Franklin	IA	IA				\$121,600,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3729	Lehigh-Adair County 756 kV line	New 765 kV line from Lehigh to Adair County	IA	IA				\$332,000,000	12/31/2022	Conceptual	765	345	Y
C	C	West	MEC	3730	Adams-Black Hawk 765 kV line	New 765 kV line from Adams to Black Hawk	MN	IA				\$222,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3731	Scott County-Black Hawk 765 kV line	New 765 kV line from Scott County to Black hawk	IA	MN				\$658,000,000	12/31/2022	Conceptual	765	345	Y
C	C	West	MEC	3732	Hills-Black Hawk 765 kV line	New 765 kV line from Hills to Black Hawk	IA	IA				\$325,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3733	Pocahontas-Lehigh 756 kV line	New 765 kV line from Pocahontas to Lehigh	IA	IA				\$128,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3734	Pocahontas-Adair County 765 kV line	New 765 kV line from Pocahontas to Adair County	IA	IA				\$309,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3735	Pocahontas-Black Hawk 765 kV line	New 765 kV line from Pocahontas to Black Hawk	IA	IA				\$331,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3736	Adair-Council Bluffs 765 kV line	New 765 kV line from Adair to Council Bluffs	IA	IA				\$203,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3737	Woodbury-Council Bluffs 765 kV line	New 765 kV line from Woodbury to Council Bluffs	IA	IA				\$298,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3738	Scott County-Byron 765 kV line	New 765 kV line from Scott County to Byron	IA	IL				\$190,000,000	12/31/2022	Conceptual	765		Y
C	C	West	MEC	3739	Broadland-Woodbury County 500 kV line	New 500 kV line from Broadland to Woodbury County	IA	SD				\$511,000,000	12/31/2022	Conceptual	500	345	Y
C	C	West	MEC	3740	Broadland-Woodbury County 765 kV line	New 765 kV line from Broadland to Woodbury County	IA	SD				\$602,000,000	12/31/2022	Conceptual	765	345	Y
C	C	West	MEC	3741	Adams-Black Hawk 345 kV line	New 345 kV line from Adams to Black Hawk	IA	IA				\$136,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3742	Black Hawk-Hills 345 kV line	New 345 kV line from Black Hawk to Hills	IA	IA				\$195,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3743	Black Hawk-Montezuma 345 kV line	New 345 kV line from Black Hawk to Montezuma	IA	IA				\$132,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3744	Woodbury County-York Center 345 kV line	New 345 kV line from Woodbury County to York Center	IA	IA				\$170,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3745	Marshalltown-Montezuma 345 kV line	New 345 kV line from Marshalltown to Montezuma	IA	IA				\$72,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3746	Tiffin-Hills 345 kV line #2	New second 345 kV line from Tiffin to Hills	IA	IA	BaseRel	TBD		\$37,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3747	Ottumwa-Norwalk 345 kV line	New 345 kV line from Ottumwa to Norwalk	IA	IA				\$137,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3748	Ottumwa-Mt. Pleasant 345 kV line	New 345 kV line from Ottumwa to Mt. Pleasant	IA	IA				\$88,100,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3749	York Center-Ft. Calhoun 345 kV line	New 345 kV line from York Center-Ft. Calhoun	IA	IA				\$81,600,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3750	Carroll-Adair County 345 kV line	New 345 kV line from Carroll to Adair County	IA	IA				\$101,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3751	Adair-Page County 345 kV line	New 345 kV line from Adair County to Page County	IA	IA				\$114,000,000	12/31/2022	Conceptual	345		Y

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C	C	West	MEC	3752	Union Tap-Electrifarm 345 kV line	New 345 kV line from Union Tap to Electrifarm	IA	IA	BaseRel	TBD		\$53,100,000	12/31/2022	Conceptual	345	161	Y
C	C	West	MEC	3753	Electrifarm-Independence 345 kV line	New 345 kV line from Electrifarm to Independence	IA	IA	BaseRel	TBD		\$56,600,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3754	Sub 56 - Oak Grove 345 kV line	New 345 kV line from Sub 56 to Oak Grove	IA	IA	BaseRel	TBD		\$49,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3755	Marshalltown-Carroll 345 kV line	New 345 kV line from Marshalltown to Carroll	IA	IA				\$182,000,000	12/31/2022	Conceptual	345		Y
C	C	West	MEC	3793	Rock Island Clean Line	3,500MW capacity +/-600kV HVDC transmission line from MEC's Raun 345kV to ComEd's Collins 765kV	IA	IL					6/1/2016	Conceptual	600		Y
C	C	West	MEC	3822	Louisa-Lehigh 765 kV	Construct 765 kV line from Louisa to Lehigh and associated substation equipment additions.	IA	IA				\$683,000,000	12/31/2019	Proposed	765		Y
C	C	West	MEC, ALTW	2193	MTEP08 Reference Future EHV Overlay - Lehigh to Toledo	Builds 765 kV circuit from Lehigh Station to Toledo Station in Iowa	IA	IA				\$313,000,000	8/1/2018	Conceptual	765		Y
C	C	Central	MEC, AmerenMo	2194	MTEP08 Reference Future EHV Overlay - Toledo to Montgomery	Builds 765 kV circuit from Toledo Station in Iowa to Montgomery Station in Missouri	IA	MO				\$871,000,000	6/1/2020	Conceptual	765		Y
C	C	West	MEC, ITCM	2950	Polk City 161-13 kV Substation	Construct the Polk City Substation. The Substation will tap the ITC Midwest 161 kV line from Bittersweet Road to NE Ankeny with in and out breakered line terminals.	IA	IA	Other	Not Shared	Distribution	\$1,500,000	6/1/2018	Conceptual	161	13.2	Y
C	C	West	MEC, ITCM	3218	Scott County - Hazleton 765 kV Line	Construct 765 kV line from Scott County to Hazleton Substation and associated substation equipment additions.	IA	IA				\$459,000,000	12/31/2019	Proposed	765	345	Y
C	C	West	MEC, ITCM	3220	Louisa-Hazleton 765 kV	Construct 765 kV line from Louisa to Hazleton and associated substation equipment additions.	IA	IA				\$257,000,000	12/31/2019	Proposed	765		Y
C	C	West	MEC, ITCM	3221	Hazleton - Pocahontas Co. 765 kV Line	Construct 765 kV line from Hazleton to new Pocahontas County Substation and associated substation equipment additions.	IA	IA				\$837,000,000	12/31/2019	Proposed	765	345	Y
C	C	West	MEC, ITCM	3222	Hills - Hazleton 345 kV Line	Construct 345 kV line from Hills to Hazleton Substation and associated substation equipment additions.	IA	IA				\$83,000,000	12/31/2019	Proposed	345		Y
C	C	West	MEC, ITCM	3223	Hazleton - Adams 345 kV Lines	Construct double circuit 345 kV line from Hazleton to Adams Substation and associated substation equipment additions.	IA	MN				\$227,000,000	12/31/2019	Proposed	345		Y
C	C	West	MEC, ITCM	3228	Hills - Hazleton 765 kV Line	Construct 765 kV line from Hills to Hazleton Substation and associated substation equipment additions.	IA	IA				\$215,000,000	12/31/2024	Proposed	765	345	Y
C	C	West	MEC, ITCM	3235	Osceola Co. - Lakefield Jct. 765 kV Line	Construct 765 kV line from new Osceola County Substation to Lakefield Jct. Substation and associated substation equipment additions.	IA	MN				\$230,000,000	12/31/2029	Proposed	765		Y
C	C	West	MEC, ITCM	3236	Hazleton - Adams 765 kV Line	Construct 765 kV line from Hazleton to Adams Substation and associated substation equipment additions.	IA	MN				\$312,000,000	12/31/2029	Proposed	765		Y
C	C	West	MEC, ITCM	3244	OGS-Pleasant Corner-Beacon-Pella-Reasnor 161 kV Line	Construct a new 161 kV line from OGS-Pleasant Corner-Beacon-Pella-Reasnor with 69 kV underbuild and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$38,650,000	6/1/2017	Conceptual	161		Y
C	C	West	MEC, ITCM	3245	Lucas County-Knoxville-Pella-Reasnor 161 kV Line	Construct a 161 kV line from Lucas County-Knoxville-Pella-Reasnor and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$34,100,000	6/1/2017	Conceptual	161		Y
C	C	West	MEC, ITCM	3248	SE 80th Street - East Altoona 161 kV Line	New 161 kV line from new SE 80th Street Switching Station on DPS-Reasnor line to East Altoona and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$6,500,000	6/1/2016	Conceptual	161		Y
C	C	West	MEC, ITCM	3249	East Altoona-Bondurant 161 kV line	New 161 kV line from East Altoona to Bondurant Substation and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$7,800,000	6/1/2016	Conceptual	161		Y
C	C	West	MEC, ITCM	3262	Odebolt-Adair 345 kV line	Odebolt-Grand Junction-Adair 345 kV line and associated substation equipment additions.	IA	IA				\$204,100,000	6/1/2020	Conceptual	345		Y
C	C	West	MEC, ITCM	3263	Adair-Sub T 345 kV line	Adair-Ottumwa-Sub T 345 kV line and associated substation equipment additions	IA	IA				\$244,000,000	6/1/2020	Conceptual	345		Y
C	C	West	MEC, ITCM	3264	S.E. Polk - Ottumwa 161 kV Line	New S.E. Polk-Ottumwa 161 kV line and associated substation equipment additions.	IA	IA	Other	Not Shared	Distribution	\$40,000,000	6/1/2020	Conceptual	161		Y

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C	C	West	MEC, ITCM	3265	Carroll-Adair 161 kV line	New Carroll County-Grand Junction-Adair 161 kV line and associated substation equipment additions.	IA	IA				\$60,500,000	6/1/2020	Conceptual	161		Y
C	C	West	MEC, ITCM, non-MISO	3672	DATC Project 4-tree: Iowa Wind Tree 345kV project	Five new 345kV branches in Audubon Co, IA and 3 new connections to the existing 161kV	IA	IA				\$646,100,000	12/31/2018	Conceptual	345	161	Y
C	C	East	METC	642	Argenta - Hazelwood(Sag) 138 ckt # 1	Remediate the Sag limits on the Argenta - Morrow 138kV circuit	MI	MI				\$50,000	6/1/2017	Proposed	138		Y
C	C	East	METC	987	Emmet - Stover 138 kV Line	Build 30 miles new 138 kV line, 795 ACSS	MI	MI				\$10,250,000	6/1/2013	Proposed	138		Y
C	C	East	METC	1432	Withey Lake-Twining 138kV line	Rebuild 0.2 miles of Withey Lake-Twining 138kV line	MI	MI				\$100,000	6/1/2015	Proposed	138		Y
C	C	East	METC	1573	Donaldson Creek 138kV Capacitor	Install minimum 23.3 MVAR 138kV capacitor	MI	MI					6/1/2011	Proposed	138		Y
C	C	East	METC	1657	Terminal Equipment Upgrade	throughout system	MI	MI						Proposed			Y
C	C	East	METC	1795	David Jct. - Bingham 138kV	Rebuild 19 miles of 138kV 336.4 ACSR to 954 ACSR.	MI	MI	BaseRel	TBD		\$11,700,000	6/1/2012	Proposed	138		Y
C	C	East	METC	1800	Argenta-Riverview 138kV	Fix Sag limit, Retap or upgrade 1200A CT's at both ends, Upgrade 1200A Breaker 377 and 1200A Switch 377 at Riverview	MI	MI					6/1/2013	Proposed	138		Y
C	C	East	METC	1804	Marquette - Easton Jct. 138kV	Upgrade relaying at Marquette	MI	MI					6/1/2013	Proposed	138		Y
C	C	East	METC	1805	Livingston-Emmet-Oden 138kV	Rebuild the Livingston-Emmet and Emmet-Oden 138kV circuits with 954 ACSR DCT, creating two circuits from both Livingston-Emmet and Emmet-Oden. Total line rebuild is 33 miles	MI	MI					6/1/2015	Proposed	138		Y
C	C	East	METC	1807	Murphy - Bullock 230kV	Swap the existing Bullock-Gleaner and Tittabawassee-Begole 138 kV lines, and open the Begole-Tittabawassee 138 kV line, and build 3.2 miles of new DCT into Richland, creating Bullock -Richland, Richland-Begole, and Tittabawassee-Gleaner 138 kV lines. Convert 8.3 miles of the new Bullock to Richland 138 kV line to 230 kV 954 ACSR. Install a new 345/230 kV transformer at Richland and a new 230/138 kV transformer at Bullock.	MI	MI					6/1/2016	Proposed	345	138	Y
C	C	East	METC	1808	Four Mile - Cowan Lake Jct.	Rebuild 15.5 miles of 336/477 to 954 ACSR.	MI	MI					6/1/2017	Proposed	138		Y
C	C	East	METC	1811	Keystone - Gray Rd. 138kV	Construct a new 9 mile 138kV 954 ACSR circuit from Keystone to Gray Road.	MI	MI					6/1/2018	Proposed	138		Y
C	C	East	METC	1816	Mecosta - Croton 138kV	Rebuild 22 miles of 138kV 110 CU to 954 ACSR. Prebuild to 230kV construction.	MI	MI					6/1/2014	Proposed	138		Y
C	C	East	METC	1831	Northern Michigan 230 kV Loop	Cut in the existing Hampton -Tittabawassee 345 kV and Thelford -- Tittabawassee 2 345 kV circuits to a new 345 kV station, Crane Rd. Construct a 230 kV loop from Crane Rd to Twining to Mio to Livingston to Plum to Keystone to Tippy to a new station, Sunoco, which is formed by reconfiguring the Ludington -- Kenowa 1 345 kV circuit into it. Install 345/230 kV transformers at Crane Rd, Mio, Livingston, Keystone, and Sunoco, and 230/138 kV transformers at Twining, Mio, Livingston, Plum, Keystone, and Tippy. The total 230 kV circuit mileage would be approximately 330 miles and roughly 320 miles would be along the existing ROW.	MI	MI					6/1/2019	Proposed	345	138	Y
C	C	East	METC	2490	North Belding - Vergennes 138kV	Upgrade terminal equipment.	MI	MI	BaseRel	Not Shared		\$550,000	6/1/2013	Proposed	138		Y
C	C	East	METC	2810	Delhi - Canal Jct 138kV	Rebuild 7.5 miles of 138kV line to 954 ACSR	MI	MI				\$5,500,000	6/1/2018	Proposed	138		Y
C	C	East	METC	2811	East Tawas - Karn 138kV	Rebuild 56 miles of 138kV to 954 ACSR. Does not include the 12.3 miles of rebuild from 2011 MTEP project Cottage Grove - East Tawas 138kV rebuild.	MI	MI				\$51,000,000	6/1/2015	Proposed	138		Y
C	C	East	METC	3128	Emmet - Riggsville and Livingston - Riggsville #2 138 kV Lines	Construct a new 138 kV circuit from Emmet to Riggsville (25 miles total), 954 ACSR and install Livingston to Riggsville 138 kV circuit #2 (40 miles total)	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3131	Bil-Mar Jct. - Port Sheldon Jct. 138 kV Sag Remediation	Improve sag clearance	MI	MI					6/1/2015	Proposed	138		Y

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C	C	East	METC	3132	Tallmadge - Tyler 138 kV Sag Remediation	Improve sag clearance	MI	MI					6/1/2015	Proposed	138		Y
C	C	East	METC	3134	Weadock Station 138 kV	Terminal Equipment upgrade at Weadock	MI	MI					6/1/2012	Proposed	138		Y
C	C	East	METC	3135	Airport - Alpena #2 138 kV	Rebuild the existing Airport - Alpena circuit on DCT's while creating a second circuit from Airport to Alpena.	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3136	Alpena - Iosco 138 kV	Rebuild 20 miles from Alpena to Spruce Rd and replace limiting station equipment.	MI	MI					6/1/2017	Proposed	138		Y
C	C	East	METC	3138	Mio-Gaylord 138 kV	Terminal Equipment upgrade at Mio	MI	MI					6/1/2014	Proposed	138		Y
C	C	East	METC	3144	Argenta - Morrow 138 kV	Terminal Equipment upgrade at Morrow	MI	MI				\$150,000	6/1/2015	Proposed	138		Y
C	C	East	METC	3145	Blackstone - Leoni 138 kV #1, #2 and #3	Replace the 636 ACSR trainers at Blackstone substation. Upgrade the relaying at Leoni and Blackstone.	MI	MI					6/1/2014	Proposed	138		Y
C	C	East	METC	3146	Battle Creek - Verona # 2 138 kV	Replace the 795 ACSR trainer at Verona substation.	MI	MI					6/1/2013	Proposed	138		Y
C	C	East	METC	3149	Four Mile Station 138 kV	Replace the 2-4/0 Cu trainer at Four Mile.	MI	MI					6/1/2013	Proposed	138		Y
C	C	East	METC	3150	North Belding - Bricker Jct 138 kV	Replace the 336.4 ACSR trainer at North Belding.	MI	MI					6/1/2014	Proposed	138		Y
C	C	East	METC	3151	Spaulding - Pettis Jct. 138 kV	Replace the 795 ACSR trainer at Spaulding.	MI	MI					6/1/2014	Proposed	138		Y
C	C	East	METC	3152	Riggsville to McGulpin 138 kV	Replace 266.8 ACSR trainer at McGulpin and 336.4 ACSR trainer at Riggsville.	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3153	Oden to McGulpin 138 kV	Replace 336.4 ACSR trainer at McGulpin.	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3300	Stover - Livingston Rebuild	Rebuild 22.2 miles 138 kV line	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3920	Gaines 138kV Inductor	Install 50 MVAR inductor at Gaines 138kV	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3921	Campbell to Tyler 345 kV	Build a new 4-mile, 345 kV line from Campbell to Tyler substation and install a new 345/138 kV transformer at Tyler.	MI	MI					6/1/2018	Proposed	345	138	Y
C	C	East	METC	3922	Alpine to Rouge River 138kV Rebuild	Rebuild 8.4 miles of 336 ACSR on with 954 ACSR	MI	MI					6/1/2017	Proposed	138		Y
C	C	East	METC	3923	Livingston to Riggsville #2 138 kV	Construct a second circuit, 40 miles from Livingston to Riggsville 138 kV.	MI	MI					6/1/2016	Proposed	138		Y
C	C	East	METC	3924	Bullock to Edenville Jct. 138 kV rebuild	Rebuild the 7.3 mile circuit section with 954 ACSR on 230 kV double circuit structures	MI	MI					6/1/2017	Proposed	138		Y
C	C	East	METC	3925	Dort to Thetford 138 kV #1 & #2 Sag Remediation	Remove Sag limits on Dort to Thetford 138 kV ckt #1 and #2.	MI	MI					6/1/2015	Proposed	138		Y
C	C	East	METC	3926	Dort to Pasadena (Dort) station equipment replacement	Replace/reset relay equipment and replace trainers in the Dort station	MI	MI					6/1/2019	Proposed	138		Y
C	C	East	METC	3927	Karn to Saginaw River (Saginaw) station equipment replacement	Replace/reset relay equipment and replace trainers in the Saginaw River station	MI	MI					6/1/2019	Proposed	138		Y
C	C	East	METC	3928	Livingston Transformers #1 and #2	Replace Livingston 345/138 kV transformers	MI	MI					6/1/2016	Proposed	345	138	Y
C	C	East	METC	3929	Tippy to Haring Jct. 138 kV	Replace trainers at Tippy.	MI	MI					6/1/2015	Proposed	138		Y
C	C	East	METC	3932	Kinderhook 35 MVAR Capacitor	Install a 35 MVar capacitor at either Kinderhook 138 kV or the Kinderhook Jct. 138 kV and coordinate with CE as necessary.	MI	MI					6/1/2015	Proposed	138		Y
C	C	East	METC	3933	Majestic to Tompkins 345 kV	Increase the CT ratio on the breaker at Majestic on the Majestic to Tompkins 345 kV circuit.	MI	MI					6/1/2018	Proposed	345		Y
C	C	East	METC	3943	Navarre 230/120 kV Transformer #201	Increase the CT ratio on the low-side breaker of the Navarre 230/120 kV Transformer #201.	MI	MI					6/1/2015	Proposed	230	120	Y
C	C	East	METC	3944	Whiting to Raisin 138 kV	Replace switches at Whiting on the Whiting to Raisin 138 kV section of the Whiting to Parr Rd 138 kV circuit.	MI	MI					6/1/2017	Proposed	138		Y
C	C	East	METC	3945	Custer to Whiting 120 kV	Replace switches at Whiting on the Custer to Whiting 120 kV circuit.	MI	MI					6/1/2016	Proposed	120		Y
C	C	East	METC	3948	METC Disconnect Switch Replacement Program	Replace problematic Pennsylvania Type A6A-2, EEE, RI&E, WESTINGHOUSE, HK-PORTER, AND DELTA-STAR disconnect switches (or any disconnect switches with problematic auxiliary latch assemblies)	MI	MI				\$2,700,000	12/31/2015	Proposed			Y
C	C	East	METC/ATC	3823	Livingston-Marquette 345 kV	New 345 kV circuit from the Livingston station in Olsego Co (Lower Peninsula) to the new National station in Marquette Co (Upper Peninsula)	MI	MI					12/31/2016	Proposed	345		Y

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C	C	West	MH, OTP	2180	MTEP08 Reference Future EHV Overlay - Riel to Maple River	Builds 500 kV circuit from Riel Station in Manitoba to Maple River Station in North Dakota	MH	ND				\$374,000,000	8/1/2018	Conceptual	500	115	Y
C	C	West	MP	2548	Hilltop 230 kV upgrades	Add a second 230/115 kV transformer and upgrade an existing line to 230 kV	MN	MN					6/1/2019	Proposed	230	115	Y
C	C	West	MP	2551	28 Line Tap	Remove tap, build 0.5 miles of new 115 kV to put line on its own breaker & rebuild/upgrade ~7 miles 115 kV line	MN	MN	Other	Not Shared	Reliability	\$4,500,000	6/30/2014	Proposed	115		Y
C	C	West	MP	3531	Deer River Substation	New 230/115 kV Substation	MN	MN				\$12,300,000	12/31/2014	Planned	230	23	Y
C	C	West	MP	3533	Savanna 230 kV Substation	Add 230/115 kV substation equipment to Savanna Sub	MN	MN				\$7,000,000	6/1/2015	Proposed	230	115	Y
C	C	West	MP	3756	Wrenshall	add 115/46 kV Transformer at Wrenshall	MN	MN				\$1,500,000	12/30/2015	Proposed	115	46	Y
C	C	West	MP	3855	Tri-County Project	MP Bison - Tri-County 230kV with 345/230kV transformer at Tri-County and connection to Antelope Valley-Broadland 345kV line	ND	ND					1/30/2016	Proposed	345	230	Y
C	C	West	MP	3856	HVDC 750 MW Upgrade	Upgrade existing HVDC line & terminal from Square Butte-Arrowhead to 750MW	ND	MN					1/30/2016	Proposed	250	230	Y
C	C	West	MP, ATC	3832	Iron Range-Arrowhead 2x345 kV	Double circuit 345 kV Iron Range-Arrowhead with 500/345 kV transformers at Iron Range.	MN	MN					1/30/2020	Proposed	500	345	Y
C	C	West	MP, XEL	4001	"T" Tap Project	500/345 kV stepdown & 345 kV double circuit to Fargo	MN	MN					1/30/2025	Proposed	500	345	Y
C	C	East	MPPA	2079	SA Switches	Replacing 600 Amp switches with 1200 Amp switches at the South Airport Sub.	MI	MI				\$200,000	7/1/2015	Planned	69		NT
C	C	East	MPPA	2080	BWX Switches	Replacing 600 Amp switches with 1200 Amp switches at the Barlow Junction.	MI	MI				\$200,000	7/1/2019	Planned	69		NT
C	C	East	MPPA	2081	CDX Switches	Replacing 600 Amp switches with 1200 Amp switches at the Cass Road Junction.	MI	MI				\$200,000	7/1/2019	Planned	69		NT
C	C	West	MRES	3794	Fergus Falls Transformer	Replace existing Fergus Falls 230/115/13.2 kV xfmr and upgrade sub in general.	MN	MN				\$5,000,000	6/1/2016	Proposed	230	115	Y
C	C	West	MRES	3795	Grant Co. area upgrades	Rebuild Grant Co. - Morris 115 kV, rebuild Grant Co. - East Fergus Falls 115 kV, upgrade Grant Co. substation.	MN	MN				\$31,100,000	6/1/2016	Proposed	115		Y
C	C	West	MRES	3796	Ortonville - Johnson Jct. upgrade	Rebuild Ortonville - Johnson Jct. 115 kV.	MN	MN				\$15,600,000	6/1/2016	Proposed	115		Y
C	C	East	NIPS	1973	Leesburg to Northeast -- Upgrade Capacity	Increase circuit capacity between Leesburg and Northeast (8.5 mi.). Upgrade to 954 KCM ACSR.	IN	IN	BaseRel	Not Shared		\$5,279,000	12/1/2017	Conceptual	138		Y
C	C	East	NIPS	1979	Maple Sub - 69 kV Switched Capacitors	Add two steps of 8.1 MVAR capacitors on the Maple Substation 69 kV bus.	IN	IN	Other	Not Shared	Reliability	\$1,080,000	12/1/2014	Conceptual	69		Y
C	C	East	NIPS	1980	Babcock Sub - 69 kV Switched Capacitors	Add two to three steps of 9.0 MVAR capacitors on the Babcock Substation 69 kV bus.	IN	IN	Other	Not Shared	Reliability	\$1,052,000	12/1/2013	Conceptual	69		Y
C	C	East	NIPS	1981	Kreitzburg Sub - 69 kV Switched Capacitors	Add two steps of 9.0 MVAR capacitors on the Kreitzburg Substation 69 kV bus.	IN	IN	Other	Not Shared	Reliability	\$1,052,000	12/1/2013	Conceptual	69		Y
C	C	East	NIPS	1983	Dekalb Sub - Upgrade 138/69 Transformer	Replace the existing No.1 138/69 KV 56 MVA transformer with a 138/69 kV 112 MVA transformer.	IN	IN	BaseRel	Not Shared		\$1,700,000	12/1/2016	Conceptual	138	69	Y
C	C	East	NIPS	1984	South Knox - New 138/69 kV Substation	South Knox- New 138-69 KV, 1-168 MVA Transformer Substation	IN	IN	BaseRel	Not Shared		\$12,568,000	12/1/2017	Conceptual	138	69	Y
C	C	East	NIPS	1985	Circuit 6959 Wolcotville to S. Milford Reconductor	Reconductor 5.4 miles of Circuit 6959's existing 2/0 Cu to 336.4 kCM ACSR.	IN	IN	Other	Not Shared	Reliability	\$1,671,000	12/1/2017	Conceptual	69		Y
C	C	East	NIPS	1989	Upgrade Circuit 6959 - S Milford to Helmer Tap	Reconductor 4.73 miles of Circuit 6959's existing 2/0 Cu to 336.4 kCM ACSR.	IN	IN	Other	Not Shared	Reliability	\$1,037,000	12/1/2017	Conceptual	69		Y
C	C	East	NIPS	1990	Upgrade Circuit 6986 - Dekalb to Angola Substation	Rebuild 16.5 miles of Circuit 6986's existing 2/0 Cu line to 336.4 kCM ACSR.	IN	IN	Other	Not Shared	Reliability	\$9,253,000	12/1/2016	Conceptual	69		Y
C	C	East	NIPS	1993	South Valparaiso - New 138/69 kV Substation	South Valparaiso - New 138/69 Substation, (3) 69 kV line extensions	IN	IN	BaseRel	Not Shared		\$4,917,000	12/1/2017	Conceptual	138	69	Y
C	C	East	NIPS	1994	Circuit 6977 - Midway to Bristol Subs - Recond 4.1 miles	Upgrade (reconductor) 4.1 miles of 69 KV line to 336.4 KCM ACSR between Midway and Bristol Substations.	IN	IN	Other	Not Shared	Reliability	\$656,000	12/1/2011	Planned	69		Y
C	C	East	NIPS	1998	Circuits 6962 & 6937 - Lawton to E. Winamac - Rebuild 4.5 Miles	Rebuild existing double circuit 69 kV line between East Winamac and Lawton. Rebuild with new poles and conductors for 4.5 miles.	IN	IN	Other	Not Shared	Condition	\$1,339,000	12/1/2013	Proposed	69		Y

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C	C	East	NIPS	2000	Circuit 6977 - Goshen Jct to Model Sub Tap	Upgrade (reconductor) .5 miles of 69 kV line to 336.4 KCM ACSR.	IN	IN	Other	Not Shared	Reliability	\$52,000	12/1/2014	Planned	69		Y
C	C	East	NIPS	2003	Circuit 6937 Sw 854 to Bruce Lake Sub - Rebuild	Rebuild existing 69 kV line between Bruce Lake Substation and Switch 854.	IN	IN	Other	Not Shared	Condition	\$957,800	12/1/2014	Proposed	69		Y
C	C	East	NIPS	2244	MTEP08 Reference Future EHV Overlay - should be Stillwell to Burr Oak	Build 345 kV circuit from Stillwell to Burr Oak station in Indiana	IN	IN	BaseRel	Shared		\$28,000,000	8/1/2018	Conceptual	345		Y
C	C	East	NIPS	2319	South Chalmers MO 62 load breaks and switch replacement.	Upgrade Switch and install Load breaks	IN	IN	Other	Not Shared	Condition	\$25,000	5/1/2013	Proposed	69		Y
C	C	East	NIPS	2321	Miller Sub - Add 138KV Capacitors - 100.0 MVAR	Add one step of 100 MVAR capacitors on the Miller Substation 138 kV bus. Engineering only in 2010.	IN	IN	BaseRel	Not Shared		\$974,838	9/1/2017	Conceptual	138		Y
C	C	East	NIPS	2323	Hiple Sub to Northport Sub - New 138 kV Line	Add new 138 kV terminals at Hiple and Northport Substations, and construct a new 10 mile 954 KCM ACSR 138 kV line between these two substations. Engineering only on 2008.	IN	IN	BaseRel	Not Shared		\$5,770,000	12/1/2016	Conceptual	138		Y
C	C	East	NIPS	2324	East Plymouth - New 345-138 Substation	Add East Plymouth 345/138 kV, 1-560 MVA Transformer Sub - New	IN	IN	BaseRel	Shared		\$18,884,017	5/1/2016	Conceptual	345	138	Y
C	C	East	NIPS	2792	Northwest circuit reconfiguration	Phase I: Reconfigure 138 kV circuits at Mitchell switchyard to address SF-6 breaker maintenance. Reconfigure Chicago Avenue 138 kV line terminals. Phase II: Split existing Dune Acres Substation 138 kV bus into two sections to form a double bus. Add (2) new POT's and additional system protection (differential relaying) to provide adequate protection for a normally split 138 kV bus.	IN	IN	Other	Not Shared	Reliability	\$2,771,000	12/1/2012	Conceptual	138		Y
C	C	East	NIPS	3399	Circuit 6964 rebuild	Rebuild/ Reconductor 6964 from Kentland Sub to Goodland Sub to Pine Creek Sub.	IN	IN	Other	Not Shared	Condition	\$5,567,000	12/1/2010	Proposed	69		Y
C	C	East	NIPS	3400	Extend 6951 to Palmira Substation	Extend 6951 to Palmira Substation	IN	IN	Other	Not Shared	Reliability	\$123,000	12/1/2012	Conceptual	69		Y
C	C	East	NIPS	3401	Circuit 6913 Rebuild Reconductor	Circuit 6913 Rebuild Reconductor	IN	IN	Other	Not Shared	Reliability	\$2,131,000	12/1/2013	Conceptual	69		Y
C	C	East	NIPS	3402	Circuit 6981 Rebuild Reconductor	Circuit 6981 Rebuild Reconductor	IN	IN	Other	Not Shared	Condition	\$5,563,000	12/1/2013	Conceptual	69		Y
C	C	East	NIPS	3403	Circuit 6987 Rebuild Reconductor	Circuit 6987 Rebuild Reconductor	IN	IN	Other	Not Shared	Move	\$1,383,000	12/1/2012	Conceptual	69		Y
C	C	East	NIPS	3404	Circuit 6998, Switch 151 to Warsaw Sub Reconductor Rebuild	Circuit 6998, Switch 151 to Warsaw Sub Reconductor Rebuild	IN	IN	Other	Not Shared	Reliability	\$461,000	12/1/2015	Conceptual	69		Y
C	C	East	NIPS	3405	Circuit 69-107 Reconductor	Circuit 69-107 Reconductor	IN	IN	Other	Not Shared	Reliability	\$360,000	12/1/2015	Conceptual	69		Y
C	C	Central, East	NIPS	3848	Schahfer-BurrOak #2-Stillwell 345 kV line	New 345 kV connection from Schahfer to BurrOak to Stillwell	IN	IL				\$109,500,000	12/31/2018	Conceptual	345		Y
C	C	East	NIPS	3882	MTEP11 TCFS Flowgate I Option 1	Babcock-Stillwell-Dumont 2nd 345kV line	IN	IN				\$45,000,000	1/1/2015	Proposed	345		Y
C	C	East	NIPS	3883	MTEP11 TCFS Flowgate I Option 2	Line rating upgrade on: Michigan City-Dune Acre; Michigan City-Laporte; Michigan City-Trail Creek; Trail Creek-Maple; Maple - New Carlisle	IN	IN				\$11,400,000	1/1/2015	Proposed	138		Y
C	C	East	NIPS	3969	Mittal-2 to Roxana Ratings Increase	Upgrade 300 kCM CU drop and jumpers at 138 kV bus at Roxana. New Ratings: SN, SE, WN, WE= 158, 158, 197, 197.	IN	IN					6/1/2013	planned	138		Y
C	C	East	NIPS	3970	Marktown East to Sheffield Ratings Increase	Upgrade conductor at Marktown East. New rating: SN, SE, WN, WE305,366, 358, 408	IN	IN					6/1/2013	planned	138		Y
C	C	East	NIPS	3971	Marktown West to BP Ratings Increase	Upgrade conductor at Marktown West. New rating: SN, SE, WN, WE305,366, 358, 408	IN	IN					6/1/2013	planned	138		Y
C	C	East	NIPS, non-MISO	3670	DATC Project 3: Goodenow Grove IL - Burr Oak IN 345kV	Loop Davis Creek-Burnham 345kV into new substation near Goodenow Grove, IL, taps existing Schahfer-St John 345kV line with new Laurie substation and create a new 345kV connection from new Laurie substation - Burr Oak. Loop the existing Dumont-Sorenson 345kV line into Leesburg	IL	IN	MEP	Shared		\$119,700,000	12/31/2016	Conceptual	345		Y
C	C	Central, East	NIPS, Non-MISO	3849	Schahfer-BurrOak #2-Dumont 345 kV line	New 345 kV connection from Schahfer to BurrOak to Dumont	IN	IL				\$124,500,000	12/31/2018	Conceptual	345		Y

Appendices A, B, C: Project Table 9/26/2012

Target Appendix	App ABC	Planning Region	Geographic Location by TO Member System	PriJD	Project Name	Project Description	State1	State 2	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)	Min of Plan Status	Max kV	Min kV	MISO Facility
C	C	Central, East	NIPS, Non-MISO	3850	Babcock-Dumont 345 kV line	New 345 kV connection from Babcock to Dumont	IN	IL				\$107,000,000	12/31/2016	Conceptual	345		Y
C	C	East	NIPSCO/Non-MISO (PJM)	3844	Illinois to Indiana Connection	New 765 kV connection from at or near existing Wilton Center 765 kV station (Com Ed) to at or near Reynolds 765 kV MVP station. Includes switching station at or near Wilton Center, approximately 80 miles of 765 kv transmission line and switching station at or near Reynolds 765 kV MVP station.	IL	IN				\$280,000,000	6/1/2018	Alternative	765		Y
C	C	Central	Non-MISO	2199	MTEP08 Reference Future EHV Overlay - Pontiac to Dequine	Builds 765 kV circuit from Pontiac Station in Illinois to Dequine Station in Indiana	IL	IN				\$265,000,000	8/1/2018	Conceptual	765		Y
C	C	Central	Non-MISO	2200	MTEP08 Reference Future EHV Overlay - Dequine to "Chicago"	Build 765 kV circuit from Dequine Station to New South Chicago Station in Indiana	IN	IN				\$161,000,000	8/1/2018	Conceptual	765		Y
C	C	West	OTP	2746	Turtle Lake-Mercer 41.6 kV Line Upgrade	Rebuild Existing 18-Mile 41.6 kV Line	ND	ND	Other	Not Shared	Distribution	\$1,500,000	11/1/2018	Proposed	41.6		NT
C	C	West	OTP	3513	Bison 345/230 kV Transformers	Add two new 345/230 kV Transformers at the Bison Substation near Fargo, ND	ND	ND				\$17,635,000	3/31/2017	Planned	345	230	Y
C	C	West	OTP	3666	Carrington - Sykeston 41.6 kV Line Reconductor	Reconductor 3 miles of 3/0 Copper with T2-1/0 ACSR conductor	ND	ND	Other	Not Shared	Reliability	\$110,000	12/31/2014	Proposed	41.6	41.6	Y
C	C	West	OTP	3667	Nunda to Rutland 41.6 kV Line Rebuild	Rebuild 8 miles of 41.6 kV line	SD	SD	Other	Not Shared	Condition	\$400,000	12/31/2016	Proposed	41.6	41.6	Y
C	C	West	OTP, GRE	2225	MTEP08 Reference Future EHV Overlay - Big Stone-Crow River	Build 345 kV double circuit line from Big Stone in South Dakota to Crow River in Minnesota	MN	SD				\$328,000,000	8/1/2018	Conceptual	345	115	Y
C	C	West	OTP, MDU	2219	MTEP08 Reference Future EHV Overlay - Maple River to Ellendale	Build 345 kV double circuit line from Maple River to Ellendale in North Dakota	ND	ND				\$239,000,000	8/1/2018	Conceptual	345	230	Y
C	C	West	OTP, NON-MISO	2182	MTEP08 Reference Future EHV Overlay - Maple River to Watertown	Builds 345 kV circuit from Maple River Station in North Dakota to Watertown Station in South Dakota	ND	SD				\$202,000,000	8/1/2018	Conceptual	345		Y
C	C	West	OTP, XEL	2181	MTEP08 Reference Future EHV Overlay - Maple River to Blue Lake	Builds 500 kV circuit from Maple River Station in North Dakota to Blue Lake Station in Minnesota	MN	ND				\$401,000,000	8/1/2018	Conceptual	500	345	Y
C	C	West	OTP, XEL	2224	MTEP08 Reference Future EHV Overlay - Bigstone to Morris to Alexandria	Build 345 kV double circuit line from Big Stone in South Dakota to Morris and then to Alexandria Station in Minnesota	MN	SD				\$215,000,000	8/1/2018	Conceptual	345	230	Y
C	C	West	OTP, XEL, GRE, MP, MHEB	3085	Dorsey - Maple River - Helena 500kV	Dorsey - Maple River 50% series compensated 500kV line with one 500/345kV 1,200 MVA transformer at Maple River. Maple River - Helena 50% series compensated 500kV line with two 1,200MVA transformers at Helena.	MN	MN	TDSP	Direct Assigned		\$1,180,000,000	6/1/2017	Proposed	500	345	Y
C	C	West	XEL	2177	RES (230 kV Corridor study)	Convert Minn Valley - Panther - McLeod - Blue Lake 230 kV line to Double circuit 345 kV from Hazel to McLeod to West Waconia to Blue Lake.	MN	MN	Other	Not Shared			6/1/2022	Proposed	345	115	Y
C	C	West	XEL	2184	MTEP08 Reference Future EHV Overlay - Splitrock to "New Blue Earth Sub"	Builds 345 kV circuit from Split rock Station in South Dakota to a New Blue Earth Station in Minnesota	MN	SD				\$205,000,000	8/1/2018	Conceptual	765	345	Y
C	C	West	XEL	2185	MTEP08 Reference Future EHV Overlay - Adams to Hampton Corners	Builds 765 kV circuit from Adams Station in Minnesota to Hampton Corners Station in Minnesota	MN	MN				\$15,000,000	8/1/2018	Conceptual	765	345	Y
C	C	West	XEL	2186	MTEP08 Reference Future EHV Overlay - Sherburne County to Chisago City	Builds 345 kV circuit from Sherburne County Station to Chisago County Station in Minnesota	MN	MN				\$69,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL	2187	MTEP08 Reference Future EHV Overlay - Sherburne County to "New SW MPLS Sub"	Builds 345 kV circuit from Sherburne County Station to New SW Minneapolis Station in Minnesota	MN	MN				\$68,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL	2188	MTEP08 Reference Future EHV Overlay - "New SW MPLS Sub" to Hampton Corners	Builds 765 kV circuit from Hampton Corner Station to New SW Minneapolis Station in Minnesota	MN	MN				\$260,000,000	8/1/2018	Conceptual	765		Y
C	C	West	XEL	2189	MTEP08 Reference Future EHV Overlay - Hampton Corners to Chisago Cty (east mpls loop)	Builds 345 kV circuit from Hampton Corner Station to Chisago County Station in Minnesota	MN	MN				\$103,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL	2191	MTEP08 Reference Future EHV Overlay - "New SW MPLS Sub" to "New Blue Earth Sub"	Builds 765 kV circuit from New SW Minneapolis Station to New Blue Earth Station in Minnesota	MN	MN				\$215,000,000	8/1/2018	Conceptual	765		Y

Appendices A, B, C: Project Table 9/26/2012

Target Appendix	App ABC	Planning Region	Geographic Location by TO Member System	ProjID	Project Name	Project Description	State1	State 2	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)	Min of Plan Status	Max kV	Min kV	MISO Facility
C	C	West	XEL	2217	MTEP08 Reference Future EHV Overlay - Granite Falls-Twin Cities	Build 345 kV circuit from Granite Falls (Hazel sub) to Blue Lake (Twin Cities) in Minnesota	MN	MN				\$162,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL	2222	MTEP08 Reference Future EHV Overlay - Minn Valley-Blue Lk 230	Build 230 kV double circuit line from Minnesota Valley to West Waconia Station in Minnesota	MN	MN				\$274,000,000	8/1/2018	Conceptual	345	230	Y
C	C	West	XEL	2226	MTEP08 Reference Future EHV Overlay - Adams-N Rochester	Build 345 kV double circuit line from Adams Station to North Rochester in Minnesota	MN	MN				\$101,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL	2227	MTEP08 Reference Future EHV Overlay - Monticello-W Waconia-Helena	Build 345 kV double circuit line from Monticello to West Waconia to Helena in Minnesota	MN	MN				\$102,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL, ATC LLC	2210	MTEP08 Reference Future EHV Overlay - Chisago Cty to Longwood	Build 345 kV circuit from Chisago County Station in Minnesota to Longwood Station in Wisconsin	MN	WI				\$165,000,000	8/1/2018	Conceptual	345		Y
C	C	West	XEL, ITCM	2212	MTEP08 Reference Future EHV Overlay - Adams to Rockcreek	Build 765 kV circuit from Adams Station in Minnesota to Rock Creek Station in Iowa	MN	IA				\$627,000,000	8/1/2018	Conceptual	765		Y
C	C	West	XEL, MEC	2192	MTEP08 Reference Future EHV Overlay - "New Blue Earth Sub" to Lehigh	Builds 765 kV Circuit from New Blue Earth Station in Minnesota to Lehigh Station in Iowa	MN	IA				\$273,000,000	8/1/2018	Conceptual	765	345	Y
C	C	West	XEL, MH, GRE, C	3398	Dorsey-Split Rock 500 kV line	Option W6: Dorsey(Manitoba)-Bison(ND)-Brookings(SD)-Split Rock (SD) 500 kV with 345/500 kV transformers. Also included is a 2nd 345 kV circuit on the Fargo-Alexandria-Quarry-Monticello 345 kV project (Project 286) and works in concert with the Brookings, SD - SE Twin Cities 345 kV project (Project ID 1203) and the Corridor project (Project ID 2177)	MH	SD				\$1,627,000,000	12/31/2017	Proposed	500	345	Y
C	C	West	XEL, Non-MISO	2183	MTEP08 Reference Future EHV Overlay - Watertown to Split Rock	Builds 345 kV circuit from Watertown Station in South Dakota to Split Rock station in South Dakota	SD	SD				\$131,000,000	8/1/2018	Conceptual	345		Y
C	C	West, Central		3675	DATC Project 6n: Cardinal (WI) - Lee County (IL) 345kV project	New 345kV connection from Cardinal-Lee County	WI	IL				\$184,500,000	12/31/2021	Conceptual	345		Y

EXHIBIT 3

**MULTI-VALUE PROJECT PORTFOLIO RESULTS AND ANALYSIS
DATED JANUARY 10, 2012**

Multi Value Project Portfolio

Results and Analyses

January 10, 2012



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1 Executive Summary

MISO staff recommends that the Multi Value Project (MVP) portfolio described in this report be approved by the MISO Board of Directors for inclusion into Appendix A of MTEP11. This recommendation is based on the strong reliability, public policy and economic benefits of the portfolio that are distributed across the MISO footprint in a manner that is commensurate with the portfolio’s costs. In short, the proposed portfolio will:

- Provide benefits in excess of its costs under all scenarios studied, with its benefit to cost ratio ranging from 1.8 to 3.0.
- Maintain system reliability by resolving reliability violations on approximately 650 elements for more than 6,700 system conditions and mitigating 31 system instability conditions.
- Enable 41 million MWh of wind energy per year to meet renewable energy mandates and goals.
- Provide an average annual value of \$1,279 million over the first 40 years of service, at an average annual revenue requirement of \$624 million.
- Support a variety of generation policies by using a set of energy zones which support wind, natural gas and other fuel sources.

This report summarizes the key reliability, public policy and economic benefits of the recommended MVP portfolio, as well as the scope of the analyses used to determine these benefits.

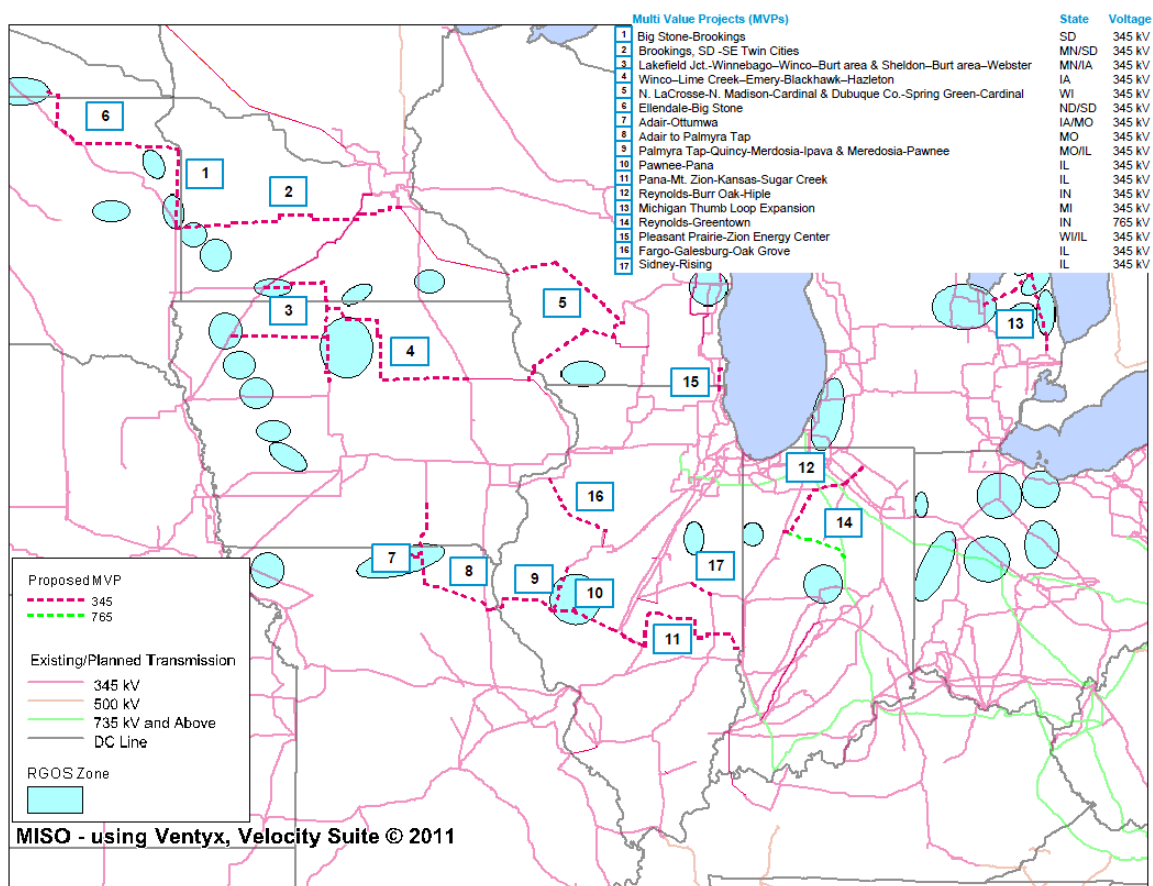


Figure 1.1: MVP portfolio¹

¹ MVP line routing shown throughout the report is for illustrative purposes only and do not represent the final line routes.

DRAFT – Multi Value Project Analysis Report

Executive Summary

The recommended MVP portfolio includes the Brookings Project, conditionally approved in June 2011, and the Michigan Thumb Loop project, approved in August 2010. It also includes 15 additional projects which, when integrated into the transmission system, provide multiple kinds of benefits under all future scenarios studied².

	Project	State	Voltage (kV)	In Service Year	Cost (M, 2011\$) ³
1	Big Stone–Brookings	SD	345	2017	\$191
2	Brookings, SD–SE Twin Cities	MN/SD	345	2015	\$695
3	Lakefield Jct. –Winnebago–Winco–Burt area & Sheldon–Burt area–Webster	MN/IA	345	2016	\$506
4	Winco–Lime Creek–Emery–Black Hawk–Hazleton	IA	345	2015	\$480
5	N. LaCrosse–N. Madison–Cardinal & Dubuque Co. –Spring Green–Cardinal	WI	345	2018/2020	\$714
6	Ellendale–Big Stone	ND/SD	345	2019	\$261
7	Adair–Ottumwa	IA/MO	345	2017	\$152
8	Adair–Palmyra Tap	MO/IL	345	2018	\$98
9	Palmyra Tap–Quincy–Merdosia–Ipava & Merdosia–Pawnee	IL	345	2016/2017	\$392
10	Pawnee–Pana	IL	345	2018	\$88
11	Pana–Mt. Zion–Kansas–Sugar Creek	IL/IN	345	2018/2019	\$284
12	Reynolds–Burr Oak–Hiple	IN	345	2019	\$271
13	Michigan Thumb Loop Expansion	MI	345	2015	\$510
14	Reynolds–Greentown	IN	765	2018	\$245
15	Pleasant Prairie–Zion Energy Center	WI/IL	345	2014	\$26
16	Fargo–Galesburg–Oak Grove	IL	345	2018	\$193
17	Sidney–Rising	IL	345	2016	\$90
Total					\$5,197

Table 1.1: MVP portfolio

² More information on these scenarios may be found in the business case description.

³ Costs shown are inclusive of transmission underbuild upgrades and upgrades driven by short circuit requirements.

Public policy decisions over the last decade have driven changes in how the transmission system is planned. The recent adoption of Renewable Portfolio Standards (RPS) and clean energy goals across the MISO footprint have driven the need for a more regional and robust transmission system to deliver renewable resources from often remote renewable energy generators to load centers.

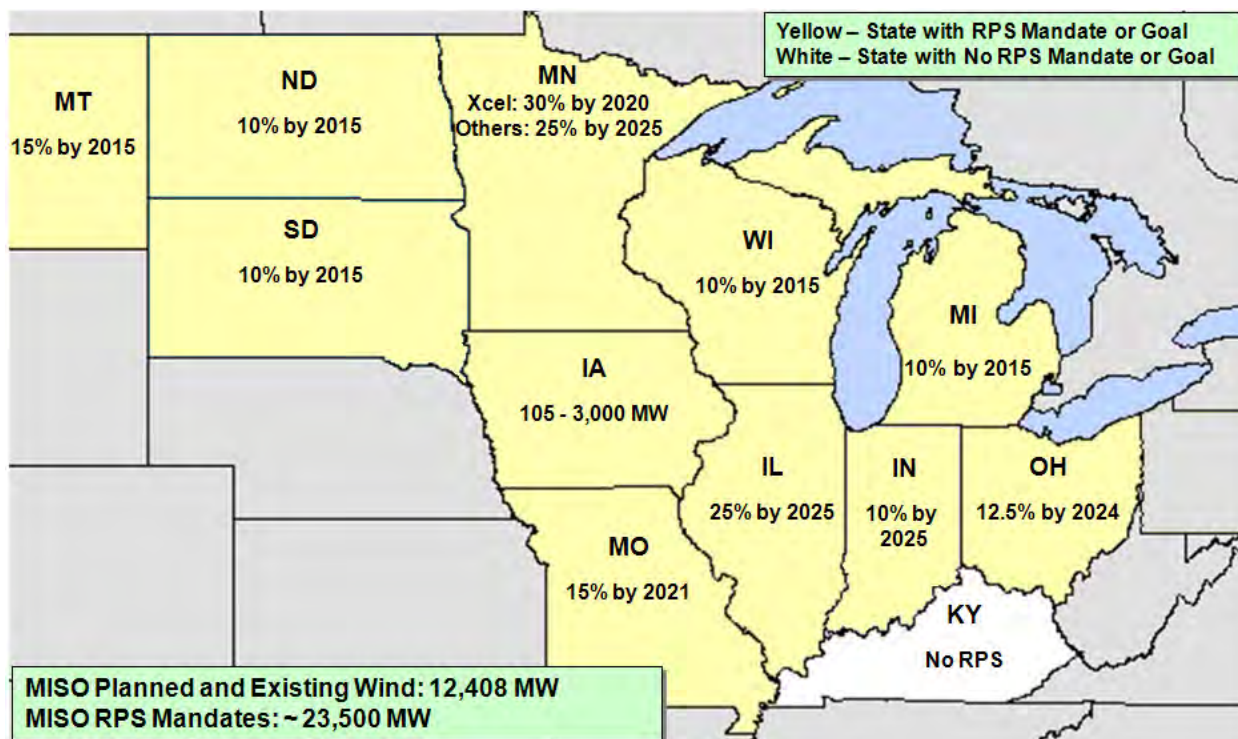


Figure 1.2: Renewable energy mandates and clean energy goals within the MISO footprint^{4, 5}

Beginning with the MTEP03 Exploratory Studies, MISO and stakeholders began to explore how to best provide a value added regional planning process to complement the local planning of MISO members. These explorations continued in later MTEP cycles and in specific targeted studies. In 2008, MISO, with the assistance of state regulators and industry stakeholders such as the Midwest Governor’s Association (MGA), the Upper Midwest Transmission Development Initiative (UMTDI) and the Organization of MISO States (OMS), began the Regional Generation Outlet Study (RGOS) to identify a set of value based transmission projects necessary to enable Load Serving Entities (LSEs) to meet their RPS mandates.

The recent adoption of Renewable Portfolio Standards (RPS) across the MISO footprint have driven the need for a more regional and robust transmission system to deliver renewable resources from often remote renewable energy generators to load centers.

The goal of the RGOS analysis was to design transmission portfolios that would enable RPS mandates to be met at the lowest delivered wholesale energy cost. The cost calculation combined the expenses of the new transmission portfolios with the capital costs of the new renewable generation, balancing

⁴ Existing and planned wind as included in the MVP Portfolio analyses. State RPS mandates and goals include all policies signed into law by June 1, 2011.

⁵ The higher number for Iowa’s state RPS mandates and goals reflects the wind online rather than a statutory requirement.

the trade offs of a lower transmission investment to deliver wind from low wind availability areas, typically closer to large load centers; against a larger transmission investment to deliver wind from higher wind availability areas, typically located further from load centers.

While much consideration was given to wind capacity factors when developing the energy zones utilized in the RGOS and MVP portfolio analyses, the zones were chosen with consideration of more factors than wind capacity. Existing infrastructure, such as transmission and natural gas pipelines, also influenced the selection of the zones. As such, although the energy zones were created to serve the renewable generation mandates, they could be used for a variety of different generation types, to serve various future generation policies. Figure 1.3 depicts the correlation between the natural gas pipelines in the MISO footprint and the energy zones.

The zones were chosen with consideration of more factors than wind capacity. Existing infrastructure, such as transmission and natural gas pipelines, also influenced the selection of zones.

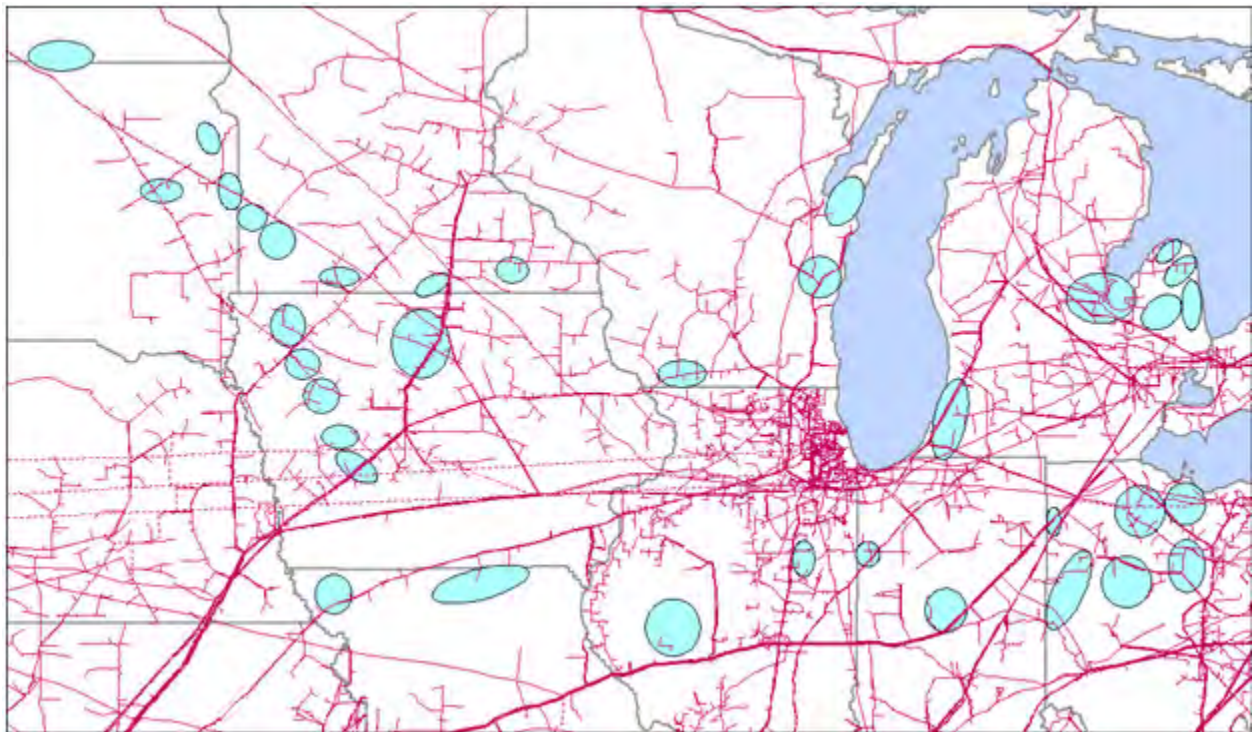


Figure 1.3: RGOS and MVP Analyses Incremental Energy Zones and natural gas pipelines

Common elements between the RGOS results and previous reliability, economic and generation interconnection analyses were identified to create the 2011 candidate MVP portfolio. This portfolio represented a set of “no regrets” projects which were believed to provide multiple kinds of reliability and economic benefits under all alternate futures studied.

The output from the study, a recommended MVP portfolio, will reduce the wholesale cost of energy delivery for the consumer by enabling the delivery of low cost generation to load, reducing congestion costs and increasing system reliability, regardless of the future generation mix.

The 2011 MVP portfolio analysis hypothesized that this set of candidate projects will create a high value transmission portfolio, enabling MISO states to meet their near term RPS mandates. The study evaluated the candidate MVP portfolio against the MVP cost allocation criteria to prove or disprove this hypothesis, as well as to confirm that the benefits of the portfolio would be widely distributed across the footprint. The output from the study, a recommended MVP portfolio, will reduce the wholesale cost of energy delivery for the consumer by enabling the delivery of low cost generation to load, reducing congestion costs and increasing system reliability, regardless of the future generation mix.

Over the course of the MVP portfolio analysis, the candidate MVP portfolio was refined into the portfolio that is now recommended to the MISO Board of Directors for approval. The portfolio was refined to ensure that the portfolio as a group and each project contained within it was justified under the MVP criteria, discussed below, and to ensure that the portfolio benefit to cost ratio was optimized.

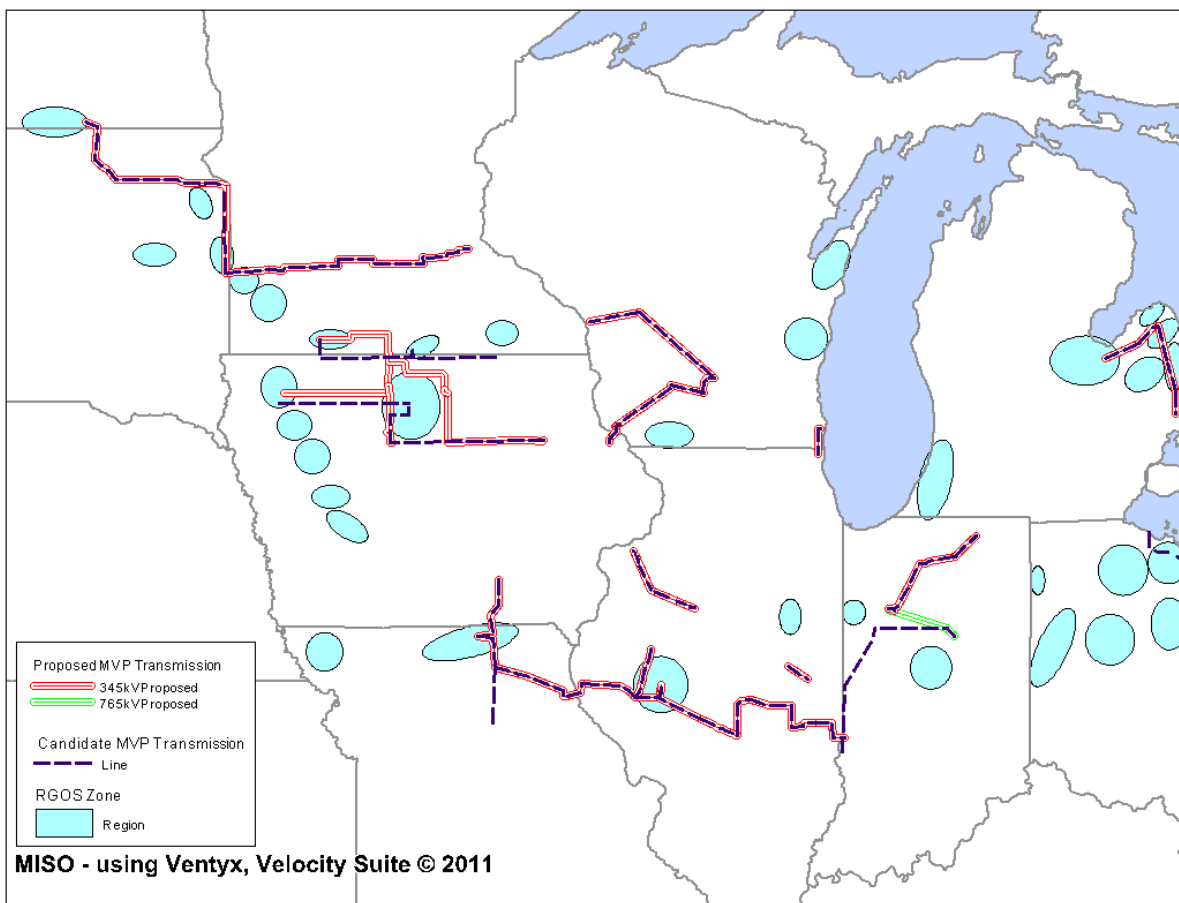


Figure 1.4: Candidate versus Recommended MVP Portfolios

The recommended MVP portfolio will enable the delivery of the renewable energy required by public policy mandates, in a manner more reliable and economic than it would be without the associated transmission upgrades. Specifically, the portfolio mitigates approximately 650 reliability constraints under 6,700 different transmission outage conditions, for steady state and transient conditions under both peak and shoulder load scenarios. Some of these conditions could be severe enough to cause cascading outages on the system. By mitigating these constraints, approximately 41 million MWh per year of renewable generation can be delivered to serve the MISO state renewable portfolio mandates.

The benefits created by the recommended MVP portfolio are spread across the system, in a manner commensurate with its costs.

Under all future policy scenarios studied, the recommended MVP portfolio delivers widespread regional benefits to the transmission system. For example, based on scenarios that did not consider new energy policies, the benefits of the proposed portfolio were shown to range from 1.8 to 3.0 times its total cost. These benefits are spread across the system, in a manner commensurate with their costs, as demonstrated in Figure 1.5.

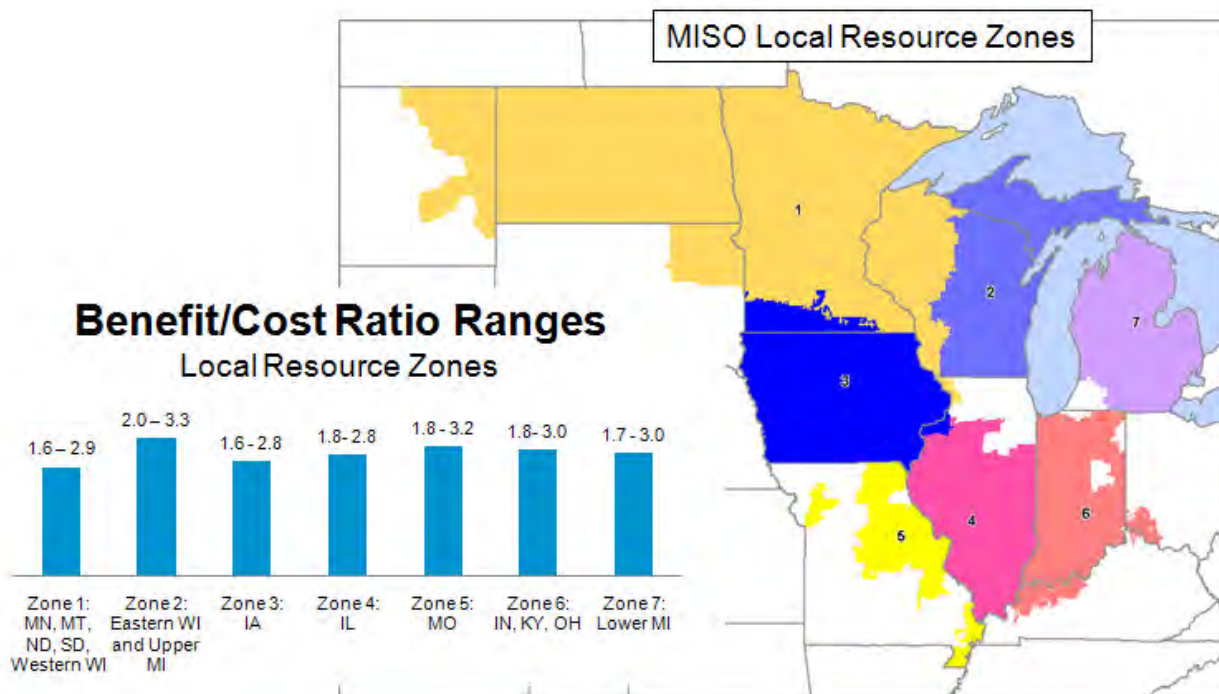


Figure 1.5: Recommended MVP portfolio benefits spread

Taking into account the significant economic value created by the portfolio, the distribution of these value, and the ability of the portfolio to meet MVP criterion 1 through its reliability and public policy benefits, MISO staff recommended the 2011 MVP portfolio to the MISO Board of Directors for their review and approval.

2 MISO Planning Approach

The goal of the MISO planning process is to develop a comprehensive expansion plan that reflects a fully integrated view of project value inclusive of reliability, market efficiency, public policy and other value drivers across all planning horizons. This process is guided by a set of principles established by the MISO Board of Directors, adopted on August 18, 2005. The principles were created in an effort to improve and guide transmission investment in the region and to furnish an element of strategic direction to the MISO transmission planning process. These principles, modified and approved by the MISO Board of Directors System Planning Committee on May 16, 2011, are:

- **Guiding Principle 1:** Make the benefits of an economically efficient energy market available to customers by providing access to the lowest electric energy costs.
- **Guiding Principle 2:** Provide a transmission infrastructure that safeguards local and regional reliability and supports interconnection-wide reliability.
- **Guiding Principle 3:** Support state and federal energy policy objectives by planning for access to a changing resource mix.
- **Guiding Principle 4:** Provide an appropriate cost mechanism that ensures the realization of benefits over time is commensurate with the allocation of costs.
- **Guiding Principle 5:** Develop transmission system scenario models and make them available to state and federal energy policy makers to provide context and inform the choices they face.

A number of conditions must be met to build longer term transmission able to support future generation growth and accommodate new energy policies. These conditions are intertwined with the planning principles put forth by the MISO Board of Directors and supported by an integrated, inclusive transmission planning approach. The conditions that must be met to build transmission include:

- A robust business case that demonstrates value sufficient to support the construction of the transmission project.
- Increased consensus on current and future energy policies.
- A regional tariff that matches who benefits with who pays over time.
- Cost recovery mechanisms that reduce financial risk.

3 Multi Value Project portfolio drivers

The 2011 MVP portfolio analysis was based on the need to economically and reliably help states meet their public policy needs. The study identified a regional transmission portfolio that will enable the MISO Load Serving Entities (LSEs) to meet their Renewable Portfolio Standards (RPS). The analyses and their results describe a robust business case for the portfolio. This business case demonstrates that not only will the recommended MVP portfolio reliably enable Renewable Portfolio Standards to be met, but it will do so in a manner where its economic benefits exceed its costs.

While the study focused upon the RPS requirements, the transmission portfolio will ultimately have widespread benefits beyond the delivery of wind and other renewable energy. It will enhance system reliability and efficiency under a variety of different generation build outs. It will also open markets to competition, reducing congestion and spreading the benefits of low cost generation across the MISO footprint. The MVP portfolio analysis focused on identifying and increasing the benefits of the transmission portfolio, including the reliability, economic and public policy drivers.

3.1 Tariff requirements

The MVP portfolio analysis and the recommendation were premised on the MVP criteria described in Attachment FF of the MISO Tariff and shown below.

Criterion 1

A Multi Value Project must be developed through the transmission expansion planning process to enable the transmission system to deliver energy reliably and economically in support of documented energy policy mandates or laws enacted or adopted through state or federal legislation or regulatory requirement. These laws must directly or indirectly govern the minimum or maximum amount of energy that can be generated. The MVP must be shown to enable the transmission system to deliver such energy in a manner that is more reliable and/or more economic than it otherwise would be without the transmission upgrade.

Criterion 2

A Multi Value Project must provide multiple types of economic value across multiple pricing zones with a Total MVP benefit to cost ratio of 1.0 or higher, where the total MVP benefit to cost ratio is described in Section II.C.7 of Attachment FF to the MISO Tariff. The reduction of production costs and the associated reduction of LMPs from a transmission congestion relief project are not additive and are considered a single type of economic value.

Criterion 3

A Multi Value Project must address at least one transmission issue associated with a projected violation of a NERC or Regional Entity standard and at least one economic based transmission issue that provides economic value across multiple pricing zones. The project must generate total financially quantifiable benefits, including quantifiable reliability benefits, in excess of the total project costs based on the definition of financial benefits and Project Costs provided in Section II.C.7 of Attachment FF.

The MVP cost allocation criteria requires evaluation of the portfolio on a reliability, economic and energy delivery basis. The scope of the analysis was designed to demonstrate this value, both on a project and portfolio basis. The projects in the MVP portfolio were evaluated against MVP criteria 1 and their ability to reliably enable the renewable energy mandates of the MISO states was quantified.

In addition, the Tariff identifies specific types of economic value which can be provided by Multi Value Projects. These values are:

- Production cost savings where production costs include generator startup, hourly generator no-load, generator energy and generator Operating Reserve costs. Production cost savings can be realized through reductions in both transmission congestion and transmission energy losses. Production cost savings can also be realized through reductions in Operating Reserve requirements within Reserve Zones and, in some cases, reductions in overall Operating Reserve requirements for the Transmission Provider.
- Capacity losses savings where capacity losses represent the amount of capacity required to serve transmission losses during the system peak hour including associated planning reserve.
- Capacity savings due to reductions in the overall Planning Reserve Margins resulting from transmission expansion.
- Long-term cost savings realized by Transmission Customers by accelerating a long-term project start date in lieu of implementing a short-term project in the interim and/or long-term cost savings realized by Transmission Customers by deferring or eliminating the need to perform one or more projects in the future.
- Any other financially quantifiable benefit to Transmission Customers resulting from an enhancement to the transmission system and related to the provisions of Transmission Service.

The full proposed portfolio was evaluated against the benefits defined in the Tariff for MVPs. In addition to the benefits described above, the operating reserve and wind siting benefits for the portfolio were quantified, as allowed under the last Tariff defined economic value. These benefits are described more fully in the economic benefit section later in the report.

3.2 Transmission strategy

A transmission strategy addressing both local needs and regional drivers allows the MISO system to realize significant economic and reliability benefits. Regional transmission, such as the transmission in the recommended MVP portfolio, increases reliability in the MISO footprint and opens the market to increased competition by providing access to low cost generation, regardless of fuel type. Development of a strong regional transmission backbone is analogous to the development of the U.S. Interstate Highway System. While developed for specific national security justifications, the system has realized significant additional benefits in subsequent years. Similarly, the recommended MVP portfolio will create reliability, economic and public policy benefits reaching beyond the immediate needs exhibited in this analysis.

The overall goal for the MVP portfolio analysis was to design a transmission portfolio which takes advantage of the linkages between local and regional reliability and economic benefits to bring value to the entire MISO system. The portfolio was designed using reliability and economic analyses, applying several futures scenarios to determine the robustness of the designed portfolio under a number of future potential energy policies.

3.3 Public policy needs

Twelve of thirteen states in the MISO footprint have enacted either RPS requirements or renewable energy goals which require or recommend varying amounts of load be served with energy from renewable energy resources. The MVP portfolio analysis focused on the transmission necessary to economically and reliably meet the state RPS mandates. Figure 3.1 provides additional details on these renewable energy requirements and goals.

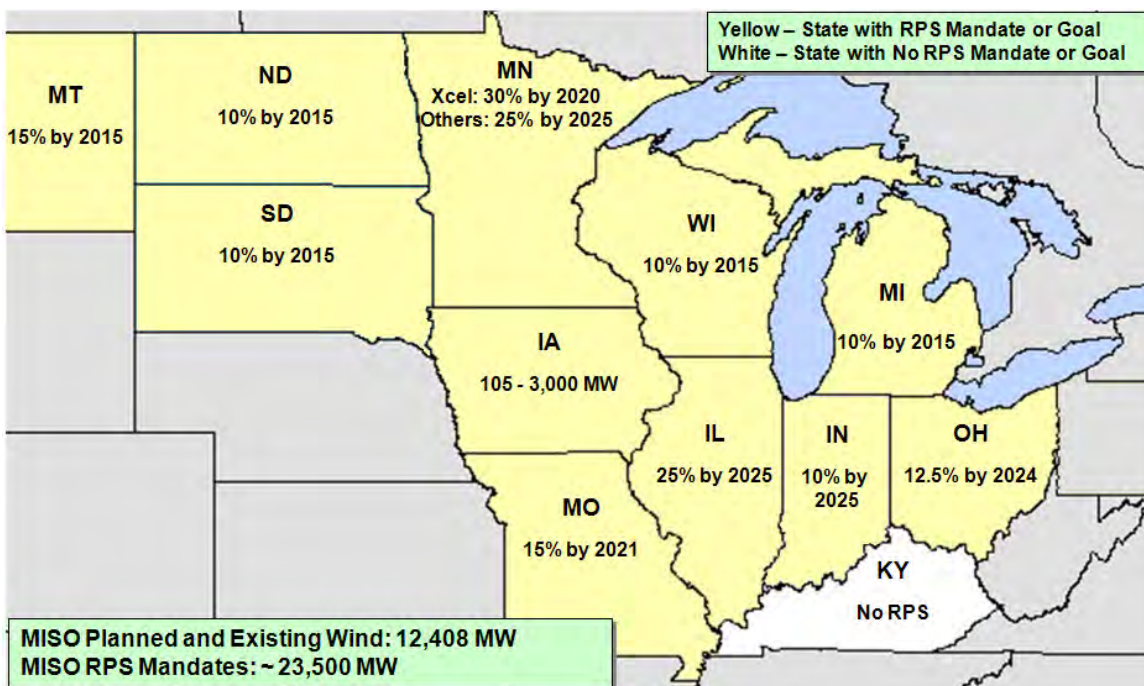


Figure 3.1: RPS mandates and goals within the MISO footprint⁶

RPS mandates vary from state to state in their specific requirement details and implementation timing, but they generally start in about 2010 and are indexed to increase with load growth. While state laws support a number of different types of renewable resources, and multiple types of renewable resources will play a role in meeting state RPS mandates, the majority of renewable energy resources installed in the foreseeable future will likely focus on harnessing the abundant wind resources throughout the MISO footprint.

3.4 Enhanced reliability and economic drivers

The ultimate goal of the MISO planning process is enable the reliable delivery of energy to load at the lowest possible cost. This requires a strategy premised upon a low cost approach to transmission and generation investment. This premise supports the overall constructability of the transmission portfolio, while reducing financial risk associated with overbuilding the system.

The goal of the MVP portfolio analysis was to design a transmission portfolio which takes advantage of the linkages between local and regional reliability and economic benefits to bring value to the entire MISO system.

⁶ The higher number for Iowa's state RPS mandates and goals reflects the wind online rather than a statutory requirement.

4 MVP Portfolio Development and Scope

The MVP portfolio was developed by considering regional system enhancements, from previous MISO analyses, that could potentially provide multiple types of value, including enhanced reliability, reduced congestion, increased market efficiency, reduced real power losses and the deferral of otherwise needed capital investments in transmission.

This portfolio was also based upon a set of energy zones, developed to provide a low-cost approach to wind siting when both generation and transmission capital costs are considered. Incremental wind necessary to meet the 2021 or 2026 renewable mandates for MISO stakeholders was added to these zones, as described in the following sections.

Finally, the MVP portfolio was intensively evaluated to ensure its composite projects, and the portfolio in total, are justified under the MVP cost allocation criterion. This analysis included an evaluation of each individual project justification against MVP criterion 1. It also included an evaluation of the full portfolio, both on a reliability and economic basis.

4.1 Development of the MVP Portfolio

MISO began to investigate the transmission required to integrate wind and provide the best value to consumers in 2002. The analyses continued through subsequent MTEP cycles, with exploratory and energy market analyses. As the demand for renewable energy grew, driven largely by an increasing level of renewable energy mandates or goals, additional regional studies were conducted to determine the transmission necessary to support these policy objectives. These studies included the Joint and Coordinated System Plan (JCSP), the Regional Generation Outlet Studies (RGOS), and analyses by the Organization of MISO States (OMS) Cost Allocation and Regional Planning (CARP) group.

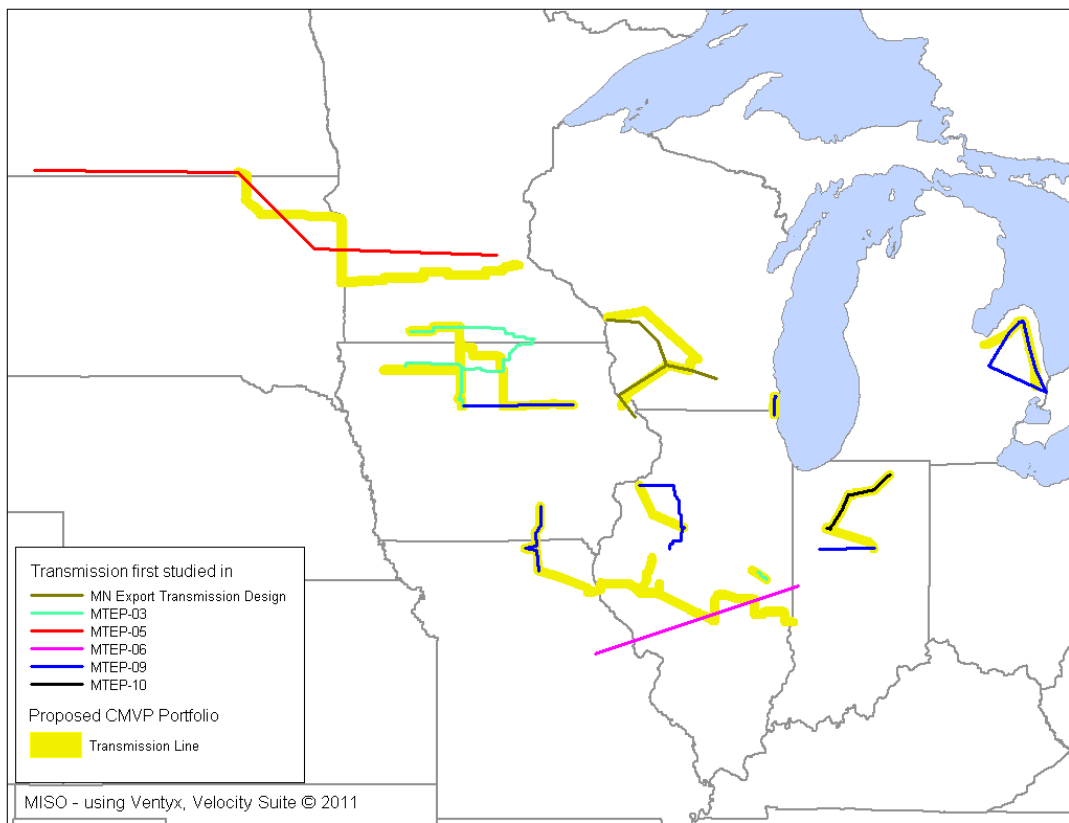


Figure 4.1: Summary of prior study input into recommended MVP portfolio

As analyses continued, the policy and economic drivers behind a regional transmission plan continued to grow. This growth was partly fueled by the development of the MISO energy and operating reserve market, which allows for regional transmission to provide regional benefits through increasing market efficiency, enabling low cost generation to be delivered to load. Simultaneously, an increase in state energy policy mandates drove the need for a robust regional transmission network, capable of responding to legislated changes in generation requirements.

It is worth noting that, although individual projects were identified beginning in MTEP03, these projects were not studied only in the year they were first identified. Subsequent MTEP analyses built on the analyses of previous years and culminated in the final recommendation of the recommended MVP portfolio.

4.1.1 MTEP03 high wind generation development scenario

In the first MISO Transmission Expansion Plan, MTEP03, the MISO evaluated at a high level the potential economic benefits of large regional transmission projects under various postulated generation development scenarios. MTEP 03 evaluated a dozen such plans based on analysis of the base planned transmission system, and its ability to accommodate substantial new additions of coal, wind and gas generation based on the interconnection queues at the time. The transmission and generation scenario analysis showed generally that there was significant potential for the right regional transmission to result in substantial reductions in marginal energy costs, particularly if that transmission was coupled with introduction of low cost coal and wind energy resources.

More specifically, MTEP03 included a high wind development scenario, which included approximately 8,600 to 10,000 MW of new wind development. This scenario was used to evaluate several transmission scenarios on a conceptual level, including a set of high voltage lines in Iowa, running from Lakefield to Adams in southern Minnesota, then looping back to tap the line from Raun to Lakefield line in Iowa.

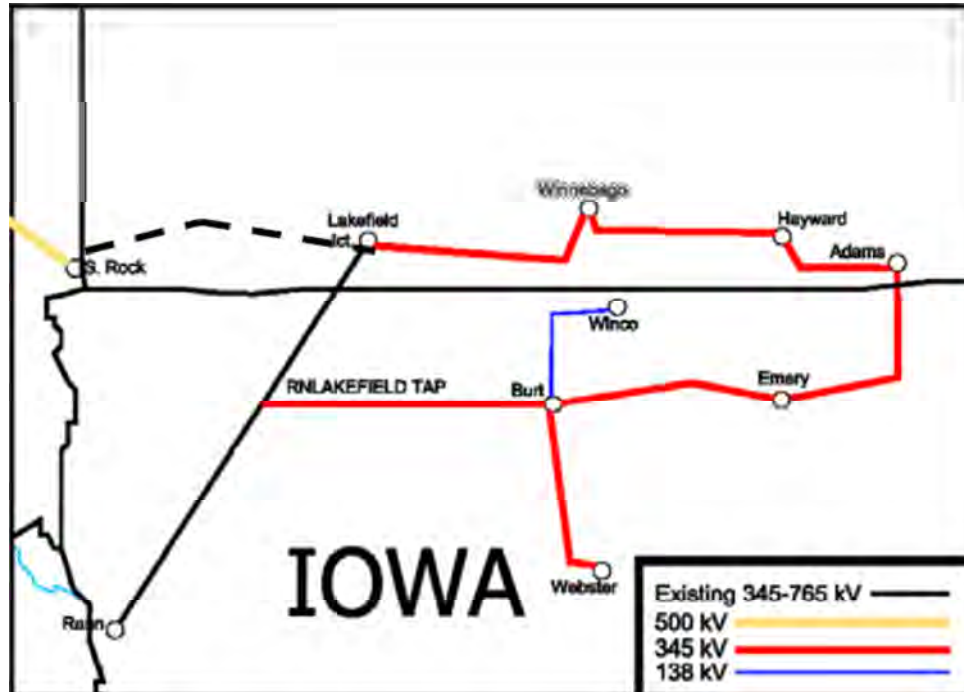


Figure 4.2: Iowa transmission identified in MTEP03

This line was studied in subsequent MTEP cycles, and it eventually led to the identification and incorporation of several Iowa lines into the MVP portfolio. MTEP03 also identified a potential upgrade of the Sidney-Rising line, as a conceptual transmission project.

4.1.2 MTEP05

MTEP05 continued the exploratory transmission analysis began in MTEP03, with two studies which focused in the area around the Dakotas and Northern Minnesota, along with the area around Iowa and Southern Minnesota. It was expected that high voltage transmission projects in these areas would provide additional access to existing base load generation, as well as future wind investment.

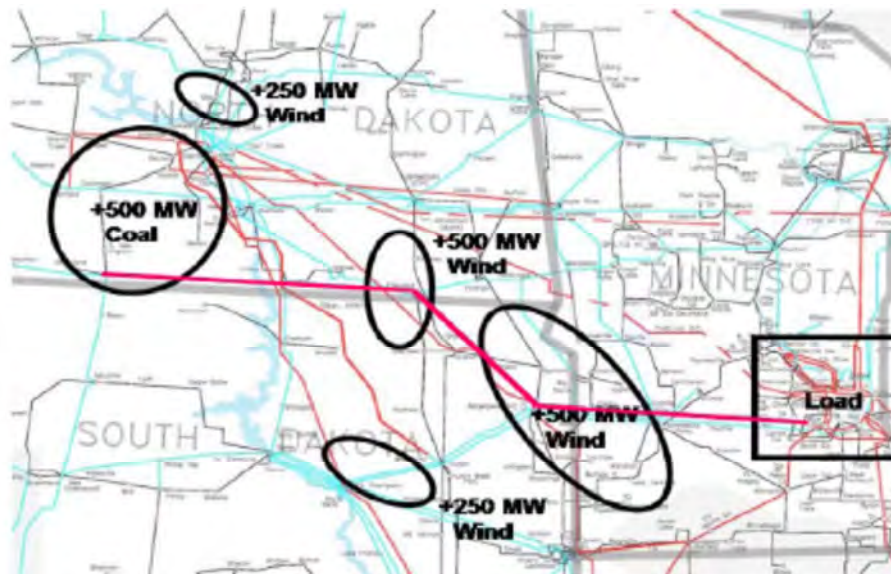


Figure 4.3: Northwest Transmission Option 2

The Northwest study identified the need for at least one, and potentially several, new transmission corridors between the Dakotas and to the Twin Cities of Minnesota. These lines were further studied through the MISO stakeholder CapX 2020 study effort, and they formed the basis of several lines included in the recommended MVP portfolio.

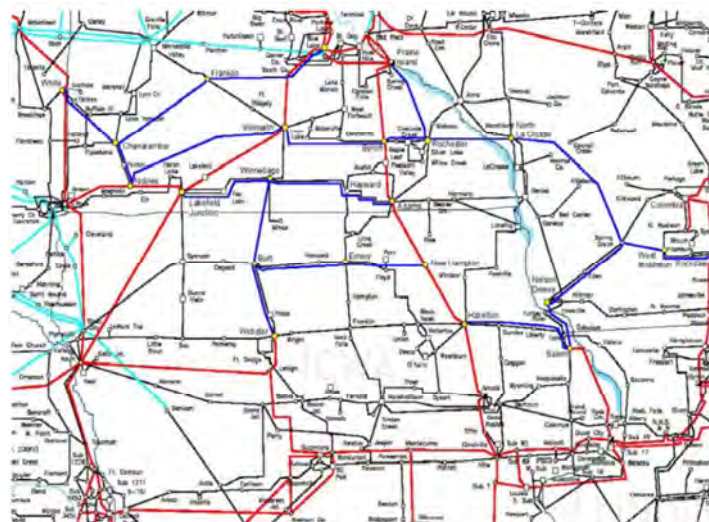


Figure 4.4: Iowa-Minnesota Transmission Scenario 2

The Iowa-Minnesota study further reinforced the need for transmission through southern Minnesota and Iowa. It also identified the need for transmission extending from Minnesota to the Spring Green area in Wisconsin, then from the Spring Green area southwest to the Dubuque area.

4.1.3 MTEP06

In MTEP06, the Vision Exploratory Study modeled scenario which included 20% wind energy for Minnesota and 10% wind energy for the other MISO states, for a total of 16 GW. This hypothetical generation scenario was used to evaluate additional high voltage transmission needs. Although this study focused on a 765 kV solution, it determined that transmission would be needed along many of the corridors identified in prior studies. Additionally, it identified that a transmission path would be required across south-central Illinois to efficiently deliver wind energy to load.

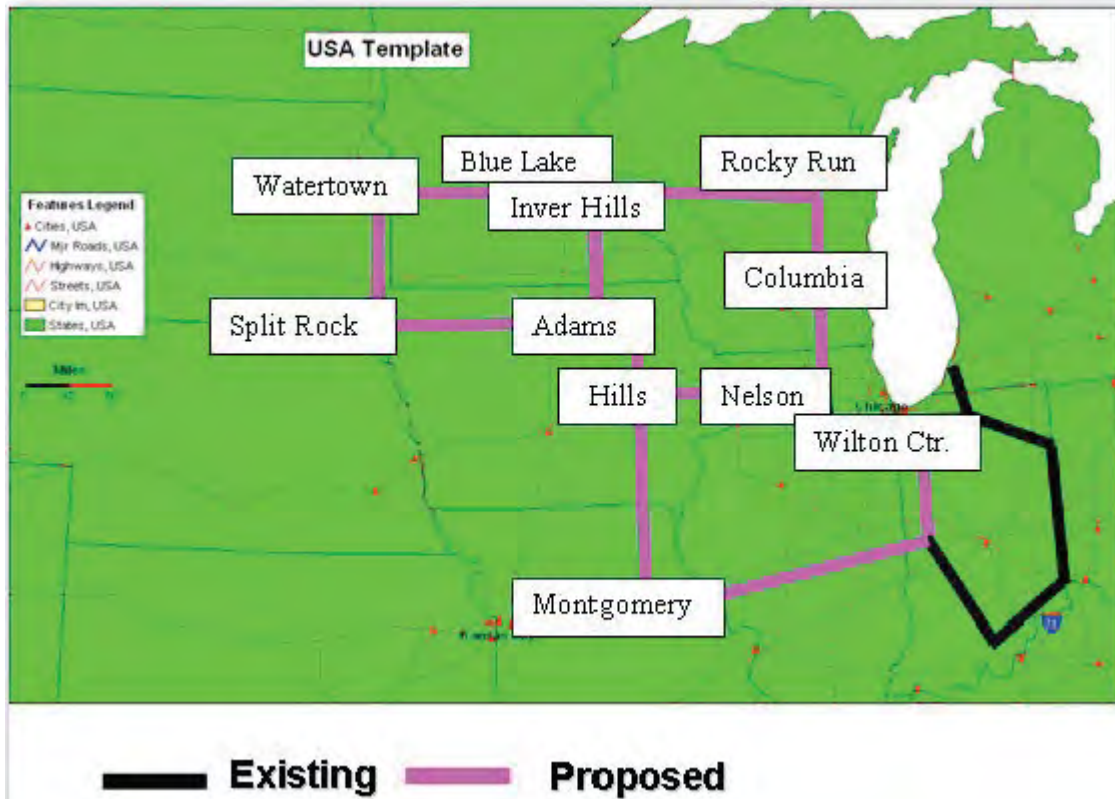


Figure 4.5: Proposed Vision Lines

4.1.4 Regional Generation Outlet Study (RGOS)

Beginning in MTEP09, MISO began the Regional Generation Outlet Study (RGOS). This study was intended, at a high level, to identify the transmission required to support the renewable mandates and goals of the MISO states, while minimizing the cost of energy delivered to the consumers. The study was conducted in two phases: Phase I focused on the western portion of the footprint, while Phase II focused on the full footprint.

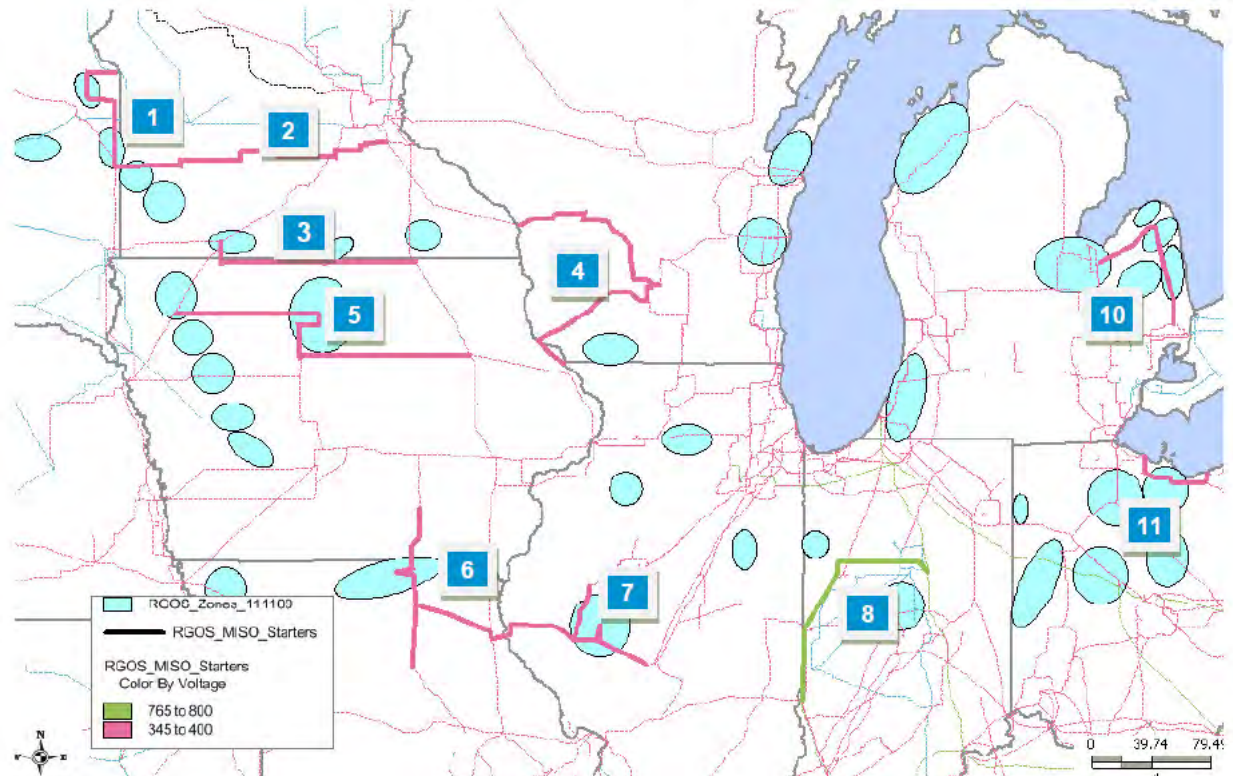


Figure 4.6: Regional Generator Outlet Study Input into MVP Portfolio

At the conclusion of the RGOS analyses, a set of three alternative expansion portfolios were identified. These portfolios, designed to meet the renewable energy mandates and goals of the full load for all the states in the MISO footprint, ranged in cost from \$16 to \$22 billion. They included transmission identified through the previous MTEP analyses, as highlighted earlier. Common transmission projects or corridors were identified between the three scenarios, and these projects formed transmission recommendations for the initial candidate MVP portfolio.

4.1.5 Candidate MVP Portfolio

The candidate MVP portfolio was created based on stakeholder feedback, as well as input from the analyses described in section 4.1. The portfolio was designed to meet the renewable energy mandates of all MISO load, and the projects in the portfolio were hypothesized to provide widespread benefits across the footprint. The projects selected as candidates for possible inclusion in the broader portfolio were then intensively evaluated in the MVP portfolio analysis to ensure they were justified and contributed to the portfolio business case.

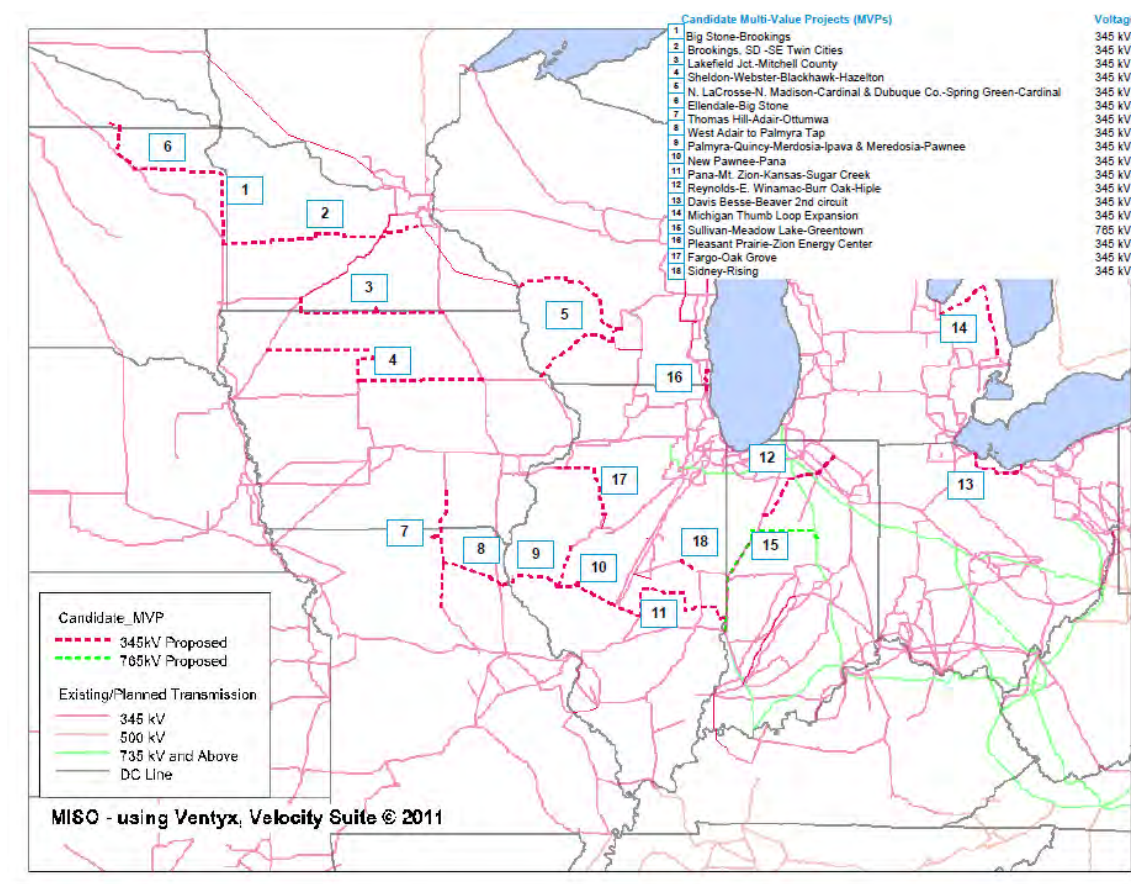


Figure 4.7: Initial Candidate MVP portfolio

4.2 Wind siting strategy

Key assumptions of the MVP portfolio study revolved around the amount and location of wind energy zones modeled within the study footprint. This energy zone development was based on stakeholder surveys focusing on expected renewable energy needs over the next 20 years and how much of that need is expected to be met with wind generation.

During the RGOS energy zone development, MISO staff evaluated multiple energy zone configurations to meet renewable energy requirements. In this process, study participants identified capital costs associated with generation capacity as well as capital costs associated with indicative transmission that would help deliver the energy to the system. It was determined that the most expensive energy delivery options were those options relying: 1) solely on the best regional wind source areas (with higher amounts

of transmission needed) or 2) those options relying solely on the best local wind source areas (with higher amounts of generation capital required).

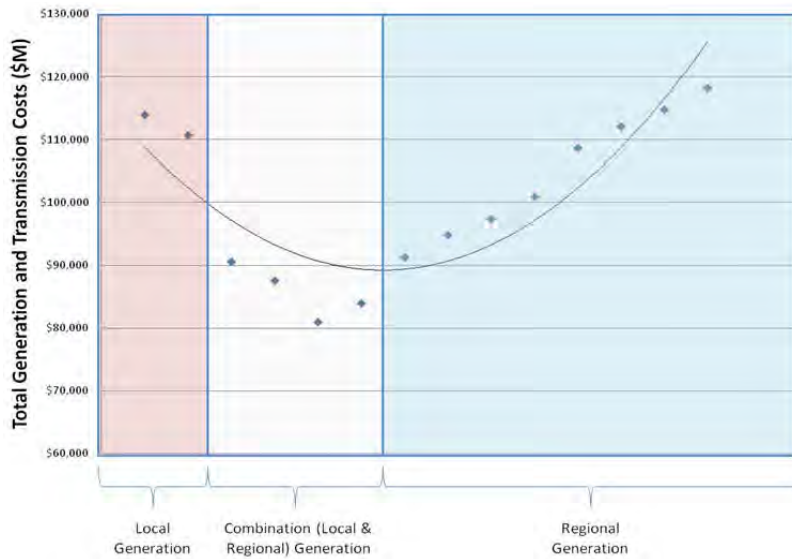


Figure 4.8: Generation and Transmission Capacity, by Energy Zone Location

As a result of RGOS energy zone development efforts as well as interaction with regulatory bodies such as the Upper Midwest Transmission Development Initiative (UMTDI) and various state agencies within the MISO, a set of energy zones was selected. These zones represent the intention of state governments to source some renewable energy locally while also using the higher wind potential areas within the MISO market footprint. Zone selection was based on a number of potential locations developed by MISO utilizing mesoscale wind data supplied by the National Renewable Energy Laboratory (NREL) of the US Department of Energy. The analysis found wind zones distributed across the region resulted in the best method to meet renewable energy requirements at the least overall system cost.

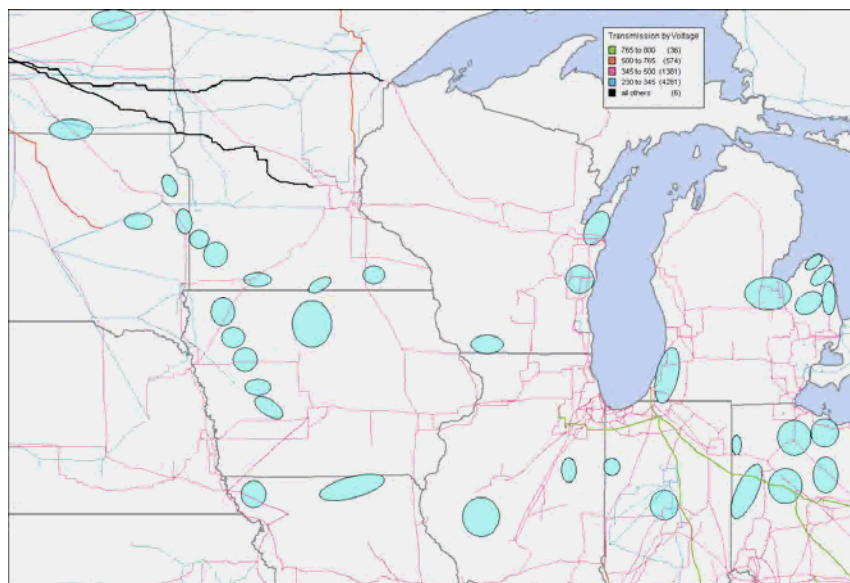


Figure 4.9: Energy Zone Locations

4.3 Incremental Generation Requirements

Once the location of the incremental wind generation was determined, through the low cost wind siting approach described above, additional analyses were required to determine how much incremental generation will be required to meet the renewable energy mandates of the MISO stakeholders. These analyses are based upon the 2009 retail sales for each area, as provided by the U.S. Energy Information Administration, a growth rate of 1.125% annually, and the specifics of each state's public policy requirements. Details on each state's public policy requirements may be found in Appendix A, while the calculations used to determine the total energy requirements may be found in Appendix B.

	2021 RPS Requirements (MWh)	2026 RPS Requirements (MWh)
IL - Ameren Illinois	3,072,047	4,274,713
IL - Alternative Retail Energy Suppliers in Ameren Illinois	2,016,516	3,046,465
MI - Total State of Michigan less AEP ⁷	8,383,843	8,383,843
MN - Xcel Energy	10,535,661	11,141,777
MN - Total State of Minnesota less Xcel Energy	8,050,396	10,641,919
MO - Ameren Missouri	5,825,834	6,160,994
MO - Columbia Water and Light	122,809	194,812
MT - Montana-Dakota Utilities	113,581	120,115
OH - Duke Ohio ⁸	2,099,315	2,921,169
WI - Total State of Wisconsin	7,682,829	8,124,821
TOTAL	47,902,831	55,010,629

Table 4.1: State Renewable Energy Mandates

Incremental wind generation was added to the model to satisfy these mandated needs. The amount of incremental generation for each zone was based on the capacity factor, the planned and proposed generation, and existing wind with power purchase agreements to serve non-MISO load ascribed to each zone. It was also based on a total wind buildout following the distributed, low-cost wind siting approach described in section 4.2.

Wind Zone	2021 Incremental Wind (MW)	2026 Incremental Wind (MW)	Wind Zone	2021 Incremental Wind (MW)	2026 Incremental Wind (MW)
IA-B	300	474	MN-L	0	0
IA-F	292	462	MO-A	356	356
IA-G	271	427	MO-C	500	500
IA-H	215	339	MT-A	136	214
IA-I	127	201	ND-G	199	313
IA-J	18	28	ND-K	164	259
IL-F	400	415	ND-M	59	94
IL-K	449	449	OH-A	30	42
IN-E	145	229	OH-B	30	42

⁷ RPS requirement must be sourced entirely within Michigan

⁸ Half of RPS requirement must be sourced from within Ohio.

Wind Zone	2021 Incremental Wind (MW)	2026 Incremental Wind (MW)	Wind Zone	2021 Incremental Wind (MW)	2026 Incremental Wind (MW)
IN-K	194	306	OH-C	30	42
MI-A	0	0	OH-D	30	42
MI-B	601	601	OH-E	30	42
MI-C	549	549	OH-F	30	42
MI-D	442	442	OH-I	30	42
MI-E	601	601	SD-H	300	474
MI-F	601	601	SD-J	292	461
MI-I	303	303	SD-L	300	474
MN-B	75	119	WI-B	234	370
MN-E	0	0	WI-D	257	405
MN-H	0	0	WI-F	0	0
MN-K	175	277			

Table 4.2: Incremental Generation Added to the MVP Portfolio Analysis Model

4.4 Analyses Performed

The MVP portfolio analysis combined the MISO Board of Director planning principles and the conditions precedent to transmission construction to develop a transmission portfolio that meets public policy, economic and reliability requirements. The analysis built a robust business case for the recommended transmission, using the newly created MVP cost allocation methodology approved by FERC. The candidate transmission was tested against a variety of potential policy futures. This maximized the value of the transmission portfolio and reduced potential negative risks associated with its construction due to changes in future demand and energy growth. The output of the study was a justified portfolio of recommended MVPs for inclusion in MTEP11 Appendix A and, if approved by the MISO Board of Directors, subsequent construction.

The MVP cost allocation criteria requires the evaluation of the portfolio on a reliability, economic and energy delivery basis. The analyses were designed to demonstrate this value, both on a project and portfolio basis. To this end, the MVP portfolio analysis included the studies and output shown in Table 4.3.

These analyses focused on three main areas. The project valuation analyses focused on justifying each individual MVP against the MVP criteria. The portfolio valuation analyses determined the benefits of the portfolio in aggregate, quantifying additional reliability and economic benefits. Finally, a series of system performance analyses were performed to ensure that the system reliability will be maintained with the recommended MVP portfolio in service.

DRAFT – Multi Value Project Analysis Report

MVP Portfolio Development and Scope

Analysis Type	Analysis Output	Purpose
Steady state	List of thermal overloads mitigated by each project in the MVP portfolio	Project valuation
Alternatives	Relative value of each MVP against a stakeholder or MISO identified alternative Can include steady state and production cost analyses	Project valuation
Underbuild requirements	Incremental transmission required to mitigate constraints created by the addition of the recommended MVP portfolio	System performance
Short circuit	Incremental upgrades required to mitigate any short circuit / breaker duty violations	System performance
Stability	List of violations mitigated by the recommended MVP portfolio Includes both transient and voltage stability analysis	System performance Portfolio valuation
Generation enabled	Wind enabled by the MVP portfolio	Portfolio valuation
Production cost	Adjusted Production Cost (APC) benefits of the entire MVP portfolio	Portfolio valuation
Robustness testing	Quantification of MVP portfolio benefits under various policy futures or transmission conditions	Portfolio valuation
Operating reserves Impact	Impact of the MVP portfolio on existing operating reserve zones and quantification of this benefit	Portfolio valuation
Planning Reserve Margin (PRM) benefits	Capacity savings due to reductions in the system-wide Planning Reserve Margin caused by the addition of the MVP portfolio to the transmission system	Portfolio valuation
Transmission loss reductions	Capacity losses savings caused by the addition of the MVP portfolio to the transmission system, where capacity losses represent the amount of capacity required to serve transmission losses during the system peak hour	Portfolio valuation
Wind generation capital investment	Quantification of the incremental wind generator capital cost savings enabled by the wind siting methodology supported by the MVP portfolio	Portfolio valuation
Avoided capital investment (transmission)	Future baseline transmission investment that may be avoided due to the installation of the MVP portfolio	Portfolio valuation

Table 4.3: MVP Portfolio Analyses and Output

4.5 Stakeholder involvement

Stakeholders reviewed and contributed to the development of the recommended MVP portfolio throughout the study process. A Technical Study Task Force (TSTF), composed of regulators, transmission owners, renewable energy developers, and market participants, met at least monthly with MISO engineers to provide input, feedback, and guidance throughout the MVP study processes. Also, regular updates were given to the MISO Planning Advisory Committee (PAC) and Planning Subcommittee (PSC). Finally, all study results were available for stakeholder review. Feedback or analyses requested throughout the study process were incorporated into the MVP portfolio scope.

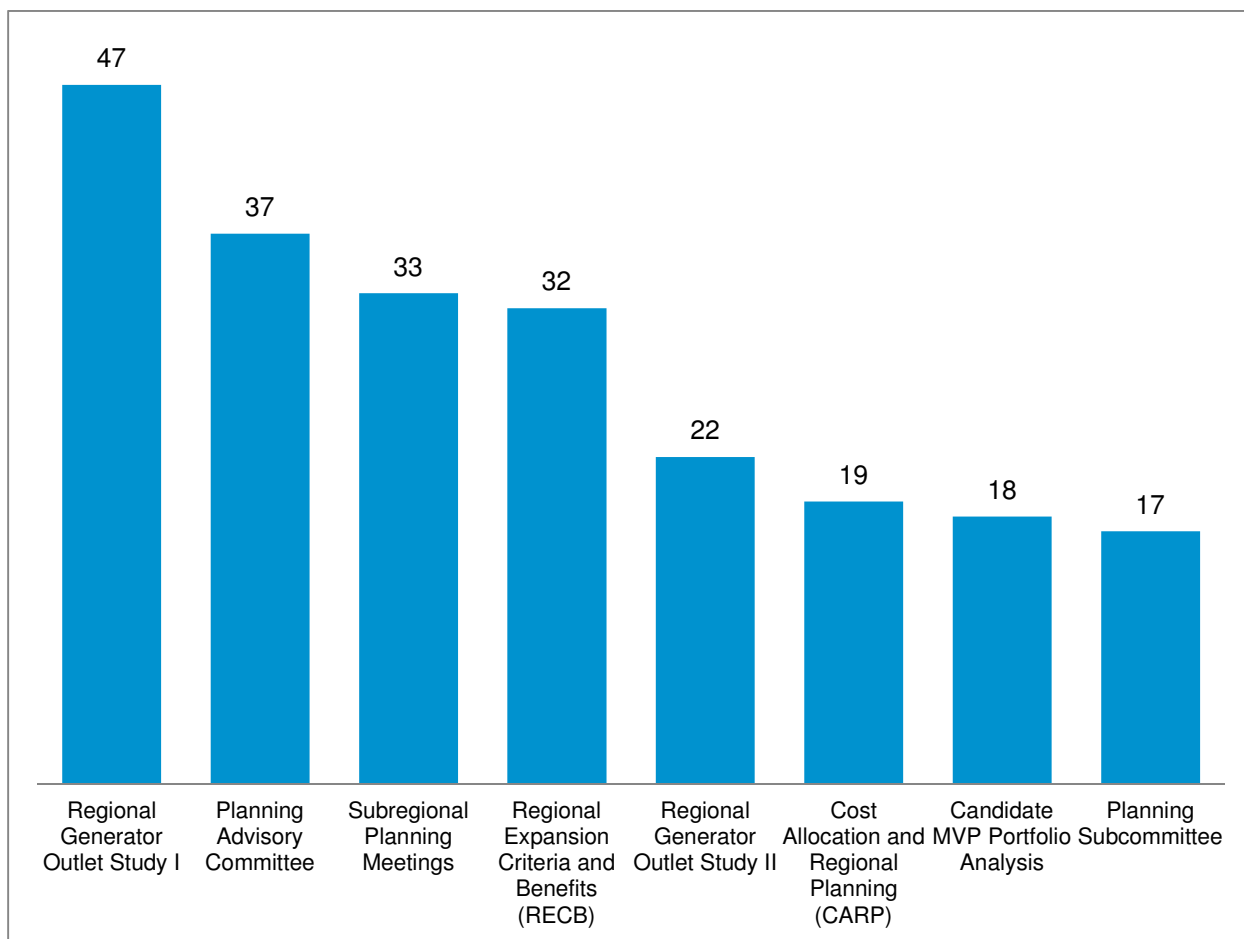


Figure 4.10: Regional Planning Stakeholder Meetings, 2008 - 2011

5 Project justification and alternatives assessment

Each project in the MVP portfolio was analyzed to ensure that the project is justified against MVP cost allocation criterion 1, and to determine if any relevant alternatives exist to the proposed projects. The projects listed below constitute the final projects, which are recommended to the MISO Board of Directors.

5.1 Big Stone to Brookings County 345 kV Line

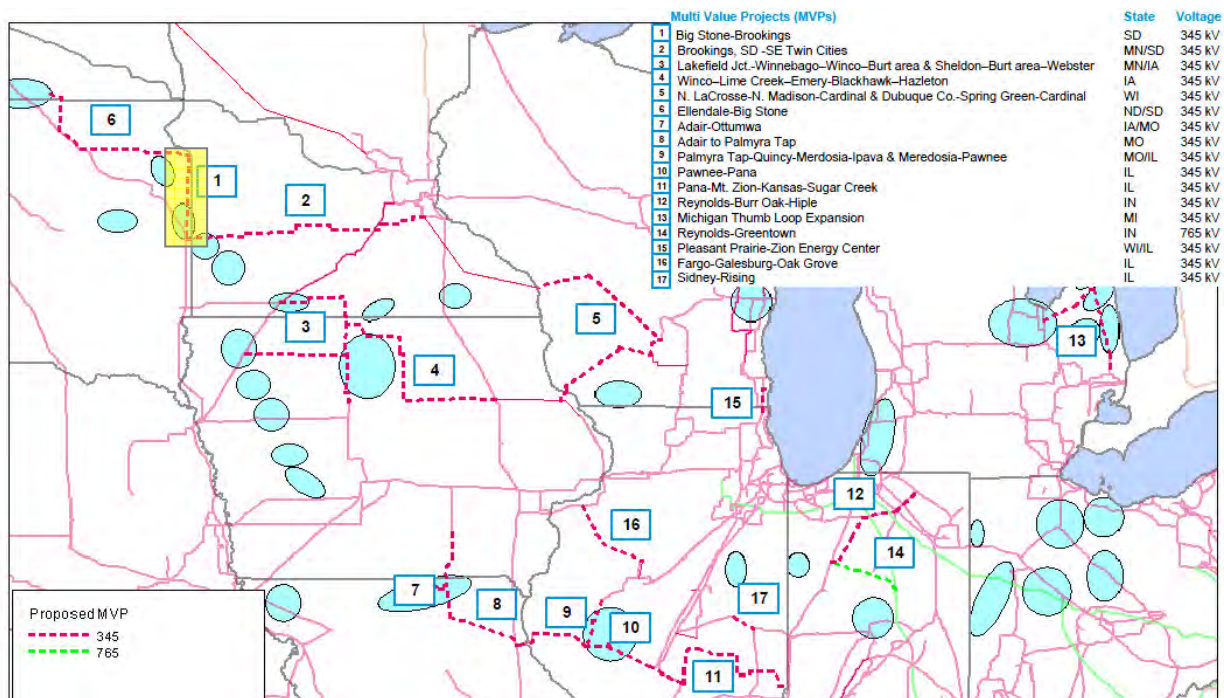


Figure 5.1: Big Stone to Brookings County

Project(s): 2221

Transmission Owner(s): OTP, XEL

Project Description: This project creates a new 345 kV path on the border of South Dakota and Minnesota by connecting XEL’s Brookings County and OTP’s Big Stone. Approximately 69 miles of new 345 kV transmission will be installed between these two substations along with a new 345 kV terminal at Big Stone and two 345/230 kV, 672 MVA transformers. The total estimated cost of this project is \$191 million⁹. The expected in service date for this project is December 2017.

Project Justification: The new 345 kV outlet from Big Stone removes overloads on the 230 kV paths from Big Stone to Blair and Hankinson to Wahpeton along with 115 kV paths from Johnson to Morris , Big Stone to Highway 12 to Ortonville, Pipestone to Buffalo Ridge and Canby to Granite Falls. The overloaded Watertown 345/230 kV is also alleviated. Along with project 2220, this project reliably moves mandated renewable energy from the Dakotas to major 345 kV transmission hubs and load centers.

Alternatives Considered: An alternative to build a new 345 kV from Big Stone to Canby to Granite Falls to Minnesota Valley and rebuild the 230 kV or build a new 345 kV to Morris could provide an

⁹ In 2011 dollars.

alternative outlet for Big Stone wind. The cost of this alternative is higher than the 345 kV path to Brookings County.

5.2 Brookings County to Southeast Twin Cities 345 kV Line

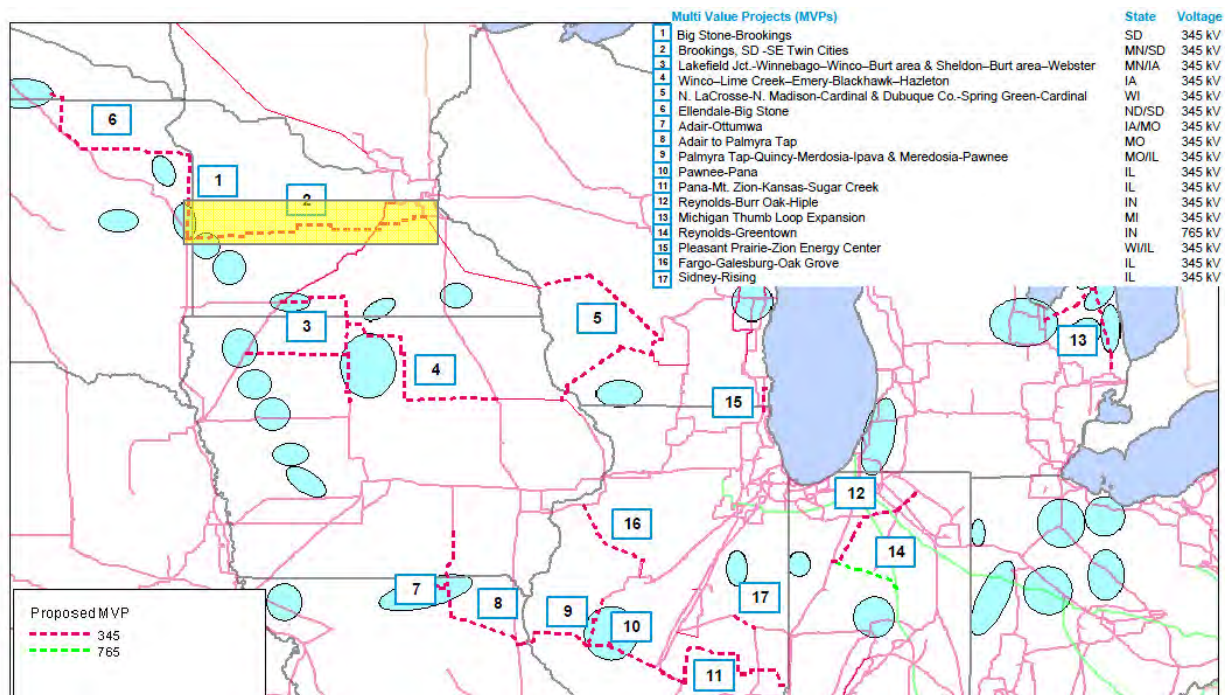


Figure 5.2: Brookings County to Southeast Twin Cities

Project(s): 1203

Transmission Owner(s): XEL, GRE

Project Description:

This project creates a new 345 kV path through southern Minnesota, by connecting XEL's Brookings County substation to the Twin Cities. Single circuit 345 kV transmission will be constructed from Brookings County to Lyon County, from Helena to Lake Marion to Hampton Corner, and from Lyon County to Hazel Creek to Minnesota Valley. The Hazel Creek to Minnesota Valley section will be operated at 230 kV initially. Double circuit 345 kV transmission will be constructed from Lyon County to Cedar Mountain to Helena. A 115 kV line will be built between the new Cedar Mountain and the existing Franklin substations. The project includes one 345/230 kV, 336 MVA transformer at Hazel Creek, three 345/115 kV, 448 MVA transformers at Lyon County, Lake Marion and Cedar Mountain, one upgraded 115/69 kV, 140 MVA transformer at Lake Marion and two upgraded 115/69 kV, 70 MVA transformers at Franklin. A new breaker and deadend structure is planned at Lake Marion and the Arlington to Green Isle 69 kV line will be upgraded to 477 ACSR. The project adds a total of 351 miles of new 345 kV, 5 miles of new 115 kV and 5.8 miles of rebuilt 69 kV lines. The total estimated cost of this project is \$695 million¹⁰. The expected in service dates for these projects are:

- June 2013 (Cedar Mountain 345/115 kV transformer)
- August 2013 (Cedar Mountain to Helena 345 kV double circuit line and Arlington to Green Isle 69 kV rebuild)

¹⁰ In 2011 dollars

- October 2013 (Lyon County 345/115 kV transformer)
- November 2013 (Lyon County to Cedar Mountain 345 kV double circuit line)
- January 2014 (Franklin 115/69 kV transformers)
- February 2014 (Cedar Mountain to Franklin 115 kV line)
- March 2014 (Lake Marion 345/115 kV and 115/69 kV transformers and station work)
- April 2014 (Helena to Lake Marion 345 kV line)
- June 2014 (Lake Marion to Hampton Corner 345 kV line)
- January 2015 (Brookings to Lyon County 345 kV line and Hazel Creek 345/230 kV transformer)
- February 2015 (Lyon County to Hazel Creek to Minnesota Valley 345 kV line)

Project Justification:

Without the Brookings County to Twin Cities 345 kV line, the loss of Split Rock to White 345 kV leaves only the 230kV system to feed load to the East. This overloads the Watertown 345/230 kV transformer without the parallel 345 kV path from Brookings County. Not having the project also impacts the 115 kV network in southern Minnesota which is connected on both sides by 230 kV. The loss of either 230kV source causes multiple overloads in the surrounding 115 kV network without this project. The loss of any segment of the Wilmarth-Helena-Blue Lake 345 kV line in southeast Minnesota leads to overloads on the underlying 115 kV network. Without this project, the power flowing west to east is forced through the 115 kV system, overloading the underlying 115 kV lines. The Wilmarth to Eastwood and Wilmarth to Swan Lake 115 kV lines are overloaded without the additional 345kV support to the north that is included with project 1203. At the Minnesota/Wisconsin interface, the loss of 345 kV lines at Blue Lake, Prairie Island, Red Rock, Coon Creek and Chisago substations overload the Prairie Island 345/161 kV transformer, particularly for any NERC Category C5 outages involving lines between the aforementioned substations. The Brookings County to Twin Cities project would bring an additional 345 kV source into this area to reduce loading along the path into Wisconsin. There are also 115 kV overloads in this area which are mitigated by this project.

Alternatives Considered:

With the existing 345 kV outlets out of Brookings County thermally constrained and with most of the 230 and 115 kV paths between Brookings County and the Twin Cities overloaded, mitigating all these constraints through underlying line rebuilds would be infeasible and costlier compared to this project.

5.3 Lakefield Junction to Winnebago to Winnco to Burt area; Sheldon to Burt area to Webster 345 kV Lines

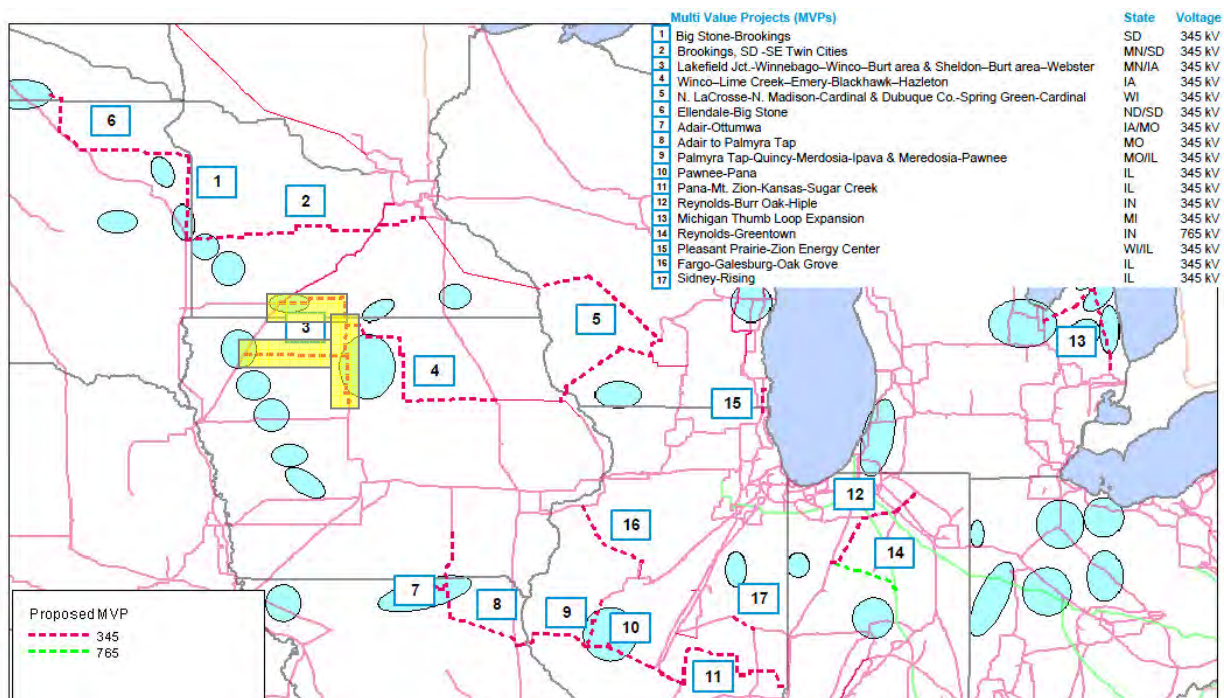


Figure 5.3: Lakefield Jct to Winnebago to Winnco to Burt area; Sheldon to Burt area to Webster

Project(s): 3205

Transmission Owner(s): MEC, ITCM

Project Description:

Designed to connect with project 3213, this project creates a double circuit 345/161 kV path through the border of Minnesota and Iowa. New 345 kV transmission will be built from Lakefield Junction to Winnebago to Winnco to Burt and from Sheldon to Burt to Webster. Rebuilt 161 kV transmission will be on the same towers and go from Lakefield to Fox Lake to Rutland to Winnebago to Winnco and Wisdom to Osgood to Burt to Hope to Webster. Winnebago, Winnco, Sheldon and Burt are all new 345 kV stations. Sheldon will be a tap on the existing Raun to Lakefield 345 kV line. A 345/161 kV, 450 MVA transformer will be installed at Winnebago. This project adds 218 miles of new 345 kV and 92 miles of rebuilt 161 kV transmission. The total estimated cost of this project is \$506 million¹¹. The expected in service dates for these projects are:

- December 2015 (All Lakefield Junction to Burt work)
- December 2016 (All Sheldon to Webster work)

Project Justification:

The new 345 kV path through southern Minnesota and northern Iowa effectively mitigates the Fox Lake – Rutland – Winnebago 161 kV constraint. Existing wind in the Winnebago and Wisdom areas are benefitted by 345 kV transmission moving generation out of these constrained areas. Working in tandem with project 3213, this project reliably moves mandated renewable energy from western and

¹¹ In 2011 dollars

northern Iowa along with existing wind at the Winnebago, Wisdom and Lime Creek/Emery areas to major 345 kV transmission hubs.

Alternatives Considered:

An Iowa alternative of Lakefield Junction to Mitchell County and Sheldon to Burt to Webster to Black Hawk to Hazleton 345 kV was analyzed but was not effective in collecting Lime Creek/Emery area wind or lowering congestion on the Mitchell County to Hazleton 345 kV line. It had similar cost to the combined Iowa projects 3205 and 3213.

5.4 Winco to Lime Creek to Emery to Black Hawk to Hazleton 345 kV Line

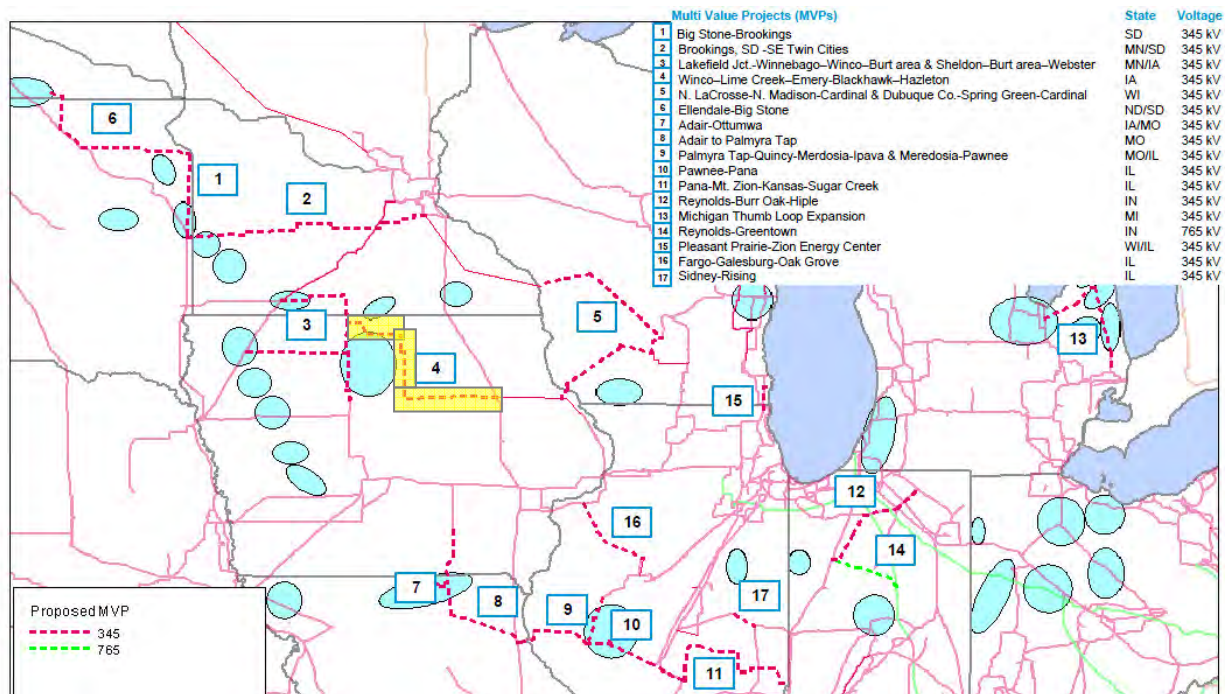


Figure 5.4: Winco to Lime Creek to Emery to Black Hawk to Hazleton 345 kV line

Project(s): 3213

Transmission Owner(s): MEC, ITCM

Project Description:

Designed to connect with project 3205, this project creates a double circuit 345/161 kV path through northern Iowa. New 345 kV transmission will be built from the new Winco substation to Lime Creek to Emery to Black Hawk to Hazleton. Rebuilt 161 kV transmission will be on the same towers as the 345 kV and will go from Lime Creek to Emery to Hampton to Franklin to Union Tap to Black Hawk to Hazleton. A 345/161 kV, 450 MVA transformer will be installed at Lime Creek, Emery and Black Hawk. This project adds 206 miles of new 345 kV, 23 miles of new 161 and 149 miles of rebuilt 161 kV transmission. The total estimated cost of this project is \$480 million¹². The expected in service date of the project is December 2015.

Project Justification:

¹² In 2011 dollars

The new 345 kV path through Iowa mitigates constraints seen on the Lime Creek – Emery – Floyd – Bremer – Black Hawk 161 kV line. The 345/161 kV transformers at Lime Creek and Emery are effectively acting as step-up transformers for wind and lowering congestion on the lower voltages. The additional 345 kV path into Hazleton significantly increases the transfer capability of the Mitchell County – Hazleton 345 kV line. Working in tandem with project 3205, this project reliably moves mandated renewable energy from western and northern Iowa along with existing wind at the Winnebago, Wisdom and Lime Creek/Emery areas to major 345 kV transmission hubs.

Alternatives Considered:

An Iowa alternative of Lakefield Junction to Mitchell County and Sheldon to Burt to Webster to Black Hawk to Hazleton 345 kV was analyzed but was not effective in collecting Lime Creek/Emery area wind or lowering congestion on the Mitchell County to Hazleton 345 kV line. It had similar cost to the combined Iowa projects 3205 and 3213.

5.5 North LaCrosse to North Madison to Cardinal 345 kV Line

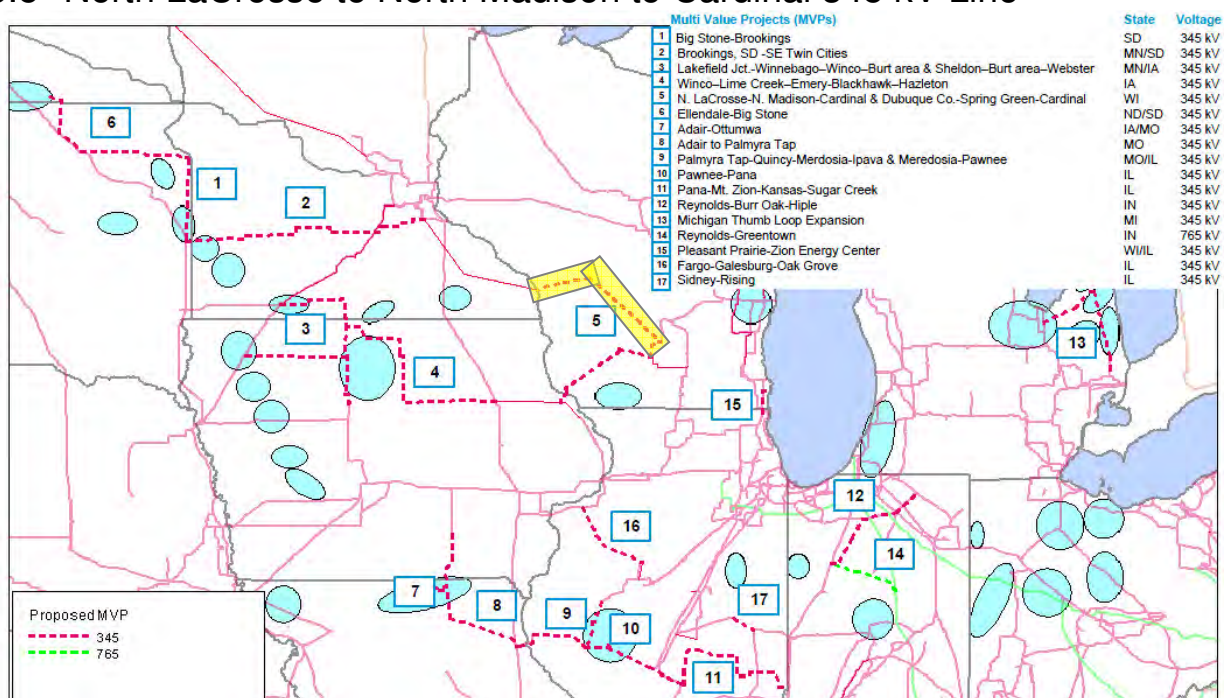


Figure 5.5: North LaCrosse to North Madison to Cardinal

Project(s): 3127

Transmission Owner(s): ATC, XEL

Description: This creates a 345 kV line from the North LaCrosse (Briggs Road) substation, to the North Madison substation, to the Cardinal substation, through southwestern Wisconsin. A 448 MVA, 345/161 kV transformer will be installed at Briggs Road, and approximately 20 miles of 138 kV line between the North Madison and Cardinal substations will be reconducted. The new 345 kV line will be approximately 157 miles long. The estimated cost is \$390 million¹³. The expected in service date is December 2018.

¹³ In 2011 dollars

Justification: The 345 kV line from North LaCrosse to North Madison creates a tie between the 345kV network in western Wisconsin to the 345 kV network in southeastern Wisconsin. This creates an additional wind outlet path across the state; pushing power into southern Wisconsin, where it can go east into Milwaukee, or south to Illinois, providing access to less expensive wind power in two major load centers. With the Brookings project, the wind coming into North LaCrosse needs an outlet, and the line to North Madison is the best option studied. From a reliability perspective, the addition of the North LaCrosse to North Madison to Cardinal 345 kV path helps relieve constraints on the 345 kV system parallel to the project to the north and south of the new line. The 138 and 161 kV system in southwest Wisconsin and nearby in Iowa are also overloaded during certain contingent events, and the new line relieves those constraints. This project will mitigate twelve bulk electric system (BES) NERC Category B thermal constraints and eight NERC Category C constraints. It will also relieve 30 non-BES NERC Category B and 36 NERC Category C constraints.

Alternatives Considered:

Rebuilding the overloaded 138 and 161 kV lines, along with adding transformers or upgrading the existing units to handle the increased loading, was the only other alternative considered. This was not a viable alternative, because the cost is greater than the proposed project. The proposed project also provides the most benefit to the transmission grid in the future.

5.6 Dubuque to Spring Green to Cardinal 345 kV Line

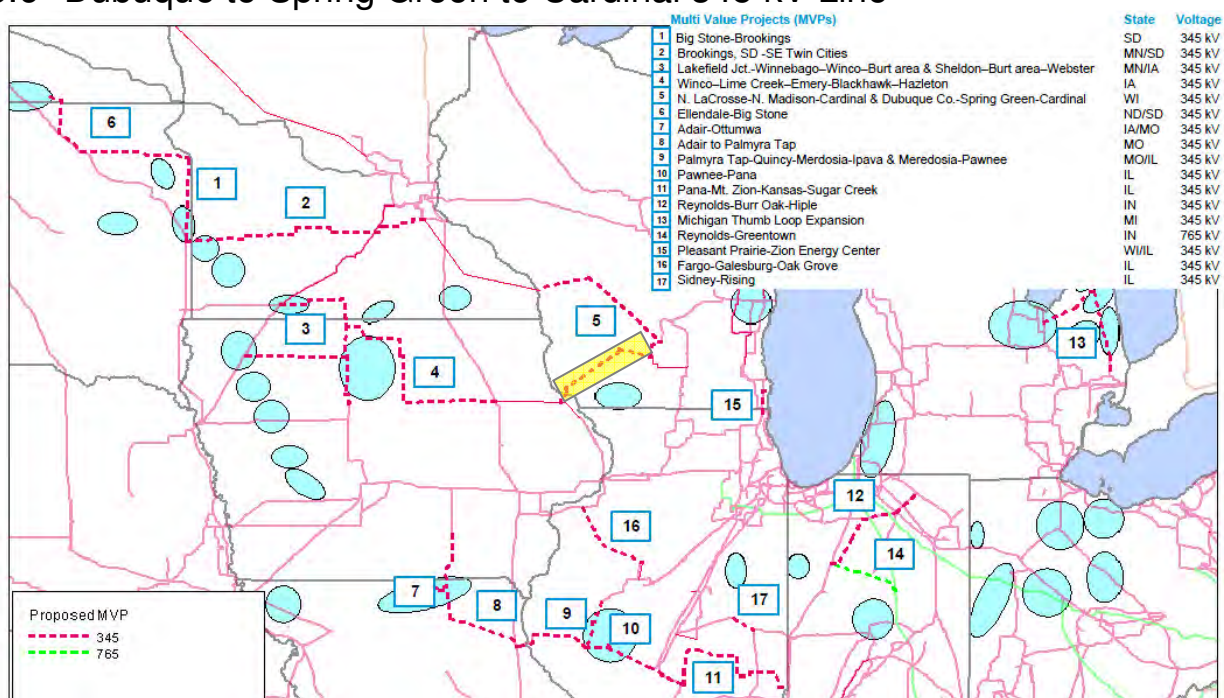


Figure 5.6: Dubuque to Spring Green to Cardinal

Project(s): 3127

Transmission Owner(s): ATC, ITCM

Description: A 345 kV line is created from the Dubuque substation in Iowa, to the Spring Green substation to the Cardinal substation through southwestern Wisconsin. A new Dubuque County 345 kV switching station will be created, and the Spring Green substation will be upgraded to

accommodate the new connections. A new 500 MVA, 345/138 kV transformer will be added. To accommodate the new 345 kV connections from Spring Green and North Madison, the Cardinal substation will be upgraded. There are also upgrades to the 69 kV system, which is being converted to operate at 138 kV, in the Mazomanie – Black Earth – Stagecoach area. The new 345 kV line is approximately 136 miles long. The estimated cost is \$324 million¹⁴. The expected in service date is December 2020.

Justification: The 345 kV line from Dubuque to Spring Green to Cardinal creates a tie between the 345kV network in Iowa to the 345 kV network in southcentral Wisconsin. This expansion creates an additional wind outlet path across the state; bringing power from Iowa into southern Wisconsin, where it can then go east into Milwaukee or south toward Chicago providing access to less expensive wind power in two major load centers. In combination with another Multi Value Project, the Oak Grove – Galesburg – Fargo 345 kV line, this project enables 1,100 MW of wind power transfer capability. This new path will help offload the lines that feed the Quad City (Iowa) area by bringing power flow to the north. From a reliability perspective, the addition of the Dubuque – Spring Green – Cardinal 345 kV path helps relieve constraints on the 345 kV system parallel to the project to the north and south of the new line, as well as 138 kV system constraints in the aforementioned areas and to the west of the new line. The 138 kV system in southwest Wisconsin and nearby in Iowa is also overloaded during certain contingent events, and the new line relieves those constraints. Those overloaded facilities that are not relieved by the 345 kV project are relieved by upgrades to the lower voltage transmission system, including converting part of the 69 kV system to operate at 138 kV. This project will mitigate eight bulk electric system (BES) NERC Category B thermal constraints and ten NERC Category C constraints. It will also relieve two non-BES NERC Category B and two NERC Category C constraints.

Alternatives Considered: An alternative to the proposed project would be to rebuild the 138 kV lines that were overloaded. The cost of this alternative would be more than the proposed project, without providing benefits of the proposed project.

¹⁴ In 2011 dollars

5.7 Ellendale to Big Stone 345 kV Line

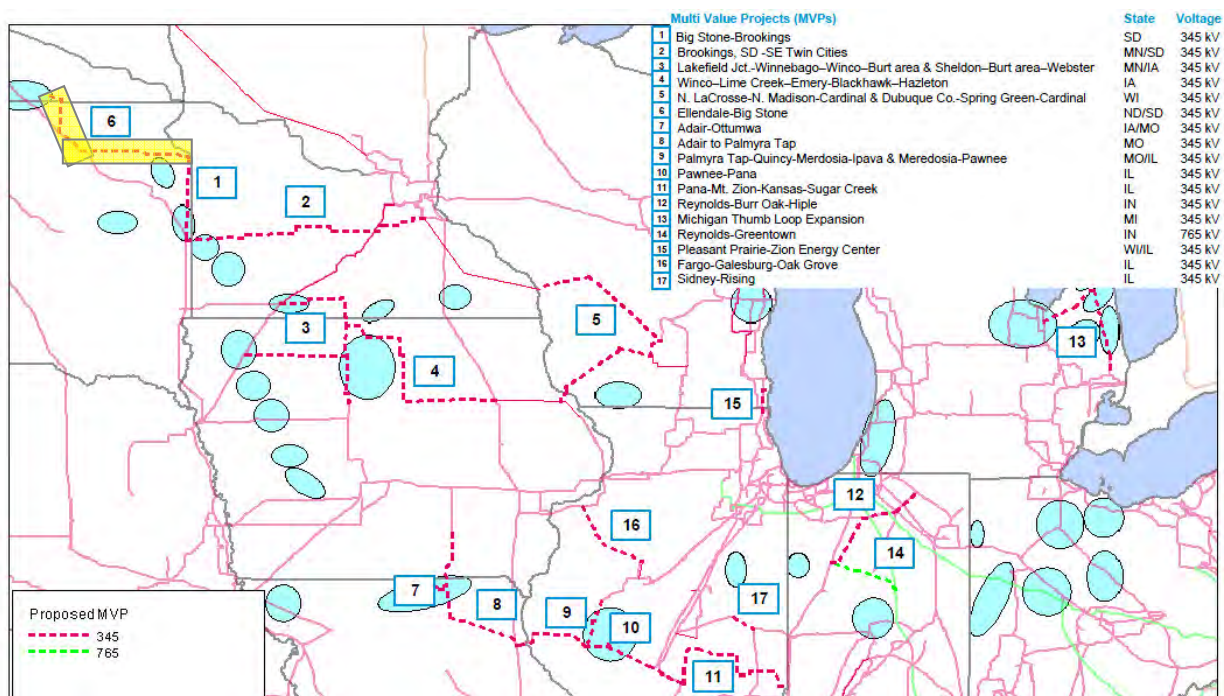


Figure 5.7: Ellendale to Big Stone

Project(s): 2220

Transmission Owner(s): OTP, MDU

Project Description:

This project creates a new 345 kV path through the border of the Dakotas by connecting OTP’s Big Stone and MDU’s Ellendale substations. Approximately 145 miles of new 345 kV transmission will be installed between these substations along with a new 345kV terminal at Ellendale and a 345/230 kV, 500 MVA transformer. The total estimated cost of this project is \$261 million¹⁵. The expected in service date for this project is December 2019.

Project Justification:

The new 345 kV outlet from Ellendale removes overloads on the 230 kV path from Ellendale to Oakes to Forman and the 115 kV path from Ellendale to Aberdeen. Overloads on the 230/115 kV transformers at Ellendale, Forman and Heskett are also alleviated. Along with project 2221, this project reliably moves mandated renewable energy from the Dakotas to major 345 kV transmission hubs and load centers.

Alternatives Considered:

An alternative to convert the 115 kV path from Ellendale to Huron could alleviate the southern path constraints out of Ellendale but downstream transmission may also need to be rebuilt to accommodate wind injection delivered through a lower impedance line. The eastern 230 kV path out of Ellendale would need to be rebuilt to 345 kV up to Fergus Falls. The cost of this alternative is higher than a 345 kV path to Big Stone.

¹⁵ In 2011 dollars

5.8 Ottumwa to Adair to Palmyra Tap 345 kV Line

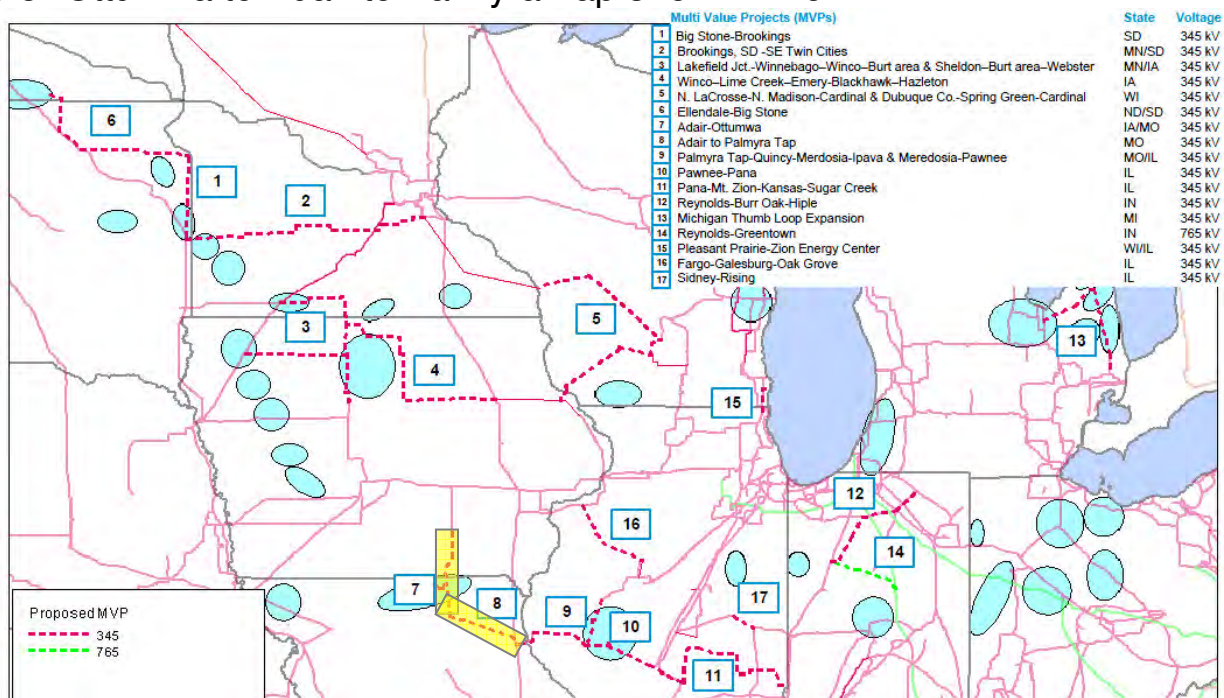


Figure 5.8: Ottumwa to Adair to Palmyra Tap

Project(s): 2248, 3170

Transmission Owner(s): Ameren Missouri, MEC, ITCM

Project Description:

This creates a 345 kV path through central/eastern Missouri by connecting Iowa’s Ottumwa substation to Ameren Missouri’s West Adair substation (P2248). It then extends 345 kV from West Adair to Ameren Missouri’s Palmyra substation Tap (P3370), near the Missouri/Illinois border. Approximately 88 miles of new and rebuilt 345 kV line will be installed between Ottumwa and Adair, along with a 345kV terminal at Adair and a 345/161 kV, 560 MVA step down transformer. Sixty-three miles of new 345 kV line will be built between West Adair and the Palmyra Tap, where a new 345 kV switching station will be established. The estimated cost is \$250 million¹⁶. The New Palmyra Tap substation will be ready by November 2016. The Ottumwa to West Adair 345 kV line and West Adair substation work will be ready by June 2017. The West Adair to Palmyra 345 kV line and West Adair 345/161 kV transformer will be ready by November 2018.

Project Justification:

The new 345 kV lines from Ottumwa to West Adair to Palmyra will provide an outlet for wind generation in the western region to move toward the more densely populated load centers to the east. In addition to providing a wind outlet, the new lines will provide reliability benefits by mitigating a number of contingent outage events during peak and shoulder periods, where the wind generation component is much higher. The addition of the 345 kV lines and step down transformer at West Adair is especially effective in resolving 161 kV line overloads on the lines out of West Adair and preventing the loss of the generation at West Adair during certain NERC Category C events. This project will mitigate two bulk electric system (BES) NERC Category B thermal constraints and five NERC Category C constraints. It will also relieve three non-BES NERC Category B and two NERC Category C constraints.

¹⁶ In 2011 dollars

Alternatives Considered:

An alternative was to incorporate an additional 345 kV line from West Adair to Thomas Hill. While improving reliability in the area, the addition would not improve the distribution of benefits within MISO. Thus the alternative was removed, and the proposed project was recommended.

5.9 Palmyra Tap to Quincy to Meredosia to Pawnee; Meredosia to Ipava 345kV Line

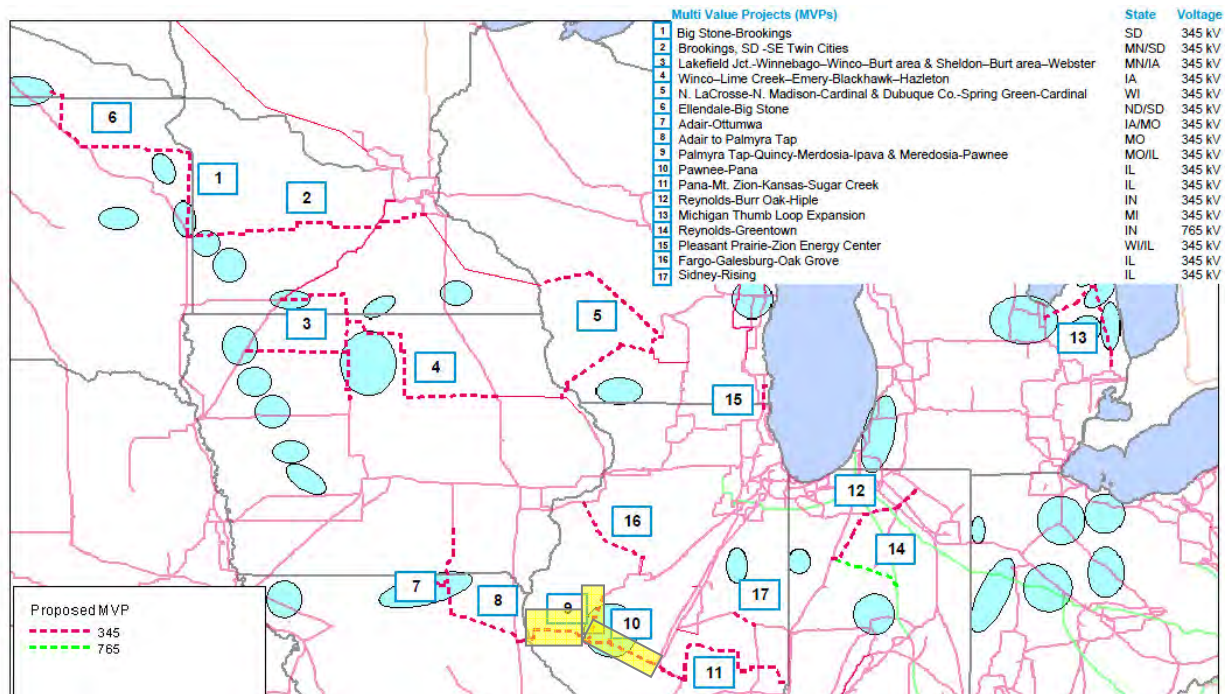


Figure 5.9: Palmyra Tap to Quincy to Meredosia to Pawnee; Meredosia to Ipava

Project(s): 3017

Transmission Owner(s): Ameren

Description: This creates a 345 kV path through western/central Illinois by construction of 345 kV lines between the new Palmyra Tap switching station to Quincy, Meredosia and Pawnee. Another 345 kV line would go from Meredosia north to the Ipava substation. A total of 116 miles of new 345 kV line will be built between the Palmyra switching station and Pawnee, with new 345/138 kV, 560 MVA transformers at Quincy and Pawnee. The new 345 kV line from Meredosia to Ipava would be 41 miles long. The estimated cost is \$392 million¹⁷. The New Palmyra Tap switching station will be ready by June 2016. The Palmyra Tap switching station to Quincy to Meredosia 345 kV line and the Quincy and Pawnee 345/138kV transformers will be ready by November 2016. The Ipava substation upgrades for new 345 kV connection from Meredosia will be ready by June 2017. The Meredosia to Ipava and Meredosia to Pawnee 345 kV lines will be ready by November 2017.

Justification: The 345 kV lines from the Palmyra switching station to Pawnee and from Meredosia to Ipava will provide an outlet for wind generation in the western region to move toward the more densely populated load centers to the east. In addition to providing a wind outlet, the new lines will

¹⁷ In 2011 dollars

provide reliability benefits by mitigating a number of contingent outage events during peak and shoulder periods, where the wind generation component is much higher. The addition of the 345 kV lines and step down transformers in this project will keep the power flow on the 345 kV system. Otherwise, it would be, injected into the lower voltage transmission networks if the 345 kV additions are not made, which causes a number of lower voltage network constraints to be alleviated. This project will mitigate eight bulk electric system (BES) NERC Category B thermal constraints and three NERC Category C constraints.

Alternatives Considered: A 345 kV connection between Palmyra and Sioux would alleviate some constraints, but would not affect constraints in the Tazewell area, which would also need a 345 kV connection to Palmyra. The alternative would not provide regional distribution of benefits with the multi value project, as it would constrain the 345 kV path from St. Louis across southern Illinois and into Indiana. Therefore the proposed project is recommended for the greatest benefit.

5.10 Pawnee to Pana to Mt. Zion to Kansas to Sugar Creek 345kV Line

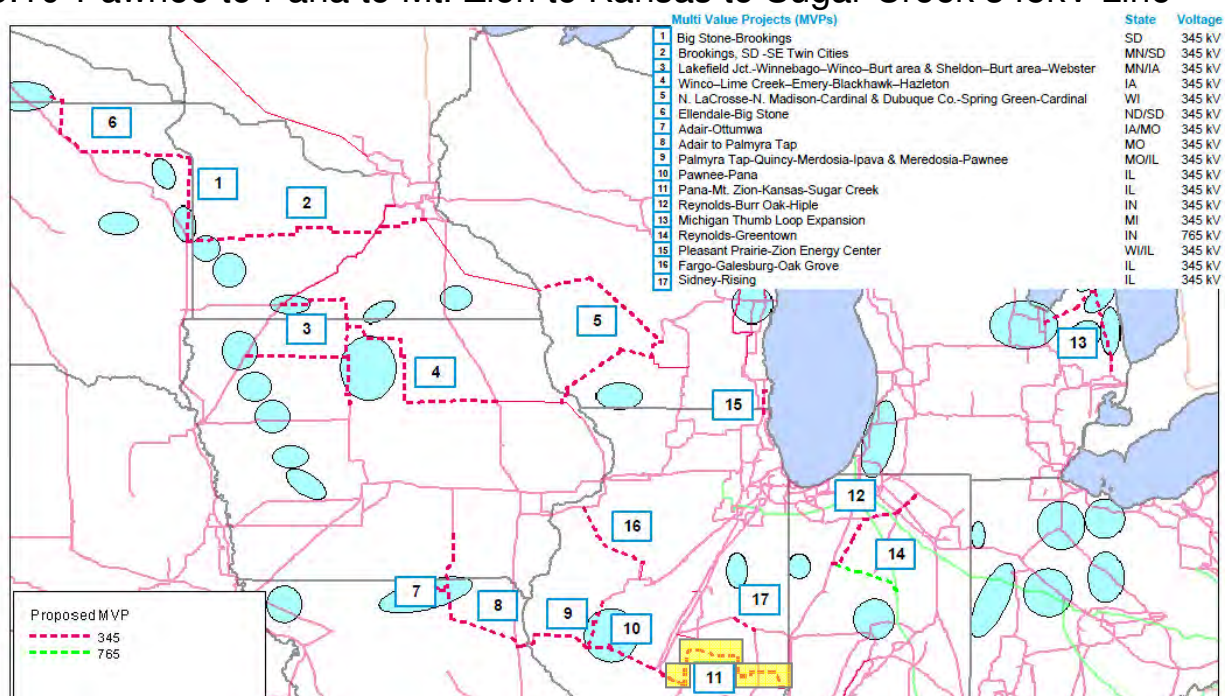


Figure 5.10: Pawnee to Pana to Mt. Zion to Kansas to Sugar Creek

Project(s): 2237, 3169

Transmission Owner(s): Ameren

Description: This creates a 345 kV path through eastern/central Illinois by building 345 kV lines between the Pawnee substation to Pana, Mt. Zion, Kansas and Sugar Creek (Indiana). A total of 146 miles of new 345 kV line will be constructed between the Pawnee substation and Sugar Creek substation on the eastern Illinois/Indiana border, with new 345/138 kV, transformers at Mt. Zion, Pana (both transformers are 560 MVA) and Kansas (448 MVA transformer). The estimated cost is \$372 million¹⁸ All components will be in service by November 2018, except the new Kansas to Sugar Creek 345 kV Line, which will be ready by November 2019.

¹⁸ In 2011 dollars

Justification: The 345 kV lines from the Pawnee to Sugar Creek in western Indiana will provide an outlet for wind generation in the western region to move toward the more densely populated load centers to the east. This 345 kV extension creates another 345 kV path across central Illinois to connect to the existing 345 kV network in Indiana at Sugar Creek. This provides access wind generation to all of Indiana, and supplies major load centers such as Indianapolis and the Chicago suburbs in northern Indiana. The new lines will provide a wind outlet and reliability benefits, by mitigating a number of contingent outage events during peak and shoulder periods, where the wind generation component is much higher. The addition of the 345 kV lines and step down transformers in this project will keep the power flow on the 345 kV system. Otherwise, it would be injected into the lower voltage transmission networks in Illinois if the 345kV additions are not made, which causes a number of lower voltage network constraints to be alleviated. This project will mitigate eight bulk electric system (BES) NERC Category B thermal constraints and 12 NERC Category C constraints.

Alternatives Considered: An alternative to the proposed project was a parallel 345 kV path to the north, which would have built a 345 kV line through Bloomington into Brokaw, through Gilman and to the Reynolds Substation in northwest Indiana. Although the benefits of taking this northern path were similar to the southern route, there were fewer benefits gained by going with the northern path. It also cost more than the recommended project.

5.11 Reynolds to Burr Oak to Hiple 345 kV line

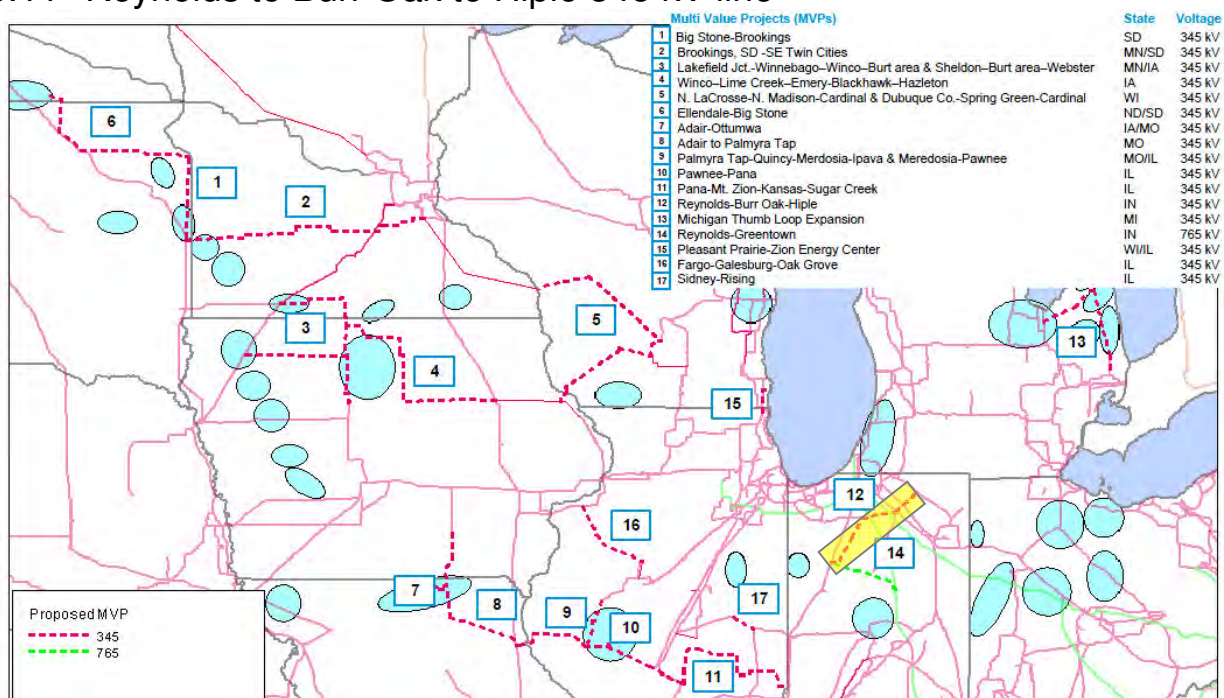


Figure 5.11: Reynolds to Burr Oak to Hiple

Project(s): 3203

Transmission Owner(s): NIPSCO

Description: This creates a 345 kV line from Reynolds substation to Burr Oak to Hiple through northern Indiana. At the Reynolds and Hiple stations, it creates a tie to 345kV lines routed near those two stations but do not connect electrically at those points. The 345 kV line is approximately 100 miles long, along with the substation upgrades at Reynolds and Hiple necessary to accommodate the

new 345 kV line connections. The estimated cost of this project is \$284 million¹⁹. The expected in service date is December 2019.

Justification: The project from Reynolds to Burr Oak to Hiple through northern Indiana will create a 345 kV path across the northern portion of Indiana toward Michigan, with the new tie at Hiple connecting an existing 345 kV line to the Argenta Station in southern Michigan. This path will provide an additional 345 kV path to move wind energy across Indiana, and closer to the east coast, bringing less expensive wind generation into areas where the expense to generate power can be considerably greater. The line will relieve overloads on the 138 kV system along a parallel path as well as the 138 kV network in the Lafayette, IN, area. The additional ties at Reynolds and Hiple also reduce loading on the existing 345 kV lines and creates a second path for power flow in this area, enhancing system reliability. This project will mitigate five bulk electric system (BES) NERC Category B thermal constraints and five NERC Category C constraints.

Alternatives Considered: There is no viable alternative to the proposed plan. The proposed project runs parallel to the constraints identified and is the most effective at relieving them.

5.12 MI Thumb Loop Expansion

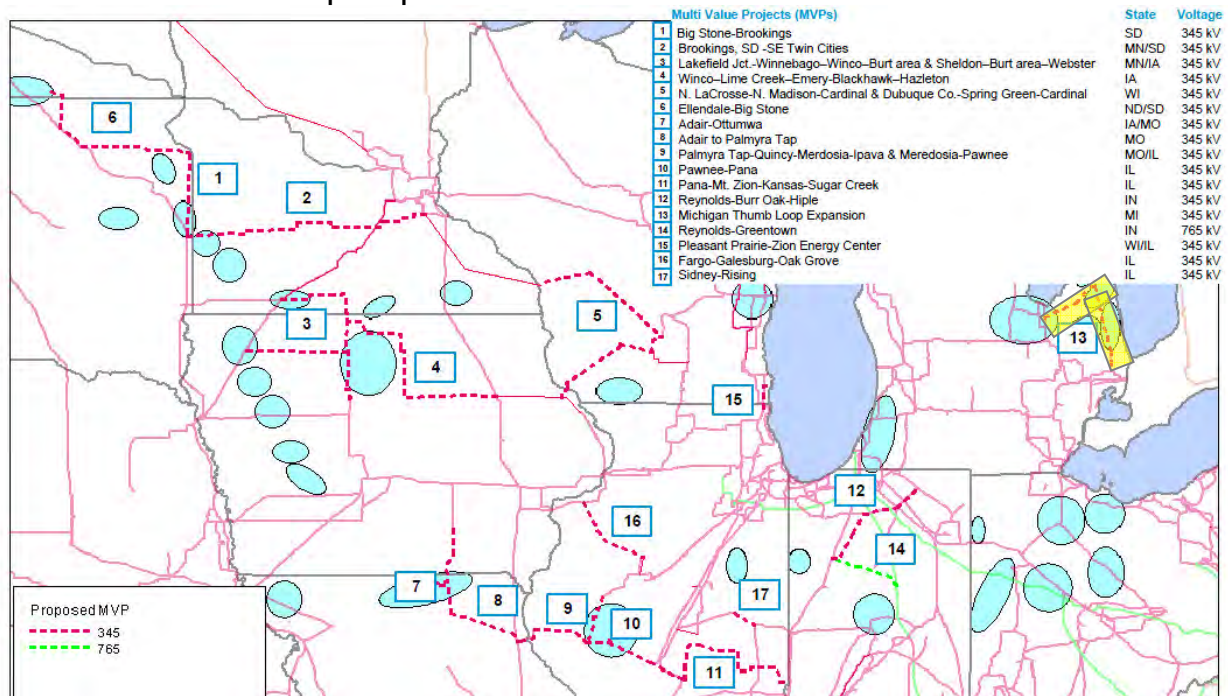


Figure 5.12: Michigan Thumb Loop Expansion

Project(s): 3168

Transmission Owner(s): ITC

Description: The proposed transmission line will connect into a new station to the south and west of the Thumb area that will tap three existing 345 kV circuits; one between the Manning and Thetford 345 kV stations, one between the Hampton and Pontiac 345 kV stations and one between the Hampton and Thetford 345 kV stations. Two new 345 kV circuits will extend from this new station, to be called Baker (formerly Reese), up to a new station, to be called Rapson (formerly Wyatt or Wyatt East) that will be

¹⁹ In 2011 dollars

located to the north and east of the existing 120 kV Wyatt station. In order to support the existing 120 kV system in the northern tip of the Thumb, the two existing 120 kV circuits between the Wyatt and Harbor Beach stations, one that connects directly between Wyatt and Harbor Beach and that connects Wyatt to Harbor Beach through the Seaside station, will be cut into the new Rapson station. From the Rapson station, two 345 kV circuits will extend down the east side of the Thumb to the existing Greenwood 345 kV station and then continue south to the point where the existing three ended Pontiac to Greenwood to Belle River 345 kV circuit combines. To facilitate connection to the existing transmission system a new 345 kV station, to be called Fitz (formerly Saratoga), is included in the plan at a site due south of the existing Greenwood station and just north of where the existing three ended Pontiac to Greenwood to Belle River 345 kV circuit combines. The Fitz station will then tap the existing Pontiac to Belle River to Greenwood 345 kV circuit and the existing Belle River to Blackfoot 345 kV circuit. Transformation from the 345 kV facilities to the 120 kV facilities will be necessary to maintain continuity to the existing system in and around the Sandusky area. The existing 120 kV facilities between the sites that will facilitate the new 345 kV to 120 kV transformation can be utilized to facilitate a connection between the new 345 kV to 120 kV transformation and the existing 120 kV facilities in the Sandusky area. The cost of this project is \$510 million²⁰.

Justification: This project was needed pursuant to the directives of the Michigan Public Service Commission' and the Final Report of the Michigan Wind Energy Resource Zone Board ("Board"). This project is necessary to deliver wind mandate in Region 4, the primary wind zone region in Michigan (the Thumb). Reliability analysis tested 13 different system conditions involving Ludington pumped storage scenarios and Ontario interface transfers. Without mitigations, overloads were up to 155% and instability may happen for some multiple contingencies. With the existing system and alternative designs tested, NERC reliability standards cannot be met when renewable sufficient to deliver the wind mandates are connected.

Alternative 1 Considered: Replace the existing single circuit 120 kV loop from Tuscola up to Wyatt and down to Lee with two new 230 kV circuits on a 230 kV double circuit tower line that will extend from a new 230 kV station at or near the existing 120 kV Wyatt station southwest to a new 345/230 kV station southwest of the existing Atlanta 138/120 kV station and two more 230 kV circuits on a 230 kV double circuit tower line that will extend from the new 230 kV station at or near the Wyatt station down around to the existing Greenwood 345 kV station utilizing high temperature 1431 ACSR conductor (or an equivalently rated conductor) and 230 kV double circuit tower (or steel pole) construction, existing ROW as available and new ROW where necessary. Also, add two new 230 kV circuits (on new ROW) on a 230 kV double circuit tower line that will extend from the new station at or near the Wyatt station down around the west side of the Thumb to the new station south west of the Atlanta 138/120 kV station and two new 230 kV circuits on a 230 kV double circuit tower line that will extend from the Wyatt station down to the Greenwood station along the east side of the Thumb utilizing a similar conductor/tower configuration as the "inner loop". Continue south from the Greenwood 345 kV station with a new 345 kV double circuit tower line containing two new 345 kV circuits toward a new 345 kV station at a site due south of the existing Greenwood station and just north of the point where the three ended Pontiac to Greenwood to Belle River 345 kV circuit combines. The two new 345 kV circuits from Greenwood to this new station south of Greenwood would parallel the existing 345 kV circuit along that same path. These routes would utilize existing ROW to the extent possible.

Total Project Cost Estimate: \$740, 000,000

Alternative 2 Considered: Replace the existing single circuit 120 kV loop from Tuscola up to Wyatt and down to Lee with two new 230 kV circuits on a 230 kV double circuit tower line that will extend from a new 230 kV station at or near the existing 120 kV Wyatt station southwest to a new 345/230 kV station southwest of the existing Atlanta 138/120 kV station and two more 230 kV circuits on a 230 kV double circuit tower line that will extend from the new 230 kV station at or near the Wyatt station down around to the existing Greenwood 345 kV station utilizing high temperature 1431 ACSR conductor (or an equivalently rated conductor) and 230 kV double circuit tower (or steel pole) construction, existing ROW

²⁰ In 2011 dollars

as available and new ROW where necessary. Also, add two new 230 kV circuits (on new ROW) on a 230 kV double circuit tower line that will extend from the new station at or near the Wyatt station down around the west side of the Thumb to the new station south west of the Atlanta 138/120 kV station utilizing a similar conductor/tower configuration as the “inner loop”. Then continue south from the Greenwood 345 kV station with a new 345 kV double circuit tower line containing two new 345 kV circuits toward a new 345 kV station at a site due south of the existing Greenwood station and just north of the point where the three ended Pontiac to Greenwood to Belle River 345 kV circuit combines. The two new 345 kV circuits from Greenwood to this new station south of Greenwood would parallel the existing 345 kV circuit along that same path. These routes would utilize existing ROW to the extent possible.

Total Project Cost Estimate: \$560,000,000

5.13 Reynolds to Greentown 765 kV line

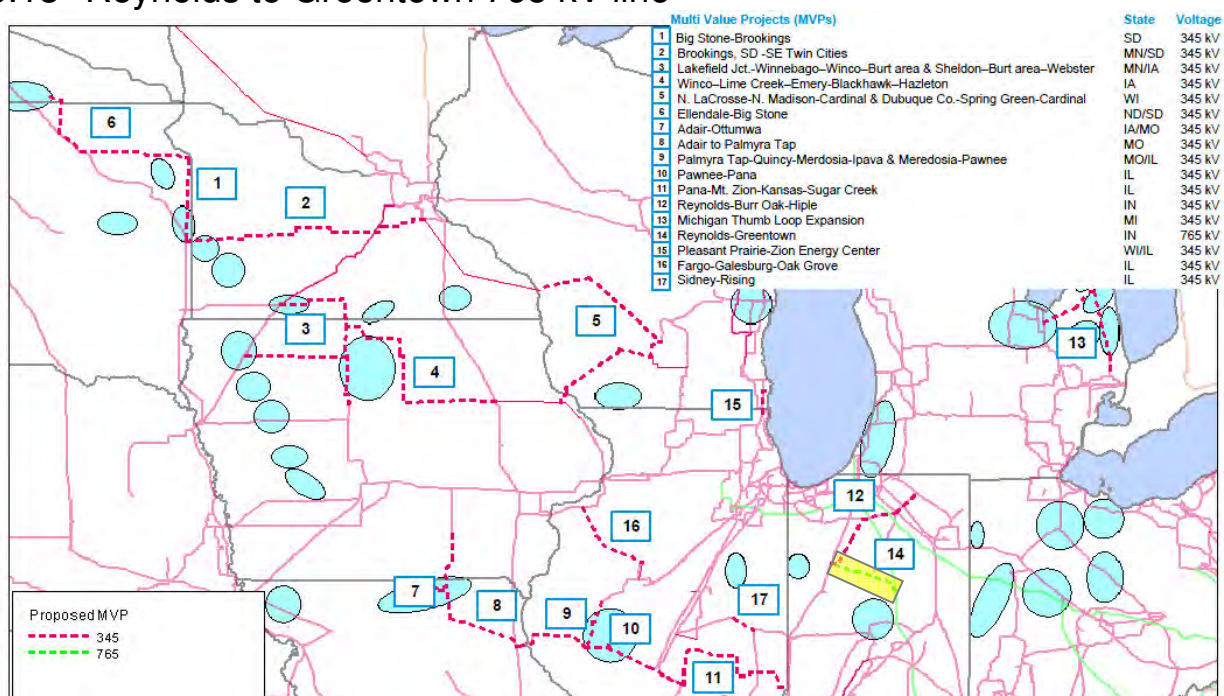


Figure 5.13: Reynolds to Greentown

Project(s): 2202

Transmission Owner(s): NIPSCO, Duke

Description: This project creates a 765 kV line from the Reynolds substation to the Greentown substation through Indiana, north of the Lafayette area. A 765/345 kV transformer/substation will also be installed at the Reynolds substation. The length of 765 kV line is approximately 66 miles, along with the 765 kV substation terminal upgrades at Greentown necessary to accommodate the 765 kV line connection. The estimated cost of this project is \$245 million²¹. The 765 kV line project will be ready by June 2018. The 765/345 kV substation upgrade/construction will be ready by August 2018.

Justification: The 765 kV line from Reynolds to Greentown path across central Indiana will create an additional wind outlet path across the state, pushing power closer to the east coast, bringing less expensive wind generation into areas where the generation of power can be considerably more expensive. There are constraints on reliability on the 345 kV system to the north going toward

²¹ In 2011 dollars

Chicago and Michigan, and to the south, crossing the Illinois/Indiana border and down into southwestern Indiana. These are mitigated with the new 765 kV line. The system flows attempt to bring power back to the Greentown substation, which cause numerous overloads for contingent scenarios that can be mitigated with the proposed 765 kV line. The line will also relieve constraints on the 138 kV system along a parallel path in the Lafayette, Indiana, area as well as the 138 kV line to the south between Dresser and Bedford. This 765 kV line will provide reliability benefits throughout Indiana. This project will mitigate seven bulk electric system (BES) NERC Category B thermal constraints and 21 NERC Category C constraints. It also relieves four non-BES NERC Category C constraints.

Alternatives Considered: Alternatives to the proposed project would be building lines to bypass the Lafayette area, which would relieve the constraints identified in this analysis, but load up the 230 and 138kV systems beyond the Lafayette area. The 345 kV in the Cayuga area is also heavily loaded, and upgrading would not be recommended. The proposed project is effective in alleviating all these constraints, without creating new ones, and provides a reduction of loadings on the existing lines.

5.14 Pleasant Prairie to Zion Energy Center 345 kV line

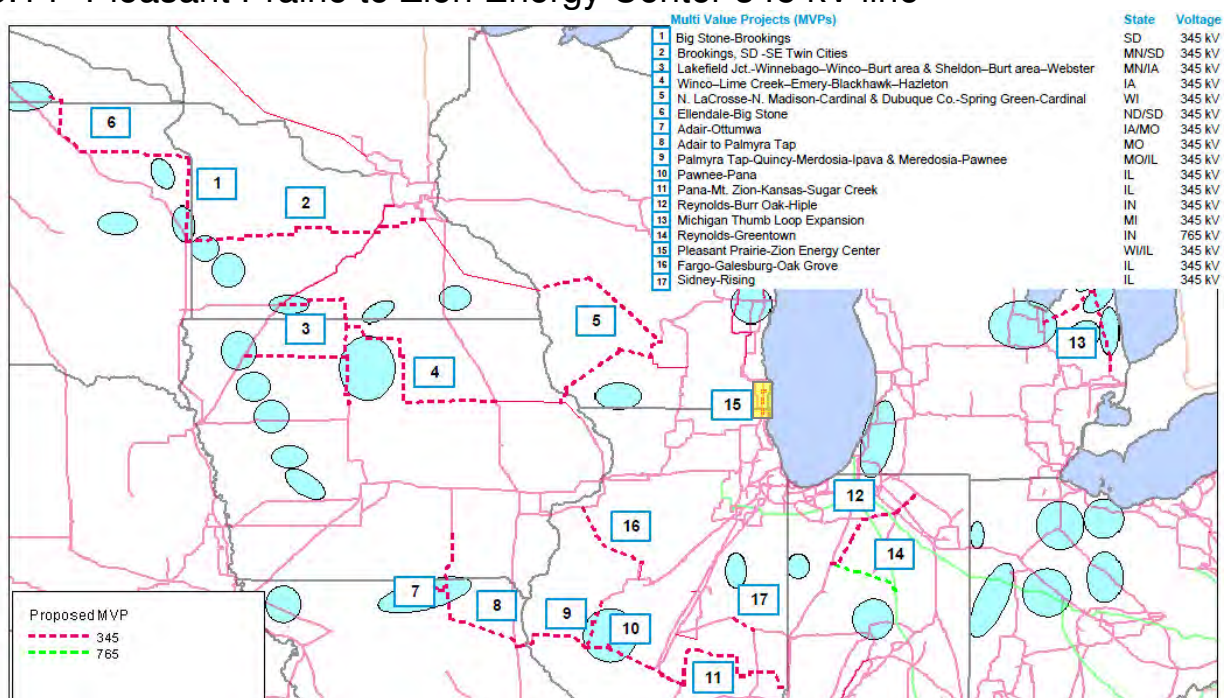


Figure 5.14: Pleasant Prairie to Zion Energy Center

Project(s): 2844

Transmission Owner(s): ATC

Description: A 345 kV line will be created from the Pleasant Prairie substation in Wisconsin to the Zion Energy Center substation in Illinois. The line will be approximately 5.3 miles long. The estimated cost is \$26 million²². The expected in service date is March 2014.

Justification: The 345 kV line from Pleasant Prairie to Zion Energy Center creates an additional 345kV tie between these two stations, allowing more power to flow from the north down into Illinois.

²² In 2011 dollars

That will bring wind energy from the north and west into this area. From a reliability perspective, the addition of the path relieves constraints on the 138 kV system adjacent to the project as well as 138 kV system constraints to the west of the new line. This project will mitigate seven bulk electric system (BES) NERC Category B thermal constraints and four NERC Category C constraints.

Alternatives Considered: No viable alternatives to this project were identified. The proposed project, which creates a parallel path to the existing constrained line, is the most effective solution.

5.15 Oak Grove to Galesburg to Fargo 345 kV line

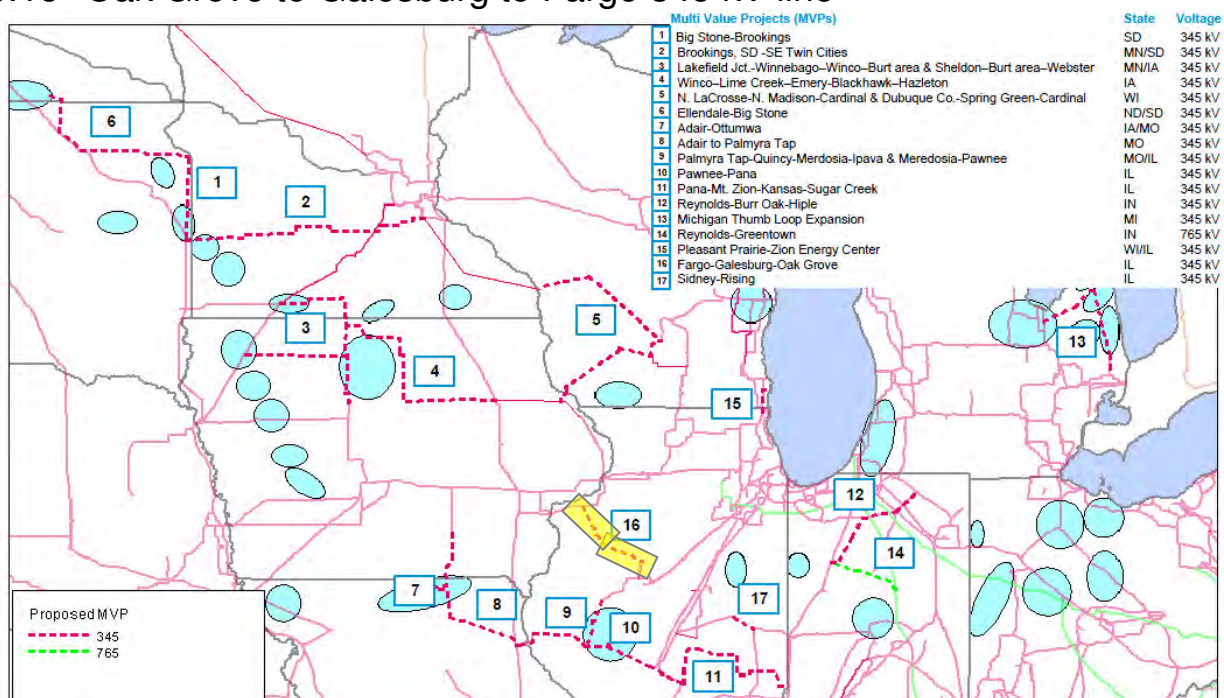


Figure 5.15: Oak Grove to Galesburg to Fargo 345 kV line

Project(s): 3022

Transmission Owner(s): Ameren, MEC

Description: This creates a 345 kV line from the MEC’s Oak Grove substation to Ameren’s Galesburg substation and to the Fargo substation through central Illinois. A new 560 MVA, 345/138 kV transformer will be installed at the Galesburg substation in addition to terminal additions/upgrades at all three substations. The 345 kV line is approximately 70 miles long, along with 40 miles of reconductor/rebuild at 345 kV and 138 kV to complete the project. The estimated cost is \$193 million²³. The Oak Grove – Galesburg 345 kV line and the Oak Grove 345 kV substation upgrades are expected to be ready by December 2016. The Fargo – Oak Grove 345 kV Line and Galesburg transformer addition are expected to be ready by November 2018. The Fargo substation upgrades are expected to be in service in 2018.

Justification: The new 345 kV line from Oak Grove to Galesburg to Fargo creates a path from western Illinois near the Iowa/Illinois border to central Illinois. This expansion creates an additional wind outlet path across the state, pushing power into central Illinois. In combination with another MVP, Dubuque – Spring Green – Cardinal 345 kV line, this enables 1,100 MW of wind power transfer

²³ In 2011 dollars

capability. From a reliability perspective, the addition of the Oak Grove to Fargo 345 kV path helps relieve constraints on the 345 kV system to the north. The 138kV system in the same area is also overloaded during certain contingent events. With the MVPs proposed in Wisconsin, Oak Grove to Fargo is needed to provide an outlet for the power coming from the west. It will keep that power on the 345 kV transmission system, rather than forcing it through the 138 kV system, requiring significant upgrades to carry the increased power flow.

Analysis also shows that the north ties from ATC to ComEd will remain constrained despite a new MVP from Pleasant Prairie to Zion, if the Oak-Grove Fargo 345 kV line is not built. This is because both outlets, Dubuque-Cardinal and Oak Grove-Fargo, are needed to effectively mitigate constraints on the transmission network supplying the Chicago area. This project will mitigate six bulk electric system (BES) NERC Category B thermal constraints and five NERC Category C constraints.

Alternatives Considered: Alternatives to the proposed project would be upgrading the 345 and 138 kV lines that are overloaded going toward Chicago. Upgrading the overloaded lines would likely lead to more overloads to the east, by injecting the additional power into an already constrained 345 kV path through Com Ed's Silver Lake area. The proposed project provides the greatest benefit to the transmission system.

5.16 Sidney to Rising 345kV Line

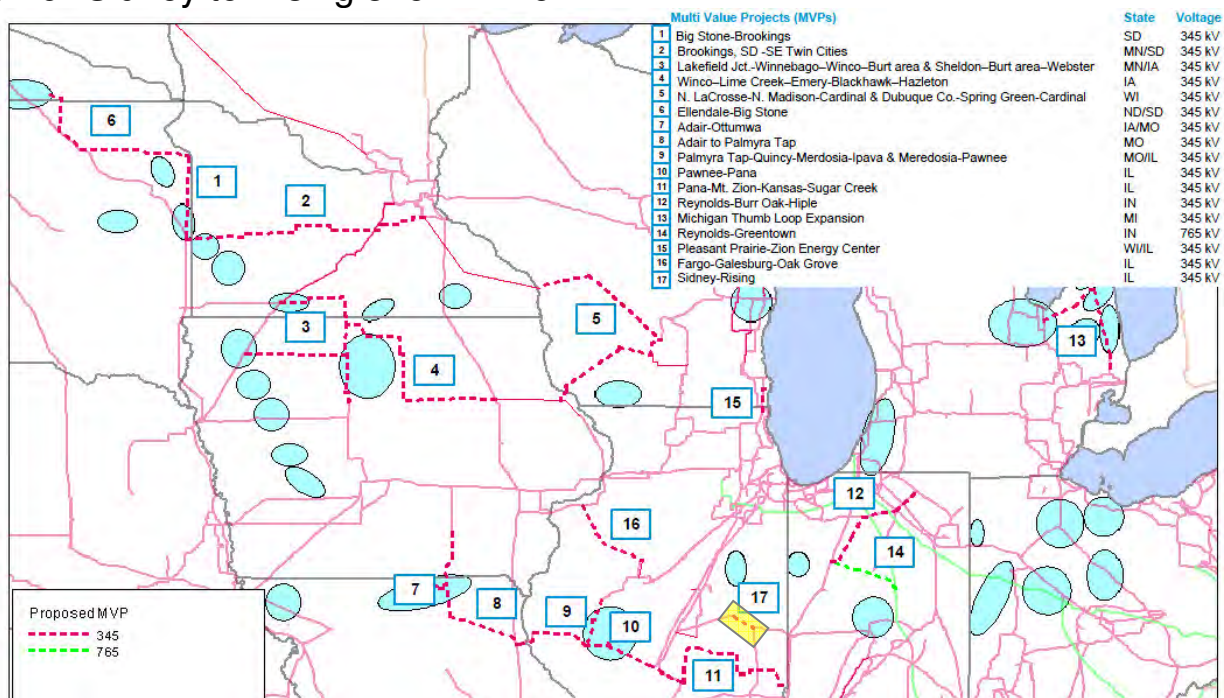


Figure 5.16: Sidney to Rising 345 kV line

Project(s): 2239

Transmission Owner(s): Ameren

Description: This builds a 345 kV line between the Sidney and Rising substation through eastern/central Illinois. That would create approximately 27 miles of 345 kV line, along with the substation upgrades at Sidney and Rising needed to accommodate the new line. The estimated cost of this project is \$90 million²⁴. The Sidney and Rising substation upgrades are expected to be ready by June 2016, and the 345 kV line should be ready by November 2016.

Justification: The 345 kV line from Rising to Sidney in Illinois will connect a gap in the 345 kV network in the area, promoting wind generation moving from the west to the east into Indiana. It will mitigate constraints by keeping the power on the 345 kV system, rather than pushing it into the 138 kV network at Rising. That causes overloads on the Rising transformer and on nearby 138 kV lines fed from Rising. This project will mitigate one bulk electric system (BES) NERC Category A thermal constraint, one NERC Category B constraint and three NERC Category C constraints.

Alternatives Considered: Upgrading the transformer at Rising and the 138 kV lines are a possible alternative, but that transformer was upgraded recently. Analysis shows that the power flow is being forced into the 138 kV system between Sidney and Rising to step back up to the 345 kV system. Completing the short connection between Sidney and Rising is the most effective recommendation for a long term solution.

²⁴ In 2011 dollars

6 Portfolio reliability analyses

In addition to the individual project justification, the MVP portfolio analysis also included an evaluation of the complete recommended MVP portfolio to ensure that system reliability is maintained. The recommended MVP portfolio maintains system reliability by resolving violations on approximately 650 transmission elements for more than 6,700 system conditions. It also mitigates 31 system instability conditions. More information on the constraints for each individual project may be found in Section 6 of this report.

6.1 Steady state

6.1.1 Reliability Planning Methodology Overview

The reliability assessment performed for the MVP portfolio analysis tested the transmission system using appropriate North American Electric Reliability Corporation (NERC) Table 1 events to determine if the system, as planned, meets Transmission Planning (TPL) standards. Any violation of these standards was identified, and the components of the portfolio were tested to determine their effectiveness in addressing the identified issues. In addition secondary transmission upgrades were developed to mitigate any unresolved issues. The performance of the mitigation plan was tested to ensure it alleviates the identified issues and does not create additional issues.

6.1.2 Planning Criteria and Monitored Elements

In accordance with the MISO Transmission Owners Agreement, the MISO Transmission System is to be planned to meet local, regional and NERC planning standards. The MVP portfolio analysis, performed by MISO staff, tested the performance of the system against the NERC Standards when applicable Renewable Portfolio Standards (RPS) were applied. Compliance with local requirements, where the local requirements exceed NERC standards, was not evaluated. This analysis will be performed by the responsible Transmission Owners. All system elements that were loaded at 95% or higher were flagged as transmission issues for Category A, B and C events. Elements under Category C3 contingencies were flagged as transmission issues at loadings of 125% and higher.

All system elements, 100 kV and above, within the MISO Planning regions, as well as tie lines to neighboring systems, were monitored. Elements 69 kV and above were monitored in select MISO Planning regions per Transmission Owner planning standards. Some non-MISO member systems were monitored if they were within the MISO Reliability Coordination Area.

6.1.3 Baseline Modeling Methodology

The MVP portfolio analysis powerflow models were developed to represent various system conditions in the planning horizon. 2021 Summer Peak and 2021 Shoulder Peak powerflow models were developed. MISO coordinated with external seam regions, including TVA, SPP, MAPP and PJM, to reflect the latest topology of the corresponding regions. For all other areas, modeling data from the 2020 Eastern Interconnection Planning Collaborative (EIPC) model was applied.

6.1.4 Contingencies Examined

Regional contingency files were developed by MISO staff collaboratively with Transmission Owners and regional study group input. NERC Category A, B and C contingency events on the transmission system under MISO functional control were analyzed. In general, contingencies on the MISO members' transmission system at 100 kV and above were analyzed, although some 69 kV transmission was also analyzed. The MTEP10 MRO contingency files were used with updates from MISO Transmission Owners. Automated single contingencies and bus double contingencies were also performed on the new MVP and surrounding transmission.

6.1.5 Results

A total of 384 thermal overloads were mitigated by the recommended MVP portfolio under shoulder peak conditions, for approximately 4,600 system conditions. In addition, approximately 100 additional thermal overloads and 150 voltage violations were mitigated by the recommended MVP portfolio in the summer peak analysis.

6.2 Transient stability

The purpose of performing transient stability analysis is to identify loss of synchronism, sometimes referred to as ‘out of step’ conditions for existing and proposed generation under severe fault conditions required by NERC and regional reliability standards. For the MVP portfolio transient stability analysis, two scenarios were studied.

Tasks of the two studies were evaluation of the impact of major fault conditions on the ability of the generators to remain synchronized to the electric system without any voltage or damping criteria violations.

6.2.1 Methodology and base case creation

Transient stability analysis was performed on two cases representing the shoulder peak conditions, in 2021, after the addition of RGOS wind zones and the 17 MVP portfolio lines. The following two cases were created for comparative analysis. These models were based upon the MTEP11 powerflow models utilized for the steady state analysis, as described in the previous section.

1. A base case, or the “No MVP portfolio case,” was developed by adding all the incremental wind zones, without the portfolio, to the MTEP11 case.
2. A study case, or the “With MVP portfolio case,” was developed by adding all the incremental wind zones, with the portfolio, to the MTEP11 case.

The corresponding dynamic files, for the power flow cases mentioned above, were created by adding the GE 1.5 MW turbines (GEWTG1- Type 3 model) to represent each wind zone. It was assumed that all new wind turbines would have a +/-0.95 power factor range. The machine data for all existing units was unchanged because it had been reviewed by the Transmission Owners during the MTEP10 review process. For all external models where the data was not available, machines were modeled with a classical machine model (GENCLS).

6.2.2 Monitored facilities

For evaluating the transient stability performance under fault conditions, the rotor angle, active power output, terminal voltage and the reactive power output for each machine was monitored. For evaluating the transient voltage violations under fault conditions, 345kV bus voltages in each MISO control area were monitored. The list of monitored bus voltages can be seen in Appendix C of this report.

6.2.3 Fault analysis and assumptions

All faults that were analyzed during the MTEP10 stability analysis review were used as the starting point for the stability analysis. In addition, several three phase faults and single line to ground faults (SLG) were developed to simulate fault conditions on the MVP portfolio lines. All these faults were reviewed by the Technical Study Task Force in the first quarter of 2011.

A two cycle margin was added to the fault clearing times to determine if system reliability would be maintained under more stressed conditions. Generally, when the fault clearing times are increased, the probability of having an unstable condition is also increased. Therefore, it was important to determine whether the existing MTEP10 faults would cause system instability; with a two cycle embedded margin to account for modeling errors that can mask underlying reliability issues if the clearing times are close to the critical clearing times. This analysis was not required to comply with any NERC reliability criteria, but

was performed to check the strength of the power system with increased wind generation and transmission under the 2021 conditions.

At the time this fault analysis was conducted, short circuit data was not available to model SLG fault conditions for the CMVP faults. NERC Category C6, C7, C8 and C9 reliability criteria requires the system to be stable under SLG faults cleared under delayed clearing such as a stuck breaker condition. NERC Category D1, D2, D3 and D4 reliability criteria, which is a lot more stringent, requires the system to be stable under three phase fault conditions with delayed clearing. Typically, a three phase fault is a lot more severe than a SLG fault and is a lot easier to simulate due to the absence of zero sequence fault currents. Therefore, SLG faults with delayed clearing on the MVP portfolio lines were simulated as three phase faults with delayed clearing.

The rationale for choosing this approach was simple. If the Three Phase faults were stable under delayed clearing conditions, then it could be reasonably assumed that the same faults would also be stable under SLG with delayed clearing. However, if the analysis revealed that a few faults caused instability, then only those faults would then be re-analyzed with correct fault impedance.

6.2.4 Results

The transient stability analysis revealed that the addition of the MVP portfolio to the transmission system made the system more stable under several fault conditions and 2021 shoulder peak conditions. There were a few fault conditions, which required the addition of minor reactive support devices at a couple of 345kv buses in the western region of the MISO transmission system. The evaluation of optimized reactive support locations under these fault conditions will be studied during the regular MTEP12 reliability analysis, which requires additional stakeholder input and more detailed analysis. The results of the transient stability analysis are under Appendix C of this report.

6.3 Voltage stability

Voltage stability analysis was performed to identify voltage collapse conditions under high energy transfer conditions from major generation resources to major load sinks. For this analysis, high transfer conditions were analyzed, from the wind rich west region of the MISO footprint to major load centers such as Minneapolis-St. Paul, Madison, St Louis and Des Moines. The idea was to evaluate the incremental transfer capability, between the generation resources and the load sinks, that is created by the addition of the MVP portfolio under 2021 summer peak conditions.

6.3.1 Methodology and base case creation

The evaluation of the MVP portfolio's incremental transfer capability benefits can only be quantified when the results are compared to identical system conditions without the MVP lines. Therefore, two different power flow cases were created for 2021 summer peak conditions, shown below.

1. A base case or the "No MVP portfolio case" was developed by adding all the incremental wind zones without the portfolio.
2. A study case or the "With MVP portfolio case" was developed by adding all the incremental wind zones with the portfolio.

For each of the two cases mentioned above, four different transfers were modeled by increasing the generation in the source areas and reducing the generation in the load areas. The idea is to transmit maximum megawatts over the transmission system before a voltage collapse condition occurs due to the contingency loss of a major transmission line. For each simulated transfer, an interface consisting of major import transmission lines into the load centers was created and monitored for each contingency.

The voltage stability transfer analysis was simulated under several contingency conditions to identify the worst contingency and the corresponding maximum megawatt transfer levels over the defined interface. This method was repeated for each transfer and for both the 2021 summer peak load cases as described above.

6.3.2 Results

The comparative analysis summary below shows that the addition of the MVP lines boosted transfer capabilities from wind rich regions to major load centers within the MISO footprint. The details of the voltage stability analysis showing the PV plots and reactive reserve margins for each transfer, under both scenarios, can be viewed in Appendix C of this report.

Voltage Stability Transfer Analyzed	Without Multi Value Project Portfolio (MW)	With Multi Value Project Portfolio (MW)	Incremental Transfer enabled by the MVPs (MW)	Incremental Transfer enabled by the MVPs (percent)
MISO West - Twin Cities	3399	5240	1841	54 percent
MISO West - Madison	1720	3160	1440	84 percent
MISO West - Des Moines	2000	3100	1100	55 percent
MISO West - St Louis	3700	4660	960	26 percent

Table 6.1: Transfer capabilities under high transfer conditions

6.4 Short circuit

The reliability analysis component of the MVP portfolio study included a short-circuit analysis. The goal was to determine whether the installation of the MVP transmission facilities would cause certain existing circuit breakers to exceed their short-circuit fault interrupting capability.

Per the Tariff, should the installation of one or more MVPs cause an electrical issue on a facility, the resolution can be included in the scope of the MVP. The costs can then be shared using the same regional cost allocation mechanism applicable to the base MVPs, as long as the electrical issue is associated with a facility that is owned by a MISO Transmission Owner and classified as a transmission plant. While many electrical issues resulting from MVPs are loading or voltage related, it is also possible for the MVPs to raise the available short-circuit fault current at specific buses.

When the available short-circuit fault current increases beyond the capability of one or more circuit breakers to interrupt the fault current, the situation must be remedied. Typical remedies include replacing the affected circuit breaker with those with higher short circuit fault interrupting capabilities. In some situations, it may be necessary to reconfigure the topology of the system (e.g., splitting buses, etc.) if the available short-circuit fault currents exceed the capabilities of available circuit breakers.

To perform the short-circuit analysis, MISO developed default criteria to govern the short-circuit study. MISO then requested each Transmission Owner to conduct a short-circuit analysis on their own circuit breakers, using either their own internal criteria or MISO's default criteria, to determine if there are fault duty issues with any circuit breakers caused by the installation of one or more MVPs. Most Transmission Owners elected to use the default MISO criteria. The Transmission Owners then submitted results to MISO, including any recommendations to be added to the scope of existing MVPs. The default MISO criteria for the short-circuit analysis follows.

6.4.1 Default criteria for worst case fault current interruption exposure

This default criteria will establish the worst case fault current interruption exposure for each circuit breaker when there is no established criteria for worst case fault current interruption exposure for a specific Transmission Owner:

- Three-phase, phase-to-ground and double phase-to-ground faults will be evaluated. Phase-to-phase faults will not be evaluated.

- Faults will be simulated with zero fault impedance.
- Fault currents will be calculated in accordance with IEEE/ANSI Standard C37.010-1999 using the X/R multiplying factors.
- Faults will be simulated with all generation on-line with the sub transient reactance or equivalent modeled for all generators.
- Faults will be simulated with all network buses and branches in their normal configuration.
- For branch faults, fault locations will be simulated at the branch-side terminals of the circuit breaker in question.
- For branch and bus faults, faults current circuit breaker flows will be determined assuming all other circuit breakers protecting the branch or bus are open. While this results in a lower total fault current, this typically represents the highest fault current exposure for a specific circuit breaker.
- For each circuit breaker, simulations will be made to determine the worst case fault current interruption exposure for primary and backup zones of protection, where backup zones of protection are covered by a specific circuit breaker under the failure of a different circuit breaker.

6.4.2 Default criteria for circuit breaker fault duty calculations

The following default criteria will be used to establish the fault duty for each circuit breaker when there is no established criteria for circuit breaker fault duty calculations for a specific Transmission Owner:

- For each circuit breaker, the interrupting capability of the circuit breaker must be greater than the worst case fault current interrupting exposure of the circuit breaker, plus a safety margin of 2.5 percent
- When specific circuit breakers must be derated for reclosing duty, the Transmission Owner will inform MISO about the specific derates and the associated zones of protection where they apply for each circuit breaker. These derates will be applied in determining the fault duty for the circuit breaker.

6.4.3 Results

The results of the short-circuit analysis indicated the need for only nine circuit breaker replacements, representing an estimated capital cost of about \$2.2 million, or less than 0.1 percent of the recommended MVP portfolio. The circuit breaker replacements represented lower voltage circuit breakers exposed to higher fault current levels due the installation of nearby MVP facilities. The recommended circuit breaker replacements are shown in the table below:

Substation	Voltage	Number of Breaker Replacements	Driving MVP
Blount	69 kV	3	N. Lacrosse – Cardinal - Dubuque
Lakefield	161 kV	1	Lakefield - Hazleton
Winnebago	161 kV	3	Lakefield – Hazleton
Lime Creek	161 kV	1	Lakefield – Hazleton
Hazleton	161 kV	1	Lakefield – Hazleton

Table 6.2: Circuit breaker replacements

7 Portfolio Public Policy Assessment

The projects in the proposed Multi Value Project portfolio were evaluated against criterion 1, which require the projects to reliably or economically enable energy policy mandates. To demonstrate the ability of the portfolio to enable the renewable energy mandates of the footprint, a set of analyses were conducted to quantify the renewable energy enabled by the footprint.

This analysis took part in two parts. The first part demonstrated the wind needed to meet the 2026 renewable energy mandates that would be curtailed but for the recommended MVP portfolio. The second part demonstrated the additional renewable energy, above the 2026 mandate, that will be enabled by the portfolio. This energy could be used to serve mandated renewable energy needs beyond 2026, as most of the mandates are indexed to grow with load.

7.1 Wind Curtailment

A wind curtailment analysis was performed to find the percentage of mandated renewable energy which could not be enabled but for the recommended MVP portfolio.

The shift factors for all wind machines were calculated on the worst NERC Category B and C contingency constraints of each monitored element identified as mitigated by the recommended MVP portfolio. The 429 monitored element/contingent element pairs (flowgates) consisted of 205 Category B and 224 Category C contingency events. These constraints were taken from a blend of 2021 and 2026 wind levels with the final calculations based on the 2026 wind levels.

Since the majority of the western region MVP justification was based on 2021 wind levels, it was assumed that any incremental increase to reach the 2026 renewable energy mandated levels would be curtailed. A transfer of the 193 wind units, sourced from both committed wind units and the RGOS energy zones, to the system sink, Browns Ferry in TVA, was used to develop the shift factors on the flowgates.

Linear optimization logic was used to minimize the amount of wind curtailed while reducing loadings to within line capacities. Similar to the Multi Value Project justifications, a target loading of less than or equal to 95% was used. 24 of the 429 flowgates could not achieve the target loading reduction, and their targets were relaxed in order to find a solution.

The algorithm found that 10,885 MW of dispatched wind would be curtailed. As a connected capacity, this equates to 12,095 MW as the wind is modeled at 90% of its nameplate. A MISO-wide per-unit capacity factor was averaged from the 2026 incremental wind zone capacities to 32.8%.

The curtailed energy was calculated to be 34,711,578 MWhr from the connected capacity times the capacity factor times 8,760 hours of the year. Comparatively, the full 2026 RPS energy is 55,010,629 MWhr. As a percentage of the 2026 full RPS energy, 63% would be curtailed in lieu of the MVP portfolio.

7.2 Wind Enabled

Additional analyses were performed to determine any incremental wind energy, in excess of the 2026 requirements, enabled by the recommended MVP portfolio. This energy could be used to meet renewable energy mandates beyond 2026, as most of the state mandates are indexed to grow with load. A set of two First Contingency Incremental Transfer Capability (FCITC) analyses were run on the 2026 model to determine how much the wind in each zone could be ramped up prior to additional reliability constraints occurring.

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First, a transfer was sourced from all the wind zones in proportion to their 2026 maximum output. All the Bulk Electric System (BES) elements in the MISO system were monitored, with constraints being flagged at 100% of the applicable ratings. All single contingencies in the MISO footprint were evaluated during the transfer analysis. This transfer was sunk against MISO, PJM, and SPP units, in the proportions below. More specifically, the power was sunk to the smallest units in each region, with the assumption that these small units would be the most expensive system generation.

Region	Sink
MISO	33 percent
PJM	44 percent
SPP	23 percent

Table 7.1: Transfer Sink Distribution

As a result of this analysis, it was determined that an additional 981 MW could be reliably sourced from the energy zones. Because of regional transfer limits, no additional western wind could be increased beyond this level. The output levels of the wind zones were updated in the model and a second transfer analysis was performed to determine any incremental wind that could be sourced from the Central and East wind zones. This analysis was performed with the same methodology and sink as the first analysis, but all the western wind zones were excluded from the transfer source. This analysis determined that 1,249 MW of additional generation could be sourced from the Central and Eastern wind zones.

Wind Zone	Incremental Wind Enabled	Wind Zone	Incremental Wind Enabled	Wind Zone	Incremental Wind Enabled
IA-BF	22.5	IN-E	144.9	MT-A	15.4
IA-GH1	27.4	IN-K	483.0	ND-M	2.4
IA-H2	76.0	MN-B	109.5	SD-HJ	130.1
IA-J	5.1	MN-H	254.7	SD-L	15.4
IL-F	678.6	MN-K	34.8	WI-B	230.4

Table 7.2: Incremental Wind Enabled Above 2026 Mandated Level, by Zone

In total, it was determined that 2,230 MW of additional generation could be sourced from the incremental energy zones to serve future renewable energy mandates. When the results from the curtailment analyses and the wind enabled analyses are combined, the recommended MVP portfolio enables a total of 41 million MWhs of renewable energy to meet the renewable energy mandates.

8 Portfolio economic benefits analyses

Multi Value Projects represent the next step in the evolution of the MISO transmission system: a regional network that, when combined with the existing system, provides value in excess of its costs under a variety of future policy and economic conditions. These benefits are discussed below, as well as the analyses used to determine them.

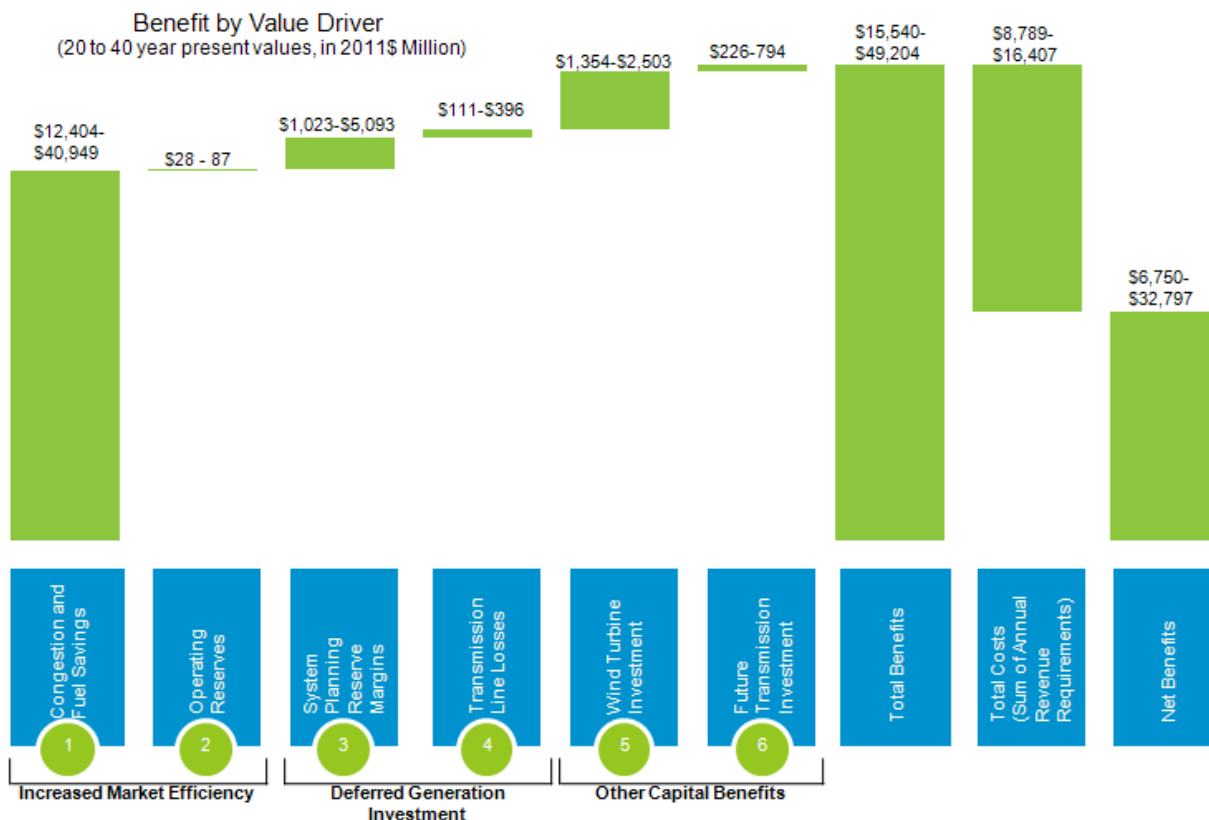


Figure 8.1: Recommended MVP portfolio economic benefits

8.1 Congestion and fuel savings

The recommended MVP portfolio allows for a more efficient dispatch of generation resources, opening markets to competition and spreading the benefits of low cost generation throughout the MISO footprint. These benefits were outlined through a series of production cost analyses, which captured the economic benefits of the recommended MVP transmission and the wind it enables. These benefits reflect the savings achieved through the reduction of transmission congestion costs and through more efficient use of generation resources.

The future scenarios without any new energy policy requirements provide a baseline of the recommended MVP portfolio’s benefits under current policy conditions. Additionally, the evaluation of the Carbon Constrained and Combined Policy future scenarios provide “bookends,” helping to show the full range of benefits that may be provided by the portfolio. Looking at the “Business as Usual” future scenarios with no new energy policies, the recommended MVP portfolio will produce an estimated \$12.4 to \$40.9 billion in 20 to 40 year present value adjusted production cost benefits, depending on the timeframe, discounts and growth rates of energy and demand. This benefit increases to a maximum present value of \$91.7 billion under the Combined Policy future scenario.

8.1.1 Production cost model development

PROMOD IV[®] is an integrated electric generation and transmission market simulation system, and was the primary tool used to support economic assessment of the recommended MVP portfolio. It incorporates details of generating unit operating characteristics and constraints, transmission constraints, generation analysis, unit commitment/operating conditions and market system operations. It performs an 8,760-hour centralized security constrained unit commitment and economic dispatch, recognizing generation and transmission impacts at the nodal level. It uses an hourly chronological dispatch algorithm that minimizes cost, while recognizing a variety of operating constraints.

These include generating unit characteristics, transmission limits, fuel and environmental considerations, reserve requirements and customer demand. It provides a wide spectrum of forecasts on hourly energy prices, unit generation, fuel consumption, energy market prices at bus level, regional energy interchanges, transmission flows and congestion prices.

To be able to perform a credible economic assessment on the recommended MVP portfolio, production cost models require detailed model input assumptions on generation, fuel, demand and energy, transmission topology and system configuration, described below.

8.1.2 Models

The primary economic analysis was performed with 2021 and 2026 production cost models, with incremental wind mandates considered for 2021, 2026 and 2031, respectively. Three various levels of wind mandates and loads were modeled: 2021 RPS mandates and load levels, 2026 RPS mandates and load levels and 2026 load levels, plus all generation enabled by the recommended MVP portfolio used to estimate benefits in year 2031.

The transmission topology was taken from the 2021 summer peak power flow model developed through the MTEP11 planning process. The 2026 production cost models used the same transmission topology as 2021. The PROMOD study footprint included the majority of the Eastern Interconnection with ISO-New England, Eastern Canada and Florida excluded. Although these regions have very limited impact on the study results, fixed transactions were modeled to capture the influence of these regions on the rest of the study footprint.

8.1.3 Event file

Production cost models use an “event file” to capture a set of transmission constraints. The constraints ensure system reliability by performing hourly security constrained unit commitment and economic dispatch. The event file was developed based on the latest Book of Flowgates from MISO and NERC, updated to incorporate rating and configuration changes from concurrent studies in the MTEP11 planning cycle. In addition, MUST AC analyses and PROMOD Analysis Tool (PAT) contingency screening analyses were performed to identify a number of additional monitored/contingencies to ensure the most severe limiters of the transmission system are captured in the event file. As an integral part of the study, stakeholders and interested parties were extensively involved in the review of the event file.

8.1.4 Benefit measure

Comprised of 17 projects spread across the MISO footprint, the recommended MVP portfolio enables the renewable energy delivery required by public policy mandates that could not otherwise be realized. To determine the economic benefits of the recommended MVP portfolio, two production cost model simulations were performed with and without the combination of the recommended MVP portfolio and the wind it enables. The difference between these two cases provides measurable benefits associated with the recommended MVP portfolio, focusing on Adjusted Production Cost savings according to the tariff provisions. Adjusted Production Cost is the annual generation fleet production costs, including fuel, variable operations and maintenance, start up cost and emissions, adjusted with off-system purchases and sales. Adjusted Production Cost savings are achieved through reduction of transmission congestion costs and more efficient use of generation resources across the system.

8.1.5 Policy driven future scenarios

To account for out-year public policy and economic uncertainties, MISO collaborated with its stakeholders to refresh available future policy scenarios to better align them with potential policy outcomes taking place. The future scenarios were designed to bookend the potential range of future policy outcomes, ensuring that all of the most likely future policy scenarios and their impacts were within the range bounded by the results. Four futures were refreshed and analyzed:

- Business As Usual with Continued Low Demand and Energy Growth (BAULDE) assumes that current energy policies will be continued, with continuing recession level low demand and energy growth projections.
- Business As Usual with Historic Demand and Energy Growth (BAUHDE) assumes that current energy policies will be continued, with demand and energy returning to pre-recession growth rates.
- Carbon Constrained assumes that current energy policies will be continued, with the addition of a carbon cap modeled on the Waxman-Markey Bill.
- Combined Energy Policy assumes multiple energy policies are enacted, including a 20 percent federal RPS, a carbon cap modeled on the Waxman-Markey Bill, implementation of a smart grid and widespread adoption of electric vehicles.

The various input assumptions and uncertain variables defined for each policy driven future dictate a unique set of generation expansion plans on a least cost basis to meet regional Resource Adequacy Requirements, detailed in Table 8.1.

Future Scenarios	Wind Penetration	Effective Demand Growth Rate	Effective Energy Growth Rate	Gas Price	Carbon Cost / Reduction Target
BAULDE	State RPS	0.78 percent	0.79 percent	\$5	None
BAUHDE	State RPS	1.28 percent	1.42 percent	\$5	None
Combined Energy Policy	20 percent Federal RPS by 2025	0.52 percent	0.68 percent	\$8	\$50/ton (42 percent by 2033)
Carbon Constrained	State RPS	0.03 percent	0.05 percent	\$8	\$50/ton (42 percent by 2033)

Table 8.1: MTEP11 Future Scenario Assumptions

8.1.6 Economic analysis results

A holistic economic assessment for the recommended MVP portfolio was performed against a wide range of future policy driven scenarios. This was done to minimize the risk imposed by the uncertainties around potential policy decisions. The future scenarios without any new energy policy mandates provide a baseline of the recommended MVP portfolio's benefits under current policy conditions. The evaluation of the Carbon Constrained and Combined Energy Policy future scenarios also provide "bookends" which help show the full range of benefits that may be provided by the portfolio.

8.1.7 Adjusted Production Cost savings and benefit spread

With the recommended MVP portfolio providing access to the lowest electric energy costs and relieving transmission congestion across the MISO footprint, the portfolio brought a wide range of adjusted production cost savings, from an estimated \$12.4 to \$28.3 billion in 20 year present value terms under the four selected future scenarios, as shown in Figure 8.2.

The recommended MVP portfolio also collects renewable energy from a distributed set of wind energy zones, enables the wind delivery and provides widespread regional benefits across the MISO footprint, regardless of future policy outcomes.

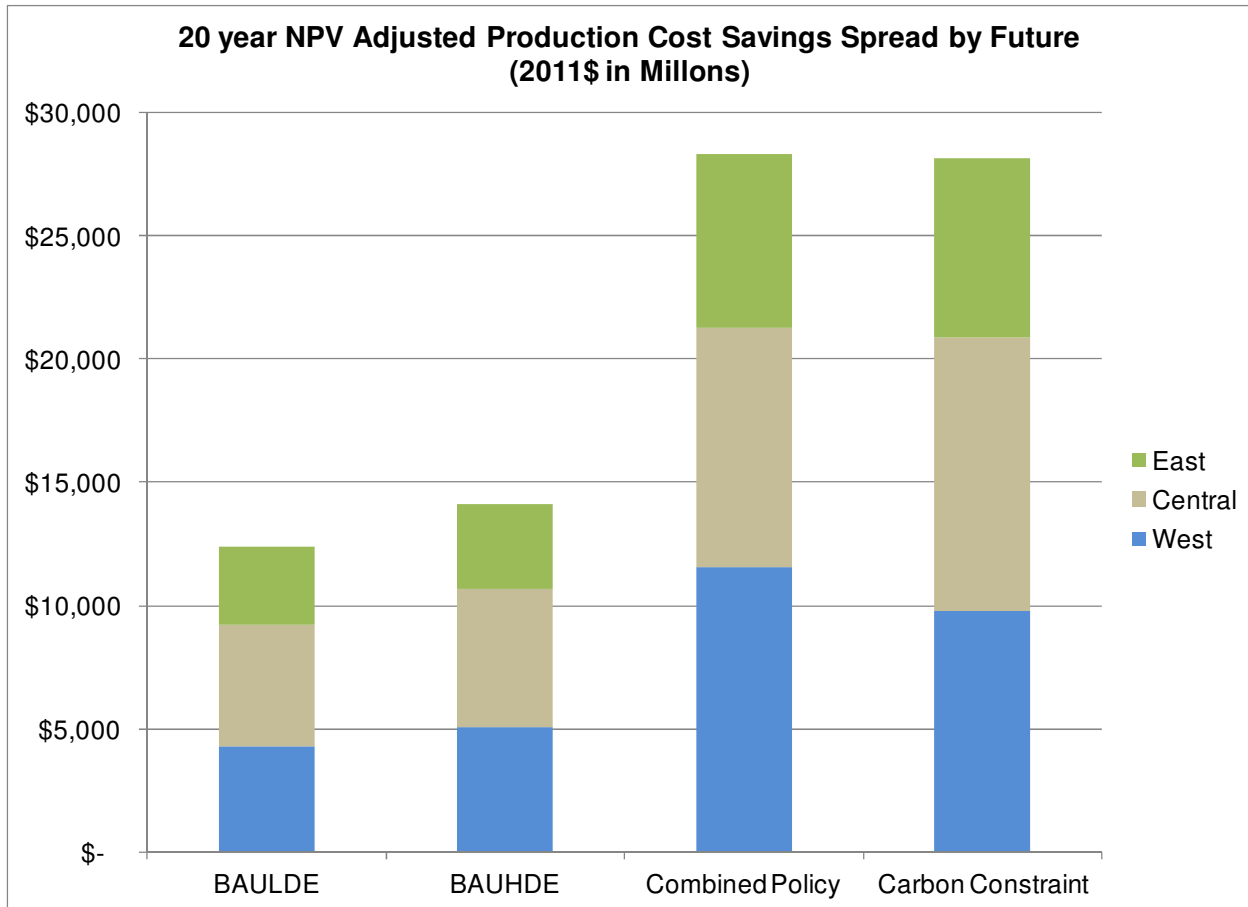


Figure 8.2: Adjusted Production Cost Savings spread by future

8.1.8 Generation displacement

Figure 8.3 summarizes the 2021 annual energy production changes between the base case and the change case. The recommended MVP portfolio enables the delivery of renewable energy to meet the near term RPS mandates of MISO states in a more reliable and economic manner, causing higher cost units to be displaced by the wind resources enabled by the proposed portfolio across the MISO footprint. Moreover, the recommended MVP portfolio allows low cost energy in the western regions to reach a wider footprint. It leads to a more efficient usage of generation resource across the entire study footprint, with some level of generation displacement occurring in external regions, particularly in PJM and SERC.

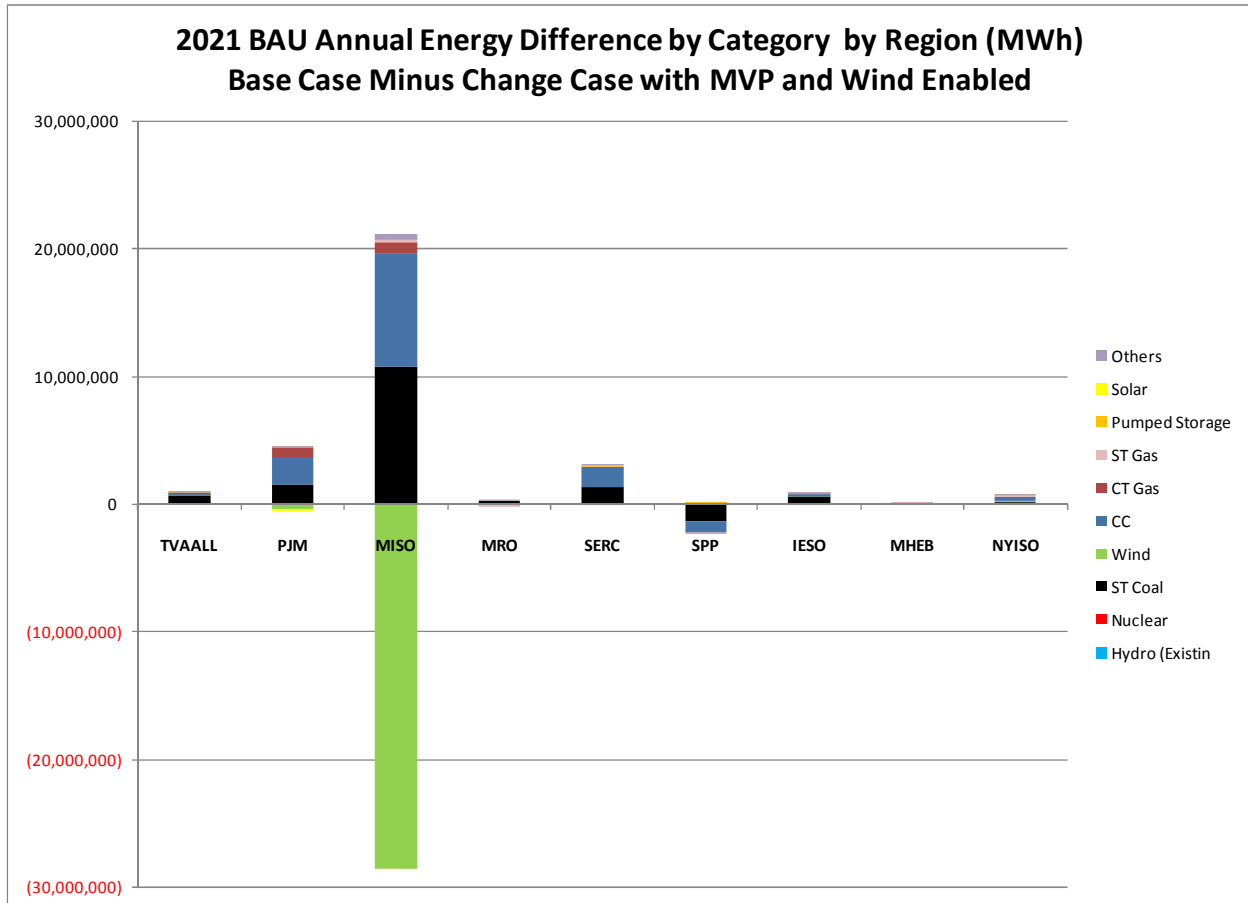


Figure 8.3: Generation displacement by region

8.1.9 Economic Variable Impact

The projected benefits of the recommended MVP portfolio depend on projections of future policy and economic variables. Figure 8.4 shows the impacts of economic variable assumptions on the projected economic benefits achieved by the recommended MVP portfolio, with the primary focus on the time of present value calculations and discount rate.

Considering solely the ‘Business as Usual’ future scenarios with no new energy policies, the recommended MVP portfolio will produce an estimated \$12.4 to \$40.9 billion in 20 to 40 year present value adjusted production cost savings, depending on the time, discount rates and rate of energy and demand growth. This benefit would increase to a maximum present value of \$91.7 billion under the Combined Energy Policy future scenario.

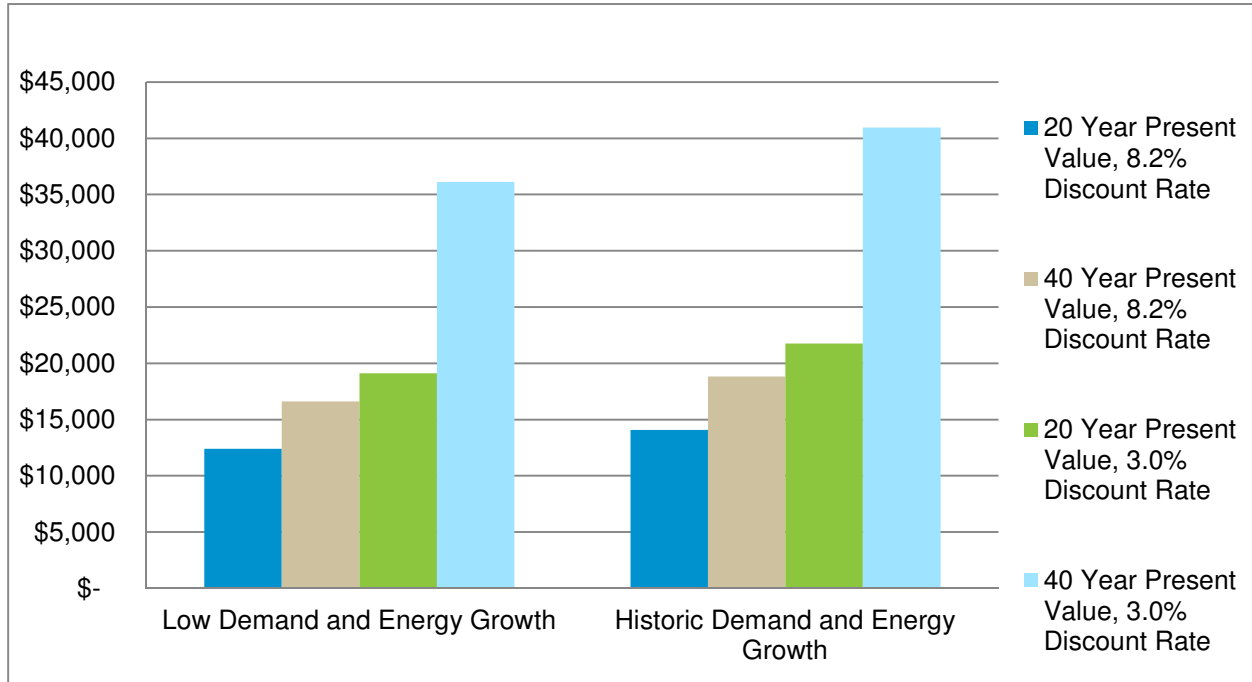


Figure 8.4: Adjusted Production Cost Benefits from recommended MVP portfolio

8.2 Operating reserves

In addition to the energy benefits quantified in the production cost analyses, the recommended MVP portfolio will also reduce operating reserve costs. The recommended MVP portfolio decreases congestion on the system, increasing the transfer capability into several key areas that would otherwise have to hold additional operating reserves under certain system conditions.

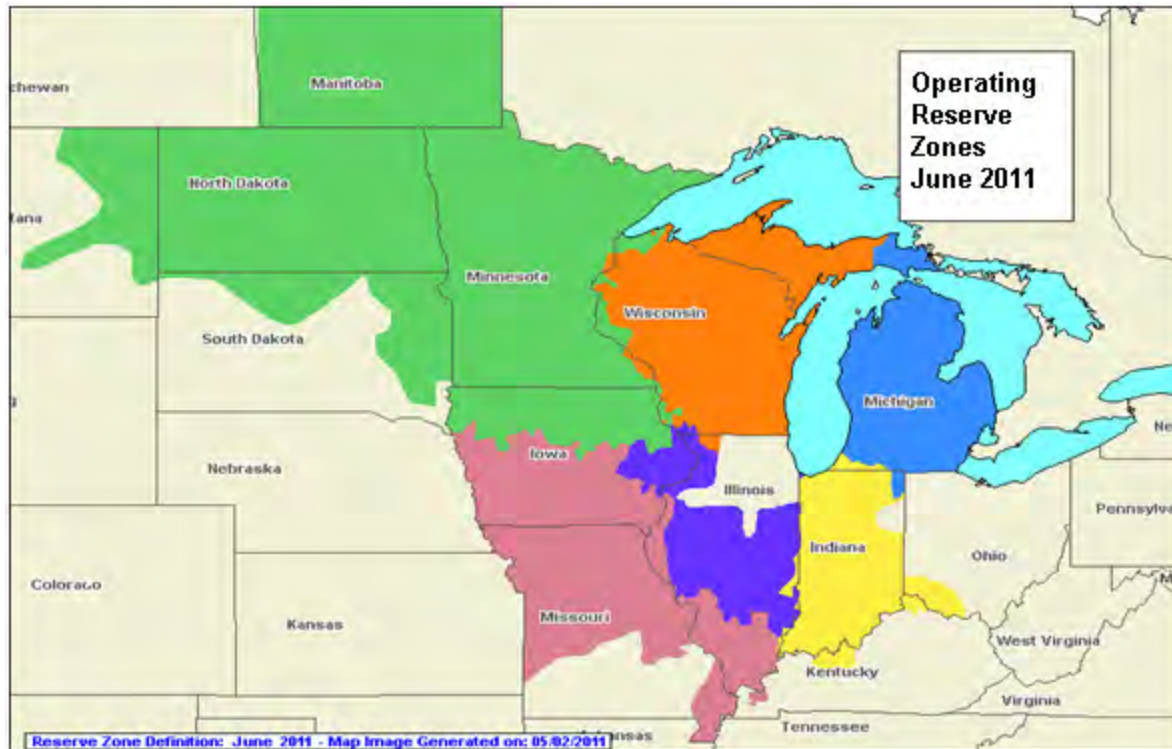


Figure 8.5: Operating reserve zones

MISO determined that the addition of the recommended MVP portfolio will eliminate the need for the Indiana operating reserve zone, as shown in Figure 8.5, and the need for additional system reserves to be held in other zones across the footprint would be reduced by half. This creates the opportunity to locate an average of 690,000 MWh of operating reserves annually where it would be most economical to do so, as opposed to holding these reserves in prescribed zones, creating benefits of \$28 to \$87 million in 20 to 40 year present value terms.

8.2.1 Analyses

Operating reserve zones are determined, on an ongoing basis, by monitoring the energy flowing through certain flowgates across the system. The zonal operating reserve requirements, based on the actual conditions from June 2010 through May 2011, are shown below in Table 8.2.

Zone	Total Requirement (MW)	Days with Requirement (#)	Average daily requirement (MW)
Missouri	95	1	95.1
Indiana	14966	53	282.4
N-Ohio	9147	15	609.8
Michigan	4915	17	289.1
Wisconsin	227	2	113.4
Minnesota	376	1	376.3

Table 8.2: Historic operating requirements

Transfer analyses were performed to determine the changes in flows due to the addition of the recommended MVP portfolio to the system. These analyses were performed on both the most recent model used to create the operating reserve limitations, as well as on the 2021 MTEP11 power flow model.

Zone	Limiter	Contingency	Operating Model Change in Flows	MTEP11 Model Change in Flows
Missouri	Coffeen - Roxford 345	Newton-Xenia 345	-0.8%	-18.5%
Indiana	Bunsonville-Eugene 345	Casey-Breed 345	-17.5%	-87.2%
Indiana	Crete-St. Johns Tap 345	Dumont-Wilton Center 765	-4.5%	-9.4%
Michigan	Benton Harbor - Palisades 345	Cook - Palisades 345	-10.8%	-4.6%
Wisconsin	MWEX	N/A	-20.2%	-2.3%
Minnesota	Arnold-Hazleton 345	N/A	-60.9%	15.9%

Table 8.3: Change in transfers, pre-MVP minus post-MVP

As a result of these transfer analyses, it was determined that the need for the Indiana operating zone would be eliminated by the addition of the recommended MVP portfolio to the transmission system. Also, it was determined that the need for operating reserve requirements in other zones throughout the MISO footprint would be reduced by half.

The ability to locate reserves at the least-cost location, rather than in a specific zone, will drive a benefit equal to between \$5/MWh and \$7/MWh. These benefits were assumed to grow with load growth, at

roughly 1% per year. As a result, the recommended MVP portfolio will create \$33 to \$116 million in present value benefits.

IN Operating Reserve, no-MVP (MWh)	IN Operating Reserves, with MVP (MWh)	Other Zonal Operating Reserve, no-MVP (MWh)	Other Zonal Operating Reserves, with MVP (MWh)	Total Zonal Operating Reserves, no-MVP	Total Zonal Operating Reserves, with MVP	Nominal Benefits - Low (\$M)	Nominal Benefits - High (\$M)
359,195	0	354,252	177,126	713,446	177,126	\$2.68	\$3.75

Table 8.4: 2011 operating reserve reductions and quantification

8.3 System Planning Reserve Margin

The system planning reserve is calculated by determining the amount of generation required to maintain a one day in 10 years Loss of Load Expectation (LOLE). The reserve margin requirement is calculated through summing two components: the unconstrained system Planning Reserve Margin (PRM) and a congestion contribution. The recommended MVP portfolio reduces transmission congestion across MISO, thereby reducing the system PRM and decreasing the amount of generation required to meet the PRM. By reducing the PRM, the recommended MVP portfolio defers new generation, creating present value benefits equal to \$1.0 to \$5.1 billion in 2011 dollars under business as usual conditions. Results for each set of future scenarios and business case assumptions are shown in Table 8.5.

	20 year NPV		40 year NPV	
	3%	8.20%	3%	8.20%
Business As Usual with Continued Low Demand and Energy Growth	\$1,460	\$1,023	\$1,869	\$1,151
Business As Usual with Historic Demand and Energy Growth	\$3,811	\$1,281	\$5,093	\$1,496
Combined Energy Policy	\$1,610	\$971	\$2,222	\$1,167
Carbon Constraint	\$2,145	\$1,159	\$2,747	\$1,309

Table 8.5: Planning Reserve Margin Capacity Reduction

8.3.1 Congestion Impact

Additional transmission investment may ease congestion in the system, reducing the congestion component used to calculate the system PRM and reducing the future capacity required to meet system load. The reduction in system congestion, as calculated through the production cost models as the reduction in congestion costs, was determined to be 21%.

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In the 2011 Planning Year LOLE Study Report, it was determined that the system Planning Reserve Margin would begin to increase due to congestion in 2016. Congestion was found to increase by 0.3 percent annually, rising to 1.5 percent by 2020²⁵ and 4.5 percent by 2030.

The recommended MVP portfolio will decrease this congestion by 21 percent, when the entire portfolio is in-service. The reduction was phased-in to account for the different in-service dates of the various projects in the portfolio, with the congestion reduction starting at 3.5 percent in 2016 and growing linearly to 21 percent by 2021. This congestion reduction was multiplied by the pre-MVP congestion to find the total impact of the recommended MVP portfolio. This resulted in the congestion components shown in Table 8.6.

Year	Pre-MVP Congestion Component [1]	MVP Congestion Reduction Percentage [2]	MVP Congestion Reduction Impact [3]=[1]*[2]	Post-MVP Congestion Component [4]=[1]-[3]
2011	0.0 percent	0.0 percent	0.0 percent	0.0 percent
2012	0.0 percent	0.0 percent	0.0 percent	0.0 percent
2013	0.0 percent	0.0 percent	0.0 percent	0.0 percent
2014	0.0 percent	0.0 percent	0.0 percent	0.0 percent
2015	0.0 percent	0.0 percent	0.0 percent	0.0 percent
2016	0.3 percent	3.5 percent	0.0 percent	0.3 percent
2017	0.6 percent	7.0 percent	0.0 percent	0.6 percent
2018	0.9 percent	10.5 percent	0.1 percent	0.8 percent
2019	1.2 percent	14.0 percent	0.2 percent	1.0 percent
2020	1.5 percent	17.5 percent	0.3 percent	1.2 percent
2021	1.8 percent	21.0 percent	0.4 percent	1.4 percent
2022	2.1 percent	21.0 percent	0.4 percent	1.7 percent
2023	2.4 percent	21.0 percent	0.5 percent	1.9 percent
2024	2.7 percent	21.0 percent	0.6 percent	2.1 percent
2025	3.0 percent	21.0 percent	0.6 percent	2.4 percent
2026	3.3 percent	21.0 percent	0.7 percent	2.6 percent
2027	3.6 percent	21.0 percent	0.8 percent	3.0 percent
2028	3.9 percent	21.0 percent	0.8 percent	3.1 percent
2029	4.2 percent	21.0 percent	0.9 percent	3.3 percent
2030	4.5 percent	21.0 percent	0.9 percent	3.6 percent

Table 8.6: Planning Reserve Margins Congestion Component

²⁵For more information, refer to table 5.1 in the Planning Year 2011 LOLE Study Report, at the link below:
<https://www.misoenergy.org/Library/Repository/Study/LOLE/2011%20LOLE%20Study%20Report.pdf>

8.3.2 Planning Reserve Margin Reduction

The uncongested Planning Reserve Margin was set to 17.4 percent for the full study period. This margin was summed with the congestion component, as calculated above, to find the full Planning Reserve Margin Requirement, both with and without the recommended MVP portfolio. Figure 8.6 shows the expected system PRM for 2011 through 2030 accounting for congestion and system PRM relief from the recommended MVP portfolio.

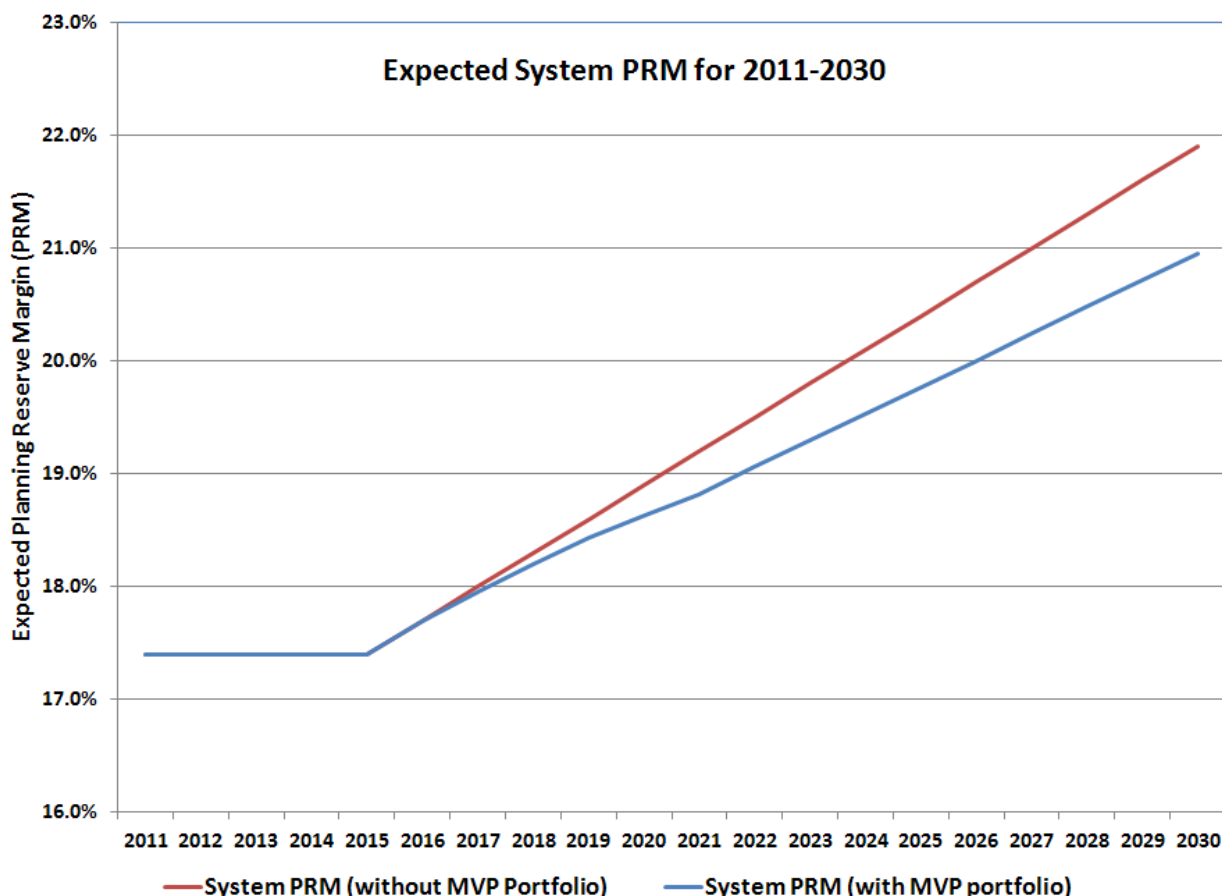


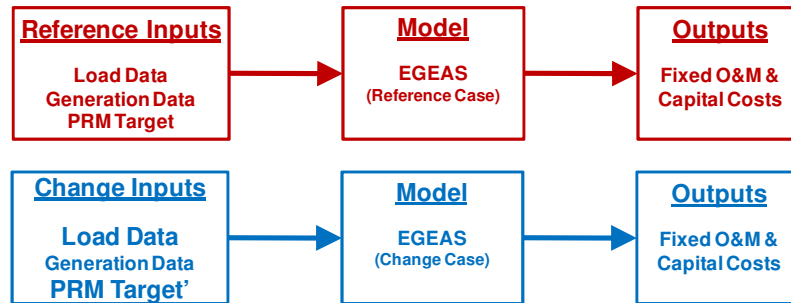
Figure 8.6: Expected System PRM, with and without the recommended MVP portfolio

8.3.3 Deferred Capacity Calculation

Sufficient generation must be built to ensure that, as the system Planning Reserve Margin increases, enough capacity is available to meet the system load and Planning Reserve Margin requirements. A lower PRM will require less future generation investment, resulting in a reduction in required capital outlays.

Electric Power Research Institute (EPRI's) Electric Generation Expansion Analysis System (EGEAS) was used to calculate the capacity benefits from PRM reduction due to transmission investment. The EGEAS model requires load forecast data, existing generation data, planned generation capacity and Planning Reserve Margin target as inputs.

Two series of analyses were run. The first set of analyses, representing the pre-MVP case, contained higher Planning Reserve Margins. The second set of analyses held all the variables constant except for the Planning Reserve Margin, modeling the lower Planning Reserve Margin created by the proposed Multi Value Project portfolio. The difference in the required capacity expansion between the two models is a benefit of the recommended MVP portfolio.



$$\text{Capacity Cost Savings} = \text{Cost}_{\text{Reference Case}} - \text{Cost}_{\text{Change Case}}$$

Figure 8.7: Capacity cost savings will be calculated by running two EGEAS cases.

EGEAS accurately captures the type and timing of resource additions that would occur with and without the Planning Reserve Margin (PRM) congestion relief. EGEAS outputs unit-by-unit capital fixed charge reports for each of these new capacity additions by year from 2011 through 2030. The capital cost of these capacity projections were then calculated as the 20-year or 40-year present values figures. These benefits include the reduction in annual fixed operations and maintenance charges from deferred capacity, as well as the capital charges from the reduced capacity requirements.

As can be seen in Figure 8.8 below, 400 MW of CT would be deferred by the additional of the recommended MVP portfolio in 2020, and 200 MW would be deferred in 2024. These results were documented for the Business as Usual with continued low demand growth rate future. Similar results were documented for the other futures.

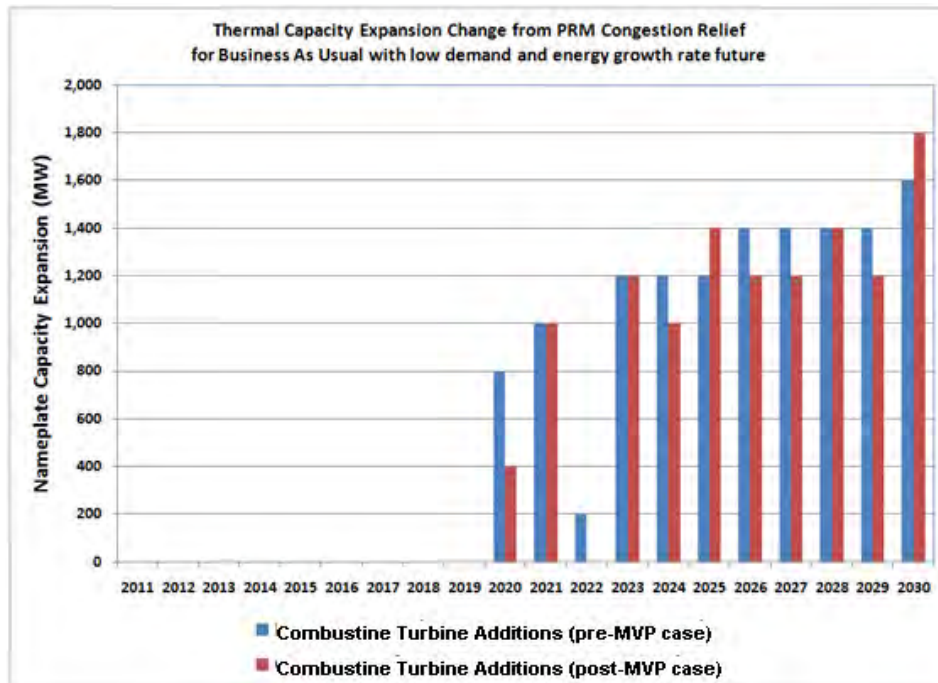


Figure 8.8: Business as Usual capacity expansion results, PRM benefit

8.4 Transmission line losses

The addition of the recommended MVP portfolio to the transmission network reduces overall system losses, which also reduces the generation needed to serve the combined load and transmission line losses. The energy value of these loss reductions is considered in the congestion and fuel savings benefits, but the loss reduction also helps to reduce future generation capacity needs. Specifically, when installed generation capacity is just sufficient to meet peak system load plus the planning reserve margin, a reduction in transmission losses reduces the amount of generation that must be built. This saves \$111 million to \$396 million in 2011 dollars, excluding the impacts of any potential future policies. Table 8.7 shows the capacity deferral results, depending on the timeline of the present value calculations, the discount rate and future scenarios analyzed.

	20 year NPV		40 year NPV	
	3%	8.20%	3%	8.20%
Business As Usual with Continued Low Demand and Energy Growth	\$317	\$229	\$396	\$251
Business As Usual with Historic Demand and Energy Growth	\$111	\$305	\$196	\$358
Combined Energy Policy	\$655	\$525	\$834	\$532
Carbon Constraint	\$737	\$229	\$749	\$248

Table 8.7: Transmission Line Losses Capacity Deferral

8.4.1 Transmission Losses Reduction

The transmission loss reduction was calculated through the PSS/E model. More specifically, the transmission line losses in the MTEP11 2021 summer peak models were compared, both with and without the recommended MVP transmission. This value was then used to extrapolate the transmission line losses for 2016 through 2021, assuming escalation at the normal demand growth rate.

8.4.2 Capacity Deferral Simulations

The change in required system capacity expansion due to the impact of the recommended MVP portfolio was calculated through a series of EGEAS simulations. In these simulations, the total system generation requirement was set to the system Planning Reserve Margin multiplied by the system load plus the system losses (Generation Requirements = (1+PRM)*(Load + Losses)). To isolate the impact of the transmission line loss benefit, all variables in these simulations were held constant, except for the system losses.

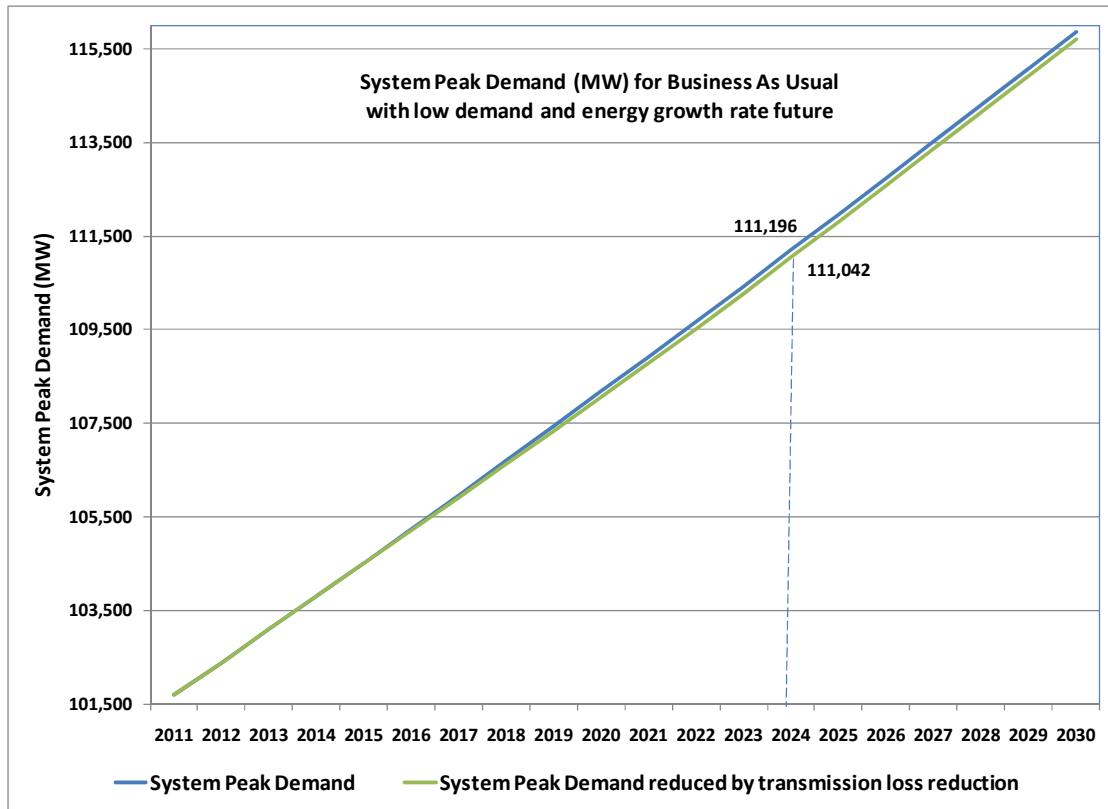


Figure 8.9: System peak demand, with and without the recommended MVP portfolio

The difference in capital fixed charges and fixed operation and maintenance costs in the reference, or pre-MVP case, and the post-MVP case is equal to the capacity benefit from transmission loss reduction, due to the addition of the recommended MVP portfolio to the transmission system. This capacity benefit was studied for the four MTEP11 future scenarios and observed during the study period (2011-2030). The capital impact of the change in capacity was then captured between 2021-2040 for a 20-year benefit value, and 2021-2060 for a 40-year capacity benefit value. As can be seen in Figure 8.10, 200 MW of CT is deferred in 2020 in the Business As Usual with a Low Demand and Energy Future at 8.2 percent discount rate.

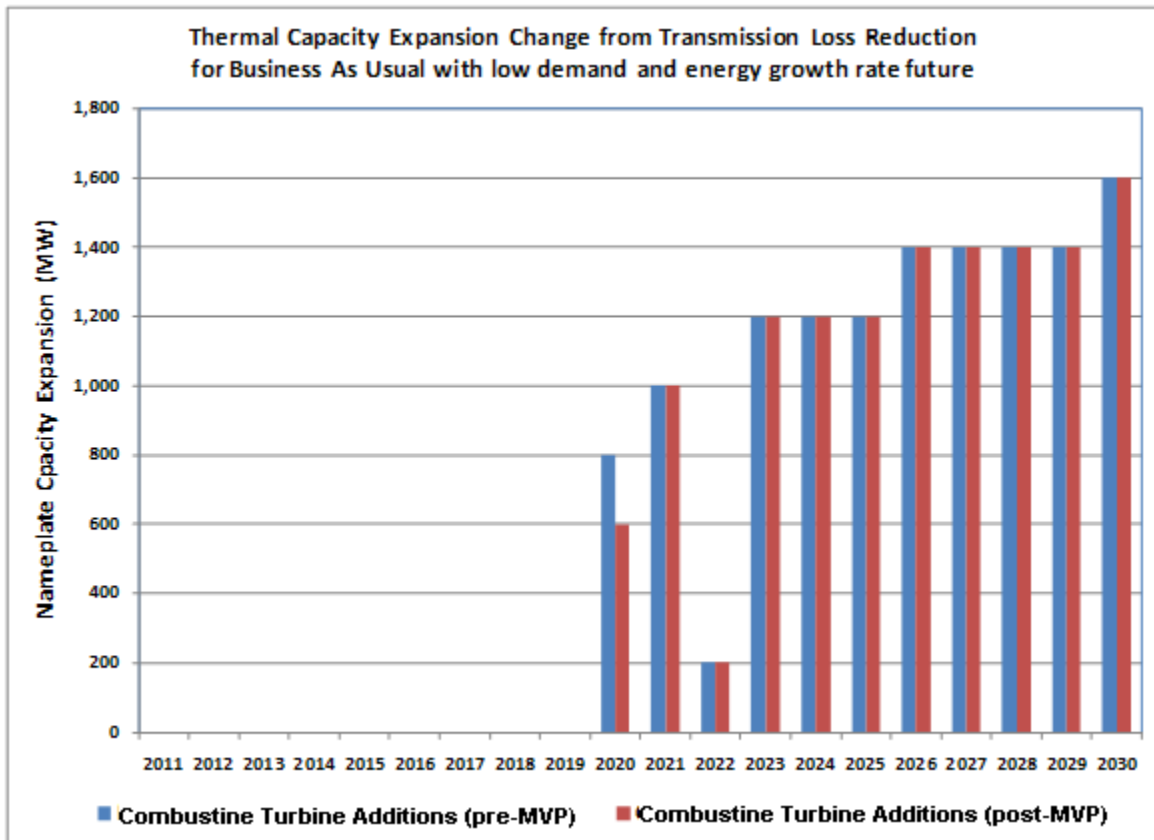


Figure 8.10: Business as Usual with Low Demand and Energy Capacity Additions, pre and post MVP

8.5 Wind turbine investment

As discussed previously, MISO determined a wind siting approach that results in a low cost solution, when transmission and generation capital costs are considered. This approach sources generation in a combination of local and regional locations, placing wind local to load, where less transmission is required; and regionally, where the wind is the strongest. However, this strategy depends on a strong regional transmission system to deliver the wind energy. Without this regional transmission backbone, the wind generation would have to be sited close to load, requiring the construction of significantly larger amounts of wind capacity to produce the renewable energy mandated by public policy.

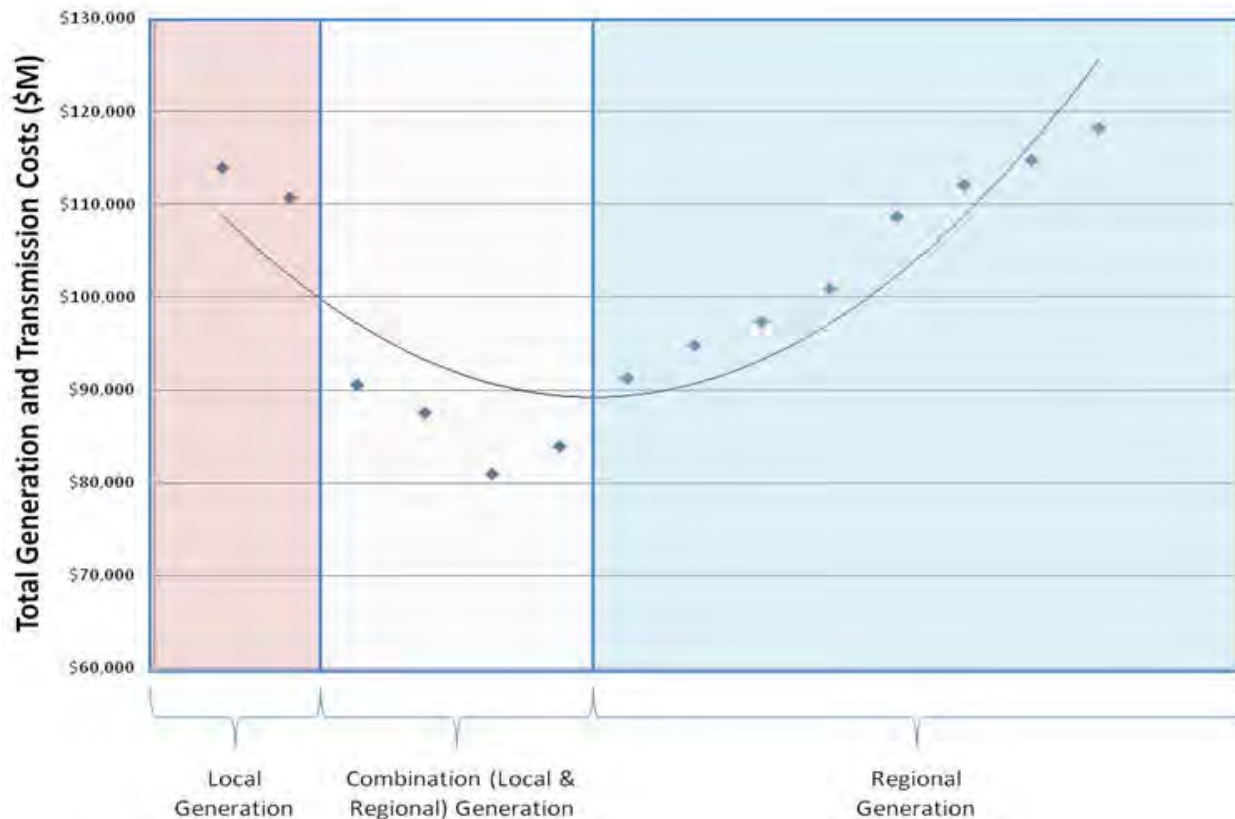


Figure 8.11: Local versus combination wind siting

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Portfolio economic benefits analyses

In the RGOS study, it was determined that 11 percent less wind would need to be built to meet renewable energy mandates in a combination local/regional methodology relative to a local only approach. This change in generation was applied to energy required by the renewable energy mandates, as well as the total wind energy enabled by the recommended MVP portfolio. This resulted in a total of 2.9 GW of avoided wind generation, as shown in Table 8.8

Year	Recommended MVP Portfolio Enabled Wind (MW)	Equivalent Local Wind Generation (MW)	Incremental Wind Benefit (MW)
Pre-2016	12,408	13,802	1,394
2016	17,276	19,217	547
2021	21,173	23,552	438
2026	23,445	26,079	255
Full Wind Enabled	25,675	28,559	251

Table 8.8: Renewable Energy Requirements, Combination versus Local Approach

The incremental wind benefits were monetized by applying a value of \$2.0 to \$2.9 million/MW, based on the US Energy Information Administration's estimates of the capital costs to build onshore wind, as updated in November 2010. The total wind enabled benefits were then spread between 2015 and 2030, with half of the pre-2021 values lumped into 2021 for the purpose of this analysis. Also, to avoid overstating the benefits of the combination wind siting, a transmission cost differential of approximately \$1.5 billion was subtracted from the overall wind turbine capital savings to represent the expected lower transmission costs required by a local-only siting strategy.

The low cost wind siting methodology enabled by the recommended MVP portfolio creates benefits ranging from a present value of \$1.4 to \$2.5 billion in 2011 dollars, depending on which business case assumptions are applied.

8.6 Transmission investment

In addition to relieving constraints under shoulder peak conditions, the recommended MVP portfolio will eliminate some future baseline reliability upgrades. A model simulating 2031 summer peak load conditions was created by growing the load in the 2021 summer peak model by approximately 8 GW, and this model was run both with and without the recommended MVP portfolio. The investment avoided through the addition of the recommended MVP portfolio into the transmission system, as determined through this analysis, is shown below in Table 8.9.

Avoided Investment	Upgrade Required	Miles
Galesburg to East Galesburg 138 kV	Bus Tie	N/A
Portage to Columbia 1 138 kV	Transmission line, < 345 kV	6
Portage to Columbia 2 138 kV	Transmission line, < 345 kV	6
Arrowhead to Bear Creek 230 kV	Transmission line, < 345 kV	1
Forbes to 44 Line Tap 115 kV	Transmission line, < 345 kV	1
Stone Lake Transformer 345/161 kV	Transformer	N/A
Port Washington to Saukville Bus 6 138 kV	Transmission line, < 345 kV	5
Port Washington to Saukville Bus 5 138 kV	Transmission line, < 345 kV	5
Ipava South to Macomb West 138 kV	Transmission line, < 345 kV	21
Lafayette Cincinnati St. to Purdue 138 kV	Transmission line, < 345 kV	1
Grace VT7 to Ortonville 115 kV	Transmission line, < 345 kV	25
East Kewanee to Kewanee South Street 138 kV	Transmission line, < 345 kV	0
Cloverdale to Stilesville 138 kV	Transmission line, < 345 kV	13
Wilmarth to Field South 345 kV	Transmission line, 345 kV	29
Dundee Transformer 161/115 KV	Transformer	N/A
Stileville to WVC Valley 138 kV	Transmission line, < 345 kV	6
Lafayette South to Lafayette Shadeland 138 kV	Transmission line, < 345 kV	3
Purdue Nw Junction Tap 1 to Westwood 2 138kV	Transmission line, < 345 kV	3
Plainfield South to WVC Valley 138 kV	Transmission line, < 345 kV	5
Antigo to Aurora Street 115 kV	Transmission line, < 345 kV	2
Latham to Kickapoo 138 kV	Transmission line, < 345 kV	5
Bunker Hill to Black Brook 115 kV	Transmission line, < 345 kV	8
Grace VT7 to Morris 115 kV	Transmission line, < 345 kV	14

Table 8.9: Avoided transmission investment

The cost of this avoided investment was estimated using generic transmission costs, as estimated from projects in the MTEP database. The costs of this transmission investment was estimated to be spread between 2027 and 2031. Also, to represent potential production cost benefits that may be missed through avoiding this investment, the value of avoiding the 345 kV transmission line was reduced by half.

Avoided Transmission Investment	Estimated Upgrade Cost
Bus Tie	\$1,000,000
Transformer	\$5,000,000
Transmission lines (per mile, for voltages under 345 kV)	\$1,500,000
Transmission lines (per mile, for 345 kV)	\$2,500,000

Table 8.10: Generic transmission costs

The recommended MVP portfolio eliminates the need for baseline reliability upgrades on 23 lines between 2026 and 2031. This creates benefits which have 20 and 40 year present values of \$268 and \$1,058 million, respectively.

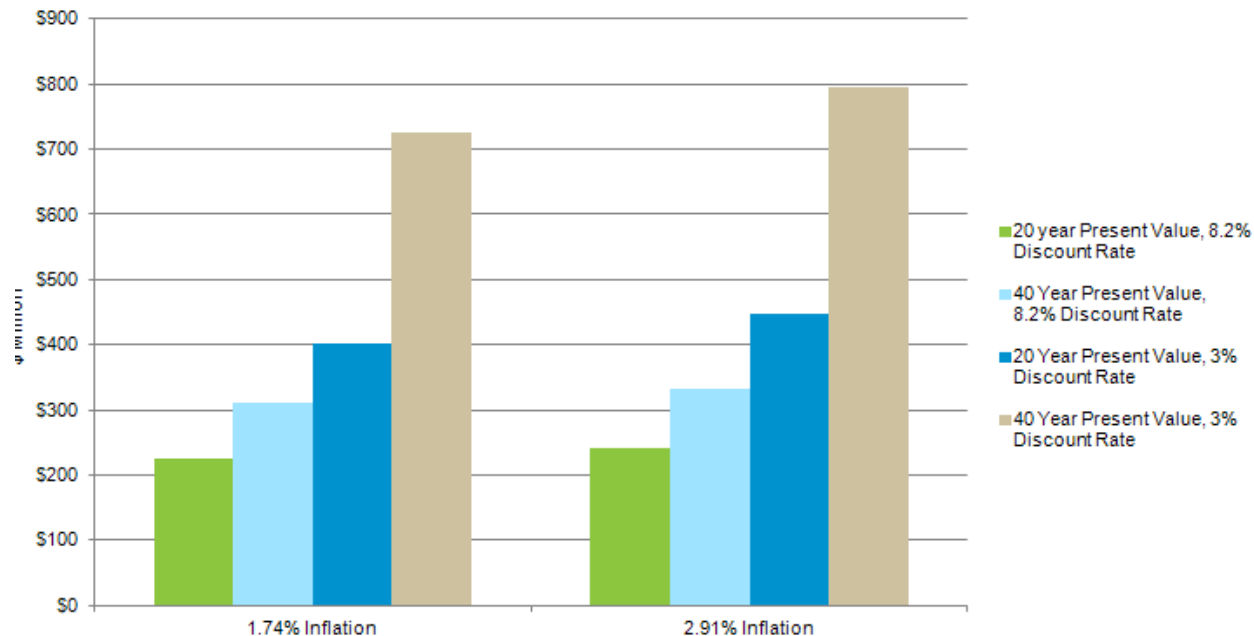


Figure 8.12: Avoided transmission investment

8.7 Business case variables and impacts

The recommended MVP portfolio provides significant benefits under every scenario studied. The base business case was built upon a fixed set of energy policies, with variances in discount rates and time horizons driving the range of benefits. However, additional variables also have the potential to impact the benefits provided by the recommended MVP portfolio.

The most critical variables considered were:

- Future energy policies
 - Includes a range of policy, demand and energy growth assumptions
 - Sensitivities were conducted to determine the impact of a legislated cost of carbon or national renewable energy mandate
- Length of Present Value Calculations: 20 or 40 years from the portfolio’s in service date
- Discount Rate: 3 percent or 8.2 percent
- Natural gas prices: \$5-\$8 (Business as Usual Scenarios)
\$8-\$10 (Combination Policy and Carbon Constrained Futures)
- Wind turbine capital cost: 2.0 or 2.9 \$M/MW

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Portfolio economic benefits analyses

To calculate the impact of any particular variable on the benefits provided by the recommended MVP portfolio, a series of analyses were performed. These analyses required changing a single variable, then comparing the resulting benefits and costs to a nominal case, which was defined as a 20 year present-value under an 8.2% discount rate. The maximum benefit-cost ratio was determined to be under a 40 year present value, using a 3% discount rate, high natural gas prices, and under the Combination Energy Policy future. The minimum benefit-cost ratio was calculated under a 20-year present value, using an 8.2% discount rate and assuming current economic policies continue under a continued economic recession.

Sensitivity Results (\$M)										
	Nominal Benefits	Low Wind Turbine Capital	High Wind Turbine Capital	3% Discount Rate	40 Year Present Values	Future Policy Scenario (Low Demand and Energy Growth)	Future Policy Scenario (Combination Policy)	Natural Gas Price (High)	Maximum Benefit Cost	Minimum Benefit Cost
Congestion and Fuel Savings	\$16,747	\$16,747	\$16,747	\$25,846	\$22,421	\$14,740	\$37,710	\$21,534	\$118,011	\$14,740
Operating Reserves	\$40	\$40	\$40	\$59	\$50	\$40	\$40	\$40	\$116	\$33
Transmission Line Losses	\$1,461	\$1,461	\$1,461	\$3,406	\$1,680	\$272	\$699	\$1,461	\$1,111	\$272
System Planning Reserve Margin	\$340	\$340	\$340	\$262	\$388	\$1,216	\$1,293	\$340	\$2,961	\$1,216
Wind Turbine Investment	\$2,635	\$1,936	\$3,334	\$2,194	\$2,635	\$2,635	\$2,635	\$2,635	\$2,778	\$1,936
Future Transmission Investment	\$295	\$ 295	\$295	\$537	\$406	\$295	\$ 295	\$ 295	\$ 1,058	\$268
Total Benefits	\$21,518	\$ 20,819	\$22,217	\$32,304	\$27,581	\$19,198	\$42,672	\$26,305	\$126,035	\$18,465
Total Costs	\$11,076	\$ 11,076	\$11,076	\$15,699	\$12,419	\$10,444	\$11,709	\$11,076	\$21,858	\$10,444
B/C	1.9	1.9	2.0	2.1	2.2	1.8	3.6	2.4	5.8	1.8

Table 8.11: Recommended MVP portfolio benefits sensitivities

Depending on which variables are assumed, the present value of the benefits created by the entire portfolio can vary between \$18.5 and \$126.0 billion in 20 to 40 year present value terms. This savings yield benefits ranging from 1.8 to 5.8 times the portfolio cost.

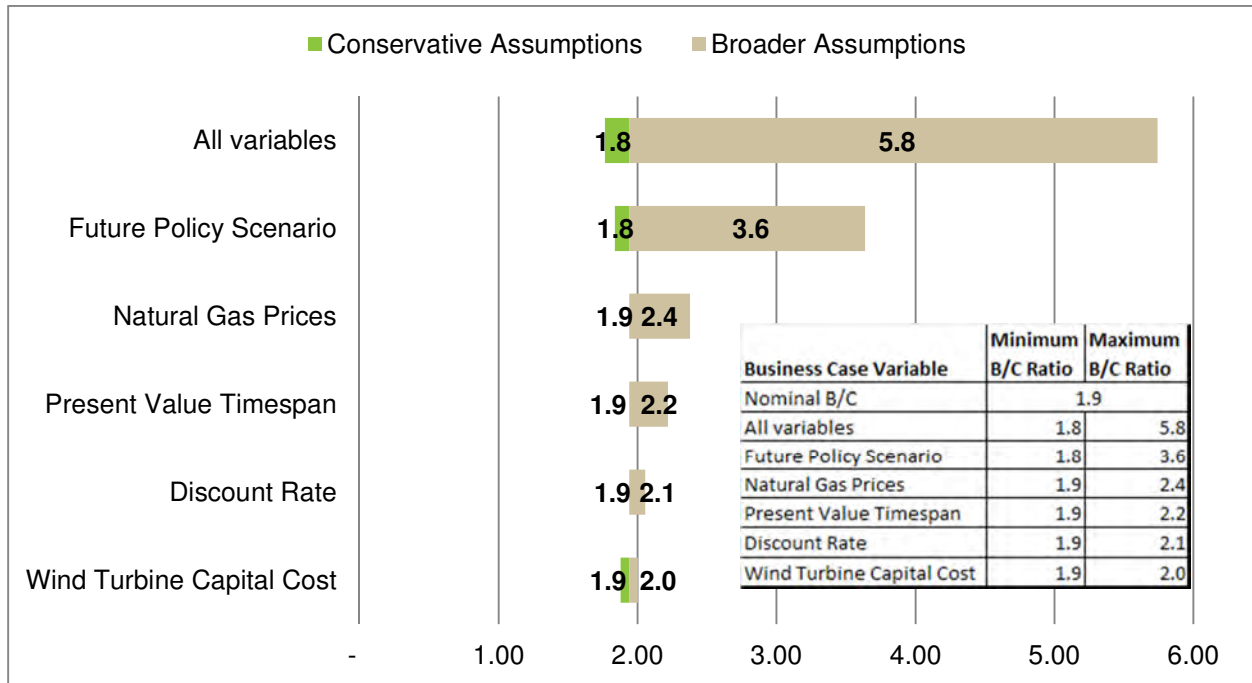


Figure 8.13: Benefit – cost variations due to business case assumptions

It should be noted that the benefits of the portfolio do not depend upon the implementation of any particular future energy policy to exceed the portfolio costs. Under existing energy policies, a conservative discount rate of 8.2 percent and 20 year present value terms, the portfolio produces benefits that are 1.8 times its cost. However, if other energy policies or enacted, or a lower discount rate is used, this benefit has the potential to greatly increase.

9 Qualitative and social benefits

The previous sections demonstrated that the recommended MVP portfolio provides widespread economic benefits across the MISO system. However, these metrics do not fully quantify the benefits of the portfolio. Other benefits, based on qualitative or social values, are discussed in the next section. These sections suggest that the quantified values from the economic analysis may be conservative because they do not account for the full potential benefits of the portfolio.

9.1 Enhanced generation policy flexibility

Although the recommended MVP portfolio was primarily evaluated on its ability to reliably deliver energy required by the renewable energy mandates, the portfolio will provide value under a variety of different generation policies. The energy zones, which were a key input into the MVP portfolio analysis, were created to support multiple generation fuel types. For example, the correlation of the energy zones to the existing transmission lines and natural gas pipelines were a major factor considered in the design of the zones as shown in Figure 9.1.

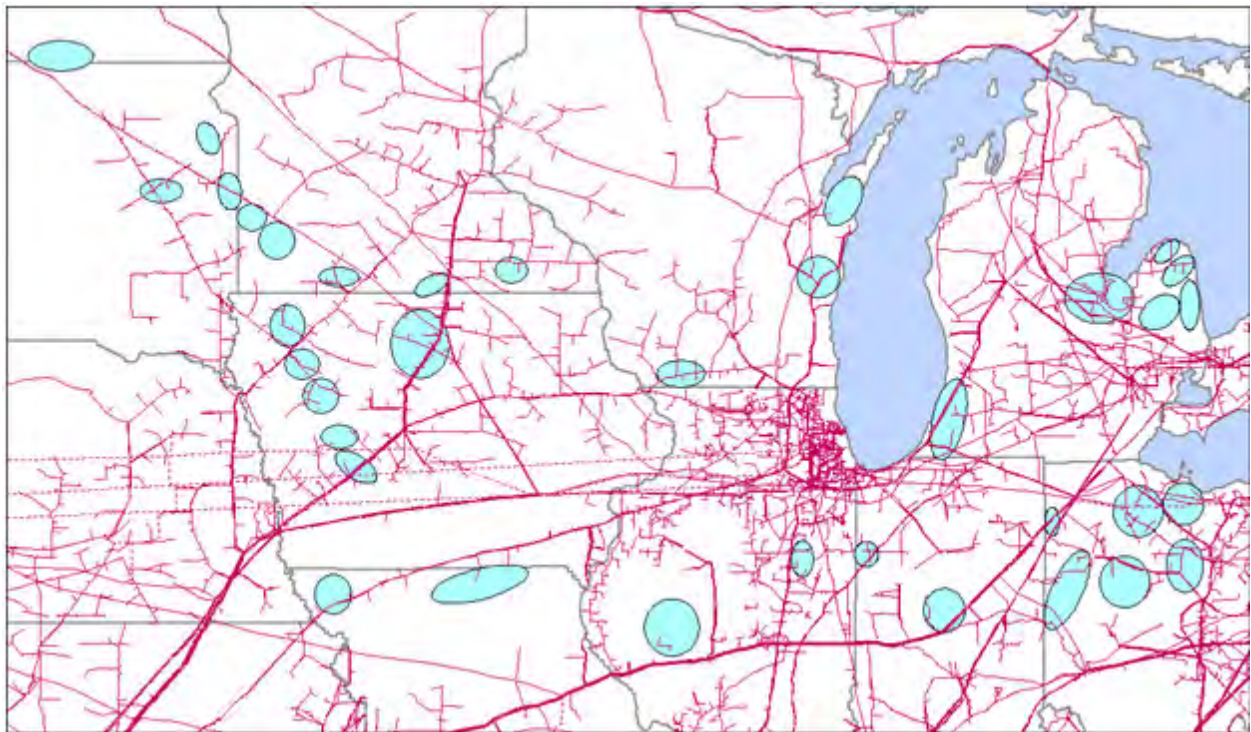


Figure 9.1: Energy zone correlation with natural gas pipelines

9.2 Increased system robustness

A transmission system blackout, or similar event, can have wide spread repercussions, resulting in billions of dollars of damage. The blackout of the Eastern and Midwestern U.S. during August 2003 affected more than 50 million people and had an estimated economic impact of between \$4 and \$10 billion.²⁶

The recommended MVP portfolio creates a more robust regional transmission system which decreases the likelihood of future blackouts by:

- Strengthening the overall transmission system by decreasing the impacts of transmission outages.
- Increasing access to additional generation under contingent events.
- Enabling additional transfers of energy across the system during severe conditions.

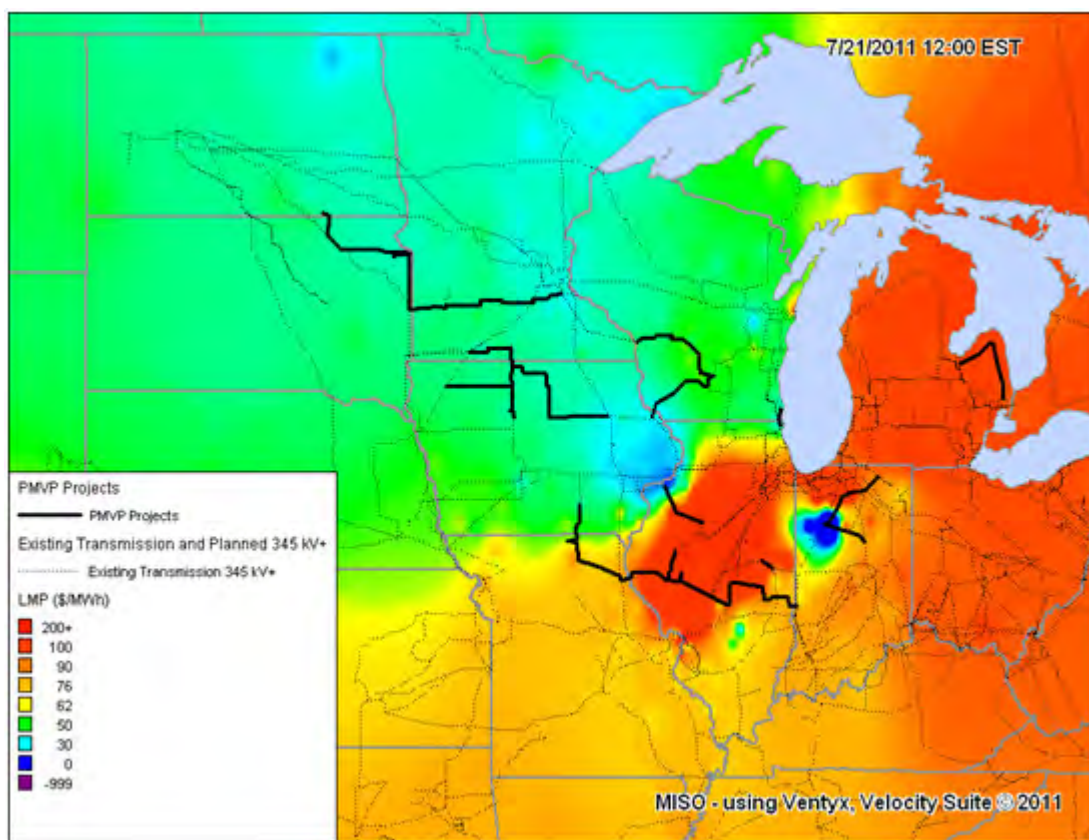


Figure 9.2: June 2011 LMP map with recommended MVP portfolio overlay

For example, the recommended MVP portfolio will allow the system to respond more efficiently during high load periods. During the week of July 17, 2011, high load conditions existed in the eastern portion of the MISO footprint, while the western portion of the footprint experienced lower temperatures and loads. Thermal limitations on west to east transfers across the system limited the ability of low cost generation from the west to serve the high load needs in the east, as shown in Figure 9.2. The recommended MVP portfolio will increase the transfer capability across the system, allowing access to additional generation resources to offset the impact and cost of severe or emergency conditions.

²⁶ Data sourced from: *The Economic Impacts of the August 2003 Blackout*, The Electricity Consumers Resource Council (ELCON)

9.3 Decreased natural gas risk

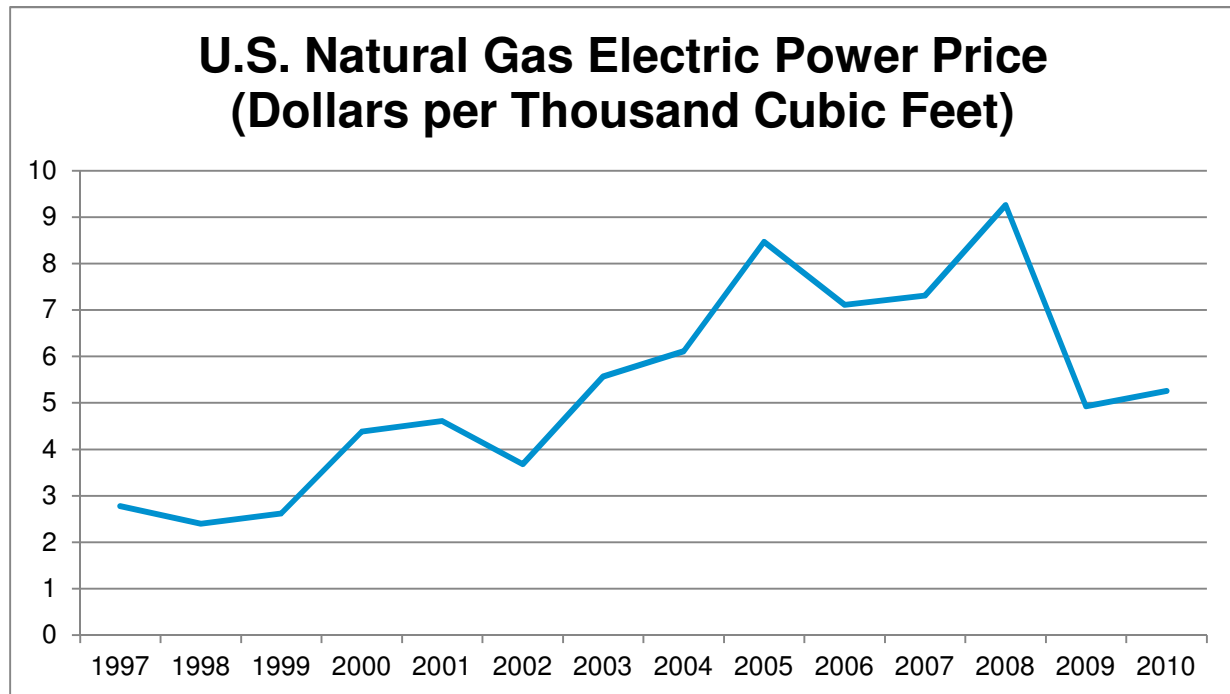


Figure 9.3: Historic U.S. natural gas electric power prices

Natural gas prices vary widely, causing corresponding fluctuations in the cost of energy from natural gas. Also, recent Environmental Protection Agency (EPA) regulations and proposed regulations limiting the emissions permissible from power plants will likely lead to more natural gas generation. This may cause the cost of natural gas to increase as demand increases. The recommended MVP portfolio can partially offset the natural gas price risk by providing additional access to generation that uses fuels other than natural gas (e.g. nuclear, wind, solar and coal) during periods with high natural gas prices. Assuming a natural gas price increase of 25 percent to 60 percent, the recommended MVP portfolio provides approximately a 5 to 40 percent higher adjusted production cost benefits.

9.3.1 Sensitivity Assumptions

A set of sensitivity analyses were performed in PROMOD to quantify the impact of changes in natural gas prices. The sensitivity cases maintained the same production cost modeling assumptions from the base business case analyses, except for the gas prices. The gas prices were increased from \$5 to \$8/MMBtu under the Business as Usual policy scenarios, and they were increased from \$8 to \$10/MMBtu under the Carbon Constrained and Combined Energy Policy scenarios. For each future scenario, the gas prices were increased starting in year 2011 and escalated by inflation thereafter.

9.3.2 Production cost benefit impact

The system production cost is driven by many variables, including fuel prices, carbon emission regulations, variable operations, management costs and renewable energy mandates. The increase in natural gas prices imposed additional fuel costs on the system, which in turn produced greater production cost benefits due to the inclusion of the recommended MVP portfolio. These increased benefits were driven by the efficient usage of renewable and low cost generation resources, as shown in

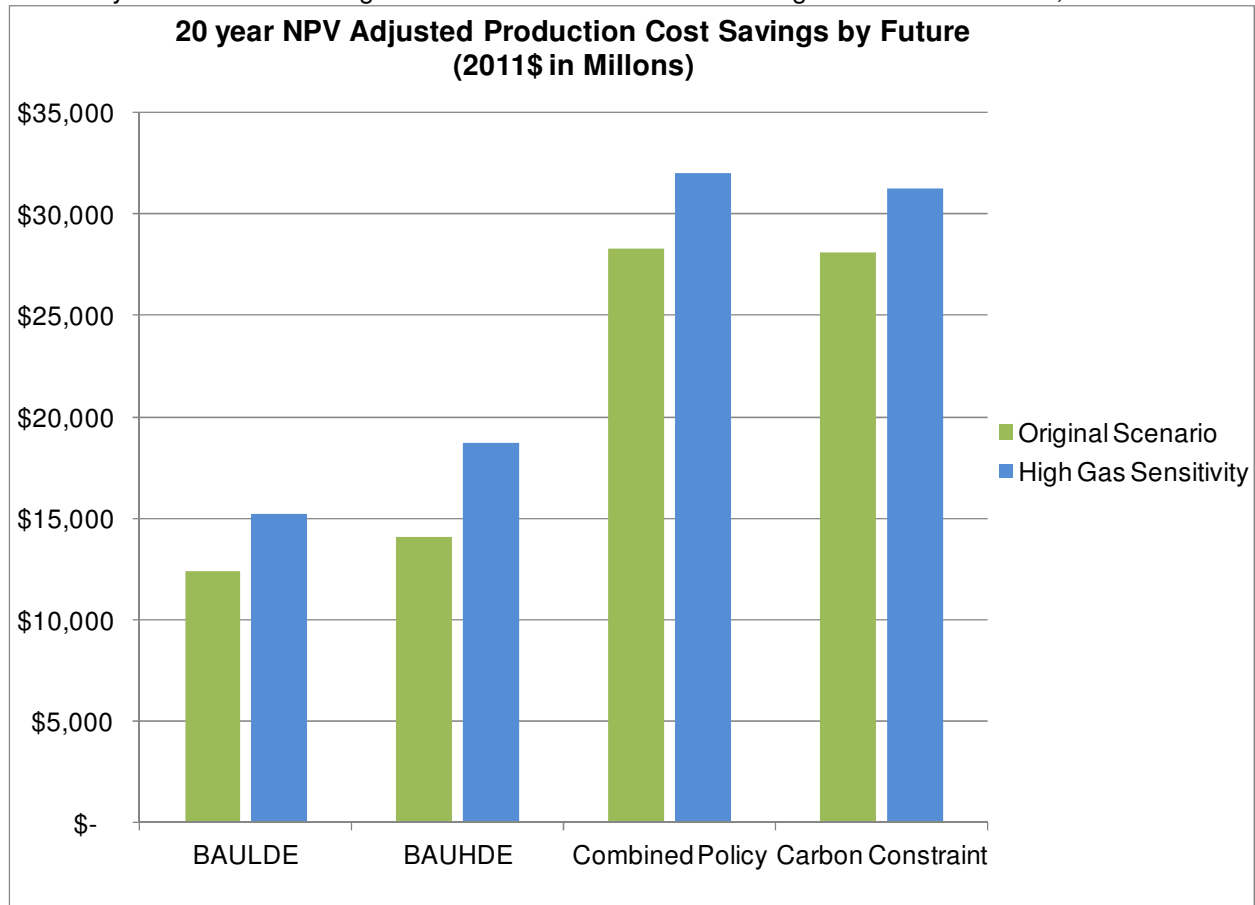


Figure 9.4.

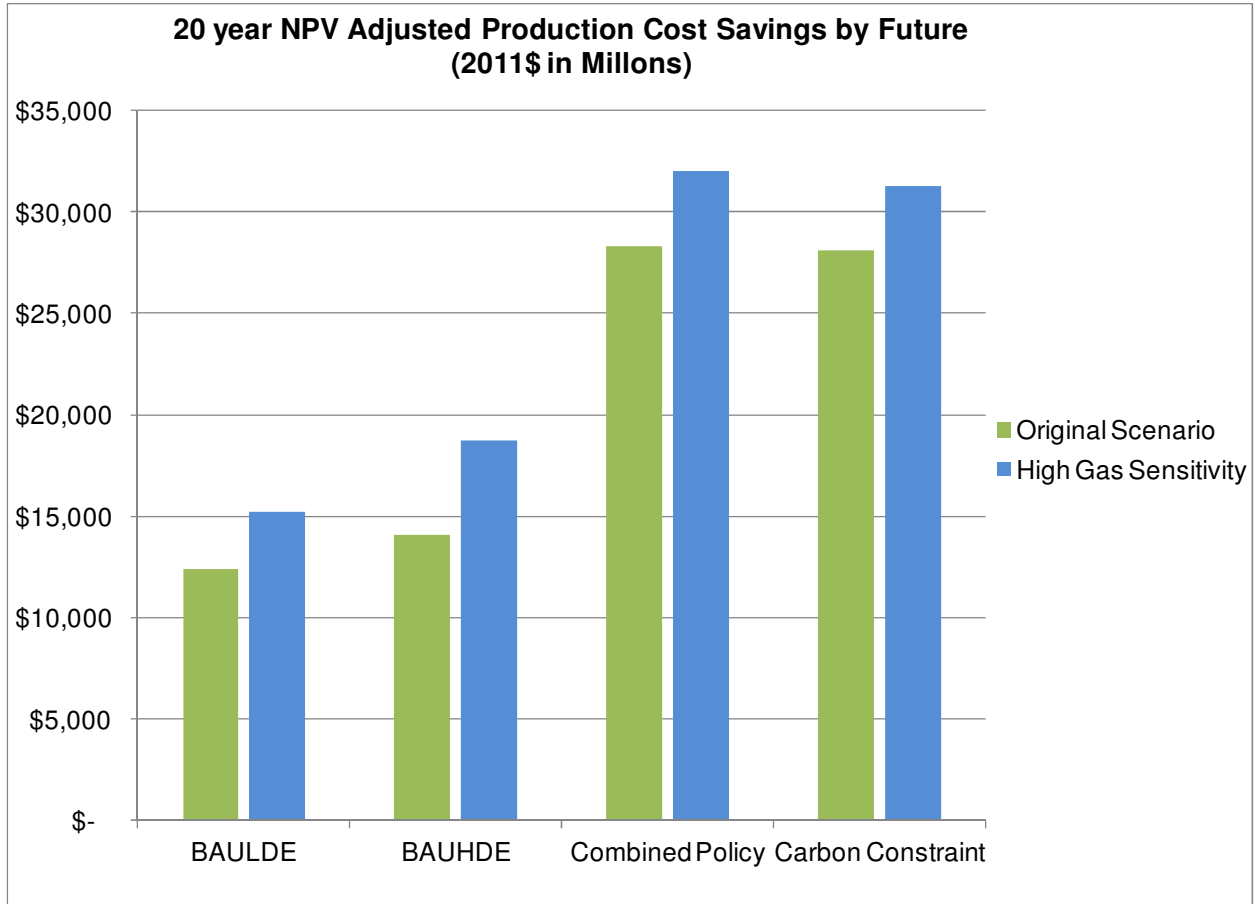


Figure 9.4: Recommended MVP Portfolio Adjusted Production Cost savings by future

9.3.3 Market price impact

The increase in market prices, or Locational Marginal Pricing (LMPs), was also calculated through the PROMOD sensitivities. The LMP is driven by the characteristics of the generation fleet and congestion on the system. With a \$2-\$3 increase in natural gas prices, the generation weighted average LMP increased by an average value of \$7/MWh under a range of policy scenarios.

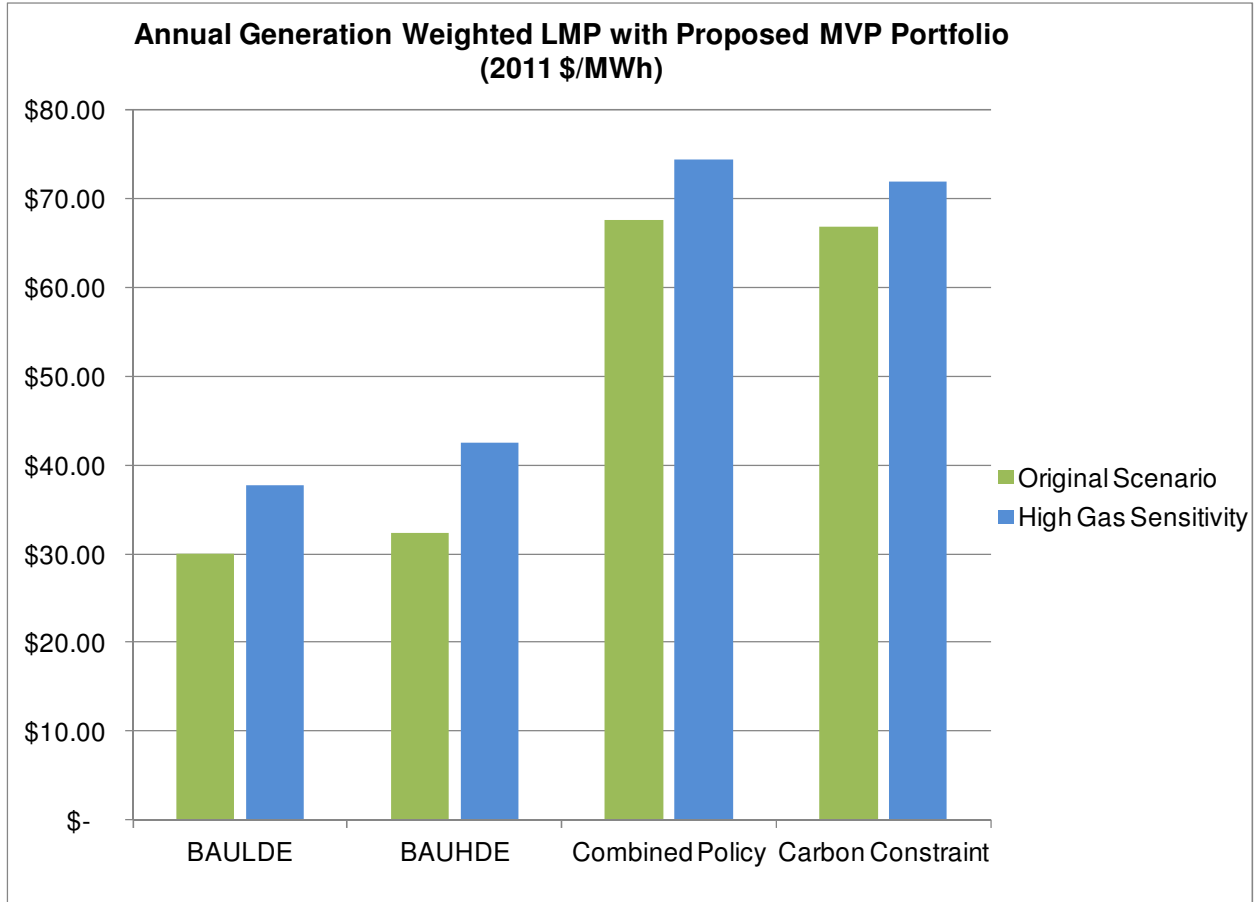


Figure 9.5: Annual generation weighted LMP with recommended MVP portfolio

9.4 Decreased wind generation volatility

As the geographical distance between wind generation increases, the correlation in the wind output decreases. This leads to a higher average output from wind for a geographically diverse set of wind plants, relative to a closely clustered group of wind plants. The recommended MVP portfolio will increase the geographic diversity of wind resources that can be delivered, increasing the average wind output available at any given time.

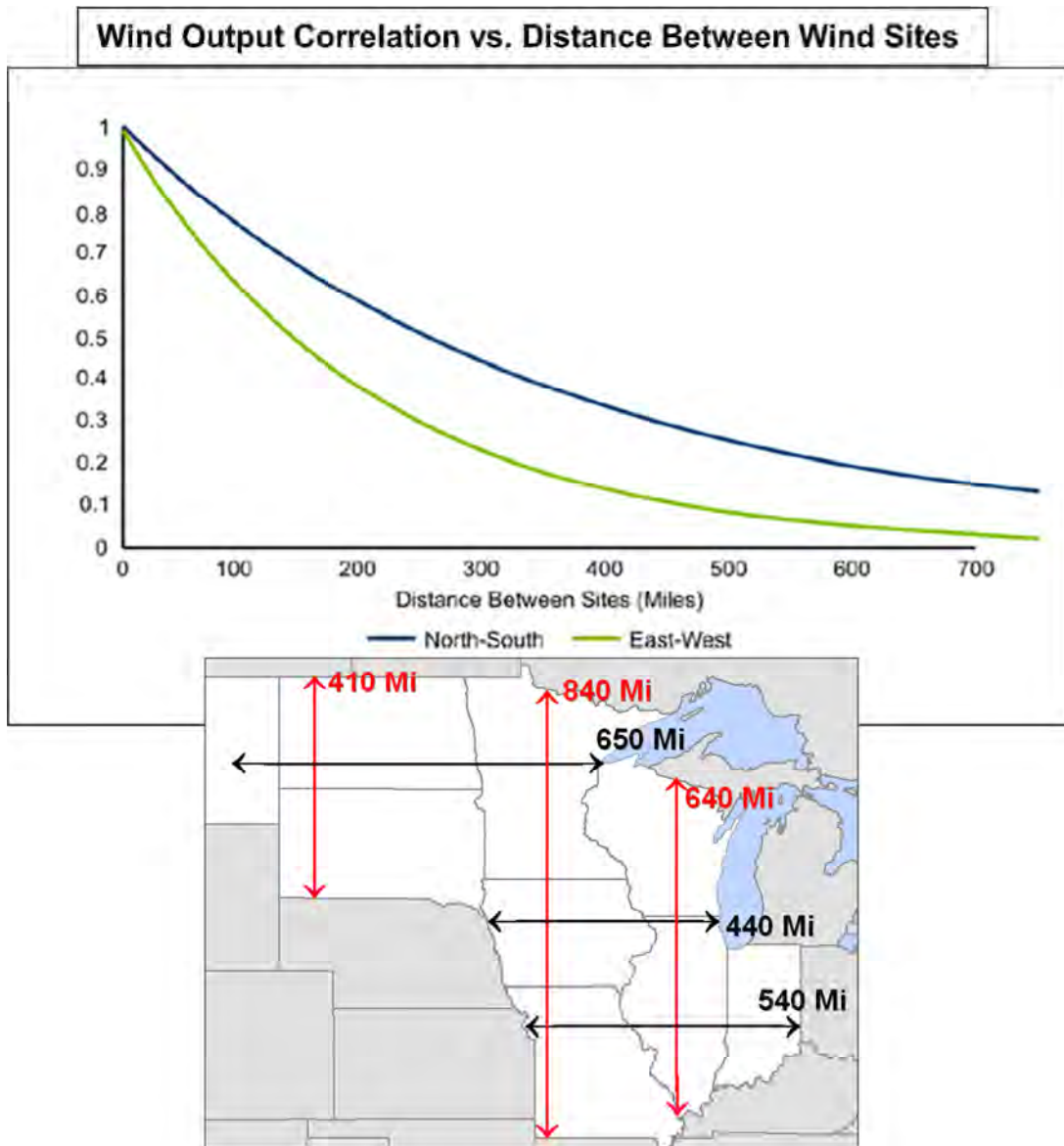


Figure 9.6: Wind Output correlation to distance between wind sites

9.5 Local investment and job creation

In addition to the direct benefits of the recommended MVP portfolio, studies have shown the indirect economic benefits of transmission investment. They estimated that, for each million dollars of transmission investment:

- Between \$0.2 and \$2.9 million of local investment is created.
- Between 2 and 18 employment years are created.²⁷

The wide variations in these numbers are primarily due to the extent to which materials, equipment and workers can be sourced from a ‘local’ region. For example, each million dollars of local investment supports 11 to 14 employment years of local employment, as compared to 2 to 18 employment years which are created for non-location specific transmission investment.

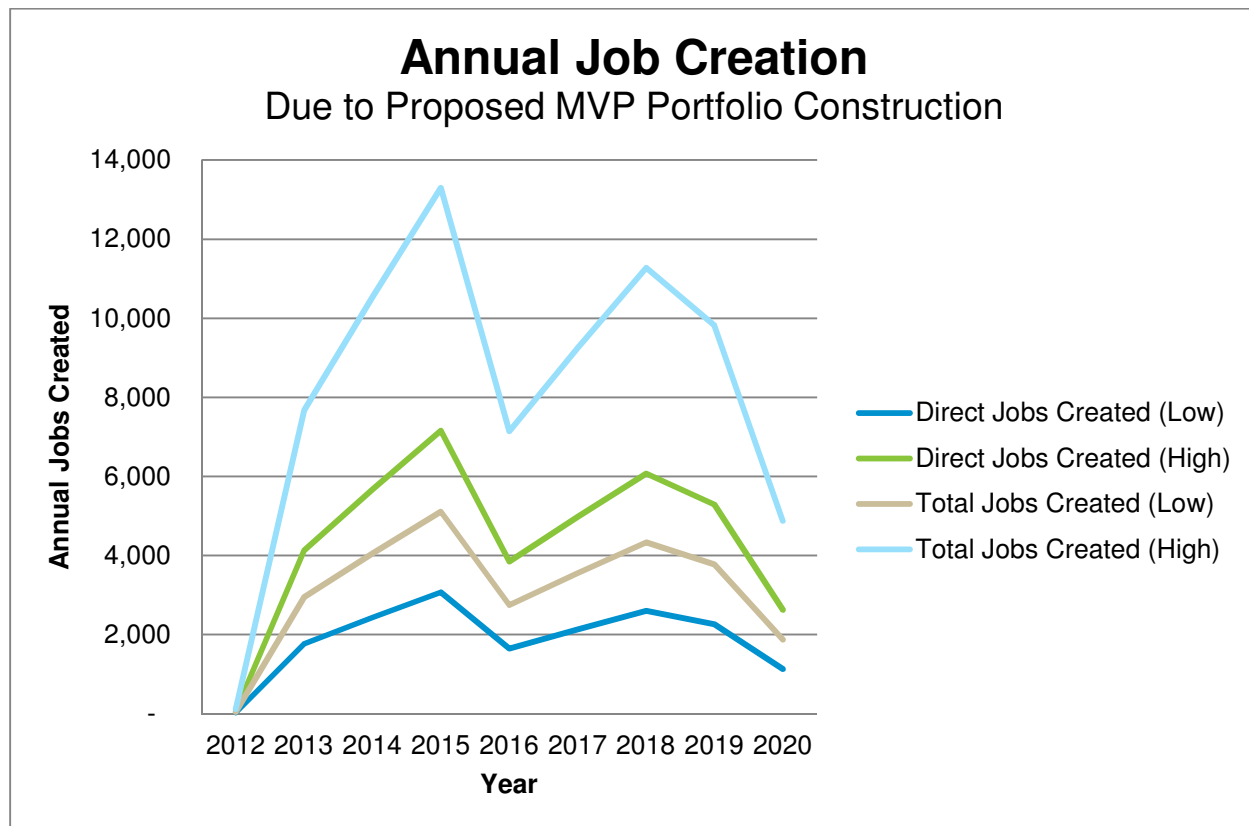


Figure 9.7: Annual Job Creation by Recommended MVP Portfolio

The recommended MVP portfolio supports the creation of between 17,000 and 39,800 local jobs, as well as \$1.1 to \$9.2 billion in local investment. This calculation is based upon a creation of \$0.3 to \$1.9 million local investment and 3 to 7 employment years per million of transmission investment. It also assumes that the capital investment for each MVP occurred equally over the 3 years prior to the project’s in-service date.

²⁷ Source: *Employment and Economic Benefits of Transmission Infrastructure Investment in the U.S. and Canada*, The Brattle Group

9.6 Carbon reduction

With the recommended MVP portfolio delivering significant amounts of wind energy across MISO and the neighboring regions, carbon emissions were reduced because of the more efficient usage of the generation fleet with conventional generation resources displaced by wind. Figure 9.8 summarizes the carbon emission reductions in million tons for each scenario with a range of 8.3 to 17.8 million tons annually.

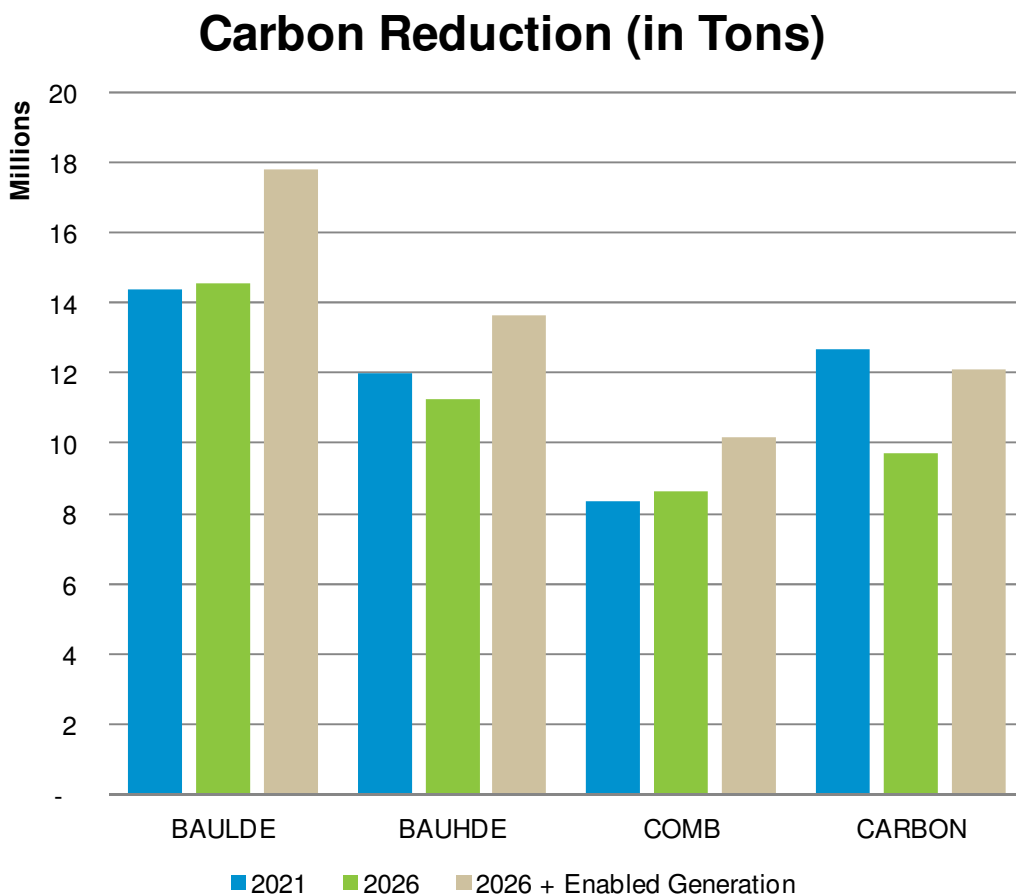


Figure 9.8: Carbon reduction by scenario

For the Combined Energy Policy and Carbon Constrained future scenarios, a \$50/ton carbon cost was included to meet aggressive carbon reduction targets, as required by the proposed Waxman-Markey legislation. If policies were enacted that mandate a financial cost of carbon, the benefits provided by the recommended MVP portfolio would increase by between \$3.8 and \$15.4 billion in 20 and 40 year present value terms respectively, as depicted in Figure 9.9.

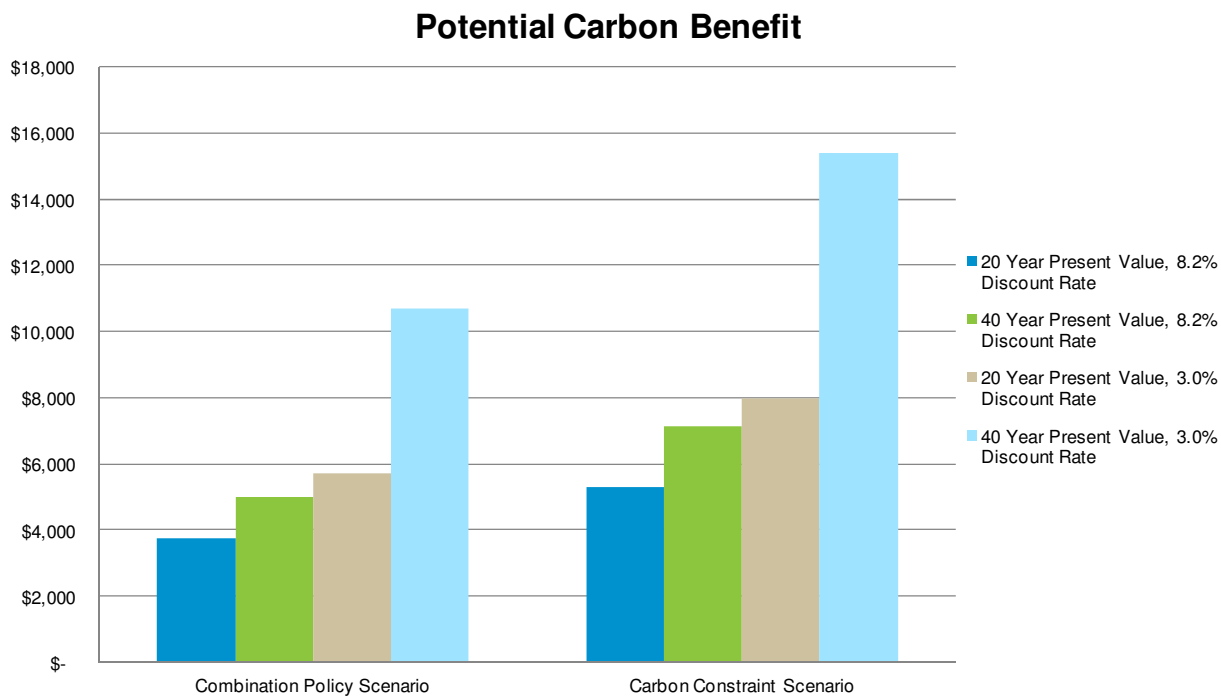


Figure 9.9: Potential carbon benefits

10 Proposed Multi Value Project Portfolio Overview

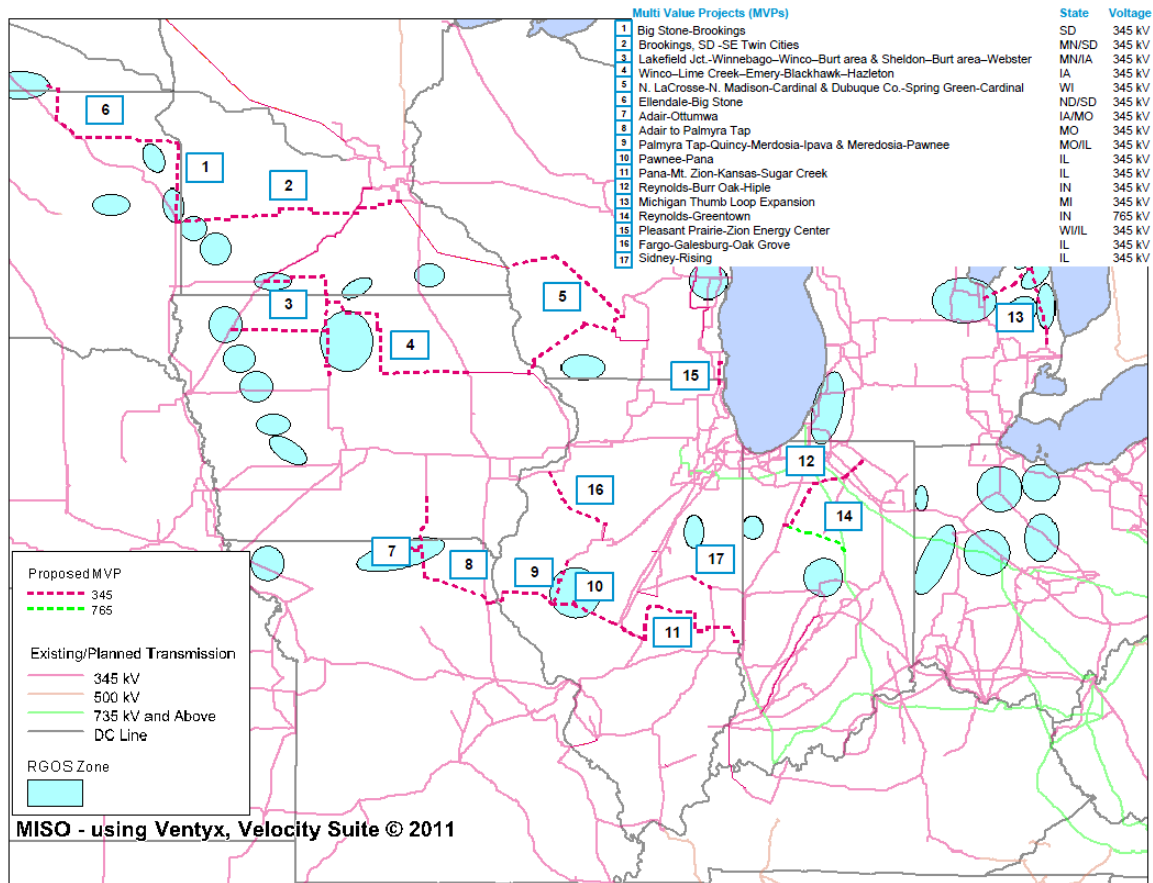


Figure 10.1: 2011 recommended MVP portfolio

The recommended MVP portfolio consists of 17 projects spread across the MISO footprint. These projects work together with the existing transmission network to enhance the reliability of the system, support public policy goals and enable a more efficient dispatch of market resources. Table 10.1 describes the projects that make up the recommended MVP portfolio.

	Project	State	Voltage (kV)	In Service Year	Cost (M, 2011\$) ²⁸
1	Big Stone–Brookings	SD	345	2017	\$191
2	Brookings, SD–SE Twin Cities	MN/SD	345	2015	\$695
3	Lakefield Jct. Winnebago–Winco–Burt area & Sheldon–Burt area–Webster	MN/IA	345	2016	\$506
4	Winco–Lime Creek–Emery–Black Hawk–Hazleton	IA	345	2015	\$480
5	N. LaCrosse–N. Madison–Cardinal & Dubuque Co.–Spring Green–Cardinal	WI	345	2018/2020	\$714
6	Ellendale–Big Stone	ND/SD	345	2019	\$261
7	Adair–Ottumwa	IA/MO	345	2017	\$149
8	Adair–Palmyra Tap	MO/IL	345	2018	\$98
9	Palmyra Tap–Quincy–Merdosia–Ipava & Merdosia–Pawnee	IL	345	2016/2017	\$392
10	Pawnee–Pana	IL	345	2018	\$88
11	Pana–Mt. Zion–Kansas–Sugar Creek	IL/IN	345	2018/2019	\$284
12	Reynolds–Burr Oak–Hiple	IN	345	2019	\$271
13	Michigan Thumb Loop expansion	MI	345	2015	\$510
14	Reynolds–Greentown	IN	765	2018	\$245
15	Pleasant Prairie–Zion Energy Center	WI/IL	345	2014	\$26
16	Fargo–Galesburg–Oak Grove	IL	345	2018	\$193
17	Sidney–Rising	IL	345	2016	\$76
Total					\$5,180

Table 10.1: Recommended MVP portfolio

²⁸ Costs shown are inclusive of transmission underbuild upgrades and upgrades driven by short circuit requirements.

10.1 Underbuild requirements

To ensure that the recommended MVP portfolio works well with the existing system to maintain reliability, MISO conducted analyses to determine any constraints that are present with the recommended MVP portfolio and not present without the portfolio. Any new constraints were identified for mitigations, and the appropriate mitigation was determined in coordination with the impacted Transmission Owners.

Below is a full list of the underbuild upgrades. These upgrades were identified through the steady state reliability analyses, using both off peak and peak models. No additional upgrades were identified through the stability analyses. Overall, approximately \$70 million of transmission investment is associated with the underbuild upgrades.

Underbuild requirements
Burr Oak to East Winamac 138 kV line uprate ²⁹
Lake Marian 115/69 kV transformer replacement
Arlington to Green Isle 69 kV line uprate
Columbus 69 kV transformer replacement
Casey to Kansas 345 kV line uprate
Lake Marian to NW Market Tap 69 kV line uprate
Franklin 115/69 kV transformer replacements
Castle Rock to ACEC Quincy 69 kV line uprate
Kokomo Delco to Maple 138 kV line uprate
Wabash to Wabash Container 69 kV line uprate
Spring Green 138/69 kV transformer replacement
Davenport to Sub 85 161 kV line uprate
West Middleton West Towne 69 kV line uprate
Ottumwa Montezuma 345 kV line uprate

Table 10.2: Recommended MVP portfolio underbuild requirements

²⁹ Burr Oak to East Winamac upgrade also identified as part of the Meadow Lake wind farm upgrades.

10.2 Portfolio benefits and cost spread

A key principle of the MISO planning process is that the benefits from a given transmission project must be spread commensurate with its costs. The MVP cost allocation methodology distributes the costs of the portfolio on a load ratio share across the MISO footprint, so the recommended MVP portfolio must be shown to deliver a similar spread of benefits.

Each economic business case metric calculated for the full recommended MVP portfolio was analyzed to determine how it would accrue to stakeholders across the footprint. These results were then rolled up to a zonal level, based on the proposed Local Resource Zones for Resource Adequacy. This level of detail was chosen to provide stakeholders with an understanding of the benefits spread, without getting into a detail level which may be falsely precise due to the impact of individual stakeholder actions on actual benefit spreads.

The allocation of each of the economic metrics is discussed in more detail below.

10.2.1 Congestion and Fuel Savings

The Production Cost model simulations return results at a granular, generator-specific level. These results were then rolled up from this detailed level to a zonal level.

10.2.2 Operating Reserve Benefits

The costs of Operating Reserves were allocated across the footprint on a load-ratio share basis. This distribution matches the allocation of these costs through the MISO Energy and Ancillary Service markets. As such, although certain areas in the footprint may see reductions in the Operating Reserves they must hold within their area, the benefits of the more economic dispatch of these resources will be shared by the full MISO footprint.

10.2.3 System Planning Reserve Margin Benefits

The benefits accruing from the reduction in the system Planning Reserve Margin (PRM) were distributed across the footprint on a load-ratio share basis. This allocation was selected due to the widespread nature of the system PRM; the reduced planning margin will apply to all load in the MISO system, reducing the capacity needs for the full system.

10.2.4 Transmission Line Loss Benefits

The benefits accruing from the reduction in transmission line losses were allocated across the footprint on a load-ratio share basis. This approach reflects the integrated nature of the transmission system, as the market allows generation to be transported large distances to remote load. This integrated nature is enhanced by the inclusion of the recommended MVP portfolio into the transmission system, as congestion is reduced, and transfer capacity is increased, across the system.

10.2.5 Wind Turbine Investment

The benefits of reducing the required investment in wind turbines are not applicable for areas that do not have either renewable energy mandates or goals that can be sourced from outside the area. This benefit is also enhanced for areas with lower wind capacity factors, as the differential in wind turbine investment is substantially higher for these areas than for those with, on average, higher wind speeds. As a result, this benefit was allocated to the zones through a weighted average of the renewable energy mandates or needs that can be sourced outside of the zone, along with the relative wind capacity factors, when compared to the system's highest wind speed area.

Zone	Average Capacity Factor	Capacity Factor Differential From System Maximum	Average Out-of-State Renewable Mandates or Goals (%)	Out-of-State Renewable Generation Mandates or Goals (MW)	2026 Projected Load (GWh)	Out-of-State Renewable Generation Mandates or Goals (GWh)	Renewable Generation Weighted by Capacity Factor Differential	Zonal Allocation
1	38%	5%	28%		108,371	29,927	1,446	19%
2	28%	16%	10%		80,267	8,027	1,260	16%
3	36%	8%	N/A	3,000	55,648	9,338	716	9%
4	28%	16%	18%		60,063	11,087	1,730	22%
5	33%	10%	14%		55,485	7,788	809	10%
6	29%	14%	9%		143,528	13,013	1,833	24%
7	28%	15%	0%		119,017	-	-	0%

Table 10.3: Wind Turbine Investment Allocation³⁰

³⁰ All values shown in the table exclude in-state renewable energy goals or mandates.

10.2.6 Future Transmission Investment

Higher voltage Baseline Reliability Projects (BRPs), under Attachment FF of the MISO Tariff, are allocated as a mixture of system wide costs and local costs. More specifically, 20% of the costs of the transmission upgrades are allocated across the system, and 80% of the project costs are allocated to affected pricing zones.

The benefits accruing from the ability of the recommended MVP portfolio to avoid future Baseline Reliability Project investment was allocated using this methodology.

10.2.7 Costs Distribution

The costs of the portfolio were allocated across the footprint on a load-ratio share basis, as required by the Multi Value Project cost allocation methodology. Additional information on the distribution of the costs of the Multi Value Project portfolio may be found in the following section, section 10.3.

10.2.8 Zonal Benefit-Cost Ratio

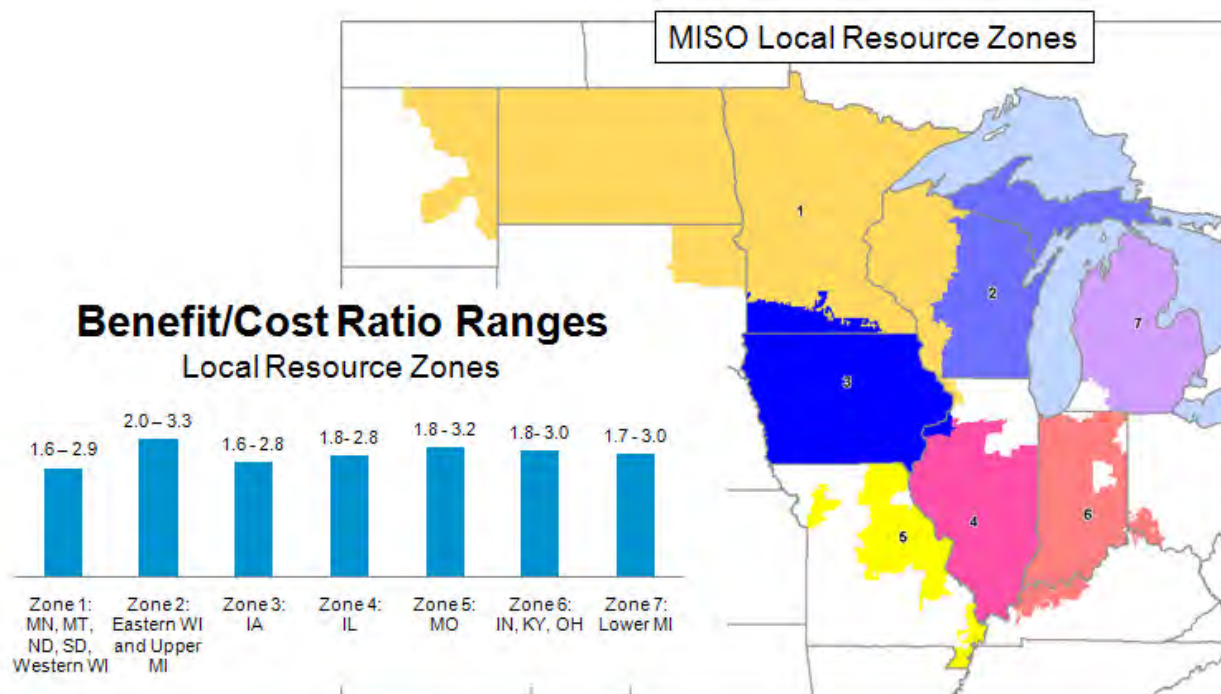


Figure 10.2: Recommended MVP portfolio production cost benefits spread

The recommended MVP portfolio provides benefits across the MISO footprint in a manner that is roughly equivalent to its costs allocation. For each of the local resource zones, as shown in Figure 10.2, the portfolio’s benefits are at least 1.6 to 2.9 times the cost allocated to the zone.

10.3 Cost allocation

Multi Value Projects represent a new project type eligible for cost sharing effective since July 16, 2010, and conditionally accepted by the Federal Energy Regulatory Commission on December 16, 2010. Multi Value Projects provide numerous benefits, including, improved reliability, reduced congestion costs, and meeting public policy objectives.

The costs of Multi Value Projects will have a 100 percent regional allocation and will be recovered from customers through a monthly energy usage charge calculated using the applicable MVP Usage Rate.

The proposed Multi Value Project portfolio described in this report includes the Michigan Thumb Loop project, approved in August 2010; the Brookings to Minneapolis-St. Paul project, conditionally approved in June 2011; and 15 additional projects being proposed to the MISO Board of Directors for approval in December 2011. The cost of the recommended MVP portfolio in 2011 dollars is \$5.2 billion, including the \$1.2 billion in projects that have previously been approved or conditionally approved by the MISO Board of Directors. See Table 10.1 for individual project costs.

The costs of Multi Value Projects will have a uniform 100 percent regional allocation based on withdrawals and will be recovered from customers through a monthly energy usage charge. This charge will apply to all MISO load, excluding load under Grandfathered Agreements, and also to export and wheel-through transactions not sinking in PJM.

Figure 10.3 shows a 40-year projection of indicative annual MVP Usage Rates based on the recommended MVP portfolio using current year cost estimates and estimated in-service dates. Additional detail on the indicative MVP Usage Rate, including indicative annual MVP charges by Local Balancing Authority, is included in Appendix A-3 of the MTEP11 report.

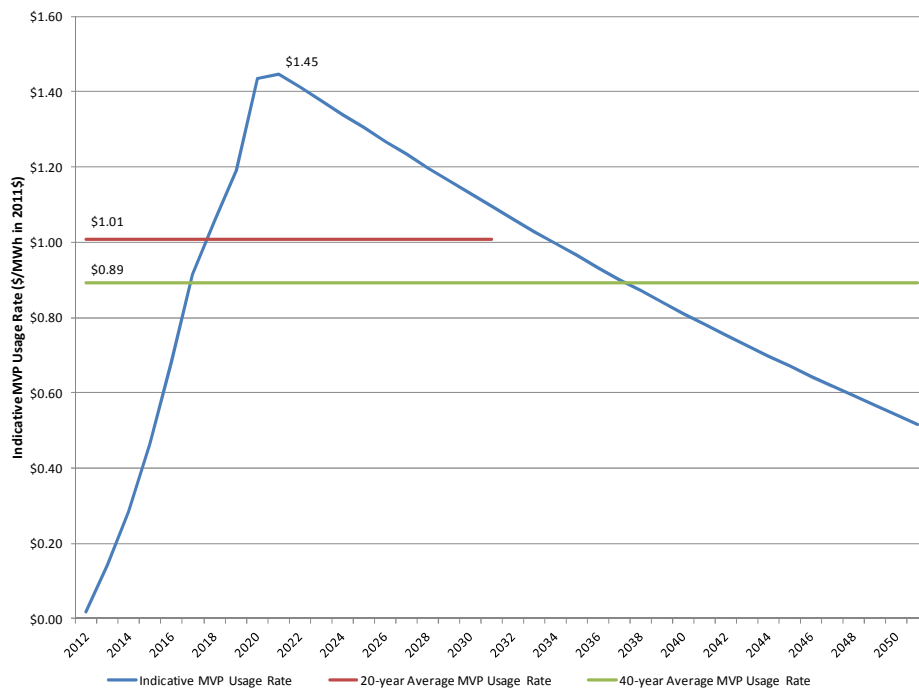


Figure 10.3: Indicative MVP usage rate for recommended MVP portfolio from 2012 to 2051

11 Conclusions and recommendations

MISO staff recommends the recommended MVP portfolio to the MISO Board of Directors for their review and approval. This recommendation is premised on the ability of the portfolio to meet MVP criterion 1, as each project in the portfolio was shown to more reliably enable the delivery of wind generation in support of the renewable energy mandates of the MISO states in a cost effective manner.

The recommendation is also supported by the strong economic benefits of the portfolio, which delivers a large amount of value in excess of costs under all conditions and policy scenarios studied. Furthermore, these benefits are spread across the MISO footprint, in a manner commensurate with the allocation of the portfolio's costs.

EXHIBIT 4

FORM OF NOTICE

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

ITC Midwest, LLC
Complainants

v.

Docket No. EL13-____-000

American Transmission Company, LLC
Respondents

NOTICE OF COMPLAINT

(October __, 2012)

Take notice that on October 24, 2012, ITC Midwest, LLC (“ITC Midwest”) filed a formal complaint against American Transmission Company, LLC (“ATC”) pursuant to Sections 206, 306, and 309 of the Federal Power Act (“FPA”), 16 U.S.C. § 824e, § 825e, § 825h (2006), and Rule 206 of the Federal Energy Regulatory Commission’s (the “Commission”) Rules of Practice and Procedure, 18 C.F.R. § 206 (2012), alleging that ATC has not complied with the express terms and conditions of: (a) the Midwest Independent Transmission System Operator, Inc.’s (“MISO”) Open Access Transmission Energy and Operating Reserve Markets Tariff; (b) the Agreement of the Transmission Facilities Owners to Organize the Midwest Independent Transmission System Operator, Inc., a Delaware Non-Stock Corporation; and (c) the MISO designations for MVP Project 5 (with the designation 3127), the Dubuque-Cardinal Line as specified in the 2011 MISO Transmission Expansion Plan Appendix A.

ITC Midwest certifies that copies of the complaint were served on the contacts for ATC as listed on the Commission’s list of Corporate Officials.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission’s Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. The Respondent’s answer and all interventions, or protests must be filed on or before the comment date. The Respondent’s answer, motions to intervene, and protests must be served on the Complainants.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the “eFiling” link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the “eLibrary” link and is available for review in the Commission’s Public Reference Room in Washington, D.C. There is an “eSubscription” link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email FERCOnlineSupport@ferc.gov, or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: 5:00 pm Eastern Time on (insert date).

Magalie R. Salas
Secretary

CERTIFICATE OF SERVICE

On this, the 24th day of October, 2012, I hereby certify that a true and correct copy of the foregoing document was served by electronic mail upon the respondent and all others that may be affected by the complaint, as required by FERC's Regulations.

Daniel P. Archuleta

Daniel P. Archuleta