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October 11, 2017*

**FILED<sup>2</sup>**

OCT 12 2017

Missouri Public  
Service Commission  
12:59pm MA

Mr. Morris L. Woodruff  
C/O Data Center  
MO Public Service Commission  
200 Madison St.  
Jefferson City, MO 65102

RE: Notice of Appeal in EA-2016-0358

Dear Mr. Woodruff:

Enclosed for filing are an original and two copies of a Notice of Appeal which is being filed on behalf of the Missouri Landowners Alliance (MLA) in Case No. EA-2016-0358. Enclosed also is a \$70 check for the filing fee.

Each of the three copies consists of the following documents: the Notice of Appeal, accompanied by a two page service list, a two page list of the Issues Expected to be Raised on Appeal, and a one page Brief Description of the case.

Also enclosed with each copy, as part of the Notice of Appeal, are three additional documents: The MLA's Application for Rehearing (which incorporates a Motion to Strike); the PSC's August 16, 2017 Report and Order; and the Concurring Opinion filed by the four commissioners, also dated August 16, 2017.

Please let me know if there is anything further you need from me to complete this filing.

Yours truly,



Paul A. Agathen  
[Paa0408@aol.com](mailto:Paa0408@aol.com)



# Missouri Public Service Commission

Judge or Division: Sr. Regulatory Law Judge Michael Bushmann	Appellate Number:
Appellant: Missouri Landowners Alliance	Missouri Public Service Commission File Number: EA-2016-0358
Respondent: Missouri Public Service Commission	

# FILED<sup>2</sup>

## OCT 12 2017

Missouri Public  
Service Commission  
12:59pm MA  
(Date File Stamp)

### Notice of Appeal

Notice is given that Missouri Landowners Alliance appeals to the Missouri Court of Appeals  Western  Eastern  Southern District.

October 12, 2017  
Date Notice of Appeal Filed  
(to be filled in by Secretary of Commission)

Paul A. Agathen  
Signature of Attorney or Appellant

The notice of appeal shall include the appellant's application for rehearing, a copy of the reconciliation required by subsection 4 of section 386.420, a concise statement of the issues being appealed, a full and complete list of the parties to the commission proceeding, and any other information specified by the rules of the court. The appellant(s) must file the original and (2) two copies and pay the docket fee required by court rule to the Secretary of the Commission within the time specified by law. **Please make checks or money orders payable to the Missouri Court of Appeals.** At the same time, Appellant must serve a copy of the Notice of Appeal on attorneys of record of all parties other than appellant(s), and on all parties not represented by an attorney.

### CASE INFORMATION

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Date of Commission Decision: August 16, 2017	Date of Application for Rehearing Filed: August 25, 2017	Date Application for Rehearing Ruled On: September 19, 2017

### DIRECTIONS TO COMMISSION

A copy of the notice of appeal and the docket fee shall be mailed to the clerk of the appellate court. Unless otherwise ordered by the court of appeals, the commission shall, within thirty days of the filing of the notice of appeal, certify its record in the case to the court of appeals.

### Certificate of Service

I certify that on 10/11/17 (date), I served a copy of the notice of appeal on the following parties, at the following address(es), by the method of service indicated.  
See attached service list, all served by electronic mail.

Paul A. Agathen  
Appellant or Attorney for Appellant

**MISSOURI PUBLIC SERVICE COMMISSION**

**August 16, 2017**

File/Case No. EA-2016-0358

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### Issues Expected to Be Raised on Appeal

1. Whether the Missouri Public Service Commission (“PSC”) erred in receiving certain evidence into the record which was inadmissible under the terms of Section 536.070(11) RSMo.

2. Whether the PSC erred in denying access to certain material requested from Grain Belt Express Clean Line LLC (“Grain Belt”) during discovery, and then allowing Grain Belt to utilize that same material in support of its case.

3. Whether the PSC erred in denying access to certain material requested in discovery from Grain Belt and a second party on the ground that the material in question was protected from discovery under a Joint Prosecution and Defense Agreement signed by those two parties.

4. Whether the PSC erred in refusing to strike factual material incorporated by Grain Belt into its Reply Brief to the PSC when that material had not been offered or introduced into evidence.

5. Whether the Concurring Opinion of the four Commissioners constituted an unauthorized “advisory opinion.”

Note to the Court of Appeals: Appellant Missouri Landowners Alliance is pursuing these or at least some of these issues on a contingent basis; i.e., it seeks a resolution of the issues only if the PSC’s underlying Report and Order of August 16, 2017 is reversed on appeal and remanded to the PSC with instructions to approve Grain Belt’s Application. See *Peters v. Contigroup*, 292 S.W.3d 380, 383 (Mo. App. 2009), where the respondent filed a “contingent” cross-appeal to be addressed only if the appellant prevailed on their issues first. And see *Kehrs Mill Trails Associates v.*

*Kingspointe Homeowner's Association*, 251 S.W.3d 391, 398 f.n. 3 (Mo. App. 2008), holding that “in the absence of a cross-appeal, we limit our review to the claims of the appellant, and do not consider allegations of trial error raised by the respondent.”

Accordingly, if the MLA does not raise the issues in question in a separate cross-appeal in this case, it may never have to opportunity for judicial review of these issues.

The Court may also wish to note that as of October 11, 2017, this is the third appeal filed from the PSC's Case No. EA-2016-0358. The other two are docketed at the Court as ED105932 and ED105975. These two cases were recently consolidated by the Court, with the first of the two being designated as the lead case.

Brief Description of the Case.

On August 30, 2016, Grain Belt Express Clean Line LLC (“Grain Belt”) filed an Application with the Missouri Public Service Commission (“PSC”) for a Certificate of Convenience and Necessity (“CCN”) to build the Missouri portion of an electric transmission line which would run approximately 780 miles from Kansas to Indiana. The proposed route of the line would traverse eight counties across northern Missouri, from a point just south of St. Joseph to a point just south of Hannibal.

In March, 2017, the PSC held five days of evidentiary hearings at its offices in Jefferson City, dealing primarily with the issues of whether or not the proposed line met the PSC’s traditional criteria for issuance of a CCN for a transmission line.

On August 16, 2017, the PSC issued its Report and Order, in which it voted 5-0 to deny Grain Belt’s Application for the CCN. The decision was essentially based on the fact that Grain Belt had not secured the consents pursuant to Section 229.100 RSMo from all of the County Commissions in the eight counties which would be traversed by the proposed line.

In a Concurring Opinion, four of the five Commissioners stated, *inter alia*, that the proposed line did meet the traditional criteria for issuance of a CCN, and that they would have voted to approve Grain Belt’s Application but for the fact that Grain Belt had not secured the needed County Commission approvals.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**



In the Matter of the Application of Grain Belt Express )  
Clean Line LLC for a Certificate of Convenience and )  
Necessity Authorizing It to Construct, Own, Operate, )  
Control, Manage, and Maintain a High Voltage, Direct )  
Current Transmission Line and an Associated Converter )  
Station Providing an Interconnection on the Maywood – )  
Montgomery 345kV Transmission Line )

**File No. EA-2016-0358**

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**REPORT AND ORDER**

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**Issue Date:** August 16, 2017

**Effective Date:** September 15, 2017



**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of the Application of Grain Belt Express )  
Clean Line LLC for a Certificate of Convenience and )  
Necessity Authorizing It to Construct, Own, Operate, )  
Control, Manage, and Maintain a High Voltage, Direct ) **File No. EA-2016-0358**  
Current Transmission Line and an Associated Converter )  
Station Providing an Interconnection on the Maywood – )  
Montgomery 345kV Transmission Line )

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**SENIOR REGULATORY LAW JUDGE:** Michael Bushmann

## REPORT AND ORDER

### I. Procedural History

On August 30, 2016, Grain Belt Express Clean Line LLC (“GBE”) filed an application with the Missouri Public Service Commission (“Commission”), pursuant to Section 393.170.1, RSMo<sup>1</sup>, 4 CSR 240-2.060 and 4 CSR 240-3.105(1)(B), for a certificate of convenience and necessity (“CCN”) to construct, own, operate, control, manage and maintain a high voltage, direct current transmission line and associated facilities within Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Monroe and Ralls Counties, Missouri, as well as an associated converter station in Ralls County.

The Commission issued notice of the application and provided an opportunity for interested persons to intervene. The Commission granted intervention to the following parties: Missouri Landowners Alliance (“MLA”); Eastern Missouri Landowners Alliance d/b/a Show Me Concerned Landowners; Missouri Joint Municipal Electric Utility Commission (“MJMEUC”); Missouri Farm Bureau Federation; Missouri Department of Economic Development; Matthew and Christina Reichert; Randall and Roseanne Meyer; Charles and Robyn Henke; R. Kenneth Hutchinson; Rockies Express Pipeline LLC; Sierra Club; Natural Resources Defense Council; The Wind Coalition; Wind on the Wires; Infinity Wind Power; Walmart Stores, Inc.; Missouri Industrial Energy Consumers; Renew Missouri; International Brotherhood of Electrical Workers Locals 2 and 53; Consumers Council of Missouri; Missouri Retailers Association; and Missouri AFL-CIO. The Commission granted the petitions of Energy for Generations, LLC and SSM Health Care Corporation to file amicus curiae briefs.

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<sup>1</sup> All statutory references are to the Missouri Revised Statutes (2016), unless otherwise noted.

The Commission held a prehearing conference and established a procedural schedule. The Commission conducted local public hearings for members of the general public in each of the eight counties where the proposed transmission line would be located.<sup>2</sup> The Commission held an evidentiary hearing on March 20-24, 2017.<sup>3</sup> During the evidentiary hearing, the parties presented evidence relating to the following unresolved issues previously identified by the parties:

1. Does the evidence establish that the Commission may lawfully issue to GBE the certificate of convenience and necessity it is seeking for the high-voltage direct current transmission line and converter station with an associated AC switching station and other AC interconnecting facilities?
2. Does the evidence establish that the high-voltage direct current transmission line and converter station for which GBE is seeking a certificate of convenience and necessity are necessary or convenient for the public service, within the meaning of that phrase in Section 393.170, RSMo 2016?
3. If the Commission grants the CCN, what conditions, if any, should the Commission impose?
4. If the Commission grants the CCN, should the Commission exempt GBE from complying with the reporting requirements of Commission rules 4 CSR 240-3.145, 4 CSR 240-3.165, 4 CSR 240-3.175, and 4 CSR 240-3.190(1), (2) and (3) (A)-(D)?

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<sup>2</sup> Transcript, Vols. 2-9.

<sup>3</sup> Transcript, Vols. 10-19. The Commission admitted the testimony of 54 witnesses and 135 exhibits into evidence during the evidentiary hearing.

The parties submitted initial, reply, and supplemental post-hearing briefs. After the filing of two post-hearing motions<sup>4</sup>, oral arguments were conducted on August 3, 2017,<sup>5</sup> and the case was deemed submitted for the Commission's decision on that date when the Commission closed the record.<sup>6</sup>

## **II. Findings of Fact**

Any finding of fact for which it appears that the Commission has made a determination between conflicting evidence is indicative that the Commission attributed greater weight to that evidence and found the source of that evidence more credible and more persuasive than that of the conflicting evidence.

1. GBE is a limited liability company organized under the laws of the State of Indiana. GBE is a wholly-owned subsidiary of Grain Belt Express Holding LLC, a Delaware limited liability company, which is a wholly-owned subsidiary of Clean Line Energy Partners LLC ("Clean Line").<sup>7</sup>

2. GBE filed its application for a CCN pursuant to Section 393.170.1, RSMo, and Commission administrative rules.<sup>8</sup>

3. The Staff of the Missouri Public Service Commission ("Staff") is a party in all Commission investigations, contested cases and other proceedings, unless it files a

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<sup>4</sup> MLA's Motion to Dismiss Application filed on July 4, 2017 and GBE's Motion for Waiver or Variance of Filing Requirements filed on June 29, 2017.

<sup>5</sup> Transcript, Vol. 20. At the oral arguments, the Commission admitted four additional exhibits into the record and took official notice of Section 393.170, RSMo 1949.

<sup>6</sup> "The record of a case shall stand submitted for consideration by the commission after the recording of all evidence or, if applicable, after the filing of briefs or the presentation of oral argument." Commission Rule 4 CSR 240-2.150(1).

<sup>7</sup> Ex. 100, Skelly Direct, p. 3.

<sup>8</sup> Ex. 100, Skelly Direct, p. 4.

notice of its intention not to participate in the proceeding within the intervention deadline set by the Commission.<sup>9</sup> Staff participated in this proceeding.

4. The transmission line proposed to be constructed by GBE in the application is an approximately 780-mile, overhead, multi-terminal +600 kilovolt (“kV”) high-voltage, direct current (“HVDC”) transmission line and associated facilities (collectively, the “Project”).<sup>10</sup>

5. The Project would traverse the states of Kansas, Missouri, Illinois and Indiana, including approximately 206 miles in Missouri.<sup>11</sup> The Project would deliver 500 megawatts (“MW”) of wind-generated electricity from western Kansas to customers in Missouri, and another 3,500 MW to states further east.<sup>12</sup>

6. The Project would have three converter stations. One converter station would be located in western Kansas, where wind generating facilities would connect to the Project via alternating current (“AC”) lines. The two other converter stations in eastern Missouri and eastern Illinois would deliver electricity to the AC grid through interconnections with transmission owners in the systems of Midcontinent Independent System Operator, Inc. (“MISO”) and PJM Interconnection, LLC (“PJM”), respectively.<sup>13</sup>

7. The Missouri portion of the Project would be located in the Missouri counties of Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Monroe, and Ralls.<sup>14</sup>

8. The Project's development, construction, and operations costs would be borne by the investors in Clean Line and the transmission customers. The Project's costs

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<sup>9</sup> Commission Rules 4 CSR 240-2.010(10) and (21) and 2.040(1).

<sup>10</sup> Ex. 100, Skelly Direct, p. 3.

<sup>11</sup> Ex. 100, Skelly Direct, p. 4.

<sup>12</sup> Ex. 108, Galli Direct, p. 4.

<sup>13</sup> Ex. 108, Galli Direct, p. 4-7; Ex. 104, Berry Direct, p. 4-5.

<sup>14</sup> Ex. 100, Skelly Direct, p. 4.

would not be recovered through the cost allocation process of any regional transmission organization approved by the Federal Energy Regulatory Commission (“FERC”).<sup>15</sup>

9. The Project is a participant-funded, “shipper pays” transmission line. GBE would recover its capital costs by entering into voluntary, market-driven contracts with entities that want to become transmission customers of the Project.<sup>16</sup>

10. GBE would offer transmission service through an open access transmission tariff that would be filed with and subject to the jurisdiction of the FERC under the Federal Power Act and FERC regulations. GBE customers would consist principally of wind energy producers in western Kansas and wholesale buyers of electricity, such as utilities, competitive retail energy suppliers, brokers, and marketers.<sup>17</sup>

11. The Project would not provide service to end-use customers or provide retail service in Missouri, so the Project would not be rate-regulated by the Commission.<sup>18</sup>

12. In 2012, GBE received assent from the county commissions of Buchanan, Caldwell, Carroll, Chariton, Clinton, Monroe, Ralls, and Randolph counties authorizing GBE to construct and operate poles, lines, conduits, and conductors for utility purposes through, along, and across the public roads and highways of those counties.<sup>19</sup>

13. In 2014, the county commissions of Clinton, Chariton, Caldwell, Ralls, and Monroe counties attempted to rescind the county assents previously granted in 2012.<sup>20</sup>

14. GBE does not have an assent at this time from the Caldwell County Commission to cross the public roads and highways of that county. By judgment dated

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<sup>15</sup> Ex. 100, Skelly Direct, p. 7; Ex. 104, Berry Direct, p. 8.

<sup>16</sup> Ex. 100, Skelly Direct, p. 12; Ex. 104, Berry Direct, p. 8; Ex. 111, Kelly Direct, p. 4.

<sup>17</sup> Ex. 100, Skelly Direct, p. 23-24; Ex. 104, Berry Direct, p. 6; Ex. 111, Kelly Direct, p. 4-5.

<sup>18</sup> Ex. 100, Skelly Direct, p. 24.

<sup>19</sup> Ex. 300, Lowenstein Rebuttal, p. 33, Schedule LDL-3.

<sup>20</sup> Ex. 300, Lowenstein Rebuttal, p. 33, Schedule LDL-4.



October 7, 2015, entered in Case No. 14CL-CV00222, the Caldwell County Circuit Court held that the Caldwell County Commission violated the Missouri Sunshine Law when it gave its assent, rendering that assent invalid and void.<sup>21</sup>

15. In a prior and separate case, Ameren Transmission Company of Illinois (“ATXI”) requested a CCN from the Commission to construct and operate an interstate electric transmission line running through several counties in Missouri that would not serve retail customers. ATXI did not have assent from any of the counties through which the proposed transmission line would traverse. In granting the CCN, the Commission concluded that such assents were required by its rules and by Section 229.100, RSMo and imposed a condition that ATXI must obtain the assent from each such county before the CCN became effective.<sup>22</sup>

16. ATXI had argued to the Commission, in part, that it need not obtain county assents because ATXI applied to the Commission for a line certificate under Section 393.170.1 and not an area certificate under Section 393.170.2, RSMo.<sup>23</sup> ATXI claimed that line certificates do not require such county assents.<sup>24</sup>

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<sup>21</sup> Ex. 320; Ex. 200, Dietrich Rebuttal, p. 3; Ex. 201, Staff Rebuttal Report, p. 2.

<sup>22</sup> Ex. 375, Report and Order, *In the Matter of the Application of Ameren Transmission Co. of Illinois for Other Relief or, in the Alternative, A Certificate of Pub. Convenience & Necessity Authorizing It to Construct, Install, Own, Operate, Maintain & Otherwise Control & Manage A 345,000-Volt Elec. Transmission Line from Palmyra, Missouri, to the Iowa Border & Associated Substation Near Kirksville, Missouri*, EA-2015-0146, 2016 WL 1730118 (Apr. 27, 2016).

<sup>23</sup> Ex. 376, Initial Post-hearing Brief of Ameren Transmission Co. of Illinois, *In the Matter of the Application of Ameren Transmission Co. of Illinois for Other Relief or, in the Alternative, A Certificate of Pub. Convenience & Necessity Authorizing It to Construct, Install, Own, Operate, Maintain & Otherwise Control & Manage A 345,000-Volt Elec. Transmission Line from Palmyra, Missouri, to the Iowa Border & Associated Substation Near Kirksville, Missouri*, EA-2015-0146, p. 60-74.

<sup>24</sup> *Id.*

### III. Conclusions of Law

The authority for the Commission to approve the Project when necessary or convenient for the public service, including the authority to impose reasonable conditions, is stated in Section 393.170, RSMo.<sup>25</sup> GBE is subject to the jurisdiction of the Commission because it is an “electrical corporation”<sup>26</sup> and “public utility”<sup>27</sup> owning, operating, controlling or managing “electric plant”<sup>28</sup>. While the Commission only has authority over facilities that are devoted to public use<sup>29</sup>, an entity that constructs and operates a transmission line bringing electrical energy from electrical power generators to public utilities that serve consumers is a necessary and important link in the distribution of electricity and qualifies as

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<sup>25</sup> 1. No gas corporation, electrical corporation, water corporation or sewer corporation shall begin construction of a gas plant, electric plant, water system or sewer system without first having obtained the permission and approval of the commission.

2. No such corporation shall exercise any right or privilege under any franchise hereafter granted, or under any franchise heretofore granted but not heretofore actually exercised, or the exercise of which shall have been suspended for more than one year, without first having obtained the permission and approval of the commission. Before such certificate shall be issued a certified copy of the charter of such corporation shall be filed in the office of the commission, together with a verified statement of the president and secretary of the corporation, showing that it has received the required consent of the proper municipal authorities.

3. The commission shall have the power to grant the permission and approval herein specified whenever it shall after due hearing determine that such construction or such exercise of the right, privilege or franchise is necessary or convenient for the public service. The commission may by its order impose such condition or conditions as it may deem reasonable and necessary. Unless exercised within a period of two years from the grant thereof, authority conferred by such certificate of convenience and necessity issued by the commission shall be null and void.

<sup>26</sup> “Electrical corporation” includes every corporation, company, association, joint stock company or association, partnership and person, their lessees, trustees or receivers appointed by any court whatsoever, other than a railroad, light rail or street railroad corporation generating electricity solely for railroad, light rail or street railroad purposes or for the use of its tenants and not for sale to others, owning, operating, controlling or managing any electric plant except where electricity is generated or distributed by the producer solely on or through private property for railroad, light rail or street railroad purposes or for its own use or the use of its tenants and not for sale to others. (emphasis added).

<sup>27</sup> “Public utility” includes every pipeline corporation, gas corporation, electrical corporation, telecommunications company, water corporation, heat or refrigerating corporation, and sewer corporation, as these terms are defined in this section, and each thereof is hereby declared to be a public utility and to be subject to the jurisdiction, control and regulation of the commission and to the provisions of this chapter.

<sup>28</sup> “Electric plant” includes all real estate, fixtures and personal property operated, controlled, owned, used or to be used for or in connection with or to facilitate the generation, transmission, distribution, sale or furnishing of electricity for light, heat or power; and any conduits, ducts or other devices, materials, apparatus or property for containing, holding or carrying conductors used or to be used for the transmission of electricity for light, heat or power. (emphasis added)

<sup>29</sup> *State ex rel. M.O. Danciger & Co. v. Pub. Serv. Commission of Missouri*, 275 Mo. 483, 205 S.W. 36, 39 (1918); *State ex rel. Buchanan County Power Transmission Co. v. Baker*, 320 Mo. 1146, 1153, 9 S.W.2d 589, 591 (1928).

a public utility.<sup>30</sup> Since GBE brought the application, it bears the burden of proof.<sup>31</sup> The burden of proof is the preponderance of the evidence standard.<sup>32</sup> In order to meet this standard, GBE must convince the Commission it is “more likely than not” that its allegations are true.<sup>33</sup>

The threshold issue for determination is whether the Commission may lawfully issue to GBE the certificate of convenience and necessity it seeks. The arguments of the parties involve whether proof of county assents under Section 229.100, RSMo,<sup>34</sup> affects the Commission's statutory authority to grant a CCN in this case. Section 229.100 requires assent of the county commission before a company may erect poles for the suspension of electric light or power wires under or across the public roads or highways of that county.

The most recent guidance from the courts on this issue is in the *Matter of Ameren Transmission Co. of Illinois*<sup>35</sup>. ATXI sought a certificate for an interstate electric transmission line under Section 393.170, as GBE has also requested. ATXI proposed an

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<sup>30</sup> *State ex rel. Buchanan County Power Transmission Co. v. Baker*, 9 S.W.2d at 592. While the Buchanan County transmission company was determined not to be a public utility because it transmitted electricity to a private company for private use, the court clearly implied that if the electricity had been transmitted to a public utility for public use the transmission company would also be considered to be a public utility. *The Empire District Electric Company v. Progressive Industries, Inc.*, Report and Order, 13 Mo.P.S.C. (N.S.) 659, 668-669 (April 2, 1968).

<sup>31</sup> “The burden of proof, meaning the obligation to establish the truth of the claim by preponderance of the evidence, rests throughout upon the party asserting the affirmative of the issue”. *Clapper v. Lakin*, 343 Mo. 710, 723, 123 S.W.2d 27, 33 (1938).

<sup>32</sup> *Bonney v. Environmental Engineering, Inc.*, 224 S.W.3d 109, 120 (Mo. App. 2007); *State ex rel. Amrine v. Roper*, 102 S.W.3d 541, 548 (Mo. banc 2003); *Rodriguez v. Suzuki Motor Corp.*, 936 S.W.2d 104, 110 Mo. banc 1996).

<sup>33</sup> *Holt v. Director of Revenue, State of Mo.*, 3 S.W.3d 427, 430 (Mo. App. 1999); *McNear v. Rhoades*, 992 S.W.2d 877, 885 (Mo. App. 1999); *Rodriguez*, 936 S.W.2d at 109-111; *Wollen v. DePaul Health Center*, 828 S.W.2d 681, 685 (Mo. banc 1992).

<sup>34</sup> “No person or persons, association, companies or corporations shall erect poles for the suspension of electric light, or power wires, or lay and maintain pipes, conductors, mains and conduits for any purpose whatever, through, on, under or across the public roads or highways of any county of this state, without first having obtained the assent of the county commission of such county therefor; and no poles shall be erected or such pipes, conductors, mains and conduits be laid or maintained, except under such reasonable rules and regulations as may be prescribed and promulgated by the county highway engineer, with the approval of the county commission.”

<sup>35</sup> *Matter of Ameren Transmission Co. of Illinois*, No. WD 79883, 2017 WL 1149139 (Mo. Ct. App. Mar. 28, 2017), reh'g denied (Apr. 27, 2017), transfer denied (Apr. 27, 2017), transfer denied (June 27, 2017).

interstate transmission line that “does not generate, distribute, or sell electricity to the general public or serve any retail service territory.”<sup>36</sup> ATXI had not yet received approval from the relevant county commissions under Section 229.100 at the time the Commission issued its Order, but the Commission granted a CCN with the condition that ATXI obtain all necessary county assents before exercising the authority in the CCN. On appeal, the Western District Court of Appeals determined that the Commission lacked authority to grant a CCN without evidence that ATXI had received those county assents, even if the Commission made the CCN conditional on ATXI obtaining the assents in the future. The Court stated:

By statute and by rule, the PSC is authorized to issue a CCN only after the applicant has submitted evidence satisfactory to the PSC that the consent or franchise has been secured by the public utility. Neither statute nor rule authorizes the PSC to issue a CCN *before* the applicant has obtained the required consent or franchise.

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Our interpretation of the statute—that it mandates that the applicant receive the consent of local government authorities before the PSC issues a CCN—gives plain meaning to the legislature’s use of the mandatory term “shall” when it describes what documents the applicant must submit to the PSC before a CCN will be issued. Accordingly, county commission assents required by section 229.100 and 4 CSR 240-3.105(1)(D)1 must be submitted to the PSC *before* the PSC grants a CCN.

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The PSC’s issuance of a CCN contingent on ATXI’s subsequent provision of required county commission assents was unlawful as it exceeded the PSC’s statutory authority.<sup>37</sup>

The Western District Court of Appeals vacated the Commission’s Report and Order issuing a CCN to ATXI. While the Commission disagreed with the legal analysis and conclusions in that opinion and asked the Supreme Court of Missouri to accept transfer of

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<sup>36</sup> *Matter of Ameren Transmission Co. of Illinois*, No. WD 79883, 2017 WL 1149139, \*2 (Mo. Ct. App. Mar. 28, 2017).

<sup>37</sup> *Matter of Ameren Transmission Co. of Illinois*, No. WD 79883, 2017 WL 1149139, \*6, 8 (Mo. Ct. App. Mar. 28, 2017).

the case<sup>38</sup>, that Court declined. The Western District ATXI opinion is now final and binding on the Commission.

ATXI, in its CCN application case at the Commission, File No. EA-2015-0146, did apply for and receive a line certificate, not an area certificate. The issue of prior county assents for line versus area CCNs was argued extensively at the Commission. ATXI proposed to build an interstate transmission line to transmit electricity for the public use, but that line would not generate, distribute, or sell electricity to the general public or serve any retail service territory, so by definition it could not result in an area certificate. ATXI had not yet obtained the assents required from all the county commissions through which the transmission line would be located.

In this GBE case, as in *Ameren Transmission Co.*, there is a disputed issue as to whether the Commission has the statutory authority to grant a line certificate to GBE without it having filed the required county assents. However, *Ameren Transmission Co.* clearly states that “county commission assents required by section 229.100 and 4 CSR 240-3.105(1)(D)1 must be submitted to the PSC *before* the PSC grants a CCN.”<sup>39</sup> (emphasis by the Court).

There are no material factual distinctions between *Ameren Transmission Co.* and this GBE case that would permit the Commission to reach a different result on the question of statutory authority to grant a CCN in this case. Accordingly, *Ameren Transmission Co.* and its plain language regarding the necessity of obtaining prior county assents apply to the

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<sup>38</sup> The Commission asserted that transfer is appropriate because the Court of Appeals interpreted Section 393.170 contrary to the existing case law interpreting that statute; the roles the legislature intended for the Public Service Commission under Section 393.170 and for the county commissions under Section 229.100 should be clearly delineated to ensure that both the Public Service Commission and the county commissions can fulfill their appointed roles; and the Commission is not authorized to decide the validity or legal effect of a county assent under Section 229.100 in the course of a hearing under Section 393.170.

<sup>39</sup> *Matter of Ameren Transmission Co. of Illinois*, No. WD 79883, 2017 WL 1149139, at \*8 (Mo. Ct. App. Mar. 28, 2017).

GBE application even though that opinion did not specifically cite to subsection 1 of Section 393.170, the subsection under which GBE requested a CCN. GBE did not submit evidence of county assents in this case. There is clear evidence in the record that GBE lacks a county assent from at least one county, Caldwell County. Under the Court's direction set forth in *Ameren Transmission Co.*, the Commission cannot lawfully issue a CCN to GBE until the company submits evidence that it has obtained the necessary county assents under Section 229.100.

#### **IV. Decision**

In making this decision, the Commission has considered the positions and arguments of all of the parties. After applying the facts to the law to reach its conclusions, the Commission concludes that the substantial and competent evidence in the record supports the conclusion that GBE has failed to meet, by a preponderance of the evidence, its burden of proof to demonstrate that it has obtained all county assents under Section 229.100 necessary for a certificate of convenience and necessity as required by *Ameren Transmission Co.*. Therefore, the Commission will deny the GBE application. Since the Commission's determination that it lacks the statutory authority to issue a CCN at this time resolves the case, it is unnecessary for the Commission to consider and decide the remaining disputed issues.

There are several motions that are currently pending a determination, as follows:

1. MLA's Motion to Dismiss Application filed on July 4, 2017;
2. GBE's Motion for Waiver or Variance of Filing Requirements filed on June 29, 2017;
3. MLA's Motion to Strike MJMEUC's Supplementation of Hearing Exhibit 479 filed on June 14, 2017;
4. GBE's Motion to Supplement the Record filed on May 2, 2017; and
5. MLA's Motion to Strike Certain Material in Reply Brief of GBE filed on April 27, 2017.

Since the Commission has concluded that under *Ameren Transmission Co.* the GBE application must be denied, the pending motions are rendered moot and will be denied.

**THE COMMISSION ORDERS THAT:**

1. Grain Belt Express Clean Line LLC's application for a certificate of convenience and necessity filed on August 30, 2016, is denied.
2. All pending motions described in the body of this order are denied.
3. This order shall become effective on September 15, 2017.



**BY THE COMMISSION**

A handwritten signature in black ink that reads "Morris L. Woodruff". The signature is written in a cursive style.

Morris L. Woodruff  
Secretary

Stoll, C., concurs.  
Hall, Chm., Kenney, Rupp, and  
Coleman, CC., concur, with separate  
concurring opinion attached;  
and certify compliance with the provisions  
of Section 536.080, RSMo.

Dated at Jefferson City, Missouri,  
on this 16<sup>th</sup> day of August, 2017.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of the Application of Grain Belt Express )  
Clean Line LLC for a Certificate of Convenience and )  
Necessity Authorizing it to Construct, Own, Operate, ) File No. EA-2016-0358  
Control, Manage and Maintain a High Voltage, Direct )  
Current Transmission Line and an Associated Converter )  
Station Providing an Interconnection on the Maywood - )  
Montgomery 345kV Transmission Line )

**CONCURRING OPINION OF COMMISSIONERS HALL, KENNEY, RUPP,  
AND COLEMAN IN THE REPORT AND ORDER**

We concur with the Report and Order issued on August 16, 2017, which denied the application of Grain Belt Express Clean Line LLC (“GBE”) for a certificate of convenience and necessity (“CCN”). The Commission concluded in that Report and Order that GBE failed to meet its burden of proof to demonstrate it had obtained all county assents under Section 229.100, RSMo 2016, necessary for a CCN as required by Section 393.170, RSMo. The Report and Order reached the correct legal conclusion that GBE’s application must be denied, based on direction from the Missouri Western District Court of Appeals in the *Matter of Ameren Transmission Co. of Illinois*<sup>1</sup>, which was a separate but similar case. While the Commission disagreed with the legal analysis and conclusions in that opinion and asked the Supreme Court of Missouri to accept transfer of the case<sup>2</sup>, that Court

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<sup>1</sup> *Matter of Ameren Transmission Co. of Illinois*, No. WD 79883, 2017 WL 1149139 (Mo. Ct. App. Mar. 28, 2017), reh'g denied (Apr. 27, 2017), transfer denied (Apr. 27, 2017), transfer denied (June 27, 2017).

<sup>2</sup> The Commission asserted that transfer is appropriate because the Court of Appeals interpreted Section 393.170 contrary to the existing case law interpreting that statute; the roles the legislature intended for the Public Service Commission under Section 393.170 and for the county commissions under Section 229.100 should be clearly delineated to ensure that both the Public Service Commission and the county commissions can fulfill their appointed roles; and the Commission is not authorized to decide the validity or legal effect of a county assent under Section 229.100 in the course of a hearing under Section 393.170.



declined. That Western District opinion is binding on the Commission, and gave the Commission no choice but to deny the GBE application.

However, had it not been for the *Matter of Ameren Transmission Co.* opinion, we would have granted the GBE application, as the evidence showed that the GBE project is “necessary or convenient for the public service”.<sup>3</sup> When making a determination of whether an applicant or project is convenient or necessary, the Commission has traditionally applied five criteria, commonly known as the Tartan factors, which follow:

- a) There must be a need for the service;
- b) The applicant must be qualified to provide the proposed service;
- c) The applicant must have the financial ability to provide the service;
- d) The applicant's proposal must be economically feasible; and
- e) The service must promote the public interest.<sup>4</sup>

The parties have not disputed that GBE is qualified or has the financial ability to provide the service, and in our view the evidence in the record shows that GBE also meets the remaining three factors that were in dispute– need, economic feasibility, and public interest.

### **Need for the service**

The GBE project is needed primarily because of the benefits to the members of the Missouri Joint Municipal Electric Utility Commission (“MJMEUC”)<sup>5</sup> and their hundreds of

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<sup>3</sup> Section 393.170, RSMo 2016.

<sup>4</sup> *In re Tartan Energy*, Report and Order, 3 Mo.P.S.C. 3d 173, Case No. GA-94-127, 1994 WL 762882 (September 16, 1994).

<sup>5</sup> MJMEUC's members include the cities of Centralia, Columbia, Hannibal, Kirkwood and the 35 MoPEP cities: Albany, Ava, Bethany, Butler, Carrollton, Chillicothe, El Dorado Springs, Farmington, Fayette, Fredericktown, Gallatin, Harrisonville, Hermann, Higginsville, Jackson, Lamar, La Plata, Lebanon, Macon, Marshall, Memphis, Monroe City, Odessa, Palmyra, Rock Port, Rolla, Salisbury, Shelbina, St. James, Stanberry, Thayer, Trenton, Unionville, Vandalia and Waynesville.

thousands of customers, who had committed to purchase at least 100 MW of wind power utilizing transmission service purchased from GBE. MJMEUC planned to use cheaper wind power from GBE to replace the 100 MW of energy and capacity it currently purchases from Illinois Power Marketing, through a contract set to expire in 2021. MJMEUC's power purchase agreement with Infinity Wind obligated MJMEUC take that GBE power and pay for it, assuming the GBE line was built, and Infinity was contractually obligated to provide that wind energy or forfeit security payments. There was some dispute about the amount of savings that MJMEUC and its customers would have received by purchasing the cheaper wind power through GBE, but MJMEUC calculates that their members would have saved approximately \$9-11 million annually. Evidently, the elected decision makers for MJMEUC's member cities recognized a need for these savings, and there was also evidence that wind power transmitted to Missouri would have been of interest to commercial and industrial customers, such as Walmart, Missouri Industrial Energy Consumers, and the Missouri Retailers Association.

Of course, MJMEUC and Missouri industrial customers are not the only energy customers we must consider in this analysis. In a state whose regulated utilities participate in two regional transmission organizations, it is appropriate to consider the project's effect on other market participants. There was substantial evidence of demand for this project, both on the production and delivery side, within the relevant regional markets. For instance, GBE presented evidence of a commitment by an Illinois load-serving entity to purchase 50 MW of the project's transmission service. On the production side, during open solicitations in 2015 and 2016, transmission service requests for the line far exceeded the

total available capacity of the project. Clearly, there is a demonstrable need for the service the GBE project offered both in Missouri and in the regions that affect Missouri energy markets.

### **Economic feasibility**

The GBE project is economically feasible because it links customers in Missouri who desire to purchase low-cost wind power from western Kansas with wind generation companies like Infinity Wind who propose to supply that energy, all under a business model under which GBE assumed the financial risk of building and operating the transmission line. Moreover, the cost of the project would not have been recovered from Missouri ratepayers through either Southwest Power Pool (SPP) or Midcontinent Independent System Operator, Inc. (MISO) regional cost allocation tariffs but rather by the entities contracting to transmit energy over the line.

GBE also presented a credible levelized cost of energy analysis from witness David Berry to show that the cost to bring wind energy from western Kansas to Missouri and eastward using the GBE project is the lowest-cost resource option compared to Missouri wind, combined cycle gas, and Missouri utility-scale solar generation. While the MJMEUC/Infinity contracts demonstrate the economic feasibility of the GBE project compared to MISO wind, it is the 3500 MW portion of the project to be sold in PJM that demonstrates the financial viability of the project overall, since power prices for PJM are generally \$10/MWh higher than prices paid for the energy sold into the MISO market in Missouri. When GBE conducted its open solicitation, it offered a price that was higher than both the MJMEUC "first-mover" price and the normal Missouri rate, and it received bids that

were 6½ times the capacity available on the project, which is a solid indication of economic feasibility.

### **Public interest**

It is the Commission's responsibility to balance the interests of all stakeholders, including the affected landowners, to determine what is in the best interest of the general public as a whole. The evidence in the case demonstrated that the GBE project would have created both short-term and long-term benefits to ratepayers and all the citizens of the state. In our view, the broad economic, environmental, and other benefits of the project to the entire state of Missouri outweigh the interests of the individual landowners.

The GBE project would have lowered energy production costs in Missouri by \$40 million or more under future energy scenarios developed by MISO and would have had a substantial and favorable effect on the reliability of electric service in Missouri, particularly through its effect on wind diversity in the region. Geographic diversity in wind resources inevitably helps to reduce system variability and uncertainty in regional energy systems. In addition, the project would have provided positive environmental impacts, since displacement of fossil fuels for wind power would reduce emissions of carbon dioxide, sulfur dioxide, nitrogen oxide, particulates and organic compounds, reduce waste by-products, and reduce water usage in Missouri.

The Missouri Department of Economic Development estimated that the construction phase of the project would have supported 1,527 total jobs over three years, created \$246 million in personal income, \$476 million in GDP, and \$9.6 million in state general revenue for the state of Missouri, and \$249 million in Missouri-specific manufacturing and

professional service contracting spending. The project would also have resulted in significant property tax benefits to affected counties, a total of approximately \$7.2 million in the first year of operation. In that first year, Randolph County alone would have received more than \$720,000 in additional tax revenue. In the first year of operation, the project would have resulted in approximately \$14.97 million in easement payments and created 91 jobs, \$17.9 million worth of personal income, and \$9.1 million in gross domestic product.

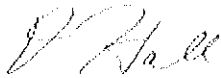
Public policy for a state must be found in a constitutional provision, a statute, a regulation promulgated pursuant to statute, or a rule, policy, or initiative created by a governmental body. In Missouri, state energy policy can be found in laws such as the Renewable Energy Standard, established by vote of the Missouri public in 2008, and the Energy Efficiency Investment Act, promulgated by our legislature in 2013, as well as the Comprehensive State Energy Plan, an initiative implemented by the Missouri Division of Energy in 2015. The public benefits described above – low cost, reliable energy with positive environmental impacts – could not in one fell swoop address all the energy policy needs of Missouri, but it would have been a solid step forward and could have served as a bridge to our energy future.

There can be no debate that our energy future will require more diversity in energy resources, particularly renewable resources. We are witnessing a worldwide, long-term and comprehensive movement towards renewable energy in general and wind energy specifically. Wind energy provides great promise as a source for affordable, reliable, safe,

and environmentally-friendly energy. The GBE project would facilitate this movement in Missouri, would thereby benefit Missouri citizens, and is therefore in the public interest.

Finally, we are sympathetic to the sincere concerns expressed by the landowners who appeared before the Commission during local public hearings in this case. However, many of those concerns could have been addressed through carefully considered conditions placed on the CCN. We would have voted to include many conditions on granting the CCN that would have provided necessary protections for Missouri landowners, ratepayers, and citizens. These conditions were proposed by the parties to the case, many of which were agreed to by GBE. Some of the proposed conditions included financing, interconnection studies and safety, protection of nearby utility facilities, emergency restoration plans, construction and clearing, maintenance and reporting, landowner interactions and right-of-way acquisition, agricultural mitigation protocols, and establishment of a decommissioning fund, the first such fund for a transmission line in the United States. This Commission's ability to impose such protections for Missouri citizens would be lost if GBE must now bypass Missouri and obtain approval for the project from the U.S. government based on federal law. We would have preferred to grant the application and retain those necessary protections.

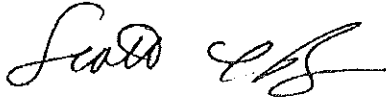
With the concerns set forth above, we concur with the Report and Order issued in this case on August 16, 2017.



Daniel Y. Hall  
Chairman



William P. Kenney  
Commissioner



Scott T. Rupp  
Commissioner



Maida J. Coleman  
Commissioner

Dated at Jefferson City, Missouri  
On this 16<sup>th</sup> day of August, 2017

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

In the Matter of the Application of Grain Belt Express )  
Clean Line LLC for a Certificate of Convenience and )  
Necessity Authorizing it to Construct, Own, Operate, )  
Control, Manage, and Maintain a High Voltage, Direct ) Case No. EA-2016-0358  
Current Transmission Line and an Associated Converter )  
Station Providing an interconnection on the Maywood- )  
Montgomery 345 kV Transmission Line )

APPLICATION FOR REHEARING OF  
THE MISSOURI LANDOWNERS ALLIANCE, MATTHEW REICHERT,  
CHRISTINA REICHERT, CHARLES HENKE, ROBYN HENKE, RANDALL  
MEYER, ROSEANNE MEYER AND R. KENNETH HUTCHINSON

Come now the Missouri Landowners Alliance (MLA), Matthew Reichert, Christina Reichert, Charles Henke, Robyn Henke, Randall Meyer, Roseanne Meyer and R. Kenneth Hutchinson (collectively the “Applicants”) pursuant to Section 386.500 RSMo and 4 CSR 240-2.160, and for the reasons set forth below respectfully apply for rehearing of the Commission’s Report and Order which was issued in this proceeding on August 16, 2017.

The sole purpose of this Application is to preserve the issues discussed below in the event the Commission significantly revises its August 16 Report and Order, or an opposing party appeals that Report and Order and the case is remanded for further consideration by the Commission.<sup>1</sup> If neither of those events occur, then the Applicants intend to abandon the issues raised herein.

1. Evidence Inadmissible Under Section 536.070(11) RSMo.

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<sup>1</sup> See *Coleman v. Meritt*, 324 S.W.3d 456, 461 (Mo App 2010) for a discussion of the “law of the case” doctrine.



On March 6, 2017, the MLA filed a Motion to Strike Certain Pre-filed Evidence on the Basis of Section 536.070(11). A copy of that Motion is attached hereto and incorporated herein.

Paragraphs 4 through 9 of that Motion identified certain evidence which the MLA argued should be stricken on the ground that it was inadmissible under the terms of that statute. The Commission thereafter denied the MLA's Motion to Strike, and at the evidentiary hearings overruled the MLA's objections to the admission of that evidence.

For the reasons set forth in the attached Motion to Strike, the Applicants contend that the evidence set forth in paragraphs 4 through 9 of the Motion to Strike should be deemed inadmissible under the terms of Section 536.070(11), and respectfully contend that the Commission erred in overruling the Motion to Strike and in denying the objections to receipt of the evidence at the evidentiary hearings. Accordingly, the Applicants ask that on rehearing the Commission reverse its rulings with respect to the admissibility of the evidence in question.

2. Material Requested from Grain Belt in data request number DB.40.

On November 30, 2016, the MLA filed a Motion in which it asked, among other things, that the Commission direct Grain Belt Express (Grain Belt) to produce unredacted copies of the responses which Grain Belt had received to its January, 2014 Request for Information (RFI). By Order of December 21, 2016, the Commission denied that Motion, and at the evidentiary hearings overruled the MLA's objections to receipt of prefiled testimony which relied on and referenced the responses to the RFI.

Due to the Commission's rulings on this subject, the Applicants had no means of verifying the accuracy of certain information provided in the RFI to Grain Belt. The

Applicants were therefore unable to fully develop rebuttal testimony and cross-examination with respect to the evidence from Mr. Berry which relied on and was derived from the responses to the RFI. Accordingly, the Applicants have been deprived of their right to due process of law, as guaranteed under Amendments V and XIV to the United States Constitution, and Article 1 Section 10 to the Missouri Constitution.

3. Material Requested from Grain Belt in data request number DB.41.

On November 30, 2016, the MLA filed a Motion in which it asked, among other things, that the Commission direct Grain Belt to produce the work papers and documents which supported the figure in Mr. Berry's pre-filed testimony of 2.0 cents per kWh flat for 25 years for the lowest-priced 4,000 MW of power, including the name of each wind farm included in that calculation. By order of December 21, 2016 the Commission denied that Motion, and at the evidentiary hearings overruled the MLA's objections to receipt of that portion of Mr. Berry's testimony which relied on and referenced the material sought in the data request.

Due to the Commission's rulings on this subject, the Applicants had no means of verifying the accuracy of Mr. Berry's testimony regarding the lowest-priced 4,000 MW which Grain Belt could transport on its proposed line. The Applicants were therefore unable to fully develop rebuttal testimony and cross-examination with respect to the issue of the lowest-priced power to be transported on the line. Accordingly, the Applicants have been deprived of their right to due process of law, as guaranteed under Amendments V and XIV to the United States Constitution, and Article 1 Section 10 to the Missouri Constitution.

4. Material Protected by the Joint Prosecution and Defense Agreement.

On January 30, 2017, the MLA filed a Motion to Compel, asking that Grain Belt and MJMEUC be ordered to answer certain data requests which the MLA had submitted to them. Both Grain Belt and MJMEUC had in effect refused to supply the requested material on the ground that it was immune from discovery under a “Joint Prosecution and Defense Agreement” signed on June 1, 2016 by Grain Belt and MJMEUC. (A copy of the document was attached as Exhibit 2 to the MLA’s Motion to Compel). On February 17, 2017, the Commission issued an Order denying the MLA’s Motion to Compel.

The MLA contends that at a minimum, it had a right to all material requested in the data requests which was generated prior to the signing of the Joint Prosecution and Defense Agreement. Prior to that date, there is no legitimate basis for finding a legal privilege for communications between Grain Belt and MJMEUC, beyond those protected by the traditional attorney-client privilege and traditional attorney work product. In order for the privileges to apply, the relation of attorney and client must have actually existed between the parties at the time that the communication was made. Such was not the case at least with respect to communications made prior to June 1, 2016. Accordingly, the denial of the MLA’s Motion to Compel with respect to those communications was unlawful and unreasonable, and acted to deny the MLA of its right to due process of law, as guaranteed under Amendments V and XIV to the United States Constitution, and Article 1 Section 10 to the Missouri Constitution.

5. Denial of Motion to Strike Certain Material in Grain Belt’s Reply Brief.

On April 27, 2017, the MLA filed a motion to strike the second and third paragraphs of page 26 of Grain Belt’s Post-hearing Reply Brief, and its Attachment A thereto. The material in question consisted of and made references to answers provided

by Mr. David Berry to data requests submitted to him by the MLA. In general, Grain Belt relied upon the material in question to support Mr. Berry's use of a 55% capacity factor for the wind farms, a critical element in his LCOE analysis for the Kansas wind generation.

However, the material in Grain Belt's brief was never even mentioned during the course of the five day evidentiary hearings, nor was it offered or received into the record as evidence. It was simply included in Grain Belt's Reply Brief in an effort to overcome an obvious weakness in their economic analysis of the proposed project.

The Commission denied the MLA's motion to strike the material in question at pages 14-15 of its August 16, 2017 Report and Order, finding that the issue was moot in light of its dismissal of Grain Belt's Application. However, if this case is ultimately remanded for a Commission decision on the merits, the material in question will now remain as a part of Grain Belt's Reply Brief. By law this material should have been stricken. It was unlawful and unreasonable for the Commission not to do so, and acted to deny the MLA of its right to due process of law, as guaranteed under Amendments V and XIV to the United States Constitution, and Article 1 Section 10 to the Missouri Constitution. *Meiners Company v. Clayton Greens Nursing Center*, 645 S.W.2d 722, 724 (Mo. App. 1983); *McGee v. City of Pine Lawn*, 405 S.W.3d 582, f.n.1 (Mo. App. 2013).

#### 6. The Concurring Opinion.

The Report and Order of August 16, 2017, denied Grain Belt's Application for a CCN, and thus totally resolved the case, leaving no remaining disputes among the parties which needed to be addressed in order to finally dispose of the case. The Concurring

Opinion issued on that same date therefore had no practical effect whatsoever, nor did it provide any specific relief to any party to the case. It merely said that hypothetically, if we had to reach a decision on the merits of the *Tartan* criteria, which we do not, here is how we would have ruled. As such the Concurring Opinion amounts to a mere “advisory opinion”, which by law the Commission is not permitted to issue. *State ex rel. Laclede Gas Co. v. Pub. Serv. Comm’n of Mo.*, 392 S.W.3d 24, 38 (Mo. App. 2013). *See also* Order Directing Filing, Commission case no. EO-2013-0359, p. 2 (EFIS No. 2). Accordingly, the Applicants respectfully suggest that the Concurring Opinion issued on August 16, 2017 is unlawful and unreasonable, and should be withdrawn.

WHEREFORE, the Applicants respectfully request that the Commission make and enter its order granting rehearing of its Report and Order of August 16, 2017, and the concurring opinion issued that same date, with respect to each of the grounds set forth above.

Respectfully submitted,

/s/ Paul A. Agathen  
Paul A. Agathen  
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485 Oak Field Ct.  
Washington, MO 63090  
(636)980-6403  
[Paa0408@aol.com](mailto:Paa0408@aol.com)  
MO Bar No. 24756

#### CERTIFICATE OF SERVICE

I certify that a copy of the foregoing document was served by electronic mail upon counsel for all parties this 25<sup>th</sup> day of August, 2017.

/s/ Paul A. Agathen  
Paul A. Agathen

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of the Application of Grain Belt Express )  
Clean Line LLC for a Certificate of Convenience and )  
Necessity Authorizing it to Construct, Own, Operate, )  
Control, Manage, and Maintain a High Voltage, Direct ) Case No. EA-2016-0358  
Current Transmission Line and an Associated Converter )  
Station Providing an interconnection on the Maywood- )  
Montgomery 345 kV Transmission Line )

MOTION OF MISSOURI LANDOWNERS ALLIANCE TO STRIKE CERTAIN  
PRE-FILED EVIDENCE ON THE BASIS OF SECTION 536.070(11) RSMo

COMES NOW the Missouri Landowners Alliance (MLA) and respectfully asks the Commission to strike certain portions of the pre-filed testimony and Schedules in this case, as designated in paragraphs 4 through 9 below, on the ground that (with two exceptions) the evidence is inadmissible under the terms of § 536.070(11) RSMo. In support of this Motion, the MLA states as follows:

1. The statute which forms the basis for this Motion, § 536.070(11) RSMo, provides in relevant part as follows:

The results of statistical examinations or studies, or of ... compilations of figures ... or examination of many records, or of long or complicated accounts, or of a large number of figures, or involving the ascertainment of many related facts, shall be admissible as evidence of such results, if it shall appear that such examination, study, audit, compilation of figures, or survey was made by or under the supervision of a witness, who is present at the hearing, who testifies to the accuracy of such results, and who is subject to cross-examination, and if it shall further appear by evidence adduced that the witness making or under whose supervision such

examination, study, audit, compilation of figures, or survey was made was basically qualified to make it. All the circumstances relating to the making of such an examination, study, audit, compilation of figures or survey, including the nature and extent of the qualifications of the maker, may be shown to affect the weight of such evidence but such showing shall not affect its admissibility;

2. The above statutory provision is applicable to proceedings of this Commission. See *Big River Telephone Company v. Southwestern Bell Telephone Company*, 440 S.W.3d 503, 511 (Mo App 2014)

3. The evidence identified in paragraphs 4 through 9 below fails to meet the standards of admissibility set forth in § 536.070(11), *supra*, in either of two ways: (1) the evidence itself constitutes the “compilations of figures” or the “examination of many records or of long or complicated accounts”, or “of a large number of figures”, or involve “the ascertainment of many related facts”, and was not compiled by a witness to this case who is available for cross-examination; or (2) the evidence sought to be stricken is derived from evidence meeting the first of these two criteria. In the second situation, the evidence is analogous to the fruit of a poisonous tree.

4. Wind Speed Maps and Related Testimony of Mr. David Berry. Schedule DAB-4 to Mr. Berry’s direct testimony is a color-coded map of the United States, depicting wind speeds in different regions of the country. As indicated on the face of Schedule DAB-4, the map was prepared by a company named AWS Truepower.<sup>1</sup>

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<sup>1</sup> The box in the bottom-right corner states: “Source Wind resource estimates developed by AWS Truepower, LLC ...”

The process whereby AWS Truepower generates its wind maps is highly complex, using a wide array of data gathered from various sources. The process is described by Mr. Berry in a response to data request DB.43, which is attached to this motion as Exhibit A. As is apparent from that description, the wind map itself clearly falls within the parameters of Section 536.070(11).

Mr. Berry discusses the data depicted on the map, and the conclusions he draws from that data, at the following pages of his direct testimony: page 25, l. 17; page 25 line 21 to page 26 line 5; page 27 lines 9-12; page 32 lines 7-14; and page 41 lines 12-13.

Accordingly, the MLA asks that Mr. Berry's Schedule DAB-4 be stricken, as well as the testimony referred to in the preceding paragraph.

5. Footnote 1 to direct testimony of Mr. David Berry

In footnote 1 at page 6 of his direct testimony, Mr. Berry summarizes the results of a study conducted by the Brattle Group, and filed by Grain Belt on April 13, 2015 after the close of the hearings in the 2014 case as Supplemental Exhibit 14 with their "Response to Order Directing Filing of Additional Information", EFIS No. 508. As indicated in footnote 1 of Mr. Berry's testimony, the study addressed the variability introduced by integrating wind from the Kansas wind farms into the MISO system; the potential for additional reserve requirements from the addition of the Project into the MISO system; and the potential cost impact from the addition of the Project.

The study consists of 29 pages of highly technical, complex information and conclusions, written by five different individuals at the Brattle Group. The cover page and pages 9 and 10 from that study<sup>2</sup> are attached hereto as Exhibit B, and clearly demonstrate that the study falls within one or more of the parameters of Sec.

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<sup>2</sup> Using the numbers from Supp Exh 14 at the lower left corner of the pages.



536.070(11). Accordingly, the MLA moves to strike footnote 1 to Mr. Berry's direct testimony.

6. Material from the rebuttal testimony of MJMEUC witness Mr. Grotzinger.

Schedule JG-2 to Mr. Grotzinger's rebuttal testimony is a lengthy document titled "Regional Market Report." The document is marked as "HC", and so without discussing the contents of the document, it was prepared by a firm named Leidos, Inc.<sup>3</sup> The report was clearly prepared by someone other than Mr. Grotzinger, and based on the contents of the document is inadmissible under Section 536.070(11).<sup>4</sup> Accordingly, the MLA moves to strike Schedule JG-2. The MLA also moves to strike page 3, lines 12-17 of Mr. Grotzinger's rebuttal testimony, where he addresses Schedule JG-2.

In addition, Schedule JG-6 to Mr. Grotzinger's rebuttal testimony consists of a list of seven alternative sources of power, the prices for which he compares to the prices provided for in MJMEUC's contracts with Grain Belt and Infinity Wind. As indicated in Mr. Grotzinger's response to data request JG.39, which is attached hereto as Exhibit C, all eight of the sources of power (including the Grain Belt alternative) incorporate assumptions about energy prices which were derived from Schedule JG-2, the Leidos report.<sup>5</sup> Therefore, the cost data of the eight alternatives shown at Schedule JG-6 constitute the fruit of a poisonous tree (Schedule JG-2) and the analysis for all eight alternatives shown at Schedule JG-6 are therefore inadmissible and must be stricken.

Finally, the MLA moves to strike the testimony from Mr. Grotzinger which address the results and conclusions derived from Schedule JG-6; i.e, his rebuttal testimony from page 7 line 19 to page 8 line 6.

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<sup>3</sup> See cover page and unnumbered page 4 with a reference to the copyright of the report.

<sup>4</sup> See, e.g., pages 2-16 to 2-25, and 3-6 to 3-32.

<sup>5</sup> See also the notes at the bottom of Schedule JG-6 itself.

7. Material from the rebuttal testimony of Mr. Alan Spell. Mr. Spell was responsible for the compilation of the Economic Impact Study which was submitted as Schedule MOL-7 to Mr. Lawlor's direct testimony.<sup>6</sup> Included as Schedule AES-2 to Mr. Spell's rebuttal is a copy of a lengthy, complex study which indicates on its cover page that it was compiled by Dr. David Loomis.<sup>7</sup> The contents of the Loomis study clearly come within one or more of the parameters of Section 536.070(11). Accordingly, the MLA moves to strike Schedule AES-2, the Loomis study, on the ground that it is inadmissible under the provisions of that statute.

In addition, as Mr. Spell testifies, he used data from the Loomis study (AES-2) in compiling the results of the Economic Impact Study submitted as Schedule MOL-7.<sup>8</sup> Accordingly, if Schedule AES-2 is not admissible, then the Economic Impact Study submitted as Schedule MOL-7 is also inadmissible, as fruit of a poisonous tree. Accordingly, the MLA moves to strike Mr. Lawlor's Schedule MOL-7 and the following portions of Mr. Spell's rebuttal testimony which address the Economic Impact Study submitted at Schedule MOL-7: page 2 line 13 to page 4 line 5; and page 7 lines 7 to 18.

In addition, the MLA moves to strike the following testimony which also quotes from and/or relies on the Economic Impact Study submitted as Schedule MOL-7:

The rebuttal testimony of Barbara A. Meisenheimer at page 9 lines 11-17;

the surrebuttal testimony of Mark Lawlor at page 2 lines 5-17;

the direct testimony of Mark Lawlor, p. 15 lines 4-13; and

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<sup>6</sup> See rebuttal testimony of Alan Spell, page 2 lines 9-10.

<sup>7</sup> The study by Dr. Loomis is apparently not marked as Schedule AES-2, and in fact bears the Schedule number DLG-2 from the 2014 case. However, from Mr. Spell's rebuttal testimony, at page 6 lines 15-17, it is clear that his Schedule AES-2 is intended to be the Loomis study.

<sup>8</sup> "Clean Line also provided Dr. Loomis's analysis, shown in Schedule AES-2, which was used to determine direct construction spending by detailed categories and by state." Rebuttal Testimony of Alan E. Spell, page 6 lines 15-17.

the direct testimony of Michael Skelly, p. 6 line 6; p. 17 lines 7-9; p. 31 lines 19-23.

8. Annual \$10 million dollar savings study. At page 3 lines 15-19 of his direct testimony, Mr. Lawlor in essence says that the Grain Belt contract will save MJMEUC members at least \$10 million annually compared to an existing contract for fossil fuel generation. However, as is evident from his responses to MLA data requests ML.2 and ML.49, which are set forth at Exhibit D hereto, Mr. Lawlor conducted no analysis himself to support that statement. Instead, as he indicates in the responses to the data requests, he was relying on information supposedly provided to him by MJMEUC.

The problem is, the testimony submitted by the two MJMEUC witnesses does not include any testimony or analysis which supports Mr. Lawlor's statement about the supposed savings from the Grain Belt contract compared to an existing fossil contract. Therefore, the statements from Mr. Lawlor regarding this supposed study lack any foundation, and are mere hearsay statements. Accordingly, on those two grounds the MLA moves to strike Mr. Lawlor's direct testimony at page 3 lines 15-19.<sup>9</sup>

In addition, the MLA moves to strike the rebuttal testimony of Barbara A. Meisenheimer at page 7 lines 9-10 which cites Mr. Lawlor's testimony regarding the \$10 million in savings to MJMEUC.

9. Portions of the Rebuttal Testimony and Schedules of Mr. Michael Goggin. Five of the Schedules included with the rebuttal testimony of Mr. Michael Goggin are inadmissible on their face under the terms of Section 536.070(11). Accordingly, the

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<sup>9</sup> Again, this objection is not based on Section 536.070(11), but is included herein to avoid duplicate Motions to Strike.

MLA moves to strike the following Schedules and his rebuttal testimony which addresses or relies on those Schedules:

Schedule MG-2, and page 5, lines 90-95; page 7 lines 130-139; and page 9 lines 178-182.

Schedule MG-3, and page 7 lines 143-147; page 24 lines 499-501; and page 25, lines 510-512.

Schedule MG-4, and page 8, lines 152-157.

Schedule MG-6, and page 22 line 461 to page 23 line 466.

Schedule MG-7, and page 26 lines 538-544.

In addition, there are numerous instances where Mr. Goggin relies in his rebuttal testimony on technical documents compiled by others, particularly in his footnotes. These documents would themselves be inadmissible under Section 536.070(11). Thus the rebuttal testimony relying on those documents should also be stricken, as fruit of the poisonous tree. While this is not a complete list of such instances, the MLA moves to strike the following rebuttal testimony from Mr. Groggin on that basis:

Page 4 lines 67-70, which rely on the material at footnote 4 (See Exhibit E).

Page 4 lines 76-81, which rely on the material at footnote 5 (See Exhibit F).

Page 13 lines 278-29, which rely on the material at footnote 13 (See Exhibit G).

Page 14 lines 289-94, which rely on the materials at footnotes 20-22 (See Exhibit H).

Page 14 line 295 to page 15 line 297, which rely on the materials at footnote 23 (See Exhibit I)

Page 20 lines 413-423, which rely on the materials at footnote 33 (See Exhibit J).

Page 24 lines 498-99, which rely on the material at footnote 47 (See Exhibit G).

Finally, the MLA moves to strike the following portions of Mr. Goggin's rebuttal testimony on the ground that it is inadmissible hearsay, without regard to Section 536.070(11): page 4 lines 84-86; page 14, line 295; page 16 lines 330-333; page 16 lines 335-336; page 20 lines 415-423; page 22 lines 451-456; page 23 lines 474-476; page 23 lines 478-479; and page 23 lines 483-485.<sup>10</sup>

10. Section 536.070(11) is a close, codified relative of the general rule against hearsay. And as the Commission will recall, in objecting earlier to certain of the exhibits offered at the local public hearings, Grain Belt made its position on hearsay evidence quite clear: "Hearsay to which another party objects is not admitted into evidence and is not considered competent and substantial evidence upon which the Commission can base its decision."<sup>11</sup> On this point, the MLA agrees with Grain Belt.

11. Some might believe that under appropriate circumstances, administrative agencies ought to have the ability to waive or relax the evidentiary restrictions of Section 536.070(11). The fact is, however, that the law gives them no such discretion. Instead, the plain language of the statute is unequivocal: if evidence does not meet the requirements of the statute, that evidence is without exception inadmissible. If one wishes to question the efficacy of this law, the place to do so is at the General Assembly.

12. Finally, the MLA should note that it filed a similar Motion to Strike in the 2014 case.<sup>12</sup> That motion was for the most part denied.<sup>13</sup>

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<sup>10</sup> The objection to the material in this paragraph is not based on Section 536.070(11), but is included in this Motion to avoid the filing of a separate Motion for this material alone.

<sup>11</sup> Reply of Grain Belt Express to the Responses of Missouri Landowners and Show-Me Concerned Landowners to Objections to Exhibits Offered at Local Public Hearings, January 3, 2017, par. 6 page 3.

<sup>12</sup> See Motion to Strike at EFIS No. 276 in Case No. EA-2014-0207.

<sup>13</sup> See hearing transcript from November 10, 2014, Tr. 24-25, EFIS No. 321.

WHEREFORE, for the reasons set forth above, the MLA respectfully asks the Commission to strike the testimony and Schedules identified and cited in paragraphs 4 through 9 above.

Respectfully submitted,

Missouri Landowners Alliance

/s/ Paul A. Agathen

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MO Bar No. 24756  
Attorney for  
Missouri Landowners Alliance

CERTIFICATE OF SERVICE

I certify that a true and correct copy of the foregoing Motion and the attached Exhibits were served upon the parties to this case by email this 6th day of March, 2017.

/s/ Paul A. Agathen

Paul A. Agathen  
Attorney for the Missouri Landowners Alliance  
[Paa0408@aol.com](mailto:Paa0408@aol.com)  
(636)980-6403

**Exhibit A**

**DB.43 With reference to page 25 lines 18-25 of your testimony, please state whether the wind map at Schedule DAB-04 was compiled by AWS Truepower, and please briefly summarize the process by which that map was compiled.**

**RESPONSE: The wind map in Schedule DAB-04 was compiled by AWS Truepower and NREL. The map was created using AWS Truepower's MesoMap system.**

**The underlying model is MASS (Mesoscale Atmospheric Simulation System), a numerical weather model that has been developed over the past 20 years by Truewind Solutions partner MESO, Inc. MASS simulates the fundamental physics of the atmosphere including conservation of mass, momentum, and energy, as well as the moisture phases, and it contains a turbulent kinetic energy module that accounts for the effects of viscosity and thermal stability on wind shear. As a dynamical model, MASS simulates the evolution of atmospheric conditions in time steps as short as a few seconds. As this is computationally demanding and time consuming, MASS is coupled to a simpler but much faster program, WindMap, a mass - conserving wind flow model. Depending on the size and complexity of the region and requirements of the client, WindMap is used to improve the spatial resolution of the MASS simulations to account for the local effects of terrain and surface roughness variations. The wind map in Schedule DAB-04 was created with a spatial resolution of 2.5 km.**

**The MASS model uses a variety of online, global, geophysical and meteorological databases. The main meteorological inputs are reanalysis data, rawinsonde data, and land surface measurements. The MASS model itself determines the evolution of atmospheric conditions within the region based on the interactions among different elements in the atmosphere and between the atmosphere and the surface. The main geophysical inputs are elevation, land cover, vegetation greenness (normalized differential vegetation index, or NDVI), soil moisture, and sea - surface temperatures. The model translates both land cover and NDVI data into physical parameters such as surface roughness, albedo, and emissivity.**

**The MesoMap system creates a wind resource map in several steps. First, the MASS model simulates weather conditions over 366 days selected from a 15 - year period. The days are chosen through a stratified random sampling scheme so that each month and season is represented equally in the sample; only the year is randomized. Each simulation generates wind and other weather variables (including temperature, pressure, moisture, turbulent kinetic energy, and heat flux) in three dimensions throughout the model domain, and the information is stored at hourly intervals. When the runs are finished, the results are compiled into summary data files, which are then input into the WindMap program for the final mapping stage.**



## Wind Integration Analysis for the Grain Belt Express HVDC Line

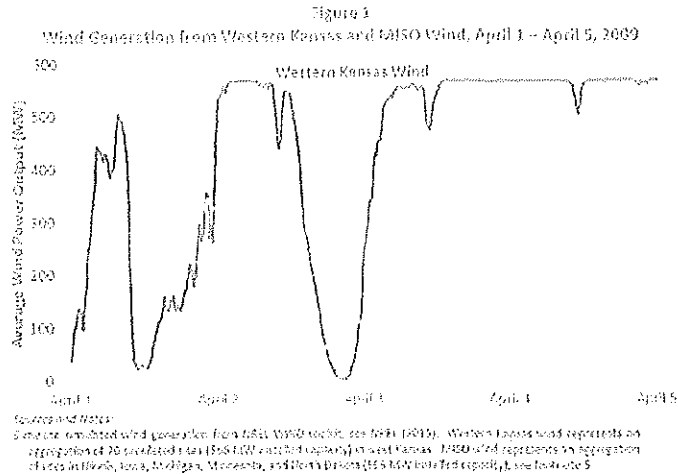
**CLEAN LINE**  
ENERGY PARTNERS

Judy Chong  
Johannes Pfeifenberger  
Philip Honser  
Roger Lueken  
Will Gorman

THE **Brattle** GROUP

SUPP EXHIBIT 14 - Page 1 of 29





**B. INTEGRATING WIND FROM WESTERN KANSAS WOULD REQUIRE LESS AUXILIARY SERVICES THAN ADDITIONAL WIND FROM MISO**

Aggregating the output of many wind generators with diverse locations reduces the total variability of their generation output. Because wind generators in western Kansas are distant from the wind generators within the MISO footprint, the wind power delivered by the Project will be less correlated with existing aggregate MISO wind power than if new wind was developed inside the MISO footprint.

To estimate the correlation between the 5-minute changes in output between western Kansas wind and MISO's existing wind, we simulate adding approximately 160 MW of new wind generation from six locations: western Kansas and five states in MISO that have high quality wind resources (Illinois, Iowa, Michigan, Minnesota, and North Dakota). This means that we

Continued from previous page

respectively of the aggregate wind capacity in these states. Therefore, Iowa, Illinois, Michigan, Minnesota, and North Dakota sites were assigned to contribute 240 MW, 34 MW, 68 MW, 144 MW, and 80 MW respectively. Clean Line anticipates that approximately 566 MW of installed wind capacity will subscribe to the Project to deliver to Missouri. The line losses on the Project are expected to reduce the amount of power delivered to MISO by about 5%–7% less than the 566 MW of maximum generation capacity we used in the analysis. A maximum of 500 MW would be delivered to Missouri at any one time. However, we have ignored the line losses in our analysis since it is not expected to affect the results in any significant manner.

BEFORE THE MISSOURI  
PUBLIC SERVICE COMMISSION

Response provided by: John Grotzinger  
Title: Chief Operating Officer  
Missouri Joint Municipal Electric Utility Commission  
Company: MJMEUC  
Address: 1808 Interstate 70 Dr. SW  
Columbia, MO 65203  
Company Response No.: JG.39  
Date of Response: February 16, 2017

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Question:

Near the bottom of your schedule JG-6 there are three assumptions regarding energy prices based on the leidos report. Please state for which of the 8 "source" options on that Schedule those assumptions were incorporated or used.

Response:

All 8 source options.



MLA's Data Request ML.2 to Mr. Lawlor: "... please provide a copy of all independent studies or analyses which you yourself conducted to support your statement that 'wind energy delivered to MJNEUC members through the Project will cost substantially less than other alternatives.'"

RESPONSE: "... In my testimony dated August 30, 2016, I respond to the question 'Has MJMEUC estimated the benefits it will receive from the 200 MW of Kansas-Missouri Service capacity?' My response points out MJMEUC estimated the benefits. I did not conduct the studies or analysis on behalf of MJMEUC."

MLA's Data Request ML.46 to Mr. Lawlor: "With reference to page 3 lines 15-19 of your direct testimony, please provide a copy of the work papers and all other documents which support the estimated \$10 million per year savings to MJMEUC member utilities."

RESPONSE: "See response to ML.2. I do not have work papers related to this calculation."



# MARKET EFFECTS OF WIND PENETRATION IN ERCOT:

HOW WIND WILL CHANGE THE FUTURE OF ENERGY AND ANCILLARY SERVICE PRICES

By LCG Consulting, October 2016

## EXECUTIVE SUMMARY

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In recent years, the Electricity Reliability Council of Texas (ERCOT) Region has experienced a rapid expansion of wind generation capacity. Nevertheless, wind generation capacity in ERCOT is expected to further increase in the coming years with many new units expected to come online. The aim of this study is to provide insight into the expected impacts of further wind capacity expansion in the ERCOT market through market simulations with the UPLAN Network Power Model. LCG has developed three scenarios for the 2021 calendar year with differing wind capacity assumptions (15.8 GW, 22.9 GW, and 30 GW). With all other factors held constant, the modeling effort is able to isolate the impact that wind generation will have on energy and ancillary service prices in the ERCOT market.

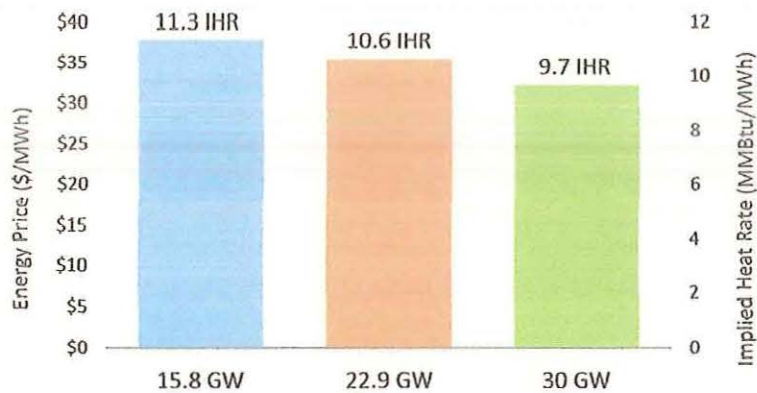
The first scenario includes only 15.8 GW of wind capacity, the amount of wind capacity installed as of the end of 2015. It is intended to serve simply as a point of reference, against which the higher wind scenarios may be compared, since the installed capacity in ERCOT as of the date of this study already exceeds 16.6 GW. The second scenario includes 22.9 GW of installed wind capacity – an addition of 7.1 GW. This scenario is intended to represent a conservative estimate of the likely wind capacity to be operational by 2021. For point of reference, development projects identified in ERCOT's August 2016 Generation Interconnection Status Report (GIS) as having executed an interconnection agreement, posted financial security, and scheduled to be operational by 2019 total 23.1 GW. Comparing this scenario to the 15.8 GW scenario can give us insight into how the market may be affected as we move from current installed capacity to a level more representative of ERCOT's current GIS reports. The third scenario increases installed wind capacity by an additional 7.1 GW to 30 GW, illustrating the impact on the market of further increases in wind capacity, that could be driven by lower costs, wind turbine technology improvements leading to higher capacity factors, federal legislative limitations on greenhouse gas emissions and/or additional or extended tax incentives, transmission upgrades, or other potential driving factors.

UPLAN simulation results indicate that with higher wind energy deployment, energy prices will be lower and ancillary service prices will be higher. In the 15.8 GW scenario, the annual average load-weighted energy price is \$36.30 with a load-weighted implied heat rate (IHR) of 11.3. In the 22.9 GW scenario, load-weighted energy price and IHR fall 6.5% to \$33.96 and 10.6, respectively. The 30 GW wind scenario projects a further decrease in the annual load-weighted average energy price to \$30.91, with an IHR of 9.7, which represents a 9.0% decrease relative to the 22.9 GW



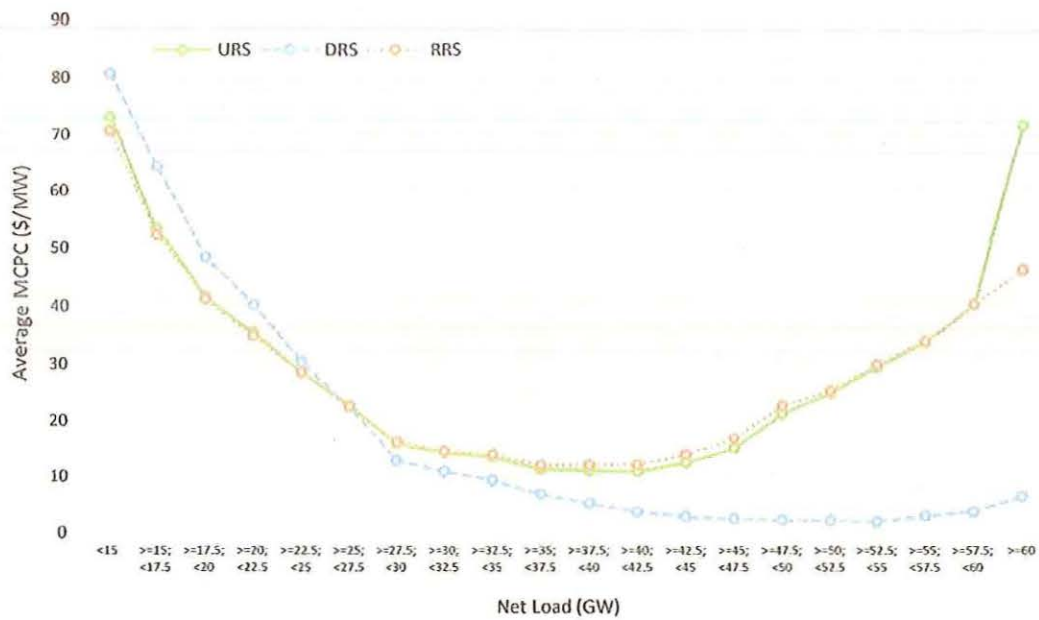
scenario. Figure ES.1 below shows annual average load-weighted system-wide energy price and implied heat rate by scenario.

Figure ES.1 – 2021 Annual Average Load-Weighted System-Wide Energy Price and Implied Heat Rate by Scenario



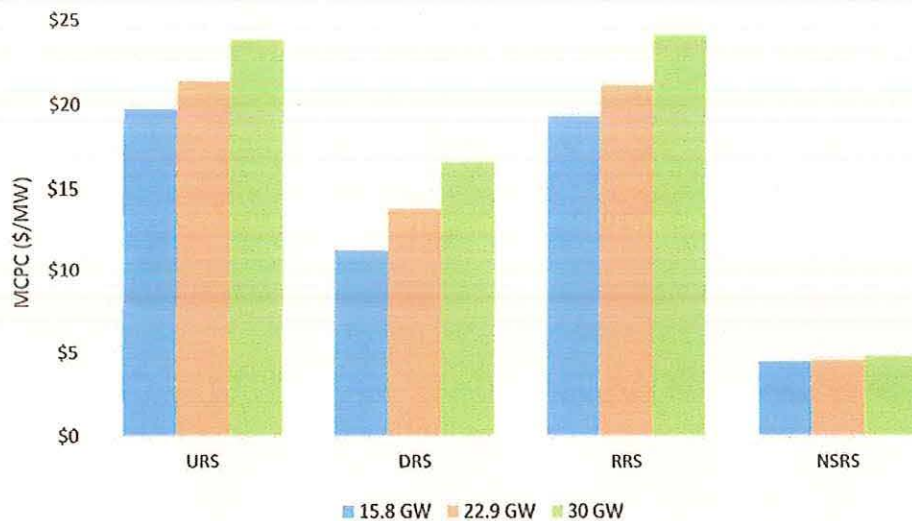
A relationship can be observed between levels of system-wide net load (defined as total customer demand less the energy provided by wind generation) and prices of ancillary service products, in particular, Regulation Up Service (URS), Regulation Down Service (DRS), and Responsive Reserve (RRS). Pictured below in Figure ES.2 are simulation results from the 22.9 GW wind scenario illustrating this relationship. As shown below, higher levels of net load have higher average prices of URS and RRS. In addition, at very low levels of system-wide net load, prices of URS and RRS are higher on average, as is the average price of DRS. In contrast, energy prices have a positive relationship with net load for all levels (higher when net load is higher and lower at low net load levels).

Figure ES.2 – 2021 Average Ancillary Service Prices by Net Load (22.9 GW Wind)



With higher levels of wind deployment, there is a greater occurrence of low net load hours. In UPLAN simulations this leads to increases in annual average ancillary service prices. Figure ES.3 below shows simulation results for average ancillary service prices for the three scenarios.

Figure ES.3 – 2021 Annual Average Ancillary Service Prices by Product



In the 2021 UPLAN simulations, the annual average Operating Reserve Demand Curve (ORDC) price adder is significantly higher than in the 2015 ERCOT market due to the expected increase in load with little thermal generation expansion. However, the ORDC price adder declines as wind generation increases across the modeled 2021 scenarios, as net load is reduced with greater wind generation.

It should be noted that this study assumes only capacity additions and retirements that are currently announced by the ERCOT ISO – with the exception of the variation in wind additions reflected by each scenario. Non-wind capacity expansion for purposes of this study includes those units that have a signed interconnection agreement and have posted financial security according to ERCOT’s August 2016 Generator Interconnection Status Report. Retirements are based on scheduled retirements announced by the ISO. Further retirements would impact the energy and ancillary service markets and we leave the analysis of these impacts to future studies.



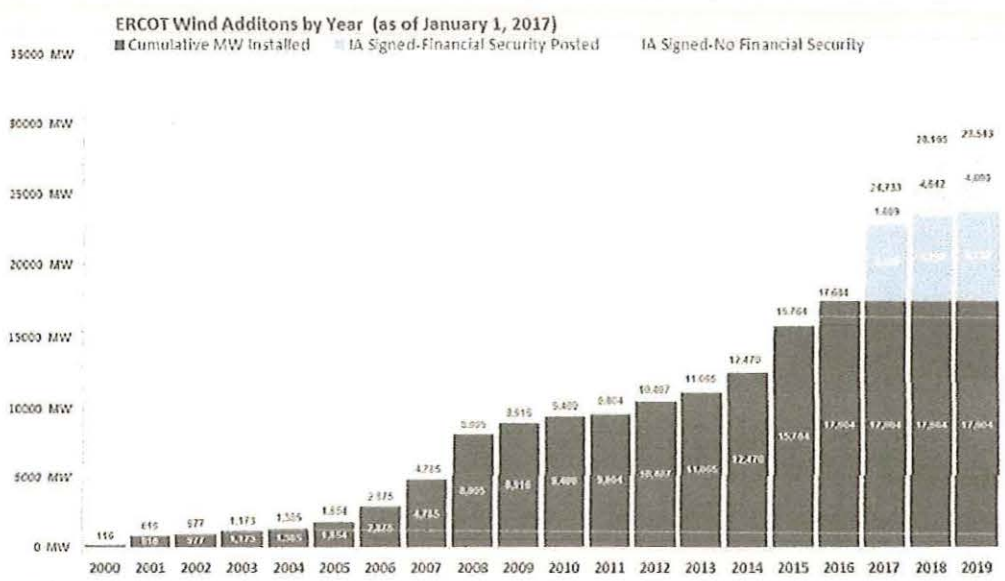
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 Email: Info@energyonline.com



## Grid Planning & Operations



# Wind Generation – December 2016



Notes:

- The data presented here is based upon the latest information provided to ERCOT by resource owners and developers and can change without notice. Rows above with December 2016 projected dates that have not received commercial operation approvals appear in 2017 column.
- Installed capacity as for the current year reflects for changes reported by the facility owners during the reporting month, and will be reflected in subsequent year's totals.
- Installed capacity as of the end of the year includes only wind facilities that have registered with ERCOT (total in generation on the grid and supply power to the ERCOT system).
- This chart reports annual planned units of projected Commercial Operations Data throughout the calendar year. In contrast, ERCOT's Capacity, Demand and Reserve (CDR) reports show planned capacity projected to be commercially available on or before the start of the Summer and Winter Peak Load seasons.
- Financial security posted for funding interconnection facilities does not include CREZ security deposits, which are refunded to the Interconnecting Entity when an IA is signed.

*Footnote 13 + 47*

DECEMBER 2016

LAZARD'S LEVELIZED COST OF ENERGY ANALYSIS—VERSION 10.0

LAZARD



## Introduction

Lazard's Levelized Cost of Energy Analysis ("LCOE") addresses the following topics:

- Comparative "levelized cost of energy" analysis for various technologies on a \$/MWh basis, including sensitivities, as relevant, for U.S. federal tax subsidies, fuel costs, geography and cost of capital, among other factors
- Comparison of the implied cost of carbon abatement for various generation technologies
- Illustration of how the cost of various generation technologies compares against illustrative generation rates in a subset of the largest metropolitan areas of the U.S.
- Illustration of utility-scale and rooftop solar versus peaking generation technologies globally
- Illustration of how the costs of utility-scale and rooftop solar and wind vary across the U.S., based on illustrative regional resources
- Illustration of the declines in the levelized cost of energy for various generation technologies over the past several years
- Comparison of assumed capital costs on a \$/kW basis for various generation technologies
- Illustration of the impact of cost of capital on the levelized cost of energy for selected generation technologies
- Decomposition of the levelized cost of energy for various generation technologies by capital cost, fixed operations and maintenance expense, variable operations and maintenance expense, and fuel cost, as relevant
- Considerations regarding the usage characteristics and applicability of various generation technologies, taking into account factors such as location requirements/ constraints, dispatch capability, land and water requirements and other contingencies
- Summary assumptions for the various generation technologies examined
- Summary of Lazard's approach to comparing the levelized cost of energy for various conventional and Alternative Energy generation technologies

Other factors would also have a potentially significant effect on the results contained herein, but have not been examined in the scope of this current analysis. These additional factors, among others, could include: capacity value vs. energy value; stranded costs related to distributed generation or otherwise; network upgrade, transmission or congestion costs or other integration-related costs; significant permitting or other development costs, unless otherwise noted; and costs of complying with various environmental regulations (e.g., carbon emissions offsets, emissions control systems). The analysis also does not address potential social and environmental externalities, including, for example, the social costs and rate consequences for those who cannot afford distribution generation solutions, as well as the long-term residual and societal consequences of various conventional generation technologies that are difficult to measure (e.g., nuclear waste disposal, environmental impacts, etc.)

While prior versions of this study have presented the LCOE inclusive of the U.S. Federal Investment Tax Credit and Production Tax Credit, Versions 6.0 – 10.0 present the LCOE on an unsubsidized basis, except as noted on the page titled "Levelized Cost of Energy—Sensitivity to U.S. Federal Tax Subsidies"

1 LAZARD Note: This study has been prepared by Lazard for general informational purposes only, and it is not intended to be, and should not be construed as, financial or other advice.

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## Unsubsidized Levelized Cost of Energy Comparison

Certain Alternative Energy generation technologies are cost-competitive with conventional generation technologies under some scenarios; such observation does not take into account potential social and environmental externalities (e.g., social costs of distributed generation, environmental consequences of certain conventional generation technologies, etc.), reliability or intermittency-related considerations (e.g., transmission and back-up generation costs associated with certain Alternative Energy technologies)

	\$0	\$50	\$100	\$150	\$200	\$250	\$300	
ALTERNATIVE ENERGY <sup>(a)</sup>	Solar PV—Rooftop Residential <sup>‡</sup>			\$138		\$222		
	Solar PV—Rooftop C&I <sup>‡</sup>		\$88			\$193		
	Solar PV—Community		\$78		\$135			
	Solar PV—Crystalline Utility Scale <sup>(b)</sup>	\$49	\$61	\$92 <sup>(b)</sup>				
	Solar PV—Thin-Film Utility Scale <sup>(b)</sup>	\$46	\$56	\$92 <sup>(b)</sup>				
	Solar Thermal—Tower with Storage <sup>(b)</sup>				\$119		\$182	\$237 <sup>(b)</sup>
	Fuel Cell <sup>‡</sup>			\$106		\$167		
	Microturbine <sup>‡</sup>		\$76	\$89				
	Geothermal		\$79		\$117			
	Biomass Direct		\$77		\$110			
Wind	\$32	\$62	\$118 <sup>(b)</sup>					
CONVENTIONAL	Diesel Reciprocating Engine <sup>(b)‡</sup>					\$212	\$281	
	Natural Gas Reciprocating Engine <sup>(b)‡</sup>		\$68	\$101				
	Gas Peaking				\$165		\$217	
	CCGT <sup>(b)</sup>			\$94			\$210	
	Nuclear <sup>(b)</sup>			\$97	\$136			
	Coal <sup>(b)</sup>		\$60		\$143			
	Gas Combined Cycle	\$48	\$78					
	\$0	\$50	\$100	\$150	\$200	\$250	\$300	

Levelized Cost (\$/MWh)

Source: Lazard estimates.

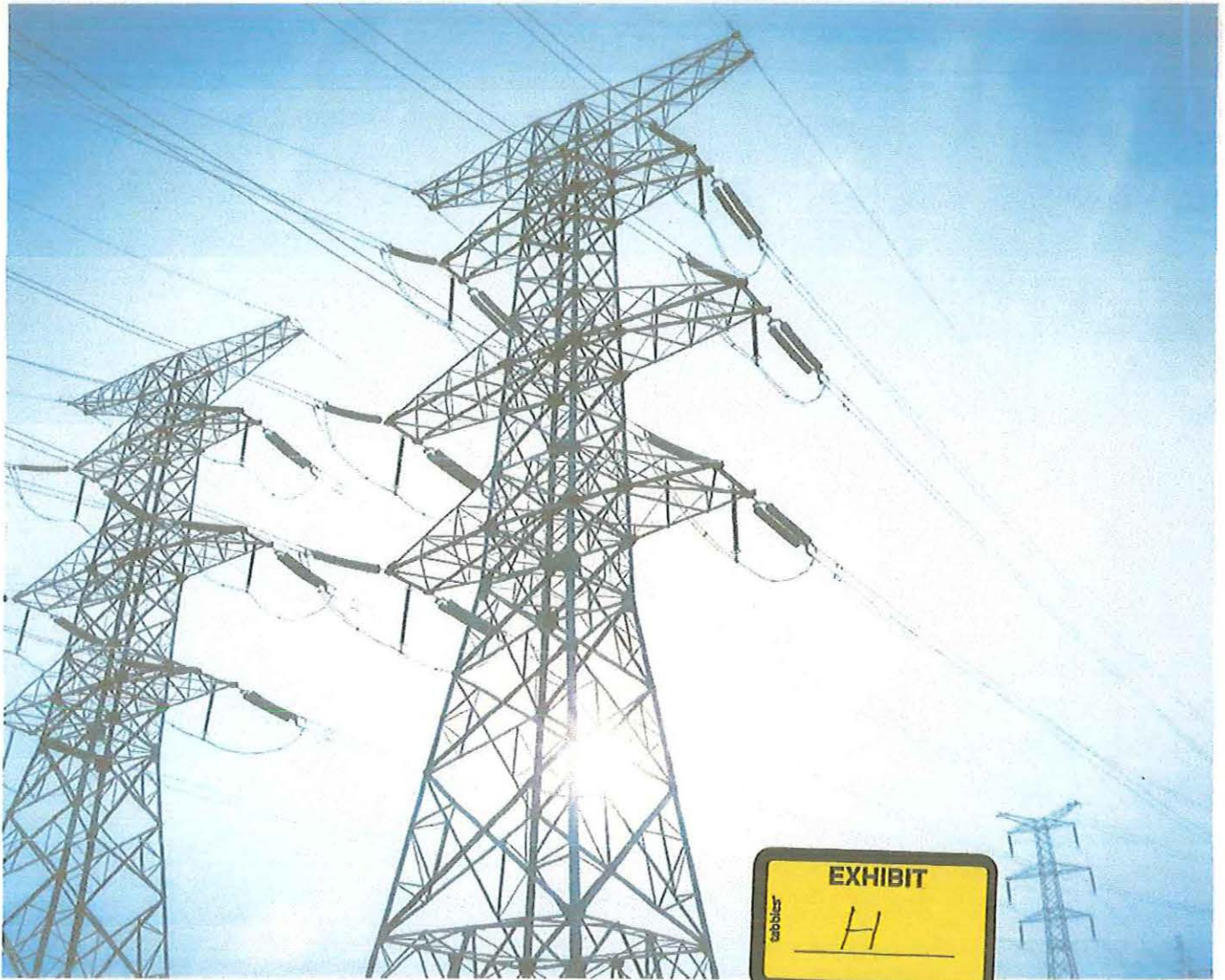
Note: Here and throughout this presentation, unless otherwise indicated, analysis assumes 60% debt at 8% interest rate and 40% equity at 12% cost for conventional and Alternative Energy generation technologies. Reflects global, illustrative costs of capital, which may be significantly higher than OECD country costs of capital. See page 15 for additional details on cost of capital. Analysis does not reflect potential impact of recent draft rule to regulate carbon emissions under Section 111(d). See pages 18–20 for fuel costs for each technology. See following page for footnotes.

‡ Denotes distributed generation technology.

Footnote 20, 21, 22  
p. 97-98, 10, 11

# MTEP16

## MISO Transmission Expansion Plan



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developed through the regional plan. MISO and PJM have identified a number of potential projects of this type and anticipate filing Joint Operating Agreement changes along with associated regional tariff revisions with FERC near the end of the fourth quarter of 2016.<sup>13</sup> Along the seam with SPP, MISO has committed to a joint, multi-year study, similar to MISO's own overlay development efforts, which will address future interregional system planning needs stemming from a dramatically changing future energy landscape expected to impact both RTOs. MISO will also continue to work with the Southeastern Regional Planning (SERTP) sponsors to advance and mature interregional coordination provisions that were accepted by FERC in 2016.

## Conclusion

MISO is proud of its independent, transparent and inclusive planning process that is well-positioned to study and address future regional transmission and policy-based needs. The valuable input and support from the stakeholder community allows MISO to create well-vetted, cost-effective and innovative solutions to provide reliable delivered energy at the least cost to consumers. MISO welcomes feedback and comments from stakeholders, regulators and interested parties on the evolving electricity system and implementation of MISO's strategic initiatives. For detailed information about MISO, MTEP16, renewable energy integration, cost allocation, and other planning efforts, go to [www.misoenergy.org](http://www.misoenergy.org).

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<sup>13</sup> See Section 8.1 PJM Interregional study - IPSAC

# Book 1 Transmission Planning Studies

2016

Chapter 2	MTEP16 Overview
Chapter 3	Historical MTEP Plan Status
Chapter 4	Reliability Analysis
Chapter 5	Economic Analysis



## 5.2 Futures Development

The MTEP16 generation expansion results created in 2015 cover both the North/Central and South regions. MISO completed this assessment of generation using the Electric Generation Expansion Analysis System (EGEAS) model in 2015. Using assumptions developed in coordination with the Planning Advisory Committee (PAC), MISO developed these models to identify the least-cost generation portfolios needed to meet the resource adequacy requirements of the system for each future scenario.

Detailed MTEP16 capacity expansion results are presented in Appendix E2<sup>33</sup>.

### Capacity Expansion Results

The study determined the aggregated, least-cost capacity expansions for each defined future scenario through the 2030 study year (Figure 5.2-1). This added capacity is required to maintain planning reliability targets for each region as well as identify other economic generation. This iteration of MTEP shows a long-term drive toward economically selected renewables in carbon cost futures and an increase in retirements and gas consumption. The reliability targets for MISO are defined in the Module E Resource Adequacy Assessment described in Book 2.

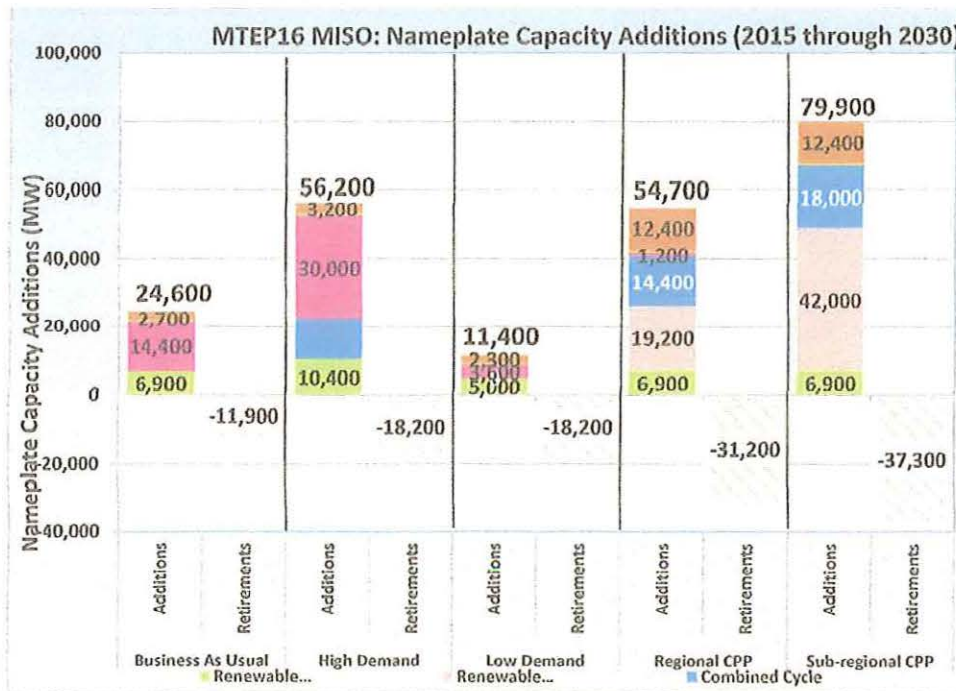


Figure 5.2-1: MISO nameplate capacity additions by future (2015-2030 EGEAS Model)<sup>34</sup>

<sup>33</sup> Futures were developed prior to the stay of the clean power plan. Futures under development for MTEP 17 will reflect a broader range of portfolio changes not specifically tied to the Clean Power Plan.

The Business As Usual future projects 24.6 GW of additional capacity to maintain system reserves and replace retired capacity between 2015 and 2030. MISO, with advice from the PAC, models 12.6 GW of coal retirements as a minimum in all future scenarios<sup>35</sup> to represent the projected effects of EPA regulations, specifically, Mercury and Air Toxics Standards (MATS). The High Demand and Low Demand futures include additional age-related retirements of non-coal and non-nuclear resources. On top of the age-related and 12.6 GW of coal retirements, the Regional and Sub-Regional Clean Power Plan (CPP) futures include an additional 14 GW and 20 GW of coal retirements respectively. Future capacity expansions include demand response (DR) and energy efficiency (EE) programs, as well as natural gas combustion turbines, natural gas combined cycle units, wind and solar.

## Futures Development

Scenario-based analysis provides the basis for developing economically feasible transmission plans for the future. A future scenario is a stakeholder-driven postulate of what could be. This determines the non-default model parameters (such as assumed values) driven by policy decisions and industry knowledge. With the increasingly interconnected nature of organizations and federal interests, forecasting a range of plausible futures greatly enhances the planning process for electric infrastructure. The futures development process provides information on the cost-effectiveness of environmental legislation, wind development, demand-side management programs, legislative actions or inactions and many other potential scenarios.

Future scenarios and their associated assumptions are developed with high levels of stakeholder involvement. As a part of compliance with the FERC Order 890 planning protocols, MISO-member stakeholders are encouraged to participate in PAC meetings to discuss transmission planning methodologies and results. Scenarios are regularly developed to reflect items such as shifts in energy policy, changing demand and energy growth projections, and/or changes in long-term projections of fuel prices. Previously, future scenario definitions were developed annually; however, several prior iterations of MTEP saw very similar futures with gas price and load growth variations year over year. Rather than continue to develop similar futures, MISO will implement a new futures process beginning with MTEP17<sup>36</sup>. Under the new process, futures will be evaluated annually and a decision made with input from stakeholders as to whether futures need to be wholly redesigned or merely updated with current fuel and demand forecasts.

Five narratives describe the MTEP16 future scenarios and their key drivers:

- The baseline, or Business as Usual (BAU), future captures all current policies and trends in place at the time of futures development and assumes they continue, unchanged, throughout the duration of the study period. All applicable EPA regulations governing electric power generation, transmission and distribution are modeled. Demand and energy growth rates are modeled at a level equivalent to the 50/50 forecasts submitted into the Module E Capacity Tracking (MECT) tool. All current state-level Renewable Portfolio Standard (RPS) and Energy Efficiency Resource

<sup>34</sup> Due to coal plant retirements that have already occurred, only the additional amounts of modeled retirements are shown in the figure.

<sup>35</sup> MISO performed an EPA impact analysis study in 2011 in order to determine the potential of coal fleet retirements. The EPA analysis produced three levels of potential coal retirements: 3 GW, 12.6 GW and 23 GW. To capture these potential retirements in the scenario-based analysis, MISO analysts, in conjunction with the Planning Advisory Committee (PAC), chose to model a minimum of 12.6 GW of retirements in all futures, with the exception of 23 GW of retirements being modeled in the Environmental future.

<sup>36</sup> See September 9<sup>th</sup> PAC meeting materials process discussion:  
<https://www.misoenergy.org/ layouts/MISO/ECM/Redirect.aspx?ID=207650>

# Policy Landscape Overview

The MISO generation fleet continues to evolve. Driven by both economics and environmental regulations, the MISO region as a whole is transitioning from a primarily coal-fueled fleet to a balance of coal, natural gas and renewables.

While the evolution of the fleet is generally accepted across the industry, the rate at which the transition will occur is uncertain. In the past 10 years, MISO has seen a significant increase in wind generation as well as coal retirements. Largely driven by compliance with the Mercury and Air Toxics Standards, which went into effect on April 16, 2015, approximately 10 GW of coal capacity in MISO has recently retired or converted fuel. Retired capacity has partially been replaced by natural gas and wind units; however, capacity additions have not kept pace with reductions. In the past five years, planning reserve margins<sup>44</sup> have dropped from 23 percent and above to 18 percent (Section 6.2).

Geographic diversity, policies (both existing and pending) as well as economics impact different areas of the footprint to different degrees. The MISO North and Central regions' fleet, which is primarily coal-based, continues to receive pressure from environmental regulations, competition from natural gas and age. Currently, the average age of the MISO North and Central regions' coal fleet is 40 years old. Analysis shows that coal plants typically retire at 65 years, meaning approximately 8 GW of currently unannounced coal retirements are expected in the next 15 years. That value could potentially triple depending on carbon regulations (Section 7.1).

The MISO North and Central Regions continue to see a large potential for increased wind on the system. As of June 2016, approximately 16 GW of wind currently operates in the MISO footprint and another 30 GW is currently in the Generator Interconnection Queue, 10 GW of the queued wind is in Iowa. MISO's South Region is primarily fueled by natural gas units so fuel prices, age, and demand and energy growth rates are the significant factors that affect the southern fleet. Approximately 12 GW of MISO South Region natural gas and oil units are at risk of age-related retirement within the next 15 years. While the current Generator Interconnection Queue indicates that most of the aging natural gas units will be replaced with newer natural gas units, it's also expected that demand-side resources as well as solar will play a greater role in the fleet into the future.

As MISO looks forward, it expects the trends towards a lower carbon fleet to be driven by potential carbon regulations, age, sustained low natural gas prices, declining construction costs of renewables and renewable tax credits. While currently the EPA's Clean Power Plan is stayed, multiple states and companies have stated they will continue to pursue carbon reductions. Should the Clean Power Plan or equivalent regulation become active, MISO's Clean Power Plan analysis shows that approximately 16 GW of additional coal capacity is at risk of retirement (Section 7.1). The replacement plan for retired capacity includes a combination of renewables, natural gas and demand-side technologies.

Even without carbon regulations, MISO expects economics to drive the continued trends towards more renewables. The capital cost for onshore wind is projected to decline annually by approximately 0.4 percent and by approximately 3 percent for PV solar units. In addition, the Production Tax Credit extension and Investment Tax Credit are projected to make renewables more economically competitive with thermal units (especially under scenarios where carbon reduction targets are assumed). To date,

<sup>44</sup> As a percentage of installed capacity



# MISO's Analysis of EPA's Final Clean Power Plan Study Report

June 2016

MISO Policy & Economic Studies Department



indicating that the ERC-producing ability of Fermi 3 was a source of revenue for Michigan under rate-based compliance.

While results for Michigan were affected by this change, the rest of the system modeled was not shown to experience significant change. LMPs under both rate-based and mass-based compliance increased by 1%, on average. The CO<sub>2</sub> price in the rate-based model increased by 6% without Fermi 3, but the CO<sub>2</sub> price in the mass-based model remained constant.

### 4.3 Mid-Term Analysis

After applying a range of coal retirement levels under different requirements for CO<sub>2</sub> reduction (described in Section 3.1) to the EGEAS model used for MISO's Mid-Term analysis, total system costs are compared in Figure 28.

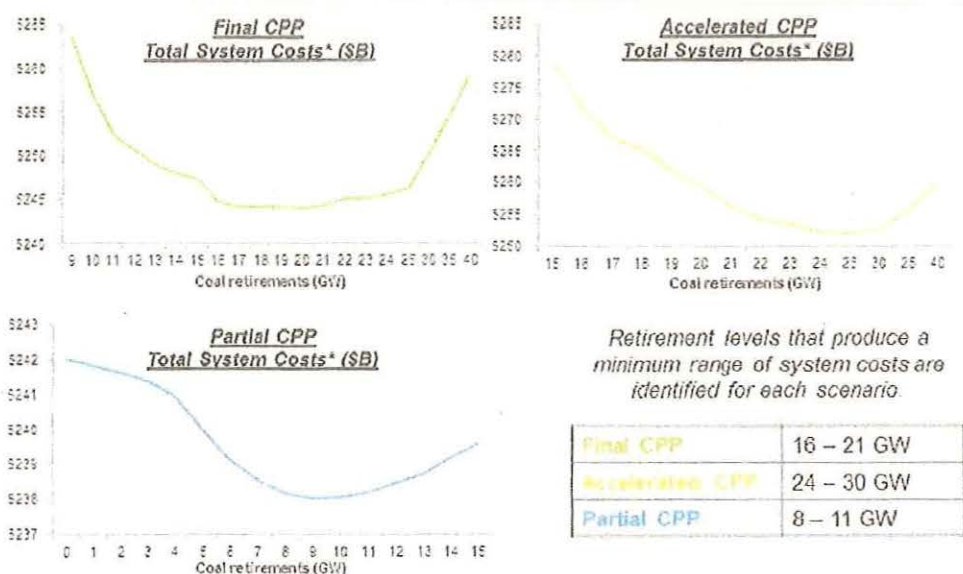


Figure 28 Total system costs per retirement level under various constraints

\*Dollar figures are 2016 USD in billions and include capital and production costs. Total system costs were calculated as the sum of fixed O&M costs, variable O&M costs, fuel costs and capital costs. They were based on a 20-year Net Present Value (NPV) calculation using a 2.5% inflation rate. These costs were compared from one level of retirement to the next for each CO<sub>2</sub> constraint scenario. A range of retirement levels that produced the lowest total system costs were identified for each scenario (indicated by tan boxes in Figure 28). From each range, the lower bound was selected for each scenario to represent a conservative estimate for how much capacity may retire. Figure 29 demonstrates that these retirement levels did achieve the required emission reduction in each scenario. Retirements above these levels achieved emission reductions well beyond the required level, as well as increased total system costs.

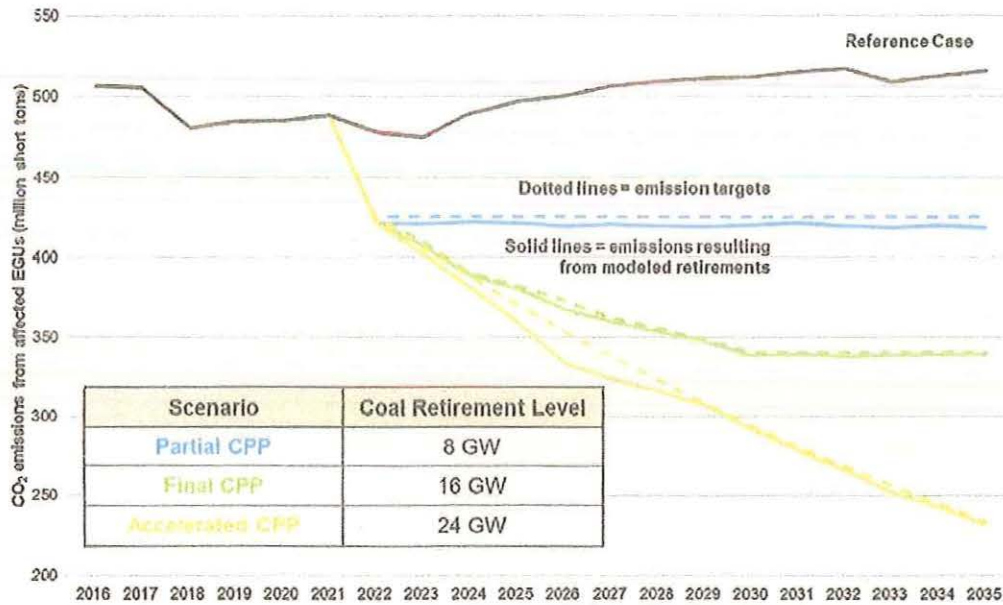


Figure 29 Emissions under various constraints with Identified retirement levels

Using the EGEAS software, capacity expansion analysis was performed for each scenario under the coal retirement levels identified in Figure 29, along with the appropriate mass emission constraints. The resulting resources economically selected by the model are shown in Figure 30 (Solar PV – Econ and Wind – Econ). This figure also includes resources forced into each case to meet the capacity required by RPS mandates (Solar PV – RPS and Wind – RPS).

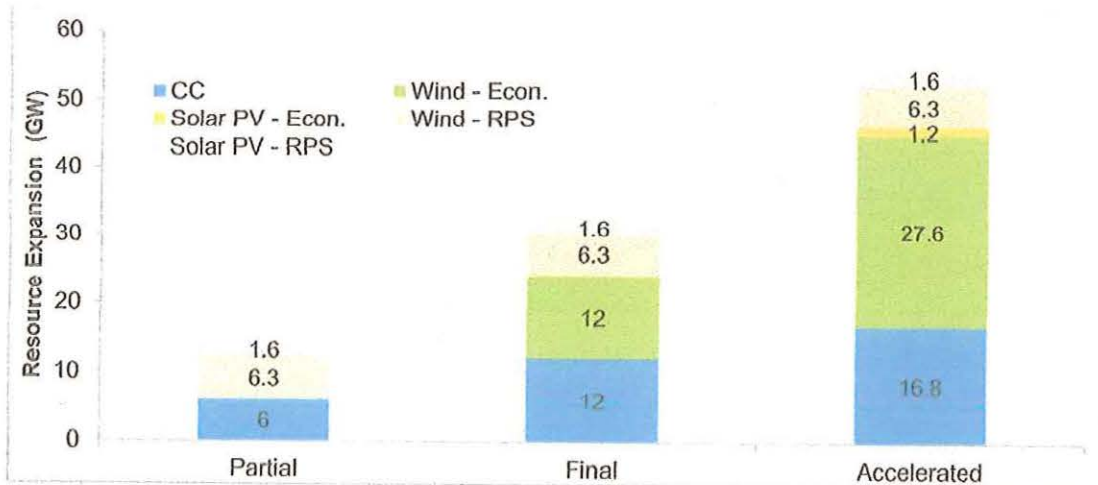
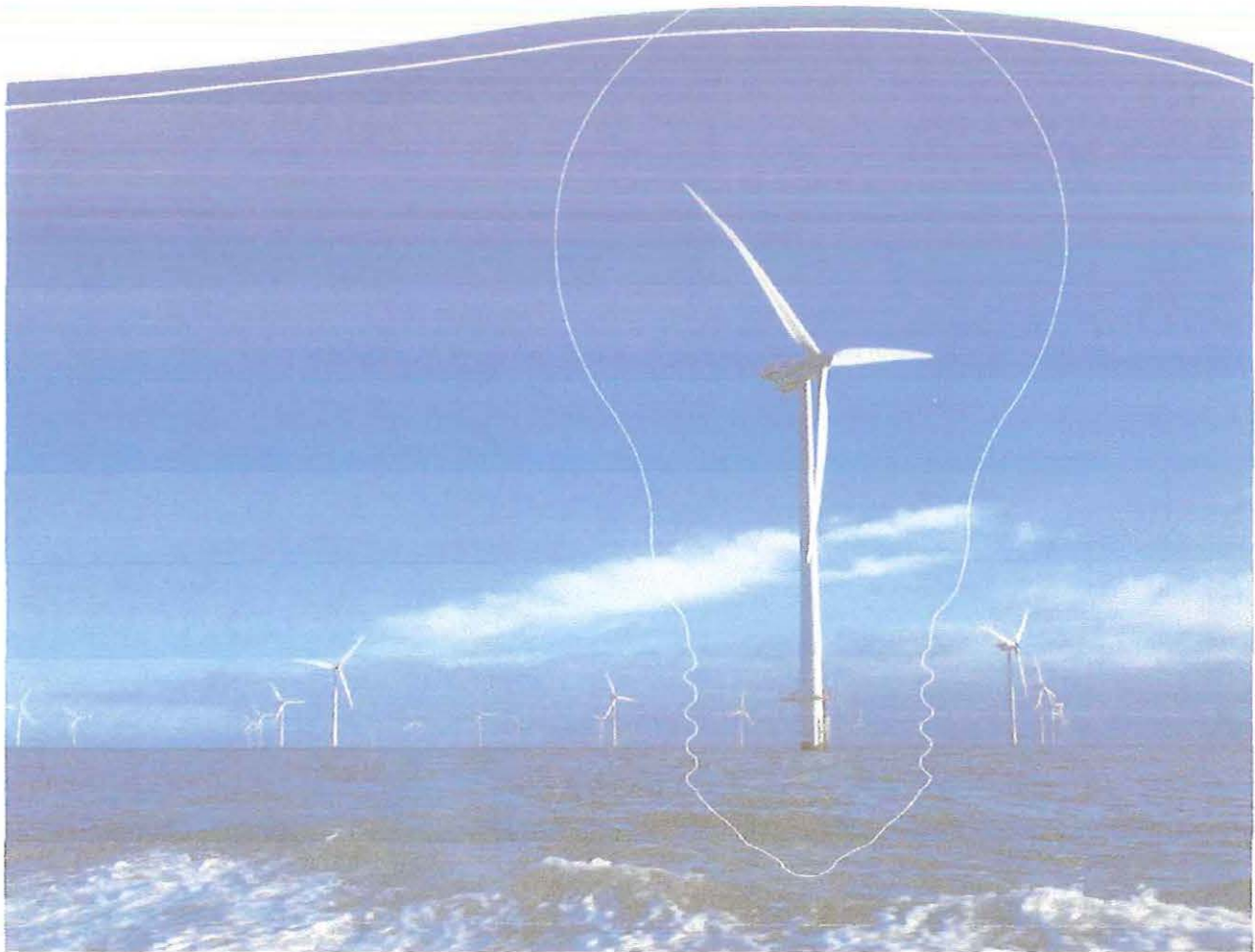


Figure 30 Economic unit selection and RPS mandated capacity



# Wind Energy and Electricity Prices

Exploring the 'merit order effect'

A literature review by Pöyry for the European Wind Energy Association



(see Figure 4) and, consequently, wind power will have a strong impact, reducing the spot power price significantly (from Price A to Price B in Figure 4). But if there is plenty of wind-produced electricity during the night, when power demand is low and most power is produced on base load plants, we are at the flat part of the supply curve and consequently the impact of wind power on the spot price is low.

### Impact of wind power on spot prices

Structural analyses are used to quantify the impact of wind power on power spot prices. A reference is fixed, corresponding to a situation with zero contribution from wind power in the power system. As more wind comes onto the system the effect is calculated at different levels. This is illustrated in the left-hand graph in Figure 5, where the shaded area between the two curves gives an approximate value of wind power in terms of lower spot power prices.

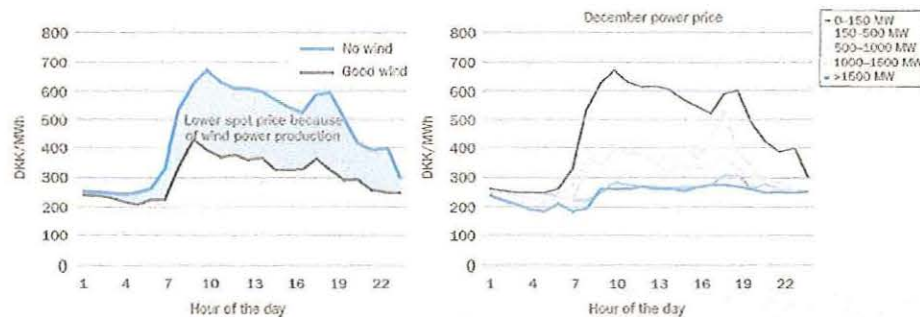
The right-hand graph in Figure 5 gives figures from the West Denmark area. Five levels of wind power production and the corresponding power prices are depicted for each hour of the day in December 2005. The reference is given by the '0-150 MW' curve,

which includes those hours of the month when the wind was not blowing. Therefore, this line on the graph provides approximate prices for an average day in December 2005, in a situation with zero contribution from wind power.

The other lines on the graph show increasing levels of wind power production: the 150-500 MW curve shows a situation with low wind, increasing to storm levels in the >1,500 MW curve. As shown, the higher the wind power production, the lower the spot power price. At very high levels of wind power production, the power price is reduced significantly during the day, but only falls slightly during the night. Thus, there is a significant impact on the power price, which might increase in the long term if even larger shares of wind power are fed into the system. Figure 5 is based on data from December 2005, but similar data is found for most other periods during 2004 and 2005, especially in autumn and winter, owing to the high production of wind power in these time periods.

Of course, 'noise' in the estimations does exist, as there is some overlap between curves for the different categories of wind power. Thus, a high amount of wind power does not always imply a lower spot price than low wind power production, indicating that significant statistical uncertainty exists. And of course, factors other than wind power production also influence

FIGURE 5: THE IMPACT OF WIND POWER ON THE SPOT POWER PRICE IN THE WEST DENMARK POWER SYSTEM IN DECEMBER 2005



Note: The calculation only shows how the production contribution from wind power influences power prices when the wind is blowing. The analysis cannot be used to answer the question 'What would the power price have been if wind power was not part of the energy system?'

Source: Riso DTU