

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

In the Matter of the Application of Grain Belt)
Express LLC for an Amendment to its Certificate)
of Convenience and Necessity Authorizing it to)
Construct, Own, Operate, Control, Manage, and) File No. EA-2023-0017
Maintain a High Voltage, Direct Current)
Transmission Line and Associated Converter)
Station)

**APPLICATION TO AMEND EXISTING CERTIFICATE
OF PUBLIC CONVENIENCE AND NECESSITY**

COMES NOW Grain Belt Express LLC (“Grain Belt Express”) and, under authority of and in accordance with Section 393.170.1 RSMo., 20 CSR 4240-2.060, 20 CSR 4240-20.045, and the Commission’s March 20, 2019 Report & Order on Remand, makes this application to the Missouri Public Service Commission (“Commission”) to amend its existing certificate of public convenience and necessity (“CCN”) to construct, install, own, operate, maintain, and otherwise control and manage an approximately 800-mile, overhead, multi-terminal ±600 kilovolt (“kV”) high-voltage, direct current (“HVDC”) transmission line and associated facilities including converter stations and alternating current (“AC”) connector lines (the “Project”).

I. Overview of Application

1. This Application is an amendment to the CCN issued in 2019 in File No. EA-2016-0358, granting Grain Belt Express authority to construct, own, operate, control, manage, and maintain the Project. The CCN was granted to Grain Belt Express with the understanding that any material changes to the engineering or project design would require an updated application for Commission approval. This Application seeks Commission approval of the following material changes to the design and engineering of the Project:

- a. Relocating the Missouri converter station from Ralls County to Monroe County and increasing the capacity of the Missouri converter station from 500 MW to 2500 MW;
 - b. Relocating the AC connector line from Ralls County to Monroe, Audrain, and Callaway Counties, allowing for greater access of renewable power to Missouri and increasing benefits to Missouri; and
 - c. Constructing the Project in two phases, allowing Missouri to realize the benefits of the Project earlier than it otherwise would.
2. There are no material changes to the design and engineering of the HVDC transmission line located in Missouri and Grain Belt Express continues to develop that aspect of the Project.
3. In addition to the undersigned counsel, correspondence, communications, notices, orders, and decisions of the Commission with respect to this matter should be sent to:

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II. Information About the Applicant and Prior Proceedings

4. Grain Belt Express is a limited liability company (“LLC”) organized under the laws of the State of Indiana. Grain Belt Express was formed in 2010 as a Delaware LLC and converted to an Indiana LLC in February 2013. Grain Belt Express’ principal offices are located at One South Wacker Drive, Suite 1800, Chicago, IL 60606.

5. Grain Belt Express is a wholly-owned subsidiary of Invenergy Transmission LLC (“Invenergy Transmission”), a Delaware limited liability company, which is a wholly-owned subsidiary of Invenergy Renewables LLC (“Invenergy Renewables”), also a Delaware limited liability company. Invenergy Transmission is an affiliate company of Invenergy LLC, which is an Illinois limited liability company.

6. Grain Belt Express is an electrical corporation and public utility regulated by this Commission.¹ On August 30, 2016, in File No. EA-2016-0358, Grain Belt Express filed an Application for a line CCN pursuant to Section 393.170.1,² seeking authorization to construct, own, operate, control, manage, and maintain the Missouri portion of the Project (the “2016 Application”). After conducting an evidentiary hearing in March 2017 and hearing oral argument on August 3, 2017, the Commission determined that it could not lawfully issue a CCN because Grain Belt Express had not obtained the necessary county assents under Section 229.100. See Report & Order at 13-15 (Aug. 16, 2017).

7. Accompanying the August 16, 2017 Report & Order was the Concurring Opinion of four Commissioners who stated that but for the appellate decision they believed they were obligated to follow, they would have granted the 2016 Application because the Project was

¹ File No. EA-2016-0358, Report & Order on Remand, pp. 37-38 (hereinafter “CCN Order”).

² All citations are to the Missouri Revised Statutes, as amended, unless otherwise noted.

necessary or convenient for the public service. *See* Concurring Opin. at 2, 7 (Aug. 16, 2017). The appellate decision is *In re Ameren Transmission Co. of Illinois*, 523 S.W.3d 21 (Mo. App. W.D. 2017) (“ATXI”).

8. On appeal, the Court of Appeals for the Eastern District found that the Commission erred in finding that it could not lawfully grant a line CCN to Grain Belt under Section 393.170.1 because the ATXI decision was in error. *Grain Belt Express Clean Line LLC v. PSC*, No. ED 105932, slip op. at 10 (Feb. 27, 2018). However, instead of reversing the order and remanding the case to the Commission, it transferred the case to the Supreme Court under Rule 83.02 because of the general interest and importance of the question. *Id.* at 10-11.

9. The Supreme Court held that the Commission erroneously concluded that it could not grant a line CCN to the Company without it first obtaining assents from the affected counties. *Grain Belt Express Clean Line LLC v. PSC*, 555 S.W.3d 469, 470, 474 (Mo. en banc 2018). Declaring that ATXI should not be followed, the Supreme Court remanded the case to the Commission to determine whether the Grain Belt Project is necessary or convenient for the public service. *Id.* at 474.

10. On remand, the Commission made clear that only “material changes” in the evidence and facts previously presented would be accepted, and that inquiry into “unchanged information would be unduly repetitious and subject to exclusion” under Section 536.070.8. *See* Tr. 1766; Order Setting Procedural Conference at 1 (Sept. 28, 2018).

11. After additional proceedings, including an evidentiary hearing held on December 18-19, 2018, the Commission issued its Report & Order on Remand (the “CCN Order”) on March 20, 2019, granting Grain Belt Express a CCN to construct and operate the Missouri portion of the Project pursuant to Section 393.170.1, subject to certain conditions.

12. The Commission subsequently approved Invenergy Transmission's acquisition of Grain Belt Express and the Project in File No. EM-2019-0150, effective September 21, 2019.³ Invenergy Transmission closed on its acquisition of Grain Belt Express in early 2020.

13. Grain Belt Express has made significant progress on the development of the Project since its acquisition in 2020, as further discussed in the Direct Testimony of Shashank Sane. In summary, Grain Belt Express has accomplished the following:

a. Acquired 72% of all easements required for the Kansas and Missouri portion of the Project.

b. Satisfied, ahead of schedule, Kansas Corporation Commission's established deadlines for easement acquisitions as a condition of retaining siting authority in Kansas.⁴

c. Achieved approvals from the Indiana Utility Regulatory Commission to authorize Invenergy Transmission to acquire, own, and operate the Project in Indiana.⁵

d. Worked with various stakeholders in support of Illinois legislation permitting Grain Belt Express to file for a certificate of public convenience and necessity ("CPCN") at the Illinois Commerce Commission ("ICC").

e. Met all prerequisites and prepared and filed its Application for a CPCN at the ICC, Docket No. 22-0499, filed on July 26, 2022.

f. Worked in cooperation with various agricultural and landowner groups culminating in the enactment of House Bill 2005.⁶

³ File No. EM-2019-0150, Amended Report and Order.

⁴ KCC Docket No. 13-GBEE-803-MIS, Order Granting Joint Motion to Replace Sunset Provisions with Settlement Deadlines, ¶ 11 (September 26, 2019).

⁵ IURC Cause No. 45294, Order from the Commission (Jan. 2, 2020).

⁶ Available at <https://house.mo.gov/billtracking/bills221/hlrbillspdf/3627S.07T.pdf>.

g. Submitted and advanced interconnection requests at Midcontinent Independent System Operator, Inc. (“MISO”) for points of interconnection on Ameren’s McCredie—Montgomery 345 kV line, near the McCredie substation owned by Associated Electric Cooperative Incorporated (“AECI”).

h. Signed an interconnection agreement with AECI for a point of interconnection at the McCredie substation.

i. Advanced through the interconnection processes with PJM Interconnection (“PJM”) and Southwest Power Pool (“SPP”), respectively.

III. Descriptions of Certificated Project and Amended Project

A. Description of Certificated Project

14. This Application will refer to the Project as described in the 2016 Application and approved in the CCN Order as the “Certificated Project.” The 2016 Application described the Missouri portion of the Certificated Project as follows:

(a) approximately 206 miles of a high voltage, direct current (“HVDC”) transmission line that will traverse the state from Kansas into Illinois and Indiana, and (b) an associated converter station in Ralls County, Missouri and alternating current (“AC”) interconnecting facilities, including an AC switching station and related AC transmission lines.⁷

15. The 2016 Application explained that the Missouri portion of the Certificated Project would be part of “an interregional transmission project that will span the footprints of three regional transmission organizations (‘RTOs’): Southwest Power Pool, Inc. (‘SPP’), Midcontinent Independent System Operator, Inc. (‘MISO’), and PJM Interconnection, LLC (‘PJM’).”⁸ The full Project was presented as follows:

⁷ File No. EA-2016-0358, Application, ¶ 1.

⁸ *Id.*

The Grain Belt Express Project is an approximately 780-mile, overhead, multiterminal +600 kilovolt (“kV”) HVDC transmission line (“HVDC Line”) and associated facilities that will collect over 4,000 MW of low-cost, wind-generated power in western Kansas. The Project will deliver 500 MW into Missouri and 3,500 MW into Illinois, Indiana and states farther east.⁹

16. The CCN Order approved the Certificated Project based on the foregoing descriptions, including AC interconnecting facilities to be constructed between the converter station and the point of interconnect with the existing AC system.¹⁰

17. The Commission’s findings in the CCN Order regarding the HVDC portion of the Certificated Project remain accurate and should not be relitigated. There is no need for the Commission to revisit its findings regarding the route, right-of-way, or facility design of the HVDC portion of the Certificated Project, as the Amended Project does not involve material modifications to any of those items.

18. The Certificated Project remains viable, feasible and in the public interest, and Grain Belt Express is continuing to develop the Certificated Project. For the HVDC portion of the line (which excludes the Tiger Connector, discussed in greater detail below), no material changes to the route, right-of-way, or facility design are anticipated as a result of the requested amendments. Development for the HVDC route is ongoing, consistent with the CCN Order. However, Grain Belt Express submits that the Certificated Project with the requested amendments (the “Amended Project”) is preferable, in the public interest, and will meet or exceed the Tartan Factors, as discussed below.

⁹ *Id.* at ¶ 14.

¹⁰ CCN Order, pp. 9-10; CCN Order Attachment 1 at Section III.3 (discussing the “Grain Belt-owned portion of the AC electric transmission line connecting the Grain Belt proposed Missouri conversation to the AC grid”).

B. Description of Amended Project

19. This Application and supporting testimony is being filed in compliance with the following condition, as incorporated into the CCN Order: “Grain Belt and Invenergy agreed that if there are any material changes in the design and engineering of the Project from what is contained in the application, Grain Belt will file an updated application subject to further review and determination by the Commission.”¹¹ Accordingly, Grain Belt Express seeks Commission review and approval of the following amendments (*i.e.* “material changes to the design and engineering”):

a. Changes to the Missouri converter station’s size (from 500 to 2500 MW) and location (from Ralls County to Monroe County);

b. Moving the AC tie line from Ralls County to Monroe, Audrain and Callaway Counties. The AC tie line will be approximately 40 miles, traversing south from the converter station in Monroe County, through Audrain County, and terminating in Callaway County at the existing McCredie Substation (the “Tiger Connector”);

c. Construction of the Amended Project in two phases. “Phase I” will comprise that HVDC portion of the Amended Project starting in Ford County, Kansas and traversing the State of Missouri to the interconnection at the converter station in Monroe County, and including the AC Tiger Connector, which will traverse southeast from the Monroe County converter station to points of interconnection (“POIs”) at and near the existing McCredie Substation in Callaway County. “Phase II” is anticipated to comprise that portion of the HVDC transmission line starting at the Monroe County converter station and ending at the AEP Sullivan Substation in Sullivan County, Illinois.

¹¹ CCN Order, p. 36.

20. As explained in this Application and the associated testimony, approving the proposed amendments is necessary and convenient for the public service and the Amended Project satisfies the Tartan Criteria.

i. *Amended size and location of converter station*

21. Grain Belt Express proposes to increase the size of the Missouri converter station from 500 MW to 2500 MW. Grain Belt Express has previously acknowledged that changing the size of the Missouri converter station constitutes a “material change” as that term was used in the CCN Order.¹² The increased size of the converter station is necessary to serve the demonstrated demand for geographically diverse renewable energy, as provided by Grain Belt Express. The demand for services provided by Grain Belt Express is discussed below in Sections V.C. and VI.B. and the Direct Testimony of Shashank Sane.

22. Grain Belt Express proposes to move the location of the converter station from Ralls County to Monroe County, adjacent to the currently certificated HVDC route, for optimal location relative to the POIs in Callaway County. The modified location of the converter station and the Tiger Connector are necessary to deliver the power into Callaway County, as the Certificated Project’s POI in Ralls County is not sufficiently robust to handle the increased injection of power. Further, the POIs at and near the McCredie Substation are necessary to connect to the three major power grids that serve Missouri (SPP, AECI, and MISO) and allow for expanded access to the power delivered by Grain Belt Express, and additional optionality for Grain Belt Express and its customers. The necessity for and benefits of interconnecting at and near the McCredie Substation are discussed in the Direct Testimony of Carlos Rodriguez.

¹² File No. EC-2021-0059, Tr. Vol. 1, 95:5-8 (Testimony of Kris Zadlo, former Vice President of Invenenergy Transmission LLC).

23. As explained in the Direct Testimony of Carlos Rodriguez, Grain Belt Express has submitted interconnection requests to MISO to establish HVDC transmission connection and generator interconnection rights on Ameren’s McCredie—Montgomery 345 kV line, near AECI’s McCredie substation. Combined, these requests will enable the interconnection of 1,500 MW, with injection rights for the Project, into the MISO system. Additionally, Grain Belt Express has signed an interconnection agreement with AECI for a point of interconnection at the McCredie substation and injection rights of approximately 1,000 MW to the AECI system.

ii. *Description of the Tiger Connector*

24. The Certificated Project has always included AC interconnecting facilities to be constructed by Grain Belt Express to connect the converter station to the existing AC grid.¹³ The fact that Grain Belt Express proposes to construct an AC transmission line is not itself a “material change” to the Certificated Project. However, the change in location from Ralls County to Monroe, Audrain and Callaway Counties likely qualifies as a “material change” as that term was used in the CCN Order.

25. As further described in the Direct Testimony of Aaron White, the Tiger Connector as proposed is a double circuit 345 kV AC transmission line designed to deliver 2,500 MW to the proposed POIs. The structures for the Tiger Connector will be steel poles on concrete pier foundations. Each circuit of the transmission line will include three phases consisting of double bundle conductors and an Optical Ground Wire (“OPGW”) for communication and lighting

¹³ 2016 Application, ¶ 1 (seeking a CCN to, among other things, “construct, own, operate, control, manage and maintain ... alternating current (“AC”) interconnecting facilities, including an AC switching station and related AC transmission lines.”); CCN Order, p. 10 (“Grain Belt proposes to construct the Missouri converter station and associated AC interconnecting facilities in Ralls County”); CCN Order Attachment 1 at Section III.3 (discussing the “Grain Belt-owned portion of the AC electric transmission line connecting the Grain Belt proposed Missouri conversation to the AC grid”).

protection. Typical span lengths will be range between 800 and 1,000 feet. The insulator assemblies which will support the conductors will be v-string. The v-string insulator assembly is intended to minimize the conductor movement due to wind within the right-of-way.

26. In order to refine the Proposed Route for the Tiger Connector, landowner notices were sent the week of July 11, 2022, and newspaper notices began running during that same time frame. Public meetings to discuss the Tiger Connector were held on July 26 and 27 in Audrain and Callaway Counties, respectively.

27. In addition to the public meetings, Grain Belt Express has established a webpage dedicated to the Tiger Connector,¹⁴ established a dedicated email address for Tiger Connector routing questions, created a voicemail option for Tiger Connector questions, mailed various notices to landowners and county officials notifying them of Project details. The public outreach effort for the Tiger Connector is further discussed in Section III of the Direct Testimony of Kevin Chandler and Schedule AB-2, attached to the Direct Testimony of Andrew Burke.

28. The Proposed Route and the process for selecting the Proposed Route is discussed in the Direct Testimony of Andrew Burke and Schedule AB-2, which contains the Route Selection Study.

29. Grain Belt Express has established a strong track record of working with landowners along with certificated HVDC route in Kansas and Missouri and will apply the same approach to working with landowners along the Tiger Connector route. Grain Belt Express will continue to abide by the Missouri Landowner Protocols, Code of Conduct, and Agricultural Impact Mitigation Protocols, as established in File No. EA-2016-0358, subject to the requested limited modifications discussed below in Section VII of this Application.

¹⁴ <https://grainbeltexpress.com/tiger-connector.html>

iii. *Phased construction of the Amended Project*

30. Commission Staff has previously expressed its belief that constructing the Amended Project in two phases likely constitutes a “material change” as that term was used in the CCN Order.¹⁵ Grain Belt Express concedes that constructing the Amended Project in two phases likely constitutes a “material change,” especially in light of the financing conditions, which appear in Section I of the *Conditions Agreed to by Grain Belt Express Clean Line LLC and the Staff of the Missouri Public Service Commission*, which was marked as Exhibit 206 and included as Attachment 1 to the CCN Order (hereinafter, “CCN Order Attachment 1”).

31. Constructing the Amended Project in two phases is in the public interest of Missouri because it will allow the benefits to Missouri accrue much earlier than would otherwise be possible. The regulatory approval process in Illinois has been subject to extensive delays because of now-resolved appeals of the Illinois Commerce Commission’s 2015 decision to grant a Certificate of Public Convenience and Necessity (“CPCN”) to Grain Belt Express Clean Line LLC in ICC Docket 15-0277. Last month, Grain Belt Express filed a new application for a CPCN that is substantially similar to the application approved in 2015 with revisions necessary to satisfy the appellate rulings in that case and to align with state laws passed in the interim that allow projects like this one to proceed in Illinois. As a result of this delay, Grain Belt Express expects a certificate to be granted around March 8, 2023 (225 days after filing). Given that land acquisition in Kansas and Missouri has taken approximately 2.5 years (and is still subject to ongoing negotiations), it is reasonable to project a similar timeline for Illinois land acquisition efforts.¹⁶

¹⁵ File No. EC-2021-0059, Tr. Vol. 1, 112:6-14 (Testimony of Shawn Lange, Commission Staff Engineer).

¹⁶ For more information on the procedural history of the Illinois CPCN application, *see* Petition of Grain Belt Express LLC for Certificate of Public Convenience and Necessity under Section 8-406.1, ICC Dkt. 22-0499 (July 26, 2022) at ¶¶ 14-18.

32. Phasing the Project will allow Missouri to realize the benefits of the Project sooner, without being dependent on land acquisition efforts in Illinois. This includes the economic, reliability and public interest benefits discussed elsewhere in this Application and the supporting testimony, as well as additional payments to landowners in Missouri who have signed easement agreements with Grain Belt Express.

iv. *Non-Material Changes*

33. In addition to the proposed amendments that qualify as “material changes to the design and engineering,” there are additional modifications that do not materially modify the design and engineering of the Certificated Project in Missouri. Those changes include increasing the overall capacity of the transmission line from 4,000 MW to 5,000 MW and improvements to the technology used for the converter, conductor, and HVDC structures as discussed in the Direct Testimonies of Carlos Rodriguez and Aaron White. These improvements do not change the right-of-way or route of the Certificated Project and do not result in material changes to the design and engineering of the Certificated Project.

34. In addition, as discussed in the Direct Testimony of Kevin Chandler, the total expected length of the HVDC transmission line has increased slightly because of more accurate survey results and Grain Belt Express working with landowners during the micro-siting process to minimize landowner impact. The total length of the HVDC line is now approximately 800 miles total with approximately 214 miles in Missouri, compared to the approximately 780 miles total with approximately 206 miles in Missouri as the line was described in the 2016 Application. The current CCN permits minor deviations to the location of the line not exceeding 500 feet as a result of surveying, final engineering and design, and landowner consultation without triggering the “material change” provisions. Grain Belt Express uses this flexibility to respond to landowner requests regarding siting, which has contributed to the slight increase in length of the line.

IV. Summary of Direct Testimony

35. A list of Grain Belt Express Witnesses providing direct testimony in support of this Application, and the subject matters covered are summarized in the following table.

Witness	Principal Testimony Topics
Shashank Sane	<ul style="list-style-type: none"> • Overview of Grain Belt Express and prior proceedings • Accomplishments and milestones since Invenergy’s acquisition of Grain Belt Express • The Proposed Amendments are needed on an economic basis • The Proposed Amendments are needed on a reliability and resiliency basis • Grain Belt Express and its affiliates are qualified • The Amended Project is economically feasible • The Amended Project satisfies the Tartan Factors
Carlos Rodriguez	<ul style="list-style-type: none"> • Physical and operating characteristics of the Amended Project • Technological updates • Limitations of existing point of interconnection • Benefits of proposed point of interconnection • Status of interconnection process
Jen Stelzleni	<ul style="list-style-type: none"> • Environmental considerations taken into account for the Tiger Connector planning purposes
Mark Repsher, PA Consulting	<ul style="list-style-type: none"> • The Amended Project will significantly reduce energy and capacity costs for Missouri ratepayers • The Amended Project will reduce emissions of CO₂, SO₂, and NO_x in Missouri, enhancing local utilities’ ability to meet climate and reliability goals and delivering local air quality and health benefits. • The Amended Project is economically feasible
David G. Loomis, Strategic Economic Research	<ul style="list-style-type: none"> • Economic, employment and fiscal impacts of the Amended Project on the Missouri economy
Anthony Petti, Guidehouse	<ul style="list-style-type: none"> • The Proposed Amendments are needed on a reliability and resiliency basis

Kevin Chandler	<ul style="list-style-type: none"> • Update on negotiations and right-of-way acquisition with landowners on existing HVDC route • Public outreach efforts and notice to landowners regarding the Tiger Connector • Description of land acquisition for the Tiger Connector • Limited Modifications to Existing Conditions
Andrew Burke, WSP	<ul style="list-style-type: none"> • Proposed Route for the Tiger Connector • Route determination process
Aaron White	<ul style="list-style-type: none"> • Grain Belt Express is qualified to construct and operate the Amended Project • Grain Belt Express' plans to use local resources • Project development timeline • Update on plans and specifications of the HVDC portion of the Project • Plans and specifications for the Tiger Connector • Update on costs of the Project • Plans for operating and maintaining the Project and plans for restoration of service after unplanned/forced outages
Rolanda Shine	<ul style="list-style-type: none"> • Update on the financial ability of Grain Belt Express • Update on the financing plan for the Amended Project
Jonathon Monken, Converge	<ul style="list-style-type: none"> • National security value of Grain Belt Express to Missouri and the Midwest

V. The Proposed Amendments Further Support the Commission’s Need and Public Interest Findings in the CCN Order

36. This Application and the supporting testimony demonstrate that the Commission can and should rely on its prior findings in File No. EA-2016-0358 that the Project is needed and that the Project promotes the public interest, and further find that the Amended Project enhances and expands the Certificated Project’s need and public interest benefits.

A. The Commission's Prior "Need" Findings

37. In File No. EA-2016-0358, the Commission heard evidence regarding Grain Belt Express's contract with the Missouri Joint Municipal Electric Utility Commission ("MJMEUC") and made the following findings regarding the need for the Project in the CCN Order:

The Project is needed primarily because of the benefits to MJMEUC and its customers, who have committed to purchase 136 MW of wind power utilizing transmission service purchased from Grain Belt. The transmission service agreement between Grain Belt and MJMEUC allows MJMEUC to purchase up to 200 MW of transmission capacity from the Grain Belt project. MJMEUC plans to use cheaper wind power from Grain Belt to replace the 100 MW of energy and capacity it currently purchases from Illinois Power Marketing, which contract will expire in 2021. MJMEUC calculates that their MoPEP members will save over \$11 million annually under the transmission service agreement with Grain Belt compared to its existing contract for those Illinois coal resources. These annual cost savings to MJMEUC member cities that participate in the Project will likely be passed through to their residential and industrial customers in the form of rate relief or invested in deferred maintenance to their electrical distribution systems.

The transmission service agreement has recently been amended to lower the price of the second 100 MW tranche to that of the first 100 MW tranche, resulting in additional annual savings (for 200 MW) to MJMEUC of approximately \$2.8 million compared to a traditional SPP to MISO point-to-point service agreement. 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, the Missouri Retailers Association, and other national companies.

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.¹⁷

38. As discussed in the Direct Testimony of Shashank Sane, the MJMEUC contract remains in place and the demand for the project on the production and delivery side continues to

¹⁷ CCN Order pp. 41-42.

grow. Accordingly, all of these findings remain accurate and are further supported by the proposed amendments.

B. The Commission's Prior Public Interest Findings

39. The Commission made the following findings regarding public interest in the CCN Order. As discussed in the Direct Testimony of Mark Repsher (regarding lower energy production costs), Kevin Chandler (regarding mitigation of impacts on landowners) and Shashank Sane (regarding policy objectives), all of these findings remain accurate and are further supported by the proposed amendments.

The Grain Belt Project will lower energy production costs in Missouri under future energy scenarios developed by MISO and will have 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 will provide positive environmental impacts, since displacement of fossil fuels for wind power will reduce emissions of carbon dioxide, sulfur dioxide, and nitrogen oxide, and reduce water usage in Missouri.¹⁸

Any negative impacts of the Project on the land and landowners will be mitigated by (a) a landowner protocol to protect landowners; (b) superior compensation payments; (c) a binding arbitration option for easement negotiations; (d) a decommissioning fund; and (e) an agricultural impact mitigation protocol to avoid or minimize negative agricultural impacts.¹⁹

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 Grain Belt Project will create both short-term and long-term benefits to ratepayers and all the citizens of the state. In the Commission's view, the broad economic, environmental, and other benefits of the Project to the entire state of Missouri outweigh the interests of the individual landowners. Many of the landowners' concerns will be addressed through carefully considered conditions placed on the CCN.²⁰

¹⁸ CCN Order, p. 46.

¹⁹ CCN Order, p. 46.

²⁰ CCN Order, p. 47.

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 Grain Belt Project will facilitate this movement in Missouri, will thereby benefit Missouri citizens, and is, therefore, in the public interest.²¹

40. The Commission can and should rely on the above findings regarding need and public interest in its review of the proposed amendments. Accordingly, Grain Belt Express requests that the Commission take administrative notice of the record in File No. EA-2016-0358 pursuant to Section 536.070(6) RSMo. Administrative notice is appropriate where “the instant case and the ... prior cases are so related and interdependent as to make it necessary to refer to those prior cases for a proper understanding of the present case.” State ex rel. St. Louis Public Serv. Co. v. PSC, 291 S.W.2d 95, 97 (Mo. en banc 1956). It is well settled law that courts may, and should, “take judicial notice of their own records in prior proceedings which are between the same parties on the same basic facts involving the same general claims for relief.”²²

C. Enhanced and Extended Benefits of Amended Project

41. The primary objective of the Amended Project is the same as that of the Certificated Project: to transport clean, low-cost electricity from renewable generation plants to be built in southwestern Kansas, which has high-capacity factor wind and solar resources, to the electricity markets in Missouri and Illinois and other states located within or adjacent to the MISO and PJM grids. The main difference between the Certificated Project and the Amended Project is that the

²¹ CCN Order, p. 47.

²² *Moore v. Missouri Dental Bd.*, 311 S.W.3d 298, 305-306 (Mo. App. W.D. 2010); *Chandler v. Hemeyer*, 49 S.W.3d 786, 791 792 (Mo. App. W.D. 2001); *State ex rel. Callahan v. Collins*, 978 S.W.2d 471, 474 (Mo. App. W.D. 1998); *Meiners Co. v. Clayton Greens Nursing Ctr., Inc.*, 645 S.W.2d 722, 724 (Mo. App. E.D. 1982); *Hardin v. Hardin*, 512 S.W.2d 851, 854 (Mo. App. K. C. Dist. 1974). See also *State v. Hurst*, 845 S.W.2d 669, 670 (Mo. App. E.D. 1993); *Schrader v. State*, 561 S.W.2d 734, 735 (Mo. App. K.C. Dist. 1978).

Amended Project provides *more* benefits to Missouri. The Amended Project will be capable of delivering up to 2,500 MW of power into the MISO and AECI grids at delivery points in Missouri, as opposed to 500 MW into the MISO market under the Certificated Project.

42. Just as with the Certificated Project, the Amended Project will (a) allow large amounts of renewable energy from southwestern Kansas to access the MISO markets and compete to serve customer load, (b) support development of wind and solar facilities where the resources are such that electricity can be generated at significantly lower cost than are currently available in Missouri, (c) enable low-cost renewable energy to access the Missouri electricity markets and reduce wholesale and retail electric prices, and (d) help customers in Missouri meet their various renewable energy and carbon reduction standards.

43. Additionally, per Lazard’s Levelized Cost of Energy Analyses from November 2018²³ and October 2021²⁴, over that time period, the cost of solar has continued to decline (dropping from \$36-\$44 in Nov. 2018 to \$28-\$37 in Oct. 2021). Further, the solar production of generation in southwestern Kansas is not strongly correlated with the production of wind and solar generators in Missouri and Illinois. As a result, integrating wind and solar generation resources in southwestern Kansas with Missouri and Illinois wind and solar generation facilities—which the Project will make possible—will reduce the overall variability of renewable generation serving Missouri and Illinois, increase the reliability of renewable generation as a supply source to Missouri and Illinois markets, and reduce the costs of renewable generation integration into the Missouri and Illinois supply portfolio.

²³ Available at <https://www.lazard.com/media/450784/lazards-levelized-cost-of-energy-version-120-vfinal.pdf>, at p.2.

²⁴ Available at <https://www.lazard.com/media/451905/lazards-levelized-cost-of-energy-version-150-vf.pdf>, at p.2.

44. If the Amended Project is approved, Grain Belt Express is expected to deliver up to 15 million megawatt-hours (“MWh”) of clean energy per year into the Missouri converter station, and up to 15 million MWh of clean energy into the Illinois converter station. The total annual deliveries of up to 30 million MWh will be enough to serve the annual electricity needs of over 2.8 million homes.

45. The Commission is also aware that the market demand for electricity supplied by renewable resources has grown considerably in recent years, spurred in large part by customer demand from corporate and municipal commitments to transition to clean energy. That demand will continue to grow over the next 20-30 years. The demand is and will be driven by state laws and policies requiring or encouraging the use of renewable resources; federal laws and policies limiting, or increasing the costs of the production of electricity from fossil-fueled generating plants, resulting in retirements or reduced use of such plants; voluntary public demand for clean energy from renewable sources; and the potential for wind and solar energy as a low-cost, competitive source of electricity.²⁵

46. Large corporate energy customers represent an increasing amount of renewable energy procurement, accounting for 37% of all carbon free energy added to the grid since 2014. Of the energy deals completed by corporations to date, 22% are within PJM markets and 13% are within MISO markets. The trend of high demand for carbon free energy continued in 2021 with corporate buyers procuring 11 gigawatts (“GW”) of power. The demand in 2022 and beyond is

²⁵ *Climate Goals of Top 30 US Electric and Gas Utilities*, S&P Global Market Intelligence (data compiled Nov. 2, 2021) (attached as Exhibit 1.5). The data compiled in this report is capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. See also *Path to net zero: 70% of biggest US utilities have deep decarbonization targets*, S&P Global Market Intelligence (Dec. 9, 2020), available at <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/path-to-net-zero-70-of-biggest-us-utilities-have-deep-decarbonization-targets-61622651>.

projected to exceed the record amount from 2021.²⁶ Meeting this demand will require increased access to geographically diverse renewable resources and increased transmission capacity, as would be achieved by the Amended Project.

47. The Amended Project will better achieve the Certificated Project's objectives to be a multigenerational energy project. Despite the superior renewable generation resources available in southwestern Kansas, prospects for the addition of new renewable generation facilities in the area are currently limited because of the lack of adequate long-distance, inter-regional transmission infrastructure to bring electricity to load and population centers, such as Missouri and Illinois. For new, low-cost renewable generation to be constructed in southwestern Kansas to meet the demand for renewable resources in Missouri and other states, additional long-distance transmission capacity between these areas must be built. The Amended Project will provide this needed long-distance transmission capacity.

48. There has been a demonstration of additional demand for the Project, bearing in mind the additional capacity of the overall Project and the expanded delivery into Missouri of the Amended Project. First, Grain Belt Express has entered Memorandums of Understanding ("MOUs") with major commercial and industrial customers, and electric utilities, each of which has expressed interest in acquiring transmission capacity from the Project. In addition to the MOUs, both Ameren Missouri and Evergy have announced carbon emission reduction goals, which further demonstrate demand for expanding the delivery capability of the Project, as discussed in greater detail in the testimony of Shashank Sane.

²⁶ Utility Dive, "Corporate clean energy procurement on track for another record year after adding 11 GW in 2021," available at <https://www.utilitydive.com/news/corporate-clean-energy-procurement-ceba-report/623926/>.

49. In addition, the findings made by the Commission in the CCN Order regarding demand for the Project from municipalities and commercial and industrial customers remains intact, and in fact have increased. A number of businesses in Missouri have expressed interest in buying renewable power, and a number of Missouri municipal governments have also made pledges to increase use of renewable energy in city facilities, as discussed in the Direct Testimony of Mr. Sane.

50. Though the Amended Project provides expanded benefits to Missouri, its citizens and businesses, there is also evidence of demand for the Amended Project outside of Missouri. As reported by S&P Global, as of December 4, of 2021, 70% of the 30 largest U.S. electric and gas utilities have net-zero equivalent targets or were moving to comply with aggressive carbon emission reduction mandates. The vast majority of these utilities reside within the MISO and PJM footprints.²⁷ In support of its regional transmission planning efforts MISO also commissioned a study by Applied Energy Group to assess the clean energy goals of utilities within its footprint through 2040.²⁸ Twenty-eight MISO utilities have Carbon Reduction goals and 26 have Renewable Energy goals. It will not take long for the best renewable resource zones within the MISO footprint to be fully developed to serve these needs. Imports from adjacent regions, such as southwest Kansas and SPP will be sorely needed. The Project, as amended, also will have the capability to delivery energy into MISO South. Moreover, in July 2022, the Tennessee Valley Authority (“TVA”) requested up to 5,000 mW of carbon-free energy that must be operational prior

²⁷<https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/path-to-net-zero-70-of-biggest-us-utilities-have-deep-decarbonization-targets-61622651>

²⁸<https://cdn.misoenergy.org/20211117%20RRA%20Workshop%20Utility%20Research%20Final%20Report604642.pdf>

to 2029. The AECI interconnect, as part of the Amended Project, could be a potential transmission source for this additional energy need.

51. Severe weather events are becoming more common and more extreme, with severe events challenging nearly every part of the U.S. power grid in the last decade alone. This uptick in severe weather events sharpens the need to increase transmission capacity at a regional level, as achieved in the Amended Project. For example, during Winter Storm Uri in February 2021, more than 4.5 million people in Texas lost power (some for as long as four days) while being exposed to below-freezing temperatures for over six days. At least 210 people died.²⁹ Each additional 1 GW of transmission ties could have saved in excess of \$100 million for customers served in the great plains by SPP and in the southern part of the geographic area served by MISO and could have kept the heat on for hundreds of thousands of Texans.³⁰

52. The south-central U.S. served by MISO and SPP also faced emergency circumstances but were able to mitigate disaster by importing power from PJM and MISO respectively.³¹ Such capacity transfer, while far from entirely sufficient, demonstrated the importance of capacity transmission and interconnection between ISOs/RTOs. In a recent Notice Inviting Post-Technical Conference Comments (Docket No. AD21-11-000, January 7, 2022), the Federal Energy Regulatory Commission (“FERC”) noted the importance of being able to import and export energy between regions to address climate change and extreme weather events.

²⁹ FERC, NERC and Regional Entity Staff Report, *The February 2021 Cold Weather Outages in Texas and the South Central United States*, at 7 (Nov. 16, 2021) (hereinafter, “FERC, *The Feb. 2021 Cold Weather Outages*”), available at <https://www.ferc.gov/media/february-2021-cold-weather-outages-texas-and-south-central-united-states-ferc-nerc-and>.

³⁰ American Council on Renewable Energy, *Transmission Makes the Power System Resilient to Extreme Weather*, at 2 (July 2021), available at https://acore.org/wp-content/uploads/2021/07/GS_Resilient-Transmission_proof.pdf.

³¹ FERC, *The Feb. 2021 Cold Weather Outages* at 14.

53. More recently, per the Washington Post, July 2022 was the nation’s third hottest July on record, and the hottest month in the last 128 years in terms of nighttime warmth.³² July temperatures in Kansas, Missouri and Illinois were all rated as “above average,” with regions of Kansas and Missouri experiencing mean temperatures that were “much above average.”³³ While Missouri utilities were able to avoid rolling blackouts this summer, utilities had to issue conservation messages due to high temperatures,³⁴ others saw blackouts due to equipment failure.³⁵ SPP issued a Conservative Operations Advisory for July 6 through 8 amidst the record-setting electricity use and high temperatures.³⁶ PJM also issued several load shed directives to AEP in mid-June, as well as hot weather alerts, most recently from July 22 to 24, 2022.³⁷ Further South, Electric Reliability Council of Texas (“ERCOT”) reported that it exceeded 80,000 megawatts for the first time and set demand records 11 times this summer.³⁸

³² Zach Rosenthal and Jason Samenow, *July 2022 featured hottest nights in U.S. history*, THE WASHINGTON POST, August 10, 2022 (<https://www.washingtonpost.com/climate-environment/2022/08/10/hottest-us-nights-july-climate/>).

³³ *Id.*

³⁴ Greta Cross, *Utility companies in the Ozarks ask customers to conserve water, energy during heat warnings*, SPRINGFIELD NEWS-LEADER, July 9, 2022 (<https://www.news-leader.com/story/news/2022/07/09/utility-companies-ask-customers-save-water-energy/10006556002/>).

³⁵ Matt Evans, *Energy demand soars in KC metro with heatwave*, KMBC News, June 14, 2022 (<https://www.kmbc.com/article/energy-demand-soars-in-kansas-city-heatwave/40290416#>).

³⁶ SPP, *Southwest Power Pool keeps the lights on as region sets new record for electricity use*, July 8, 2022, (<https://www.spp.org/newsroom/press-releases/southwest-power-pool-keeps-the-lights-on-as-region-sets-new-record-for-electricity-use/>).

³⁷ See PJM, *June 14 – June 16 Operational Review*, July 14, 2022, (<https://www.pjm.com/-/media/committees-groups/committees/oc/2022/20220714/item-03---june-14-16-operations-review.ashx>); and PJM, *Emergency Procedures: Hot Weather Alerts (July 21 and 22, 2022)*, (<https://emergencyprocedures.pjm.com/ep/pages/dashboard.jsf>).

³⁸ Matt Harab, *ERCOT says power grid exceeded 80,000 MW for first time as Texas heat wave continues*, HOUSTON PUBLIC MEDIA, July 21, 2022 (<https://www.houstonpublicmedia.org/articles/news/energy-environment/2022/07/21/428816/ercot-says-grid-exceeded-limit-for-the-first-time-as-heat-wave-continues/>).

54. Section IV of Shashank Sane’s Direct Testimony provides additional detail on the Project need from the perspective of reliability and resiliency challenges presented by extreme weather.

55. More specifically, the Guidehouse Report (Schedule AP-2) and Direct Testimony by Anthony Petti demonstrate that the Amended Project will enhance reliability and resiliency for the regions served, including Missouri. As set forth in Schedule AP-2, the Amended Project will mitigate high energy prices during extreme weather events, reduce procurement obligations and enhance system restoration capabilities.

56. Russia’s recent invasion of Ukraine has prompted new concerns about national security and serves as a reminder that accelerating the pace of electrification of the U.S. vehicle fleet and renewable energy deployment can reduce the nation’s dependence on global fossil fuel markets, which can be subject to unpredictable price spikes and the influence of unsavory autocratic leaders.³⁹ Major new transmission lines such as the Certificated Project are necessary to build new renewable energy in a quantity sufficient to reduce the state and national exposure to global energy supplies and prices. The Amended Project will further this objective by significantly increasing transmission capacity regionally. The national security benefits of the Project are discussed in the Direct Testimony of Jonathon Monken and Schedule JM-2.

57. The Amended Project increases a number of quantifiable benefits to Missouri and the region, including:

³⁹ Rocky Mountain Institute, *From Deep Crisis, Profound Change*, available at <https://rmi.org/insight/from-deep-crisis-profound-change/>.

a. Lowering energy and capacity costs in Missouri by approximately six-point-one percent (6.1%) over the 2027-2066 period, resulting in over \$17.6 billion of savings for Missouri residents, on an undiscounted basis.⁴⁰

b. Reducing emissions of CO₂, SO₂, and NO_x in Missouri by 9.3%, 19.2%, and 17.2%, respectively, offering Missouri over \$7.6 billion in social benefits from 2027-66, in addition to the over \$17.6 billion in direct ratepayer savings in the energy and capacity costs over this same period—bringing the total cumulative benefit to over \$25.3 billion by 2066.⁴¹

c. Increased system reliability benefits – As provided in more detail in the Direct Testimony of Anthony Petti, had the Project been in operation during Winter Storm Uri, for example, east-to-west transmission of 2,500 MW could have saved SPP participants over \$300 million in costs. While the Certificated Project would provide some of the same benefits, increasing transmission capacity from 500 MW to 2,500 MW multiplies the benefit.⁴²

d. Given the increase in scope, jobs supported by the Amended Project will increase in Missouri to an estimated 5,747 construction jobs and 104.4 long term jobs, resulting in an earnings impact of \$586,118,331 for construction and \$8,113,077 for operations.⁴³

⁴⁰ See Direct Testimony of Mark Repsher for additional detail on economic impact of the Amended Project.

⁴¹ See *id.* for additional detail on emissions reductions and savings.

⁴² See Direct Testimony of Anthony Petti for additional reliability benefits.

⁴³ For more detail, see Direct Testimony of Dr. David Loomis.

e. Contracting opportunities for businesses located in Missouri – Grain Belt Express has entered into a Memorandum of Understanding with Hubbell Power Systems (“Hubbell”) to supply conductor hardware and insulators for the Project. Hubbell currently has a plant and distribution center in Centralia, Missouri that can be used for the Project. Should the Project be approved as amended, Grain Belt Express will necessarily provide for additional contracting opportunities for businesses in the area.⁴⁴

f. Grain Belt has also executed a Letter of Intent with Prysmian as a preferred supplier of conductor for the Project. Prysmian is the world’s largest wire and cable manufacturer with revenues worth over 13 billion dollars in 2021. Prysmian will supply roughly 23 million feet of steel core for the transmission line conductor. Prysmian will use commercially reasonable efforts source aluminum rod used in the conductor for the Project with aluminum from the Magnitude 7 aluminum smelter near New Madrid, MO.⁴⁵

g. On July 11, 2022, Invenergy Transmission coordinated with PAR/Quanta to host a supplier social event in St. Louis, MO where representatives provided a presentation on the scope, size, services and resources that will be needed to construct the Project. Attendees included suppliers who offer a variety of services across the route area and state-wide. Invitations were sent to about 50 suppliers, and about 40 individuals attended, representing 30 supplier companies. Grain Belt Express will seek to continue to maximize the use of local contractors and suppliers where practicable.⁴⁶

⁴⁴ See Direct Testimony of Aaron White for more on Project contracting.

⁴⁵ See *id.*

⁴⁶ See *id.*

VI. The Amended Project Satisfies the Commission’s Tartan Factors

58. 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 are as follows:

- 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.

59. When determining whether the project is necessary or convenient for the public service, the term “necessity” does not mean “essential” or absolutely indispensable”, but that an additional service would be an improvement justifying its cost.⁴⁷

A. The Proposed Amendments are Needed on an Economic Basis

60. The Commission previously found that the Project was needed due to the benefits that it will provide MJMEUC. The MJMEUC contract is still in place, so the Commission’s finding on that basis is still accurate. Further, as described above and detailed in the supporting testimony, there is significant need for the additional clean power supplied by the Amended Project, sufficient to expand the line capacity.

61. Need for the Amended Project is demonstrated by the executed MOUs, carbon emission reduction goals by local utilities, demand from municipalities, and demand from commercial and industrial customers. There is also evidence of demand for the Project outside of

⁴⁷ *State ex rel. Intercon Gas, Inc. v. Pub. Serv. Commission of Missouri*, 848 S.W.2d 593, 597 (Mo. Ct. App. 1993).

Missouri, as demonstrated by the vast majority of large utilities having net-zero equivalent targets or moving to comply with aggressive carbon emission reduction mandates. This evidence is discussed above in Section V.C. as well as in the Direct Testimony of Shashank Sane.

62. Moreover, as discussed in the Direct Testimony of Mark Repsher, the Amended Project is projected to lower energy and capacity costs in Missouri by approximately six-point-one percent (6.1%) over the 2027-2066 period, resulting in over \$17.6 billion of savings for Missouri residents, on an undiscounted basis. In addition, the Amended Project is projected to result in \$7.6 billion in social benefits from avoided emissions in the 2027-66 period.

B. The Proposed Amendments are Needed on a Reliability and Resiliency Basis

63. Invenenergy's consultant, Guidehouse, performed in-depth research and analysis to substantiate specific value streams that the Project might generate to benefit electric customers in regions where Grain Belt Express will add incremental electric transmission transfer capability. In its report, attached as Schedule AP-2 to the Direct Testimony of Anthony Petti. Guidehouse's analysis estimates the reliability and grid resilience values that can be generated by the Project. Guidehouse concludes that the Project will provide certain reliability values, including the potential for reduced generation procurement obligations, and a hedge against future generation retirements. Regarding resilience values, Guidehouse concludes that the Project will provide mitigation of high energy prices during extreme weather events, the value of avoided risk of load shedding, avoided High Resource Auction Prices, Transmission system restoration capability, and HVDC operational flexibility.

64. Government and industry sources, such as the North American Electric Reliability Corporation ("NERC") and the Department of Energy ("DOE") have recognized that there is a strong need to expand and strengthen the overall transmission grid, particularly to support the

movement of electricity generated by renewable resources to areas of market demand and to make the U.S. power grid more resilient to the impacts of climate change and in the face of national security threats. Recently, the DOE commented that “insufficient transmission capacity—especially transmission that facilitates transfer of power across regions—presents another critical challenge facing the grid.”⁴⁸ The DOE stated, “Upgrading and expanding the current transmission system will enhance grid reliability and resilience and enable the cost-effective integration of clean energy.”⁴⁹ The DOE noted, “Investment in transmission infrastructure can help protect the grid against supply disruptions due to physical and cyber-attacks or climate-induced extreme weather, minimize the impact of supply disruptions when they happen, and restore electricity more quickly when outages do occur.”⁵⁰ Specifically, the DOE stated, “Expanding transmission capacity also improves reliability by creating stronger and more numerous energy delivery pathways, helping to ensure that customers have a dependable source of electricity to power their homes, schools, and businesses” and will “spur[] economic growth.”⁵¹ The Amended Project furthers regional energy security.

65. Further, the Department of Defense (“DOD”), with more than 500 installations and 300,000 buildings nationwide, has a substantial dependence on private electricity infrastructure for maintaining and executing critical missions. Following Executive Order 14057, “Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability,” the DoD will use its status as the largest energy consumer in the U.S. to spur the development of at least 10 GW of clean

⁴⁸ See U.S. Dept. of Energy, *Building a Better Grid Initiative to Upgrade and Expand the Nation’s Electric Transmission Grid to Support Resilience, Reliability, and Decarbonization*, at 2 (prepub. version Jan. 11, 2022), available at https://www.energy.gov/sites/default/files/2022-01/Transmission%20NOI%20final%20for%20web_1.pdf.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

electricity production by 2030.⁵² This includes a target of procuring carbon-free power on a 24/7 basis to support national defense missions, which will require long-range, cross-regional transmission with enhanced controllability to meet the DOD’s real-time demand. The Amended Project will allow for greater supply of electricity for the national defense. The national security benefits of the Project are discussed further in the Direct Testimony of Jonathon Monken and Schedule JM-2.

66. As noted in Section V.C. of this Application, the Amended Project will also serve to strengthen Missouri’s electrical infrastructure against supply shocks caused by extreme weather and foreign conflicts.⁵³

C. Grain Belt Express is Qualified to Provide the Proposed Service

67. In the Commission’s CCN Order, the Commission found that “Grain Belt and Invenenergy together have the qualifications ... to develop, construct, and operate the Project,” citing Invenenergy’s management team’s extensive experience in developing, constructing and operating transmission and energy infrastructure projects and Invenenergy’s impressive record of development and construction of energy projects, including hundreds of miles of transmission lines, substations and transformers.⁵⁴ And in the Commission’s September 11, 2019 Report and Order approving

⁵² <https://www.defense.gov/News/Releases/Release/Article/2921646/dod-gsa-announce-rfi-to-gather-information-for-supplying-247-carbon-pollution-f/>

⁵³ See 18-22.

⁵⁴ CCN Order at 43. In the Commission’s Findings of Fact, it referenced, among other things, that Invenenergy’s senior management executives, each with more than 25 years of experience in the energy generation industry, have worked together for more than two decades; Invenenergy’s project management team has extensive experience in construction of energy generation projects, contract negotiation, material procurement, right-of-way issues, utility interconnections, and construction of electrical transmission and substations (*id.* at ¶ 57, p. 20); and that since 2001, Invenenergy has built all required transmission and distribution lines, generator step-up transformers, and substations for its facilities in numerous regions, including within the regions managed by SPP, MISO and PJM. Invenenergy developed, permitted and constructed this infrastructure across various terrains, state and local jurisdictions, and in vastly differing environmental and regulatory conditions. This experience has resulted in over 392 miles of high-voltage transmission lines, over

Invenergy's acquisition of Grain Belt Express, the Commission restated that Invenergy possessed requisite technical abilities.⁵⁵

68. Since 2019, the Invenergy family of companies have continued to expand their experience and qualifications. Invenergy Renewables, directly and through its affiliated companies, has developed over 4,000 miles of transmission and distribution lines, 88 substations, 96 generator step-up transformers and over 5,000 pad mount transformers over the past 20 years. This is in addition to developing over 191 large-scale clean power projects in the United States and globally, totaling 30 GW and representing \$47 Billion in completed transactions.

69. Grain Belt Express and Invenergy Transmission have designed an effective construction management organization ("CMO") for the Amended Project. Grain Belt Express and Invenergy Transmission have hired and will continue to hire employees to staff the CMO with qualified personnel. Grain Belt Express is engaging experienced contractors to carry out the engineering, procurement, construction, equipment design, routing and land acquisition tasks required to construct the Amended Project and place it into operation. Grain Belt Express has entered or will enter into contracts with its contractors that will provide for effective project controls and oversight mechanisms from the project owner's perspective. Further, members of Invenergy Transmission's management team have experience in developing construction management organizations and overseeing the construction and completion of large projects in the electric utility industry, including wind generation facilities and transmission lines.⁵⁶

1,748 miles of distribution lines, 59 substations, and 73 generator step-up transformers (*id.* at ¶ 58, p. 21).

⁵⁵ Docket No. EM-2019-0150, Report & Order, ¶ 7. The Commission again referenced the findings listed above in fn. 58. *Compare id.* at ¶¶ 11-17 with CCN Order at ¶¶ 56-63, pp. 20-22.

⁵⁶ This experience is described in the Direct Testimony of Aaron White.

70. Grain Belt Express has already engaged the following experienced firms to perform tasks in connection with the development and construction of the Amended Project: (i) WSP to assist in route development for the Tiger Connector portion of the Amended Project; (ii) Contract Land Staff, LLC, to assist in easement and right-of-way acquisition; (iii) PAR Electric/Quanta Services to assist in construction-related development consulting activities for the Amended Project; (iv) POWER Engineers, Inc. to provide transmission line engineering support and to serve as the Owner's Engineer for the Amended Project, providing additional project management expertise and oversight services on the owner's behalf; and (v) Hatch Associates Consultants Inc. to assist in developing models of the HVDC converter stations and to assist in impact studies relating to the converter stations.

71. Grain Belt Express will have a dedicated operations organization to oversee the operations and maintenance activities associated with the Amended Project. This organization will utilize in-house personnel to plan, manage and schedule the required maintenance on the HVDC and transmission facilities. The Amended Project will also contract with a firm or firms experienced in maintaining transmission facilities to provide operational and maintenance services for the Amended Project when it is in service. These firms will be required to have sufficient maintenance resources in place along the route of the Amended Project in Kansas, Missouri, Illinois and Indiana to ensure timely responses to any operational or service issues. Further, in connection with its current grant of authority by FERC to negotiate rates for transmission service, Grain Belt Express has committed to turn over functional control of the Amended Project to an RTO (which will be SPP, MISO or PJM), which will operate the transmission line pursuant to a

FERC-approved non-discriminatory rate schedule filed under the RTO's Open Access Transmission Tariff ("OATT").⁵⁷

72. In designing, constructing and operating the Amended Project, Grain Belt Express will comply with: (1) the National Electrical Safety Code and the Commission's regulations at 20 CSR 4240-18.010; (2) other applicable codes and standards; and (3) applicable NERC reliability standards.

73. As discussed in the Direct Testimony of Kevin Chandler, Grain Belt Express will also take appropriate steps to avoid or mitigate adverse impacts to landowner properties and, upon completion of construction activities, repair and restore any land that was disturbed during the construction process, including remediation of soil compaction and repair or replacement of drainage tiles.

D. Grain Belt Express has the Financial Ability to Provide the Service

74. In the Commission's CCN Order, the Commission found that "Grain Belt and Invenergy together have ... the financial ability to develop, construct, and operate the Project," concluding that "Invenergy's financial condition is very strong."⁵⁸ And in the Commission's September 11, 2019 Report and Order in Docket No. EM-2019-0150, the Commission restated that Invenergy possessed requisite financial abilities.⁵⁹

⁵⁷ *Grain Belt Express Clean Line LLC*, 147 FERC ¶ 61,098, at PP 3, 13, 28, 31 and 32 (2014).

⁵⁸ *Id.* at p. 43. In the Commission's Findings of Fact, it referenced, among other things, that: Invenergy has raised more than \$30 billion of financing in connection with the successful development of more than 20,046 MW in projects in the United States, Canada, Europe, Central America, and Japan (*id.* at ¶ 60, p. 21); and that Invenergy and its affiliates have in excess of \$9 billion in total assets and \$3 billion in total equity on a consolidated basis (as of December 31, 2017) (*id.* at ¶ 59, p. 21).

⁵⁹ Docket No. EM-2019-0150, ¶ 7. The Commission again referenced the findings listed above in fn. 58. *Compare id.* at ¶¶ 11-17 with Report & Order on Remand, EA-2016-0358 (March 20, 2019) at ¶¶ 56-63, pp. 20-22.

75. Grain Belt Express continues to have access to the necessary financial resources to carry out the necessary development work for the Amended Project prior to engaging in project-specific financings for the construction of the Amended Project. Invenergy Renewables has sufficient capital resources to provide the funding necessary to enable Invenergy Transmission and its subsidiaries to undertake the initial development and permitting work for the Amended Project.

76. Once the Amended Project reaches an advanced stage of development and licensing, Grain Belt Express can enter into project-specific financing arrangements with investors and lenders to secure the capital needed to complete development and construction of the projects and place them into operation. As discussed above, Invenergy Renewables has developed over 191 large-scale clean power projects in the United States and globally, totaling 30 GW and representing \$47 Billion in completed transactions. As a result of this track record and the relationships established through the experience of Invenergy Renewables, Grain Belt Express will have access to significant amounts of expertise and capital.

77. The projected cost to construct the Amended Project and place it into operation is approximately \$4.95 billion. This figure encompasses the entire Amended Project cost including the Kansas, Missouri, Illinois and Indiana segments, but not including any estimated network upgrade costs for RTO interconnections for which Grain Belt Express will be responsible. The projected cost to construct Phase I of the Amended Project and place it in operation is approximately \$3.52 billion, including the costs of the Tiger Connector. The projected cost to construct Phase II of the Amended Project and place it in operation is approximately \$1.43 billion dollars. A portion of the Kansas converter station may be built out with Phase II in which case the proportional amount would change.

78. As discussed in the Direct Testimony of Rolanda Shine, Grain Belt Express has a viable plan for raising the capital necessary to finance the cost of constructing the Project on a project financing basis. Specifically, after advancing development and permitting activities to a status at which developers of wind and solar generation facilities and other potential customers of the transmission line are willing to enter into commercial agreements for an undivided interest (purchase or lease) or long-term contracts for transmission capacity on the Amended Project, Grain Belt Express will enter such contracts with interested parties that satisfy necessary creditworthiness requirements. Grain Belt Express will then raise debt capital using the aforementioned contracts as security for the debt. Grain Belt Express may also raise additional equity capital.

79. Recent experience shows that significant amounts of liquidity exist in the capital markets for transmission projects that have reached an advanced stage of development. The capital markets have a substantial history of supporting transmission projects, including merchant projects, and other infrastructure projects, through both debt financings (on a project finance basis, such as planned by Invenergy Transmission) and equity investments. Numerous institutional lenders and investors have provided capital to transmission projects and other infrastructure projects and demonstrate continued interest in this sector. Invenergy Transmission has developed relationships with many of the major lenders and investors that have been involved in financing transmission projects, which will directly benefit Grain Belt Express.

E. Grain Belt Express' Proposed Amended Project is Economically Feasible

80. As discussed in the Direct Testimony of Mark Repsher, PA Consulting conducted a forward-looking long-term analysis that assessed (i) the wholesale (energy and capacity) market impacts of the Amended Project; and (ii) how the Amended Project would enable emissions

reductions within the State as compared to the Certificated Project. PA Consulting summarized its analysis in a Report titled “Missouri Interstate Transmission Need: The Public Benefit of Grain Belt Express” (referred to herein as the “PA Report”). The PA Report refers to the Certificated Project as the “Status Quo Case” and the Amended Project as the “Expanded GBX Case.”

81. PA Consulting found that the Amended Project offers the following advantages.
 - a. Comparatively stronger dedicated clean solar and wind resources in western Kansas (as compared to relatively lower quality renewable resources in eastern service territories) are transmitted directly via efficient, controllable HVDC technology to eastern service territories, thereby lowering energy costs in MISO and SPP states, including Missouri.
 - b. Dedicated solar and wind resources transmitted by the Amended Project displace more emissions-intensive generation in the Eastern Interconnection, including Missouri, helping local utilities and customers achieve their decarbonization goals.
 - c. The Amended Project increases the geographic diversity of renewable resources feeding the Eastern Interconnection via an HVDC line that can be controlled by MISO and SPP system operators, increasing the reliability and resiliency of a grid becoming more intermittent as it quickly decarbonizes.
82. Specifically, PA Consulting’s analysis finds that the Amended Project will:
 - a. Collectively lower energy and capacity costs in Missouri by approximately 6.1% (over \$17.6 billion, on an undiscounted basis) over the 2027-66 period;
 - b. Reduce 2027-66 emissions of CO₂, SO₂, and NO_x in Missouri by 9.3%, 19.2%, and 17.2%, respectively, enhancing local utilities’ abilities to meet their climate and reliability goals while also delivering local air quality and health benefits; and

- c. Offer Missouri over \$7.6 billion in social benefits from avoided emissions in the 2027-66 period, in addition to the over \$17.6 billion in savings in the energy and capacity markets over this same period – bringing the total cumulative benefit to over \$25.3 billion by 2066.

83. With respect to ratepayer benefits stemming from the Amended Project, PA Consulting notes that it is projected to lower wholesale energy pricing for Missouri customers in two ways. First, low-cost, high-capacity factor renewable generation is projected to put downward pressure on power pricing within the MISO and SPP wholesale power markets, particularly during the evening peak when the capacity factor of dedicated renewable resources transmitted via the Amended Project is significantly stronger than a typical Midwestern (including Missouri) solar or wind profile. Second, incremental reliability-weighted capacity via the Amended Project will tend to increase available supply in the MISO power market, putting downward pressure on capacity prices in several years, all else equal. Together, these impacts reduce costs to ratepayers across the State of Missouri.

84. Although the revised projected cost of the entire Amended Project (\$4.95 billion) is higher than the 2016 projected cost (\$2.35 billion), the Amended Project remains economically feasible because the cost of alternative resources has also significantly increased, while the demand for renewable energy continues to grow. Accordingly, even with the higher projected cost, the energy and capacity offered by Grain Belt Express is more economically attractive than the alternatives. This is discussed further in Mr. Sane's Direct Testimony.

85. Finally, it is critical to note that there is no change in Invenenergy Transmission and Grain Belt Express bearing the financial risk of the Project and the cost of the Project will continue

to be recovered through a merchant business model and not through SPP or MISO regional transmission cost allocation.

86. Section I of CCN Order Attachment 1 prohibits Grain Belt Express from installing transmission facilities on easement property in Missouri until it has obtained commitments for funds in an amount equal to or greater than the total cost to build the entirety of the multi-state transmission project. As part of this Application, Grain Belt Express is seeking to modify that condition to permit the construction of Phase I prior to Phase II, but Grain Belt Express will still be required to have full financing in place for the respective phase of the Project before construction begins on that phase.⁶⁰ Accordingly, Grain Belt Express will continue to bear all financial risk of the Amended Project.

F. The Service Offered by the Amended Project will Promote the Public Interest

87. With regard to the public interest of the Project, the Commission found the following in File No. EA-2016-0358:

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 Grain Belt Express Project will facilitate this movement in Missouri, will thereby benefit Missouri citizens, and is, therefore, in the public interest.⁶¹

88. As Mr. Sane testifies in his Direct Testimony, this statement is still accurate, and more so. As discussed above under Section V.C., the purpose of and types of benefits provided by the Amended Project are the same as the Certificated Project. The Amended Project increases

⁶⁰ See *infra*, Section VII.

⁶¹ CCN Order, p. 47.

the magnitude and number of the benefits. Accordingly, the Amended Project will continue to promote the public interest.

VII. Request for Limited Modification of Conditions

89. Grain Belt Express requests modification of the financing conditions, which appear in Section I of the CCN Order Attachment 1. Modification is necessary to allow for phasing of the Amended Project which, as discussed above, is in the public interest. The specific amendments to the financing condition are discussed in the Direct Testimony of Kevin Chandler.

90. Grain Belt Express also requests modification of the “easement expiration” condition at Ordering Paragraph 5 on page 51 of the CCN Order. Modification is appropriate to bring the condition imposed on Grain Belt Express in line with House Bill 2005. House Bill 2005 added a new Section 523.025 to Missouri’s Condemnation Proceedings Act, which was inspired by the “easement expiration” condition established in the CCN Order. However, House Bill 2005 provides public utility companies that acquire any involuntary easement by means of eminent domain *seven* years to obtain financial commitments necessary to construct the project, rather than the *five* years provided to Grain Belt Express in the CCN Order. For fairness and consistency, and in deference to the General Assembly, the Commission should modify the condition at Ordering Paragraph 5 to replace “five years” with “seven years.”

91. Finally, Grain Belt Express requests limited modifications to the Missouri Landowner Protocols to permit a landowner compensation package for Tiger Connector landowners that is responsive to stakeholder feedback. Specifically, Grain Belt Express plans to offer a payment equal to 150% of the fair market fee value of the easement area for voluntary easements for Tiger Connector landowners. The compensation package and the requested

modifications to the Landowner Protocol are discussed in more detail in Mr. Chandler's Direct Testimony.

VIII. Miscellaneous Filing Requirements

92. In addition to the general information stated above, this Application and the associated testimony satisfies the filing requirements of 20 CSR 4240-2.060(1) and 20 CSR 4240-20.045(6) as follows:

93. Grain Belt Express' Certificate of Good Standing from the Missouri Secretary of State is attached hereto as **Appendix A**.

94. Grain Belt Express has no pending actions or final unsatisfied judgments or decisions against it from any state or federal court or agency within the past three (3) years that involve customer service or rates and has no overdue or unpaid annual reports or assessment fees.

95. The description of the proposed route and site of construction for the Tiger Connector is provided in the Direct Testimony of Andrew Burke and Schedule AB-2, which contains the Route Selection Study. Additionally, the public engagement, coordination with local, state and federal agencies, and the environmental and cultural impacts of the Project are discussed in the Direct Testimony and Schedules of Kevin Chandler and Jen Stelzleni. Real estate requirements and the easement acquisition process is discussed in the Direct Testimony of Kevin Chandler. A legal description of the proposed route for the Tiger Connector is included as Schedule AB-3, attached to Andrew Burke's testimony.

96. A list of all electric, gas, and telephone conduit, wires, cables, and lines of regulated and nonregulated utilities, railroad tracks, and each underground facility, as defined in Section 319.015, RSMo., which the proposed Tiger Connector will cross, is provided as Schedule AB-4 to Andrew Burke's Direct Testimony.

97. A description of the plans, specifications, and estimated costs for the complete scope of the Project is set forth in the Direct Testimony of Aaron White. Mr. White also describes the Project schedule, including the projected beginning of construction date and the anticipated fully operational and used for service date of the Amended Project.

98. Description of the operational features of the HVDC portion of the Amended Project are provided in the Direct Testimonies of Carlos Rodriguez and Mr. White. A description of the operational features of the Tiger Connector are provided in the direct testimony of Mr. White.

99. No common plant will be included in the Amended Project.

100. Plans for financing the Amended Project are discussed in the direct testimony of Rolanda Shine.

101. Grain Belt Express is not subject to 20 CSR 4240-22, as it is not an electric utility which sold more than one (1) million megawatt-hours to Missouri retail electric customers in calendar year 2009. Accordingly, the requirement to describe how the Amended Project relates to the utility's adopted preferred plan is not applicable.

102. An overview of Grain Belt Express' plan for the Amended Project regarding competitive bidding for the design, engineering, procurement, construction management, and construction of the Project was provided in the direct testimony of Aaron White. Aaron White also provides an overview of plans for operating and maintaining the Amended Project and for restoration of safe and adequate service after significant, unplanned/forced outages of the Project.

103. An affidavit addressing the verification required by 20 CSR 4240-2.060(1)(M) is provided as **Appendix B** hereto. An affidavit confirming compliance with the notice requirements

of 20 CSR 4240-20.045(6)(K), as related to the Tiger Connector, is attached to Kevin Chandler's Direct Testimony as Schedule KC-3.⁶²

IX. Other Matters

104. To be clear, Grain Belt Express affirms that it continues to actively develop the Certificated Project under the existing CCN and has not abandoned or otherwise relinquished its existing CCN by filing this Application to Amend or by any other means. Because “[t]he Commission has no authority to terminate a CCN,”⁶³ the existing CCN remains in full effect during the pendency of the Commission's review of this Application.

105. This Application is filed as an amendment to the existing CCN because, as discussed throughout this Application and the supporting testimony, the general purpose of the Project is not changing. Additionally, there are no material modifications to the route, right-of-way, or facility design of the currently certificated HVDC portion of the Project in Missouri. If Grain Belt Express were to file for a new CCN, the Commission and Grain Belt Express would likely be required to reexamine the entire HVDC portion of the Project under 20 CSR 4240-20.045(6)—including a new routing study, public hearings, and facility design. Such approach would be extremely inefficient and would create significant and harmful uncertainty for the Project and the landowners to revisit that portion of the Project when there are no material changes.

106. Further, the original CCN contemplated AC interconnection facilities, so the Tiger Connector is not a “new” project, but rather, a modified portion of the existing Project. It cannot be considered in isolation from the existing Project or from the request to change the size and

⁶² Grain Belt Express is filing confidential and public versions of Schedule KC-3. The confidential version contains names and addresses of landowners and is confidential pursuant to 20 CSR 4240-2.135(2)(A)(1).

⁶³ File No. EC-2021-0059, Report and Order, p. 14 (August 4, 2021).

location of the converter station, because it is inextricably linked to the existing unchanged route. Accordingly, filing an Application to Amend, with the Tiger Connector included, allows the Commission and stakeholders to consider the Project as a whole.

107. Finally, the filing of an amended or updated application was specifically required by the language used by the Commission in the CCN Order: “Grain Belt and Invenergy agreed that if there are any material changes in the design and engineering of the Project from what is contained in the application, Grain Belt will file an updated application subject to further review and determination by the Commission.” (Emphasis supplied.)

108. On July 12, 2022, Grain Belt Express filed a Notice of Intended Amendment Filing pursuant to 20 CSR 4240-4.017(1), which requires that “any person that intends to file a case shall file notice with the secretary of the commission a minimum of sixty (60) days prior to filing such case.” In its July 12, 2022 pleading, Grain Belt Express noted that because the application to amend will be filed in an existing case, the notice requirement appears to be inapplicable, and in the alternative, requested a waiver of the 60-day notice requirement.

109. On July 13, 2022, the Commission issued a Notice Regarding Filing, noting that it removed the notice of intent to file from File No. EA-2016-0358 and placed it in a new file, the instant case. The Commission also directed Grain Belt Express to file its amendment application in the new case. The Commission further noted that Grain Belt Express’ request for waiver of the 60-day notice requirement was premature, and that Grain Belt Express may renew its request for waiver when it files its application. Accordingly, Grain Belt Express will renew its request for waiver of the 60-day notice requirement, if applicable, in a pleading filed simultaneously herewith.

110. Grain Belt Express is not seeking expedited treatment of this Application, but for the purposes of planning, requests an order from the Commission by May 31, 2023, which is in line with a typical timeline for processing a CCN application. The importance of receiving an order from the Commission by May 31, 2023 is discussed in the Direct Testimony of Mr. Sane.

X. Conclusion

WHEREFORE, Grain Belt Express respectfully requests the Commission: (a) take administrative notice of the record in File No. EA-2016-0358; (b) grant its request to amend the CCN as described in this Application and the supporting testimony; (c) approve the limited modifications to existing conditions on Grain Belt Express' CCN as described in this Application and the supporting testimony; and (d) take such other action as it determines the law requires in order to approval all aspect of the Amended Project.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document was served upon the parties listed on the official service list by email, this 24th day of August, 2022.

/s/ Andrew O. Schulte

Attorney for Grain Belt Express