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Staff – Exhibit 109
Revised Staff Report
File No. EA-2023-0017

MISSOURI PUBLIC SERVICE COMMISSION

Revised STAFF REPORT



CASE NO. EA-2023-0017

**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 MAINTAIN A HIGH VOLTAGE, DIRECT CURRENT
TRANSMISSION LINE AND ASSOCIATED CONVERTER STATION**

APRIL 19, 2023

BACKGROUND

On March 20, 2019 in Case No. EA-2016-0358, the Commission issued its Report and Order on Remand approving Grain Belt Express Clean Line LLC's application for a certificate of convenience and necessity ("CCN") with conditions. On September 11, 2019 in Case Number EM-2019-0150, the Commission approved the acquisition of Grain Belt Express Clean Line LLC by Invenergy Transmission LLC ("Invenergy"), subject to the same conditions placed upon Grain Belt Express Clean Line LLC in the Report and Order on Remand in File No. EA-2016-0358.

Paragraph 6 on Page 52 of the Commission's Report and Order on Remand in Case No. EA-2016-0358 states:

If the design and engineering of the project is materially different from how the Project is presented in Grain Belt Express Clean Line LLC's Application, Grain Belt Express Clean Line LLC must file an updated application with the Commission for further Commission review and determination.

On August 24, 2022 in this docket, Case No. EA-2023-0017, Grain Belt Express, LLC ("Grain Belt Express" or "GBE") submitted an application with the Commission on August 24, 2022 seeking to amend its existing CCN and conditions.

STAFF'S ANALYSIS

As the Commission is well aware, Staff opposed the granting of a CCN in EA-2016-0358 due to, in part, the concerns of the need for the project and the economic feasibility of the proposed project. Those concerns have not changed.

In this case, Staff has viewed the Tartan criteria of "need" and "economic feasibility" as linked: in order for a company to be successful, it must offer a good or service that is desired at a given price point that also provides a reasonable return above its cost of manufacture. In EA-2016-0358, Staff expressed concern that the contract given to MJMEUC (Missouri Joint Municipal Electric Utility Commission, now known as the Missouri Electric Commission ("MEC")), which the Commission used to establish "need" for the project, was not priced in a way to allow a reasonable rate of return. In fact, GBE Witness David A. Berry admitted that the first-mover rate offered to MJMEUC was a "sweetheart deal" that was not sufficient for GBE to recover

its investment, but that GBE was relying on the additional sales in the PJM market to make up the losses for sales in Missouri.¹ However, the Commission reasoned that since “[t]he Project’s development, construction, and operations costs would be borne by the investors in Grain Belt and the transmission customers,”² a line that was not feasible would not be constructed.

More than two years have passed since the Commission’s Report and Order on Remand in Case No. EA-2016-0358, and though Invenergy claims that it has exercised the authority granted under EA-2016-0358,³ the Regional Transmission Organization (“RTO”) final studies remain incomplete. GBE withdrew from the original studies, as noted in Staff’s Revised Supplemental Rebuttal report,⁴ and in many ways, the subsequent filings have made it less clear as to what the final project will be. As discussed by Staff Witness Shawn Lange, Invenergy has a total of four (4) interconnection requests currently with the Midcontinent Independent System Operator (“MISO”), two under the Merchant HVDC Transmission Connection Procedures, and two under the Generation Interconnection Procedures. Invenergy can sign an interconnection agreement based on any one or combination of these studies, perhaps even none.⁵ Until Grain Belt specifies its project in an interconnection agreement, Staff cannot tell the Commission how much generation will be interconnected with Missouri nor is it clear which party would be responsible for the costs of injecting various amounts of energy at the interconnection point(s).

Invenergy’s main case is that the Commission has already approved this HVDC project and that the changes are a modification that do not require relitigating that portion of the project, or “to revisit its findings regarding the route, right-of-way, or facility design of the HVDC portion of the Certificated Project.”⁶ However, Invenergy has taken actions that contradict findings by the Commission that should be noted. For example, in paragraph II.A.9. of the Commission’s Report and Order on Remand, the Commission stated, “The Missouri converter station will have bi-directional functionality, allowing Missouri utilities an additional means to earn revenue from off-system sales of up to 500 MW of excess power into the PJM energy markets.” However, the Midcontinent Independent System Operator (“MISO”), on September 7, 2022 in response to a

¹ Transcript, Case No. EA-2016-0358, Volume XIV, 3/22/2017, p. 944 l. 2 – p. 945 l. 12.

² Case No. EA-2016-0358, Report and Order on Remand, p. 10 para 11.

³ Response to Staff Data Request 0001.

⁴ Case No. EA-2016-0358, Staff’s Revised Supplemental Rebuttal Report, p. 10, ln. 22-25 .

⁵ Invenergy may be able to interconnect with AECI without any interconnection to MISO.

⁶ Grain Belt Express “Application to Amend CCN,” paragraph 17.

Grain Belt Express complaint before the Federal Energy Regulatory Commission (“FERC”), stated:

Based on the applications Invenergy submitted to date, the TCA will be for unidirectional flow. Specifically, Invenergy did not seek the ability to withdraw power from the MISO system in any of its MHVDC Connection Requests (i.e., H104, H105 and H107). If Invenergy seeks to have bidirectional flow on its proposed MHVDC Transmission Line, it would need to submit a new application as that would be a “substantial modification to the operating characteristics on an existing MHVDC Transmission Line.”⁷

In paragraph II.E.114, of the Commission’s Report and Order on Remand, the Commission found, “Out of the 206 miles that the Project will traverse in Missouri, no more than nine acres of land would be taken out of agricultural production as a result of the structures installed for the Project in cultivated lands.” These estimates were based on a combination of different pole designs, which included steel monopoles. However, in response to Staff Data request 0047, Invenergy stated that all poles on the HVDC line are now intended to be steel lattice structures. Staff is unaware of the final impact on acreage, and while the final amount may be considered small, it is different than what Grain Belt Express touted and what the Commission found in Case No. EA-2016-0358. Additionally, in this case, Invenergy states that the proposed Tiger Express line will be constructed with steel monopole structures. As a final example, much of the Commission’s analysis was predicated on the cost of the project not being “recovered from Missouri ratepayers through either SPP or MISO regional cost allocation tariffs.”⁸ However, Invenergy has repeatedly petitioned FERC to require RTOs to pay for the presumed benefits of this and other merchant HVDC projects, which could result in Missouri ratepayers paying for the project regardless of use by Missouri utilities.⁹

In this case, Invenergy has also added claims that are not part of the proposed project. For instance, Mr. Repsher assumes a blend of generation that is not part of this proposed project and that does not currently exist.¹⁰ As part of this assumption, Invenergy has assumed capacity factors that are much higher than what the RTOs allow for accreditation.¹¹ Staff is concerned that

⁷ Answer of the Midcontinent Independent System Operator, Inc. under EL22-83., p.12, [eLibrary | File List \(ferc.gov\)](#) (12SEP22).

⁸ Report and Order on Remand, p. 44. See also para. 11 on p. 10 and para. 72 on page 24.

⁹ FERC Docket Nos. AD22-13, ER22-477, and recovery may be implied EL22-83.

¹⁰ Rebuttal Testimony of Michael Stahlman.

¹¹ Rebuttal Testimony of Michael Stahlman.

much of Invenergy’s evidence “depend[s] on puffery, evolving understandings of the project itself, and the constant changes in supply, demand, and pricing of electricity in the market and for that potential supplier or customer.”¹² This, and the reasons discussed above, are why Staff has not been able to assess the project’s economic feasibility and continues to insist on reviewing completed RTO Interconnection Agreements and any associated studies, and to review Invenergy’s plan to address any new issues that arise from them.¹³

SUMMARY OF INVENERGY’S CASE AND STAFF’S RESPONSE

In this section, Staff identifies what it understands to be Invenergy’s case-in-chief for the amended project and to identify Staff’s witness that respond to the claims. Staff would request that, if any material changes in the case become known, Staff reserves the right to evaluate the new information and modify its recommendation accordingly.¹⁴

Need

Invenergy refers to the Commission’s Report and Order on Remand in Case No. EA-2016-0358 that the “Need” criteria was met by the contract with MJMEUC.¹⁵ Invenergy maintains that that contract is still in place, thus the “Need” criteria remains met.¹⁶ In this case, Invenergy also identifies other factors that support a “Need” finding, including: executed Memorandums of Understanding (“MOUs”),¹⁷ lower energy and capacity costs,¹⁸ reliability and resiliency challenges due to extreme weather and foreign conflicts,¹⁹ and to reduce the state and national exposure to global energy supplies and prices.²⁰ Invenergy also mentions Ameren’s IRP as evidence for the need of this project.²¹

¹² Invenergy’s Response to Motion for Discovery Conference, filed on January 17, 2023 in Case No. EA-2023-0017, para. 17. This is Invenergy’s description concerning negotiations between a separate party and Invenergy over the MOUs which Invenergy relied on in its application.

¹³ Staff’s Initial Brief after remand in Case No. EA-2016-0358, p. 28, citing Staff’s Revised Rebuttal Report-C, pp. 10-11, esp. 11.

¹⁴ As an example, Staff is aware of a power flow model performed by Invenergy in FERC docket EL22-83, but currently does not have access to this information.

¹⁵ Grain Belt Express “Application to Amend CCN”, paragraph 37.

¹⁶ Grain Belt Express “Application to Amend CCN”, paragraph 38.

¹⁷ Grain Belt Express “Application to Amend CCN”, paragraph 61.

¹⁸ Grain Belt Express “Application to Amend CCN”, paragraph 62.

¹⁹ Grain Belt Express “Application to Amend CCN”, paragraphs 54, 55, 63 and 66.

²⁰ Grain Belt Express “Application to Amend CCN”, paragraph 56.

²¹ Direct Testimony of Shashank Sane, p. 32, ll. 8-9.

Staff Witnesses Claire Eubanks, Michael Rush, Shawn Lange, Michael Stahlman, and Krishna Poudel reviewed Invenergy's claims on fulfilling the "Need" criteria. Specifically, Claire Eubanks reviews the reliability and resiliency claims, Michael Rush discusses national security claims, Shawn Lange discusses the MOUs and MJMEUC contract, and Michael Stahlman also discusses the MJMEUC contract and claims of lower energy and capacity costs. Generally, Staff is concerned that the relocation of the converter station could void the MJMEUC contract as that contract specifies a point of interconnection near the original converter station location. In response to Staff Data Request 0032, Invenergy confirmed that the terms and conditions of the MJMEUC contract have not been altered since the Commission's Report and Order on Remand in Case No. EA-2016-0358. As further discussed by Staff witness Shawn Lange, Staff is also concerned that the MOUs appear to have expired though, based on the advice of counsel, the MOUs required no further action on the part of any party. Finally, Staff witness Krishna Poudel discusses Ameren Missouri's and Evergy's IRPs and finds that neither utility includes this project in its preferred resource plan.

Qualified to Provide Service

Invenergy refers to the Commission's Report and Order on Remand in Case No. EA-2016-0358 that states that Invenergy is qualified to provide the service and that this qualification continues.²² Staff Witness Jordan T. Hull discusses this criteria and concludes that Invenergy is qualified to construct and install this project and Grain Belt Express LLC, with the help of Invenergy, is qualified to own, operate, maintain, and otherwise control and manage the project.

Financial Ability

Invenergy states that it "has a viable plan for raising the capital necessary to finance the cost of constructing the Project on a project financing basis."²³ Staff Witness Dr. Seoung Joun Won discusses this criteria and agrees that Invenergy has the financial ability to construct, operate, and maintain the Amended Project. Dr. Won also provides several conditions should the Commission approve the phasing of the Amended project.

²² Grain Belt Express "Application to Amend CCN", paragraphs 67 through 73.

²³ Grain Belt Express "Application to Amend CCN", paragraph 62.

Economic Feasibility

Invenergy states that it is economically feasible because it bears 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.²⁴ Invenergy also states that it is economically feasible because, even with the higher projected cost, the energy and capacity offered by Grain Belt Express is more economically attractive than the alternatives.²⁵ Finally, Invenergy cites that the benefits provided by the project being greater than the expense of the proposed project as evidence of feasibility.²⁶

Staff Witness Michael Stahlman reviewed this criterion and maintains, based upon the evidence provided by Invenergy, that it is not clear that this project is economically feasible. However, because the Commission found that the project was feasible in the prior case, Staff recommends that the Commission continue the conditions set forth in its Order on Remand, with clarification of the term “material change”,²⁷ and does not oppose the specific modification of the converter station’s location and size.

Public Interest

Invenergy cites the Commission’s Report and Order on Remand in Case No. EA-2016-0358 and states that not only do those findings still apply, but that the amendments and modifications to the proposed project further support a finding that the project is in the public interest.²⁸ Invenergy highlights lower energy and capacity costs, reduced emissions of CO₂, SO₂, and NO_x in Missouri, increased system reliability benefits, jobs, and economic development.²⁹ Much of this is tied to Invenergy’s claim that the project brings more energy,³⁰ fulfills additional demand,³¹ increases transmission ties,³² and interconnects Regional Transmission Organizations (“RTOs”).³³

²⁴ Grain Belt Express “Application to Amend CCN”, paragraph 85.

²⁵ Grain Belt Express “Application to Amend CCN”, paragraph 84.

²⁶ Direct Testimony of Mark Repsher, p. 18 ll. 2 – 4.

²⁷ There was dispute of this term in Case No. EC-2021-0059. Staff witness Stahlman provides example language that could clarify what would constitute a material change.

²⁸ Grain Belt Express “Application to Amend CCN”, paragraph 39.

²⁹ Grain Belt Express “Application to Amend CCN”, paragraph 57.

³⁰ Grain Belt Express “Application to Amend CCN”, paragraph 40.

³¹ Grain Belt Express “Application to Amend CCN”, paragraph 48.

³² Grain Belt Express “Application to Amend CCN”, paragraph 51.

³³ Grain Belt Express “Application to Amend CCN”, paragraph 52.

Staff witness Michael Stahlman discusses Invenergy's claims of lower energy and capacity costs, reduced emissions of CO₂, SO₂, and NO_x in Missouri as mentioned above. He also recommends the Commission ignore the economic development claims, including jobs creation. Also, as discussed in the "need" section, Staff witness Claire Eubanks discusses the reliability benefits claimed in Invenergy's Direct Testimony, and Staff Witness Michael Rush discusses the national security benefits. Although not specific to the claims of Invenergy, Staff Witnesses Cedric Cunigan addresses the route selection of the Tiger Express line and identifies conditions. Staff witness Claire Eubanks also discusses House Bill 2005 and its relation to public interest as well as responding to conditions proposed by Invenergy witness Kevin Chandler.

STAFF RECOMMENDATION

Staff continues to have concern that this project does not have a clearly identified need. Concerning economic feasibility, Staff reiterates the recommendation it held in Staff's Revised Rebuttal Report:

Overall, Staff's position has not changed: since Grain Belt has not completed the RTO studies, the costs to integrate Grain Belt's converter station are unknown, therefore there continues to be insufficient information to conclude that the Project is economically feasible. However, Grain Belt has committed to providing Staff with completed RTO Interconnection Agreements and any associated studies and to provide its plan to address any new issues that arise from them.³⁴

However, because the Commission approved Invenergy's application in EA-2016-0358, Staff does not oppose some of the modifications requested by Invenergy with certain conditions.

Staff witness Cedric Cunigan recommends that the Commission order the Company to provide documentation that all relevant permits have been received prior to approval or, in lieu of that, the Commission should condition any approval on all relevant permits being approved and submitted prior to beginning construction of the Tiger Connector.

Staff witness Claire Eubanks recommends the Commission include a new condition to require GBE to provide notice to Staff that the project has been designated as a system restoration resource if that designation occurs in the future.

Staff witness Michael Stahlman recommends adding further clarification on what constitutes a material change to specifically include:

³⁴Staff's Initial Brief after remand p. 28, citing Staff's Revised Rebuttal Report-C, pp. 10-11, esp. 11.

- Changing the converter station location of point(s) of interconnection;
- A modification of 100 MW in converter design size;
- A change in estimated cost of half a billion dollars or more;
- A change of 100 MW of obtaining the injection rights of the full 1,500 MW into MISO and 1,000 MW into AECI; or
- A Change in 100 MW of obtaining the rights to withdraw from MISO a currently proposed 0 MW

With these conditions, Staff does not oppose Invenenergy's request to:

- Relocate the Missouri converter station from Ralls County to Monroe County and increase the capacity of the Missouri converter station from 500 MW to 2500 MW; and
- Relocate the AC connector line from Ralls County to Monroe, Audrain, and Callaway Counties.

Staff recommends the Commission reject Invenenergy's request to:

- Construct the Project in two phases, allowing Missouri to realize the benefits of the Project earlier than it otherwise would.

As part of this recommendation, Staff recommends that the Commission reject Invenenergy's request to modify the financing conditions, which appear in Section I of the CCN Order Attachment 1.

Staff witness Claire Eubanks notes that the project has recently received approval in Illinois. Staff witness Seoung Joun Won agrees that Invenenergy is financially capable to construct the whole project. Staff witness Michael Stahlman highlights where the Commission previously found that economic feasibility of the project is dependent on the project's ability to sell to PJM as the revenues from the Missouri converter station, based on the MJMEUC contract, were insufficient to cover the project's costs. With this in mind, Mr. Stahlman further expresses concerns about the project's increasing cost, reducing sales in PJM, and that the terms of the MJMEUC contract, which the Commission used to determine need in EA-2016-0358, remain unaltered to reflect the changes in the proposed project. Finally, Mr. Stahlman expresses concerns about how construction of the project in two phases can create uncertainty about the status of easements, especially if the second phase is delayed or never constructed. Therefore Staff recommends that the Commission reject the request to construct the proposed project in two phases and the request to modify the financing condition.

However, should the Commission approve Invenergy's request to construct the project in two phases, Staff recommends modifying the financing condition as set forth in the Rebuttal Testimony of Dr. Seoung Joun Won:

GBE will not install transmission facilities associated with Phase I of the Project 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 Phase I of the Project. Further, GBE will not install transmission facilities associated with Phase II of the Project 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 Phase II of the Project. To allow the Commission to verify compliance with this condition, GBE shall file the following documents with the Commission at such a time as GBE is prepared to begin to construct electric transmission facilities in Missouri associated with Phase I and Phase II, respectively:

- (a) On a confidential basis, equity and loan or other debt financing agreements and commitments entered into or obtained by GBE or its parent company for the purpose of funding the respective Phase of the transmission project that, in the aggregate, provide commitments for the total cost of such Phase.
- (b) An attestation by an officer of GBE that GBE has not, prior to the date of the attestation, installed transmission facilities associated with the respective Phase on easement property; or a notification that such installation is scheduled to begin on a specified date.
- (c) A statement of the total cost of the respective Phase, broken out by the categories of engineering, manufacturing and installation of converter stations; transmission line engineering; transmission towers; conductor; construction labor necessary to complete the Phase; right-of way acquisition costs; and other costs necessary to complete the Phase, and certified by an officer of GBE, along with a reconciliation of the total cost of such Phase in the statement to the total cost of such Phase as of the Application to Amend (i.e., \$3.52 billion for Phase I and \$1.43 billion for Phase II as set forth in the Direct Testimony of Aaron White); and property owned in fee by GBE associated with the respective Phase, including the converter station sites.
- (d) A reconciliation statement certified by an officer of GBE showing that (1) the agreements and commitments for funds provided in subsection (a), above, are equal to or greater than the total cost of the Phase provided in subsection (c), above; and (2) the contracted transmission service revenue is sufficient to service the debt financing of the Phase (taking into account any planned refinancing of debt).

Finally, Invenergy requests two other modifications to conditions the Commission ordered in Case Nos. EA-2016-0358 and EM-2019-0150:

- (1) A 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."

- (2) 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.

Staff witness Claire Eubanks recommends that the Commission reject both modifications as the effective date of this statute is August 28, 2022, and GBE chose to file its application on August 24, 2022.³⁵ Further, GBE is not seeking to apply other aspects of HB 2005 to the Tiger Connector and Phase 2 of the project. Alternatively, Staff would recommend all previously ordered conditions be modified to be consistent with HB 2005. In the alternative, these conditions would read as follows:

If Grain Belt Express Clean Line LLC acquires any involuntary easement in Missouri by means of eminent domain proceedings ("easement") and does not obtain the financial commitments referred to in Section I(1) and Section I(1)(a) of the Conditions Agreed to by Grain Belt Express and Staff (Exhibit 206) within **five seven** years of the date that such easement rights are recorded with the appropriate county recorder of deeds, Grain Belt Express Clean Line LLC shall return possession of the easement to the fee simple title holder ("title holder") within 60 days and cause the dissolution of the easement to be recorded with the county recorder of deeds. In the event of such a return of the easement to the title holder, no reimbursement of any payment made by Grain Belt Express Clean Line LLC to the title holder shall be due.

Grain Belt Express Clean Line LLC shall comply with the Missouri Landowner Protocol, including, but not limited to, a code of conduct and the Missouri Agricultural Mitigation Impact Protocol, and incorporate the terms and obligations of the Missouri Landowner Protocol **as revised to incorporate House Bill 2005** into any all easement agreements with Missouri landowners.

³⁵ See § 523.010.1.8, RSMo.

Grain Belt Express Clean Line LLC shall construct the proposed Missouri converter station to be capable of ~~the actual delivery of 500 MW of wind power to the converter station~~ **delivering an amount of its electrical capacity to electrical customers in Missouri that is greater than or equal to the proportionate number of miles of the line that pass through Missouri.**

Finally, Staff recommends that the Commission restate the conditions ordered in the Report and Order on Remand in Case No. EA-2016-0358 with all modifications ordered by the Commission in this case.