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Staff – Exhibit 108
Seoung Joun Won
Rebuttal Testimony
File No. EA-2023-0017

Exhibit No.:
Issue(s): Financial Ability
Witness: Seoung Joun Won, PhD
Sponsoring Party: MoPSC Staff
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Case No.: EA-2023-0017
Date Testimony Prepared: April 19, 2023

MISSOURI PUBLIC SERVICE COMMISSION
FINANCIAL AND BUSINESS ANALYSIS DIVISION
FINANCIAL ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

SEOUNG JOUN WON, PhD

GRAIN BELT EXPRESS, LLC

CASE NO. EA-2023-0017

Jefferson City, Missouri
April 2023

1 A. GBE is a wholly-owned subsidiary of Invenergy Transmission, LLC
2 (“Invenergy Transmission”), a Delaware limited liability company, which is a wholly-owned
3 subsidiary of Invenergy Renewables, LLC (“Invenergy Renewables”), also a Delaware limited
4 liability company, which is a wholly-owned subsidiary of Invenergy, LLC (“Invenergy”), an
5 Illinois limited liability company.¹ Invenergy was incorporated in 2001, and it develops, owns,
6 and operates sustainable power generation and energy storage facilities in North America and
7 Europe.² Invenergy or its affiliates are providing project management support for GBE,
8 including overseeing the financing, design, engineering and construction.³

9 Q. What is the approval GBE is requesting from the Commission in the
10 Application?

11 A. GBE is requesting approval from the Commission to amend its existing
12 certificate of public convenience and necessity (“CCN”), approved in Case No. EA-2016-0358
13 (“2016 GBE Case”), to construct, install, own, operate, maintain, and otherwise control and
14 manage an approximately 800-mile, overhead, multi-terminal +/- 600 kilovolt (“kV”) high-
15 voltage, direct current (“HVDC”) transmission line, and associated facilities including
16 converter stations and alternating current (“AC”) connector lines (the “Project”).⁴ GBE
17 requested the approval of the following material changes to the design and engineering of the
18 Project: (the “Amended Project”):⁵

- 19 a. Relocating the Missouri converter station from Ralls County to Monroe
20 County and increasing the capacity of the Missouri converter station from
21 500 MW to 2500 MW;

¹ Paragraph 4-5, The Application.

² S&P Capital IQ Pro.

³ Page 3, lines 23-24, Shashank Sane’s Direct Testimony.

⁴ Page 4, lines 8-15 & Page 5, lines 1-2, Rolanda Shine’s Direct Testimony.

⁵ Paragraph 1, The Application.

1 b. Relocating the AC connector line from Ralls County to Monroe, Audrain,
2 and Callaway Counties, allowing for greater access of renewable power to
3 Missouri and increasing its benefits to Missouri; and

4 c. Constructing the Amended Project in two phases, allowing Missouri to
5 realize the benefits of the Amended Project earlier than it otherwise would.

6 Q. What is the projected cost of the Amended Project?

7 A. The projected cost to construct the Amended Project and place it into operation
8 is approximately \$4.95 billion. This figure encompasses the entire Amended Project cost
9 including the Kansas, Missouri, Illinois and Indiana segments, but does not include any
10 estimated network upgrade costs for regional transmission organization (“RTO”)
11 interconnections for which Grain Belt Express will be responsible.⁶ The revised projected cost
12 of \$4.95 billion for the entire Amended Project is higher than the 2016 projected cost of
13 \$2.35 billion.⁷ Excluding the upgrade costs for RTO interconnections, the estimated projected
14 cost to construct Phase I and Phase II of the Amended Project and place it in operation is
15 approximately \$3.52 billion and \$1.43 billion, respectively.⁸ Ms. Shine stated,
16 “The transmission owner will pay for the upgrades upfront” and “GBE will repay the
17 transmission owner using the Project’s revenue” so the upgrade costs will not be included in
18 the upfront cost of the Amended Project.⁹

19 Q. What is GBE’s financing plan for the Amended Project?

20 A. Phase I and Phase II of the Amended Project will be financed separately.¹⁰
21 According to the Application, GBE and Invenergy Renewables has sufficient capital resources

⁶ Paragraph 77, The Application.

⁷ Page 29, lines 6-7, Shashank Sane’s Direct Testimony.

⁸ Paragraph 77, The Application.

⁹ Page 7, lines 9-13, Rolanda Shine’s Direct Testimony.

¹⁰ Page 5, line 9, Rolanda Shine’s Direct Testimony.

1 to provide the funding necessary to enable Invenergy Transmission and its subsidiaries to
2 undertake the initial development and permitting work for the Amended Project.¹¹ GBE expects
3 the lenders to size the debt based on a debt service coverage ratio between 1.25x-1.50x that is
4 equal to 67%-80% of the total project costs, or \$3.3 billion to \$4 billion.¹² Once the Amended
5 Project reaches an advanced stage of development and licensing, GBE plans to enter into
6 project-specific financing arrangements with investors and lenders to secure the capital needed
7 to complete the development and construction of the projects and place them into operation.¹³

8 Q. What is GBE witnesses' position related to the financial ability of GBE?

9 A. According to Ms. Shine and as reiterated by Mr. Sane, GBE has the financial
10 ability to develop, construct, and operate the Amended Project because of following reasons:¹⁴

11 (1) GBE and its affiliates have a strong record of financing transmission
12 projects;

13 (2) GBE and its affiliates have developed and financed over 4,000 miles of
14 transmission and collection lines, 88 substations, 96 generator step-up
15 transformers and over 5,000 pad mount transformers over the past 20 years;

16 (3) GBE has a clear and viable plan to raise the capital necessary to construct
17 the Amended Project, both from contracting with future users of the line and
18 through debt and equity capital; and

19 (4) The Commission previously found that GBE had the financial ability to
20 complete the Certificated Project in 2019.

21 Q. Please update the information concerning the Commission's finding that GBE
22 had the financial ability to complete the Project in 2019 for the 2016 GBE Case.

¹¹ Paragraph 75, The Application.

¹² Staff's Data Request No. 0014 (1).

¹³ Page 6, lines 3-7, Roland Shine's Direct Testimony.

¹⁴ Page 34, lines 3-13, Shashank Sane's Direct Testimony.

1 A. GBE has three material changes to update the information concerning the
2 Commission’s finding that GBE had the financial ability to complete the Project in 2019.
3 According to GBE’s response to Staff’s data request, paragraph Nos. 56, 59, and 60 in the
4 “Report and Order on Remand” of the 2016 GBE Case can be updated as follows:

5 56. Inverenergy is spending money now on development of the Project, and has
6 spent *** [REDACTED] *** as of December 31, 2022. Inverenergy projects that
7 it will spend approximately *** [REDACTED] *** total on development
8 of the Project before it can obtain funding from institutional investors;

9 59. Inverenergy and its affiliates have in excess of *** [REDACTED] *** in total
10 assets and *** [REDACTED] *** in total equity on a consolidated basis (as of
11 September 30, 2022);

12 60. Over the last 20 years, Inverenergy has raised more than \$47 billion of
13 financing in connection with the successful development of more than
14 30 GW in projects in the United States, Canada, Europe, Central America,
15 and Japan. Inverenergy maintains strong relationships with more than 60
16 financial institutions worldwide, including international and domestic banks,
17 multilateral development banks, export credit agencies and pension funds.¹⁵

18 Q. Is there any updated information that may change the Commission’s decision
19 that GBE has the financial ability to complete the Amended Project?

20 A. No. The updated financial information as of September 30, 2022 shows
21 Inverenergy has a stronger financial ability compared to their financial information as of
22 December 31, 2017. For example, Inverenergy’s equity ratio is 52% as of September 30, 2022,
23 but was only 33% as of December 31, 2017.¹⁶

¹⁵ Staff’s Data Request No. 0024.

¹⁶ Won’s Rebuttal Workpaper.

1 Q. Do you agree with GBE witnesses that GBE has the financial ability to construct,
2 operate, and maintain the Amended Project in this docket?

3 A. Yes. With the consideration of GBE and its affiliates' financial capacity, the
4 Applicant has the financial ability to provide the service. Invenergy Renewables has developed
5 over 191 large-scale clean power projects in the United States and globally, totaling 30 GW and
6 representing \$47 billion in completed transactions.¹⁷ Staff confirmed Invergy's financial ability
7 continued to improve in the past seven years since the Commission approved the Project in the
8 2016 GBE Case. At that time, Invenergy had raised only approximately \$30 billion of financing
9 in connection with the successful development of approximately 20 GW in projects.¹⁸
10 Recently, significant amounts of liquidity exist in the capital market for transmission projects
11 including \$40 billion from the Inflation Reduction Act (IRA).¹⁹ In addition, GBE reported that
12 capital for the transmission projects has been provided by numerous institutional lenders and
13 investors such as Wells Fargo, MUFG, GE Capital, JP Morgan, Santander, Morgan Stanley,
14 Natixis, Bank of America, and Rabobank.²⁰ Invenergy also has strong relationships with equity
15 investors such as the following: Caisse de dépôt et placement du Québec (CDPQ), Blackstone,
16 Blackrock, Hannon Armstrong, and AMP Capital.²¹ In 2019, the Commission concluded that
17 GBE and Invenergy together had the financial ability to develop, construct, and operate the
18 Project.²² Considering Invenergy has improved its financing experience and currently has more
19 favorable capital market conditions for investing in transmission projects, it is reasonable to

¹⁷ Paragraph 76, The Application.

¹⁸ Paragraph 60, *Report and Order on Remand*, EA-2016-0358.

¹⁹ Staff Data Request No. 0025.

²⁰ Page 6, lines 16-17, Roland Shine's Direct Testimony.

²¹ Staff Data Request No. 0014.2.

²² Page 43, *Report & Order on Remand* (March 20, 2019), EA-2016-0358.

1 conclude that GBE and Invenergy together have the financial ability to construct, operate, and
2 maintain the Amended Project.

3 Q. GBE witness Kevin Chandler discusses limited modifications to the financing
4 conditions attached to the current CCN that are necessary for financing Phase I and Phase II
5 separately. Does Staff recommend approval of the phasing of the Amended Project?

6 A. No, it does not. Please see Staff's Report for Staff's recommendation regarding
7 phasing of the Amended Project.

8 Q. If the Commission were to approve the phasing of the Amended Project, does
9 Staff have any recommendation regarding the financing conditions?

10 A. If the Commission approves the phasing of the project, Staff recommends
11 updating the financing conditions of the Amended Project as follows:

12 GBE will not install transmission facilities associated with Phase I of the Project
13 on easement property in Missouri until it has obtained commitments for funds in an amount
14 equal to or greater than the total cost to build the entirety of Phase I of the Project. Further, GBE
15 will not install transmission facilities associated with Phase II of the Project on easement
16 property in Missouri until it has obtained commitments for funds in an amount equal to or
17 greater than the total cost to build the entirety of Phase II of the Project. To allow the
18 Commission to verify compliance with this condition, GBE shall file the following documents
19 with the Commission at such a time as GBE is prepared to begin to construct electric
20 transmission facilities in Missouri associated with Phase I and Phase II, respectively:

- 21 (a) On a confidential basis, equity and loan or other debt financing agreements
22 and commitments entered into or obtained by GBE or its parent company for
23 the purpose of funding the respective Phase of the transmission project that,
24 in the aggregate, provide commitments for the total cost of such Phase.

1 (b) An attestation by an officer of GBE that GBE has not, prior to the date of the
2 attestation, installed transmission facilities associated with the respective
3 Phase on easement property; or a notification that such installation is
4 scheduled to begin on a specified date.

5 (c) A statement of the total cost of the respective Phase, broken out by the
6 categories of engineering, manufacturing and installation of converter
7 stations; transmission line engineering; transmission towers; conductor;
8 construction labor necessary to complete the Phase; right-of way acquisition
9 costs; and other costs necessary to complete the Phase, and certified by an
10 officer of GBE, along with a reconciliation of the total cost of such Phase in
11 the statement to the total cost of such Phase as of the Application to Amend
12 (i.e., \$3.52 billion for Phase I and \$1.43 billion for Phase II as set forth in
13 the Direct Testimony of Aaron White); and property owned in fee by GBE
14 associated with the respective Phase, including the converter station sites.

15 (d) A reconciliation statement certified by an officer of GBE showing that
16 (1) the agreements and commitments for funds provided in subsection (a),
17 above, are equal to or greater than the total cost of the Phase provided in
18 subsection (c), above; and (2) the contracted transmission service revenue is
19 sufficient to service the debt financing of the Phase (taking into account any
20 planned refinancing of debt).

21 Q. Does this conclude your rebuttal testimony?

22 A. Yes.

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) Case No. EA-2023-0017
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)

AFFIDAVIT OF SEOUNG JOUN WON, PhD

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW SEOUNG JOUN WON, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Seoung Joun Won, PhD*; and that the same is true and correct according to his best knowledge and belief.

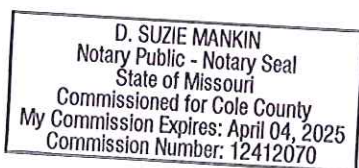
Further the Affiant sayeth not.



SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 17th day of April 2023.





Notary Public

Credentials and Background of

Seoung Joun Won, PhD

I am currently employed as a Regulatory Compliance Manager in the Financial Analysis Department of the Financial and Business Analysis Division of the Missouri Public Service Commission. I have been employed at the Missouri Public Service Commission since May 2010.

I received my Bachelor of Arts, Master of Arts, and Doctor of Philosophy in Mathematics from Yonsei University and my Bachelor of Business Administration in Financial Accounting from Seoul Digital University in Seoul, South Korea, and earned my Doctor of Philosophy in Economics from the University of Missouri - Columbia. Also, I passed several certificate examinations for Finance Specialist in South Korea such as Accounting Management, Financial Risk Manager, Enterprise Resource Planning Accounting Consultant, Derivatives Investment Advisor, Securities Investment Advisor, and Financial Planner.

Prior to joining the Commission, I taught both undergraduate and graduate level mathematics at the Korean Air Force Academy and Yonsei University for 13 years. I served as the director of the Education and Technology Research Center in NeoEdu for 5 years. Before starting my current position at the Missouri Public Service Commission, I had served as a regulatory economist in Tariff/Rate Design Department.

My current duties at the Commission include financial analysis of rate of return and cost of equity, valuation analysis on merger and acquisition, due diligence review and supporting economic and statistical analysis.

List of Previous Testimony Filed

Seoung Joun Won, PhD

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
GA-2023-0038	Spire Missouri, Inc. d/b/a Spire	Financial Capability
EF-2022-0151	Union Electric Co., d/b/a Ameren Missouri	Financing Authority
EA-2022-0328	Evergy Missouri West, Inc. d/b/a Evergy Missouri West	Financial Capability
ER-2022-0337	Union Electric Co., d/b/a Ameren Missouri	Rate of Return, Capital Structure
EA-2022-0245	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
EA-2022-0244	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
EA-2022-0234	NextEra Energy Transmission Southwest, LLC	Financial Capability
GR-2022-0179	Spire Missouri, Inc., d/b/a Spire	Rate of Return, Capital Structure
GF-2022- 0169	Spire Missouri, Inc.	Financing Authority
EF-2022-0164	Union Electric Co., d/b/a Ameren Missouri	Financing Authority
WF-2022-0161	Missouri-American Water Company	Financing Authority
ER-2022-0130	Evergy Missouri West, Inc., d/b/a Evergy Missouri West	Rate of Return, Capital Structure
ER-2022-0129	Evergy Missouri Metro	Rate of Return, Capital Structure
EF-2022- 0103	Evergy Missouri West, Inc.	Financing Authority
WF-2022-0066	Missouri American Water Company	Financing Authority
WF-2021-0427	Raytown Water Company	Financing Authority

cont'd List of Previous Testimony Filed

Seoung Joun Won, PhD

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
GR-2021-0320	Empire District Gas Company	Rate of Return, Capital Structure
ER-2021-0312	Empire District Electric Company	Rate of Return, Capital Structure
GR-2021-0241	Union Electric Co., d/b/a Ameren Missouri	Rate of Return, Capital Structure
ER-2021-0240	Union Electric Co., d/b/a Ameren Missouri	Rate of Return, Capital Structure
GR-2021-0108	Spire Missouri, Inc.	Rate of Return, Capital Structure
EA-2021-0087	Ameren Transmission Company of Illinois	Financial Capability
EA-2020-0371	Union Electric Co., d/b/a Ameren Missouri	Financial Capability
SR-2020-0345	Missouri American Water Company	Rate of Return, Capital Structure
WR-2020-0344	Missouri American Water Company	Rate of Return, Capital Structure
EF-2020-0301	Evergy Missouri Metro	Financing Authority
WR-2020-0264	Raytown Water Company	Rate of Return, Capital Structure
WR-2020-0053	Confluence Rivers Utility Operating Company, Inc.	Rate of Return, Capital Structure
HM-2020-0039	Veolia Energy Kansas City, Inc. AIP Project Franklin Bidco	Merger and Acquisition
EO-2019-0133	KCP&L Greater Missouri Operations Company, Evergy Metro	Business Process Efficiency
EO-2019-0132	Kansas City Power & Light Company, Evergy Metro	Business Process Efficiency
GR-2019-0077	Union Electric Co., d/b/a Ameren Missouri	Weather & Normalization, Net System Input
GO-2019-0059	Spire West, Spire Missouri, Inc.	Weather Variables

cont'd List of Previous Testimony Filed

Seoung Joun Won, PhD

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
GO-2019-0058	Spire East., Spire Missouri, Inc.	Weather Variables
ER-2018-0146	KCP&L Greater Missouri Operations Co.	Weather & Normalization, Net System Input
ER-2018-0145	Kansas City Power & Light Co.	Weather & Normalization, Net System Input
GR-2018-0013	Liberty Utilities (Midstates Natural Gas) Corp.	Weather Variables
GR-2017-0216	Missouri Gas Energy (Laclede), Spire Missouri, Inc.	Weather Variables
GR-2017-0215	Laclede Gas Co., Spire Missouri, Inc.	Weather Variables
ER-2016-0285	Kansas City Power & Light Co.	Weather & Normalization, Net System Input
ER-2016-0179	Union Electric Co., d/b/a Ameren Missouri	Weather & Normalization, Net System Input
ER-2016-0156	KCP&L Greater Missouri Operations Co.	Weather & Normalization, Net System Input
ER-2016-0023	Empire District Electric Company	Weather & Normalization, Net System Input
ER-2014-0370	Kansas City Power & Light Co	Weather & Normalization, Net System Input
ER-2014-0351	Empire District Electric Company	Weather & Normalization, Net System Input
ER-2014-0258	Union Electric Co., d/b/a Ameren Missouri	Weather & Normalization, Net System Input
EC-2014-0223	Noranda Aluminum, Inc., et al, Complaint v. Union Electric Co., d/b/a Ameren Missouri	Weather Variables
GR-2014-0152	Liberty Utilities (Midstates Natural Gas) Corp.	Weather Variables
GR-2014-0086	Summit Natural Gas of Missouri, Inc.	Weather Variables
HR-2014-0066	Veolia Energy Kansas City, Inc.	Weather Variables, Revenue

cont'd List of Previous Testimony Filed

Seoung Joun Won, PhD

<u>Case Number</u>	<u>Company</u>	<u>Issue</u>
GR-2013-0171	Laclede Gas Co.	Weather Variables
ER-2012-0345	Empire District Electric Company	Weather Variables, Revenue
ER-2012-0175	KCP&L Greater Missouri Operations Co.	Weather Variables
ER-2012-0174	Kansas City Power & Light Co.	Weather Variables
ER-2012-0166	Union Electric Co., d/b/a Ameren Missouri	Weather Variables, Revenue
HR-2011-0241	Veolia Energy Kansas City, Inc.	Weather Variables
ER-2011-0028	Union Electric Co., d/b/a Ameren Missouri	Weather Variables, Revenue
ER-2011-0004	Empire District Electric Company	Weather Variables, Revenue
GR-2010-0363	Union Electric Co., d/b/a Ameren Missouri	Weather Variables
ER-2010-0356	KCP&L Greater Missouri Operations Co.	Weather Variables
ER-2010-0355	Kansas City Power & Light Co.	Weather Variables, Revenue

Work Related Publication

Won, Seoung Joun, X. Henry Wang, and Henry E. Warren. "Climate normals and weather normalization for utility regulation." *Energy Economics* (2016).