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Witness: Barbara Meisenheimer
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Development
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Case No.: EA-2016-0358

MISSOURI PUBLIC SERVICE COMMISSION

GRAIN BELT EXPRESS CLEAN LINE LLC

CASE NO. EA-2016-0358

REBUTTAL TESTIMONY

OF

BARBARA A. MEISENHEIMER

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

Jefferson City, Missouri

January 24, 2017

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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Barbara A. Meisenheimer. My business address is 301 West High Street,
4 Suite 720, PO Box 1766, Jefferson City, Missouri 65102.

5 **Q. Please describe your educational background and employment experience.**

6 A. I am employed as a Planner IV with the Missouri Department of Economic Development
7 (“DED”) – Division of Energy. I have served as the Manager of the Energy Policy &
8 Resources Group since October 2014. The Policy Group collects and analyzes data,
9 participates in proceedings before the Missouri Public Service Commission (“PSC” or
10 “Commission”), and recently assisted in developing the Comprehensive State Energy
11 Plan (“CSEP”).

12 Prior to joining the Division of Energy, I served as Chief Economist with the Missouri
13 Office of the Public Counsel. In the eighteen years I served at the Office of the Public
14 Counsel, I researched, authored and presented testimony in more than 80 cases before the
15 PSC addressing economic and public policy issues related to investor-owned electric,
16 natural gas, water, sewer, and telecommunications utilities. A list of cases in which I
17 participated is attached as Schedule BAM-1.

18 From 1995 to 2014, I served as an instructor for William Woods University located in
19 Fulton, Missouri, teaching primarily economics courses in the traditional Undergraduate
20 Program, International Program, and Adult and Graduate Studies Program. From 1988 to
21 1994, I served as an instructor and teaching assistant for mathematics and later economics
22 courses for the University of Missouri – Columbia.

1 I attended the University of Missouri in my home town of Columbia. I received a
2 Bachelor of Science Degree in Mathematics with an area of concentration in Economics.
3 I have completed the qualifying and comprehensive exams for a Ph.D. in Economics with
4 emphases in Quantitative Economics and Industrial Organization.

5 **Q. Have you previously filed testimony in this case before the PSC on behalf of DED or**
6 **any other party?**

7 A. No.

8 **Q. What information have you reviewed in preparation of your testimony?**

9 A. I have reviewed the Clean Line, LLC (“Clean Line”) Application and supporting
10 testimony, transcripts from the local public hearings held in this proceeding, and data
11 requests issued in this case and portions of the responses to those requests. I also
12 reviewed documents from Clean Line’s previous Certificate of Public Convenience and
13 Necessity (“CCN”) Application proceeding, Case No. EA-2014-0207, including the
14 Commission’s Report and Order, parties’ position statements, and portions of the Staff of
15 the Missouri Public Service Commission’s (“Staff”) testimony relating to recommended
16 conditions if the Commission approved the Application. Additionally, I have reviewed
17 portions of Missouri law related to eminent domain and the Commission’s authority to
18 grant CCNs.

19 **II. PURPOSE AND SUMMARY OF TESTIMONY**

20 **Q. What is the purpose of your Rebuttal Testimony in this proceeding?**

21 A. The purpose of my testimony is to provide evidence, on behalf of DED, related to the
22 CCN Application of Clean Line to construct, own, and operate the Grain Belt Express
23 transmission line (“Grain Belt” or “Project”). Grain Belt offers the potential to advance a

1 number of the goals outlined in the CSEP, including: increased diversity of the state's
2 energy resources, as evidenced by Clean Line's agreement to provide up to 200 MW of
3 upstream transmission capacity to municipal utilities in the state, with up to an additional
4 300 MW of transmission capacity available to Missouri customers; energy infrastructure
5 development associated with \$354 million in in-state transmission line construction; and,
6 enhanced economic activity, increased tax revenues, and job creation resulting from
7 construction and ongoing operation of the Project. DED witness Mr. Alan E. Spell
8 provides estimates of the projected benefit to the state and affected local jurisdictions
9 associated with the construction and ongoing operation of the transmission line.

10 DED recognizes that the Commission will rightly base final approval on many factors,
11 including: a demonstration that the project has been approved by the affected counties;
12 adoption of meaningful and enforceable protections to ensure fair treatment of
13 landowners and mitigation of agricultural impacts; and, conditions to assure safety,
14 reliability and efficiency as this new transmission resource is integrated into the existing
15 power grid. DED's support for approval of the Project is conditioned on Clean Line's
16 demonstration that it has submitted required documentation to the Commission and will
17 fully comply with agreements and conditions established to protect the state's citizens,
18 agricultural and environmental interests, and existing infrastructure.

19 **III. OVERVIEW**

20 **Q. What is the standard by which the Commission typically judges CCN applications?**

21 A. The Commission's rules governing CCN applications for electric plant are found at 4
22 CSR 240-3.105, with the power to evaluate CCN applications found in statute at Section
23 393.170, RSMo. In evaluating CCN applications, the Commission has generally used a

1 “five-factor test” which is alternatively known as the “Tartan criteria.” The Commission
2 ascertains whether a project encompassed by a CCN: 1) is necessary or convenient for
3 serving the public; 2) can be undertaken by the applicant; 3) is financially feasible; 4) is
4 economically feasible; and, 5) serves the public interest. Below, I address the need and
5 public interest aspects of the Tartan criteria.

6 **Q. What is your understanding of the CCN application in this case?**

7 A. Clean Line has applied to the Commission for permission to construct, own, and operate
8 an approximate 600 kilovolt (“kV”) direct current transmission line and associated
9 facilities in Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Monroe, and
10 Ralls counties in northern Missouri, and a 345 kV converter station near the town of
11 Center in Ralls County, Missouri. The Missouri portion of the transmission line
12 represents 206 of the total 780 miles of line proposed to carry energy from Ford County,
13 Kansas to Missouri and points farther east.¹ Energy can also be placed on the line at the
14 Missouri converter station. As proposed, Clean Line’s Routing Study estimates that the
15 project will cross 665 parcels of land (299 of those parcels sized at 80 or less acres), and
16 will be located within 500 feet of 51 residences along its path.² Tower structures are

¹ Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Direct Testimony of Michael P. Skelly on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, page 3.

² Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Direct Testimony of James G. Puckett on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, Schedule JGP-2.

1 proposed to range from a vertical height of 110 to 150 feet, with typically 4 to 5 tower
2 structures per mile; guyed structures may be used in the design.³

3 Although the transmission line will be required to serve all eligible customers consistent
4 with Federal Energy Regulatory Commission requirements, the proximity of the western
5 converter to existing and proposed Kansas wind farms is expected to result in greater
6 access to renewable resources.

7 The Project is to be paid for by shippers and customers of the Grain Belt transmission
8 line. Grain Belt represents that the Project will not impose any costs on ratepayers in
9 general and that only the specific users of the line would pay for the service offered by
10 the Project.⁴ Grain Belt also represents that the Project will have no impact on Midwest
11 Independent Transmission System Operator, Inc. transmission charges or Union Electric
12 Company d/b/a Ameren Missouri's ("Ameren Missouri") base rates charged for electric
13 service or rate adjustments under the Fuel and Purchased Power Adjustment Clause
14 unless Ameren Missouri becomes a customer of Grain Belt.⁵

³ Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Direct Testimony of Dr. Anthony Wayne Galli, P.E. on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, page 11.

⁴ Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Direct Testimony of David A. Berry on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, page 41.

⁵ Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Direct Testimony of Suede G. Kelly on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, page 8.

1 **IV. MISSOURI COMPREHENSIVE STATE ENERGY PLAN**

2 **Q. What benefits does the CSEP associate with diversifying the state’s energy**
3 **resources?**

4 A. The CSEP was developed with the goal of achieving a clean, reliable, affordable, and
5 abundant energy future for Missouri.⁶ The CSEP recognizes that increasing the diversity
6 of the state’s energy portfolio can increase economic development and hedge against
7 potential price volatility and reliance on imported fossil fuels.⁷

8 **Q. Does the Grain Belt project have the potential to advance these goals?**

9 A. Yes. The Project offers an opportunity to increase Missouri’s access to renewable energy
10 resources. Participating municipal utilities anticipate a direct benefit of long-term, low-
11 cost transmission access. Grain Belt could also provide an additional option for other
12 Missouri utilities to access wind resources, assist with satisfying customer interest in
13 greater use of renewable energy, and meet corporate renewable energy goals. The CSEP
14 also recommends capitalizing on renewable energy development.⁸ In-state manufacturers
15 and service providers will be employed in the development of transmission
16 infrastructure.⁹

⁶ Missouri Department of Economic Development – Division of Energy. 2015. “Missouri Comprehensive State Energy Plan” (“CSEP”). <https://energy.mo.gov/energy/docs/MCSEP.pdf>. Page 227.

⁷ *Ibid*, pages 211 and 227.

⁸ *Ibid*, pages 211 and 226-227.

⁹ Missouri Public Service Commission Case No. EA-2016-0358, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Control, Manage, Operate and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Direct Testimony of Mark O. Lawlor on Behalf of Grain Belt Express Clean Line LLC, August 30, 2016, pages 16-17.

1 **Q. Have any Missouri utilities already expressed interest in purchasing power from**
2 **Grain Belt?**

3 A. Yes. In total, Clean Line has committed to providing up to 500 MW of the 4,000 MW
4 total upstream Project capacity to Missouri. The Missouri Joint Municipal Electric Utility
5 Commission (“MJMEUC”) has agreed to purchase up to 200 MW of capacity from Grain
6 Belt to transport energy to Missouri. MJMEUC has also agreed to purchase 25 MW of
7 downstream capacity in order to sell excess energy or unused capacity into the PJM
8 Interconnection market, with the option to purchase an additional 25 MW of downstream
9 capacity.¹⁰ MJMEUC estimates \$10 million in annual savings from the ability to access
10 low-cost wind energy delivered on the Grain Belt transmission line.¹¹

11 **Q. Do other CSEP recommendations indicate support for renewable energy**
12 **development and related transmission development?**

13 A. Yes. Among other benefits, the CSEP notes that additional investment in transmission
14 infrastructure can assist in meeting public policy objectives such as renewable energy
15 goals.¹² Missouri’s Renewable Energy Standard (“RES”) at Sections 393.1020 through
16 1030, RSMo. requires the state’s investor-owned utilities to use renewable energy
17 resources (or equivalent credits) to meet certain minimum percentages of their retail
18 sales. While the RES applies only to investor-owned retail electric utilities, the CSEP
19 recommends extending the RES for those utilities and allowing voluntary participation by
20 other providers, including municipal providers.¹³ Although in Case No. EA-2014-0207
21 the Commission found that investor-owned utilities subject to the RES are already

¹⁰ EA-2016-0358, Berry Direct, pages 3-4 and Lawlor Direct, pages 3-4.

¹¹ EA-2016-0358, Lawlor Direct, page 3.

¹² CSEP, pages 139-140.

¹³ CSEP, page 228

1 positioned to meet the existing requirements,¹⁴ the Commission has also recognized that
2 the RES portfolio requirements are minimum thresholds rather than caps.¹⁵ Grain Belt
3 would allow investor-owned utilities an additional option for compliance, and would
4 provide utilities, including both investor-owned utilities and those not subject to the RES,
5 an additional option for meeting voluntary renewable energy goals.

6 **Q. Could Grain Belt assist Missouri businesses in meeting renewable energy goals?**

7 A. Yes, it could. The CSEP explains that, increasingly, companies are setting clean energy
8 targets and reporting progress in meeting those targets to satisfy investors' expectations
9 for greater use of renewable energy.¹⁶ For example, a group of 62 businesses, including
10 Walmart, McDonalds, and General Mills, have signed the *Corporate Renewable Energy*
11 *Buyers' Principles: Increasing Access to Renewable Energy*, which outlines six
12 principles that would assist signatory companies in meeting their renewable energy
13 needs.¹⁷ Two of these principles are a desire for more access to cost-competitive
14 renewable energy options and access to new projects that reduce emissions beyond
15 "business as usual." Grain Belt has the potential to enhance participating municipal
16 utilities' and potentially other utilities' ability to offer service reflective of these
17 attributes.

¹⁴ Missouri Public Service Commission Case No. EA-2014-0207, *In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing It to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line*, Report and Order, July 1, 2015, page 12.

¹⁵ Missouri Public Service Commission Case No. EA-2016-0208, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing It to Offer a Pilot Distributed Solar Program and File Associated Tariff Report and Order*, December 21, 2016, page 8.

¹⁶ CSEP, page 178.

¹⁷ World Resources Institute and World Wildlife Fund. 2016. "Corporate Renewable Energy Buyers' Principles." <http://buyersprinciples.org/>.

1 **Q. How can greater access to clean wind energy resources result in improved air**
2 **quality in Missouri?**

3 A. The generation of electricity from wind energy results in no emissions, in contrast to
4 traditional fossil fuel-fired generation. Grain Belt will provide an additional option for
5 utilities to reduce their emissions of criteria air pollutants (e.g., sulfur dioxide), hazardous
6 air pollutants (e.g., mercury), and carbon dioxide by purchasing cleaner renewable power
7 for delivery on the transmission line in lieu of using existing or constructing new fossil
8 fuel-fired generation assets.

9 **V. ECONOMIC BENEFIT**

10 **Q. How will the project impact economic development?**

11 A. DED's Missouri Economic Research and Information Center has estimated that the
12 project will result in over 1,500 new jobs over the three years of Project construction, as
13 well as 91 jobs in the first year of operation and 28 jobs in subsequent years of operation.
14 New personal income is expected to be \$246 million during construction, \$17.9 million
15 in the first year of operation, and \$2.6 million in subsequent years of operation. New
16 gross domestic product is expected to be \$476 million during construction, \$9.1 million
17 in the first year of operation, and \$4.2 million in subsequent years of operation. DED
18 supports the use of Missouri-based companies to supply products and services related to
19 construction of the transmission line and associated facilities. Clean Line is working with
20 local businesses including PAR Electric, ABB Inc., Hubbell Power Systems, Inc., and
21 General Cable Industries, Inc. to supply products and services.

1 **VI. CONDITIONS ON APPROVAL**

2 **Q. In determining if the Project is in the public interest, should the Commission take**
3 **notice of landowner and local community concerns?**

4 A. Yes. While DED supports Grain Belt, it is also mindful of the concerns expressed by
5 landowners. DED views the Landowner Protocol and Missouri Agricultural Impact
6 Mitigation Protocol developed in response to concerns with Clean Line's previous CCN
7 Application as important improvements made over the last application. These initiatives
8 are designed to address landowner and agricultural concerns, a number of which would
9 help to address some of the concerns expressed by citizens in local public hearings. These
10 protocols include provisions for binding arbitration to resolve compensation disputes,
11 reliance on a regional appraisal firm for determining county specific property values,
12 creation of a decommissioning fund for the transmission line, establishment of guidelines
13 to avoid or mitigate agricultural impacts, and retention of an inspector, with a
14 professional background in agriculture, soil and water conservation, and general farm
15 operations and practices, to address landowner concerns and stop construction when
16 violations occur. DED's support for the project is subject to Clean Line's adherence to
17 these protocols.

18 **Q. Prior to approval, should the Commission require documentation of county**
19 **commission approvals?**

20 A. Yes. County commission input into this process is important because county
21 commissions are well positioned to evaluate the balance of costs and benefits of such a
22 project to their constituents and local communities. Clean Line's Application does not
23 include copies of county approvals or affidavits affirming that consent has been acquired

1 from all affected counties as required by 4 CSR 240-3.105(1)(D). In its Application,
2 Clean Line cites 4 CSR 240-3.105(2) in explaining that it will furnish required approvals
3 once they have been acquired. In a recent Report and Order issued April 27, 2016 in Case
4 No. EA-2015-0146, the PSC found under similar circumstances that county commission
5 approval was required by Section 229.100, RSMo. as a prerequisite to approving a CCN
6 for a transmission provider to construct a transmission line in areas where the applicant
7 did not already hold a CCN. In that proceeding, the PSC conditioned approval of the
8 CCN on submission of certified copies of county commission approvals for each affected
9 county. DED's support for the Grain Belt project is conditioned on a similar
10 demonstration by Clean Line that county commissions have approved construction of the
11 line.

12 **Q. What additional conditions on approval will need to be considered?**

13 A. Staff recommended a number of conditions as a result of its review of Clean Line's 2014
14 CCN Application. Clean Line has agreed to certain of those recommendations as part of
15 its current Application. DED reserves the opportunity to review the Staff's
16 recommendations related to the current Application and to support reasonable conditions
17 related to those recommendations.

18 **VII. CONCLUSIONS**

19 **Q. Please summarize your conclusions and the positions of DED.**

20 A. Grain Belt offers the potential to advance a number of the goals outlined in the CSEP,
21 including increased diversity of the state's energy resources, energy infrastructure
22 development, and enhanced economic activity, increased tax revenues, and job creation
23 resulting from construction and ongoing operation of the Project. DED recognizes that

1 the Commission will rightly base final approval on many factors, including: a
2 demonstration that the project has been approved by the affected counties; adoption of
3 meaningful and enforceable protections to ensure fair treatment of landowners and
4 mitigation of agricultural impacts; and, conditions to assure safety, reliability and
5 efficiency as this new transmission resource is integrated into the existing power grid.
6 DED's support for approval of the Project is conditioned on Clean Line's demonstration
7 that it has submitted required documentation to the Commission and will fully comply
8 with agreements and conditions established to protect the state's citizens, agricultural and
9 environmental interests, and existing infrastructure.

10 **Q. Does this conclude your Rebuttal Testimony in this case?**

11 **A. Yes.**