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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. EA-2016- 0358

SURREBUTTAL TESTIMONY OF
DAVID A. BERRY
ON BEHALF OF
GRAIN BELT EXPRESS CLEAN LINE LLC

February 21, 2017

****NP****

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TABLE OF CONTENTS

I.	Introduction and Summary	1
II.	Economic Feasibility.....	2
	a. Cost to Missouri Ratepayers.....	2
	b. Levelized Cost Analysis.....	4
	c. Transmission Upgrade Costs.....	27
	d. Other Issues	31
III.	Need and Public Interest	33
IV.	Financial Viability.....	37
V.	Conditions.....	39

1 **I. Introduction and Summary**

2 **Q. Please state your name, present position and business address.**

3 A. My name is David Berry. My business address is 1001 McKinney Street, Suite 700,
4 Houston, Texas 77002.

5 **Q. By whom are you employed and in what capacity?**

6 A. I am Chief Financial Officer and Executive Vice President for Clean Line Energy
7 Partners LLC (“Clean Line”). Clean Line is the ultimate parent company of Grain Belt
8 Express Clean Line LLC (“Grain Belt Express” or “Company”), the Applicant in this
9 proceeding. **Q. Have you previously submitted testimony and exhibits in this**

10 **proceeding?**

11 A. Yes, I have previously submitted direct testimony, dated August 30, 2016, along with
12 accompanying schedules DAB-1 through DAB-8 in support of the Company’s request for
13 a Certificate of Convenience and Necessity (“CCN”) to construct, own, and operate the
14 Grain Belt Express Project (“Project”) in the state of Missouri.

15 **Q. What is the purpose of your surrebuttal testimony?**

16 A. I am responding to issues raised in the rebuttal testimony of other parties in this
17 proceeding, including witnesses representing Commission Staff, the Missouri
18 Landowners Alliance (“MLA”) and Show Me Concerned Landowners (“Show Me”). I
19 respond to issues concerning the economic feasibility of the Project (Section II), the need
20 for the Project and public interest considerations (Section III), the financial viability of
21 the Project (Section IV) and proposed conditions on the Company’s CCN (Section V).

22 **Q. Please briefly summarize your testimony.**

23 A. The main conclusions of my testimony are:
24

- 1 • Staff’s concerns that Grain Belt Express could recover costs from Missouri
2 ratepayers are unfounded because Grain Belt Express has specifically proposed
3 that the Commission must authorize such cost recovery. (Section II.a)
4
- 5 • Show Me witness Glen Justis’ own financial analysis indicates that the Project
6 and the connected wind generation are less expensive than other energy resources,
7 including combined cycle gas generation; his attempt to impose a “dependable
8 capacity” penalty on wind energy runs into a calculation error; when this error
9 and other flaws in Mr. Justis’ model are corrected, the Project remains the lowest-
10 cost alternative studied. (Section II.b)
11
- 12 • Staff’s concerns about transmission upgrade costs are overstated because Grain
13 Belt Express already has a reasonable basis for estimating transmission upgrade
14 costs; the Company has included this estimate in its financial models; and even a
15 large increase in transmission upgrade costs does not render the Project
16 uneconomic (Section II.c)
17
- 18 • The possibility of buying renewable energy credits (“RECs”) does not eliminate
19 the need for the Project, because the generation of RECs requires wind farms to
20 obtain the necessary transmission which is otherwise unavailable without the
21 Project, and because buying RECs, unlike buying energy and RECs, does not
22 reduce fuel cost or increase generation portfolio diversity. (Section III)
23
- 24 • Grain Belt Express accepts Staff’s recommended financing conditions which
25 assures Grain Belt Express has the financing to complete the Project before
26 facilities are installed on easements in Missouri. (Section V)
27
- 28 • Grain Belt Express accepts the large majority of the other conditions proposed by
29 Staff, with some modifications as to their wording and timing of compliance
30 which will allow the Project to proceed. (Section V)
31

32 **II. Economic Feasibility**

33 a. Cost to Missouri Ratepayers

34 **Q. Grain Belt Express has asserted that Missouri ratepayers in general will not pay for**
35 **the costs of the Project. Witness Sarah Kliethermes states that “Staff does not agree**

1 **with Grain Belt’s assumptions that underlie this conclusion.” (Staff Rebuttal**
2 **Report, p. 30) What is your response?**

3 A. Ms. Kliethermes is not clear about which “assumptions” she does not accept. However,
4 given her statement on page 31 of the Staff Rebuttal Report, her opinion appears to be
5 tied to the Company’s position that it would not seek to cost allocate any costs of the
6 Project to ratepayers via an RTO cost allocation process without the approval of the
7 Commission. She implies that Grain Belt Express may not meet the “Economic
8 Feasibility” factor of the Tartan Criteria because Missouri ratepayers may end up paying
9 for a portion of the costs of the Project if the Commission agrees. However, her
10 implication is incorrect.

11 **Q. Why can the Commission be confident that Grain Belt Express will pay for the**
12 **Project through participant funding, rather than recovering costs from Missouri**
13 **ratepayers?**

14 A. As Grain Belt Express has recommended, the Commission can impose a condition on the
15 Company’s CCN which would prevent Grain Belt Express from “cost-allocating” the
16 Project to Missouri ratepayers without a future Commission authorization. Grain Belt
17 Express has agreed to similar conditions in its approvals from the Kansas Corporation
18 Commission, Illinois Commerce Commission and the Indiana Utility Regulatory
19 Authority.¹ I believe it is safe to assume that a state commission would not approve such
20 a cost allocation proposal unless it found it to be in the public interest. Similarly, Grain

¹ Kansas Corporation Commission Order Approving Stipulation and Agreement in Docket No. 11-GBEE-624-COC (December 7, 2011), p. 10; Indiana Regulatory Authority Order in Cause 44264 (May 22, 2013), p. 22-23; Illinois Commerce Commission Order in Docket 15-0277 (November 12, 2015), p. 147.

1 Belt Express' rate authority from the Federal Energy Regulatory Commission is premised
2 on the fact that "Grain Belt Express is assuming full financial risk for the project."²

3 **Q. On page 31 of Staff's Rebuttal Report, Ms. Kliethermes calls attention to the fact**
4 **that Grain Belt Express could return to ask the Commission for authorization to**
5 **cost allocate the Project at a later date. Does this possibility invalidate Grain Belt**
6 **Express' commitment?**

7 A. No. The Company's request for a CCN is based on the economic feasibility of its
8 participant-funded business plan. Grain Belt Express is not pursuing cost allocation of the
9 Project, has no plans to cost allocate the Project, and does not believe any mechanism to
10 cost allocate the Project exists today. In determining if Grain Belt Express' application
11 meets the Tartan Criteria, the Commission should focus on the substantial evidence that
12 clearly supports the economic feasibility of the participant-funded model, the low cost of
13 western Kansas wind energy, and the demand for such renewable energy in Missouri and
14 load centers farther to the east. If Grain Belt Express wishes to pursue cost allocation in
15 the future, it would need to return to the Commission and justify the proposal, including,
16 if the Commission deems appropriate, compliance with the "economic feasibility" test of
17 the Tartan Criteria. If the Commission finds that the Company has not adequately
18 supported its proposal, it can deny the request.

19
20 b. Levelized Cost Analysis

21 **Q. Have you reviewed the rebuttal testimony of Show-Me witness Paul Glenden Justis, Jr.?**

² Federal Energy Regulatory Commission Order in Docket ER14-409-000 (May 8, 2014), p. 6.

1 A. Yes, I have reviewed his testimony in detail, along with the supporting workpapers and
2 calculations. In his testimony, Mr. Justis performs a Levelized Cost of Energy (LCOE)
3 analysis similar to the one I performed for my direct testimony. Mr. Justis produces two
4 sets of results, the first using his own LCOE analysis and the second using my original
5 LCOE model with modified inputs.

6 **Q. Do Mr. Justis' modeling results dispute your finding that Kansas wind power**
7 **delivered by Grain Belt Express is the least expensive form of renewable generation**
8 **to serve Missouri load?**

9 A. No. His results actually support my findings that Kansas wind power delivered via Grain
10 Belt Express is the lowest-cost wind resource compared to both Missouri and Iowa wind
11 resources. Figure 4 on page 14 of Mr. Justis' rebuttal testimony shows the LCOE of
12 alternatives from three models: my original model, Mr. Justis' own model, and my
13 original model with input assumptions changed by Mr. Justis. In all three models, Kansas
14 wind power delivered via Grain Belt Express is the lowest-cost wind resource. Though
15 Mr. Justis claims that an AC line would be more cost-effective than an HVDC line to
16 bring power to Missouri, his own analysis indicates otherwise. His analysis finds that the
17 Project bringing wind power from western Kansas is more cost-effective than AC
18 transmission lines bringing wind power from Iowa or Missouri.

19 **Q. Mr. Justis claims, however, that a new, combined cycle generator would be less**
20 **expensive than the Project's delivered energy. Do you agree with his conclusion?**

21 A. No, I do not. In the remainder of this section of my Surrebuttal Testimony, I provide the
22 details supporting my conclusion that, when corrected for errors, Mr. Justis' model
23 results support the LCOE conclusions stated in my Direct Testimony.

1 **Q. When Mr. Justis claims that a combined cycle gas generator is a more cost-effective**
2 **generation resource than the Project's delivered energy, what does he mean?**

3 A. Mr. Justis does not analyze the cost-effectiveness of the Project's delivered energy in its
4 own right. He adds a penalty to the cost of the Project's delivered energy, as well as to
5 other energy resources. That penalty adds the cost of new, simple-cycle gas generators to
6 "back up" the energy resource studied. Adding the cost of simple cycle gas generation
7 makes all energy resources appear more expensive, but it particularly affects wind
8 generation.

9 **Q. What is the amount of the capacity penalty Mr. Justis applies to the Project's**
10 **delivered wind energy?**

11 A. Mr. Justis assumes that for every 100 megawatts ("MW") of Kansas wind generation
12 installed, approximately 81 MW of simple-cycle gas generation must also be installed. In
13 the case of the Project, which enables over 4,300 MW of new wind generation, Mr.
14 Justis' capacity penalty implies that the cost of over 3,460 MW of simple cycle gas
15 generation would somehow be assessed to wind generation delivered across the Project.
16 This is highly implausible.

17 **Q. Do MISO or PJM actually assess a capacity penalty against wind generation?**

18 A. No. Mr. Justis' cost of supplemental capacity is not an actual cost assessed by MISO or
19 PJM to wind farms or their power purchasers. MISO and PJM, where Grain Belt Express
20 will deliver power, balance variability and plan to meet peak demand on a system-wide
21 basis, taking into account all generation resources. They do not pair off variable and
22 dispatchable resources one by one. Together, MISO and PJM have added over 20,000

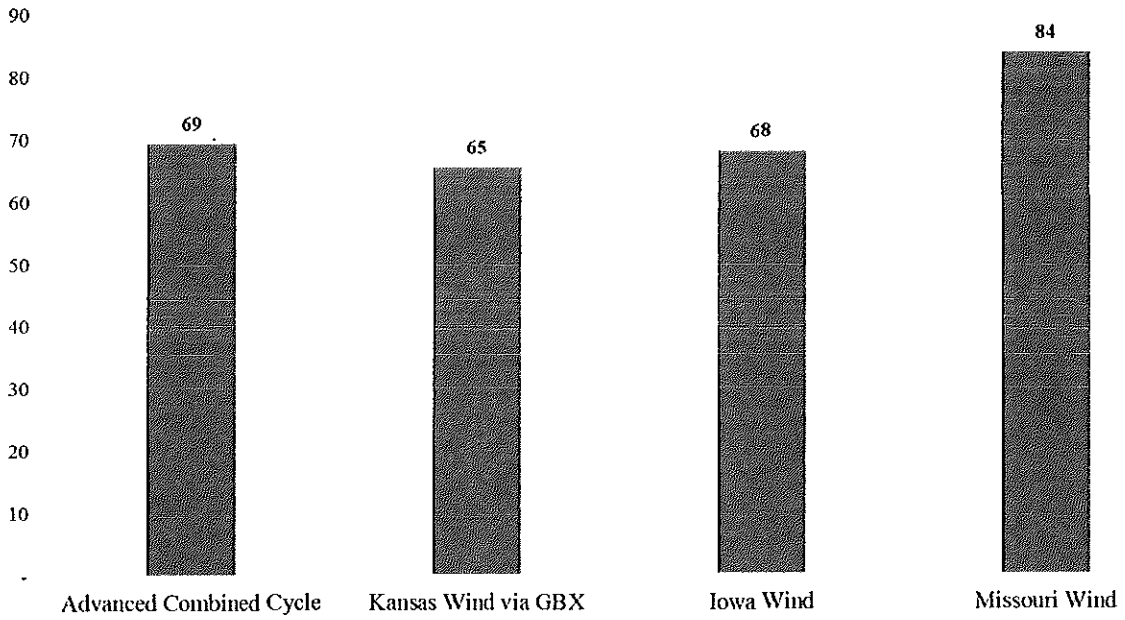
1 MW of wind generation resources from 2005 to 2015.³ I am not aware that any utilities
2 or wind generation owners in MISO and PJM have installed even a single simple-cycle
3 gas generator as a dedicated “back-up” to wind generation.

4 **Q. What does Mr. Justis’ analysis show when you compare the cost of energy of the**
5 **Project’s delivered wind energy to a combined cycle generator without imposing the**
6 **capacity penalty?**

7 A. To answer this question, I used Mr. Justis’ workpapers and re-ran his analysis without
8 making any other changes other than removing the capacity penalty. (There are some
9 other important changes that should be made to his analysis, which I will set aside for
10 now and return to later in this testimony). As depicted below, when wind energy
11 resources are not penalized with the cost of simple cycle gas generators, the Project’s
12 delivered energy cost is the lowest of all alternatives, even changing nothing else in Mr.
13 Justis’ model.

³ MISO Planning Year 2016-2017 Wind Capacity Credit report (available at <https://www.misoenergy.org/Library/Repository/Report/2016%20Wind%20Capacity%20Report.pdf>; last accessed on February 18, 2017)
2005 State of the Market Report for PJM and 2015 State of the Market Report for PJM (available at http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2015.shtml; last accessed on February 18, 2017)

Justis Model: Levelized Cost of Energy (\$/MWh) Estimates of Generation Alternatives

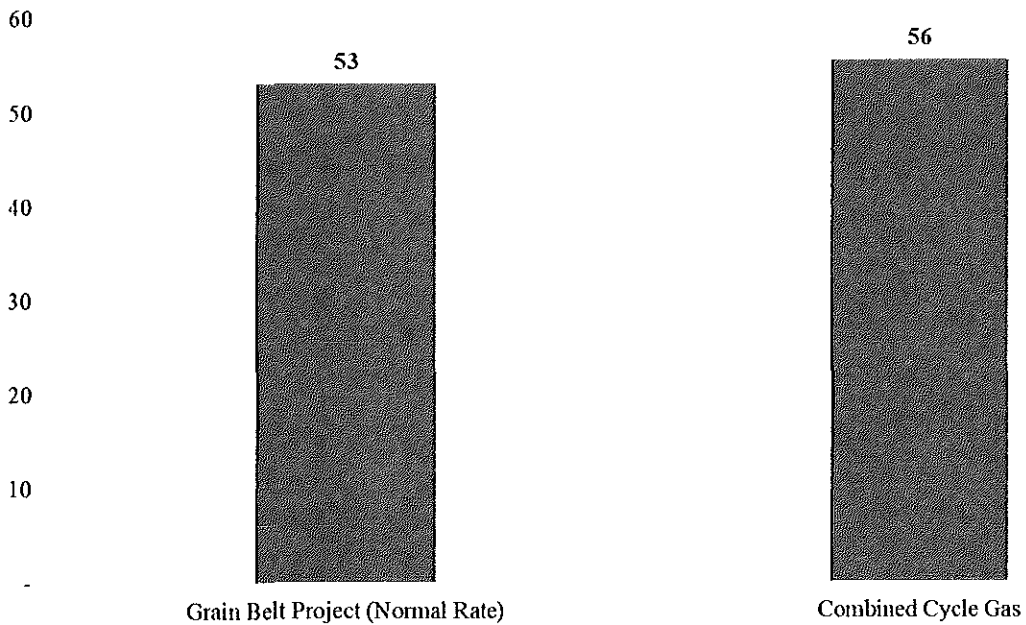


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Figure 1: Justis LCOE analysis without capacity penalty

Berry Adjusted Model: Year 1 Cost of Energy (\$/MWh) with 2.5% Escalator without Capacity Value, Natural Gas Reference Case, no CO2 Price



3

4

5

Figure 2: Justis' modified version of Berry analysis without capacity penalty

1 **Q. Even if one were to accept Mr. Justis' method of penalizing wind energy, which I do**
2 **not, would his analysis then prove that a combined cycle gas generator is a less**
3 **expensive alternative than wind energy delivered by the Project?**

4 A. No. There are some important flaws in his analysis. These flaws fall into two categories.
5 The first are calculation errors. These are calculations that I believe any reasonable
6 person who is experienced with financial models would agree to be incorrect. The
7 second category is input assumptions. Mr. Justis changes many assumptions from the
8 model presented in my direct testimony. Some of the changes are not objectionable, but
9 many are not reasonable, as I will discuss below.

10 **Calculation errors**

11 **Q. Mr. Justis reruns your LCOE model while adding a capacity penalty. Does he do so**
12 **correctly?**

13 A. No. Mr. Justis claims that an LCOE analysis must include a capacity penalty for wind
14 generation so that it can be compared with thermal generation on an *equivalent basis*.
15 While I disagree for the reasons described above, even if one accepts Mr. Justis' position,
16 he does not apply the penalty correctly when he reruns my analysis.

17 **Q. How does Mr. Justis apply the capacity penalty incorrectly?**

18 A. He adds the cost of too many megawatts of simple cycle gas generation to the Grain Belt
19 Express alternative. As a result, the Grain Belt Express alternative actually has a 50%
20 higher dependable capacity value than the combined cycle gas generation alternative.
21 Comparing the cost of two alternatives to provide dependable capacity is meaningless
22 unless they provide an equivalent amount of dependable capacity.

23 **Q. How do you know that Mr. Justis' application of his capacity penalty is incorrect?**

1 A. In reviewing Mr. Justis' workpapers, he computes that Grain Belt Express' delivered
2 wind energy has an inherent capacity value of 58.5 MW, before any simple cycle gas
3 generation is added. He then adds the cost of 241.5 MW of supplemental capacity on top
4 of the inherent dependable capacity, so that the total dependable capacity of the Grain
5 Belt Express alternative is 300 MW. Mr. Justis then compares the Grain Belt Express to
6 a combined cycle gas plant alternative with a total dependable capacity of only 201 MW.

7 To confirm Mr. Justis' error, I also reviewed the similar capacity penalty applied
8 by landowner witness Dr. Michael Proctor in Grain Belt Express' 2014 case before the
9 Commission. Unlike Mr. Justis, Dr. Proctor applied a capacity penalty to the Kansas
10 wind generation so that it had equivalent dependable capacity as the combined cycle gas
11 generator.⁴ While I disagreed with other aspects of Dr. Proctor's analysis, his application
12 of the capacity penalty is mathematically correct, while Mr. Justis' is not.

13 **Q. What effect does Mr. Justis' calculation error have on his model results?**

14 A. The error excessively penalizes the cost of the Project's delivered energy, with the
15 consequence that the model results are not valid.

16 **Q. Does Mr. Justis make any other calculation errors?**

17 A. Yes. Mr. Justis' own model has an error in how it calculates the cost for Kansas wind
18 generation to use the Grain Belt Express Project and the cost for other wind alternatives
19 to use new AC transmission lines. Mr. Justis first calculates an annual charge to build,
20 own and operate the Grain Belt Express Project. He then converts this annual charge to a
21 cost per megawatt-hour (MWh) of "delivered energy" after electric losses. But then Mr.
22 Justis applies the transmission cost per MWh of delivered energy to the total amount of

⁴ See Rebuttal Testimony of Show-Me witness Dr. Michael S. Proctor at page 16 in the 2014 Case, No. EA-2014-0207.

1 wind energy generated in western Kansas before electric losses, resulting in a
2 transmission charge that is too high because it was applied to the wrong number of MWh.

3 **Q. What are the impacts of these two calculation errors?**

4 A. Both errors make the combined cycle gas alternative appear more competitive than it
5 should—by increasing the cost of the Grain Belt Express Project and other wind
6 generation alternatives.

7 **Input Assumptions**

8 **Q. Schedule PGJ-01 HC contains a table of changes Mr. Justis made to your LCOE
9 analysis. What is your response to these change?**

10 A. Some of these changes are simply updating the Energy Information Administration
11 (“EIA”) input assumptions with new data that were released after my direct testimony
12 was filed. I have no objection to these changes. However, Mr. Justis makes four main
13 changes that are objectionable. First, Mr. Justis adds \$690 million (a 24% increase) to
14 the capital cost of the Grain Belt Express project, unreasonably relying on a report for
15 generic transmission line planning in the western United States. Second, Mr. Justis
16 assumes the Project’s rate from Kansas-Missouri will be the same as the Kansas-PJM
17 rate, while Grain Belt Express has been clear that this is not the case. Third, Mr. Justis
18 uses a capital cost for wind energy generation which is significantly more expensive than
19 current values--and wind energy costs are likely to decline between now and when wind
20 farms connecting to the Project are constructed. Fourth, Mr. Justis reduces the PTC value
21 from 80% to 60%, claiming this to be a more realistic assumption.

22 **Q. Why does Mr. Justis increase the Grain Belt Express capital cost estimate?**

23 A. Mr. Justis does not identify any specific issues with or deficiencies in Grain Belt Express’
24 capital cost estimate. His only support is a three year-old report prepared by a consultant

1 to the Western Electric Coordinating Council (“WECC”), a transmission planning body
2 in the western United States.

3 **Q. Please explain the basis for Grain Belt Express’ capital cost estimate.**

4 A. The capital cost estimate is based on our EPC development partner PAR’s input for the
5 line cost and a market survey by industry-leading HVDC consultants. For the
6 transmission line, Clean Line consulted with PAR to estimate the cost to construct the
7 project. The estimates are based on current market data for specific components of the
8 transmission line and include PAR’s own labor costs and markup assumptions. The cost
9 includes adders for contingency to account for potential capital cost increases due to, for
10 example, inflation in material costs, increases in labor rates, or weather delays.

11 Grain Belt Express’ HVDC converter estimates are based on a survey, conducted
12 by TransGrid Solutions, of HVDC projects around the world with a size between 700
13 MW and 6,000 MW. The survey included the actually awarded prices of recent HVDC
14 projects with the same HVDC technology as the Grain Belt Express Project (a line-
15 commutated converter or LCC). Some examples are the 2,200 MW Western HVDC link
16 that connects England to Scotland (\$209/kW), as well as the 3,000 MW K-C HVDC Link
17 and the 6,000 MW NER-Agra line in India (\$171/kW and \$165/kW, respectively). Using
18 these data points, the HVDC engineering TransGrid Solutions estimated that a 3,500 MW
19 HVDC bipole with a 500 MW mid-point converter station, such as the Grain Belt
20 Express Project, would cost approximately \$690 million. Taking into account the
21 potential for higher labor rates and materials costs in North American projects and
22 contingency, we estimate the cost of the Project converter stations to be approximately
23 \$850 million.

1 **Q. Does the WECC report cited by Mr. Justis make any estimates specific to the Grain**
2 **Belt Express?**

3 A. No. As stated on page 1-4, the report provides a tool to estimate “indicative” capital
4 costs for “the WECC region.” As the report further explains on page 1-2:

5 The costs included in this report are believed to reasonably represent the cost to
6 develop transmission and substation facilities in the WECC region. It is imperative
7 to note, however, that transmission lines and substations are all unique, and the cost
8 of a specific line or substation may be significantly different than the costs
9 provided here due to a variety of factors. [...] The costs here should be used as a
10 guide to develop approximate costs for new transmission, but **should not be used**
11 **to measure the cost or cost-effectiveness of any specific transmission facility.**
12 (emphasis added)
13

14 The WECC region does not include any of the states in which the Grain Belt Express
15 project will be located. Given that they cover a different region of the country, the
16 WECC report assumptions are not appropriate to use for the Grain Belt Express Project.
17 Further, the WECC report contains no substantive discussion of how the HVDC
18 estimates were developed or benchmarked.

19 **Q. Setting aside the inapplicability of the WECC report, did Mr. Justis apply the**
20 **WECC report in a reasonable manner?**

21 A. No. Mr. Justis assumes the cost for all three converter stations to be \$1.5 billion. This
22 appears to reflect the WECC report’s assumption that each 600 kV HVDC converter
23 station costs \$500 million. While \$500 million is an excessive estimate for each of the
24 Kansas and PJM converter stations, it is dramatically too high for the 500 MW Missouri
25 converter station. Due its lower power rating of 500 MW, the Missouri converter will
26 cost less than the Kansas or PJM converters. As is discussed in Dr. Galli’s direct
27 testimony on page 39, the cost for the Missouri converter station is estimated at about

1 \$100 million. Mr. Justis' estimated cost for the Missouri converter station is about five
2 times too high.

3 **Q. How does Mr. Justis' estimate of the capital cost of Grain Belt Express impact the**
4 **LCOE analysis?**

5 A. Mr. Justis uses his capital cost estimate to calculate the annual transmission charge
6 needed to generate sufficient revenue to cover the costs of the project. Because his capital
7 cost estimate is unreasonably high, they result in a transmission charge that is also
8 unreasonably high, which increases the cost of the Project's delivered energy.

9 **Q. Does Mr. Justis assess a different transmission service cost on the Project for**
10 **delivery to Missouri, as compared to delivery to PJM?**

11 A. No. Mr. Justis ignores the fact that Grain Belt Express will charge more for Kansas-PJM
12 service than for Kansas-Missouri service based on the shorter distance to Missouri and
13 the smaller MISO market size. By charging the same transmission service price to
14 Missouri, even though the Missouri converter station is much closer to the Project's
15 Kansas converter station, Mr. Justis makes the Project's delivered energy to Missouri
16 seem more expensive than it really is.

17 **Q. Why can the Project's Kansas to PJM service support a higher transmission**
18 **charge?**

19 A. It is a matter of supply and demand. The supply of renewable energy is higher in MISO
20 compared to PJM, with 14.7 GW of wind installed in MISO and 7.0 GW of wind
21 installed in PJM as of the end of 2015.⁵ On the other hand, demand for renewable energy

⁵ MISO Planning Year 2016-2017 Wind Capacity Credit report (available at <https://www.misoenergy.org/Library/Repository/Report/2016%20Wind%20Capacity%20Report.pdf>; last accessed on February 18, 2017);

1 is higher in the PJM states. Page 40 of my direct testimony describes the MISO and PJM
2 renewable demand in more detail. The PJM wholesale energy market is also much larger
3 than the MISO market. As a result of these supply-demand dynamics, REC prices are
4 higher in PJM, allowing a higher delivered cost of renewable energy to be competitive.⁶
5 The PJM market can support a higher price for delivered wind energy and justify a higher
6 transmission charge for Kansas-PJM service on the Project.

7 **Q. Mr. Justis uses a capital cost for wind that is \$1,933/kW (in 2016 dollars). Is this**
8 **number realistic for wind farms built in Kansas?**

9 A. No, it is not. As an initial matter, Mr. Justis makes a small error in coming up with his
10 estimate. The EIA report that is Mr. Justis' source suggests the base cost for wind is
11 \$1,877/kW in 2016 dollars. Mr. Justis then uses a regional cost adjustment factor to
12 increase the cost to \$1,933/kW.

13 A \$1,933/kW installation cost is well above costs today in southwest Kansas. For
14 the original LCOE analysis, I used data from the Lawrence Berkeley National Laboratory
15 (LBNL), which are based on a comprehensive survey of actual market data from 2015
16 wind projects.

17 Wind technology costs have continued to decline every year since 2009.⁷ In light
18 of this trend, my use of average 2015 installation cost of \$1,637/kW (in 2022 dollars) for

2016 State of the Market Report for PJM (available at http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2016.shtml; last accessed on February 18, 2017)

⁶ As of February 10, 2017, PJM Tier 1/Class 1 REC prices average approximately \$7.60/MWh according to SNL Energy's Power Daily report.

⁷ LBNL, 2015 Wind Technologies Market Report 2015 (available at <https://emp.lbl.gov/publications/2015-wind-technologies-market-report>; last accessed on February 18, 2017) page 52, figure 39.

1 projects built in the a 2020-2021 is, if anything, a conservative assumption.⁸ On the other
2 hand, Mr. Justis' use of a capital cost that is almost 20% over current market values is
3 highly unreasonable for future wind generation installations.

4 **Q. Why does Mr. Justis reduce the production tax credit ("PTC") value associated with**
5 **the Project to 60% of the full value?**

6 A. His explanation is limited to the following:

7 Currently, GBX development schedule indicates completion at end of 2021. Due to
8 regulatory and land acquisition (*sic*) issues, the project schedule contains significant (*sic*)
9 risk. It is unlikely that new wind facilities planning to deliver energy via GBX would
10 qualify for the 80% PTC level. (Schedule PGJ-01 HC)
11

12 **Q. What is your response to Mr. Justis' change?**

13 A. Given the lack of details he offers, I can only suppose that Mr. Justis' concern is that, if
14 the Project suffers unexpected delays, it cannot be in service by 2021, and the delay could
15 decrease the value of the PTC received by connected wind generators. In the recent IRS
16 guidance on this matter, the start date for a wind project, not the completion date, is the
17 most important factor to determine the appropriate PTC value. If wind projects can begin
18 construction or spend 5% of the total project cost in 2017, they are deemed to start
19 construction for the purposes of qualifying for 80% of the full value of the PTC.

20 If wind projects which start construction in 2017 become operational by the end
21 of 2021, the expected online date of the Grain Belt Express Project, they automatically
22 meet the Internal Revenue Service's "continuity" requirements. (IRS Notice 2016-31)
23 However, even if there is a delay in the transmission line construction that prevents the

⁸ The investment bank Lazard Freres recently estimated installed wind costs at \$1,250-\$1,700 per kW. Lazard's Levelized Cost of Energy Analysis – Version 10.0 (available at <https://www.lazard.com/media/438038/levelized-cost-of-energy-v100.pdf>; last accessed on February 18, 2017) page 11.

1 wind farms from coming online in 2021, it is still possible for wind projects to qualify for
2 80% of the full value of the PTC. The deadline for the wind farm to come online by the
3 end of 2021 is merely a “safe harbor,” not a strict requirement. Wind farms can still
4 qualify for the higher tax credit value if they show “continuous construction” or
5 “continuous efforts” as defined in the IRS guidance. Of note, the IRS guidance
6 specifically calls out “interconnection-related delays, such as those relating to the
7 completion of construction on a new transmission line” (emphasis added) as an excusable
8 disruption in continuous efforts or continuous construction for tax credit qualification.
9 Therefore, a wind farm that otherwise qualifies for the higher tax credit value but must
10 wait on the Grain Belt Express Project may still claim the higher value PTC. In light of
11 Grain Belt Express’ current schedule for a 2021 commercial online date and the IRS’
12 specific allowance for transmission line delays, the 80% PTC is a reasonable
13 assumption.⁹

14 **Q. Does Mr. Justis make any other questionable assumptions in his LCOE analyses?**

15 A. Yes. In his analysis comparing Missouri and Iowa wind to the cost of the Project’s
16 delivered energy, Mr. Justis erroneously spreads the cost for a double-circuit 345 kilo-
17 volt (“kV”) AC transmission line over 3,000 MW of new generation. This is too high a
18 capacity for a 345 kV AC line. The WECC report that Mr. Justis references assumes the
19 capacity of this type of transmission line is 1,500 MW, which, unlike 3,000 MW, is a
20 reasonable value. When I reran Mr. Justis’ model, I used the 1,500 MW capacity, but I

⁹ On page 13-16 of his rebuttal testimony, Mr. Joseph Jaskulski also argues that wind generators connected to Grain Belt Express are likely to receive only 60% of the full PTC value. My response here also applies to Mr. Jaskulski’s position.

1 also reduced the network upgrades for the Missouri and Iowa wind alternatives by 50%,
2 which made them more competitive.

3 In addition, Mr. Justis assumes the cost of the Grain Belt Express is spread over
4 the delivered capacity of the Project (4,000 MW) rather than the amount of generation in
5 western Kansas (approximately 4,300 MW). Grain Belt Express's transmission service
6 rate is charged based on the amount of generation which converted to HVDC in western
7 Kansas. Mr. Justis' model should do the same.

8 Finally, Mr. Justis applied the property tax assessment for commercial property in
9 Kansas for the entire Grain Belt Express Project. Though a more minor error than the
10 others discussed above, this is still incorrect as each state has a different property tax
11 regime. The composite rate for Kansas, Missouri, Indiana and Illinois is significantly
12 lower than Kansas, with the result that Mr. Justis' use of the wrong property tax rate
13 penalizes the delivered cost of energy for the Project.

14 **Q. Have you modified Mr. Justis' LCOE analysis based on the issues described above?**

15 **A.** Yes, I have. I took Mr. Justis' workpapers and corrected the calculation errors described
16 above. I also modified the input assumptions in both his analyses to correct the issues I
17 described above. Finally, I updated the upgrade cost for the MISO interconnection to
18 equal \$21 million based on the Project's most recent MISO study results, discussed by
19 Grain Belt Express witness Wayne Galli in his surrebuttal testimony. The changes I
20 made to Mr. Justis' own analysis are summarized in the table below.

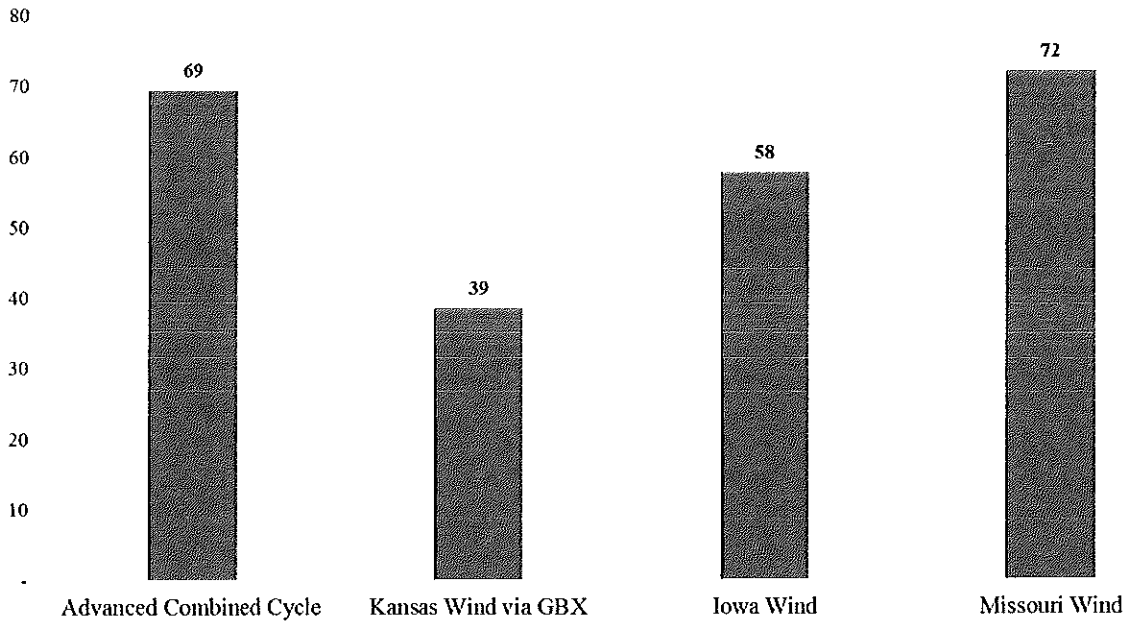
Input Assumption	Justis Rebuttal Value	Berry Adjusted Value
GBX Capital Cost	\$3.59 billion	\$3.19 billion
GBX Transmission Capacity	4,000 MW	4,385 MW
GBX Effective Property Tax Rate	3.75%	1.93%
Transmission Cost Adder Adjustment for GBX KS-MO Service	1.0	0.67
Transmission Cost Adder Calculation Method	Off Gross Energy	Off Net Energy
AC Line Capital Cost	\$1.33 billion	\$1.06 billion
AC Line Transmission Capacity	3,000 MW	1,500 MW
Wind Base Capital Cost	\$1,877/kW (2016) \$2,187/kW (2021)	\$1,637/kW (2021)
PTC Value	60%	80%

1

2 **Q. How do the results of Mr. Justis LCOE analyses change after making the input**
3 **assumption changes you describe above?**

4 **A.** The graph below shows the results of Mr. Justis' model after making the corrections
5 described above. The modified analysis shows that the Kansas wind via GBX alternative
6 is the lowest-cost generation alternative, both with and without including the cost penalty
7 of supplemental capacity. Without the cost penalty of supplemental capacity, the Kansas
8 wind via GBX alternative is \$31/MWh cheaper than combined cycle gas, and with the
9 cost penalty of supplemental capacity, Kansas wind is \$3/MWh cheaper than combined
10 cycle gas generation.

Justis Model (Corrected): Levelized Cost of Energy (LCOE) Estimates of Generation Alternatives, with capacity penalty



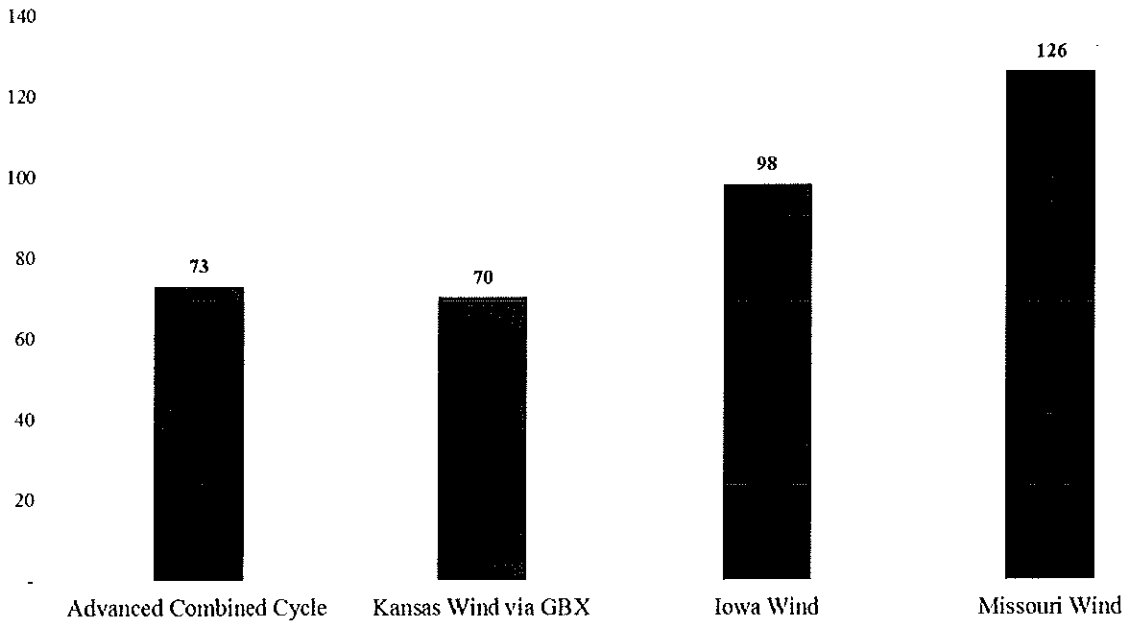
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Figure 3: Justis LCOE analysis after model corrections without capacity penalty

2

3

Justis Model (Corrected): Levelized Cost of Energy (LCOE) Estimates of Generation Alternatives, with capacity penalty



4

Figure 4: Justis LCOE analysis after model corrections with capacity penalty

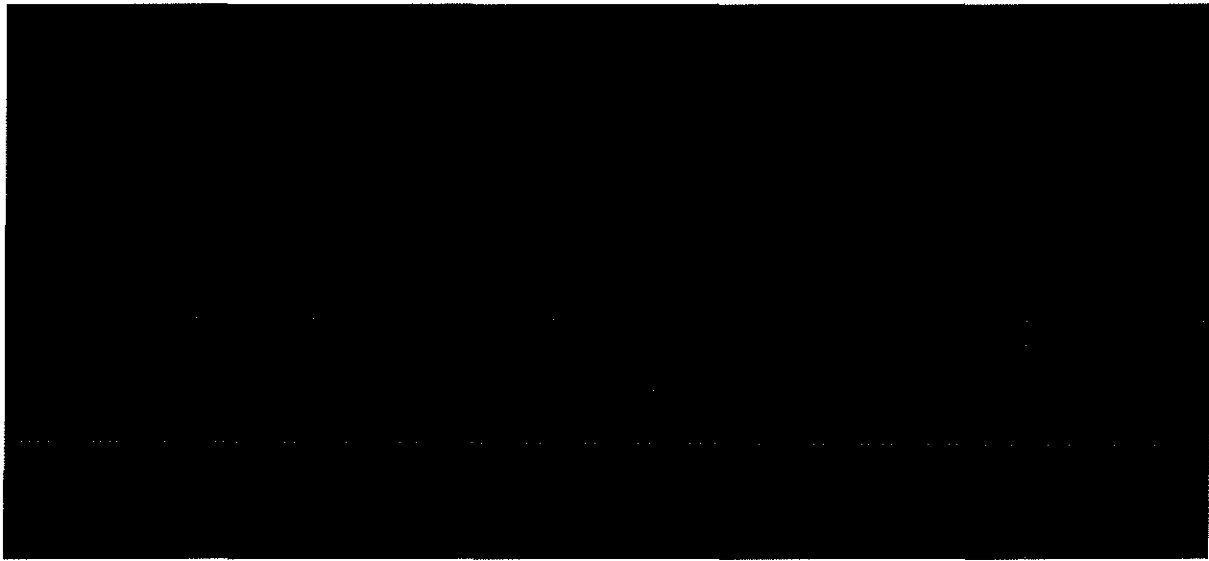
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6

1 **Q. With respect to Mr. Justis' modifications to your original LCOE model, what**
2 **happens when you take into account the issues described above?**

3 A. To confirm that the Project's delivered energy remains the low-cost alternative, I reran
4 the model and left in all of Mr. Justis' changes except the following: I fixed the
5 supplemental capacity penalty calculation as described earlier in this section. I also made
6 the same alterations to input assumptions as I did to Mr. Justis' own model. Finally,
7 instead of using Mr. Justis' transmission rate of [REDACTED]
8 [REDACTED]/MW-month for Kansas-Missouri service (the same price as for Kansas-
9 PJM service), I reverted back to the original [REDACTED]
10 [REDACTED]MW-month for Kansas-Missouri service that I used in my original model.
11 These changes are summarized below.

12



13

14

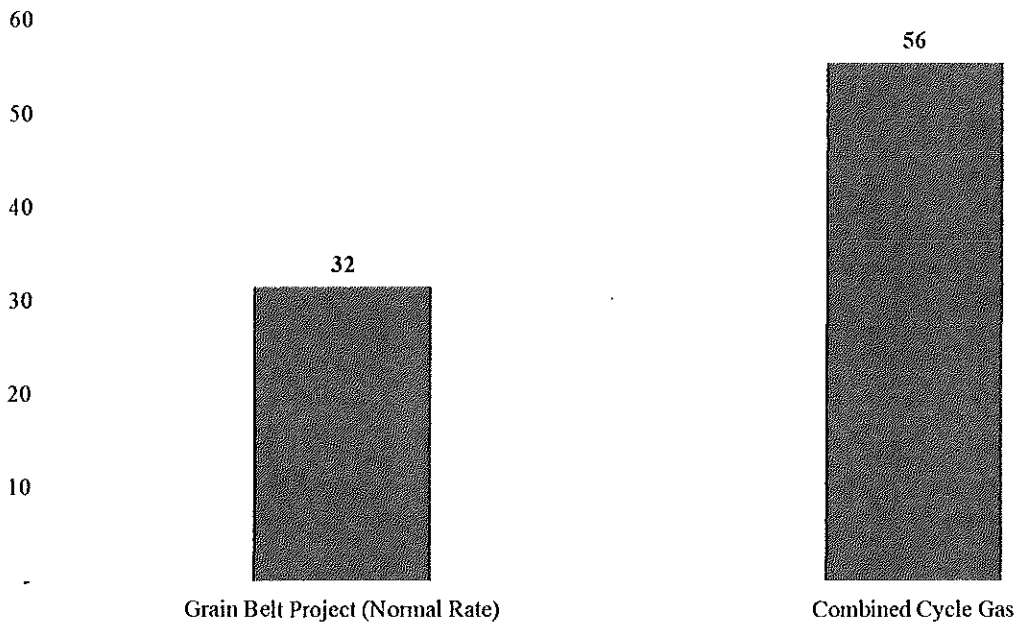
15 **Q. When you made these changes, what are the results?**

16 A. The chart below compares the LCOE for the Kansas Wind + Grain Belt (Normal Rate),
17 and Combined Cycle Gas alternatives from Mr. Justis' analysis using my original model,
18 with the changes I mention above. Without the cost of supplemental capacity, wind
19 delivered by the Project is approximately \$24/MWh lower-cost than a combined cycle

1 gas alternative. Including the appropriate amount of supplemental capacity penalty in the
2 Kansas wind alternative to match the dependable capacity of the combined cycle gas
3 alternative, the Kansas Wind + Grain Belt (Normal Rate) LCOE increases, but is still
4 approximately \$13/MWh lower than the combined cycle alternative.

5

Berry Adjusted Model (Corrected): Year 1 Cost of Energy (\$/MWh) with 2.5% Escalator, without Capacity Penalty, Natural Gas Reference Case, no CO2 Price

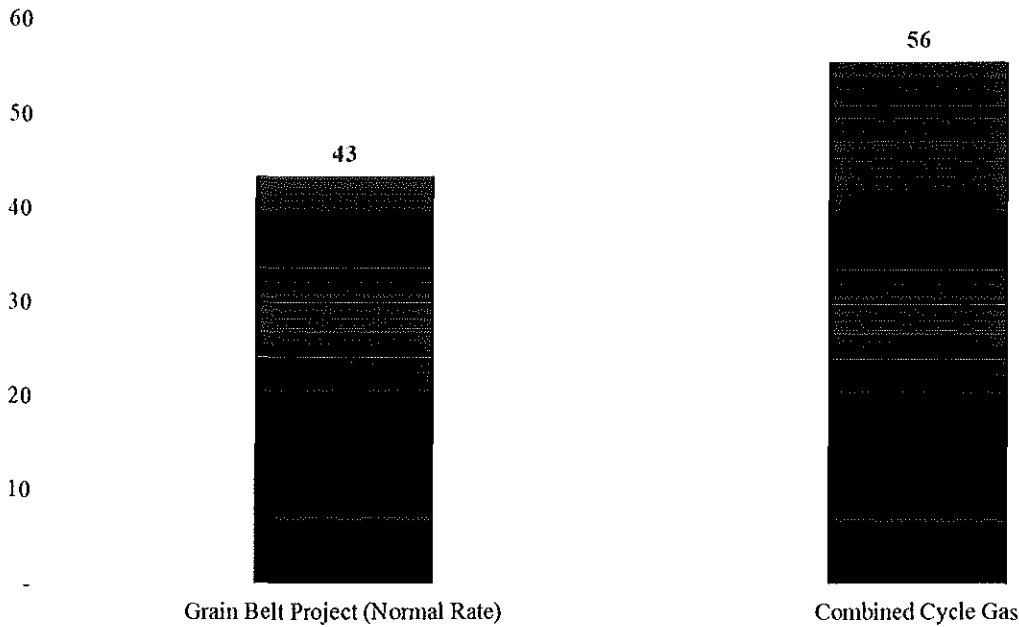


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Figure 5: Modified Berry analysis after model corrections without capacity penalty

Berry Adjusted Model (Corrected): Year 1 Cost of Energy (\$/MWh) with 2.5% Escalator, with Capacity Penalty, Natural Gas Reference Case, no CO2 Price



1

Figure 6: Modified Berry analysis after model corrections with cost of supplemental capacity

2

3 **Q. Do you still believe the LCOE model results presented in your direct testimony are**
4 **valid?**

5 **A.** Yes. Mr. Justis did not point out any issues which change the validity of my analysis or
6 my conclusions. I have presented additional results in this testimony to demonstrate that
7 the financial viability of the Project is robust when different assumptions and modeling
8 techniques are used.

9 **Q. On page 16 of his rebuttal testimony, Mr. Justis also argues that the natural gas**
10 **price forecast used in your original analysis are noticeably higher than current**
11 **market-traded future prices. What is your response?**

12 **A.** The forecast I use is reasonable for natural gas prices in Missouri. Natural gas futures
13 traded on the market are typically priced at the Henry Hub, a major distribution hub on
14 the natural gas pipeline system generally seen as the primary price setter for the North

1 American natural gas market. Henry Hub prices do not take into account any
2 adjustments due to the cost of moving the gas to a generator unit in Missouri to use for
3 electric power generation.

4 Looking at historical citygate gas prices from 2012-2016, the average cost of
5 natural gas delivered to distribution points in Missouri has been about 22% more
6 expensive than the average cost to all other U.S. citygate prices, and 81% more expensive
7 than Henry Hub prices.¹⁰ While average Henry Hub spot prices were \$2.42/mmBtu in
8 2016, the average citygate price in Missouri was \$4.78/mmBtu. My analysis assumes gas
9 prices in Missouri in 2022 (corresponding to the first full year of Grain Belt operation) to
10 be \$5.46/mmBtu, which is lower than the price estimated if you escalate the 2016 price
11 annually with inflation. That is, the reference case natural gas prices I use in my model
12 assume a price that is slightly lower than today's citygate natural gas prices in Missouri
13 in real dollar terms.

14 In addition, my original LCOE analysis looked at a range of natural gas forecasts.
15 The low natural gas price scenario assumes gas prices are approximately 29% lower than
16 the reference case (in 2022). Even with these low natural gas prices, my analysis showed
17 that in all cases Kansas wind delivered by Grain Belt was lower-cost than combined cycle
18 gas.

19 **Q. Do you agree with Mr. Justis' assessment at page 20 that the status of the Clean**
20 **Power Plan and a possible nation-wide carbon tax raise doubts regarding further**
21 **expansion of wind generation?**

¹⁰ Citygate gas prices represent a point or measuring station at which a distributing gas utility receives gas from a natural gas pipeline company or transmission system. Data available at https://www.eia.gov/dnav/ng/ng_pri_sum_a_EPG0_PG1_DMcf_m.htm (last accessed on February 18, 2017).

1 A. Even with no carbon rule in place and even if the Clean Power Plan is scaled back or
2 reversed, the further expansion of wind generation will continue. Today, wind generation
3 procurement is primarily driven by economics and state policies. This trend will continue
4 even without a national carbon policy that would further increase the appetite for
5 renewable energy. As the LCOE analysis in my direct testimony showed, even the no
6 carbon price scenarios all resulted in Kansas wind delivered via Grain Belt Express
7 having the lowest LCOE of all alternatives studied. The analyses presented earlier in this
8 testimony also show that even without a carbon price, the Project's delivered energy is
9 the lowest-cost resource option. If carbon legislation or rules are implemented at some
10 point in the future, the economics will only favor wind more. Buying wind energy is, at a
11 minimum, an insurance policy against future environmental regulation. But carbon
12 regulation is not necessary for wind energy expansion and the Project to be economically
13 compelling.

14 **Q. On page 11 of his rebuttal testimony, Mr. Justis suggests that it is also appropriate**
15 **to consider the Levelized Avoided Cost of Energy (LACE) in analyzing the Grain**
16 **Belt Express Project. Do you agree?**

17 A. I agree that LACE comparison can provide valuable information about a generation
18 resource's economic value relative to the existing resource mix in a region. A LACE
19 comparison is, most basically, a comparison of the cost of a new generation resource with
20 a utility's avoided cost of generating or purchasing power through another means. If the
21 cost of a new resource is below the LACE, that resource will save money for the utility
22 and its customers.

1 Based on Mr. Justis' testimony, wind generation in general compares favorably to
2 utilities' LACE. According to the EIA report Mr. Justis references, both combined cycle
3 gas and wind can generate energy for less than the forecasted LACE, implying both
4 resources provide benefits relative to buying power from the market or generating it with
5 existing resources.

6 The values cited by Mr. Justis, however, do not pertain to any particular resource;
7 they represent an average over 22 regions across the entire United States. A better
8 analysis must be specific to the region and generation resource studied. The PROMOD
9 analysis provided by Grain Belt Express witness J. Neil Copeland provides an avoided
10 cost of energy that is specific to a wind resource delivered to Missouri. In Mr. Copeland's
11 Business as Usual simulations, the average locational marginal price at the Missouri Load
12 Hub during hours in which Grain Belt Express delivers wind energy to the Missouri
13 converter station is about \$36.70/MWh. In an RTO, the locational marginal price at a
14 load hub represents the avoided cost of energy for a utility to buy power on the market,
15 and is therefore the most precise estimate of a utility's avoided cost. Mr. Copeland's
16 forecasted avoided cost of \$7/MWh is about \$5/MWh higher than the Kansas Wind +
17 Grain Belt (Normal Rate) LCOE calculation presented in my model above, even taking
18 into account the changes by Mr. Justis which I specifically refuted in this testimony. Mr.
19 Copeland's forecasted avoided cost of \$37/MWh is \$9/MWh higher than the LCOE
20 calculation presented in my direct testimony. These comparisons support the fact that
21 Grain Belt Express can deliver wind energy for a price lower than a reasonably expected
22 avoided cost.

1 **Q. Is low cost the only benefit that should be considered regarding Kansas wind**
2 **delivered by the Grain Belt Project?**

3 A. No, it is not. There are other benefits to having direct transmission access to the best wind
4 resources and including wind generation in a utility's portfolio. For example, wind can
5 reduce fuel risk in such a portfolio. The recent downward trend in gas prices has been the
6 primary driver for coal plant retirements. The shift has resulted in a strong dependency on
7 natural gas for power generation. If gas prices were to spike as they have in the past, the
8 cost to utilities to meet demand would be very high as they wouldn't be able to switch
9 back to coal. Having a transmission line that connects to the windiest regions of the U.S.
10 reduces this risk, as the cost of wind energy will be the same regardless of commodity
11 prices. Similarly, wind generation in a utility portfolio serves to reduce the risk of a
12 carbon policy in the future. Even if the price of wind generation is similar to or slightly
13 more expensive than other resources, reducing the risk of fuel price fluctuations and
14 future environmental policy changes is a valuable benefit of the resource.

15 c. Transmission Upgrade Costs

16 **Q. Commission Staff has expressed concern that the Project may not be economically**
17 **feasible because of the cost of transmission upgrades to interconnect the Project to**
18 **SPP, MISO and PJM. What is your response?**

19 A. As discussed in the surrebuttal testimony of Grain Belt Express witness Dr. Wayne Galli,
20 there is more certainty on upgrade costs than Staff implies. As Dr. Galli details there:

21 1. Many of the technical studies discussed by Staff as potentially driving higher upgrade
22 costs are actually design-level studies that affect the HVDC converter design within
23 the fence boundaries of the converter station, not the level of transmission upgrades
24 on the existing transmission grid.
25

1 2. Each of SPP, MISO and PJM have completed technical studies that provide a
2 reasonable basis for estimating Grain Belt Express' network upgrade costs.

3
4 3. Reputable third-party technical consultants such as Siemens PTI and TransGrid
5 Solutions, Inc. have completed additional studies that provide a further basis for
6 Grain Belt Express' cost estimates.

7
8 While Staff is correct that Grain Belt Express' upgrade costs are not known to the last
9 dollar and cent, Staff chooses to emphasize what studies have not yet been completed,
10 rather than recognize the substantial number of technical studies that have been
11 completed to date. For the purposes of the Project's economic feasibility, the important
12 point is that Grain Belt Express has completed enough technical work to form a
13 reasonable estimate of the Project's transmission upgrade costs.

14 **Q. Does Grain Belt Express currently include an estimate of transmission upgrade
15 costs in its financial model and business plan?**

16 A. Yes. The capital cost estimate presented in this testimony includes an estimate for SPP
17 upgrades (based on Grain Belt Express' executed interconnection agreement with ITC
18 and SPP), for MISO upgrades (based on the recently completed Optional Study by
19 MISO, which is attached to the surrebuttal testimony of Company witness Dr. Wayne
20 Galli as Schedule AWG-9), and PJM upgrades (based on the System Impact Study
21 completed by PJM and Grain Belt Express' own analyses). The total estimate for
22 transmission upgrades is about \$550 million.

23 **Q. Is it possible that this cost estimate could change?**

24 A. Yes, however it is very unlikely that the transmission upgrade costs will change by a
25 magnitude that makes the Project economically infeasible.

26 **Q. Is it likely that changes in transmission upgrade costs will negatively affect the
27 economic feasibility of Grain Belt Express' proposal?**

1 A. No. First, as discussed by Dr. Galli in his surrebuttal testimony, Grain Belt Express
2 already has a reasonable basis for its upgrade cost estimates, reducing the risk of major
3 cost changes in the future. Second, for the purposes of the Project's economic feasibility,
4 the relevant consequence of any increase in the upgrade costs is the effect of these
5 changes on the Project's delivered cost of wind energy. As noted above in the discussion
6 of levelized cost analysis, the Project will be economically feasible if it can deliver
7 energy at a cost that is competitive with other alternatives to generate or purchase
8 electricity. Although higher upgrade costs may reduce the profitability of the Project, if
9 its delivered energy is still cost competitive with alternatives, then the Project is
10 economically feasible.

11 **Q. Will potential transmission upgrade costs be significant enough to affect the**
12 **economic feasibility of the Project?**

13 A. No. They are far from the largest cost component. When looking at the combined cost of
14 the Project and the connected wind generation, the transmission upgrade costs comprise
15 about 5.5% of the total cost.¹¹ Therefore, even in the unlikely scenario that transmission
16 upgrade costs increased by 50%, it would only increase the overall costs of the Project to
17 deliver wind energy by 2.75%.

18 **Q. How much could transmission upgrade costs increase while the Project still remains**
19 **lower cost than other alternatives?**

20 A. Based on my analysis presented above, the transmission upgrade costs could increase by
21 over 500% and the Project's delivered wind energy would still be less expensive than the

¹¹ Assumes 4,300 MW of new wind generation with a capital cost \$7.04 billion (or \$1,637/kW), and \$2.9 billion capital cost for the project, including the \$550 million total upgrade cost. \$550 million divided by the total capital cost of \$9.94 billion equals 5.5%.

1 other alternatives studied.¹² Some relatively small level of uncertainty in transmission
2 upgrade costs should not obscure the overall economic feasibility of Grain Belt Express'
3 proposal.

4 **Q. If transmission upgrade costs are higher than expected, who bears that risk?**

5 A. Grain Belt Express and its investors bear the risk. The only possible exception is that ten
6 percent of a network upgrade with a reliability benefit to Missouri could be allocated to
7 MISO's general transmission rates, with a portion of that cost recovered from Missouri
8 customers if this Commission allows that recovery.

9 Grain Belt Express' and MISO's study work to date have identified only about \$2.02
10 million of upgrades that may be subject to broader cost allocation, of which Missouri's
11 estimated share would be \$125,200. Dr. Wayne Galli discusses this topic in Section II.a
12 of his surrebuttal testimony. Based on the load allocation formula discussed in Dr.
13 Galli's testimony, Missouri would be allocated 0.62% of any eligible upgrades. If, for
14 some reason, \$100 million of reliability transmission upgrades arise through the MISO
15 interconnection, the total bill to Missouri would be \$620,000, to be recovered over many
16 years. On the other hand, MJMEUC has estimated the benefits to its customers of the
17 Grain Belt Express Project at \$10 million per year for its 37% of the Kansas-Missouri
18 capacity.¹³ Even in this extreme scenario, the potential cost of MISO upgrades does not
19 come close to outweighing the Project's benefits to the public.

¹² In my original LCOE analysis, the next lowest-cost resource after the Kansas Wind + Grain Belt (Normal Rate) alternative was the Missouri Wind alternative. I solved for the amount of upgrades for which, if 100% of the upgrade cost increase were reflected in a higher transmission charge, the Kansas Wind + Grain Belt (Normal Rate) alternative would be equal in cost to the Missouri wind alternative. The result was a 521% increase.

¹³ Rebuttal Testimony of John Grotzinger, p. 5.

1 d. Other Issues

2 **Q. At page 31 of Staff’s Rebuttal Report, Ms. Kliethermes suggests that Grain Belt**
3 **Express has ignored “the basis differential between the MISO converter station and**
4 **the ultimate sink within MISO.” Please respond to that statement.**

5 A. The basis differential, or difference in locational wholesale electric prices, is in fact
6 incorporated into the wholesale market analysis performed by Grain Belt Express witness
7 Neil Copeland in his direct testimony. Mr. Copeland elaborates on this point in his
8 surrebuttal testimony.

9 With respect to Grain Belt Express’ levelized cost analysis, basis differential is
10 not explicitly incorporated because all of the resources considered will have a basis
11 differential, though it may vary based on their location. The fact that Grain Belt Express
12 delivers directly to Missouri is an advantage over more remote wind resources delivered
13 via the AC grid, which are exposed to a much greater degree of basis differential.
14 Generally speaking, the farther away a generation resource is from load, the higher the
15 risk of basis differential.

16 In his surrebuttal testimony, Mr. Copeland states that the forecasted basis
17 differential between Grain Belt Express’ point of delivery and Missouri load hub is only
18 \$0.16 per MWh. Compared to the price of the wholesale energy and the cost of
19 generation, the basis differential is insignificant. Mr. Copeland supports Ms. Kliethermes’
20 statement at page 31 of Staff’s Rebuttal Report that, while it is reasonable to study
21 potential congestion costs, “[congestion] amounts are not likely to be of such a magnitude
22 to impact the economic feasibility of the Project one way or the other.”

1 **Q. On pages 15-16 of his rebuttal testimony, Mr. Justis claims the Ameren Missouri**
2 **2014 Integrated Resource Plan (“IRP”) supports his claim that wind energy is more**
3 **expensive than conventional generation. What is your response?**

4 A. As Mr. Justis notes, the Ameren Missouri RFP did in fact find that wind energy was
5 “competitive.” As I explained in my direct testimony, the Ameren IRP identifies high
6 capacity factor wind resources to have the lowest levelized cost of energy of all new
7 supply options.¹⁴ Ameren’s IRP concludes that wind energy is competitive despite some
8 outdated (and in light of what we know today, unreasonable) assumptions about wind
9 energy. Ameren’s IRP assumes zero production tax credit value for wind energy. Since
10 Ameren published its IRP, Congress extended the PTCs for wind for all projects starting
11 construction by the end of 2019. Moreover, Ameren’s IRP considered a range of wind
12 generation capital costs from about \$2,000 per kW to \$2,800 per kW.¹⁵ As discussed
13 above, this range is substantially above the current market prices for wind generation
14 equipment. The IRP’s outdated assumptions about PTCs and wind costs penalize wind
15 energy as compared to conventional generation, and therefore the IRP is not the best
16 document to evaluate whether wind energy is less expensive than conventional
17 generation.

18 Furthermore, Ameren’s IRP did not study Grain Belt Express’ proposal or the
19 windiest sites in western Kansas, which can connect to the Project’s converter station.
20 Therefore, the IRP is not directly relevant to evaluate the economic feasibility of the
21 Project.

¹⁴ Ameren Missouri Integrated Resource Plan, 2014, Chapter 1, Figure 1.3

¹⁵ Ameren Missouri Integrated Resource Plan, 2014, Chapter 6, Table 6.16-6.18

1 **Q. Some intervenors have suggested that the MJMEUC contract does not support the**
2 **economics of the Project.¹⁶ What is your response?**

3 A. The expected revenue from Grain Belt Express' contract with MJMEUC is not a
4 benchmark of expected revenue from the rest of the line. MJMEUC's "first mover" rate
5 is lower than the rate that will be offered to subsequent customers. A first mover
6 discount was appropriate for MJMEUC given the development status of the Project.
7 MJMEUC's discounted rate provides additional benefits to MJMEUC and increases
8 MJMEUC's savings from the contract.

9 **Q. Is there a demand for transmission service on the Project at a rate higher than that**
10 **set forth in the MJMEUC contract?**

11 A. Yes. All but one of the 14 respondents to the Grain Belt Express open solicitation
12 accepted the full rate offered by Grain Belt Express for Kansas-PJM service. The
13 average rate offered by other shippers for Kansas-Missouri service was approximately
14 [REDACTED] per kw-month, much higher than the
15 MJMEUC first-mover rate of \$1.60 per kw-month.

16 **Q. On page 30 of Staff's Rebuttal Report, Staff testifies that the MJMEUC contract**
17 **accounts for only 5.71% of the Project's Kansas-Missouri capacity. Is that correct?**

18 A. No. The correct number is 37%. MJMEUC purchased 200 MW of a total of over 537
19 MW of Kansas-Missouri capacity. The MJMEUC contract assures that a substantial
20 amount of the Project's Kansas-Missouri capacity is allocated to benefit to Missouri load
21 serving entities.

22 **III. Need and Public Interest**

¹⁶ Staff Rebuttal Report p. 29-30, Shaw Rebuttal Testimony, p. 5.

1 **Q. At page 17 of Staff’s Rebuttal Report, Daniel Beck testifies that Grain Belt Express**
2 **is not needed for investor owned utilities in Missouri to meet the state’s 2021**
3 **Renewable Energy Standard compliance requirements because utilities can just buy**
4 **RECs. What is your response?**

5 A. Mr. Beck is technically correct that utilities can purchase Renewable Energy Credits
6 (“RECs”) without purchasing the accompanying renewable energy to comply with the
7 Missouri RES. However, the logical extension of this view without consideration of the
8 purpose of the RES would lead to the irrational result that no renewable energy facility or
9 transmission line is ever needed. Missouri’s statutory renewable energy “portfolio
10 requirement” in Section 393.1030.1 directs investor-owned electric utilities “to generate
11 or purchase electricity from renewable energy resources.” New facilities are in fact
12 needed because the only way to generate a REC is to actually produce and transmit
13 renewable energy to a buyer or power pool.

14 Wind generators in western Kansas cannot and will not build their projects unless
15 and until adequate transmission is in place to deliver their energy. New transmission
16 lines, including the Project, are essential to expanding the supply of renewable energy
17 generation. By delivering 500 MW of the lowest cost renewable energy generation to
18 Missouri, the Project enables a large and affordable supply of renewable energy and
19 RECs that could not otherwise enter the market. In addition, by actually delivering
20 power to Missouri, the Project enables Missouri load serving entities to buy actual
21 electricity along with RECs, which reduces fuel costs and improves the diversity of their
22 generation portfolios. RECs alone do not reduce fuel costs or improve portfolio
23 diversity.

1 **Q. On page 17 of is Rebuttal Report, Staff suggests that the estimate of 12-15 million**
2 **MWh in Grain Belt Express' Application is too high. What is your response?**

3 A. Staff is correct. The Application contained an error. It should have stated that expected
4 RES demand in Missouri is nine million MWh. The correct value is shown on Schedule
5 DAB-1 to my direct testimony.

6 **Q. Show Me witness Donald Shaw testifies that "there has been no request for service**
7 **requiring the project, and, therefore, there is no need." (Shaw Rebuttal Testimony,**
8 **page 4-5) What is your response?**

9 A. Mr. Shaw is incorrect that there has been no request for service on the Project. As
10 detailed in my direct testimony on page 25, Grain Belt Express has received transmission
11 service requests for 20,825 MW, almost five times the total available capacity of the
12 Project.

13 **Q. At pages 5-6 of his rebuttal testimony, MLA witness Joseph Jaskulski testifies that**
14 **the Project does not have any commitments for capacity purchases from load**
15 **serving entities other than MJMEUC. How do you respond to the concern that**
16 **Grain Belt Express has not yet signed binding contracts for the full capacity of the**
17 **Project?**

18 A. Shippers usually do not enter into large transmission service commitments until they
19 know the schedule on which service can be provided, the route of the transmission line,
20 and whether the line has the necessary approvals to be built. Grain Belt Express will not
21 be able to make these firm commitments until it receives a CCN from the Commission.
22 Load serving entities prefer to execute commercial contracts closer to the date when
23 generation projects begin construction and enter service, because this reduces planning

1 uncertainty for the load serving entity and the generation project. Grain Belt Express has
2 presented a great deal of evidence in this proceeding (including in my direct testimony at
3 pages 38-42) that load serving entities are likely to buy transmission service from Grain
4 Belt Express or wind power delivered by Grain Belt Express. As discussed in my direct
5 testimony at pages 28-32 and in this surrebuttal testimony, the levelized cost of wind
6 energy delivered by Grain Belt Express is lower than other alternative sources of power.
7 Consequently, load serving entities will be likely to participate in the Grain Belt Express
8 Project because it will save them money relative to other alternatives.

9 **Q. Is the transmission service that the Project will provide duplicative, as Mr. Justis**
10 **suggests on page 8 of his rebuttal testimony?**

11 A. No, it is not. Mr. Justis attempts to argue that because a wind generator can request
12 transmission service across an RTO to deliver wind power to Missouri, the Grain Belt
13 Express Project is duplicative and is not needed. Mr. Justis is correct that there is a
14 process for wind generators to request service from an RTO. But the mere existence of
15 that process does not mean that the service is available or that building new lines to
16 provide the service would be desirable. As illustrated earlier in my testimony, building
17 new AC transmission lines to deliver wind energy to Missouri, as suggested by Mr.
18 Justis, would be substantially more expensive than the Project. Compared to new AC
19 lines, the Project can provide transmission service that is the lowest-cost and minimizes
20 electrical losses and congestion risk, all at a fixed rate to shippers.

21 **Q. At page 5 of his rebuttal testimony, Mr. Donald Shaw states that MISO and SPP**
22 **have not determined a need for the Project through a “system wide study.” What is**
23 **your response?**

1 A. MISO and SPP do not have a process to evaluate the need for participant-funded
2 transmission lines like the Project. The Project also reaches into the PJM footprint. SPP,
3 MISO and PJM have not yet established an interregional planning process to establish the
4 low-cost transmission approach to meet the large demand for renewables among states
5 and customers within their footprints. RTOs like MISO and SPP identify projects that
6 are regionally cost-allocated. In contrast, participant-funded projects like the Grain Belt
7 Express Project offer the benefit that they are not socialized through transmission rates
8 paid by all users of the grid. The determination of need for a participant-funded line must
9 be made based on the benefits offered to customers and the public because the RTOs are
10 not in a position to make any such determination.

11 **IV. Financial Viability**

12 **Q. Staff states on page 21 of its Rebuttal Report: “Other than the addition of a new**
13 **investor and additional equity capital investments, Staff did not discover any issues**
14 **that caused it to change its previous position that Grain Belt is financially capable to**
15 **be granted a CCN.” Do you agree with this statement?**

16 A. Yes. The basic facts of Grain Belt Express’ capitalization and financing plan have not
17 changed since the 2014 case. Since the 2014 Case, Clean Line Energy Partners LLC
18 (“Clean Line,” the parent company of Grain Belt Express) has added Bluescape
19 Resources as an investor. The addition of Bluescape is discussed further on page 12 of
20 my direct testimony. The addition of Bluescape evidences the continued ability of Clean
21 Line to attract capital to the Grain Belt Express Project and the other transmission
22 projects Clean Line is developing.

1 **Q. Notwithstanding Staff's conclusion that the Project is financially viable, on page 38**
2 **of the Staff Rebuttal Report, witness Michael Stahlman states that "obtaining**
3 **financing" is not "conclusive evidence of economic feasibility." Please respond.**

4 A. Mr. Stahlman's opinion relies on speculative internet research and reflects a basic
5 misunderstanding of Grain Belt Express' financing plan. Mr. Stahlman claims "[o]nly
6 45% of startup companies in an industry category identified as 'Transportation,
7 Communication and Utilities' remained in operation after four years, which was the
8 second highest failure rate of all industry categories." The source for his statement is a
9 website called "statisticbrain.com." In response to Grain Belt Express Data Request No.
10 5 to Staff, Mr. Stahlman confirmed that "Staff did not seek further documentation of
11 which companies were included in the Transportation, Communication and Utilities
12 category" of "Statistic Brain's" survey, and that "Staff does not know" whether any
13 companies owning transmission lines were included in the survey. The "Statistic Brain"
14 survey lumps Grain Belt Express in with transportation and communications start-up
15 companies. Such companies might include developers of iPhone applications or modem
16 manufacturers. The "Statistic Brain" web site does not even list the authors of the study
17 Mr. Stahlman cites. Mr. Stahlman's use of the survey should be accorded no weight
18 whatsoever.

19 Grain Belt Express was established in 2010, and Clean Line in 2009. They have
20 already been in existence much longer than four years. In their careers, executives at
21 Grain Belt Express have completed many billions of dollars of project financings. The
22 financing condition proposed by Mr. Murray, and accepted by Grain Belt Express,
23 requires the Project to obtain financing to complete the Project and contracted revenues

1 to service debt before physical facilities are ever installed on easements in Missouri.
2 Once the condition is met, Grain Belt Express will have committed financing to become a
3 company with over \$2.5 billion in assets. In light of the above, I do not think it is
4 reasonable to compare Grain Belt Express to “start-up” companies from very different
5 industries. The comparison is particularly unreasonable since the identity of those start-up
6 companies is completely unknown.

7 **Q. Staff expresses the concern that, if Grain Belt Express encounters financial**
8 **difficulties, landowners might not receive their expected annual structure payments.**
9 **(Staff Rebuttal Report, p. 36) What is your response?**

10 A. As described in the direct testimony of Deann Lanz, any landowner has the option to
11 elect a much larger, upfront structure payment instead of annual payments. However,
12 landowners electing annual payments have a high degree of payment security. The
13 obligation to pay landowners will be senior in priority to paying back any of Grain Belt
14 Express’ equity investors. Lenders to Grain Belt Express will explicitly incorporate
15 landowner payments into the amount they are willing to loan to the Project. Payments to
16 landowners will be supported by the long-term, creditworthy transmission service
17 agreements, which I describe in my direct testimony.

18 **V. Conditions**

19 **Q. Commission Staff’s Rebuttal Report recommends the Commission impose a number**
20 **of Conditions on the Company’s Certificate of Convenience and Necessity. What is**
21 **your response to these recommended conditions?**

22 A. Grain Belt Express agrees with the large majority of conditions recommended by Staff.
23 For convenience, the Company’s response to each recommendation is summarized in

1 Schedule DAB-9, attached to this testimony. The schedule summarizes the conditions
2 proposed by Staff; the Company's position on each condition, including any proposed
3 modifications; and a citation to the Grain Belt Express surrebuttal testimony addressing
4 the condition.

5 **Q. What is the Company's general response to Staff's proposed conditions?**

6 A. We appreciate Staff's efforts to provide the Commission a path to grant the Company's
7 Application. As detailed in our surrebuttal testimony, we do not agree with all of Staff's
8 opinions about the Project. However, the right conditions on the CCN can address Staff's
9 issues while allowing the Project to proceed and provide benefits to Missouri.

10 **Q. Many of Staff's proposed conditions pertain to technical studies that are not yet**
11 **completed. Should the Commission deny the Application without prejudice, with**
12 **Grain Belt Express retaining the ability to file a new Application when the studies**
13 **are complete?**

14 A. No. This approach is not a viable path forward for the Project. Since its previous
15 application, the Company has performed numerous additional studies to address issues
16 raised by Staff in the 2014 case. For example, the Company has refined its production
17 cost modeling with input from Commission Staff, as described in Grain Belt Express
18 witness Neil Copeland's direct testimony. The Company has asked MISO to perform, and
19 MISO has completed, a more detailed interconnection study on the Project, as described
20 in the surrebuttal testimony of Grain Belt Express witness Dr. Wayne Galli. Finalizing
21 the additional technical studies discussed by Staff, beyond those which are currently
22 completed, would require many months, and in some cases years. Requiring the
23 completion of these studies before the Commission grants a CCN would cause an

1 unwarranted delay in the Project, both decreasing and jeopardizing the benefits to
2 Missouri. In addition, the cost of some studies, such as the final MISO interconnection
3 studies, is prohibitively high for Grain Belt Express to undertake without the regulatory
4 certainty of an approval from the Commission. A far better alternative is to grant the
5 Application subject to reasonable conditions concerning the remaining technical studies.
6 This alternative assures that the required studies will be completed before the Project
7 begins construction or is energized, as appropriate, but still allows the Project to proceed.

8 **Q. Staff recommends that “Grain Belt must comply with the conditions prior to**
9 **acquiring involuntary easements or starting construction of the transmission line.”**
10 **(Staff Rebuttal Report, p. 7) What is your response?**

11 A. Some of the conditions, such as those related to right-of-way acquisition, are ongoing
12 commitments, not milestones to complete at a set moment in time. Other conditions, such
13 as filing final technical studies related to underground utilities, would not be possible
14 until survey permission is obtained on all parcels, which would occur after right-of-way
15 acquisition is completed. Accordingly, Grain Belt Express recommends that the
16 Commission address the required timing in the context of each condition rather than any
17 blanket compliance deadline.

18 **Q. Staff’s Rebuttal Report recommends at page 7 that “the conditions [on the CCN] be**
19 **subject to a demonstration to the Commission that the outstanding studies do not**
20 **raise any new issues, and if they do, that the Commission is satisfied with Grain Belt**
21 **Express’ solution to address those issues?” What is your view of this**
22 **recommendation?**

1 A. Staff's recommendation is unclear. If Staff is recommending a new proceeding where the
2 Commission would issue findings with respect to each of the technical studies filed by
3 Grain Belt Express, this would lead to an unnecessary and overly bureaucratic process,
4 causing significant delays and regulatory uncertainty. Staff's recommendation that Grain
5 Belt Express prove that "[additional] studies do not raise any new issues" is also unclear.
6 The standard by which a "new issue" would be judged is undefined and vague. Even
7 without a formal requirement for the Commission to "accept" new information provided
8 by Grain Belt Express, the Commission will retain broad authority to review in this
9 docket, or open a new docket with respect to any information filed by Grain Belt Express
10 once it receives a CCN. By virtue of becoming a public utility, Grain Belt Express will be
11 subject to the Commission's ongoing authority to regulate and oversee the Project if
12 subsequently filed studies raise new issues of concern. We recommend that the
13 Commission reject Staff's recommendation on this issue and rely on its continuing
14 authority, instead of predetermining the need for future proceedings.

15 **Q. Staff recommends that Grain Belt Express must demonstrate that it has financing**
16 **commitments to complete the Project before it constructs on easement property in**
17 **Missouri. Staff also recommends a number of filings allowing the Commission to**
18 **verify Grain Belt Express' compliance with the requirement. (Staff Rebuttal Report,**
19 **pp. 63-64) Does the Company accept Staff's recommendation?**

20 A. Yes. The Company accepts these conditions as proposed by Staff.

21 **Q. Does this conclude your surrebuttal testimony?**

22 A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Grain Belt Express)
Clean Line LLC for a Certificate of Convenience and)
Necessity Authorizing it to Construct, Own, 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)

Case No. EA-2016-0358

AFFIDAVIT OF DAVID A. BERRY

STATE OF Texas)
COUNTY OF Harris) ss

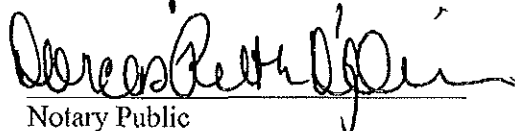
David A. Berry, being first duly sworn on his oath, states:

1. My name is David A. Berry. I am Chief Financial Officer and Executive Vice President for Clean Line Energy Partners LLC.
2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Grain Belt Express Clean Line LLC consisting of 44 pages, having been prepared in written form for introduction into evidence in the above-captioned docket.
3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.



David A. Berry

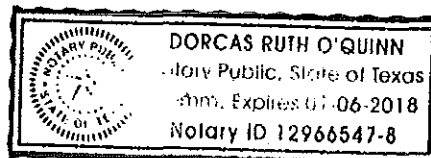
Subscribed and sworn before me this 21 day of February, 2017.



Dorcas Ruth O'Quinn

Notary Public

My commission expires Jan 6 2018



GRAIN BELT EXPRESS RESPONSE TO CONDITIONS RECOMMENDED BY STAFF

In re Grain Belt Express Clean Line LLC, No. EA-2016-0358 (Mo. P.S.C.)

The following conditions or recommendations were contained in the Staff Rebuttal Report submitted on January 24, 2017:

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal
I. Financing Conditions (Staff Rebuttal Report at 63-64)		
<p>Grain Belt will not install 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 this multi-state transmission project. To allow the Commission to verify compliance with this condition, Grain Belt shall file the following documents with the Commission at such a time as Grain Belt is prepared to begin to construct electric transmission facilities in Missouri:</p>	<p>Grain Belt Express accepts this condition as proposed.</p>	<p>Berry, p. 44</p>
<p>(a) On a confidential basis, equity and loan or other debt financing agreements and commitments entered into or obtained by Grain Belt or its parent company for the purpose of funding Grain Belt's multi-state transmission project that, in the aggregate, provide commitments for the total project cost.</p>	<p>Grain Belt Express accepts this condition as proposed.</p>	<p>Berry, p. 44</p>
<p>(b) An attestation by an officer of Grain Belt that Grain Belt has not, prior to the date of the attestation, installed transmission facilities on easement property; or a notification that such installation is scheduled to begin on a specified date.</p>	<p>Grain Belt Express accepts this condition as proposed.</p>	<p>Berry, p. 44</p>
<p>(c) Statement of total multi-state transmission project cost, 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 project; right-of-way acquisition costs; and other costs necessary to complete the project, and certified by an officer of Grain Belt, along with a reconciliation of the total project cost in the statement to the total project cost as of the Application of \$2.2 billion; and property owned in fee by Grain Belt including the converter station sites.</p>	<p>Grain Belt Express accepts this condition as proposed.</p>	<p>Berry, p. 44</p>

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
<p>(d) A reconciliation statement certified by an officer of Grain Belt showing that (1) the agreements and commitments for funds provided in (a) are equal to or greater than the total project cost provided in (c) and (2) the contracted transmission service revenue is sufficient to service the debt financing of the project (taking into account any planned refinancing of debt).</p>	<p>Grain Belt Express accepts this condition as proposed.</p>	<p>Berry, p. 44</p>
<p>II. Interconnection Studies (Staff Rebuttal Report at 64, 67)</p>		
<p>1. Grain Belt provides Staff with completed RTO Interconnection Agreements and any associated studies. Should the studies raise new issues, Grain Belt will provide its plan to address those issues.</p>	<p>Grain Belt Express accepts this conditions as proposed</p>	<p>Galli, p. 41</p>
<p>2. Grain Belt will provide to the Commission completed documentation of the Grain Belt plan, equipment, and engineering drawings to achieve compliance with NERC standards for a project of this scope and size, the National Electric Safety Code for a project of this scope and size (as set forth in 4 CSR 240-18.010), the Overhead Power Line Safety Act (Section 319.075-.090) , and any other applicable Missouri State law for a project of this scope and size; prior to the commercial operational date of the Project.</p>	<p>Grain Belt Express accepts this conditions as proposed</p>	<p>Galli, p. 41</p>

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
III. Nearby Utility Facilities (Staff Rebuttal Report at 64-66)		
<p>1. Grain Belt obtains detailed location information on each existing underground utility plant, either crossed by or in close proximity to its proposed route, and that Grain Belt contact and coordinate with the owners of each such facility prior to construction.</p>	<p>Grain Belt Express proposes that the following italicized language should be added: "Grain Belt shall use <i>commercially reasonable efforts</i> to obtain..."</p>	<p>Galli, p. 41</p>

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
<p>2. Grain Belt show the Commission, before it begins commercial operation of any part of the multi-state Project, that it built the entire multi-state Grain Belt proposed HVDC transmission line with dedicated metallic return conductors which are operational and that the entire multi-state Project has operational protection and control safety systems that automatically de-energize the Project within approximately 150 milliseconds of when an abnormal or fault condition occurs.</p>	<p>Grain Belt Express accepts this conditions as proposed</p>	<p>Galli, p. 41</p>
<p>3. Grain Belt performs engineering studies to determine if the operation of the Grain Belt proposed HVDC transmission line, the Grain Belt proposed Missouri converter station, and the Grain Belt-owned portion of the AC electric transmission line connecting the Grain Belt proposed Missouri converter station to the AC grid have adverse impacts on nearby facilities. These engineering studies must include, but not be limited to, items (a)-(e) of p. 65 of Staff's Rebuttal Report.</p> <ul style="list-style-type: none"> a. the effects of tower footing groundings, if used; b. analysis of metallic underground facilities; c. other AC power lines and telecommunications facilities that are located within a distance from the Grain Belt proposed HVDC transmission line, as determined by an appropriately qualified expert, where there may be adverse effects on the facilities; d. a determination whether there are locations where the Grain Belt proposed HVDC transmission line parallels a pipeline and an existing AC power line and, ifso, whether there are any combined effects on steel pipelines (and other underground metallic facilities); and e. the effects of Grain Belt proposed transmission line(s) connecting the Grain Belt proposed Missouri converter station to the AC grid. <p>If any of these studies show that mitigation measures are identified/needed, those measures must be in place prior to commercial operation of the Grain Belt proposed transmission line</p>	<p>Grain Belt Express accepts this conditions as proposed</p>	<p>Galli, p. 41</p>

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
(a) Studies should be made available to Staff and affected facility owners at least 45 days prior to commercial operation of the Grain Belt proposed HVDC transmission line.	Grain Belt Express accepts this condition as proposed.	Galli, p. 41
(b) Studies should disclose how the parameters for conducting them were determined (e.g., continuous 24-hour recordings at a certain time of year).	Grain Belt Express accepts this condition as proposed.	Galli, p. 41
(c) Such studies shall be conducted by persons knowledgeable in: (1) HVDC power lines; (2) DC-to-AC converter stations; (3) Pipeline cathodic protection systems; (4) Corrosion of underground metallic facilities; (5) Interference with AC utility lines; (6) Interference with telecommunications facilities; (7) Effects of DC and AC interference on the facilities identified in EX 3 as amended by Grain Belt's addendum to the application and all additional facilities subsequently identified.	Grain Belt Express accepts this condition as proposed.	Galli, p. 41
4. GBX must file "annual status updates" on discussions with Staff regarding need for additional studies of the impacts of its facilities on other facilities in Missouri, as summary of the results of any additional studies, and any mitigation measures that have been implemented to address underground metallic structures, telecom facilities and AC lines. Mitigation measures indicated by future studies must be implemented within three (3) months of discovery that additional mitigation measures are needed.	Grain Belt proposes that the following italicized language be added in the second sentence, "Mitigation measures indicated by future studies must be implemented within three (3) months of discovery that additional mitigation measures are needed, <i>or as quickly as reasonably practical thereafter.</i> "	Galli, p. 41

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
IV. Emergency Restoration Plans (Staff Rebuttal Report at 66)		
Grain Belt provides a copy of the final Grain Belt Emergency Restoration Plan prior to the commercial operations date for the Grain Belt Project.	Grain Belt Express accepts this condition as proposed.	Galli, p. 41
V. Construction and Clearing (Staff Rebuttal Report at 67-68)		
1. Prior to construction, Grain Belt will notify all landowners in writing of the name and telephone number of Grain Belt's Construction Supervisor so that they may contact the Construction Supervisor with questions or concerns before, during, or after construction. Such notice will also advise the landowners of the expected start and end dates of construction on their properties.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
2. Prior to construction, Grain Belt's Construction Supervisor will personally contact each landowner (or at least one owner of any parcel with multiple owners) to discuss access to the right-of-way on their parcel and any special concerns or requests about which the landowner desires to make Grain Belt Express aware.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
3. From the beginning of construction until end of construction and clean-up of the right-of-way is complete, Grain Belt's Construction Supervisor will be on-site, meaning at or in the vicinity of the route, or on-call, to respond to landowner questions or concerns.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
4. If requested by the landowner, Grain Belt will cut logs 12" in diameter or more into 10 to 20 foot lengths and stack them just outside the right-of-way for handling by the landowner.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
5. Stumps will be cut as close to the ground as practical, but in any event will be left no more than 4" above grade.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
6. Unless otherwise directed by the landowner, stumps will be treated to prevent regrowth.	Grain Belt Express proposes modified text for this condition as described in Mark Lawlor's testimony	Lawlor, p. 5
7. Unless the landowner does not want the area seeded, disturbed areas will be reseeded with a blend of K31 fescue, perennial rye, and wheat grasses, fertilized, and mulched with straw.	Grain Belt Express proposes modified text for this condition as described in Mark Lawlor's testimony	Lawlor, p. 6
8. Best management practices will be followed to minimize erosion, with the particular practice employed at a given location depending upon terrain, soil, and other relevant factors.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
9. Gates will be securely closed after use.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
10. Should Grain Belt damage a gate, Grain Belt will repair that damage.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
11. If Grain Belt installs a new gate, Grain Belt Express will either remove it after construction and repair the fence to its pre-construction condition, or will maintain the gate so that it is secure against the escape of livestock.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
12. Grain Belt will utilize design techniques intended to minimize corona.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
13. Should a landowner experience radio or television interference issues believed by the landowner to be attributed to Grain Belt's line, Grain Belt will work with the landowner in good faith to attempt to solve the problem.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
14. Grain Belt will clearly mark guy wires.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
VI. Maintenance and Repair (Staff Rebuttal Report at 68-69)		
1. With regard to future maintenance or repair and right-of-way maintenance after construction is completed, Grain Belt will make reasonable efforts to contact landowners prior to entry onto the right-of-way on their property to advise the landowners of Grain Belt's presence, particularly if access is near their residence.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
2. All Grain Belt contractors will be required to carry and maintain a minimum of one million dollars of liability insurance available to respond to damage claims of landowners. All contractors will be required to respond to any landowner damage claims within 24 hours. All contractors will be required to have all licenses required by state, federal, or local law.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
3. All right-of-way maintenance contractors will employ foremen that are certified arborists.	Grain Belt Express requests the removal of this condition on the grounds that it is not reasonable to require a foreman to be a certified arborist.	Lawlor, p. 6
4. If herbicides are used, only herbicides approved by the EPA and any applicable state authorities will be used, and herbicides will be used in strict compliance with all labeling directions.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
5. Routine maintenance will not occur during wet conditions so as to prevent rutting.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
6. Existing access roads will be used to access the right-of-way wherever available.	Grain Belt Express accepts this condition as proposed	Lawlor, p. 5
7. Prior to commencing any vegetation management on the right-of-way, Grain Belt will meet personally with all landowners to discuss Grain Belt's vegetation management program and plans for their property, and to determine if the landowner does or does not want herbicides used on their property. If the landowner does not want herbicides used, they will not be used.	Grain Belt Express proposes modified text for this condition as described in Mark Lawlor's testimony	Lawlor, p. 6
VII. Landowner Interactions and Right-of-Way Acquisition (Staff Rebuttal Report at 43-45, 69)		
1. That the certificate is limited to the construction of this line in the location specified in the application, and as represented to the landowners on the aerial photos provided by Grain Belt, unless a written agreement from the landowner is obtained, or the company gets a variance from the Commission a particular property.	Grain Belt Express proposes following italicized language should be added at the end of the condition: <i>“; provided, however, minor deviations to the location of the line will be permitted as a result of surveying, final engineering and design, and landowner consultation.”</i>	Lanz, pp. 11-12
2. That absent a voluntary agreement for the purchase of the property rights, the transmission line shall not be located so that a residential structure currently occupied by the property owners will be removed or located in the easement requiring the owner to move or relocate from the property	Grain Belt Express accepts this condition as proposed.	Lanz, p. 11
3. That Grain Belt shall survey the transmission line location after construction and record the easement location with the Recorder of Deeds in the appropriate counties. Grain Belt shall also file a copy of its survey in this case.	Grain Belt Express accepts this condition as proposed	Lanz, p. 11

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
4. That Grain Belt shall follow the construction, clearing, maintenance, repair, and right-of-way practices set out in Exhibit A attached to the order [in Case No. EO-2002-351].	Grain Belt Express takes the actions as laid out in this Schedule DAB-9 and as described in Dean Lanz's testimony.	Lanz, pp. 11-12
5. Every landowner from whom Grain Belt requires an easement will be contacted personally, and Grain Belt will negotiate with each such landowner in good faith on the terms and conditions of the easement, its location, and compensation therefor. They will be shown a specific, surveyed location for the easement and be given specific easement terms.	The Company accepts this condition as proposed if the word "surveyed" is deleted from the second sentence, such that the condition reads: "Every landowner from whom Grain Belt requires an easement will be contacted personally, and Grain Belt will negotiate with each such landowner in good faith on the terms and conditions of the easement, its location, and compensation therefor. Each landowner will receive an Easement Agreement pertaining to such landowner's land, which Easement Agreement will contain a drawing that shows the location of the easement."	Lanz, p. 12
6. After construction is completed, every landowner will be contacted personally to ensure construction and clean-up was done properly, to discuss any concerns, and to settle any damages that may have occurred.	Grain Belt Express accepts this condition as proposed	Lanz, p. 11
7. If a landowner so desires, Grain Belt will give the landowner a reasonable period of time in advance of construction to harvest any timber the landowner desires to harvest and sell.	Grain Belt Express accepts this condition as proposed	Lanz, p. 11
8. Grain Belt's right-of-way acquisition policies and practices will not change regardless of whether Grain Belt does or does not yet possess a Certificate of Convenience or Necessity from the Commission.	Grain Belt Express accepts this condition as proposed	Lanz, p.11
VIII. Other Conditions		

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
<p>Staff states that GBX's commitment not to cost allocate the Project poses a risk to Missouri ratepayers because GBX retains the right to ask the Commission to allow such cost allocation in a future proceeding. (Staff Rebuttal Report, p. 31)</p>	<p>GBX disagrees with Staff. The Commission will be able to review any proposal for GBX to allocate any of its costs through regional cost allocation, and determine whether such cost allocation would benefit Missouri. GBX proposes the following italicized language</p> <p><i>"Grain Belt Express will not recover any Project costs from Missouri retail ratepayers through MISO or SPP regional cost allocation without first obtaining an approval from the Missouri Public Service Commission in a new proceeding initiated by Grain Belt Express. As used in the prior sentence, the Project refers to the approximately 780 mile HVDC transmission line to be built by Grain Belt Express, including the HVDC converter stations and the AC feeder lines connecting the HVDC Project to wind generation facilities."</i></p>	<p>Berry, pp. 3-4</p>
<p>Staff states that the Commission could grant the CCN if GBX agrees to submit "... a modified plan to address congestion should the ATXI Mark Twain project not proceed as planned." (Staff Rebuttal Report, p. 7)</p>	<p>GBX disagrees with Staff because the development of plans to address such hypothetical congestion issues is the responsibility of the relevant Regional Transmission Organization. GBX agrees to cooperate with such planning efforts if they should occur.</p>	<p>Galli, p. 42</p>

Summary of Staff's Proposed Conditions	Grain Belt Express Position on or Modifications to Conditions	Grain Belt Express Witness on Conditions (Surrebuttal Testimony)
<p>Staff proposes that contributions to the decommissioning fund begin when the Project begins commercial operation, similar to that of a nuclear generating plant. (Staff Rebuttal Report, pp. 44-45).</p>	<p>GBX opposes such a condition because contributions to a decommissioning fund related to a transmission project have never been required at the time the project begins commercial operation. Decommissioning issues related to an electric transmission project are far different than nuclear generating plants and issues of radioactive fuel storage and disposal.</p>	<p>Lanz, pp. 9-10</p>