Exhibit No. _____
Issues: Business Model; Need;
Economic Feasibility and Public Interest;
Financial Viability; Conditions
Witness: David Berry
Type: Surrebuttal Testimony
Sponsoring Party: Grain Belt Express Clean Line LLC
Case No.: EA-2016- 0358
Date of Testimony: February 21, 2017

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

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I. Introduction and Summary

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

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

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

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

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

Q. What is the purpose of your surrebuttal testimony?

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

Q. Please briefly summarize your testimony.

A. The main conclusions of my testimony are:

- Staff's concerns that Grain Belt Express could recover costs from Missouri ratepayers are unfounded because Grain Belt Express has specifically proposed that the Commission must authorize such cost recovery. (Section II.a)

- Show Me witness Glen Justis' own financial analysis indicates that the Project and the connected wind generation are less expensive than other energy resources, including combined cycle gas generation; his attempt to impose a "dependable capacity" penalty on wind energy runs into a calculation error; when this error and other flaws in Mr. Justis' model are corrected, the Project remains the lowest-cost alternative studied. (Section II.b)

- Staff's concerns about transmission upgrade costs are overstated because Grain Belt Express already has a reasonable basis for estimating transmission upgrade costs; the Company has included this estimate in its financial models; and even a large increase in transmission upgrade costs does not render the Project uneconomic (Section II.c)

- The possibility of buying renewable energy credits ("RECs") does not eliminate the need for the Project, because the generation of RECs requires wind farms to obtain the necessary transmission which is otherwise unavailable without the Project, and because buying RECs, unlike buying energy and RECs, does not reduce fuel cost or increase generation portfolio diversity. (Section III)

- Grain Belt Express accepts Staff's recommended financing conditions which assures Grain Belt Express has the financing to complete the Project before facilities are installed on easements in Missouri. (Section V)

- Grain Belt Express accepts the large majority of the other conditions proposed by Staff, with some modifications as to their wording and timing of compliance which will allow the Project to proceed. (Section V)

II. <u>Economic Feasibility</u>

a. <u>Cost to Missouri Ratepayers</u>

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

with Grain Belt's assumptions that underlie this conclusion." (Staff Rebuttal Report, p. 30) What is your response?

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

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

A. As Grain Belt Express has recommended, the Commission can impose a condition on the Company's CCN which would prevent Grain Belt Express from "cost-allocating" the Project to Missouri ratepayers without a future Commission authorization. Grain Belt Express has agreed to similar conditions in its approvals from the Kansas Corporation Commission, Illinois Commerce Commission and the Indiana Utility Regulatory Authority.[1] I believe it is safe to assume that a state commission would not approve such 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. l l-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.

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

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

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

b. <u>Levelized Cost Analysis</u>

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.

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

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

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

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

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

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

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

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

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

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

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

MW of wind generation resources from 2005 to 2015.[3] I am not aware that any utilities or wind generation owners in MISO and PJM have installed even a single simple-cycle gas generator as a dedicated "back-up" to wind generation.

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

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

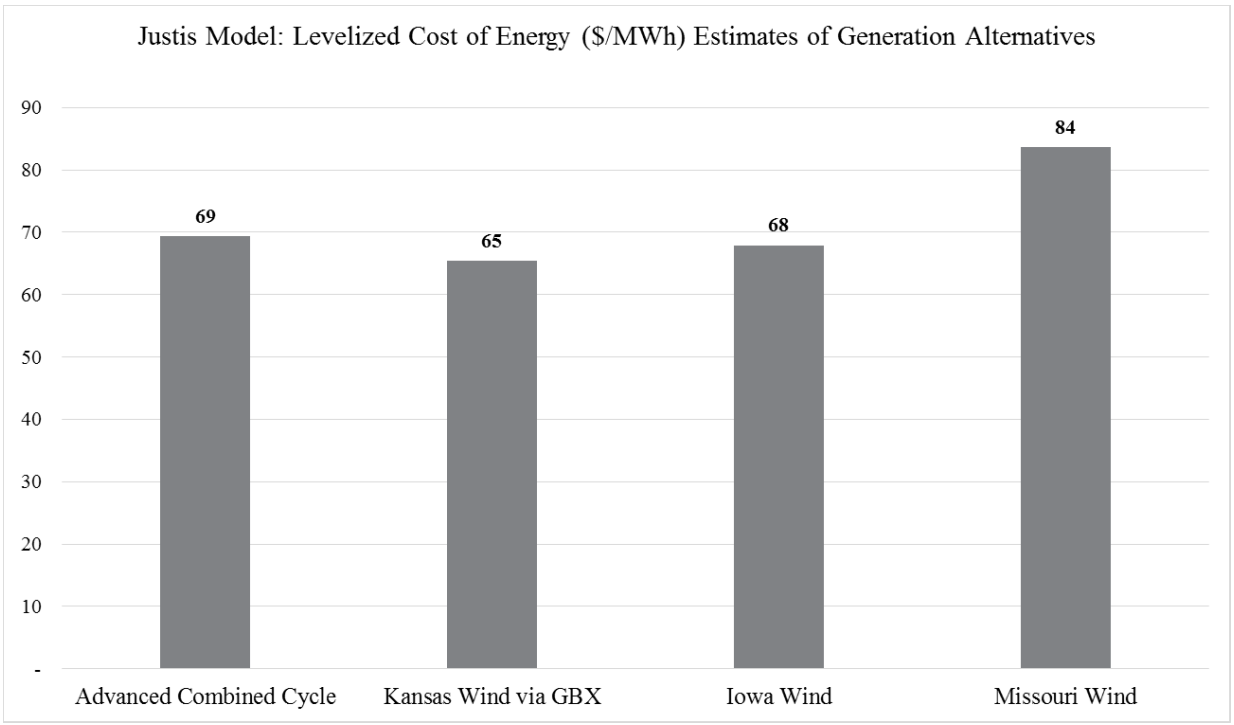

Figure 1: Justis LCOE analysis without capacity penalty

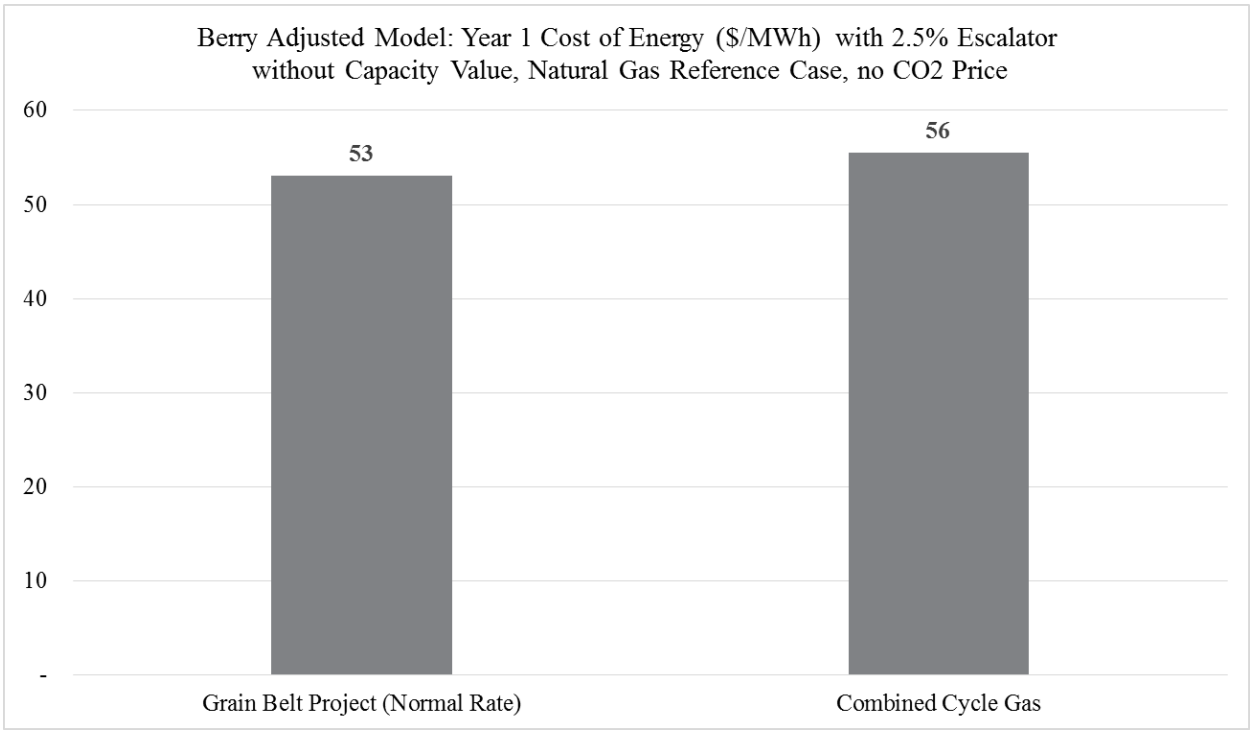

Figure 2: Justis' modified version of Berry analysis without capacity penalty

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

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

Calculation errors

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Input Assumptions

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

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

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

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

to the Western Electric Coordinating Council ("WECC"), a transmission planning body in the western United States.

Q. Please explain the basis for Grain Belt Express' capital cost estimate.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

A. It is a matter of supply and demand. The supply of renewable energy is higher in MISO compared to PJM, with 14.7 GW of wind installed in MISO and 7.0 GW of wind 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);

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

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

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

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

Wind technology costs have continued to decline every year since 2009.[7] In light of this trend, my use of average 2015 installation cost of $1,637/kW (in 2022 dollars) for

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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.

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

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

A. His explanation is limited to the following:

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

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

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

If wind projects which start construction in 2017 become operational by the end of 2021, the expected online date of the Grain Belt Express Project, they automatically meet the Internal Revenue Service's "continuity" requirements. (IRS Notice 2016-31) 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.

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

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

A. Yes. In his analysis comparing Missouri and Iowa wind to the cost of the Project's delivered energy, Mr. Justis erroneously spreads the cost for a double-circuit 345 kilo-volt ("kV") AC transmission line over 3,000 MW of new generation. This is too high a capacity for a 345 kV AC line. The WECC report that Mr. Justis references assumes the capacity of this type of transmission line is 1,500 MW, which, unlike 3,000 MW, is a 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.

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

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

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

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

A. Yes, I have. I took Mr. Justis' workpapers and corrected the calculation errors described above. I also modified the input assumptions in both his analyses to correct the issues I described above. Finally, I updated the upgrade cost for the MISO interconnection to equal $21 million based on the Project's most recent MISO study results, discussed by Grain Belt Express witness Wayne Galli in his surrebuttal testimony. The changes I 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%

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

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

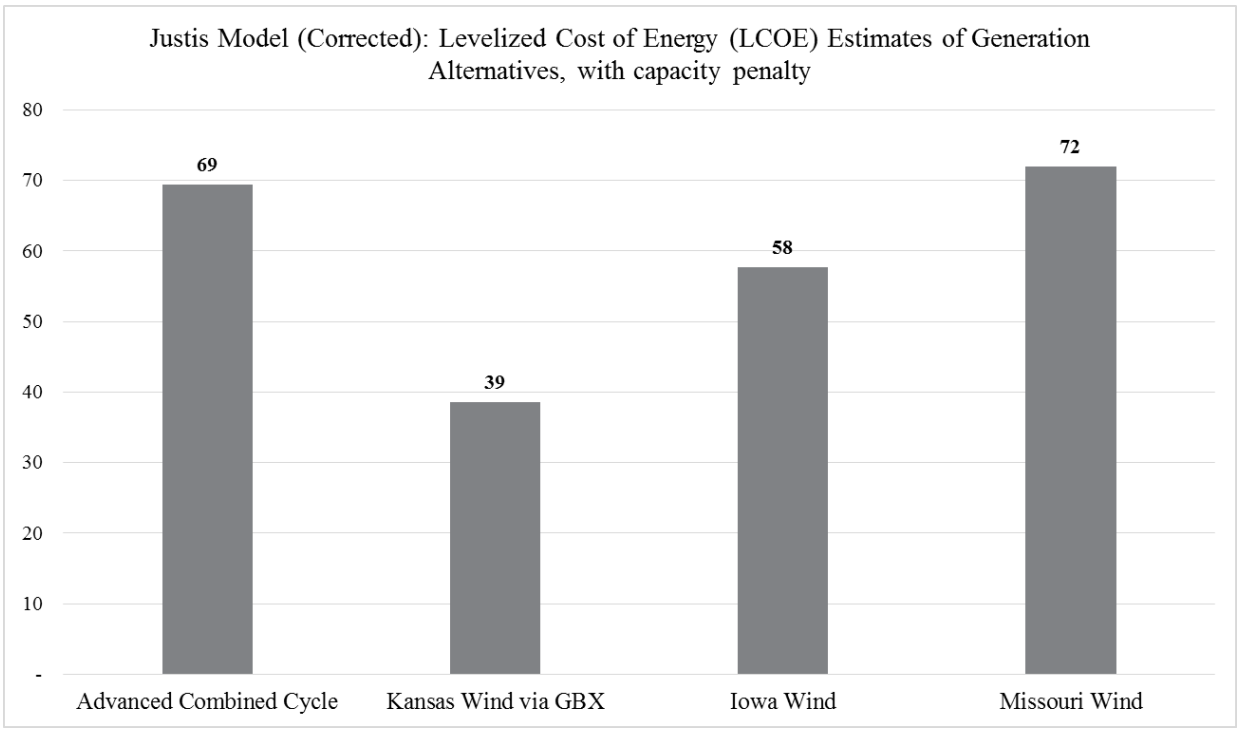

Figure 3: Justis LCOE analysis after model corrections without capacity penalty

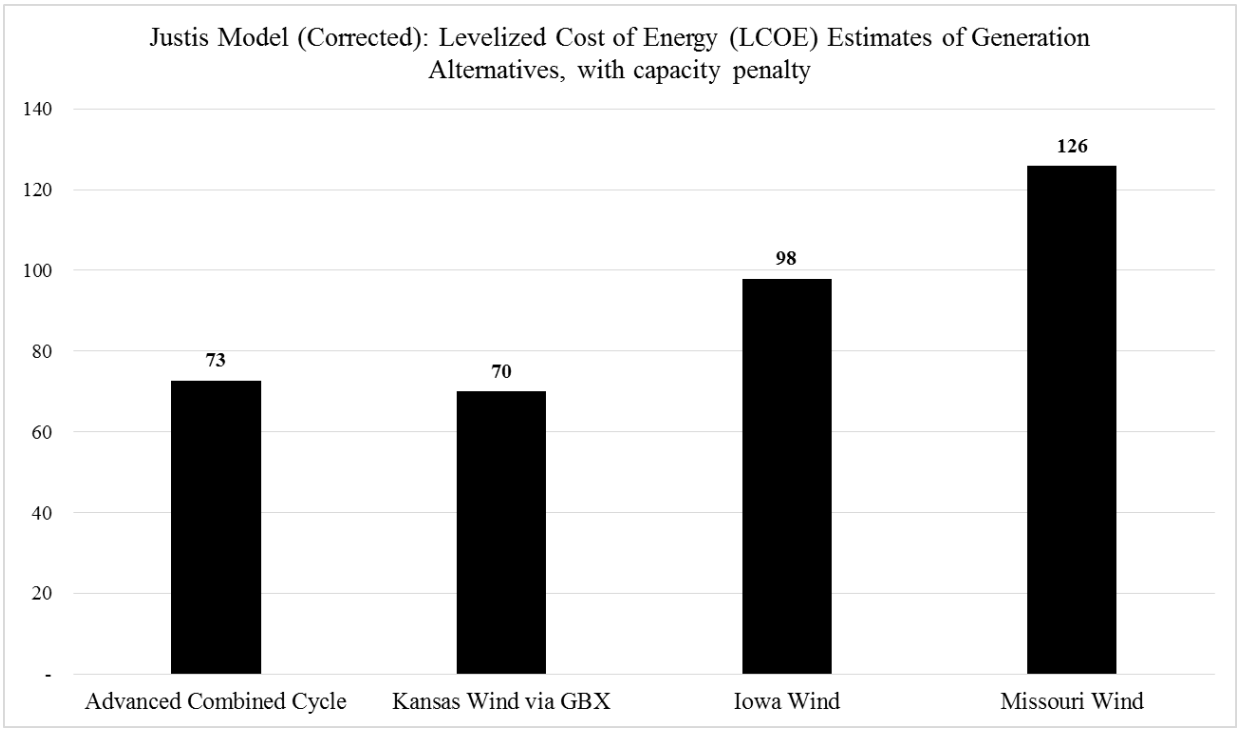

Figure 4: Justis LCOE analysis after model corrections with capacity penalty

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

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

[redacted]

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

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

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

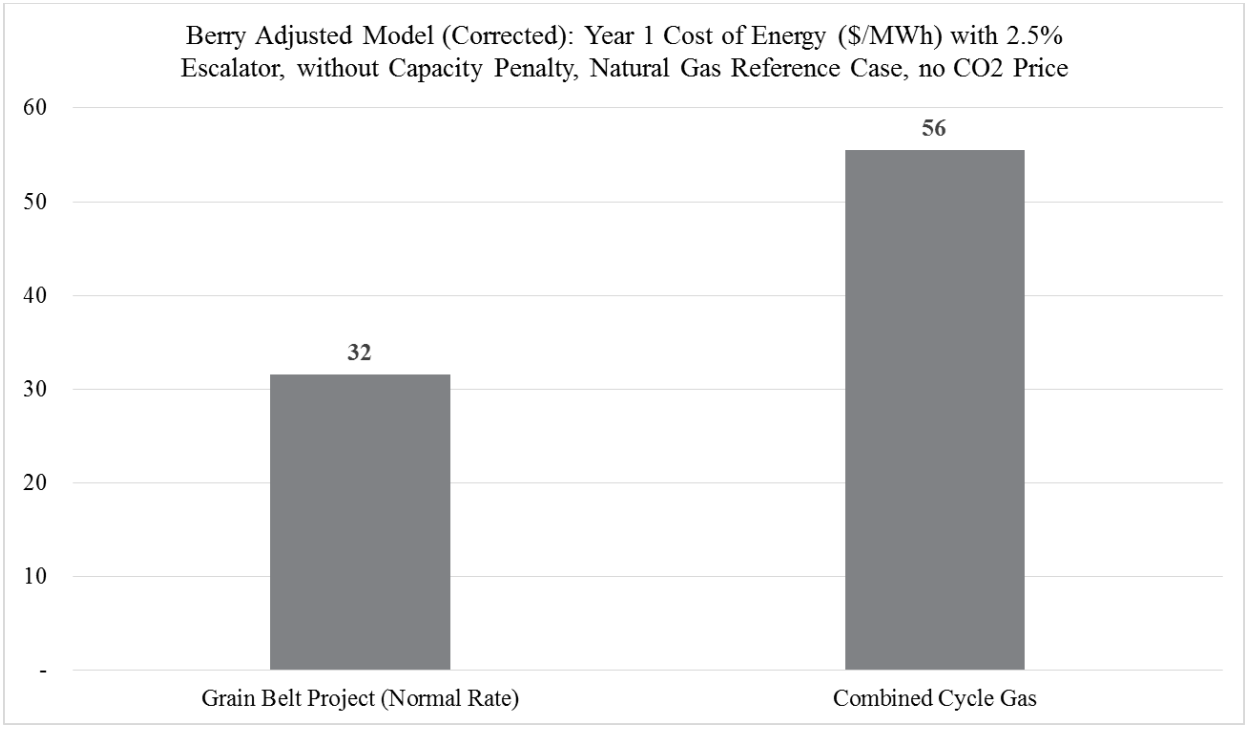

Figure 5: Modified Berry analysis after model corrections without capacity penalty

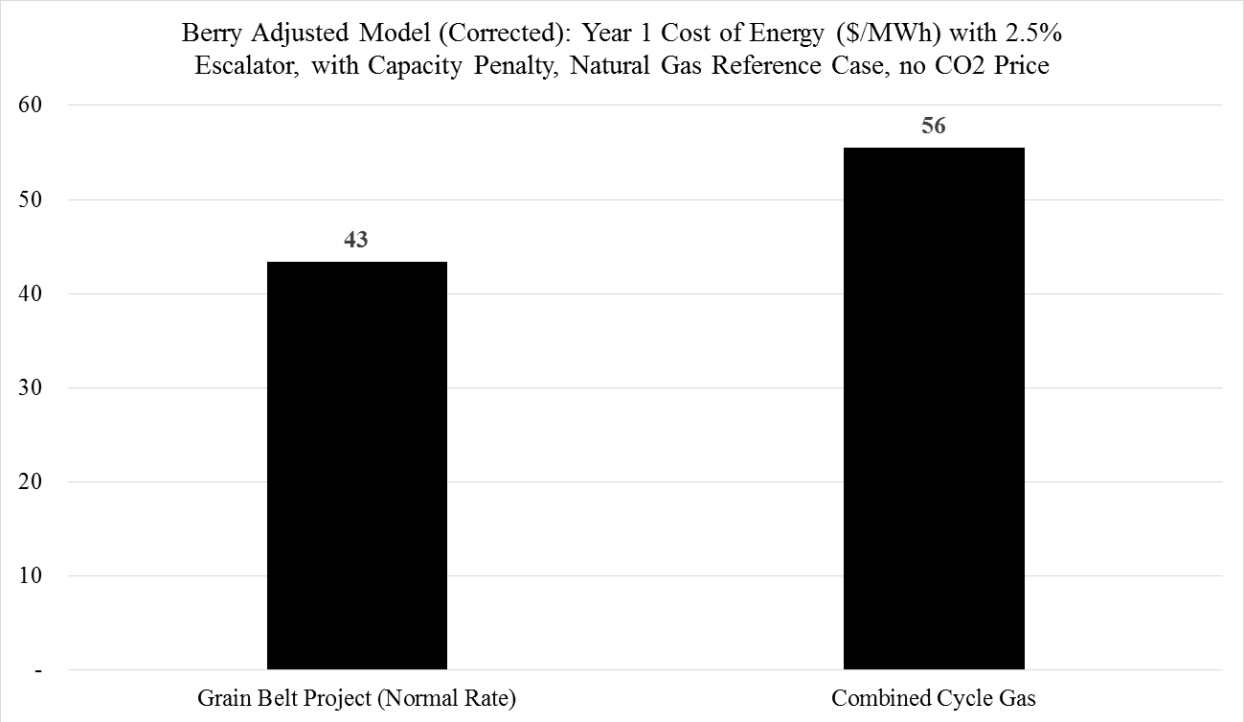

Figure 6: Modified Berry analysis after model corrections with cost of supplemental capacity

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

c. <u>Transmission Upgrade Costs</u>

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

d. Other Issues

Q. At page 31 of Staff's Rebuttal Report, Ms. Kliethermes suggests that Grain Belt Express has ignored "the basis differential between the MISO converter station and the ultimate sink within MISO." Please respond to that statement.

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

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

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

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

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

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

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

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

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

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

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

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

III. Need and Public Interest

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

IV. Financial Viability

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

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

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

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

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

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

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

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

V. Conditions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Q. Does this conclude your surrebuttal testimony?

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)
) **ss**
COUNTY OF Harris)

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.

Notary Public

My commission expires: Jan 6 2018

DORCAS RUTH O'QUINN
Notary Public, State of Texas
Comm. Expires 01-06-2018
Notary ID 12966547-8