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Witness:	Todd Schatzki, Ph.D.
Type of Exhibit:	Surrebuttal Testimony
Sponsoring Party:	Ameren Transmission Company of Illinois
File No.:	EA-2015-0146
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MISSOURI PUBLIC SERVICE COMMISSION

File No. EA-2015-0146

SURREBUTTAL TESTIMONY

OF

TODD SCHATZKI, Ph.D.

ON

BEHALF OF

AMEREN TRANSMISSION COMPANY OF ILLINOIS

Boston, Massachusetts
November, 2015

SURREBUTTAL TESTIMONY

OF

TODD SCHATZKI, Ph.D.

FILE NO. EA-2015-0146

Q. Please state your name and business address.

A. My name is Todd Schatzki. My business address is 111 Huntington Avenue, 10th Floor, Boston MA 02199.

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

A. I am employed by Analysis Group, Inc. ("Analysis Group"), where I am a Vice President in the Boston office. Analysis Group is a firm that provides microeconomic, strategy and financial analyses.

Q. Are you the same Todd Schatzki who filed direct testimony in this case?

A. Yes, I am.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimony of Staff witnesses Ms. Sarah L. Kliethermes and Mr. Michael Stahlman. Specifically, I respond to the testimony of Ms. Kliethermes where she states that the Commission should not, when assessing whether the Project is in the "public interest", rely on the portions of my analysis that indicate the Mark Twain Project ("Project") would reduce Missouri retail electric rates and emissions. I also respond to Mr. Stahlman's statement that the Commission should not rely on the portion of my testimony regarding economic feasibility.

Q. Do you agree with Ms. Kliethermes' recommendation?

A. No. The economic analysis in my testimony provides a sound and reliable basis for assessing whether the Project is in the "public interest", which is one of the five *Tartan* factors that the Commission generally uses when evaluating applications for a certificate of public convenience and necessity. Economic analysis of new energy infrastructure proposals is relevant to determining whether a proposed project is in the public interest. My approach relies on highly detailed and reliable data about the current transmission system, current generation resources and future loads, in combination with appropriate assumptions about future infrastructure changes, particularly new transmission and wind resources that would occur in association with the Project. Because the Project would be a long-lived capital investment, my analysis is forward-looking, evaluating economic outcomes many years into the future. Such a long-term, forward-looking approach is appropriate – and in some instances, necessary – to the reliable analysis of decisions (e.g., long-lived energy infrastructure and policies) whose impacts extend beyond short-run horizons. The approach and data I use is the same as that used by Midcontinent Independent System Operator, Inc. ("MISO") in its analysis of the economic benefits of MISO's Multi-Value Project ("MVP") Portfolio, of which the Project is a part. This analysis provided necessary support for the approval by the Federal Energy Regulatory Commission of recovery of the MVP Portfolio's costs through the MISO transmission tariff. As I describe below, discarding sound economic analyses of this type would deprive the Commission of relevant information upon which it could assess whether infrastructure proposals (or many other matters before the Commission) are in the public interest. While no one piece of information may be dispositive in any given case, and while the Commission has considered

many factors in making its public interest determinations, it should not limit the information considered in such assessments in the manner suggested by Ms. Kliethermes.

Q. Please briefly describe that portion of your testimony to which Ms. Kliethermes takes issue.

A. I concluded that the Project would be expected to decrease wholesale prices for electric power, decrease the costs of producing electricity to meet customer loads or demands, and decrease air emissions from generation plants within Missouri (for sulfur dioxide, or SO_2, and nitrogen oxides, or NO_X) and throughout the MISO footprint (for carbon dioxide, or CO_2). The reduction in production costs would, in the long-run, lead to the reduction in charges for retail electric power. These calculations not only accounted for the cost of serving load from each company's generation resources, but also the impact of each company's purchase power and off-system sales, at appropriate market prices, referred to as Locational Marginal Prices ("LMPs").

Q. Does Ms. Kliethermes take issue with the conclusions described in the previous answer?

A. Not specifically. Rather, Ms. Kliethermes asserts that estimating the retail rate impact requires the type of analysis that "is typically used in electric utility rate cases."[1] In effect, Ms. Kliethermes seems to be saying that in order to estimate a retail rate impact, a cost of service study is required that would take into consideration all those components that make up a retail rate. I agree that my analysis did not take such an approach. However,

[1] Rebuttal Testimony of Ms. Sarah L. Kliethermes, Case No. EA-2015-0146, October 2015 ("Kliethermes Rebuttal Testimony"), p. 6, lines 3-4.

because of several important differences between an analysis needed to evaluate the economic consequences of long-lived infrastructure investments and that undertaken to set the specific rates to be charged to customers of a particular utility, such an approach would be neither necessary nor appropriate. First, my analysis considers *expected* costs many years into the future, which is appropriate given the Project's long operating life and the decision before the Commission of whether to grant a certificate for the Project. By contrast, a cost of service study is used to establish customer rates and, thus, typically reflects historical actual expenditures, and, in circumstances when future cost estimates are permitted, typically only considers costs one or two years into the future and only through well-documented "known and knowable" or "known and measurable" changes relative to past expenditures. Second, my analysis considers impacts and accounts for market effects across a wide market footprint, including MISO, the Southwest Power Pool ("SPP"), and system operators in and outside Missouri. By contrast, a cost of service study only considers costs for one utility. Third, my analysis focusses on the *difference* in costs between scenarios with and without the Project, whereas a cost of service study focuses on the *level* of costs. Consequently, there is no need to consider many elements of the utility's cost of service that must be evaluated to establish customer rates.

With regard to Ms. Kliethermes' interest in the retail rate aspect, I can say that assuming all other retail rate components are held steady, including the impact of environmental regulations, and assuming that changes in production cost (including changes in purchase power and off-system sales) are reflected in retail rates, the Project would be expected to result in lower retail rates because the energy component of the rate will be reduced.

Q. Among her comments, Ms. Kliethermes suggests that the data used in your analysis is not sufficiently precise. How do you respond?

A. In her comments, Ms. Kliethermes indicates that my PROMOD analysis is not "reasonable for purposes of estimating which plants will operate at a specific time, at a specific production cost, for a specific net profit, creating a specific level of emissions".[2] She continues, advocating for a "more narrowly tailored analysis" relying on "accurate" data of "[g]reater precision" on plant operating characteristics, such as unit capacity, heat rate, minimum run-times and outage parameters.[3] The data used in my analysis is highly accurate, is the same data used by MISO in approving the MVP Portfolio, and is the same type of data that is used in many other forward-looking analyses of benefits and costs of new transmission infrastructure.[4] In this regard, Ms. Kliethermes does not object to the conclusions reached by MISO about the MVP Portfolio's economic benefits, despite using the same data relied on in my analysis.[5]

While raising concerns about the accuracy of the data I relied upon to estimate changes in production costs, she also suggests that this data is "reasonable" for estimating

[2] Kliethermes Rebuttal Testimony, p. 8, lines 10-11.
[3] Kliethermes Rebuttal Testimony, p. 9-10.
[4] The data set used in the analysis starts with the Ventyx Power Base data set, which reflects careful analysis by Ventyx of the operating costs and specifications of all resources throughout the country. Among the data relied on by Ventyx is the publicly available data reported by utilities and other electric power companies to the Federal Energy Regulatory Commission and the Energy Information Administration. The data set I use has then been further vetted by MISO and market participants within MISO through the various stakeholder processes that rely on PROMOD analysis to make various planning decisions, such as the decision to approve the MVP Portfolio, of which the Project is an important element.
[5] "The inclusion of the Mark Twain Project in the MVP portfolio ndicates the Project was determined by MISO to appropriately balance the economic tradeoffs considered by MISO at the time MISO undertook those considerations." Kliethermes Rebuttal Testimony, p. 3 (line 24) to 4 (lines 1-3).

LMPs.[6] However, my estimates are simply a consequence of the efficient market-clearing simulated by the PROMOD model, which, in turn, result in LMP estimates that reflect the production costs of the marginal price-setting generation resource. Consequently, to the extent that the data was sufficiently reliable to produce reasonable LMPs estimates, it is unclear why Ms. Kliethermes believes the data is not sufficiently precise to estimate production costs.

Q: Would the adoption of the data standards for economic analysis suggested by Ms. Kliethermes have adverse consequences for the Commission's ability to consider the economic consequences of new infrastructure projects (or other matters before the Commission)?

A. Yes, I am concerned that it would. In effect, Ms. Kliethermes advocates for a standard for determining what analyses should or should not be considered that could be impossible for any company coming before the Commission to meet. While individual companies may have data on their resources and system that is more precise than data included in the MISO/Ventyx data sets, they would not have such information for the other utilities operating within MISO, SPP and other nearby systems and thus would need to rely on publicly available data for all these companies, including regulated and non-regulated utilities in Missouri, and utilities outside Missouri. Thus, if all analysis must reflect company-specific data comparable to that used in a rate case, no individual company would be able to meet that standard and the Commission would effectively be deprived of relevant analyses that can aid in its case determinations. This outcome would be to the detriment of

[6] Kliethermes Rebuttal Testimony, p. 5.

the citizens of Missouri, because new infrastructure proposals, such as the Project, or many other matters before the Commission, would not be evaluated in terms of the economic benefits and costs they provide for the citizens of Missouri. If such analyses were to be disregarded, the Commission would be precluded from considering economic consequences when evaluating whether proposals are in the public interest.

Q. In her comments, Ms. Kliethermes indicates that input data, developed for the MVP Study finalized in January 2012, "is simply not reflective of reality at this time." Do you agree and, to the extent such differences do exist, do you think they would affect your underlying conclusions?

A. As Ms. Kliethermes suggests, there are differences between market conditions assumed in the MVP Study and those today. However, Mr. Kliethermes has provided no analysis to show that my data "is simply not reflective of reality at this time" or that the overarching conclusions of my study would change if more recent data were used. In many respects, changes in market conditions have been modest in the intervening years between when the MVP Report analysis was performed and the present. The load growth levels assumed in my analysis bound the load growth assumptions in MISO's more recent Triennial Report.[7] Natural gas prices used in my analysis are somewhat, but not substantially, lower than prices assumed in MISO's most recent transmission planning study.[8] While some resources may have retired in the intervening years, regardless of when the study was

[7] MISO, MISO Transmission Expansion Plan, 2011, Appendix E2, EGEAS Assumptions Document; MISO, MISO Transmission Expansion Plan, 2014 and 2015, Appendix E2, EGEAS Assumptions Document; see also Response to Neighbors United, Data Request D.1.
[8] MISO, MISO Transmission Expansion Plan, 2011, Appendix E2, EGEAS Assumptions Document; MISO, MISO Transmission Expansion Plan, 2014 and 2015, Appendix E2, EGEAS Assumptions Document.

performed, reserve margins in the future years analyzed would reflect conditions in which there are sufficient resources (but no more than needed) to meet resource adequacy criterion.

Comparisons between the initial MVP Study and the Triennial Report, which reflects more recent market conditions, suggest that there is limited change in the estimated impact of the MVP Portfolio between studies. For example, in its original MVP Report, MISO concluded that the MVP portfolio would provide $8.8 to $31.0 billion in benefits in excess of costs to the MISO region across scenarios evaluated (in present value terms), while in the Triennial Report, MISO estimated net economic benefits of $13.1 billion (present value) from development of the MVP portfolio.[9] Impacts are also similar between the two studies when only the Missouri portion of MISO is considered. In the original MVP Report, MISO finds that the MVP Portfolio would result in net benefits of $748 million to MISO Missouri, with a ratio of benefits to costs ranging from 1.8 to 3.2 across scenarios.[10] In the Triennial Report, MISO found that benefits to Missouri would total $1,150 million (present value), with a ratio of benefits to costs equal to 2.33.[11]

Finally, my analysis found that the Project would be expected to produce benefits well in excess of costs, with ratios of benefits to costs ranging from 25 to 1, to 107 to 1. Given these large ratios of benefits to costs, there is no reason to think that more recent data would lead to a change in the overarching conclusions of the analysis.

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[9] The Triennial Report evaluated the business as usual high and low demand scenarios, with the reported value reflecting an average of these two scenarios. MISO, "MTEP14 MVP Triennial Review, A 2014 review of public policy, economic, and qualitative benefits of the Multi-Value Project Portfolio," September 2014 ("Triennial Report"); MISO, "Multi Value Project Portfolio, Results and Analyses," January 10, 2012 ("MVP Report"); "MTEP14 MVP Triennial Review Business Case.xlsx", available on the MISO web site.
[10] Net benefits are reported for a nominal scenario, reflecting an average of business as usual high and low demand scenarios. MVP Report, p. 86; "MVP Detailed Base Case.xlsx", available on the MISO web site.
[11] "MTEP14 MVP Triennial Review Business Case.xlsx".

Q. In her comments, Ms. Kliethermes indicates that on a call with the Missouri Commission's Staff that you indicated that "the Direct Testimony he presented concerning electric rate impact was intended to be an estimate under the relevant scenarios for the State of Missouri as a whole, as opposed to a prediction for actual retail rate impacts for specific utilities." Does this statement accurately convey your analysis?

A. As written, this statement potentially mischaracterizes how my analysis was performed. As noted above, my analysis is not a cost of service study to establish new rates to customers of a particular utility. However, my analysis does estimate changes in production costs (adjusted for power purchases and off-system sales) for each load-serving entity ("LSE") in Missouri, which in turn captures expected retail rate impacts for each LSE because of the rates for these LSEs generally reflects their cost of service. The retail rate impacts I estimate for the state of Missouri reflect the specific changes in (adjusted) production costs for each LSE.

Q. Ms. Kliethermes suggests that your analysis does not properly account for fuel and purchase power expense and off-system sales revenues.[12] Is this the case?

A. No. As explained above and in my direct testimony, my analysis did account for purchased power expenses and off-system sales.[13] In my analysis, estimates of production costs, which are the basis for estimated rate impacts, include an adjustment for purchased power expenses and off-system sales that is based on the LMPs estimated in my

[12] Kliethermes Rebuttal Testimony, p. 9, line 13.
[13] Direct Testimony of Dr. Todd Schatzki, pp. 13-14.

model.[14] Moreover, the approach I use to account for purchase power expenses and off-system sales is consistent with the approach advocated by Ms. Kliethermes. Ms. Kliethermes indicates that these purchases and sales should be accounted for through properly calculated market prices (LMPs), as I do in my approach. In fact, Ms. Kliethermes even indicates that the prices estimated in my model would be a reasonable basis for determining the purchase power expenses and off-system sales, stating that "the level of detail he uses is useful for estimating what DA LMPs might be reasonable for use in performing more narrowly-tailored production cost modeling."[15]

Q. Among her comments, Ms. Kliethermes offers that your study did not properly take into account wind projects. How do you respond?

A. Ms. Kliethermes states that I assume "wind projects that have not been built and as a consequence are not in the MISO queue."[16] This is correct, and in fact is an appropriate assumption for an analysis of the economic benefits of new transmission infrastructure that is designed to support, among other things, the ability of states within the MISO footprint to comply with future state renewable energy requirements and to address the generation needs that are likely to be driven by the new, federal Clean Power Plan. Achieving such compliance will require new wind resources in quantities that are well in excess of any particular wind resources currently in the MISO queue. Assumptions about the location and quantity of new wind resources were developed through a lengthy stakeholder

[14] As noted in my testimony, these expenses and sales were accounted for by "… adjusting production cost estimates to account for net sales and purchases (at appropriate wholesale market prices)…" Direct Testimony of Dr. Todd Schatzki, p. 14, lines 3-4.
[15] Kliethermes Rebuttal Testimony, p. 8, lines 14-15."DA" refers to Day Ahead.
[16] Kliethermes Rebuttal Testimony, p. 10, lines 12-14.

process supported by quantitative analysis by MISO.[17] Thus, it is appropriate, and in fact necessary, to consider these future wind resources in my analysis.

Q. Along with her views regarding the retail rate impact, Ms. Kliethermes offers certain observations regarding projected emission impacts. Are her concerns germane?

A. No. Like my analysis of production costs, my analysis of emissions reflects plant operating specifications based on highly accurate publicly available data on plant emissions, notably data from the U.S. Environmental Protection Agency based on plant-level Continuous Emission Monitoring and other information collection requests (for mercury).

Q. Mr. Michael Stahlman comments on the relevance of your conclusions regarding whether the project is "economically feasible", one of the five *Tartan* factors. Are his conclusions correct?

A. Mr. Stahlman finds that the Project is economically feasible because the Project's costs for operation and construction are fully recoverable through pre-approved rates included in the MISO tariffs.[18] I do not disagree with this conclusion. However, he also suggests that my analysis and that of MISO that the Project on its own and the MVP Portfolio as a whole provides economic benefits in excess of costs is not germane to the question of "economic feasibility". I strongly disagree with this conclusion. Information about the benefits and costs of a proposed project provides important information on the

[17] MISO, "RGOS, Regional Generation Outlet Study," November 19, 2010, particularly Sections 4 and 5.
[18] "… Staff would still find the project economically feasible as long as ATXI would receive payments for the construction and operation of the proposed line through MISO tariffs." Rebuttal Testimony of Michael Stahlman, p. 4, lines 1-3.

project's feasibility from an economic standpoint, particularly given that project benefits and costs are often a necessary element for regulatory approval and approval of rates needed to recover costs. The Commission itself recognizes that this is true, notwithstanding Mr. Stahlman's contention. In a case similar to this one, the Commission has previously, in part, relied on information regarding project benefits and costs.[19]

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

[19] "Transource Missouri's construction of the Projects is economically feasible by virtue of the cost/benefit analysis conducted by SPP, as well as its FERC-approved cost allocation methodology under its Tariff Schedule 11." State of Missouri Public Service Commission, Order and Report, Docket EA-2013-0098, August 7, 2013, P. 12.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Ameren Transmission Company of Illinois for Other Relief or, in the Alternative, a Certificate of Public Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage a 345,000-volt Electric Transmission Line from Palmyra, Missouri, to the Iowa Border and an Associated Substation Near Kirksville, Missouri.	)	File No. EA-2015-0146

AFFIDAVIT OF TODD SCHATZKI

STATE OF MASSACHUSETTS)
) ss
CITY OF BOSTON)

Todd Schatzki, being first duly sworn on his oath, states:

1. My name is Todd Schatzki. I work in Boston, Massachusetts, and I am employed by Analysis Group, Inc.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Ameren Transmission Company of Illinois consisting of 12 pages, ~~and Schedule(s) XXXXXXXXXX~~ all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

Todd Schatzki

Subscribed and sworn to before me this 16th day of November, 2015.

Notary Public

My commission expires: 11/3/2017

DENISE VAN VOOREN
Notary Public
Massachusetts
Commission Expires Nov 3, 2017