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Witness: Scott Wibbenmeyer
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Sponsoring Party: Union Electric Company
Case No.: EA-2022-0245
Date Testimony Prepared: July 14, 2022

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. EA-2022-0245

DIRECT TESTIMONY

OF

SCOTT WIBBENMEYER

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

*****DENOTES HIGHLY CONFIDENTIAL INFORMATION*****

St. Louis, Missouri
July, 2022

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SCOTT WIBBENMEYER

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Scott Wibbenmeyer and my business address is 1901 Chouteau Avenue, St. Louis, Missouri 63103.

Q. By whom are you employed and what is your position?

A. I am employed by Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or "Company") as Director, Renewable and Technology Business Development.

Q. Please describe your educational background and employment experience.

A. I hold a Bachelor of Science in Mechanical Engineering from the University of Missouri – Columbia. I also hold a Master of Business Administration from the University of Missouri – St. Louis. I joined Ameren Missouri in 1999. In my roles since first joining Ameren Missouri, I have served as a design engineer at the Callaway Energy Center managing projects to improve efficiency and reliability of plant equipment. Following my time at Callaway, my roles included engineering management responsibilities for maintenance, production, and turbine operations for Ameren Missouri's fossil generation fleet. I was then promoted to General Executive of Coal

Operations where I managed coal rail supply contracts. In 2007, I transferred to the renewable development organization, where I led development teams for biomass, wind, and solar for Ameren Missouri. In 2015, I transitioned to Insurance Risk Management where I was responsible for managing financial risk and insurance portfolios. In 2019, I returned to lead the Ameren Missouri renewables organization as Director, Renewable and Technology Business Development.

Q. What are your responsibilities in your current position?

A. I am currently responsible for leading the development of renewable generation projects in support of three primary goals: (a) to comply with the Missouri Renewable Energy Standard; (b) to accomplish a reliable, resilient, and affordable transition of Ameren Missouri's generation portfolio to rely more on renewable power production; and (c) to develop customer renewable energy solutions such as the Company's Community Solar Program and the Renewable Solutions Program ("Renewable Solutions" or "Program") proposed in this docket.

Q. Please describe Ameren Missouri.

A. Ameren Missouri is a public utility under the jurisdiction of the Commission engaged in providing electric and natural gas utility services in portions of Missouri. Ameren Missouri currently provides electric utility service to approximately 1.2 million customers in Missouri and natural gas utility service to approximately 100,000 customers. Ameren Missouri has approximately 10,800 megawatts of generation capacity in operation, which includes wind, solar, hydro-electric, fossil and nuclear technologies.

Q. What is the purpose of your testimony?

A. The purpose of my direct testimony is to support the Company's Application for a Certificate of Convenience and Necessity ("CCN") for a solar generation project, the Boomtown Solar Project (the "Project"), that Ameren Missouri is developing to support the Company's transition to clean energy. In the near term, the facility will also support customer demand for renewable energy through the Program. That Program is addressed in detail in the direct testimonies of Company witnesses Lindsey Forsberg and Steven Wills. My direct testimony addresses the details of the Project and the request for proposal ("RFP") process that was utilized to identify the Project. In addition, I cover the specifics of the build transfer agreement ("BTA") contractual structure used to construct and acquire the Project, and the Ameren Missouri customer protections and value inherent in the Project structure.

Q. Please summarize the key conclusions in your testimony.

A. 1. The Project is a competive, cost-effective addition to Ameren Missouri's generation portfolio, selected from among more than fifty project bids evaluated by the Company.

2. The BTA structure allows Ameren Missouri to leverage the developer's expertise with solar generation construction and acquire a late-stage solar project in Illinois

3. The BTA arrangement, combined with tax equity financing, allows Ameren Missouri to capture the entire value of the Investment Tax Credit ("ITC") the Project will receive to the benefit of all Ameren Missouri customers.

4. Through terms and conditions captured within the BTA, the Company can effectively manage and mitigate key risks associated with the Project.

II. PROJECT OVERVIEW

Q. Please provide an overview of the Project.

A. The Project is an approximately 150 megawatt ("MW")-AC solar generation facility to be constructed in southeastern Illinois, in White County. Under the BTA structure, the Project is being developed by Invenergy Renewables LLC ("Invenergy") through a special purpose entity known as Boomtown Solar Energy LLC. Invenergy is a well-established renewable generation developer with over 24 gigawatts of wind and solar projects under operation, construction, or contract.

Q. Why is Ameren Missouri seeking a CCN for the Project if Invenergy is constructing it?

A. Invenergy will be completing all Project development activities, including final design and engineering, obtaining permits, completing transmission studies, and balance of plant and engineering and procurement agreements. Invenergy will construct the project once Ameren Missouri provides notice to proceed with construction. While it is true that the developer will construct the Project, ultimately it will be acquired by Ameren Missouri. So functionally, the Project is in many respects no different than if Ameren Missouri had itself purchased the equipment from the vendors, purchased or leased the land and easements needed to construct, own, and operate the Project, and signed the contracts with the construction firms. Consequently, while I am not an attorney, it is my understanding that it is the Company's view that the spirit of the CCN statute's requirement that an electrical corporation obtain a CCN prior to construction

applies. It is also my understanding that under the Commission's CCN rules, a CCN is required before Ameren Missouri could operate the Project once Ameren Missouri acquires the Project assets, even if it is the case that Ameren Missouri is not constructing the Project. Consequently, a CCN is being sought and obtained for the Project.

Q. Is there a name for a project of this type?

A. Yes. As indicated, the Project is being constructed under a build transfer agreement, or BTA. Under a BTA, a solar developer builds the project, but the ultimate owner has contractual rights both before and during construction to ensure that the project is built to the ultimate owner's specifications and will otherwise meet the ultimate owner's needs. Some might call this a "turnkey" project in that the developer will build it to the ultimate owner's requirements at a contractually agreed upon cost and completion schedule, assume many of the risks during construction, and then hand the keys to the ultimate owner with the project fully completed and in operable condition.

Q. Are there advantages of the Company using the BTA structure for the Project?

A. Yes. The BTA approach currently carries with it certain important advantages for Ameren Missouri customers.

Q. What are some of those advantages?

A. The first advantage is that Ameren Missouri, using a tax equity financing structure as described by Ameren Missouri witness Mitchell Lansford, will be able to utilize the federal ITC and pass the significant cost savings of the ITC on to its customers. Ameren Missouri will be able to capture and pass those ITC benefits through to customers due to the stage in project development Invenergy has achieved at this time.

To obtain the ITC at 30%, a project must meet several important and time-critical milestones that a self-built project starting today would struggle to achieve. First, under Internal Revenue Service ("IRS") requirements, the Project must be able to prove that physical work of a significant nature began during 2019. To meet this requirement, Invenergy will incorporate a transformer into the Project for which manufacturing began in 2019. Second, to fully qualify for the 30% ITC, the Project must be constructed, tested, and commissioned by the end of 2025. To achieve Project completion no later than 2025, the land rights needed for the Project must be acquired and transmission agreements must be executed. Invenergy already has all the land rights and appropriate environmental studies needed for the expected solar generation for the Project. Furthermore, Invenergy has secured a generator interconnection agreement ("GIA"), securing the transmission rights within Midcontinent Independent System Operator, Inc. ("MISO") that will allow the project to meet the 2025 ITC deadline.

Developers such as Invenergy have accumulated extensive expertise in executing the many steps needed to develop solar projects expeditiously and cost-effectively. This includes obtaining needed property rights, completing required environmental and transmission studies, and building, testing, and placing into operation large-scale solar and wind projects.

Q. What happens if the Project is not completed by the end of 2025?

A. If the Project is not completed by the end of 2025, the value of the ITC would drop from 30% to 10%, a loss of approximately ***__*** million of net present value ("NPV") benefit for Ameren Missouri customers. However, the Project is currently targeting Substantial Completion by October 31, 2024, allowing for over a year of

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additional construction time, if necessary, to ensure that the risk of ITC loss is minimal for the Project.

Q. What is the cost of the Project?

A. The Project has an estimated capital cost of approximately ***___*** million, including transmission interconnection costs, some minimal additional project diligence, governance, quality assurance, and oversight costs to ensure the Project is being built to Ameren Missouri's specifications for an asset life of 30 years or more. This cost is subject to certain adjustments outlined in the BTA or additional project related risks.

Q. How does Ameren Missouri intend to finance the Project?

A. As described in more detail by witness Lansford, Ameren Missouri intends to finance the Project using a combination of its own debt and equity financing and tax equity financing to facilitate capture of the ITC benefits.

III. CONTRACT STRUCTURE

Q. Please outline the basic contractual arrangements between Ameren Missouri and Invenergy under the BTA.

A. Attached to my testimony as Highly Confidential Schedule SW-D1 is a summary of the build transfer agreement. The entire agreement is also attached as Highly Confidential Schedule SW-D2. Key terms are as follows:

- The BTA is between BREC Holding Company ("Purchaser")[1] and Invenergy ("Seller"). Seller, through a special purpose entity known as Boomtown Solar

[1] Purchaser is a subsidiary of Ameren Missouri.

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Energy, LLC (the "LLC") will develop, construct, and sell the Project to Purchaser. The Purchaser is a special purpose entity created to enable the tax equity partnership between Ameren Missouri, through its subsidiary, Ameren Missouri Renewables Holdco, LLC, and a tax equity investor. The Purchaser entity was created solely for the utilization of tax equity financing for the project. The tax equity arrangements are discussed further in the testimony of my colleague, witness Lansford.

- Boomtown Solar Energy, LLC ("LLC") will ultimately acquire all of the property and other rights needed for the Project, including equipment, land rights, transmission agreements and permits needed for the construction and operation of the Project. All land rights for the solar facility have been acquired.
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IV. THE REQUEST FOR PROPOSALS PROCESS

Q. Please provide an overview of the RFP process that led to the selection of the Project.

A. In August 2020, Ameren Missouri issued an RFP for solar and wind generation projects that could begin producing energy in the 2022-2024 timeframe to support RES compliance, customer programs, and Ameren Missouri's overall fleet transformation efforts. The RFP sought bids under which Ameren Missouri could acquire the solar or wind project companies through a BTA.

Q. What responses were received?

A. In October 2020, the Company received responses from 16 bidders, including a bid from Invenergy for the Project that is the subject of this case. The 16 bidders proposed a total of 51 different projects, with an aggregate capacity of approximately 9,000 MW. Of the bids received, 15 projects were wind resources, and 36 projects were solar resources. The projects were in Missouri, Kansas, Illinois, and Iowa.

Q. How did the RFP process proceed after the bids were received?

A. From approximately October to December 2020, the Company, with expertise from 1898 & Co. (a division of Burns and McDonnell) examined the bids for the 51 projects and engaged in a screening evaluation of each response using certain

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selection criteria. 1898 & Co. is considered a leading industry expert and has supported many other utilities in evaluating renewable projects. 1898 & Co., in conjunction with the Company's subject matter experts, created a scorecard which was utilized to evaluate and document the selection criteria.

Q. What were the selection criteria Ameren Missouri used in this initial screening evaluation of the bids?

A. In general, with the support of 1898 and Co., we evaluated and screened all 51 projects on technical, commercial, and economic criteria, including the following key project elements: project maturity; site control; resource assessment; interconnection studies timeline; tax credit strategy; price; environmental assessment; exceptions taken to our form agreements (BTA and Scope of Work); and developer experience. Later in my testimony, I provide additional details related to the specific criteria used. As a result of this process, we narrowed our consideration ***_____
_____
_____
_____
_____***

Q. How did the RFP process proceed after you had narrowed the projects down from ***_____*?**

A. While evaluating the ***_*** projects and after narrowing the list to ***_***, we met with the shortlisted developers in the spring of 2021, and each of them made a detailed presentation of their project(s) and answered our questions.

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In the spring of 2021, the Company began discussions and diligence efforts with all ***[redacted]*** As diligence and contract negotiations continued, Ameren Missouri was notified by the developers that, due to market volatility and uncertainty of new tariffs on construction components like solar panels, they could no longer honor the original bids and would need to resubmit new pricing for their projects based on the latest negotiations and market conditions. At this time, ***[redacted]*** In the fall and winter of 2021, ***[redacted]*** projects were no longer available. ***[redacted]***

This ongoing project and financial diligence, led us to conclude that EDF Renewables' Huck Finn Solar Project, an appropriately sized in-state resource, was the

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best available project to support Ameren Missouri RES Compliance needs.[2] The Boomtown Solar Project was selected to support the generation transtition discussed in the testimony of Company witness Ajay Arora and for the Renewable Solutions Program Phase 1.

Q. Before the Company finalized its selection of Invenergy as the developer for this Project, were the major developers of solar and wind projects in the United States afforded the opportunity to provide bids for other projects in Missouri, Illinois, and Iowa for Ameren Missouri's RES compliance?

A. Yes. Between the 16 bidders who initially responded to the RFP, the major solar and wind developers in the U.S. have had the opportunity to bid projects in Missouri, Kansas, Illinois, and Iowa for RES compliance.

Q. You mentioned earlier that you applied certain specific criteria when evaluating the projects. What was the selection criteria that you used?

A. The categories of the criteria we applied for the selection of projects to be considered were: project size; location; ownership arrangements; project maturity; developer experience; technology and project performance; transmission interconnection criteria; locational market pricing; project pricing; ITC qualification; status of acquisition of required land rights; status of environmental studies and response to the form BTA; and scope of work agreements. As earlier noted, we applied all, or nearly all, of these to the

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that were selected as part of the initial screening process discussed earlier, we applied these criteria with more rigor.

[2] The Company is seeking a CCN for the Huck Finn project in File No. EA-2022-0244.

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I should also note that while we looked at numerous factors as listed above, no one factor can be considered in isolation in the selection of a utility solar project, and the overall economics, feasibility and risks of a project were considered holistically through the evaluation process.

V. PROJECT RISK MITIGATION

Q. Please outline the main risks associated with development and construction of utility scale solar projects.

A. All projects of this magnitude carry risks, and that is true of this Project as well. The main risks associated with this Project are as follows:

1. Project cost due to supply chain volatility, change in law/tariff uncertainty;
2. ITC value qualification; and
3. Construction and schedule delays

I explain these risks below and how Ameren Missouri customers are protected through the BTA structure for the Project.

Q. Please explain the first risk related to project cost.

A. ***

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Q. Please elaborate on current supply chain volatility and tariff uncertainty in the solar industry.

A. The global solar supply chain is currently experiencing significant volatility in the price of key materials (e.g., polysilicon, steel, copper, etc.). Based on internal Ameren Missouri market research, the cost of polysilicon – the raw material for solar panels – has increased 23% since July 2021. Steel has seen a 182% rise over the last 24 months, however over the last quarter Ameren Missouri has seen steel prices moderate but remain at or above July 2021 prices. Aluminum and copper prices continue to rise, having increased since July 2021 by 59% and 36%, respectively. Moreover, the last several months have seen marked accelerated increases in aluminum and copper at 30% of the 59% and 7% of the 36%, respectively. In addition, on March 28, 2022, the U.S. Department of Commerce launched an anti-dumping circumvention investigation of solar cells being imported from Cambodia, Malaysia, Vietnam, and Thailand. The investigation alleges that those four countries are utilizing parts manufactured in China to produce solar cells that would otherwise be subject to a tariff. The U.S. Department of Commerce estimates the investigation will take approximately one year to complete, introducing further uncertainty on potential tariff and importation restrictions.

Q. How has the Company mitigated this risk?

A. ***_____

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Q. Are there additional actions that may be available to reduce the impacts of tariffs or market uncertainty related to the U.S. Department of Commerce investigation?

A. Yes. Completing the Project by the end of 2024, as targeted in the Project schedule, could significantly reduce the risk of new tariffs associated with the recent U.S. Department of Commerce investigation mentioned above. On June 6, 2022, President Biden signed an executive order temporarily facilitating U.S. solar deployers' ability to

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source solar modules and cells from Cambodia, Malaysia, Thailand, and Vietnam by providing that those components can be imported free of certain duties for 24 months. Though the ultimate effect this order may have on stabilizing the supply and pricing of solar modules is unknown, it does provide additional certainty that projects completed before the end of 2024 may have little to no risk of being subject to new tariffs. Due to this executive order, the Project's risk can be greatly reduced by reaching completion before the end of 2024.

Q. Please address the risks associated with ITC value qualification.

A. As mentioned earlier in my testimony, an important step to qualify for the 30% ITC value is to prove that work of a significant nature began in 2019. The other main criteria to qualify for the 30% ITC is to ensure the Project is placed in service by December 31, 2025.

Q. How has the Company mitigated this risk?

A. The Company has performed the necessary tax diligence and legal analysis confirming that Invenergy has completed all steps for the Project to qualify for the 30% ITC. With regard to the in-service criteria, the Project is targeting an October 31, 2024, Substantial Completion date, which means the Project construction schedule could experience more than a full year of delay without risking 30% ITC qualification.

Q. Please address the risks associated with project construction and ITC value retention.

A. Utility scale solar generation is no longer a nascent industry in the United States given that approximately 61 GW of projects have already been constructed. The construction process is therefore well known. However, as with any large construction

project, there are sometimes issues that need to be resolved. In the case of solar generation, these issues may include concerns from specific landowners, differences regarding scope of work, unknown site conditions or environmental conditions (i.e., rocks, soft soils, unknown materials), force majeure, delay in transmission interconnection, permitting, negotiating project procurement and construction agreements, procurement of long lead time materials, etc. In order for the Project to qualify for the 30% ITC, it must be placed in service by December 31, 2025.

Q. How has the Company mitigated that risk?

A. ***_____

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_____*** In addition, the Project schedule has approximately 14 months of float to manage the risk associated with Excusable Events and other Force Majeure events to help assure the Project is completed in sufficient time to take full advantage of the ITC value.

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VI. CONCLUSION

Q. What are your conclusions regarding the Project?

A. The Project is a competitive, cost-effective addition to Ameren Missouri's generation portfolio, and the BTA structure allows Ameren Missouri to leverage the developer's expertise with solar generation construction and acquire a late-stage solar project in Illinois. Further, the BTA arrangement, combined with tax equity financing, allows Ameren Missouri to capture the entire value of the ITC the Project will receive to the benefit of all Ameren Missouri customers. Through terms and conditions captured within the BTA, the Company can effectively manage and mitigate key risks associated with the Project. Therefore, I recommend the Commission grant Ameren Missouri the relief requested in its Application.

Does this conclude your testimony?

A. Yes.

SCHEDULE SW-D1

IS HIGHLY

CONFIDENTIAL IN

ITS ENTIRETY

SCHEDULE SW-D2

IS HIGHLY

CONFIDENTIAL IN

ITS ENTIRETY

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union Electric	)	
Company d/b/a Ameren Missouri for Approval	)	
of a Subscription-Based Renewable Energy Program	)	File No.: EA-2022-0245

AFFIDAVIT OF SCOTT WIBBENMEYER

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Scott Wibbenmeyer, being first duly sworn on his oath, states:

My name is Scott Wibbenmeyer, and hereby declare on oath that I am of sound mind and lawful age; that I have prepared the foregoing *Direct Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

\s\ Scott Wibbenmeyer
Scott Wibbenmeyer

Sworn to me this 14th day of July, 2022.