MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

COST OF SERVICE

APPENDIX 5

CONSTRUCTION AUDIT AND ENGINEERING REVIEW

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. ER-2021-0240

Jefferson City, Missouri
September 2021

** Denotes Confidential Information **
*** Denotes Highly Confidential Information ***

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APPENDIX 5: WIND PROJECTS

PURPOSE OF STAFF'S CONSTRUCTION AUDIT AND PRUDENCE REVIEW

Staff has performed this construction audit to determine the appropriate level of costs for the purchase of the Atchison Renewable Energy Center ("Atchison)[1] and the High Prairie Renewable Energy Center ("High Prairie")[2] to be used for the purpose of setting rates, and to provide an independent and objective assessment of the utility's performance as it relates to this specific project. This is different from Staff's previous construction audits as Ameren Missouri purchased Atchison[3] and High Prairie[4] through build transfer agreements ("BTA"). In providing this recommendation, Staff has examined Ameren Missouri's contract with the Sellers to purchase the facility and subsequent changes to the BTA agreement since the prior certificate of convenience and necessity cases ("CCN"). Staff reviewed to determine if those decisions were unreasonable, excessive, inappropriately allocated, unnecessary, of no benefit to Missouri ratepayers, or inappropriate in any manner; whereas such decision would result in harm to ratepayers, in light of the following factors established by Staff:

- Impact on Rate Base.
- Projected operations and maintenance expense.
- Projected fuel and consumable-related expense.
- Projected effect on the Fuel and Purchase Power Cost Recovery Mechanism.
- Projected effect on depreciation rates and expense.
- Projected operational impacts including plant dispatchability, dispatch order, or reductions to net generation.

[1] On May 15, 2019, Ameren Missouri filed its Application for Certificate of Convenience and Necessity ("CCN") in Case No. EA-2019-0181 to acquire the Atchison Renewable Energy Center, then called the Outlaw Project.
[2] On May 21, 2018, Ameren Missouri filed its Application for Certificate and Convenience and Necessity ("CCN") in Case No. EA-2018-0202 to acquire the High Prairie Renewable Energy Center.

- Consistency with the utility's Preferred Resource Plan effective at the time the project was undertaken, and as subsequently updated or superseded.
- Compliance with State and Federal mandates that go into effect during construction of the project.
- Compliance with settlements or other agreements.
- Evaluations of other projects to improve this project.

Staff expert/witness: Jason Kunst, CPA

The Engineering Analysis Section is responsible for and conducts Engineering Reviews of major electric utility construction projects. The Engineering Review consists of two activities, monitoring the progress of construction and reviewing construction project changes such as change orders and schedule changes. In this case,

Engineering Staff reviewed construction changes associated with the project for the following:

- To understand the reason for the change at the point in time when it occurred;
- To determine whether the change corrected an engineering-related problem, resulted in a better design, or improved the operation or construction of the plant; and
- To determine whether the change resulted in a safety concern, caused unnecessary construction, or caused unnecessary duplication of facilities or work.

In addition, the Engineering Staff reviews contracts, agreements, purchase orders, drawings, and correspondences related to the changes. If Engineering Staff determine there is an engineering concern with a change the Engineering Staff would share its concern with the Commission's Auditing Staff and consult with Staff management to determine the appropriate response to take to address the concern.

As discussed in the Staff Cost of Service Report, Engineering Analysis provides recommendations related to whether generating units are fully operational and used for service. Because of the timing of the project and the current rate case, Engineering Analysis reviewed

whether the Company provided sufficient information to deem the facility "in-service" as a part of the Construction Audit.

Staff Experts/witnesses: J Luebbert and Shawn Lange, PE.

DECISION TO UNDERTAKE WIND PROJECTS

The Commission granted Ameren Missouri a CCN to construct and own two wind generation facilities, High Prairie[5] and Atchison[6], under the respective terms of the BTAs and subject to conditions. In both CCN cases, the parties agreed to not challenge the prudence of the decision to construct the facilities.[7,8]

The proposed wind facilities, upon certification by Division of Energy, will be eligible for compliance with the Renewable Energy Standard ("RES"). The projects, located in Missouri, qualify for an additional ¼ credit per megawatt-hour generated, lowering Ameren Missouri's RES compliance obligation. Even with completion of these projects, Ameren Missouri expects a need

[5] Order Approving Third Stipulation and Agreement effective November 3, 2018 in EA-2018-0202. "Union Electric Company d/b/a Ameren Missouri is granted a certificate of convenience and necessity to construct and own a wind generation facility to be constructed in Schuyler and Adair Counties in Missouri under the Build Transfer Agreement with TG High Prairie Holdings, LLC, as described in its application, subject to the conditions set forth in the Third Stipulation and Agreement."

[6] Order Approving Stipulation and Agreement effective August 25, 2019 in EA-2019-0181. "Union Electric Company d/b/a Ameren Missouri is granted a certificate of convenience and necessity to construct and own a wind generation facility, which includes gen-tie facilities, to be constructed in Atchison County, Missouri under the Build Transfer Agreement with Enel Kansas, LLC, as described in its application, subject to the conditions set forth in the Stipulation and Agreement."

[7] "Prudence: The Signatories agree that they shall not challenge the prudence of the decision to acquire the facility under the terms of the BTA, including Non-Compliant wind turbine generators under the terms of the BTA, and to merge TG High Prairie, LLC into Ameren Missouri if the acquisition of the facility closes pursuant to the BTA. Nothing in this Stipulation limits the ability of any Signatory or other party from challenging the prudency of the design, construction costs, interconnection costs, and all other project related costs, including costs impacted by construction duration."

[8] "Prudence: The Signatories agree that they shall not challenge the prudence of the decision to construct the facility for RES compliance purposes under Section 393.1030, RSMo., and to merge Outlaw Wind Project, LLC into Ameren Missouri upon acquisition of the facility. Nothing in this Stipulation limits the ability of any Signatory or other party from challenging the prudency of the design, construction costs, interconnection costs, and all other project related costs, including costs impacted by construction duration."

to purchase Renewable Energy Credits (RECs) to fully comply with the RES in 2022 and 2023.[9]

Staff expert/witness: Claire M. Eubanks, PE

RECOVERY OF FACILITY COSTS – PISA AND RESRAM

On June 1, 2018 Senate Bill 564 was signed into law, which allowed investor owned utilities to recover 85% of the deferred depreciation and return on qualifying electric plant investment between rate cases. During a rate case these deferred amounts would be placed into a regulatory asset and amortized over twenty years. The RESRAM allows a utility to recover RES eligible costs through a rider between rates. In Case No. EA-2018-0202, Ameren Missouri stated it intended to use the PISA mechanism to recovery 85% of the costs for the project and would flow the remaining 15% through the RESRAM. The Office of Public counsel opposed this treatment, however in its Report and Order issued in Case No. EA-2018-0202, the Commission found that Ameren Missouri could recover costs for the High Prairie Renewable Energy Center through the RESRAM and through PISA. The first 85% of the deferred depreciation and return with the facility until it is included in rates as part of a rate case is recovered included in the PISA deferral mechanism which will be rebased and amortized over twenty years as part of this case. The remaining 15% of the deferred depreciation and return are recovered through the RESRAM rider along with other operations costs to run the facility. As part of this case though, the RESRAM will be rebased and the costs will be included in base rates.

[9]Page 6, Ameren Missouri Renewable Energy Standard Compliance Plan 2021-2023 filed in EO-2021-0352.

DEPRECIATION RATES

As part of the stipulation and agreement filed in Case No. EA-2019-0181, the parties agreed that the equipment would be recorded in account 344 with a then approved 6.81% depreciation rate and a -17% salvage rate. As part of the Commission approved stipulation and agreement approved in Case No. ER-2019-0335 the parties agreed to the following rates:

Account	Description	Depreciation Rate
341	Structures and Improvements – Wind	3.53%
344	Generators – Wind	3.71%
345	Accessory Electric Equipment – Wind	3.70%
346	Misc. Power Plant Equipment – Wind	3.70%

As part of its direct case, Ameren Missouri has proposed changes to the depreciation rates. The following chart summarizes the proposed rates of Ameren Missouri and Staff.

Account	Ameren Proposed Rate	Staff Proposed Rate
341	3.46%	2.90%
344	3.67%	3.67%
345	3.66%	3.66%
346	3.62%	2.89%
346.21	7.74%	7.74%
346.22	7.65%	7.65%
346.23	20.80%	20.80%

Staff expert/witness: Jason Kunst, CPA

ATCHISON COUNTY WINDFARM

Overview:

On May 15, 2019 Ameren Missouri filed its Application for Certificate of Convenience and Necessity in Case No. EA-2019-0181 to acquire the Atchison Renewable Energy Center, then called the Outlaw Project. The estimated cost for the project at the time of the filing was **[redacted]

[redacted] .** Ameren Missouri sought to acquire the facility through a BTA, rather than constructing the facility itself as Ameren Missouri was not in a position to take advantage of the production tax credits available for renewable energy projects. As part of the BTA, Enel was responsible for interconnection costs up to ** [redacted] **, if the interconnection cost exceeded that amount ** [redacted] . ** The BTA was structured so that Ameren Missouri would acquire 100% of the special purpose entity known as Outlaw Wind Project, LLC, and merge it into Ameren Missouri. The parties to the case eventually signed a Stipulation and Agreement, filed on July 31, 2019, and approved by the Commission on August 15, 2019. As part of the stipulation and agreement the parties agreed to the following:

- That the Commission should grant Ameren Missouri's request for the CCN under Section 393.170.1 to construct and own a wind generation facility under the BTA with Enel Kansas, LLC. It also included permission to acquire any "WTG-II's". The Signatories also agreed that the costs for the project would be RES compliance costs as long as the facility was certified by the Division of Energy as a renewable energy resource under 10 CSR 140-8.010.
- That the Commission should grant Ameren Missouri the authority to merge with Outlaw Wind Project, LLC, with Ameren Missouri to be the surviving parent.
- Ameren Missouri would file quarterly update reports on the plans and specifications of the project. Ameren Missouri would also file complete plans and specifications prior to commencing construction. Ameren Missouri would include an update on all required permits as part of its quarterly reporting.

- Ameren Missouri would acquire permission from the Federal Energy Regulatory Commission.
- That in-service criteria agreed upon in Case No. EA-2018-0202 would apply to this wind facility.
- Ameren Missouri would comply with specific wildlife-related conditions.
- The parties agreed, until the a different depreciation rate was ordered by the Commission, the facility would be recorded to FERC account 344, and the currently approved 6.81% depreciation rate would be used along with a -17% salvage rate.
- Ameren Missouri would describe and document its considerations of the following factors on the potential economics of wind resources in its 2020 triennial resource plan under Chapter 22 of the Commission's rules:
    - Changes in PTC value associated with qualifications deadline in federal tax law
    - Differences in PTC values associated with different levels of production in different states or areas
    - Potential variability in required transmission system network upgrades
    - Impacts on capacity position and deferral or other resources with wind capacity included or excluded from resource adequacy
    - Differences in hourly pricing, including the possibility of negative hourly pricing
    - Differences in interconnecting in MISO or SPP
    - Trade-offs between higher out-of-state capacity factors versus the 1.25 multiplier provided for by the Missouri Renewable Energy Standard for Missouri sited renewable resources
    - Potential variability in wind production
- The parties agreed not to challenge the prudence of the decision to construct the facility for RES compliance and to merge Outlaw Wind Project, LLC into Ameren Missouri.

- Ameren Missouri would provide the full grossed-up value of the PTCs to customers through the RESRAM or in rates when earned, without any reduction and without a return on any deferred tax assets, regardless of Ameren Missouri's tax position.
- Ameren Missouri was to file with the Commission an analysis, prior to a Generation Interconnection Agreement being signed, if the total designated Network Upgrade costs allocated or assigned from other upgrades or projects, exceed the amounts listed in Staff's Rebuttal Report.[10]

REQUEST FOR PROPOSAL PROCESS

In December of 2015, Ameren Missouri issued a request for proposal ("RFP") to wind developers to determine if the construction of a wind facility would be an economically feasible way to meet RES requirements. Based upon the results of the RFP, Ameren Missouri determined that construction of a wind facility was the lowest cost option to meet RES requirements. ** [redacted] . ** Ameren Missouri discovered through analysis and cost/revenue modeling that ownership of a wind farm was the most cost effective means to meet future RES requirements and that a BTA was the most appropriate structure to accomplish that. Ameren Missouri issued a copy of the RFP to ** [redacted] ** and Ameren Missouri received responses from ** [redacted] .** In total Ameren Missouri received 13 responses to the RFP.

[10] ** [redacted] ** for SPP connection and ** [redacted] ** for a MISO connection.

**

[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

**

Ameren Missouri narrowed down the list to six potential projects: ** [redacted]

[redacted]

. ** The initial price range for the short listed BTA wind projects was ** [redacted] . **

**

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

**

** [redacted]

[redacted]

[redacted]

[redacted].**

Ameren Board of Directors Approval and Reporting

** [redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[11] Ameren Missouri and EDF announced on July 25, 2019 that the project was mutually terminated due to "unacceptably high costs" for transmission upgrades.

[redacted][12] [redacted]

[redacted].[13]**

Additional reporting was presented to the Ameren Construction Project Oversight Committee ("CPOC") beginning in April of 2020. ** [redacted]

[redacted].**

Quarterly Reporting

As part of the stipulation and agreement approved by the Commission in Case No. EA-2019-0181, Ameren Missouri agreed to provide quarterly reports. These reports contained updates on any changes to the BTA, notifications of significant events such as notices of force majeure, and updates on the status of the plans, project milestones, necessary permits, and costs for the project.

Project Reporting

** [redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[12] ** [redacted]. **

[13] ** [redacted]. **

[redacted]

- [redacted].**

CHANGES TO THE BUILD TRANSFER AGREEMENT AND CHANGE ORDERS

BTA Amendments

** [redacted]

[redacted][14]

[14] See EA-2019-0181 Ameren Missouri Third Quarterly Progress Report of 2019 Pg. 3 The Fourth Amendment to the Build Transfer Agreement, dated August 9, 2019, does the following:

- **[redacted]**
- **[redacted]**
- **[redacted]**
- **[redacted]***
- **[redacted]**
- **[redacted]**
- **[redacted]**
- **[redacted]**
- **[redacted]**
- **[redacted]**

[redacted]

[redacted]

[redacted].**

Change Orders

**[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

**

Staff expert/witness: Jason Kunst, CPA

ENGINEERING REVIEW

Interconnection

The BTA for the project contains an option to interconnect the wind farm in Midcontinent Independent System Operator ("MISO") *** [redacted] *** [15] or to interconnect the wind farm in the SPP *** [redacted] *** [16] or via the *** [redacted]

[15] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 27
[16] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 22

[redacted] ***[17]. On September 13, 2019, Ameren Missouri filed notice stating *** [redacted] ***.[18]

The BTA contains scenarios in which the total project's installed capacity could be between ** [redacted] **[19] and 299 MW.

- *** [redacted] ***[20]
- *** [redacted] ***.[21]

Production Tax Credits

A part of the value of any wind generation project is its ability to take advantage to the greatest extent possible of the Production Tax Credits ("PTCs"). PTCs are credits against the owner's tax liability from production of energy from resources such as wind, biomass, geothermal, landfill gas, and hydropower.

[17] EA-2019-0181 Ajay K. Aurora Direct Schedule ADA-D1 Pg. 2
[18] EA-2019-0181 Notice Regarding Generator Interconnection Agreement Pg. 2
[19] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 29
[20] EA-2019-0181 Ajay K. Aurora Direct Schedule ADA-D1 Pg. 1
[21] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 29

To obtain the full value of the PTCs, a project must meet several important and time-critical milestones that a self-built project starting today would be unable to achieve. First, the project must have incurred, by the end of 2016, at least 5% of qualifying project costs to satisfy the PTC "safe harbor" rule. One way to meet this requirement is for the wind project developer to purchase PTC-qualified "safe harbor" equipment before the end of 2016 and to obtain title to and delivery of the equipment within a specified time period.

*** [redacted] . ***[22]

Second, to fully qualify for the PTCs, the Project must be constructed, tested, and commissioned by the end of 2020. However, due to the Covid-19 pandemic, the Treasury

[22] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 106

Department and the Internal Revenue Service, on May 5, 2020, provided tax relief for taxpayers that develop renewable energy projects.

*** [redacted] .***[23]

Partial Project Completion

There are provisions in the BTA that permit a closing if not all of the approximately 299 MW of turbines are complete:

The Project specifications are to construct a 299 MW wind farm. However, the BTA's terms provide that if by the project completion deadline of ** [redacted] **, **[redacted] ** or more of wind turbines are placed in service, Ameren Missouri will buy the LLC and close the transaction. However, Ameren Missouri will not pay for the remaining Wind Turbine Generators ("WTGs") (i.e., the other *** [redacted] ***) unless and until they too are placed in service, by *** [redacted] . *** If that happens, Ameren Missouri will release purchase price funds withheld at closing, ** [redacted] ** and those additional WTGs (which will have then become "compliant") will be part of the larger wind farm.[24]

[23] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 262
[24] EA-2019-0181 Ajay K. Aurora Direct Pg. 27 Ln. 4-12

** [redacted].**[26]

Invenergy has continued to make progress with construction to complete as much of the project as practical in 2020 in order for Ameren Missouri to acquire the Project Company under a Partial Project Completion whereupon Ameren Missouri would pay to Invenergy the cost per kilowatt of completed and commissioned turbines. Unfortunately, due to delays in turbine deliveries and commissioning efforts Invenergy was unable to reach the Partial Project Completion Minimum of 80 MW to achieve Partial Project Completion by the Completion Deadline of December 21, 2020. Per the BTA, Invenergy was allowed a day-for-day extension to the Completion Deadline in order to achieve Partial Project Completion based on the 80 MW threshold. Invenergy completed the balance of construction to achieve the Partial Project Completion Minimum of 80 MW on January 14, 2021. Thereafter, each wind turbine generator that was not completed by the Closing Date (each, a WTG-II per the BTA) will be completed by Invenergy under delegated authority from Ameren Missouri according to the BTA and Ameren Missouri will pay the BTA Purchase Price cost per kilowatt to Invenergy for each WTG-II that is completed by the WTG-II Deadline (i.e. December 31, 2021). Ameren Missouri closed on the acquisition of the Project

[25] A value of "P50" or "P90" (or any value from 0-100) describes an annual value of power production from the intermittent resource with a probability of 50% or 90%, respectively. For P50, there is a 50% chance that the mean power production will not be reached at any given time. For P90, there is a 10% chance that the P90 level will not be reached. 8.4 E https://www.e-education.psu.edu/eme810/node/630 xceedance Probabilities: P50, P75, P90 | EME 810: Solar Resource Assessment and Economics (psu.edu)

[26] EA-2019-0181 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 25

Company on January 14, 2021, based on a Partial Project Completion consisting of 96.2 MW of completed turbines.[27]

Covid-19 and Schedule Impacts

Calendar year 2020 saw significant changes due to the coronavirus pandemic. The construction of the Atchison County Wind Farm was no exception.

*** [redacted] ***[28]

*** [redacted] .***[29]

[27] EA-2019-0181 Ameren Missouri Fourth Quarterly Progress Report of 2020 Pg. 3
[28] EA-2019-0181 Ameren Missouri Third Quarterly Progress Report of 2020 Pg. 3
[29] EA-2019-0181 Ameren Missouri Third Quarterly Progress Report of 2020 Pgs. 3-4

As described above, Ameren and Invenergy made amendments to the BTA which extended the applicable timelines. Because COVID-19 has caused industry-wide delays in the supply chain for components needed to complete renewable energy projects otherwise eligible for important tax credits the IRS has issued Notice 2020-41 PDF to provide tax relief to affected taxpayers.

*** [redacted] . ***[30]

** [redacted] **

*** [redacted] . ***[31]

*** [redacted]

[30] EA-2019-0181 Ameren Missouri Third Quarterly Progress Report of 2020 Pg. 3
[31] EA-2019-0181 Ameren Missouri Fourth Quarterly Progress Report of 2020 Pg. 3

[redacted] ***[32] As a result, Vestas performed a root cause investigation. *** [redacted] ***[33] *** [redacted]. ***[34] *** [redacted]. ***[35] *** [redacted] ***[36]

[32] Ameren Response to Staff DR 588 "mpsc 0588 d. bonding failure of blade root inserts tcc 5035 conf.pdf" Pg. 4 section 1.2
[33] Ameren Response to Staff DR 588 "mpsc 0588 d. bonding failure of blade root inserts tcc 5035 conf.pdf" Pg. 5
[34] Ameren Response to Staff DR 588 #2
[35] Ameren Response to Staff DR 588 #1
[36] Ameren Response to Staff DR 588 #3

*** [redacted]

[redacted][37] [redacted]

		[redacted]		
		[redacted]	[redacted]	[redacted]
		[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]		[redacted]
[redacted]	[redacted]	-	-	-
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

***

In-Service Recommendation and Engineering Review Recommendation

In-service criteria are a set of operational tests or operational requirements developed by the Staff to determine whether a new unit is "fully operational and used for service." The “fully operational and used for service” phrase comes from Section 393.135, RSMo. 2000, a statute that was adopted by Initiative, Proposition No. 1, on November 2, 1976. Section 393.135, RSMo. 2000, provides as follows:

[37] Ameren Response to Staff DR 588 Table 1

> Any charge made or demanded by an electrical corporation for service, or in connection therewith, which is based on the costs of construction in progress upon any existing or new facility of the electrical corporation, or any other cost associated with owning, operating, maintaining, or financing any property before it is fully operational and used for service, is unjust and unreasonable, and is prohibited. (Emphasis added)

As part of the stipulation and agreement approved by the Commission in EA-2019-0181 was a set of in-service criteria. A copy of the agreed upon in-service criteria as well as the results of the evaluations are summarized at the end of this Report. As stipulated[38]:

> The in-service criteria agreed upon in connection with File No. EA-2018-0202 and filed in that docket shall apply to the wind facility at issue in this case.

Staff has reviewed data provided by Ameren Missouri in response to Staff's DR 682 and the documentation contained therein. ** [redacted] .** For the remaining turbines, ** [redacted] .**

** [redacted] .** Staff has requested additional information and verification from Ameren Missouri regarding the satisfaction of term 2.c. of the jointly submitted in-service criteria. Staff will continue to review information provided by Ameren Missouri and will provide its recommendation

[38] EA-2019-0181 Stipulation and Agreement Pg. 4

concerning full or partial satisfaction of the MCC portion of the in-service criteria in a subsequent round of testimony. At this time, Staff recommends proceeding with the development of revenue requirement as though the Atchison project, with the exception of ** [redacted] **, is in-service. Staff will provide an in-service recommendation when documentation consistent with Ameren Missouri's representations is provided, or will recommend adjustments if such documentation is not received.

Based on the information provided, Staff is not recommending a disallowance due to ** [redacted] .**

Based on the information provided, Staff is not recommending a disallowance due to Covid 19 impacts.

Staff Expert/witness: Shawn Lange, PE.

AUDIT RESULTS

Risk Assessment

At the time of this filing, the assigned Staff auditors has determined that there were no significant indication that the Atchison Renewable Energy costs incurred to date are imprudent, unreasonable, inappropriate, however, Staff continues to review the level of the project's completion of in-service criteria. The Audit Staff's basis for this concern is based on a thorough examination of all actual costs in its possession at the time of this direct filing. Staff auditors will continue to assess all actual costs through the September 30, 2021 true-up cut-off established by the Commission in this rate proceeding, and will bring up any concerns based on any new information provided. At this time, Staff witness Shawn Lange has reviewed data provided by Ameren Missouri in response to Staff's DR 682 and the documentation contained therein. ** [redacted]

[redacted]. ** For the remaining turbines, although full documentation of satisfaction of in-service criteria has not been received at this time, ** [redacted]. ** At this time, Staff is proceeding with the development of revenue requirement as though the Atchison project with the exception of ** [redacted] ** is in service. Staff will provide an in service recommendation when documentation consistent with Ameren Missouri's representations is provided, or will recommend adjustments if such documentation is not received.

Audit Scope

The Atchison Renewable Energy Center was constructed under the BTA with Invenergy, which allowed Ameren Missouri to agree to a price for the project for its specifications. Ameren Missouri has the contractual right to ensure that the project is built to its ultimate specifications both before and during construction. The developer builds the project at the contractually agreed to cost and completion schedule, and assumes many of the risks during construction. Given the nature of this type of contract Staff focused it scope on the changes that were proposed to the contract after it was presented to Staff in the previous CCN case EA-2019-0181. Staff reviewed the following documents:

1. BTA Contract with Invenergy, including amendments to the BTA
2. Change orders requested by Ameren Missouri
3. Internal and External Audit Reports
4. Requests for Proposal
5. Ameren Corporation Board of Directors information
6. Reports provided to Ameren Missouri by the seller

Audits of the Facility

Ameren's internal audit team performed one audit with regards to the Atchison Renewable Energy. ** [redacted] **

In response to Staff Data Request No. 569, Ameren Missouri indicated no other audits had been performed on the facility.

Construction Delays

There were significant delays which lead to the Atchison Renewable Energy Center not being acquired and placed in service during December of 2020 as originally planned during the CCN case. The details are described below.

a. COVID

During the construction of the Atchison Renewable Energy Center the developer, received several notices of force majeure from Vestas, the turbine manufacturer with regards to unspecified delays as a result of the coronavirus pandemic. The supply chain disruptions were due to factory closings, government restrictions, transportation cancelations and congestions, import/export restrictions as well as actions taken by Vestas and their subcontractors.

b. Weather delays

The project also suffered delays to due weather related events, Vestas was unable to enter WTGs to perform commissioning activities on 12/12/20, 12/14/20, 12/15/20, 12/23/20, 12/29/20, 1/1/21, 1/2/21, 1/6/21, 1/7/21, 1/9/21, 1/25/21, 1/26/21, 1/27/21, 1/28/21, 2/2/21, 2/6/21, and 4/20/21 due to snow and ice accumulation above the WTG access doors.

Due to safety policy, Vestas was unable to perform commissioning work on the following dates due to high wind speeds: 11/7/20, 11/9/20, 11/14/20, 11/18//20, 12/22/20, 1/14/21, 1/15/21, 2/4/21, 2/12/21, 2/13/21, 2/26/21, 2/27/21, 3/10/21, and 4/23/21.

The cranes utilized for the construction of the facilities have a safety feature which prevents them from operating in high wind conditions, Fagan the balance of plant contractor reported that high wind speeds prevented them from operating the cranes for thirty working days. Additionally, it is unsafe to use the cranes when lighting is in the area, lightning prevented crane operations on the following days: 4/6/21, 4/7/21, 4/8/21, and 4/9/21.

The commissioning of the turbines requires minimum wind speeds in order performing the activities, low wind speeds prevented Vestas from performing commissioning activities on 11/12/20, 11/24/20, 11/30/20, 12/3/20, 12/10/20, and 12/17/20.

c. Transportation Issues

On Friday, August 14, 2020 a V150 tower base section fell off the CL Kate vessel into the Indian Ocean due to perils of sea. The tower section was one of 26 aboard the ship, along with 26 tower midsections for the V150 WTGs. After losing the tower base section, the ship returned to port in Kandla, India to re-secure the cargo. The ship arrived at port in the United States on October 4, 2020 which was 17 calendar days later than estimated. The CL Kate was carrying the base and first mid sections for 26 towers, as a result of the delay work could not be performed on tower sections, nacelles, hubs, or blades that were already on site.

The Marmac 22 barge which was carrying 59-meter blades was delayed seven days due to the sinking of a tugboat and hazardous fog. The CBC 1269 barge, which was also carrying blades was delayed four days to hazardous fog.

Additionally Vestas experienced delays due to tropical storms and hurricanes. Gulf shore ports were closed to inbound traffic from August 23, 2020 until August 27, 2020 due to tropical storms. The barge, Marmac 21, which was carrying eighteen 74-meter blades was delayed 10 days in September of 2020, due to Hurricane Sally. Tropical Storm Beta which shut down the Port of Houston from September 20, 2020 through September 22, 2020 caused delays as parts were unable to be loaded on railcars for transport to the site.

d. Defective Blades

On December 14, 2020 Vestas gave notice, that it became aware of a manufacturing defect of steel root inserts in a fixed population of blades for the V150-4.2 MW WTGs. Vestas identified four blades that were assigned to the Atchison Renewable Energy Center that were part of the fixed population and performed additional inspects of the blades at the site and at port. In total Vestas inspected 69 blades and determined that 40 of them were defective, which were then replaced by Vestas on April 19, 2021. ** [redacted]. **

e. Damaged Turbine

** [redacted]

[redacted] **

f. Costs Due to Delays

Ameren Missouri indicated that it incurred additional costs due to pandemic related delays and due to the damaged blades. These costs were primarily for external legal and external construction oversight. The delays caused Ameren Missouri's onsite engineering firm, Patrick Engineering to spend more time on site then expected, additionally legal resources were needed to review changes to documents and agreements. The following chart summarizes the additional costs incurred by Ameren Missouri as a result of the delays and damages through May 2021.

**

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

**

Closing and Procurement

** [redacted]

[redacted]	
[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

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Interconnection Costs

As part of the BTA agreement, the developer was responsible for the interconnection costs up to ** [redacted]**, which are all the costs associated with installing system reinforcements or other necessary upgrades to the system to accommodate a proposed generation project and are the responsibility of the applicant.. At the time of the CCN filing, Ameren Missouri had estimated interconnection costs to be ** [redacted]**. The current estimates for the interconnection costs are ** [redacted]

[redacted]. ** There are currently no annual facility services agreements associated with the Atchison Renewable Energy Center.

Production Tax Credits

One of the reasons the projects were considered an economically feasible way to achieve RES compliance was the availability of the production tax credits ("PTC"), at the time of the CCN filing the full value for the PTCs was $24[39] per MWh. At the time of Ameren Missouri's filing, to achieve full PTC value, an eligible facility would have had to commenced construction prior to December 31, 2016 and been placed in service by December 31, 2020. While Ameren Missouri had not commenced construction before December 31, 2016, the IRS had issued guidance on two methods on how it would determine if construction had started, a "physical work" test and a 5% Safe Harbor test. The physical work test was satisfied if "physical work of a significant nature" had occurred. The 5% Safe Harbor test was demonstrated by showing that 5% or more of the total cost of the facility was paid or incurred by the applicable date. Meeting either of the criteria was sufficient to demonstrate that the project can qualify for PTCs depending on the time frame the qualification was met. ** [redacted]. ** Due to delays caused by the coronavirus pandemic, Congress extended the deadline for completion of eligible projects to December 31, 2021. The IRS issued notice 2020-41, which detailed the extension of the safe

[39] The current value of the PTC is $25 per MWh from Federal Register / Vol. 86, No. 79 / Tuesday, April 27, 2021 / Notices

harbor continuity, which allowed projects an extra year to be placed into service. This change allows the WTG-IIs that are commissioned in 2021 to qualify for the full value of the PTC. On June 29, 2021, the IRS issued Notice 2021-41, which further extended the deadline for projects under safe harbor continuity to qualify for the full value of the PTCs.

Non-BTA Costs

Ameren Missouri has incurred $11,534,436 in costs for the Atchison Renewable Energy Center beyond those included for the purchase of the facility through the BTA as of July 30, 2021. These costs represent approximately 2.3% of the total cost of the facility. The following chart summarizes the non-BTA costs.

Commercial Team	$136,915
Corp. Communications	$804
Digital/Cyber Secuirty	$307,580
Engineering	$407,687
Environmental	$82,994
Internal Audit	$5,517
Legal	$3,377,772
Project/Construction Mgmt	$6,434,143
Real Estate	$126,834
Tax	$233,361
Overhead	$420,828
Total	$11,534,435

Operations and Maintenance of the Facility

** [redacted]

[redacted]. **

Additionally, Ameren Missouri has contracted with Western Ecosystem Technologies, Inc. to provide bat and avian monitoring at the site. Ameren Missouri is also in negotiations with Harvest Energy Services, Inc. to provide ancillary services, such as snow removal, janitorial services, and road access and repair. As of this filing the contract with Harvest Energy Services had not yet been finalized.

An annualized level operations and maintenance expense for the facility are included in the RESRAM base established as part of this rate case.

Curtailment

Currently the Atchison Renewable Energy Center is operating without constraints due to congestion or curtailment to protect species fatalities.

Staff Expert/witness: Jason Kunst, CPA

HIGH PRAIRIE WINDFARM

OVERVIEW

On May 21, 2018 Ameren Missouri filed its Application for Certificate and Convenience and Necessity ("CCN") in Case No. EA-2018-0202 to acquire the High Prairie Renewable Energy Center.[40] The estimated cost for the project at the time of the filing was ** [redacted][41]** for the 400 MW wind farm. Additionally as part of its application Ameren Missouri sought to establish a Renewable Energy Standard Cost Recovery Mechanism to allow for recovery of RES related costs associated with the wind facility. Ameren Missouri sought to acquire the facility

[40] High Prairie consists of 175 wind turbines with a total nameplate generating capacity of approximately 400 MW. **High Prairie is located in Schuyler and Adair Counties, in northeast Missouri, and interconnects into the Midcontinent** Independent System Operator ("MISO") via the Mark Twain Transmission Line.

[41] ** [redacted] ** *per kilowatt*

through a build transfer agreement, or BTA rather than constructing the wind facility itself as Ameren Missouri since they were not in a position to take advantage of the production tax credits available for renewable energy projects. The BTA was with TG High Prairie Holding LLC, which was the parent company of TG High Prairie LLC. TG High Prairie LLC was the owner of the project and acquired all of the property, permits, and transmission agreements necessary for the project. After closing on the project, Ameren Missouri would take ownership of TG High Prairie and merge it into Ameren Missouri. The parties to the case eventually reached a Stipulation and Agreement which was filed on filed on October 12, 2018 and approved by the Commission on October 24, 2018. As part of the stipulation and agreement the parties agreed to the following:

- That the Commission should grant Ameren Missouri's request for the CCN under Section 393.170.1 to construct and own a wind generation facility under the BTA with TG High Prairie Holdings. It also included permission to acquire any Non-Compliant wind turbine generators, as defined by and according to the terms of the BTA. The signatories also agreed that the costs for the project would be RES compliance costs as long as the facility was certified by the Division of Energy as a renewable energy resource under 4 CSR 340-8.010.
- That the Commission should grant Ameren Missouri the authority to merge with TG High Prairie, LLC with Ameren Missouri to be the surviving parent.
- Ameren Missouri would file quarterly update reports on the plans and specifications of the project. Ameren Missouri would also file complete plans and specifications prior to commence construction.
- Ameren Missouri would include an update on all required permits as part of its quarterly reporting
- Ameren Missouri would acquire permission from the Federal Energy Regulatory Commission.
- That In-service criteria must be agreed upon and filed with the Commission on or before December 31, 2018 that would satisfy the fully operational and used for service standard

in 393.135 RSMo, and the applicable Internal Revenue Service Requirements to qualify for the Production Tax Credits.

- Ameren Missouri would comply with specific terms and agreements relating to conservation issues that were raised in testimony during the case.
- The parties agreed until the a different depreciation rate was ordered by the Commission the facility would be recorded to FERC account 344, and the currently approved 6.81% depreciation rate would be used along with a -17% salvage rate.
- The parties agreed not to challenge the prudence of the decision to acquire the facility under the terms of the BTA.
- Ameren Missouri would provide the full grossed-up value of the PTCs to customers through the RESRAM or in rates when earned without any reduction and without a return on any deferred tax assets, regardless of Ameren Missouri's tax position.

Additionally as part of the agreement the parties agreed to allow Ameren Missouri to implement a RESRAM.

Ameren Board of Directors Approval and Reporting

** [redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]. **

Additional reporting was present to the Ameren Construction Project Oversight Committee ("CPOC") beginning in April of 2020. ** [redacted] .**

Request for Proposal Process

In December of 2015 Ameren Missouri issued a request for proposal ("RFP") for wind developers to determine if the construction of a wind facility would be an economically feasible way to meet RES requirements. Based upon the results of the RFP, Ameren Missouri determined that the construction of a wind facility were the lowest cost option to meet RES requirements. ** [redacted]. ** Ameren Missouri discovered through analysis and cost/revenue modeling that ownership of a wind farm was the most cost effective means to meet future RES requirements and that a BTA was the most appropriate structure to accomplish that. Ameren Missouri issued a copy of the RFP to ** [redacted] ** and Ameren Missouri received responses from ** [redacted] ** In total Ameren Missouri received 13 responses from the RFP.

**

[redacted]	[redacted]
[redacted]	[redacted]
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[redacted]	[redacted]

**

Ameren Missouri narrowed down the list to six potential projects: ** [redacted]

[redacted]

[redacted]. ** The initial price range for the short listed BTA wind projects was ** [redacted] **

**

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]	[redacted]

**

** [redacted] **

Quarterly Reporting

As part of the Commission approved Stipulation and Agreement filed in Case No. EA-2018-0202, Ameren Missouri agreed to provide quarterly reports. These reports included information on changes or amendments to the BTA, notices of significant events such as a notice of force majeure, and updates on the status of the plans and designs for the project and necessary permits.

Project Reporting

**[redacted]

- [redacted]
- [redacted]
- [redacted]

- [redacted]
- [redacted]

[redacted]

- [redacted]

[redacted] **

CHANGES TO THE BUILD TRANSFER AGREEMENT AND CHANGE ORDERS

BTA Amendments

Since the BTA was presented for Staff review in Case No. EA-2018-0202, the agreement went through eight amendments.

** [redacted]

[redacted]

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

[redacted]**

Change Orders

**[redacted]

- [redacted]

[42] ** [redacted]. **

[redacted]

- [redacted]
- [redacted]

[redacted]

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- [redacted]
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Staff expert/witness: Jason Kunst, CPA

ENGINEERING REVIEW

Production Tax Credits

A part of the value of any wind generation project is its ability to take full advantage of the Production Tax Credits ("PTCs"). PTCs are credits against the owner's tax liability from

production of energy from resources such as wind, biomass, geothermal, landfill gas, and hydropower.

"To obtain the full value of the PTCs, a project must meet several important and time critical milestones that a self-built project starting today would be unable to achieve. First, the project must have incurred, by the end of 2016, at least 5% of qualifying project costs to satisfy the PTC "safe harbor" rule. One means to meet this requirement is for the wind project developer to purchase PTC-qualified "safe harbor" equipment before the end of 2016 and to obtain title to and delivery of the equipment within a specified time period. As confirmed by *** [redacted] *** and Ameren Missouri's external legal due diligence, *** [redacted] *** successfully safe harbored equipment in 2016 and thus has met the 5% requirement for the Project."[43]

*** [redacted]."[44]***

On July 31, 2020 the Sixth Amendment to the BTA was executed. Ameren provided an explanation of the main terms of the amendment in the third quarterly status report of 2020.

*** [redacted]

[43] Direct testimony of Ajay Aurora, Page 7 lines 1-8, Case No. EA-2018-0202.
[44] EA-2018-0202 Ajay K. Aurora Direct Schedule AKA-D2 Pg. 137

[redacted]

[redacted] ***[45]

[45] Quarterly Report submitted by Ameren Missouri on July 1 2020 in Docket No. EA-2018-0202.

Covid-19 and Schedule Impacts

According to a status report provided by Ameren Missouri in July of 2020, "*** [redacted]. *** [46] Ameren Missouri subsequently filed the following information in the next status report, *** [redacted]. ***

In-Service Recommendation and Engineering Review Recommendation

In-service criteria are a set of operational tests or operational requirements developed by the Staff to determine whether a new unit is "fully operational and used for service." The "fully operational and used for service" phrase comes from Section 393.135, RSMo. 2000, a statute that was adopted by Initiative, Proposition No. 1, on November 2, 1976. Section 393.135, RSMo. 2000, provides as follows:

[46] Quarterly Report submitted by Ameren Missouri on July 1, 2020 in Docket No. EA-2018-0202.

> Any charge made or demanded by an electrical corporation for service, or in connection therewith, which is based on the costs of construction in progress upon any existing or new facility of the electrical corporation, or any other cost associated with owning, operating, maintaining, or financing any property before it is fully operational and used for service, is unjust and unreasonable, and is prohibited. (Emphasis added)

As part of the stipulation and agreement approved by the Commission in EA-2018-0202 was an agreement to develop a set of in-service criteria. As stipulated[47]:

> In-service criteria must be agreed upon and filed with the Commission on or before December 31, 2018 that would satisfy the fully operational and used for service standard in § 393.135, RSMo, and the applicable Internal Revenue Service requirements to qualify for Production Tax Credits. The Company, the Staff, and any other Signatory desiring to have input on the in-service criteria will work together reasonably and in good faith to develop such inservice criteria by such date.

A copy of the jointly submitted in-service criteria is included at the end of this Report.

Of particular issue within the scope of Staff's analysis of the in-service criteria of High Prairie is the term 2.c. of the jointly submitted in-service criteria which states:

> "Each item on the Mechanical Completion Checklist has been satisfied and the turbine is ready to commence commissioning."

Staff has reviewed data provided by Ameren Missouri in response to Staff's DR 668 and the documentation contained therein. Although full documentation of satisfaction of in-service criteria has not been received at this time, ** [redacted] **

** [redacted]

[47] Third Stipulation and Agreement filed on October 12, 2018 and approved by the Commission on October 24, 2018 in Case No. EA-2018-0202.

[redacted]** Staff has requested additional information and verification from Ameren Missouri regarding the satisfaction of term 2.c. of the jointly submitted in-service criteria. Staff will continue to review information provided by Ameren Missouri and will provide its recommendation concerning full or partial satisfaction of the MCC portion of the in-service criteria in a subsequent round of testimony. At this time, Staff recommends proceeding with the development of revenue requirement as though the High Prairie project is in-service. Staff will provide an in-service recommendation when documentation consistent with Ameren Missouri's representations is provided, or will recommend adjustments if such documentation is not received.

Staff Expert/witness: J Luebbert

AUDIT RESULTS

Risk Assessment

At the time of this filing, the Audit Staff has determined that there were no significant indication that the High Prairie Renewable Energy costs incurred to date are imprudent, unreasonable, inappropriate and/or not of benefit to the Missouri ratepayers. The Audit's Staff's basis for this concern is based on a thorough examination of the all actual costs in its possession at the time of this direct filing. Staff does have a reservation regarding the ** [redacted]. ** The Audit Staff will continue to assess all actual costs through the September 30, 2021 true-up cut-off established by the Commission in this rate proceeding, and will bring up any concerns based on any new information provided

Audit Scope

The High Prairie Renewable Energy Center was constructed under the BTA with Terra Gen, which allowed Ameren Missouri to agree to a price for the project for its specifications. Ameren Missouri has the contractual right to ensure that the project is built to its ultimate specifications both before and during construction. The developer builds the project at the contractually agreed to cost and completion schedule, and assumes many of the risks during construction. Given the nature of this type of contract Staff focused it scope on the changes that were proposed to the contract after it was presented to Staff in the previous CCN case EA-2018-0202. Staff reviewed the following documents:

7. BTA Contract with Terra Gen, including amendments to the BTA
8. Change orders requested by Ameren Missouri
9. Internal and External Audit Reports
10. Requests for Proposal
11. Ameren Corporation Board of Directors information
12. Reports provided to Ameren Missouri by the seller

Audits of the Facility

Ameren's internal audit team performed two audits with regards to the High Prairie Renewable Energy Center. ** [redacted] **

As part of Ameren's compliance in the IRS's Compliance Assurance Program, Ameren discoed the High Prairie transaction to the IRS in the first quarter of 2021. The audit is ongoing

and Ameren anticipates that the IRS will respond during the third quarter of 2021 that the project qualifies for 100% of the PTCs.

Additionally, as part of the ** [redacted] .**

Construction Delays and Issues

While the developer did have construction related delays to the COVID pandemic, it resulted in the use of contingency or float time but did not impact the in-service date of the facility which was acquired and placed into service in December of 2020 with the exception of three turbines. Two of the turbines were fully constructed, but had not ** [redacted] **, the turbines were commissioned in January of 2021. The third turbine had sustained ** [redacted] ** and was repaired and placed in service in April of 2021.

** [redacted]

[redacted]

[redacted]. **

Closing and Procurement

** [redacted]

[redacted]. **

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Curtailment Due to Bat Fatalities

As a condition of its United States Fish and Wildlife Services ("USFWS") Ameren Missouri performs site-wide searches of the facility for bat and avian deaths. To date the facility has incurred eight Indiana bat fatalities. At that number of fatalities, it requires Ameren Missouri to reduce the site-wide cut in speed to 8.0 m/s. Additionally out of caution Ameren Missouri has voluntarily ceased operations at night for the facility, until new bat deterrence technology is evaluated and consultations are performed with the USFWS and the Missouri Department of Conservation. The facility will resume night operations at the conclusion of bat mating and migration season. In response to Staff Data Request No. 742, Ameren Missouri indicated that since the operational cut-in speed was adjusted for bat mitigation purposes on June 9, 2021 through July 31, 2021 the lost MWh to bat mitigation is estimated to be 72,187.

Production Tax Credits

One of the reasons the projects were considered an economically feasible way to achieve RES compliance was the availability of the production tax credits ("PTC"), at the time of the CCN

filing the full value for the PTCs was $24[48] per MWh. At the time of Ameren Missouri's filing, to achieve full PTC value, an eligible facility would have had to commenced construction prior to December 31, 2016 and been placed in service by December 31, 2020. While Ameren Missouri had not commenced construction before December 31, 2016, the IRS had issued guidance on two methods on how it would determine if construction had started, a "physical work" test and a 5% Safe Harbor test. The physical work test was satisfied if "physical work of a significant nature" had occurred. The 5% Safe Harbor test was demonstrated by showing that 5% or more of the total cost of the facility was paid or incurred by the applicable date. Meeting either of the criteria was sufficient to demonstrate that the project can qualify for PTCs depending on the time frame the qualification was met. ** [redacted] . ** Due to delays caused by the coronavirus pandemic, Congress extended the deadline for completion of eligible projects to December 31, 2021.

Interconnection Costs

The purchase for the High Prairie Renewable Energy center did not include interconnection costs, which are all the costs associated with installing system reinforcements or other necessary upgrades to the system to accommodate a proposed generation project and are the responsibility of the applicant. At the time of the CCN filing, Ameren Missouri had estimated interconnection

[48] The current value of the PTC is $25 per MWh from Federal Register / Vol. 86, No. 79 / Tuesday, April 27, 2021 / Notices

costs to be in the range of ** [redacted] **. The current estimated for the interconnection costs for the project are ** [redacted] **, there is a ** [redacted] ** which could increase the cost. ** [redacted] . ** The remainder of the interconnect costs are collected annually through a facilities service agreement, these costs are included in the RESRAM base.

Operations and Maintenance of the Facility

** [redacted] .**

Additionally, Ameren Missouri has contracted with Stantec Consulting Services, Inc to provide bat and avian monitoring at the site. Ameren Missouri is also in negotiations with Harvest Energy Services, Inc. to provide ancillary services, such as snow removal, janitorial services, and road access and repair. As of this filing the contract with Harvest Energy Services had not yet been finalized.

An annualized level operations and maintenance expense for the facility are included in the RESRAM base established as part of this rate case.

Non-BTA Costs

Ameren Missouri has incurred $13,156,294 of costs for the High Prairie Renewable Energy Center beyond those included for the purchase of the facility through the BTA. These costs represent 2.1% of the total cost of the facility. The following chart provides a breakdown of the costs:

Category	Amount
Commercial Team	$570,599
Corp. Communications	$3,742
Digital/Cyber Security	$314,423
Engineering	$675,073
Environmental	$148,632
Internal Audit	$42,142
Legal	$3,505,616
Project/Construction Mgmt.	$6,037,818
Real Estate	$186,144
Tax	$504,395
Misc. Overhead	$377,196
Total	$13,156,294

Nations Energy Solutions, Inc. Lawsuit

Ameren Missouri became the successor in interest to TG High Prairie, LLC with regards to Nations Energy Solutions, Inc. v. TG High Prairie, LLC, et al. Case No 20SL-CC05197 in the Circuit Court of St. Louis County after the project closed the merger was completed. Nations Energy Solutions, Inc. ("NES") has alleged that the defendants utilized NES's property wind, environmental, and project data to successfully bid for and then construct the High Prairie Wind Farm. In exchange for the data, NES alleges that the defendants agreed to pay NES a flat flee upon the completion and transfer of the wind farm to Ameren Missouri, and a fee for every kilowatt the High Prairie Wind Farm generated in excess of 400 MW. Ameren Missouri has incurred outside legal expense of $16,128 as of June 30, 2021 with regards to the case.

Staff Expert/witness: Jason Kunst, CPA

WIND FARM ELECTRICAL GENERATOR - IN-SERVICE TEST CRITERIA - ATCHISON WIND FARM

1. For each wind turbine to be considered for inclusion in rate base, the criteria in part 2, 3, 4, 5, and 6 shall be met.

Criteria in part 2 has not met.

2. Mechanical completion has been achieved, meaning:

a. The turbine and its support tower are assembled, erected, and installed in accordance with the turbine supplier's technical specifications and quality assurance procedures;

b. Utility has installed, or caused to be installed, all necessary communication facilities needed to achieve SCADA functionality; and

c. Each item on the Mechanical Completion Checklist has been satisfied and the turbine is ready to commence commissioning.

** [redacted]. ** *Staff has requested additional information and verification from Ameren Missouri regarding the satisfaction of term 2.c. of the jointly submitted in-service criteria. Staff notes that its recommendation may ultimately need to include disallowance for a percentage of turbines if Ameren Missouri cannot provide adequate verification and additional documentation regarding the completion of the MCC of each turbine.*

3. The turbine has been commissioned and a Commissioning Completion Certificate has been completed.

** [redacted] **

4. An operational test of the turbine as outlined in this part 4 has been successfully completed on at least ten percent of the total number of turbines in a Wind Farm for which a Commissioning Completion Certificate has been issued for each such turbine. The operational test shall be completed using the plant SCADA and turbine-mounted sensing and monitoring equipment. Each tested turbine shall have sustained for two consecutive hours a power output of at least 90% of the turbine supplier's guaranteed output as determined by wind speed observed at or above the Predicted Mean Turbine Hub-height Wind Speed and the Air Density, subject to the following:

a. Failure of any turbine to achieve the operational test provided for by this part 4 shall mean that the turbine shall be repaired, if needed, and retested. In addition, the test population size shall be increased from ten percent to twenty percent and each of the tested turbines shall comply with this part 4.

** [redacted] ** *Based on this information, criteria in part 4 has been satisfied.*

5. Sufficient Interconnection Facilities exist to carry the Wind Farm energy output at the nameplate capacity from the completed turbines into the distribution/transmission system at the point of interconnection, the turbines have been synchronized to the grid, and conditional energy resource interconnection service (ERIS) is available on the transmission system.

** [redacted] ** *Based on this information, criteria in part 5 has been satisfied.*

6. Review of operating Data. The Company will provide Operating Data for each commissioned turbine and its review of such data. The Company's review will be certified by a Professional Engineer licensed in the State of Missouri.

** [redacted] **

WIND FARM ELECTRICAL GENERATOR - IN-SERVICE TEST CRITERIA - HIGH PRAIRIE WIND FARM

1. For each wind turbine to be considered for inclusion in rate base, the criteria in part 2, 3, 4, 5, and 6 shall be met.

Criteria in part 2 has not been met.

2. Mechanical completion has been achieved, meaning:

a. The turbine and its support tower are assembled, erected, and installed in accordance with the turbine supplier's technical specifications and quality assurance procedures;

b. Utility has installed, or caused to be installed, all necessary communication facilities needed to achieve SCADA functionality; and

c. Each item on the Mechanical Completion Checklist has been satisfied and the turbine is ready to commence commissioning.

** [redacted]

[redacted].** *Staff has requested additional information and verification from Ameren Missouri regarding the satisfaction of term 2.c. of the jointly submitted in-service criteria. Staff notes that its recommendation may ultimately need to include disallowance for a percentage of turbines if Ameren Missouri cannot provide adequate verification and additional documentation regarding the completion of the MCC of each turbine.*

3. The turbine has been commissioned and a Commissioning Completion Certificate has been completed.

Ameren Missouri provided a Commissioning Certificate all of the turbines. Based on this information, criteria in part 3 has been satisfied.

4. An operational test of the turbine as outlined in this part 4 has been successfully completed on at least ten percent of the total number of turbines in a Wind Farm for which a Commissioning Completion Certificate has been issued for each such turbine. The operational test shall be completed using the plant SCADA and turbine-mounted sensing and monitoring equipment. Each tested turbine shall have sustained for two consecutive hours a power output of at least 90% of the turbine supplier's guaranteed output as determined by wind speed observed at or above the Predicted Mean Turbine Hub-height Wind Speed and the Air Density, subject to the following:

a. Failure of any turbine to achieve the operational test provided for by this part 4 shall mean that the turbine shall be repaired, if needed, and retested. In addition, the test population size shall be increased from ten percent to twenty percent and each of the tested turbines shall comply with this part 4.

** [redacted] ** *Based on this information, criteria in part 4 has been satisfied.*

5. Sufficient Interconnection Facilities exist to carry the Wind Farm energy output at the nameplate capacity from the completed turbines into the distribution/transmission system at the point of interconnection, the turbines have been synchronized to the grid, and conditional energy resource interconnection service (ERIS) is available on the transmission system.

** [redacted] ** *Based on this information, criteria in part 5 has been satisfied.*

6. Review of operating Data. The Company will provide Operating Data for each commissioned turbine and its review of such data. The Company's review will be certified by a Professional Engineer licensed in the State of Missouri.

** [redacted] ** *Based on this information, criteria in part 6 has been satisfied.*