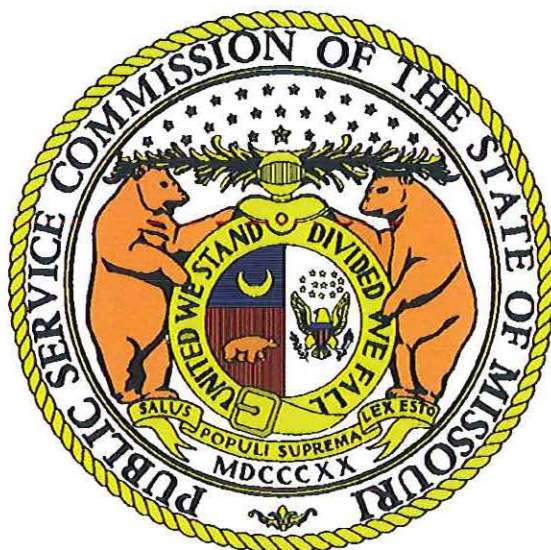


MISSOURI PUBLIC SERVICE COMMISSION

STAFF

REBUTTAL REPORT



THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EA-2019-0010

Jefferson City, Missouri
February 5, 2019

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Date 4-8-19 Reporter TG
File No. EA-2019-0010

*** Denotes Highly Confidential Information ***

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THE EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. EA-2019-0010**

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STAFF REBUTTAL REPORT
THE EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. EA-2019-0010

I. Executive Summary

On October 18, 2018, in Case No. EA-2019-0010, The Empire District Electric Company (“Empire”) filed an *Application for Certificates of Convenience and Necessity* (“CCN”) authorizing it to acquire an interest in the two holding companies that own the companies that will be constructing and installing the Kings Point and North Fork Ridge wind projects (“MO Wind Projects”). The MO Wind Projects are located in or near the Empire service territory and comprise approximately 150 MW of wind generation each.

On November 18, 2018, in Case No. EA-2019-0118, Empire filed an *Application for Certificate of Convenience and Necessity and Motion for Waiver, If Necessary* authorizing it to acquire an interest in the holding company that owns the company that will be constructing and installing the Neosho Ridge wind project (“KS Wind Project”). The KS Wind Project is located in or near the Empire service territory in Neosho County, KS, and comprises approximately 300 MW of wind generation.

Construction of the Missouri and Kansas wind projects (collectively, “Wind Projects”) will begin in the latter part of 2019, and the projects are expected to become fully operational by the end of 2020 in order to qualify for 100% of the wind production tax credits (“PTCs”).

On November 18, 2018, Empire filed a motion to consolidate Case No. EA-2019-0118 with Case No. EA-2019-0010. The request was granted on December 19, 2018, thus designating Case No. EA-2019-0010 as the lead case.

Staff reviewed Empire’s applications based on the five factors the Commission listed in *In Re Tartan Energy*, GA-94-127, 3 Mo.P.S.C.3d 173, 177 (1994) – need, qualified to own, operate, control and manage the facilities and provide the service, financial ability, economic feasibility and promotion of the public interest (“Tartan Criteria”). Staff provides its analysis and recommendations throughout this Rebuttal Report (“Report”).

1 **Tartan Criteria**

2 a. **Whether there is a need**

3 Staff has interpreted “need” as whether there are benefits to the project that justify
4 the cost.

5 The primary need identified by Empire is the ability to take advantage of the opportunity
6 to add generation capacity to Empire’s fleet at a reduced cost due to the availability of the PTCs
7 and to provide low cost energy to customers.

8 Staff provides its analysis of the various risks and benefits associated with the
9 Wind Projects. Staff ultimately recommends the Commission find the Wind Projects satisfy the
10 “need” factor of the Tartan Criteria. (See Section IV.1.)

11 b. **Whether the applicant is qualified to own, operate, control and manage**

12 Empire has not developed a wind farm and, therefore, does not have direct expertise to
13 complete the Wind Projects. However, Empire has managed the addition of several large
14 generating units and has managed several large-scale environmental modification projects made
15 to its existing units. Further, Empire’s corporate parent, Algonquin Power & Utilities Corp.
16 (“APUC”), has prior experience in developing renewable generation projects and has consulted
17 on the Wind Projects. Therefore, Empire, through its ownership structure, benefits from
18 the experience of Liberty Utilities Company (“LUCo”) and APUC in developing wind
19 generation facilities.

20 The Wind Projects will be constructed pursuant to Purchase and Sale Agreements
21 (“PSAs”) between Empire and Tenaska Missouri Matrix Wind Holdings, LLC (“Tenaska”) and
22 Steelhead Missouri Matrix Wind Holdings, LLC (“Steelhead”) and between Empire and Neosho
23 Ridge Wind JV, LLC (“Neosho Ridge Joint Venture”).¹ Tenaska, Steelhead, and Neosho Ridge
24 Joint Venture have experience with wind projects, and Staff has identified no concerns with the
25 qualifications of the individual contractors. (See Section IV.2.)

26 c. **Whether the applicant has the financial ability**

27 Staff reviewed Empire’s financial ability. Empire indicates that it intends to finance the
28 projects with a mix of debt, equity, and tax equity. Empire will receive debt and equity financing

¹ Neosho Ridge Joint Venture, LLC is a partnership consisting of Apex Clean Energy, Inc. (“Apex”) and a subsidiary of Steelhead Wind 2, LLC (“Steelhead 2”).

1 from LUCo for the portion of the Wind Projects not financed by the tax equity partners.
2 The majority of the construction costs during development and construction will be borne by
3 independent developers. Staff indicates that the developers of the Wind Projects have the
4 financial ability to complete construction and Empire has the financial ability to purchase the
5 Wind Projects. (See Section IV.3.)

6 **d. Whether the Wind Projects are economically feasible**

7 Empire proposes to utilize tax equity financing for a portion of the new wind investment.

8 Under this approach, a tax equity investor will agree to finance a portion of the
9 construction costs of a renewable project in return for, among other things, receipt of all federal
10 tax benefits associated with the project. Staff agrees with Empire's assessment that it is
11 reasonable to assume a net customer benefit from tax equity financing for these Wind Projects.

12 Staff notes that Empire's PSAs contain various provisions that are intended to shield
13 Empire, and ultimately its customers, from risks associated with the MO Wind Projects.
14 However, Staff indicates projected benefits are heavily dependent upon assumptions regarding
15 future wind power that Empire can sell into the Southwest Power Pool ("SPP") Integrated
16 Marketplace ("SPP IM"). The SPP Definitive Impact System Impact Studies ("DISIS") have not
17 yet been completed, so interconnection costs are not completely known at this time.

18 Staff recommends the Commission recognize the uncertainties related to the Wind
19 Projects' "economic feasibility". Staff recommends the Commission condition the CCN on:
20 implementation of a Market Protection Provision ("MPP"); an Empire commitment to cap
21 network upgrade costs; and the completion of a sensitivity analysis on curtailment and the
22 dispatching down of each Wind Project. (See Section IV.4.)

23 **e. Whether the Wind Projects promote the public interest**

24 Based on its review of the various Tartan Criteria, Staff is able to state the Wind Projects
25 satisfy the public interest subject to the conditions recommended by Staff in Section VI.
26 Further, in its Report and Order in Case No. EO-2018-0092; the Commission, at page 20, stated,

27 It is the public policy of this state to diversify the energy supply through
28 the support of renewable and alternative energy sources. In past decisions,
29 the Commission has stated its support in general for renewable energy
30 generation, which provides benefits to the public. Empire's proposed
31 acquisition of 600 MW of additional wind generation assets is clearly
32 aligned with the public policy of the Commission and this state.

1 Although Staff identifies certain factors that it would not recommend the Commission include in
2 its findings, Staff recommends the Commission grant the CCNs as requested in the Applications
3 subject to Staff's recommended conditions.

4 *Staff Expert/Witness: Natelle Dietrich*

5 **II. Market Protection Provision**

6 In Case No. EO-2018-0092, Staff entered into a Non-Unanimous Stipulation and
7 Agreement with between Empire, Midwest Energy Consumers Group ("MECG"), Staff, Renew
8 Missouri Advocates, and Missouri Department of Economic Development – Division of Energy
9 ("DE") to mitigate the concern of uncertain market prices and production from the proposed
10 Wind Projects. Staff continues to have the same concerns, and is recommending that an MPP,
11 modified in some respects from that stipulated to in Case No. EO-2018-0092, be adopted in this
12 case. The requirement that the MPP be in place during the first ten years of the wind projects
13 provided Staff with a level of comfort in Case No. EO-2018-0092 that Empire's customers
14 would not be asked to bear significant financial detriment in the first ten years due to the tax
15 equity financing arrangement being in place. Staff recommends that the Commission condition
16 approval of the CCN on implementation of the Market Protection Provision as proposed in
17 Appendix A to the non-unanimous Stipulation and Agreement between Empire, Midwest Energy
18 Consumers Group ("MECG"), Staff, Renew Missouri Advocates, and Missouri Department of
19 Economic Development – Division of Energy ("DE") filed on April 24, 2018 in Case No.
20 EO-2018-0092 with the following changes:

- 21 1. Remove the guarantee cap which was a negotiated value equal to \$35 Million;
- 22 2. Limit the value of PPA_Replacement to the amount calculated based upon the
23 number of MWh generated to produce RECs in order to comply with the RES;²
- 24 3. Incorporate mutually agreeable provisions to adequately balance risks and
25 performance related to Transmission Congestion Rights ("TCRs") and Auction
26 Revenue Rights ("ARRs") related to the Neosho Ridge interconnection point to
27 Empire's load serving area.

² The Company's current estimation of the RECs required for RES compliance in 2021 (first year of 15% RES requirement) is 638,429. (Response to Staff Data Request 0047)

1 While net benefits are expected for customers based upon the modeling conducted as part of
2 Case No. EO-2018-0092, the benefits are heavily dependent on market prices and wind
3 production values. Implementation of such a market protection provision would provide sharing
4 of risk between customers and shareholders associated with the possibility of reduced market
5 prices and wind production.³ Such a provision promotes the public interest by providing an
6 appropriate treatment of risk associated with the projects. Staff's recommendations throughout
7 this Report rely on implementation of the updated MPP.

8 *Staff Expert/Witness: J Luebbert*

9 III. Application Requirements

10 Application requirements for the granting of a CCN for construction of electrical
11 production facilities are contained in 4 CSR 240-3.105(1)(B) and are generally described below:

- 12 • A description of the route of construction and a list of utility crossings⁴ which the
13 proposed construction will cross;
- 14 • The plans and specifications for the complete construction project and estimated cost
15 of the construction project;⁵
- 16 • Plans for financing;
- 17 • Evidence of approval of affected governmental bodies;⁶ and
- 18 • The facts showing that the granting of the application is required by the public
19 convenience and necessity.

20 Empire included a list of utility crossings for the Kings Point and North Fork Ridge project areas
21 in Schedule TNW-3 attached to the Direct Testimony of Timothy N. Wilson in Case No.
22 EA-2019-0010. Mr. Wilson attached maps of the area and proposed routes for Kings Point and
23 North Fork Ridge to his testimony as Schedules TNW-2A, TNW-2B, TNW-6A, and TNW-6B,

³ Risk associated with additional off-system sales revenue was discussed thoroughly in the written testimony of Staff witness John A. Rogers in Case No. EO-2018-0092.

⁴ "A description of the route of construction and a list of all electric and telephone lines of regulated and nonregulated utilities, railroad tracks or any underground facility, as defined in Section 319.015, RSMo, which the proposed construction will cross."

⁵ Or a statement of the reasons the information is currently unavailable.

⁶ "(C) When no evidence of approval of the affected governmental bodies is necessary, a statement to that effect; (D) When approval of the affected governmental bodies is required, evidence must be provided as follows: 1. When consent or franchise by a city or county is required, approval shall be shown by a certified copy of the document granting the consent or franchise, or an affidavit of the applicant that consent has been acquired; and 2. A certified copy of the required approval of other governmental agencies;"

1 in Case No. EA-2019-0010. The maps are not construction level drawings and do not show the
2 proposed location of each wind turbine generator (“WTG”); thus, they do not meet the
3 requirements of 4 CSR 240-3.105. However, the maps do show the plat easements proposed to
4 be used for the project.

5 Empire included a list of utility crossings for the Neosho Ridge project area in Schedule
6 TNW-3, attached to the Direct Testimony of Timothy N. Wilson in Case No. EA-2019-0118.
7 Mr. Wilson attached maps of the area and proposed routes for Neosho Ridge to his testimony as
8 Schedules TNW-2A and TNW-2B, in Case No. EA-2019-0118. The maps are not construction
9 level drawings and do not show the proposed location of each WTG; thus, they do not meet the
10 requirements of 4 CSR 240-3.105. However, the maps do show the plat easements proposed to
11 be used for the project.

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15 Empire discussed its plans for financing in the Direct Testimony of Todd Mooney.
16 The process outlined in the testimony involves the creation of a project company to build the
17 project and the creation of a holding company to be the sole owner of the project company for
18 each of the three projects. Empire and a tax equity partner, at this time Wells Fargo, would then
19 purchase the holding companies assuming that the conditions of the PSA are met. *** _____

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_____ 8 *** Further discussion regarding financing is in the Financial ability
section of this Report (Section IV.3.).

23 Empire stated in response to Staff Data Request 0029 that no permits had been
24 obtained at this time⁹ and provided the following information showing permits that are
25 anticipated to be needed.

7 Direct Testimony of Todd Mooney page 10, line 9 in Case No. EA-2019-0010 for North Fork Ridge and Kings Point and of Case No. EA-2019-0118 for Neosho Ridge.

8 Direct Testimony of Todd Mooney page 17, lines 15 and 16 in Case No. EA-2019-0118 and page 16, lines 18 and 19 in Case No. EA-2019-0010.

9 Response to Staff Data Request 0029 received on November 12, 2018.

1

The table consists of approximately 10 columns and 15 rows. The content is almost entirely redacted with horizontal lines. A small number '10' is visible in the middle-right section of the table.

¹⁰ Empire's response to Staff Data Request 0029 cuts off the remainder of this sentence.

1 ***

2 Regarding the application requirements, Staff recommends the Commission include the
3 following two conditions with approval of the CCN:

- 4 • Filing of the construction-level plans and specifications prior to commencing
- 5 construction of each project,
- 6 • Filing of the evidence of all required permits and approvals of affected governmental
- 7 bodies outlined in Empire’s response to Staff Data Request 0029.

8 *Staff Expert/Witness: Cedric E. Cumigan*

1 **IV. Five Tartan Criteria**

2 **1. Whether there is a need for the facilities and service**

3 The Neosho Ridge wind project is located in Neosho County, Kansas, approximately
4 thirty-five miles west of Empire's service territory. The point of interconnection for the
5 generation tie line will be a new substation on Westar's Neosho-to-Caney River 345 kV
6 transmission line. Neosho Ridge will have a capacity of approximately 300 MW. *** _____

7
8 ***¹¹

9 On November 16, 2018, Empire entered into a Purchase and Sale Agreement
10 ("PSA-Neosho") with Neosho Ridge Wind Joint Venture, LLC, ("Neosho Ridge Joint Venture")
11 a joint venture between a subsidiary of Apex Clean Energy, Inc. ("Apex") and a subsidiary of
12 Steelhead Wind 2, LLC ("Steelhead"). Pursuant to the PSA-Neosho, the Neosho Ridge Joint
13 Venture will sell and Empire will acquire ownership of the holding company (Neosho Ridge
14 Wind Holdings, LLC, the "Neosho Holdco"), which will in turn own, through a project company
15 (Neosho Ridge Wind, LLC, "Neosho Ridge Wind"), an approximately 300 MW wind project.
16 At the time of the closing when Empire acquires its ownership interest in the Neosho Holdco,
17 tax equity partner(s) will make a capital contribution to the Neosho Holdco and thereby become
18 a joint owner with Empire.

19 ***

20 _____ ***¹² Construction is targeted to begin in
21 the latter half of 2019. Neosho Ridge Joint Venture expects to have the KS Wind Project in place
22 and have received a Commercial Operation Date Certificate delivered by an independent
23 engineer by December 31, 2020.

24 *Staff Expert/Witness: David T. Buttig, PE*

25 The proposed Kings Point Wind project site is located in Missouri in southeastern Barton
26 County, southwestern Dade County, northeastern Jasper County, and northwestern Lawrence
27 County. The Kings Point Wind project will be approximately 150 MW and consist of

¹¹ Response to Staff Data Request 0051.

¹² Response to Staff Data Request 0012.1.

1 approximately 70 turbines (*** _____ ***)¹³

2 An approximately 13 mile 161 kV generation tie line will be constructed to interconnect the
3 Kings Point Wind project to the point of interconnection at Empire's LaRussell Energy Center.

4 Empire entered into a PSA for the Kings Point Wind project with Tenaska Missouri
5 Matrix Wind Holdings, LLC ("Tenaska") and Steelhead Missouri Matrix Wind Holdings, LLC
6 ("Steelhead") on October 11, 2018.¹⁴ Tenaska and Steelhead have partnered to jointly develop¹⁵
7 and construct the Kings Point site. Per the PSA, *** _____

8 _____
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11 _____¹⁶ ***

12 *Staff Expert/Witness: Cedric E. Cunigan*

13 The proposed North Fork Ridge site is located in northwestern Jasper County and
14 southwestern Barton County, Missouri. The North Fork Ridge project will be approximately
15 150 MW *** _____

16 _____¹⁷. An approximately 6.5-mile 161 kV generation tie line will be constructed
17 to interconnect the North Fork Ridge project to the point of interconnection at Empire's Asbury
18 Power Plant.

19 Empire entered into a PSA for the North Fork Ridge wind project with Tenaska
20 and Steelhead on October 11, 2018.¹⁸ Tenaska and Steelhead have partnered to jointly develop¹⁹
21 and construct the North Fork Ridge and Kings Point sites. Per the PSA, Tenaska and Steelhead
22 will form a holding company, which will in turn form a LLC "North Fork Ridge Wind, LLC."
23 The Project Company will select an EPC contractor to construct the site, *** _____

13 *** _____ ***

¹⁴ The PSA is attached to the Direct Testimony of Todd Mooney, Highly Confidential Schedule TM-1A.

¹⁵ Empire began site development activities for North Fork Ridge and Kings Point in March of 2017, prior to issuance of its October 2017 Request For Proposal. See Response to Staff Data Request 0020.

¹⁶ Direct Testimony of Todd Mooney, page 10, line 17.

17 *** _____ ***

¹⁸ The PSA is attached to the Direct Testimony of Todd Mooney, Highly Confidential Schedule TM-1B.

¹⁹ Empire began site development activities for North Fork Ridge and Kings Point on March 1, 2017, prior to issuance of its October 2017 RFP.

1 _____ . *** North Fork Ridge is scheduled to begin construction on
2 *** _____ . ***²⁰

3 Request For Proposal and Bid Evaluation

4 Empire issued a Request for Proposal ("RFP") on *** _____
5 _____

6 _____ ***

7 As discussed in the public surrebuttal testimony of Empire witness Timothy N. Wilson in
8 Case No. EO-2018-0092, Empire and Burns and McDonnell performed an initial review of the
9 bid packages for conformity with bidder instructions. From the initial conformity review, twenty
10 projects²¹ were further considered. Of the twenty projects, four separate bidders proposed
11 projects on Empire's two sites (North Fork Ridge and Kings Point).

12 Empire developed four major criteria for bid evaluation:

- 13 1. Levelized cost of revenue requirement,²² the total cost of the project over 30 years
14 divided by the expected generation;
- 15 2. Basis differential, the weighted historical average of basis differential from each
16 project's SPP interconnection node compared to Empire's hourly prices;
- 17 3. Transmission basis costs, used to represent risk related to the volatility of the
18 transmission market and future risk; and
- 19 4. Technical evaluation.

20 For the technical review of the bids, Burns and McDonnell provided Empire ranking adjustments
21 to capture differences in scope and Empire further refined the ranking categories to develop
22 weighting based on the following criteria: experience, safety, project performance and cost,
23 financial standing, ability to supply equipment, and commercial terms.²³

²⁰ Direct Testimony of Todd Mooney, page 10, line 17.

²¹ Process included sending additional questions to the bidders.

²² Empire uses the terms levelized cost of energy and levelized cost of revenue requirement interchangeably.

²³ For the technical evaluation, high score is better; the technical score was then converted to match the golf scoring used for the other major categories.

The weighting and sub-weighting of the technical evaluation are provided below:

Category:	Sub-weighting	Composite Weighting
Proximity to Load	80%	52%
Level of Network Upgrades	10%	6.5%
Interconnection Status	10%	6.5%
Transmission		65%
Exceptions to the Work Specifications	30%	3%
Status of permits, licenses, gov. approvals, key environmental permits, studies, and surveys	25%	2.5%
Land control status	30%	3%
Experience of the developer ²⁴	5%	0.5%
Safety record of respondent and subcontractors	10%	1%
Development Status		10%
Wind Resource Risk ²⁵	10%	2.5%
O&M Scope	30%	7.5%
Credit of the Seller	10%	2.5%
Tax Equity Partner	30%	7.5%
Guaranties/Warranties (Power Curve, availability, warranty term)	20%	5%
Project Performance		25%

²⁴ ***

*** Staff further discusses the qualifications of Tenaska as a part of the Tartan evaluation in Section IV.2.

²⁵ ***

1 The transmission category was weighted 65% of the overall technical evaluation and is
2 comprised of three sub-categories: proximity to load (80%), level of network upgrade costs
3 (10%), and interconnection status (10%); resulting in 52% (composite) of the overall technical
4 evaluation being based solely on the wind farms proximity to load.

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19 **Is the service needed?**

20 In the context of the Tartan Criteria, Staff has interpreted “need” as a requirement for
21 the applicant to demonstrate that there are benefits to the project which justify its cost.
22 Empire discusses the need for the three proposed projects in the Direct Testimony of Blake A.
23 Mertens. The primary need outlined by Empire is to take advantage of the opportunity to add
24 generation capacity to Empire’s fleet at a reduced cost because of the availability of the PTCs
25 and ultimately provide low cost energy to its customers.²⁸ The Direct testimony of Empire
26 witness, Mr. Todd Mooney refers to customer savings calculated in the Customer Savings Plan
27 (“CSP”) Docket, Case No. EO-2018-0092.²⁹ Mr. Mertens notes that Empire does not have an

26 ***

²⁷ Response to Staff Data Request 0025.1.

²⁸ Direct Testimony of Blake A. Mertens, page 11, lines 1-4.

²⁹ Direct Testimony of Todd Mooney, page 22, lines 9-10.

1 immediate capacity need for the projects, but the projects would provide a capacity benefit.³⁰
2 Empire is estimating the accredited capacity to be 5% of each proposed wind project's nameplate
3 capacity. After three years of operation, Empire anticipates the accredited capacity will range
4 from 15-25% of nameplate rating.³¹ Additionally, Empire filed its Notice of Preferred Plan
5 Change in Case No. EO-2019-0106 on October 17, 2018, which provided notice that Empire's
6 new acquisition strategy is to add 600 MW of wind by 2020.

7 Mr. Mertens further asserts that the proposed wind projects will help replace Empire's
8 existing renewable generation upon expiration of the contracts.³² Missouri's Renewable Energy
9 Standard ("RES") requires that no less than 15% of retail sales must be generated or purchased
10 from renewable resources by 2021.³³ Compliance with the RES is accomplished by retirement of
11 renewable energy credits ("RECs"). (A REC represents that 1 MWh of energy was generated by
12 a renewable energy resource.) Although Empire has two existing wind Purchase Power
13 Agreements ("PPAs"), Elk River and Meridian Way, RECs from Meridian Way have never been
14 retired for compliance with Missouri's renewable energy standard. As illustrated in Figure 1³⁴
15 below, only one of the three proposed wind farms is necessary for Empire's long-term
16 compliance with the Missouri renewable energy standard. Figure 1 also compares the projected
17 REC production of each proposed wind farm compared to a 30% of retail sales RES level and a
18 50% of retail sales RES level scenario. Only under a 50% RES scenario will all three proposed
19 wind farms be needed for compliance with the Missouri RES.

³⁰ Direct Testimony of Blake A. Mertens, page 11, line 20.

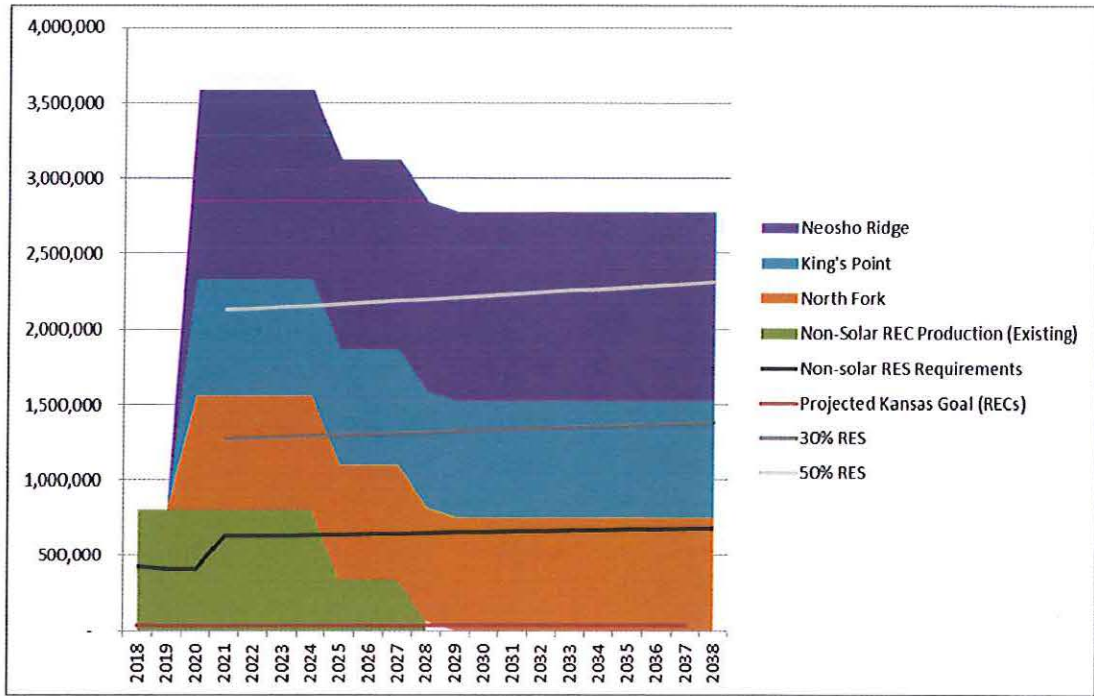
³¹ Response to Staff Data Request 0053.

³² There is nothing in this docket to indicate that the proposed wind farms are necessary for RES compliance. While Empire witness Timothy N. Wilson provided testimony in Case No. EO-2018-0092 indicating that upon expiration of the contracts for Elk River (2025) and Meridian Way (2028) that additional renewable resources would be necessary for RES compliance, Empire has not used Meridian Way for RES Compliance; see Response to Staff Data Request 0045. It is uncertain at this time whether the proposed facilities would be used for Missouri RES compliance.

³³ 393.1030, RSMo.

³⁴ Figure 1 illustrates annual REC production (i.e. wind farm projected generation from Company work papers) with the 1.25 adder for the Missouri sites and annual RES requirement projections (Data Request 0047). RECs are eligible for RES compliance three years from expiration. Figure 1 does not attempt to show the banking of RECs.

Figure 1: Existing and Proposed REC production



Large construction projects, such as the Wind Projects, carry risk. In evaluating whether the Wind Projects provide benefits which justify their cost, Staff has considered the risks associated with the individual projects including ***

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As discussed in detail below, Staff evaluated the scope of those risk factors, and other risks Staff has identified, and has provided a summary of the risk, and, where appropriate, any recommendations or conditions to mitigate the individual risks or the overall risk of the projects.

³⁵ Response to Staff Data Request 0003, ***

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³⁶ Net Capacity Factor (P50): Net capacity factor representing the P50 median production (i.e. the production at which there is a probability of exceedance of the production level of 50%.

³⁷ EO-2018-0092, Affidavit in Support of Non-Unanimous Stipulation and Agreement of James McMahon, dated April 24, 2018.

³⁸ See Section IV.1. for further detail on the RFP and bid evaluation.

³⁹ Public response to Staff Data Request 0050.

⁴⁰ Response to Staff Data Request Nos. 0025 and 0025.3.

⁴¹ Response to Staff Data Request 0041.3.

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⁴² Direct Testimony of Timothy N. Wilson, page 13, line 6.

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⁴⁵ Response to Staff Data Request 0051.

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16 **Levelized Cost of Energy**

17 Empire's direct filing in this case does not model the customer savings associated with
18 the specific site locations under the terms of its PSAs. While Staff does not dispute the need for
19 the projects under the Tartan criteria, Empire ties the levelized cost of energy ("LCOE"),
20 calculated during settlement negotiations in the CSP docket, as a threshold for comparison for
21 the portfolio of wind projects in this case. The specific LCOE value referenced in Mr. Mooney's
22 testimony in this case, *** _____ ***, was not provided in the affidavit in support of

46 *** According to Section 2.3 of the PSAs, _____

47 Response to Staff Data Request 0025. *** _____

48 Response to Staff Data Request 0025. *** _____

49 Response to Staff Data Request 0012.1.
50 *** _____ ***

1 the stipulation of Empire witness James McMahon in Case No. EO-2018-0092. Rather,
2 the portfolio LCOE of *** _____ *** was calculated *** _____

3 _____ . ***⁵¹ Further,
4 the portfolio LCOE estimated in this case is *** _____

5 _____
6 . *** Therefore, after reviewing Empire's filings and evidence, Staff recommends the
7 Commission not rely on certain evidence Empire put forth to suggest that meeting a specific
8 LCOE threshold constitutes need, in its findings of fact regarding need.

9 Due to the risks discussed above, as well as the uncertainty of future market prices, Staff
10 recommends the CCN be conditioned on inclusion of the MPP.

11 If the Commission orders Staff's other recommended conditions as discussed in this
12 Report, along with the MPP, only then can Staff state that the Wind Projects would provide
13 benefits justifying their costs, and thus satisfy the "need" criteria under Tartan.

14 *Staff Expert/Witness: Claire M. Eubanks, PE*

15 **2. Whether the applicant is qualified to own, operate, control and manage the**
16 **facilities and provide the service**

17 The proposed wind facilities will be constructed pursuant to three PSAs; the first two
18 between Empire, Tenaska, and Steelhead; and the third between Empire and Neosho Ridge Wind
19 Joint Venture.

20 Empire provided qualifications for the Tenaska and Steelhead teams in response to Staff
21 Data Request 0020.3 in Case No. EA-2019-0010. Members of the Tenaska wind team have been
22 involved with development of more than 3 GW of wind projects in the United States since 2004.
23 Several of these projects were build transfer projects. Members of the Steelhead team have been
24 involved with 1.3 GW of wind projects since 2012. Steelhead is also a wholly owned subsidiary
25 of Vestas, which is the leading turbine manufacturer and has more than 100 GW of wind turbines
26 installed around the world.⁵² Apex has completed more than 2.2 GW of wind generation in the
27 United States and manages 1.2 GW of clean energy.⁵³ While Empire has not completed a wind
28 generation facility before, members of the project team have experience with project

⁵¹ Direct Testimony of Todd Mooney page 22, lines 7-9.

⁵² January 9, 2019 press release at <https://www.vestas.com/en/media/company-news?n=1868272#!NewsView>.

⁵³ <https://www.apexcleanenergy.com/our-story-2/>.

1 development, financing, and permitting/compliance issues. The Curriculum Vitae (“CVs”)
2 and qualifications for the internal project team were provided in response to Staff Data
3 Request 0020.5. In addition, APUC, which has constructed more than 750 MW of wind
4 generation⁵⁴, has assisted Empire. APUC has provided assistance to the Empire team with
5 project structuring, tax equity, and project financing; and provided guidance in a consultative
6 role in areas such as permitting, environmental, plant layout, and equipment selection.⁵⁵ Staff
7 has no concerns with the qualifications of the individual contractors due to their experience in
8 building and managing wind projects. Staff has no concerns with Empire’s qualifications given
9 the experience of the project team and consulting made available through APUC.

10 *Staff Expert/Witness: Cedric E. Cunigan*

11 Empire owns and operates an electric utility system located in Missouri, Oklahoma,
12 Kansas, and Arkansas.⁵⁶ Empire’s generation portfolio comprises of units that are
13 wholly-owned, jointly owned, and contracted through PPAs. Empire’s generation portfolio
14 includes 1,447 MWs of accredited generation capacity (coal-fired, natural gas fired,
15 hydroelectric, and wind).⁵⁷ Additionally, Empire owns and operates 1,208 miles of transmission
16 lines and 6,911 miles of distribution lines.⁵⁸ Empire further benefits from its ownership structure
17 in that LUCo and/or APUC has experience in wind development, operations, and tax-equity
18 financing for wind projects.⁵⁹

19 Staff has also considered whether Empire has the experience necessary to complete the
20 project by the full PTC deadline of December 31, 2020. Ameren Missouri recognized the
21 expertise needed in its recent wind applications:

22 Developers ... have developed and maintain expertise in executing the
23 many steps needed to expeditiously and cost-effectively locate wind
24 projects, obtain needed property rights, complete required environmental
25 and transmission studies, and build, test, and place into operation projects

⁵⁴ Response to Staff Data Request 0020.2.

⁵⁵ Response to Staff Data Request 0020.4.

⁵⁶ Direct Testimony of Blake A. Mertens, page 6, lines 14-15.

⁵⁷ Response to Staff Data Request 0052.

⁵⁸ Direct Testimony of Blake A. Mertens, page 7, lines 2-4.

⁵⁹ Direct Testimony of Blake A. Mertens, page 7, lines 5-18 and Response to Staff Data Request 0020.2.

1 of this type. This is expertise that Ameren Missouri intends to develop
2 over time, but it is not expertise that Ameren Missouri possesses today.⁶⁰

3 Empire, like Ameren Missouri, has not developed a wind farm and therefore does not have direct
4 expertise to complete the projects in the timeframe required by the expiration of the full PTCs.
5 However, Empire's parent, APUC has completed 750 MW of PTC-qualified wind projects
6 financed through tax equity structures.⁶¹ APUC has consulted on the three projects that are
7 subject of this case on topics such as permitting, environmental, plant layout, and equipment
8 selection. Additionally, APUC has further provided assistance to the Empire team with project
9 structuring, tax equity, project financing, and tax advice.⁶²

10 Tenaska/Steelhead is developing the North Fork Ridge and Kings Point sites and Apex is
11 developing the Neosho Ridge site. As Empire witness Blake A. Mertens notes in his Direct
12 Testimony, Tenaska has developed 10,000 MW of natural gas and renewable projects;⁶³
13 however, Tenaska has only announced the development of three wind projects, totaling 686 MW,
14 none of which are yet operational.⁶⁴ The Tenaska/Steelhead project team working directly on the
15 Empire projects includes individuals who have supported the development of 1,300 MW of wind
16 generation.⁶⁵ The Neosho Ridge project is being developed by Apex, *** _____

17 _____ . ***⁶⁶ Ultimately, the
18 three projects will be constructed through Engineering, Procurement and, Construction contracts
19 *** _____

20 _____
21 _____
_____ ⁶⁷ ***

⁶⁰ Direct Testimony of Ajay Arora in EA-2018-0202, page 7, lines 20-23 and Direct Testimony of EA-2019-0021, page 8, lines 8 through 10.

⁶¹ Response to Staff Data Request 0020.2.

⁶² Response to Staff Data Request 0020.4.

⁶³ Direct Testimony of Todd Mooney, page 7, lines 15-16.

⁶⁴ Response to Staff Data Request 0020.3.

⁶⁵ Response to Staff Data Request 0020.3.

⁶⁶ Response to Staff Data Request 0003.2.

⁶⁷ ***

1 Empire has the experience through its long history of operating electric generation
2 facilities to operate the three wind generation facilities upon completion. Additionally, Empire
3 has managed the addition of several large generating units to its system, including several
4 combined cycle units, and has also managed several large-scale environmental modification
5 projects made to its existing units. Empire, through its ownership structure, benefits from the
6 experience of LUCo and APUC in developing wind generation facilities.

7 *Staff Expert/Witness: Claire M. Eubanks, PE*

8 3. Whether the applicant has the financial ability for the undertaking

9 To ascertain whether Empire has the financial ability to purchase the Wind Projects, Staff
10 reviewed how Empire anticipates funding the projects and the effect the proposed financing
11 would have on Empire's credit metrics. According to Mr. Mooney's testimony, and his response
12 to Staff Data Request 0037, Empire will receive debt and equity financing from LUCo to finance
13 the portion of the Wind Projects not financed by tax equity partners. Funding for the affiliate
14 loans, from LUCo to Empire, are likely to be raised by third-party debt issuances at Liberty
15 Utilities Finance ("LUF"). Empire has not indicated how its equity financing from LUCo will be
16 funded. It is possible that the equity will not be funded by equity shares issued at APUC, but
17 rather some type of debt financing.

18 Empire, LUCO, and APUC (collectively, "Companies") share an organizational and debt
19 structure. Activity at one entity has the potential to affect finances at the other entity because
20 neither Empire nor LUCo issues their own long-term debt; they receive financing from LUF,
21 whose credit rating is based on LUCo's credit profile; earnings from Empire and LUCo are
22 relied upon to service debt at LUF, as well as pay dividends to APUC. For example, Empire's
23 earnings constitute approximately 45% of LUCo's earnings, and LUCo's earnings constitute
24 approximately 65% of APUC's earnings.⁶⁸ The contemplated nature of financing the Wind
25 Projects coinciding with the organizational and debt structure described above led Staff to also
26 assess the effects the proposed financing would have on LUCo's and APUC's credit metrics.
27 A supplementary reason Staff assessed APUC's financial ability is because APUC entered into
28 an Administrative and Special Services Agreement ("ASSA") with the developer of the Neosho

⁶⁸ Fitch Ratings, Algonquin Power & Utilities Corp., August 06, 2018.

1 Ridge project, Neosho Ridge Wind JV, LLC, effectively making APUC the performance security
2 guarantor of the project.

3 The effect the Wind Projects have on the Companies' credit metrics, and ultimately the
4 economics of the Wind Projects, depends on the final purchase price of the Wind Projects, the
5 total amount of tax equity financing secured by Empire for the Projects, the proportions of debt
6 and equity financing used by Empire to finance the Wind Projects' costs, and the total annual
7 energy production of the Wind Projects. Staff reviewed the Companies' credit metrics under the
8 base case scenario using the pro forma financial statement information presented by Empire in
9 response to Staff Data Request 0036. ***

13 ***

14 Staff's evaluation of Empire's financial plan and its financial ability in this case should
15 not be considered a finding of appropriateness for ratemaking purposes. It is clear from the
16 financing plan that Empire is no longer acting independently from a financing perspective. This
17 is a matter that is evolving and will be considered in the context of Empire's next rate case.

18 Assessing liquidity at Empire and LUCo was not a point of Staff's analysis because the
19 Wind Projects are being built by independent developers. The developers incur the majority of
20 construction costs during development and construction of the Wind Projects. Major costs to
21 Empire occur after the Wind Projects are constructed, tested, commence operation, and the
22 conditions to closing in the PSAs have been met by the developers. However, APUC's ASSA
23 agreement with Neosho Ridge Wind JV, LLC may require liquidity at APUC. Apart from any
24 internal cash flows at APUC, which may be used to service the ASSA agreement, APUC also
25 maintains a revolving credit facility with access of up to Canadian \$165 million, or
26 approximately U.S. \$125 million.

27 Staff also reviewed information on Tenaska, and Steelhead, the developers of the Kings
28 Point and North Fork Ridge projects to assess their financial ability to complete the projects.
29 Steelhead's involvement in the Projects pertains primarily to its supply of wind turbine
30 components, for which Steelhead has already incurred costs, necessary for the Wind Projects to

1 qualify for 100% of PTCs. Tenaska's 2017 Annual Report indicates that it maintains a
2 \$150 million revolving credit facility and has access to a \$1.5 billion credit facility.

3 After reviewing the information presented by Empire, it is Staff's opinion that Empire
4 has the financial ability to purchase the Wind Projects. Similarly, given Tenaska's access to
5 capital, and the ASSA between Neosho Ridge Wind JV, LLC and APUC, it is Staff's opinion
6 that the developers of the Projects have the financial ability to complete construction.

7 *Staff Expert/Witness: Jeffrey Smith*

8 **4. Whether the proposal is economically feasible**

9 The "economic feasibility" criteria has been interpreted by Staff as requiring that the
10 applicant demonstrate that it has the capability of successfully managing the construction of and
11 placement in-service of the utility assets covered within the CCN application so as to enable
12 realization of net customer benefits resulting from addition of the assets in question.

13 In regard to economic feasibility, Empire argues that the additional wind generation
14 should result in net customer savings over the long term.

15 Empire also asserts that customers will directly benefit from Empire's decision to utilize
16 "tax equity" financing for a portion of the new wind investment. Tax equity financing is a
17 method of financing renewable energy investments currently used in the U.S. In essence, under
18 this approach a tax equity investor will agree to finance a certain portion of the construction costs
19 of a renewable project in return for, among other things, receipt of all federal tax benefits
20 associated with the project.

21 These tax benefits include the normal accelerated depreciation tax deductions
22 available for most types of utility asset additions, as well as generation of PTCs associated with
23 qualifying wind generation energy output. These types of federal tax benefits will ordinarily
24 flow to utility customers in rates over time to offset a portion of the increased rate base and
25 depreciation expense accruals associated with plant additions. However, under the tax equity
26 financing arrangement proposed by Empire in these Applications, the entire amount of
27 accelerated depreciation and PTC benefits will be assigned to the tax equity partner and not to
28 Empire's customers.

29 Notwithstanding loss of tax benefits to customers, use of tax equity financing for the
30 wind investments at issue in this proceeding is projected by Empire to be beneficial to its

1 customers over the long term. These customer benefits are largely driven by the fact that the
2 portion of Empire's wind investment financed by a tax equity partner will not be included in
3 utility rate base. Therefore, the planned financing of *** _____ *** of the cost of the
4 wind projects through tax equity financing means that the plant in service balance in utility rate
5 base will ultimately be only *** _____ *** (at most) than if the total project costs were
6 financed by more conventional means. With tax equity financing, Empire has projected that the
7 positive rate impact to customers of a reduced rate base will outweigh the negative rate impact of
8 loss of tax benefits, leading to an estimate of net customer savings associated with use of tax
9 equity financing for these wind projects between \$4 per MWh to \$7 per MWh over the projects'
10 lives. Staff agrees that it is reasonable to assume a net customer benefit from application of tax
11 equity financing for these Wind Projects.

12 The availability of potential PTC benefits is asserted by Empire to be a primary driver of
13 the wind projects' economic feasibility. However, under current income tax law, the availability
14 to Empire of PTC benefits associated with the Wind Projects will phase out over time.
15 Generally, in order for the wind construction projects to qualify for full PTC benefits, work of a
16 substantive nature must have begun on the projects prior to January 1, 2017 or, alternatively, at
17 least 5% of total project costs must have been incurred before January 1, 2017. Further, the
18 renewable wind assets must be placed in service by year-end 2020 in order to qualify for 100%
19 of the PTC benefits.

20 Regarding these PTC tests, in his direct testimony Empire witness Todd Mooney states
21 that Empire has met the upfront PTC qualification test because the wind developers had incurred
22 5% of total project costs by December 31, 2016. However, whether these assets will be placed
23 in-service by the required deadline of December 31, 2020 cannot be known at this time.

24 Empire's PSAs with its selected wind developers, Tenaska, Steelhead, and Neosho Ridge
25 Joint Venture, contain various provisions that are intended to shield Empire (and ultimately its
26 customers) from the risk of construction cost overruns and delays in completing the projects.

27 First, the terms of construction contracts call for a fixed price payment by Empire for
28 the projects equal to *** _____ *** of total estimated project costs. Only certain
29 "pass-through" cost items to Empire are not covered under the fixed price provisions of the
30 contracts. This means that if Tenaska, Steelhead and Neosho Ridge Joint Venture cannot carry

1 out their contractual obligations with the current projected cost in the areas covered by the fixed
2 price provisions, any such excess costs will not be charged to Empire and its customers.

3 In addition, the contracts require that the wind developers post performance security in a
4 total amount of approximately *** _____ *** during construction of the wind projects.
5 These provisions provide additional protection to Empire and its customers if the wind
6 developers fail to meet their contractual obligations.

7 Finally, the contracts contain provisions to limit Empire's financial detriment if the
8 Wind Projects are not successfully placed in service by the end of calendar year 2020.
9 As previously discussed, the primary financial detriment associated with schedule delays would
10 be potential loss of full PTC benefits from the Wind Projects. In order to guard against this
11 possibility, the PSAs require the wind developers to offer a reduced purchase price for the Wind
12 Projects to Empire in order to reimburse it for the financial impact of loss of full PTC availability
13 in the event there are construction delays.⁶⁹

14 Even with Empire's projections of net customer savings from the Wind Projects and the
15 contractual protections discussed above, Empire's customers could still face material future risk
16 related to the economic feasibility of these projects.

17 The projected benefits identified by Empire as accruing to its customers as a result of
18 these wind additions is heavily dependent upon assumptions regarding the future amount of wind
19 power that Empire can sell into the SPP Integrated Marketplace and the future price of that
20 power in the SPP IM. Whether Empire's projections on these values will prove to be accurate is
21 obviously uncertain, and the amount of projected net customer benefits may be reduced or (in a
22 worst case scenario) eliminated in entirety if Empire's estimates are over-optimistic.

23 A related project risk is that Empire's own modeling of the financial impact of the wind
24 additions shows that in the first ten years of the windfarms' operation minimal net customer
25 savings are expected. This is because of the need to fully pay off the tax equity partner's
26 investment in that ten-year period through receipt of tax benefits and cash distributions, leaving
27 little opportunity for customers to gain material benefits from the Wind Projects over this period.
28 If Empire's assumptions regarding the quantity of and the price of wind power generated by
29 these projects prove to be overly optimistic, ratepayers may be asked to bear significant financial
30 losses for at least the first ten years of wind farm operation.

⁶⁹ These provisions are not applicable in the event the actions of Empire caused the delay.

1 In Staff's view, Empire has demonstrated that there is a reasonable likelihood that
2 Empire's proposed Wind Projects can potentially result in a net benefit to customers over the
3 lives of the assets. However, due to the inherent uncertainty of relying upon long-range forecasts
4 to justify the economic feasibility of these projects, an additional condition protecting customers
5 from potential future economic detriment should be imposed by the Commission as part of any
6 approval of this Application; namely, implementation of a MPP.

7 The MPP was first introduced as a concept as part of the CSP Stipulation in Empire's
8 previous application, Case No. EO-2018-0092. The intent of the stipulated MPP was to share the
9 risk between ratepayers and shareholders of any shortfalls in either the assumed amount of wind
10 power sold into the SPP marketplace or the assumed price of that power for approximately the
11 first ten years the wind farms are in operation. The requirement that the MPP be in place during
12 the first ten years of the wind projects provided Staff with a level of comfort in Case No.
13 EO-2018-0092 that Empire's customers would not be asked to bear significant financial
14 detriment in the first ten years due to the tax equity financing arrangement being in place. Staff
15 continues to have the same concerns, and is recommending that an MPP, modified in some
16 respects from that stipulated to in Case No. EO-2018-0092, be adopted in this case. Please see
17 Section II. for additional discussion of the MPP and Staff's proposed modifications.

18 *Staff Expert/Witness: Mark L. Oligschlaeger*

19 **Transmission Interconnection**

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26 ⁷⁰ The expected date for full completion of the interconnection studies for Neosho Ridge, North Fork Ridge, and Kings Point is not known at this time and may be delayed due to ongoing complications related to the study process at SPP and changes within the SPP queue and SPP queue process.

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⁷² Neighboring non-market areas include: Tennessee Valley Authority, Associated Electric Cooperative Inc., and Southwestern Power Administration.

⁷³ https://www.spp.org/documents/57928/spp_mmu_asom_2017.pdf page 143.

⁷⁴ https://www.spp.org/documents/51179/2017_itp10_report_board%20approved_april2017_final.pdf

pages 164-165.

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⁷⁵ https://www.spp.org/documents/59376/spp_mmu_qsom_fall_2018_final.pdf page 10.

⁷⁶ Tradewind RFP page 21.

⁷⁷ FCITC is the amount of power that can be transferred reliably from one area to another, given set initial conditions.

⁷⁸ Empire Response to Data Request 0023, Staff 1-23 – hc – wind build-transfer rfp fcite – base case with Asbury 1.pdf.

⁷⁹ Empire Response to Data Request 0023.1, Staff 5-23.1 gia impact estimate_hc.xlsx.

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⁸⁰ Empire response to Data Request 0023.1, Staff 5-23.1 neosho ridge – net upgr dil pkg_hc.pdf.

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31 *** The interconnection cost issues Staff is raising will be alleviated with
32 the proper inclusion of network interconnection costs in the updated MPP as proposed by Staff.

81 ***

82 Company response to Data Request 0023.1, Staff 5-23.1 neosho ridge – net upgr dil pkg_hc.pdf.

1 In the alternative, Staff recommends the Commission condition the CCN on an Empire
2 commitment to cap the total network upgrade costs for which recovery may be sought at
3 Empire's estimate plus a 10% contingency.

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16 _____ *** All of these concerns would be alleviated if properly taken
17 into account in the updated MPP as proposed by Staff.

18 *Staff Expert/Witness: Shawn E. Lange*

19 Subject to Staff's proposed conditions, Staff recommends that the Commission find the
20 Wind Projects to be economically feasible.

21 *Staff Expert/Witness: Mark L. Oligschlaeger and Shawn E. Lange*

22 **5. Whether the Wind Projects promote the public interest**

23 The public interest assessment involves essentially a reconsideration of the other Tartan
24 Criteria: need for the project, its economic feasibility, Empire's qualifications to provide service
25 and financial ability to construct the project.

26 Due to various risks associated with the specific projects, as well as the uncertainty of
27 future market prices, Staff recommends the CCN be conditioned on inclusion of the MPP with
28 the modifications Staff recommends in this Report. With such a condition, Staff asserts the

1 Wind Projects are a benefit justifying their cost, and therefore have met the “need” and
2 “economic feasibility” standards. Staff’s assessment of Empire’s qualifications to provide
3 service and financial ability to construct the Wind Projects concludes that Empire has
4 sufficiently satisfied those Tartan Criteria.

5 In its Report and Order in Case No. EO-2018-0092⁸³, the Commission, at page 20, stated,

6 It is the public policy of this state to diversify the energy supply through
7 the support of renewable and alternative energy sources.⁸⁴ In past
8 decisions, the Commission has stated its support in general for renewable
9 energy generation, which provides benefits to the public.⁸⁵ Empire’s
10 proposed acquisition of 600 MW of additional wind generation assets is
11 clearly aligned with the public policy of the Commission and this state.

12 Staff’s assessment concludes that the three Wind Projects, with Staff’s recommended conditions,
13 are not detrimental to the public interest.

14 *Staff Expert/Witness: Claire M. Eubanks, PE*

15 V. In-Service Criteria

16 In-service criteria are a set of operational tests or operational requirements used to
17 determine whether a new unit is “fully operational and used for service.”⁸⁶ A new facility may
18 not have any historical operating information from which Staff could make a recommendation to
19 the Commission of whether the new unit is “fully operational and used for service”; therefore,

⁸³ In the Matter of the Application of the Empire District Electric Company for Approval of its Customer Savings Plan (“CSP”). Empire originally proposed to acquire up to 800 MWs of wind generation in conjunction with tax equity partners, which was later modified through a non-unanimous stipulation and agreement to 600 MWs of wind.

⁸⁴ *Missouri Comprehensive State Energy Plan*, Department of Economic Development – Division of Energy, October 2015; Sections 393.1025 and 393.1030, RSMo 2016, the Renewable Energy Standard.

⁸⁵ Report and Order, *In the Matter of Union Electric Company d/b/a Ameren Missouri’s Voluntary Green Program/Pure Power Program Tariff Filing*, File No. EO-2013-0307, April 24, 2013, p. 14-15; Report and Order, *In the Matter of the Application of KCP&L Greater Missouri Operations Company for Permission and Approval of a Certificate of Convenience and Necessity Authorizing it to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage Solar Generation Facilities in Western Missouri*, File No. EA-2015-0256, March 2, 2016, p. 15-16; Report and Order, *In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Convenience and Necessity Authorizing it to Offer a Pilot Distributed Solar Program and File Associated Tariff*, File No. EA-2016-0208, December 21, 2016, p. 19-20.

⁸⁶ Section 393.135, RSMo. 2000: “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.]

1 operational tests are established and performed in order for Staff to file its recommendation.
2 In-service criteria are typically developed based on review of the new unit's specifications and
3 discussions with the company. For other construction projects, these discussions often have
4 occurred during a general rate case, though have also occurred as part of other proceedings.
5 Each set of in-service criteria are developed for both a specific type of generating unit (i.e. coal
6 plant, air quality control systems, wind farm) and the specific facility.

7 Empire included an *** _____ *** which will, with an
8 additional criteria and definitions, satisfy as in-service criteria for determining whether the
9 proposed facilities are fully operational and used for service. Empire's *** _____
10 _____ *** Staff
11 recommends the Commission order the in-service criteria contained in attached
12 Schedule CME-r1 be used to determine whether the projects are in-service. Staff's proposed
13 criteria are generally consistent with the *** _____ ***
14 modified to include the following criteria and related definition:

- 15 • All major construction work shall be completed.
- 16 • Review of operating Data. The Company will provide Operating Data for
17 each commissioned turbine and its review of such data. The Company's
18 review will be certified by a Professional Engineer licensed in the State in
19 which the wind farm is located.
- 20 • "Operating Data" shall mean the quantity of electricity produced by each
21 Turbine, the average wind speed at each Turbine, and the output voltage at
22 each Turbine, in each case on an hourly interval.

23 Additionally, Staff recommends various definitions be included for clarity.

24 Staff's recommendation is generally consistent with the in-service criteria agreed upon
25 between Ameren Missouri and Staff in Case No. EA-2018-0202, filed with the Commission on
26 January 22, 2019, and in Case No. EA-2019-0021 on January 29, 2019.

27 *Staff Expert/Witness: Claire M. Eubanks, PE*

1 **VI. Recommendations**

2 After reviewing Empire’s filings and evidence, Staff recommends the Commission not
3 rely on certain evidence Empire put forth to suggest that meeting a specific LCOE threshold
4 constitutes need, in its findings of fact regarding need as discussed further in Section IV.1. of this
5 report. Approval of the CCNs for the Wind Projects should not be considered a finding of
6 appropriateness for ratemaking purposes.

7 Based on its review, Staff recommends the Commission condition approval of the Empire
8 CCN Applications for the MO Wind Projects and the KS Wind Project, under the specific terms
9 of the PSAs, with the following conditions:

10 1. Implementation of the Market Protection Provision as proposed in Appendix A to the
11 non-unanimous Stipulation and Agreement between Empire, MECG, Staff, Renew
12 Missouri Advocates, and DE filed on April 24, 2018 in Case No. EO-2018-0092 with the
13 following changes:

- 14 a. Remove the guarantee cap which was a negotiated value equal to \$35 Million;
- 15 b. Limit the value of PPA_Replacement to the amount calculated based upon the
16 number of MWh generated to produce RECs in order to comply with the RES;⁸⁷
- 17 c. Incorporate mutually agreeable provisions to adequately balance risks and
18 performance related to Transmission Congestion Rights (“TCRs”) and Auction
19 Revenue Rights (“ARRs”) related to the Neosho Ridge interconnection point to
20 Empire’s load serving area;
- 21 d. inclusion of network interconnection costs in the revenue requirement for each
22 project.

23 2. Completion of the SPP Definitive Impact System Impact Studies;

- 24 a. Empire will demonstrate that the outstanding studies do not raise any new issues,
25 and if they do, that the Commission is satisfied with Empire’s solution to address
26 those issues.

27 3. Completion, and subsequent filing with the Commission, of a sensitivity analysis on
28 curtailment and the dispatching down of each Wind Project;

⁸⁷ The Company’s current estimation of the RECs required for RES compliance in 2021 (first year of 15% RES requirement) is 638,429. (Response to Staff Data Request 0047)

1 a. Empire will demonstrate that the analysis does not raise any new issues, and if it
2 does, that the Commission is satisfied with Empire's solution to address those
3 issues.

4 4. Filing of the construction-level plans and specifications prior to commencing
5 construction of each project;

6 a. If the specifications materially change from those contained in the Applications,
7 Empire must file an updated application for the Wind Project(s).

8 5. Filing of the evidence of all required permits and approvals of affected governmental
9 bodies outlined in Empire's response to Staff Data Request 0029;

10 6. Empire's commitment to cap the total network upgrade costs for which recovery may be
11 sought at Empire's estimate plus 10% contingency;

12 7. Use of the in-service criteria contained in attached Schedule CME-r1 to determine
13 whether the projects are in-service.

14 *Staff Expert/Witness: Natelle Dietrich on behalf of all witnesses.*

15 **Appendix 1 - Staff Credentials**

SCHEDULE CME-r1

HAS BEEN DEEMED

CONFIDENTIAL

IN ITS ENTIRETY

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

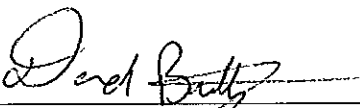
In the Matter of the Application of The)
Empire District Electric Company for) Case No. EA-2019-0010
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities)

AFFIDAVIT OF DAVID T. BUTTIG, PE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW DAVID T. BUTTIG, PE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to his best knowledge and belief.

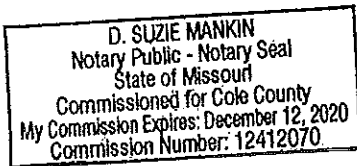
Further the Affiant sayeth not.

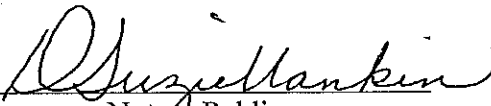


DAVID T. BUTTIG, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.





Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

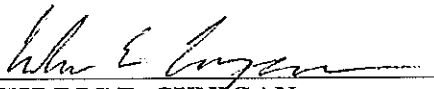
In the Matter of the Application of The)
Empire District Electric Company for) Case No. EA-2019-0010
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities)

AFFIDAVIT OF CEDRIC E. CUNIGAN

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW CEDRIC E. CUNIGAN and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to his best knowledge and belief.

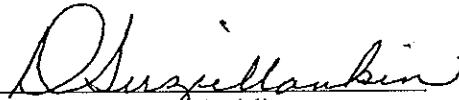
Further the Affiant sayeth not.


CEDRIC E. CUNIGAN

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 12, 2020
Commission Number: 12412070


Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of The)
Empire District Electric Company for)
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities) Case No. EA-2019-0010

AFFIDAVIT OF NATELLE DIETRICH

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW NATELLE DIETRICH and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to her best knowledge and belief.

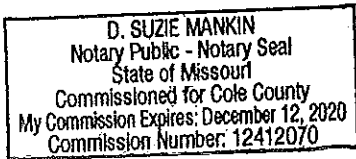
Further the Affiant sayeth not.

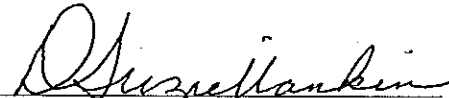


NATELLE DIETRICH

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.





Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of The)
Empire District Electric Company for) Case No. EA-2019-0010
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities)

AFFIDAVIT OF CLAIRE M. EUBANKS, PE

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

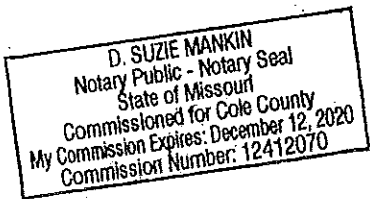
COMES NOW CLAIRE M. EUBANKS, PE and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to her best knowledge and belief.

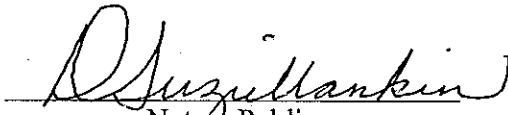
Further the Affiant sayeth not.


CLAIRE M. EUBANKS, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.




Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of The)
Empire District Electric Company for) Case No. EA-2019-0010
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities)

AFFIDAVIT OF SHAWN E. LANGE

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

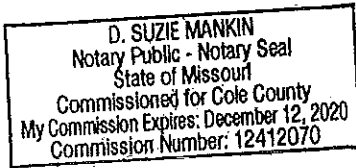
COMES NOW SHAWN E. LANGE and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to his best knowledge and belief.

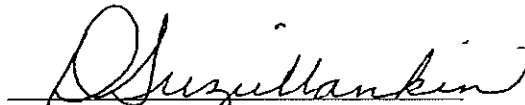
Further the Affiant sayeth not.


SHAWN E. LANGE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.




Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI


In the Matter of the Application of The)
Empire District Electric Company for)
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities) Case No. EA-2019-0010

AFFIDAVIT OF J LUEBBERT

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW J LUEBBERT and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to his best knowledge and belief.

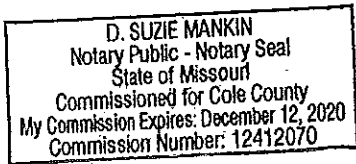
Further the Affiant sayeth not.

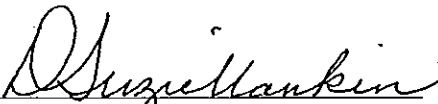


J LUEBBERT

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.





Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of The)
Empire District Electric Company for)
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities) Case No. EA-2019-0010

AFFIDAVIT OF MARK L. OLIGSCHLAEGER

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW MARK L. OLIGSCHLAEGER and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to his best knowledge and belief.

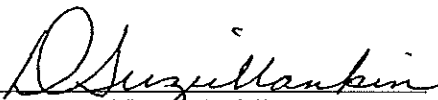
Further the Affiant sayeth not.


MARK L. OLIGSCHLAEGER

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.

D. SUZIE MANKIN Notary Public - Notary Seal State of Missouri Commissioned for Cole County My Commission Expires: December 12, 2020 Commission Number: 12412070
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Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

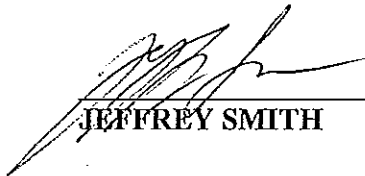
In the Matter of the Application of The)
Empire District Electric Company for)
Certificates of Convenience and Necessity)
Related to Wind Generation Facilities) Case No. EA-2019-0010

AFFIDAVIT OF JEFFREY SMITH

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW JEFFREY SMITH and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Staff Rebuttal Testimony in Report form*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

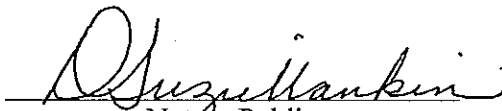


JEFFREY SMITH

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 5th day of February 2019.

D. SUZIE MANKIN Notary Public - Notary Seal State of Missouri Commissioned for Cole County My Commission Expires: December 12, 2020 Commission Number: 12412070
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Notary Public