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|--------------------------|--------------------|
| Exhibit:                 | CCN for Ameren     |
| Issue(s)                 | Outlaw Project     |
| Type of Exhibit:         | Written Rebuttal   |
| Witness:                 | Testimony          |
| Sponsoring Party:        | Dr. Janet Haslerig |
|                          | Missouri           |
|                          | Department of      |
|                          | Conservation       |
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MISSOURI PUBLIC SERVICE COMMISSION  
FILE NO. EA-2019-0371

WRITTEN REBUTTAL TESTIMONY

OF

DR. JANET HASLERIG

Missouri Department of Conservation

December 12, 2019

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1 **I. INTRODUCTION**

2 **Q. Please state your name, title and business address.**

3 A. Janet Haslerig, Ph.D., Resource Scientist, Missouri Department  
4 of Conservation, P.O. Box 180, Jefferson City, Missouri 65102-0180.

5 **Q. What are your qualifications and experience?**

6 A. I have a Ph.D. in Wildlife Ecology and over 15 years of  
7 professional experience in wildlife conservation. I have served as the Bald  
8 Eagle Recovery leader for the Missouri Department of Conservation (“MDC”)  
9 since October 2010 where I am responsible for the monitoring and recovery of  
10 bald eagle populations in the state.

11 **Q. Have you testified previously before the Missouri Public**  
12 **Service Commission?**

13 A. Yes. I have provided testimony in the following cases before the  
14 Public Service Commission (“Commission”): EA-2018-0202, EA-2019-0021,  
15 EA-2019-0181, and EA-2018-0010. In those cases, Ameren Missouri  
16 (“Ameren”) and Empire District Electric sought approval of Certificates of  
17 Convenience and Necessity for wind farms in Schuyler/Adair, Atchison, and  
18 Lawrence/Jasper/Barton/Dade counties, respectively.

19 **Q. Are you familiar with the application for Certificate of**  
20 **Convenience and Necessity (“CCN”) filed by Ameren Missouri to**  
21 **construct three utility-scale solar generation facilities?**

1           A.     Yes. I am familiar with the proposal to construct three utility-  
2     scale solar generation facilities (“Projects”) in Green City, Richwoods and  
3     Livingston, Missouri. I have reviewed the Direct Testimony filed by Ameren  
4     and (the Critical Issues Analysis reports) and have compared that  
5     information with data contained in the MDC’s Natural Heritage Database,  
6     which indicates current and past locations of threatened and endangered  
7     species as well as species designated by MDC as Species of Conservation  
8     Concern (“SOCC”) as described below.

9  
10   **II.    MDC INTERESTS**

11           **Q.    Why is MDC intervening in this case?**

12           A.     MDC has a constitutional mandate to conserve fish, forest, and  
13     wildlife in the state for Missourians to enjoy now and in the future. MDC  
14     was formed through an initiative petition approved by voters in 1936 to  
15     create a Conservation Commission. Sportsmen protested earlier that decade  
16     that fees from hunting permit sales were used for projects other than wildlife  
17     preservation/management, plus the statewide wildlife populations were low  
18     (deer population not more than 2,000 animals and perhaps 3,500 turkeys  
19     scattered across 45 counties). Voters passed another ballot initiative (“Design  
20     for Conservation”) in 1976 to fund increased research into forestry and all  
21     species of wildlife, and to expand recreational opportunities for the future.

1           The proposed construction and operation of the three solar  
2   commercially operated facilities is the first of its kind in Missouri. MDC is  
3   interested in gaining an understanding of the wildlife impacts of renewable  
4   energy projects. While renewable energy projects can be positive, the  
5   Commission and the public need to understand and weigh all potential  
6   consequences associated with such projects. It is MDC's position that  
7   consideration of fish and wildlife resources during project planning, siting,  
8   construction, and operation can produce a renewable energy project that is  
9   even more environmentally beneficial. Unfortunately, because of a lack of  
10  reported fatality monitoring, MDC is still learning about the impacts of solar  
11  projects on certain wildlife species. Fatality monitoring at renewable energy  
12  projects is critical to understanding and protecting wildlife in the future.  
13  MDC has an interest in protecting the investment made by Missourians  
14  (through the Conservation Sales Tax) in conserving species that are rare or  
15  were once rare in our state. MDC also has interest in conserving other  
16  species, so they do not decline to the point of becoming federally protected.

17           **Q.   What is the purpose of your rebuttal testimony?**

18           A.   The purpose of my testimony is to respond to the Application for  
19  a CCN and Direct Testimony filed by Ameren. My testimony summarizes my  
20  concerns about the proposed Projects -- that the projects may pose risks to  
21  bald eagles, as well as other raptors and songbirds in and around the Project

1 areas. I also explain why the Commission should impose monitoring and  
2 reporting requirements to assist MDC in evaluating the risks to the state's  
3 conservation interests.

### 5 **III. BALD EAGLE OVERVIEW**

6 **Q. Are bald eagles currently protected by federal or state**  
7 **law?**

8 A. Yes, both. While bald eagles were removed from the federal  
9 Endangered Species Act list in June 2007, they remain federally protected by  
10 the Bald and Golden Eagle Protection Act, 16 U.S.C. 668-668c, and the  
11 Migratory Bird Treaty Act, 16 U.S.C. 703-712. These acts generally prohibit  
12 anyone, without a permit, from taking or disturbing bald eagles, including  
13 their parts, nests, or eggs. The bald eagle is also designated by MDC as a  
14 Species of Conservation Concern ("SOCC"). This state designated status and  
15 rank indicate the level of concern about the species and/or natural  
16 community continued existence throughout its range in Missouri. The bald  
17 eagle is currently listed as "S3" within the state – which means that it is  
18 vulnerable in the state due to a restricted range, relatively few populations or  
19 occurrences, recent and widespread declines, or other factors making it  
20 vulnerable to extirpation. As an SOCC, the bald eagle in Missouri warrants  
21 routine monitoring to assess the population status and to document the

1 continual recovery of the species as well as detect any eminent or pending  
2 threats to its survival.

3 **Q. Describe MDC's efforts in restoring, managing and**  
4 **protecting bald eagles.**

5 A. MDC has invested and will continue to invest considerable  
6 resources in the restoration, management and protection of bald eagles. From  
7 1981 to 1990, MDC, in cooperation with USFWS and the Dickerson Park Zoo  
8 in Springfield, released 74 young bald eagles in Missouri to reestablish them  
9 as nesters. The eaglets were obtained from captive breeding facilities or  
10 healthy wild populations and released in good nesting habitat at Mingo  
11 National Wildlife Refuge and Schell-Osage Conservation Area. Since 1990,  
12 MDC has opportunistically monitored the population of nesting bald eagles in  
13 the state. After the USFWS delisted bald eagles, MDC has systematically  
14 surveyed nesting bald eagles under the USFWS post-delisting monitoring  
15 plan. This plan calls for states nationwide to monitor the status of bald eagles  
16 for a 20-year period. In 2006 (prior to the official delisting of the bald eagle  
17 under the ESA), MDC participated in the pilot study to test the effectiveness  
18 of the post-delisting monitoring protocol. Since then, MDC conducted  
19 statewide aerial and ground surveys in 2011, 2016, 2017 and 2018. The  
20 yearly estimated monetary cost of conducting aerial surveys is approximately  
21 \$10,189 (helicopter only), not including staff hours.

Initiated in the spring of 2018, the Missouri Eagle Watch Program allows volunteers to contribute to science by collecting critical monitoring information necessary for the conservation and protection of bald eagles in the state. The Eagle Watch Program is a standardized and comprehensive eagle nest monitoring program using citizen scientists to monitor bald eagle populations and their productive status. To date, there are 75 volunteers monitoring 202 nests throughout the state.

#### **IV. SOLAR GENERATION PROJECTS IMPACT ON BALD EAGLES, OTHER RAPTORS AND SONGBIRDS**

**Q. Are you concerned about the impact of the Projects on bald eagles, other raptors and songbirds? Why or why not?**

**A.** Yes, I am concerned about the potential impact of the Projects on bald eagles, other raptors, and songbirds. My primary concern is that there are not documented studies that assess the impacts of large-scale solar developments upon wildlife in general, and eagles, raptors and songbirds in particular. There is limited scientific literature on this topic, however, the range of potential impacts from large-scale solar projects on birds and other wildlife include habitat loss and fragmentation, impact trauma, solar flux,



predation, adverse reactions to noise, and infrastructure collision.<sup>1 2</sup>. Based upon my review of MDC's Natural Heritage Database, there is currently one known active bald eagle nest within 2.8 miles of the Livingston Project area.

Despite this lack of understanding of their long-term impacts to wildlife, solar power projects are being constructed on the landscape at a rapid pace. The U.S. Department of Energy projections suggest that the solar energy sector could meet 14% of electricity demands in the contiguous U.S. by 2030 and 27% by 2050.<sup>3,4</sup> It is important that we begin to gather data now to begin evaluating potential impacts to our bird populations before irreversible damage is done.<sup>5,6</sup>

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<sup>1</sup> U.S. Department of Energy, Sunshot Initiative and Office of Energy Efficiency & Renewable Energy. 2015. A Review of Avian Monitoring and Mitigation Information at Existing Utility-Scale Solar Facilities. Washington, DC. USA.

<sup>2</sup> Smith, Jennifer A. and J.F. Dwyer. 2016. Avian Interactions with Renewable Energy Infrastructure: An update. The Condor: Ornithological Applications 118:411-423. DOI:10.1650/CONDOR-15-61.1

<sup>3</sup>See n. 2.

<sup>4</sup> U.S. Department of Energy. 2012. Sunshot Vision Study. U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy, Washington, DC, USA.

<sup>5</sup> See. n.1.

<sup>6</sup> See. n.2.

1           **Q.     Generally, can you describe the economics associated**  
2 **with the public’s interest in the birds and raptors (including bald**  
3 **eagles)?**

4           A.     Hundreds of birds and raptors are of interest to wildlife watchers  
5 in our state. There are 1.7 million Missourians and visitors who participate in  
6 wildlife viewing on an annual basis.<sup>7</sup> There is a \$1.7 billion economic impact  
7 of wildlife viewing in Missouri, supporting 18,000 jobs, and generating \$153.7  
8 million in state and local taxes. <sup>8</sup>

9           **Q.     What area uses are known from MDCs’ lands proximate to**  
10 **the project?**

11          A.     There are no MDC owned or managed lands located or within  
12 three miles of the Project Areas.

13  
14 **V. MDC RECOMMENDATIONS**

15          **Q.     What does MDC recommend with respect to bald eagles,**  
16 **other raptors and songbirds?**

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<sup>7</sup> U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

<sup>8</sup> ENVIRON International Corporation. 2014. The 2011 Economic Impacts of Fishing, Hunting, and Wildlife Viewing in Missouri. Environ International Corporation, Clackamas OR. 67 pp.

1           A.     MDC suggests that the following best management practices be  
2 implemented to ensure that MDC can adequately protect, monitor and  
3 determine the impacts of the Projects on the area's bald eagles, other raptors  
4 and songbird population. The Commission should require Ameren to:

5                   1.     Conduct monthly avian carcass searches throughout the  
6 year for at least the first two years the Projects are in operation.

7                   2.     Use biodegradable wildlife friendly erosion control  
8 materials during construction (as opposed to erosion control mesh) for  
9 highly erodible areas to reduce the bird fatality and entanglement.

10                  3.     Design overhead power lines, wires and supports to  
11 minimize electrocution and collision risk.

12                  4.     Agree to not clear any occupied/active or inactive eagle  
13 nest trees to be cleared.

14                  5.     Report all current and future avian species of conservation  
15 concern (SOCC) carcasses observed within 48 hours on a form provided  
16 by MDC. Verify SOCC annually from the MDC checklist.

17                  6.     Report mortalities for all avian species by December 31,  
18 annually.

19  
20       **Q.     Does this conclude your rebuttal testimony?**

21       A.     Yes.

In the Matter of the Application of Union Electric )  
Company d/b/a Ameren Missouri for Permission and ) Case No. EA-2019-0371  
Approval and a Certificate of Convenience and )  
Necessity Authorizing it to Construct Solar Generation )  
Facility(ies) )

[illegible]

1. My name is Dr. Janet Haslerig. I work in Jefferson City, Missouri, and am employed at the Missouri Department of Conservation as a Resource Scientist.
2. Attached to this affidavit and made a part hereof for all purposes is my Written Rebuttal Testimony (testimony) on behalf of the Missouri Department of Conservation. The testimony consists of 11 pages, which have been prepared in the appropriate format to be introduced into evidence in the case above.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions promulgated therein are true and correct.

Sworn to and subscribed before me this 12<sup>th</sup> day of December, 2019.

My Commission Expires: November 24, 2021

