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January 29, 2019

Members of Solar PV Rulemaking Advisory Committee
Energy Facility Siting Council (EFSC)
Oregon Department of Energy
550 Capitol St. NE, 1st Floor
Salem, OR 97301

Re: Comments on Solar Photovoltaic (PV) Facilities Rulemaking

Dear Solar PV Rulemaking Advisory Committee (RAC) members:

Defenders of Wildlife submits the following comments on Single Solar PV Facility and Solar PV Facility-Specific Rulemaking that the EFSC initiated on June 29th, 2018.

Defenders of Wildlife (“Defenders”) is dedicated to protecting native animals and plants in their natural communities. Founded in 1947, Defenders is a national conservation organization with more than 1.8 million members and supporters dedicated to wildlife and habitat conservation and protecting biodiversity across the nation. We support responsible energy development on public and private lands, including in Oregon, that balances conservation, recreation and other uses of the lands. We believe energy projects must be sited in a manner that avoids or minimizes impacts to wildlife and wild habitat and, where necessary, unavoidable impacts should be offset through compensatory mitigation. Renewable energy sources provide benefits such as reduction of greenhouse gas emissions, jobs and revenue for communities while reducing the cost of electricity for ratepayers. We support responsible development of solar energy projects in Oregon that continue to provide these benefits.

In 2008, Defenders, along with Oregon Natural Desert Association and Audubon Society of Portland, petitioned EFSC and the Department of Energy to clarify what constitutes a single energy facility for application of the EFSC jurisdictional threshold criteria in OAR Chapter 345 and ORS 469.300. We appreciate that EFSC initiated the rulemaking and appointed a Rulemaking Advisory Committee (RAC) in 2018 to evaluate the need to establish a definition or criteria for what constitutes a single solar PV energy facility for purposes of EFSC jurisdiction and evaluate whether specific standards should be developed for solar PV energy facilities.

We request the RAC take the following comments and recommendations into consideration during the evaluation and development of proposed rules:

1. **Aggregation of multiple non-EFSC jurisdictional solar PV facilities**

When a large project is fragmented into smaller projects, the cumulative impacts of each of the projects on wildlife remain the same. However, when projects are fragmented to avoid EFSC jurisdiction, the permitting standards may be different and often times less rigorous. For example, a large project under EFSC jurisdiction is subject to Oregon Department of Fish and Wildlife's (ODFW) Fish and Wildlife Habitat Mitigation Policy under OAR 635-415-0025. Smaller projects not under EFSC jurisdiction are subject to county standards and may be excused from addressing impacts to wildlife from energy development and operation altogether. The county or counties responsible for permitting smaller projects may not follow ODFW's mitigation policy or may not have the expertise to effectively address and avoid impacts to wildlife. This can result in the irreversible loss of important species and habitat.

We believe it is critical to aggregate smaller facilities when their cumulative impacts make them more appropriately considered one facility under EFSC jurisdiction. Aggregation in this manner would allow the uniform application of ODFW's mitigation policy. Doing so would allow EFSC to play a vital role protecting and preserving Oregon's wildlife and habitat. Aggregation would also provide much needed clarity to developers and counties by ensuring the same set of mitigation standards apply to all projects in the state. Without such action, artificial fragmentation of large industrial projects will continue and possibly increase as Oregon's renewable energy resources are developed while negative impacts on wildlife will continue to go unaddressed.

Recommendation: We urge the RAC to determine that multiple non-EFSC jurisdictional solar PV facilities may be aggregated such that the aggregate is functionally the size of an EFSC jurisdictional solar PV facility. Furthermore, we urge the RAC to develop rules that would require aggregated non-EFSC jurisdictional projects to be subject to ODFW's Fish and Wildlife Habitat Mitigation Policy.

2. **Application of ODFW's Fish and Wildlife Habitat Mitigation Policy**

Construction and development of PV Solar projects can have direct impacts on wildlife through vegetation removal, fencing, trenching, entanglement or crushing of wildlife and collision with photovoltaic panels. In addition to direct impacts, wildlife is also susceptible to construction activity noise and disturbance, loss of breeding or wintering ground and loss of habitat connectivity. Furthermore, the presence of an energy generation facility may obstruct wildlife movement, especially if the facilities are fenced. Many smaller facilities located close together could compound the obstruction and negatively affect habitat connectivity. These direct, indirect and cumulative impacts are present regardless of the jurisdiction of a PV facility.

Fortunately, EFSC jurisdictional facilities are subject to ODFW's Fish and Wildlife Habitat Mitigation Policy, the application of which can alleviate some of the impacts. Smaller non-EFSC jurisdictional facilities are, however, not subject to ODFW's Fish and Wildlife Habitat Mitigation Policy and therefore continue to negatively impact wildlife and habitat.

Recommendation: We urge the RAC to develop rules specifying that aggregated projects are subject to ODFW's Fish and Wildlife Habitat Mitigation Policy.

3. Cumulative impacts of multiple projects in the same area

Oregon's potential for solar energy development is well recognized, as demonstrated by the pace and scale at which projects are being approved and developed in Eastern Oregon. However, solar project permitting in Eastern Oregon is beginning to have an impact on migration corridors and other habitat uses of Oregon's Sensitive Species (such as pygmy rabbits, sagebrush-obligate birds). For example, in the Fort Rock Valley in northern Lake county, there are multiple projects that have been permitted at the county level and another proposed project close to the permitted projects that would be under the EFSC jurisdiction. While the wildlife impacts have been considered at the individual project level through the Land Conservation and Development Commission's rules, the cumulative impacts of all these projects at the landscape level has not been studied or considered. As an example, the impact on mule deer and elk wintering grounds as well as mule deer migration have not been addressed despite the projects' effects. This is just one example of what is happening in other parts of the state as more solar energy projects are being proposed. As the RAC considers aggregating smaller projects and developing standards for aggregated projects we think it is essential that cumulative impacts of the aggregated projects be considered.

Recommendation: Add cumulative impacts of smaller projects as a criterion while developing standard for aggregated projects.

4. Avian impacts of solar facilities

Avian fatalities have been detected at several solar facilities, but the impacts of solar energy projects are still being studied. The presence of waterboards among the species detected at photovoltaic projects has led to speculation that birds perceive solar panels to be bodies of water and attempt to land there, striking the panels or becoming stranded (the "Lake Effect" hypothesis). Concentrated solar facilities, which use mirrors to reflect light to a central tower collector, have recorded birds being incinerated by flying too close to concentrated beams of sunlight. There is still much to learn about the extent to which solar projects cause avian mortality, the mechanisms of causation, whether these mortalities could have adverse impacts on bird populations, and potential mitigation strategies.

Furthermore, there is no research that has been done to date to study the correlation between a project's footprint and its impacts on avian species. It is not clear if the "lake effect" increases with increasing number of PV panels or increasing acreage. It is also not clear if collision risks increase with greater number of projects in one area. At several solar facilities, some of the dead birds were found next to fencing, and it is unclear if that was the cause of mortality, or if the carcass was windblown and caught there. If the former, the additive fenced perimeter of multiple small projects might represent a larger threat. This rulemaking may be a good opportunity to contribute to the scientific body of knowledge by requiring monitoring of avian mortality at solar facilities. The Department of Energy has stated that "More systematic data from solar energy facilities across geographic regions will clarify avian risks of the solar industry and allow comparison with risks of

other energy sources.”¹ We urge the RAC to use this rulemaking as an opportunity to collect data that could contribute to better understanding of avian impacts of solar energy projects.

Recommendation: Require avian mortality monitoring for the first year of project operation in projects aggregated as a single facility. Monitoring results should be collected in a publicly available database with appropriate safeguards to protect confidential business information. If post-construction monitoring results indicate significant avian fatalities (e.g., population-level effects) or impacts to federal- or state-listed endangered or threatened species, mandatory procedures should be in place for further communication with EFSC and appropriate federal and state agencies to determine additional project-level monitoring requirements, as warranted.

Thank you for the opportunity to provide input. Please let us know if you have any questions or if we can be of further assistance during the rulemaking process.

Yours sincerely,



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¹ Leroy J. Walston, Jr., Katherine E. Rollins, Karen P. Smith, Kirk E. LaGory, Karin Sinclair, Craig Turchi, Tim Wendelin, and Heidi Souder. 2015. A Review of Avian Monitoring and Mitigation Information at Existing Utility- Scale Solar Facilities. U.S. Department of Energy ANL/EVS-15/2. Pg. 2. Available at <http://www.evs.anl.gov/>