

DOCKETED

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Comment Received From: Garry George - Audubon
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**Comments on Preliminary Draft Utility Scale Renewable Energy
Generation Research Roadmap**

Additional submitted attachment is included below.



July 12, 2019

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 19-ERDD-01
1516 Ninth Street
Sacramento, CA 95814-5512

Delivered via email to: docket@energy.ca.gov

RE: Docket No. 19-ERDD-01
Comments on: Preliminary Draft Utility Scale Renewable Energy Generation Research Roadmap (the Roadmap).

For more than a century, Audubon has built a legacy of conservation success by mobilizing the strength of its network of one million members and supporters, 450 local chapters, 41 Audubon centers, 23 state offices, and dedicated professional staff to connect people with nature and the power to protect it. A powerful combination of science, education and policy expertise combine in efforts ranging from protection and restoration of local habitats to the implementation of policies that safeguard birds, other wildlife, and the resources that sustain us all—in the U.S. and across the Americas.

Audubon's 2014 Climate science hosted online at www.climate.audubon.org reveals that 314 species of our North American birds are seriously threatened on their breeding and wintering grounds by changes in climate suitability depending on how fast we can reduce our emissions. Transforming our energy sector rapidly to emission-free generation is a key strategy to combat the effects of climate change on our birds while providing jobs and economic benefits to our people, and is a priority for Audubon.

At the state level in California we have supported policies that drive a rapid deployment of renewable energy including most recently SB100 as well as the adoption of siting guidelines and other policies to avoid, minimize and mitigate effectively for impacts on birds and other wildlife of that energy and transmission.

A key strategy of the Clean Energy Initiative at Audubon is prioritizing collaboration on research and science as a foundation and path forward to resolve the conflicts between birds and other wildlife and clean energy and transmission with the goal of rapid deployment of those renewable technologies to reduce emissions. Successful resolution of those conflicts is also a key tool to reducing costs and delays in permitting and operating projects making clean energy more competitive economically, generating broad public support in California, and supporting California's environmental tradition of conservation of our natural resources for the public good and enjoyment.

Audubon works closely with the wind and solar industry in industry/NGO collaborations on research and science such as Avian Solar Work Group (www.aviansolar.org) and American Wind and Wildlife Institute (www.awwi.org) These collaborations share mutual goals *"to advance coordinated scientific research to better understand how birds interact with PV solar facilities"* and *"To facilitate timely and responsible development of wind energy while protecting wildlife and wildlife habitat."* We are also engaged in a process to form a similar work group for offshore wind in California.

California Energy Commission's EPIC research program has played an important role in providing research funding and leadership in key issues including those identified by these two NGO/industry venues.

We recommend that the preparers of the ROADMAP review the research plans and frameworks developed by both ASWG and AWWI on their websites to help inform Key Barriers and Challenges and Initiatives for research on solar and wind generation in California.

Our comments are as follows:

1. **The Roadmap should include conflicts with wildlife and habitat, and the resulting permitting, public opposition, and legal challenges that can result when those conflicts are not successfully resolved, in the Key Barrier and Challenge Summary and throughout the document.**
2. **The Roadmap should include and develop Initiatives under Solar PV, CSP, Land-based Wind and Off-shore Wind and Grid Integration that will provide greater scientific understanding of those conflicts and help develop new technologies and science to help resolve them and inform more efficient siting and permitting.**
 - a. In **Solar PV** include a Recommended Initiative such as *"Reduce Capital and Operating Costs and Delays in deployment of PV by Improving Technologies for Data Collection and understanding of impacts of PV solar on wildlife and habitat to inform siting."*

Additionally, the statement in Resource Availability that *"Many locations in California are ideal for PV solar energy development (and concentrated solar*

power (CSP) development) but are being limited due to local and national ordinances (The Desert Renewable Energy Conservation Plan (DRECP) for example)” should be revisited. The DRECP provided for 380,000 acres of public lands suitable for efficient solar PV permitting near to transmission, and an additional 400,000 acres of public lands that may be available to solar PV development. The Plan does not limit solar PV development. It facilitates it. The California Energy Commission’s leadership role in the federal/state DRECP Planning process, and Governor Brown’s Office of Planning and Research leadership in the San Joaquin Valley “Least Conflict” PV Solar Siting Stakeholder Processes are both examples of precedent setting planning efforts that have facilitated environmentally-responsible renewable energy, enjoyed wide public support, and were completed without any litigation or substantial opposition including from the solar PV industry, who participated as a stakeholder in both efforts.

- b. In **CSP** include a Recommended Initiative such as “Reduce Capital and Operating Costs and Delays in deployment of CSP by Developing Technologies for Deterrence and Avoidance during Operations and Data Collection to inform siting to avoid and minimize impacts on birds”
- c. In **Land-based Wind** include a Recommended Initiative such as “Reduce Capital and Operating Costs and Delays and Land use restrictions of Wind Energy by Improving Technologies for Data Collection and Detection and Avoidance and research to understand impacts on wildlife and habitat of taller turbines.”

Examples of Detection and Avoidance technologies that have been developed, tested and verified and that include smart economical curtailment of wind turbines to avoid collisions with large birds include Identiflight and the Condor Geo-scape in Kern County. (See <https://www.audubon.org/magazine/spring-2018/how-new-technology-making-wind-farms-safer-birds>). EPIC contributions to this kind of research and technology development are a path forward for rapid deployment of wind energy.

Revisit the statement “National plans such as the desert renewable energy conservation plan (DRECP) have limited potential locations for wind resource development as well.” The plan identifies over 380,000 acres of Development Focus Areas and an additional 400,000 acres of possible lands for wind energy development. Limitation on wind energy in the DRECP Plan Area may be the result of military restrictions rather than any limitations of the Plan itself, and this should be clarified. A possible resolution of that conflict may be research into the technological conflicts between military testing and turbine operation in order to resolve them.

- d. In **Offshore Wind** the Roadmap correctly identifies “the environmental impact of offshore turbines must be thoroughly studied. For offshore turbines, these studies must include avian impacts as well as impacts on fish and other forms of aquatic life that could be harmed by wind system deployment.”

The Roadmap should immediately identify and prioritize an Initiative solely dedicated to rapid research and development of technologies for data collection and monitoring of marine life, prioritizing marine life above sea level such as birds. **There is no current verified technology to monitor offshore wind projects for impacts on birds.** Without an ability to collect data pre-construction and monitor the known impacts of turbine collision or displacement during operation with reliable and verified technology that includes migration movements by birds at night, it is impossible to “thoroughly study” the environmental impacts of offshore wind as there will be no data for a baseline or mortality or displacement studies to measure impacts and inform adaptive management.

Additionally, it will be difficult for Audubon and our supporters and the California public to support the construction of any offshore wind facility, even as “demonstrations,” without a technology in place that accurately measures the impacts on birds. DOE’s Office of Renewable Technologies has prioritized funding development of this technology, and so should EPIC as well as the offshore wind industry.

3. **The Roadmap should also include Initiatives in research on Grid or Transmission planning and siting as well as Grid Integration to resolve the obstacle of environmentally responsible transmission availability for renewable energy.** This would include research on avoiding and minimizing impacts of transmission on birds, possibly in collaboration with Avian Power Line Interaction Committee (APLIC). The Roadmap preparers should leave open the ability to fund research such as a recent study that used UV light on transmission lines in Nebraska that reduced the collision of Sandhill cranes with transmission lines by 98%. (<https://academic.oup.com/condor/article-abstract/121/2/duz008/5476728?redirectedFrom=PDF>) and consider research into new approaches to transmission and gen-tie planning and siting such as the Supergrid effort recently launched by Climate Initiative, a proposal for the construction of largely underground high voltage direct current (HVDC) electric grid overlay along existing rights-of-way in the U.S. that has the potential to reduce power sector carbon dioxide emissions by 80 percent while avoiding impacts to wildlife and habitat, watershed conflicts and permitting delays. (<https://www.eesi.org/articles/view/climate-institute-launches-north-american-supergrid-initiative>).

Thank you for the opportunity to comment on this important work to develop a Roadmap for the EPIC Research program.

Sincerely,

A handwritten signature in black ink, appearing to read "Garry George", with a long horizontal flourish extending to the right.

Garry George
Clean Energy Director

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