State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
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GAVIN NEWSOM, Governor
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November 21, 2025

Rob Ferrera
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817
Rob.Ferrera@smud.org

Subject: Solano 5 Wind Repower Project, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2025101549, Solano County

Dear Rob Ferrera:

The California Department of Fish and Wildlife (CDFW) has reviewed the Sacramento Municipal Utility District's (SMUD) Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) for the Solano 5 Wind Repower Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect fish and wildlife resources of the State. Please be advised that, by law, CDFW may be required to carry out or approve aspects of the project through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW is providing SMUD, as the lead agency, with specific detail about the scope and content of the environmental information related to CDFW's area of statutory responsibility that must be included in the EIR (Cal. Code Regs., tit. 14, § 15082, subd. (b)).

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) For purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority over the Project pursuant to the Fish and Game Code. For example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority, if the Project impacts the bed, channel or bank of any river, stream or lake within the State (Fish & G. Code, § 1600 et seq.). Likewise, to the extent the Project may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

REGULATORY REQUIREMENTS

California Endangered Species Act

A CESA Incidental Take Permit (ITP) must be obtained from CDFW if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, "take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & G. Code, § 86.) CDFW's issuance of an ITP is subject to CEQA and to facilitate permit issuance, any project modifications and mitigation measures must be incorporated into the CEQA document analysis, discussion, and mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a mandatory finding of significance if a project is likely to substantially impact threatened or endangered species. Pub. Resources Code, §§ 21001, subd. (c) & 21083; CEQA Guidelines, §§ 15380, 15064 & 15065.) In addition, pursuant to CEQA, the lead agency cannot approve a project unless all impacts to the environment are avoided or mitigated to less-than-significant levels, or the lead agency makes and supports findings of overriding consideration for impacts that remain significant despite the implementation of all feasible mitigation. Findings of consideration under CEQA, however, do not eliminate the Project proponent's obligation to comply with the Fish and Game Code.

Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting river, lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains is generally subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through horizontal directional drilling, is also generally subject to notification requirements. Therefore, any impact to the mainstems, tributaries, or floodplains or associated riparian habitat caused by the proposed Project will likely require an LSA Notification. CDFW may not execute a final LSA Agreement until it has considered the final EIR and complied with its responsibilities as a responsible agency under CEQA.

Migratory Birds and Raptors

CDFW has authority over actions that may result in the disturbance or destruction of active bird nest sites or the unauthorized take of birds. Fish and Game Code sections protecting birds, their eggs, and nests include section 3503 (regarding unlawful take, possession, or needless destruction of the nests or eggs of any bird), section 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and section 3513 (regarding unlawful take of any migratory nongame bird). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

Migratory Bats

CDFW has authority over actions that may result in the take or possession of a nongame mammal, including all bats species. State laws and regulations that protect bats include Fish and Game Code section 4150 which prohibits unlawful take or possession, and California Code of Regulations, Title 14, section 251.1 which prohibits acts such as harassing, herding, or driving any nongame mammal.

PROJECT DESCRIPTION AND LOCATION SUMMARY

Proponent: SMUD

Objective: The objective of the Project is to repower SMUD’s existing Solano Wind Project Phase 2 within the Solano County Wind Resource Area (WRA). Primary Project activities include removing 20 Vestas V90 Wind Turbine Generators (WTGs) and constructing 21 new WTGs in the same general area to generate up to 94.5 megawatts (MW). The Project would also include the construction of road improvements, WTG foundations, an underground electrical collection system, and a temporary water intake pump at the Sacramento River.

Location: The Project is within 1,525 acres in the southeastern corner of Solano County, approximately 4 miles southwest of Rio Vista and just north of the confluence of the Sacramento and San Joaquin Rivers.

The CEQA Guidelines (§§15124 & 15378) require that the draft EIR incorporate a full project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the Project components in the Project description, including, but not limited to, the following:

- Land use changes resulting from, for example, rezoning certain areas;
- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes;
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, and stormwater systems;
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features; and
- Construction schedule, activities, equipment, and crew sizes.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand any potentially significant impacts on the environment of the proposed Project and any alternatives identified in the draft EIR (CEQA Guidelines, §§15125 & 15360). CDFW recommends the draft EIR provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, and endangered species (CEQA Guidelines, §15380). The draft EIR should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see: https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities). Fully protected, threatened or endangered, rare, and candidate species that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to the species listed in Attachment A.

Habitat descriptions and species profiles included in the draft EIR should include robust information from multiple sources: aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; California Aquatic

Resources Inventory; and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDB), and the North American Bat Monitoring Program and/or Bat Acoustic Monitoring Portal Visualization Tool. Only with sufficient data and information can SMUD adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://www.wildlife.ca.gov/Conservation/Survey-Protocol.

Botanical surveys for special-status plant species, including those listed by the California Native Plant Society (http://www.cnps.org/cnps/rareplants/inventory/), should also be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and include the identification of reference populations. Please refer to CDFW botanical field surveyor qualifications and protocols for surveying and evaluating impacts to rare plants available at: https://www.wildlife.ca.gov/Conservation/Plants. Elements of Botanical Survey Reports that should be incorporated into the draft EIR are identified in the above referenced protocols.

IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Potential for impacts to special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alternation of soils and hydrology, and removal of habitat structural features (e.g., snags, roosts, overhanging banks);
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic or human presence; and
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.
- Water quality impacts resulting from construction and operation of the Project;
- Impacts both from construction and operation of the Project;
- Impacts to the bed, channel, and bank, in any rivers and streams in and/or downstream of the Project and the direct and indirect effects to fish, wildlife, and

their habitat;

- Impacts to avian and bat species due to Project operation.

The CEQA document also should identify existing and reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to each impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable. Specifically, CDFW recommends that the draft EIR include a discussion of the status of existing wind energy projects that have been approved and are currently operating in Alameda, Contra Costa, and Solano counties. This should include the total number of estimated annual avian and bat fatalities occurring across the Altamont Pass and Solano County Wind Resource Areas, based on past monitoring data and other available sources.

The CEQA Guidelines direct SMUD, as the lead agency, to consider and describe in the draft EIR all feasible mitigation measures to avoid and/or mitigate potentially significant impacts of the Project on the environment based on comprehensive analysis of the potential direct, indirect, and cumulative impacts of the Project. (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.2, 15126.4 & 15370.) This should include a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with the USFWS, the National Marine Fisheries Service and CDFW. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels.

COMMENTS AND RECOMMENDATIONS

Based on the information provided in the NOP CDFW offers the comments and recommendations below to assist SMUD in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and/or indirect impacts on fish and wildlife (biological) resources. **These comments and recommendations are not an exhaustive list and CDFW may provide additional recommendations as more Project specific information is disclosed. The draft EIR must include a full Project Description, Environmental Setting, and Impact Analysis and Mitigation Measures as outlined above.** Editorial comments or other suggestions may also be included to improve the document.

Operational Impacts on Birds and Bats

Project WTGs are expected to have long-term impacts on bird and bat populations over the course of their operations due to ongoing collisions between birds and bats and turbine blades. Species of special concern not listed in Attachment A including, but not limited to, Cooper's hawk (*Astur cooperii*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus hudsionius*), western red bat (*Lasiurus frantzii*), silver-haired bat (*Lasionycteris noctivagans*), and hoary bat (*Lasiurus cinereus*), may be directly impacted.

In order to analyze and mitigate the project's operational impacts on birds and bats, CDFW recommends that SMUD include the following in the draft EIR:

1. Descriptions and maps showing the amount, extent, and precise location of grading for turbine pads and roads, a description of anticipated changes in topography resulting from Project grading, and an analysis of potential changes in overland flow and drainage;

2. An analysis of known bird and bat populations in the area with special focus on special-status species and species that are likely to be impacted by the construction and operations of the Project;

3. A complete habitat assessment for raptor species, including golden eagle (*Aquila chrysaetos*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*) and burrowing owl (*Athene cunicularia*), tricolored blackbird (*Agelaius tricolor*), and bat (*Chiroptera*) within the Project area and nearby surrounding lands. Lands should be assessed for their potential use by breeding, migrating and wintering species. The draft EIR should include results of pre-Project construction avian and bat surveys and a requirement to conduct annual bird and bat surveys during the operational term of the Project;

4. A detailed micro-siting report, including Project topography studies and modeling of anticipated topography changes and an analysis of known bird and bat behavior and use of the Project site. The report should use a quantitative approach based on collision-hazard modeling combined with expert opinion, in addition to a qualitative analysis. The quantitative analysis should include all proposed turbine sites and should factor in proximity to known current and historical nesting sites and any other bird and/or bat attractants. Any particularly hazardous areas for birds and bats related to proposed turbine operations should be identified and avoided;

5. A clear description of turbine size, rotor swept area and height of blades above ground, and a corresponding analysis of impacts of each turbine model on birds and bats. The effects of larger turbines should specifically be analyzed in terms of rotor swept area and distance to ground, as increasing rotor swept area and decreasing ground clearance can lead to increased fatality rates for hoary bats (Garvin et al. 2024); and

6. Estimates of the project's potential mortality for special-status birds and bats over the entire course of its operation, and how ongoing mortalities are likely to affect each target species' local populations.

Mitigation Measures

CDFW recommends the draft EIR include stringent mitigation measures to address bird and bat mortality, including, but not limited to, the following elements:

1. The placement of WTGs on-site should follow micro-siting requirements to avoid high-risk areas based on the micro-siting report described above. Turbines placed in areas determined to be of a moderate risk due to proximity to nesting and roosting areas should be curtailed seasonally to minimize impacts to nesting birds and roosting bats;

2. A qualified biologist should conduct annual surveys for nesting birds, in all potential nesting habitat within a minimum of one mile of the turbine locations. Surveys should be conducted during appropriate nesting seasons for focal species, such as from December 15 to July 15 for golden eagle, typically from early March to early-mid September for other raptors, and March 1 to August 15 for tricolored blackbird. In addition to nesting season surveys, overwintering surveys should also be conducted for burrowing owl from December 1 to January 31. Annual surveys for bat maternity or roosting colonies should also be conducted. Protocol-level survey methodologies should be used, and guidance on survey methodologies for golden eagle, burrowing owl and other species can be found on our website at https://wildlife.ca.gov/Conservation/SurveyProtocols#377281284-birds. CDFW staff are also available to provide additional guidance on appropriate and effective survey protocols. These annual surveys should be conducted during the entire operational term of the Project;

3. Appropriate buffers to avoid noise and visual disturbances of avian and bat species during Project-related construction activities should be established. Protective buffers should be a minimum of 0.5-mile for large raptors, 0.3-mile for burrowing owl and 0.25-mile for smaller sensitive birds such as tricolored blackbird, as well as bat colonies. Less sensitive species may have smaller buffers as deemed appropriate by the qualified biologist. The qualified biologist should conduct regular monitoring of any active raptor nests, and tricolored blackbird and bat colonies documented during annual surveys. The biologist should adjust the no disturbance buffer during construction based on the behavior of the breeding adults and young to avoid nest disturbance;

4. All turbines located within one mile of a golden eagle or Swainson's hawk nest or communal roosting area, and within 0.5-mile of any other raptor nest or tricolored blackbird colony, should be curtailed. Curtailment should occur each year that active nests are detected during surveys. Curtailment of turbines located near raptor nests and tricolored blackbird colonies should be implemented during daylight and crepuscular hours during the entire nesting season or until young have fledged or the nests have been determined by a qualified biologist to be unsuccessful;

5. Turbines should also be curtailed nightly within a minimum of 0.5-mile of a bat colony during the appropriate breeding/roosting season. Curtailment should also occur nightly during the peak fall migration season for bats (typically early August to late November) which is a period that has been associated with high bat fatalities at existing repowered projects in the nearby Altamont Pass Wind Resource Area (APWRA). Seasonal curtailment has been shown to be effective in the APWRA in reducing bat collisions (Smallwood and Bell 2020);

6. For bats, cut-in speeds should be increased during night-time periods during high periods of bat activity such as the migratory seasons. Cut-in speeds should start with five meters per second and increased incrementally through adaptive management until bat mortality is significantly reduced; and

7. The draft EIR should include a detailed adaptive management plan, including mortality thresholds which, if exceeded, will trigger implementation of adaptive management strategies, and a postconstruction monitoring plan to monitor the mortality rate at each turbine for target species as well as birds and bats overall. Monitoring should be conducted during years 1-3, 10-12, and 20-22 post-construction.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to prepare subsequent CEQA documents or to make supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (d) & (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be filled out and submitted online here: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found here: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

CDFW anticipates that the proposed Project, will have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist SMUD in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Gabriele Quillman, Senior Environmental Scientist (Specialist), at (707) 815-9867 or Gabriele.Quillman@wildlife.ca.gov; or Brenda Blinn, Senior Environmental Scientist (Supervisory), at (707) 339-0334 or Brenda.Blinn@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
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Erin Chappell
Regional Manager
Bay Delta Region

ec: Office of Land Use and Climate Innovation (SCH No. 2025101549)
Melissa Farinha, CDFW Bay Delta Region – Melissa.Farinha@wildlife.ca.gov

REFERENCES

Garvin, J. C., Simonis, J. L., & Taylor, J. L. (2024). Does size matter? Investigation of the effect of wind turbine size on bird and bat mortality. *Biological Conservation*, *291*, 110474.

Smallwood, S., and D. Bell. 2020. Effects of Wind Turbine Curtailment on Bird and Bat Fatalities. Journal of Wildlife Management 1–12.

ATTACHMENT A

Common name	Scientific name	Status
Invertebrates		
Crotch's bumble bee	*Bombus crotchiii*	SCE
Western bumble bee	*Bombus occidentalis*	SCE
Amphibians & reptiles		
Northwestern pond turtle	*Actinemys marmorata*	FPT, SSC
California tiger salamander – Central California Coast DPS	*Ambystoma californiense*	FT, ST
Western spadefoot	*Spea hammondii*	FPT, SSC
California red-legged frog	*Rana draytonii*	FT, SSC
Giant gartersnake	*Thamnophis gigas*	FT, ST
Birds		
Tricolored blackbird	*Agelaius tricolor*	ST
Bank swallow	*Riparia riparia*	ST
Golden eagle	*Aquila chrysaetos*	SFP
Bald eagle	*Haliaeetus leucocephalus*	SE, SFP
western burrowing owl	*Athene cunicularia*	SCE, SSC
Swainson's hawk	*Buteo swainsoni*	ST
White-tailed kite	*Elanus leucurus*	SFP
California least tern	*Sternula antillarum browni*	FE, SE, SFP
California black rail	*Laterallis jamaicensis coturniculus*	ST, FP
California Ridgway's rail	*Rallus obsoletus obsoletus*	FE, SE, SFP
Fish		
Green sturgeon - southern DPS	*Acipenser medirostris*	FT, SSC

White sturgeon	*Acepenser transmontanus*	SCT, SSC
Delta smelt	*Hypomesus transpacificus*	FT, SE
Longfin smelt - San Francisco Bay-Delta DPS	*Spirinchus thaleichthys*	FE, ST
Oncorhynchus kisutch	*Coho salmon - central California coast ESU*	SE, SE
Steelhead - Central Valley DPS	*Oncorhynchus mykiss irideus*	FT, SSC
Chinook salmon - Central Valley spring-run ESU	*Oncorhynchus tshawytscha*	FT, ST
Chinook salmon - Sacramento River winter-run ESU	*Oncorhynchus tshawytscha*	FE, SE
Mammals		
Salt-marsh harvest mouse	*Reithrodontomys raviventris*	FE, SE, SFP
Plants		
Mason's lilaeopsis	*Lilaeopsis masonii*	SR
Rock sanicle	*Sanicula saxatilis*	SR
Contra costa goldfields	*Lasthenia conjugens*	FE
Keck’s checkerbloom	*Sidalcea keckii*	FE
Soft salty birds-beak	*Chloropyron molle ssp. molle*	FE, SR

Notes:

FT = listed as threatened under the federal Endangered Species Act; FE = listed as endangered under the federal ESA; FPT = proposed to be listed as threatened under the federal ESA; ST = listed as threatened under CESA or Native Plant Protection Act (NPPA); SE = listed as endangered under CESA or NPPA; SCT = candidate for listing as threatened under CESA or NPPA; SCE = candidate for listing as endangered under CESA or NPPA; SSC = state species of special concern; SFP = state listed as fully protected; 1B.1 = rare, threatened, or endangered in California and elsewhere and seriously threatened in California; 1B.2 = rare, threatened, or endangered in California and elsewhere and moderately threatened in California.