

O9-1 *The commenter introduces the comments from the Environmental Protection Information Center (EPIC) and the Northcoast Environmental Center (NEC) and notes that the project was proposed in an area that CDFW characterized as “Inappropriate for Wind Development” and where there could be “High or Uncertain Impacts to Wildlife.” The commenter further expresses the opinion that the environmental costs of this project are often extreme and that this project will demand more mitigation than what is typically required by other wind energy projects.*

Please see the response to Comment S4-4, which addresses the California Department of Fish and Wildlife’s (CDFW’s) comment about the project being proposed in an area that would be characterized as “Inappropriate for Wind Development” and where there could be “High or Uncertain Impacts to Wildlife.” The remaining comments express an opinion that environmental costs and mitigation will be high. These comments do not raise specific questions or request information that pertains to the adequacy of the DEIR for addressing adverse physical impacts associated with the project, nor does it contain an argument raising significant environmental issues. No further response is required.

O9-2 *The commenter expresses concern that the project as presented in the DEIR would present unacceptable impacts to wildlife that could be avoided or minimized, and expresses the expectation that the project developer will work with the conservation community to reduce impacts.*

The commenter states the opinion that the project poses unacceptable impacts on wildlife and expresses a desire to have the project developer work with the conservation community to reduce impacts. This comment does not raise specific questions or request information that pertains to the adequacy of the Draft EIR for addressing adverse physical impacts associated with the project, nor does it contain an argument raising significant environmental issues. No further response is required. It should be noted that the project applicant has engaged in a series of community outreach events since inception of the project and continues to work with the County and the regulatory agencies to address the project’s impact on the environment.

O9-3 *The commenter describes concerns about the timeline with a construction deadline of December 2020, which the commenter states has introduced uncertainty because multi-year surveys are still ongoing. The commenter also notes the tight deadline has meant that ordinary best practices to avoid and reduce impacts such as wet weather restrictions may be waived to speed up construction, increasing potential risk associated with the project.*

Studies conducted in 2019 for marbled murrelet, northern spotted owl, eagles, and special-status plants have now been completed and are available in Appendix B of this FEIR. Please also see Chapter 1 of this FEIR for a summary of revisions to the project description since circulation of the DEIR and a list of supplemental technical studies completed. The results of the 2019 surveys and resulting additional technical analysis completed supplement the analyses presented in the DEIR. They did not change any of the conclusions reached in the DEIR. The DEIR contains mitigation measures to avoid adverse impacts on the environment from wet weather construction.

O9-4 *The commenter suggests using this project to learn about best practices for wind energy, and toward that end recommends making all data publicly accessible, opening the project site to researchers and to work with Humboldt State University and other institutions to further our collective understanding of wind energy development, and being willing to test new theories and technology to meet our energy demands while simultaneously reducing impacts.*

This request is beyond the scope of CEQA. While the County has the ability to request information from those seeking permits, licenses, or other entitlement to determine whether the proposed project may have a significant effect on the environment, the County is not in a position to publicly release information that may be considered to be proprietary or “trade secrets.” Information that would be generated by the approach suggested by the commenter could include information regarding operating performance under various weather conditions or by particular equipment types and may fall under this category.

Further, CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. Rather, the adequacy of an EIR is determined in terms of what is reasonably feasible, considering factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project.

O9-5 *The commenter provides an overview of CEQA, covering such topics as project impacts, alternatives, and mitigation.*

This overview of CEQA does not raise specific questions or request information that pertains to the adequacy of the DEIR for addressing adverse physical impacts associated with the project, nor does it contain an argument raising significant environmental issues. No further response is required.

O9-6 *The commenter discusses the public trust doctrine, noting that wildlife is a public trust resource.*

This discussion of the public trust doctrine does not raise specific questions or request information that pertains to the adequacy of the DEIR for addressing adverse physical impacts associated with the project, nor does it contain an argument raising significant environmental issues. No further response is required.

O9-7 *The commenter discusses the California Endangered Species Act.*

This discussion of the California Endangered Species Act does not raise specific questions or request information that pertains to the adequacy of the DEIR for addressing adverse physical impacts associated with the project, nor does it contain an argument raising significant environmental issues. No further response is required.

O9-8 *The commenter discusses Fully Protected Species and states that these species may not be taken or possessed at any time and that neither agencies nor the County can issue permits for actions that will result in the take of fully protected species.*

This discussion of Fully Protected Species does not raise specific questions or request information that pertains to the adequacy of the DEIR for addressing adverse physical impacts associated with the project, nor does it contain an argument raising significant environmental issues. No further response is required.

O9-9 *The commenter discusses alternatives to the proposed project and recommends consideration of four additional alternatives: 1) Community Solar Development, 2) Phased Development, 3) Alternative Wind Turbine Design Development, and 4) Minimized Gen-Tie Disturbance.*

Please see Master Response 11, “*Alternatives*,” for a discussion of the alternatives suggested by the commenter. Please also note that the project has been refined since circulation of the DEIR and now includes the shortened gen-tie alignment (previously included in Alternative 2 in the DEIR). Please refer to Chapter 1 of this FEIR for a discussion of this change. Please also see Master Response 1, “*Site Planning and Avoidance Measures*.”

O9-10 *The commenter discusses the Environmentally Superior Alternative and notes that avian collision risk can increase with fog and clouds, stating that this project is poorly sited and that it is in the Cape Mendocino Grasslands Important Bird Area (IBA) where birds such as horned lark, raptors, and marbled murrelets occur. The commenter notes that Alternative 5 would reduce those impacts, and states that it is not clear why Alternative 5 would result in less energy generation. The commenter discusses the changing energy market, noting that as wind energy prices drop demand increases, meaning that once onerous mitigation measures are now more feasible.*

Please see Master Response 5, “*Migratory and Special-Status Birds*,” for a discussion of the Cape Mendocino Grasslands IBA and of the effect of fog and clouds on avian collision risk. Please see Master Response 11, “*Alternatives*,” for a discussion of the alternatives considered.

Regarding the comments on the reduction in risk of developing wind farms due to changing energy markets, and the increased feasibility of mitigation measures due to reduced risk, please note that these comments do not raise specific questions or request information that pertain to the adequacy of the DEIR for addressing adverse physical impacts associated with the project, nor do they contain an argument raising significant environmental issues. No further response is required.

O9-11 *The commenter requests a clear indication of where earth-moving activities and other major disturbances will occur and expresses concerns about project impacts on water quality and hydrology resulting from grading and excavation and the disturbance/cutting of forestlands in an area where the watershed is already degraded. The commenter states that consistency with the Humboldt Redwood Company (HRC) Habitat Conservation Plan (HCP) water quality requirements does not mean the impacts on water quality are less than significant, noting that the impacts of the project are above anything considered in the HCP, and stating that listed salmonids could be adversely affected by sedimentation. The commenter recommends that the DEIR be revised to model total sediment from ground disturbance and include the results of a cumulative watershed effects model in consultation with the North Coast Regional Water Board and National Marine Fisheries Service. The commenter also suggests partnering with efforts such as the “Redwoods Rising” road decommissioning project or other road improvement projects to mitigate project-related watershed impacts.*

As discussed in Master Response 1, Section 3.1, “*Project Siting and Design*,” the project applicant has made refinements to the project to avoid and minimize impacts on sensitive resources throughout the planning and concept design process. Please also refer to Chapter 1 of this FEIR for “*Refinements to the Project Description Since Circulation of the DEIR*” for details on the most recent refinements. These project description revisions are also shown in Chapter 9 of this FEIR and include a reduction of the

disturbance area from 900 acres to approximately 655 acres (due to the narrowing of the 500 foot corridor); re-alignment of the gen-tie to avoid northern spotted owl habitat; reduction of the gen-tie length from 25 to 22 miles and co-location with existing roads wherever possible; reduction of the number of turbines from 60 to 47 and micro siting of turbines to avoid known cultural and sensitive biological resources; overhead crossing of the gen-tie line over the Eel River and relocating it 1.8 miles east of the previous route and other slight routing adjustments; and re-alignment of the access route, adopting the “realigned Jordan Creek access” presented in Alternative 2 in the DEIR. Please see Figure 1-1a and b in Chapter 1 of this FEIR for the revised project footprint. With these reductions of ground disturbance, the amount of potential sedimentation is also reduced.

Please also note that the schedule for construction has changed from that described in the DEIR. The project applicant had originally planned for a construction period of approximately 18 months starting in fall 2019 during the wet season. The project is now slated to begin construction at the staging area at Jordan Creek and the access road onto Monument Ridge across HRC lands in 2020. The 18-month construction period remains unchanged.

Regarding comments on consistency with the HRC HCP, please see Master Response 8, “*Conflict with Adopted HCP.*” The HRC HCP provides measures to avoid impacts on the fish species covered in the HCP (Southern Oregon/Northern California coho salmon, Northern California steelhead, and California coastal Chinook salmon) and describes measures to minimize erosion and sediment delivery to streams. Any drainage constructed along a roadway will be hydrologically disconnected from the waterway, meaning that no direct connection between roadside culverts and a natural drainage will occur. Mitigation Measures 3.5-22a through 3.5-24e of the DEIR require the implementation of erosion control measures for disturbed areas and other Best Management Practices (BMPs) intended to avoid sediment input to watercourses and adverse effects on water quality and fish habitat. These measures include erosion control measures outlined in the Stormwater Pollution Prevention Plan (SWPPP), storm-proofing of roads, driving restrictions during the wet months, and revegetation of disturbed areas after construction. Monitoring would be conducted to determine the effectiveness of BMPs. In addition to submitting water quality monitoring data to the Regional Water Quality Control Board, monitoring results will be also be submitted to the County. If monitoring shows exceedance of any standards in the SWPPP, the County has the ability to impose a temporary shutdown of construction.

With implementation of Mitigation Measure 3.5-28 (Implement Wet-Weather BMPs Consistent with the Humboldt Redwood Company Habitat Conservation Plan or Equivalent BMPs), these measures would effectively avoid and minimize the impacts of project-related erosion and sedimentation on streams that could support listed fish species.

With respect to the recommendation that the DEIR be revised to include the results of a cumulative watershed effects model to assess the impacts of sedimentation on water quality and fish, please note that CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. In reviewing DEIRs, public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated (CEQA Guidelines Section 15204).

An EIR is not inadequate simply because experts in a particular environmental subject matter dispute the conclusions reached by the experts whose studies were used in drafting the EIR, even where different conclusions can reasonably be drawn from a single pool of information. (CEQA Guidelines Section 15151, *Guide to the California Environmental Quality Act [CEQA]* [Remy et al. 2007:499–500]; *Greenebaum v. City of Los Angeles* [1984] 153 Cal. App. 3d 391, 413.) Perfection is not required, but the EIR must be adequate, complete, and a good faith effort at full disclosure (CEQA Guidelines Section 15151). The DEIR for the proposed project provides an adequate, complete, and good faith effort at full disclosure of the physical environmental impacts and the conclusions are based upon substantial evidence in light of the whole record. No further response is required.

O9-12 *The commenter states that the DEIR provides an inadequate discussion of potential impacts to bat species other than hoary bats, particularly for western red bat and silver-haired bat. The commenter discusses collision risk for western red and silver-haired bats, expressing the opinion that these species are at high risk. The commenter also discusses potential project impacts on Mexican free-tailed bats from both construction and operation. The commenter requests additional analysis of impacts on these three species.*

Pages 3.5-134 through 3.5-136 of the DEIR provide a sufficient discussion of potential operational impacts of the project on bat species that could occur in the project area, including western red bats, silver-haired bats, and Mexican free-tailed bats, to assess the operational impacts of the project on bats. Much of the bat impact discussion appropriately focuses on hoary bats because of their high mortality rates associated with wind farms and the exceptionally high numbers of hoary bats documented near the project site at Humboldt Redwoods State Park. However, the analysis also notes that threats associated with the proposed project are similar for the other bat species found in the area, in addition to hoary bats. Additional discussion of western red bats, silver-haired bats, and Mexican free-tailed bats would not change the conclusion that operational impacts of the project on bats occurring in the project area are potentially significant.

O9-13 *The commenter states that the DEIR provides a convincing case that construction impacts may pose significant impacts on bat roosts and hibernacula but fails to make an adequate showing that artificial structures can compensate for native structures. The commenter requests that the DEIR be revised to demonstrate the effectiveness of artificial roost structures, or in the absence of evidence, incorporate other proven mitigation measures, such as conservation easements for known Townsend's big-eared bat habitat.*

Artificial tree roosts have been successfully occupied by other cavity-roosting bat species (The Wildlife Society 2014) and CDFW recommends the creation of artificial roosts as a management approach for Townsend's big-eared bats. In CDFW's *Status Review of Townsend's Big-Eared Bat In California* (CDFW 2016a page 59), one of their management recommendations is to create artificial roosts: "Implement basal hollow creation projects to increase opportunities for Townsend's big-eared bats to use tree roosts in coastal redwood forests (and possibly interior forests where large tree species, such as giant sequoia, have the potential to serve as roost sites.)" The commenter has provided no evidence supporting the assertion that conservation easements are a proven mitigation strategy for impacts on Townsend's big-eared bat, and CDFW 2016a does not include conservation easements among its management recommendations for this species. No revisions to the language in the DEIR are necessary.

O9-14 *The commenter notes that the DEIR correctly found that operational impacts on bats before mitigation are potentially significant, but states that the proposed mitigation measures do not reduce the impacts to less than significant.*

Please see Master Response 4, “Bats,” for additional discussion of project impacts on bats and refined language that has been added to Mitigation Measure 3.5-18d (Implement Operational Minimization Measures and Mitigation) in the DEIR to further clarify proposed mitigation. Section 3.5 in Chapter 9 of this FEIR provides a track change version of the bat mitigation measures.

This revision to the mitigation measure does not change the analysis or conclusions of the DEIR, but rather provides additional detail requested by the commenter on the proposed approach for mitigation.

O9-15 *The commenter states that while creation of a Technical Advisory Committee (TAC) is an important component of mitigation, it should be a part of a full suite of mitigation measures to reduce impacts on bat populations. The commenter notes that the TAC would only meet after the first year of operation, during which time substantial impacts on bat populations could occur, and recommends that the TAC convene before project implementation. The commenter also requests that adaptive management be included as part of the TAC approach to track ongoing impacts and incorporate emerging science to meet the County’s obligations to protect bat populations.*

Please see Master Response 4, “Bats,” and Mitigation Measure 3.5-18a (Avoid and Minimize Bat Population Level Declines through Consultation with a Technical Advisory Committee), which has been revised as stated above to incorporate the commenter’s suggestion that the TAC convene before operation of the project. These revisions to Mitigation Measure 3.5-18a do not change the analysis or conclusions of the DEIR, but rather provide additional detail requested by the commenter on the operation of the proposed TAC.

Please note that Mitigation Measure 3.5-18d (Implement Operational Minimization Measures and Mitigation) includes an adaptive management approach, as requested by the commenter. This refined mitigation measure does not change the analysis or conclusions of the DEIR, but rather provides additional detail requested by the commenter on the proposed approach for mitigation.

O9-16 *The commenter requests that the TAC be composed solely of subject matter experts and makes suggestions for potential organizations that could be represented on the TAC and makes other suggestions regarding the role of the County on the TAC, TAC facilitation, and funding.*

Please see Master Response 4, “Bats,” and Mitigation Measure 3.5-18a (Avoid and Minimize Bat Population Level Declines through Consultation with a Technical Advisory Committee), which has been revised to incorporate the commenter’s suggestions regarding the TAC. These revisions to Mitigation Measure 3.5-18a do not change the analysis or conclusions of the DEIR, but rather provide additional detail requested by the commenter on the proposed TAC.

O9-17 *The commenter states that the DEIR fails to propose feasible measures to mitigate operational impacts on bats, and cites recent scientific publications noting that bat fatalities at wind energy facilities could be minimized by informed curtailment. The commenter states that curtailment during high risk periods has*

*been demonstrated to be a feasible and effective mitigation measure that resulted in minimal loss of power generation.*

Please see Master Response 4, “Bats,” and a refined mitigation measure that has been added to the FEIR, Mitigation Measure 3.5-18d (Implement Operational Minimization Measures and Mitigation), which describes a stepwise approach to implementing minimization measures, including acoustic deterrence and curtailment, as will be guided by the TAC. This refined mitigation measure does not change the analysis or conclusions of the DEIR, but rather provides additional detail requested by the commenter on the proposed approach for mitigation.

- O9-18 *The commenter states that the DEIR contains insufficient information to accurately gauge the impacts of the project on northern spotted owls. The commenter states that the DEIR does not provide an adequate assessment of temporary impacts associated with the construction of the transmission line, noting that the impacts are not temporary but should be considered permanent because decades would be required for the habitat to provide roosting or nesting habitat for spotted owls. The commenter states that the DEIR is missing critical information, such as the location of known nest sites and the amount of habitat affected within 0.7 mile of known nest sites. The commenter also states that additional information is available on northern spotted owls that is not captured by a CNDDDB record search.*

Please see Master Response 3, “Northern Spotted Owl,” for an updated summary of temporary and permanent impact acreages, a discussion of known activity centers and the amount of habitat affected within 1.3 miles of these activity centers, and a refined mitigation measure for impacts on northern spotted owl habitat. Please also see *Northern Spotted Owl Activity Center Occurrences Discussion and Figures* by Stantec Consulting Services, Inc., dated September 30, 2019 in Appendix B of this FEIR. Additional surveys were conducted in 2019 for northern spotted owls as described in *Northern Spotted Owl Survey Results 2019* prepared by ICF, dated September 2019. This study is also included in Appendix B of this FEIR. This discussion and refinement to the mitigation measure does not change the analysis or conclusions of the DEIR, but rather provides additional detail requested by the commenter.

- O9-19 *The commenter suggests that the County work with the conservation community and owl experts to identify northern spotted owl compensatory mitigation lands that are high-priority areas (areas that are both important to the survival and recovery of the northern spotted owl and are at risk from development or timber production). The commenter suggests these areas occur within the general vicinity of the project area, such as the “Hole in Headwaters” as well as areas within the Timber Harvest Plan in the Rainbow Ridge area. The commenter offers assistance with identifying these areas.*

Please see Master Response 3, “Northern Spotted Owl,” and *Potential Sites for Off-Site Mitigation of Loss of NSO Habitat* by Stantec Consulting Services, Inc., dated October 17, 2019 in Appendix B of this FEIR, which describes mitigation parcels.

- O9-20 *The commenter states that barred owl removal is a potentially effective tool to aid in the recovery of the northern spotted owl and encourages this approach as mitigation for project impacts on northern spotted owls.*

Please see Master Response 3, “*Northern Spotted Owl*,” regarding proposed mitigation approaches for northern spotted owl that include the acquisition of lands that would provide high value habitat to northern spotted owls and potentially barred owl management.

- O9-21 *The commenter discusses the population of horned larks present on the Bear River Ridge portion of the project and the taxonomic uncertainty for this population and expresses the opinion that the DEIR should adopt a conservative approach and assume for planning purposes that the project’s horned larks are the federally listed streaked horned larks.*

Please see the response to Comment S4-12, which concludes that it is unlikely that there are streaked horned larks in the vicinity of the project and provides supporting information for this conclusion.

- O9-22 *The commenter describes the DEIR’s analysis of construction impacts on nesting and foraging habitat for birds. The commenter expresses the opinion that the DEIR fails to address nesting behavior by horned larks and states that it is not clear how the DEIR mitigation measures would reduce impacts below a level of significance. The commenter notes that the DEIR fails to consider mitigation that would avoid impacts on nesting horned larks, such as avoiding construction activity during the breeding season, in addition to the other commitments already outlined in Mitigation Measure 3.5-12, or avoiding impacts altogether by adopting Alternative 5.*

Please see the response to Comment S4-12, which discusses potential construction impacts on the horned lark population, and Master Response 11, “*Alternatives*,” for a discussion of alternatives.

- O9-23 *The commenter notes that the DEIR identifies the collision risk to horned larks as potentially significant, and proposes Mitigation Measure 3.5-14 to mitigate project impacts, but that it is not clear how this measure would reduce impacts to less than significant. The commenter states that the mitigation is too vague and that without any standards or metrics the measure is too open ended. The commenter reiterates the recommendation that these impacts be avoided by adopting Alternative 5.*

Please see the response to Comment S4-12, which discusses operational project impacts on the horned lark population, and Master Response 11, “*Alternatives*,” for a discussion of alternatives.

- O9-24 *The commenter states that raptors are particularly susceptible to mortality at wind farms and notes that the DEIR considers impacts on raptors to be significant and unavoidable. The commenter expresses the opinion that the DEIR has failed to exhaust all meaningful and feasible potential mitigation measures and describes camera-based automatic bird detection systems (such as *IdentiFlight*) that have been successfully paired with operational curtailment to reduce impacts.*

Please see Master Response 2, “*Marbled Murrelet*,” specifically answer 2e, which explains why unknown post-operational curtailment regimes would cause the proposed project to be infeasible and not financeable. Please also see response O9-26 below. Automated visually based detection technology (i.e., *Identiflight*®) is currently considered experimental and this technology has not yet demonstrated that it can reliably detect raptors or provide adequate curtailment response times to minimize the probability of collision.

O9-25 *The commenter discusses the marbled murrelet collision risk model results and notes that the estimate of collision impacts is extremely sensitive to the "collision avoidance rate." The commenter notes that the sensitivity analysis only considered a 1% change in this rate, while valuating a 10% change for other model parameters. The commenter requests clarification as to how the collision avoidance rate was defined, and what, for example, a collision rate of 0.98 means, and states that limited data or studies are available which are comparable to conditions common at the project site and for a species like marbled murrelets. The commenter expresses the opinion that it is overly optimistic to assume a 98% or more conservative 96% avoidance rate and that the DEIR should address this issue. The commenter recommends including, at a minimum, 90% and 95%, in addition to 98% avoidance rates. The commenter notes that researchers have concluded that avoidance behavior is likely to vary according to conditions, and that avoidance rates would be much reduced at times of poor visibility, in poor weather, and at night. The commenter also expresses concern regarding the impact of turbine lighting on murrelet collision risk because some project turbines will be illuminated to meet federal aviation safety requirements.*

Collision risk models are known to be sensitive to avoidance rates, but they are also sensitive to additional inputs such as passage rate, operational time, number of turbines, and location of turbines. Avoidance is a simple multiplier in the model and the sensitivity analysis was applied to complement the model output. The reported change in risk for a 1% change in avoidance is a common and accepted way for an evaluator to assess effect, depending on what an evaluator considers to be the appropriate consideration of avoidance. For example, if an evaluator wanted to determine risk for an avoidance of 0.96 rather than 0.98 (two percentage points difference), it would require multiplying the reported change in risk by two and adding that to the number of birds impacted based on an avoidance of 0.98.

Please see Table 5 in the *Marbled Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California: 2-Year Report*, prepared by H.T. Harvey & Associates, dated September 2019, in Appendix B of this FEIR. This table describes risk for a range of avoidance (0.99, 0.98, 0.97, 0.96, 0.95). When considering avoidance rates lower than 0.95, it is important that evaluators consider this data in the context of avoidance typically exhibited by birds, as observed by actual studies. Empirical measures of avoidance less than 0.95 with adequate precision to be reliable have not been documented for any birds other than a few raptors or soaring birds. Further, birds with empirical measures for avoidance rates averaging less than 0.98 have been raptors that were territorial and hunt among turbines or reflected inadequate sampling.

Regarding the definition of collision risk, consider that birds approaching wind turbines can avoid interaction in three ways: avoiding the area with turbines entirely, flying above or around turbines, or taking evasive action when they fly near a rotor swept zone. Birds at both land- and ocean-based wind facilities are known to avoid turbines using a combination of all three measures, which are commonly lumped into one value in models due to the difficulties of measuring each behavior separately (although some reports fail to include all three in their reported measures, thus underestimating overall avoidance). At onshore wind facilities, most birds actively avoid entering a rotor swept zone and being struck by turbine blades. Hunting birds in search of prey are an exception; they are more prone to collision as they are frequently distracted by the pursuit of prey and defense of territories while flying near turbines. Murrelets do not forage or defend territories along either ridge and are expected to detect and avoid turbines similar to non-raptors that transit near turbines. An avoidance of 0.98 means that the percentage of birds observed colliding with a turbine is only 2% of what would be expected in the absence of

avoidance. The expected number of collisions in the absence of avoidance is derived from: 1) the area that is occupied by rotors, 2) bird passage rate at risk height through that area, and 3) the physical characteristics of turbines (blade width, speed) and birds (size, flight speed, flight style) that influence the probability of collision. Importantly, even if a bird enters a rotor swept zone, the chance of being struck is quite low (4%–5% for a bird the size and speed of a murrelet, even at the fastest rotational speeds of blades). Overall avoidance is the cumulative effect of behavioral responses elicited by wind farms at various scales, including turbine arrays, individual turbines, and each rotor swept area, which includes birds that exhibit micro-avoidance by altering their flightpath at a distance from wind facilities, which is very difficult to measure.

Regarding the comment that the collision risk model in the DEIR (Appendix O) does not cite any avoidance rate data or studies that are comparable to conditions common at the project site and for marbled murrelets, please note that there are no operating wind facilities in the range of the murrelet. Appendix A of the updated collision risk model (*Marbled Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California: 2-Year Report*, in Appendix B of this FEIR) provides an expanded summary of what is known regarding avoidance for birds transiting through onshore wind facilities in a variety of landscapes, including mountainous areas and during times of poor visibility in areas where fog is frequent and during the nocturnal period when ambient light is less than what would be expected for murrelets transiting inland. An additional analysis is also provided with a more detailed documentation of avoidance in birds. In brief, 152 studies or monitoring programs were examined, of which 35 (34 measured at terrestrial wind facilities and one from an offshore facility during the nocturnal period) had sample sizes adequate for precision to the 0.01 level. All 35 estimates of avoidance were used as an input for a Bayesian analysis to allow for an estimation of the most likely avoidance and resulting risk. This new analysis provided an opportunity to also estimate uncertainty in risk based on the estimates of avoidance. The conclusion from the Bayesian analysis was that the estimates produced by the deterministic model were conservative.

With respect to the commenter's request for additional analysis regarding avoidance rates for marbled murrelets in poor weather and light conditions, please see Section c in Master Response 2, "*Marbled Murrelet*." Regarding the request that the impact of turbine lighting on murrelet collision risk be discussed in the DEIR, please note that because murrelets do not fly in total darkness, aircraft warning lights should not affect the perception of the turbines by murrelets at night. There are no reports of marbled murrelets being attracted to lighted objects during flight.

O9-26 *The commenter states that the proposed mitigation for marbled murrelets relies to a large extent on a single approach: compensatory mitigation via nest predator management on Van Duzen County Park lands. The commenter expresses the opinion that while predator management as proposed is reasonable as part of a mitigation program, a more diverse mitigation program would be more robust and effective, and notes the uncertainties associated with the predator management approach and potential for overestimating the effect. The commenter states that the DEIR should evaluate curtailment as an avoidance option. The commenter notes that Mitigation Measure 3.5-2a calls for avoiding placing wind turbines in areas characterized by high passage rates for marbled murrelets and requests more details on this avoidance approach. The commenter expresses the opinion that the risk zones provided by the project applicant are difficult to interpret and run counter to information presented by other projects. The commenter also offers the opinion that without any data on murrelet risk for Shively Ridge, it was*

*speculative to suggest that siting turbines on Monument and Bear River ridges would have lower impacts to murrelets than would siting on Shively Ridge. The commenter suggests that the DEIR should consider other mitigation options, including evaluating the closure or relocation of campgrounds and/or picnic areas (focal areas for human food sources for corvids) within murrelet nesting habitat to other locations to reduce predation risk, or compensatory mitigation in the form of habitat replacement for marbled murrelets.*

Since circulation of the DEIR, the project applicant has made numerous refinements to the project design to reduce impacts on marbled murrelets and other sensitive biological resources. Please see Master Response 1, “*Site Planning and Avoidance Measures.*” and “*Refinements to the Project Description*” in Chapter 1 of this FEIR for details on the refinements. The collision risk model analyzed passage in zones as a way to identify areas of both ridges that were associated with higher marbled murrelet passage rates, and thus would be available for use in a minimization or avoidance strategy. This analysis was used to inform a new layout with 13 fewer turbines (reduction from 60 to 47 turbines), representing a 21.6% decrease in the number of turbines. This reduction included removal of all turbines in the three zones with the greatest documented marbled murrelet passage rates. Using the existing deterministic model and holding all variables constant except the revised turbine layout and the correction for winds below operating speed, projected take of murrelets was reduced by 55% when compared to the model used in the DEIR.

*The Marbled Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California: 2-Year Report*, in Appendix B of this FEIR provides figures depicting marbled murrelet passage rates.

These project description refinements are also discussed in the refined Project Description in Chapter 9 in this FEIR. Turbines have been reduced from 60 to 47, and turbines have been eliminated from high-risk areas, resulting in a 55% decrease in the estimated take of marbled murrelets (4.65 birds in 30 years).

Please see the *Compensatory Mitigation Strategy for Marbled Murrelets Impacted by Operation of the Humboldt Wind Project*, prepared by H. T. Harvey & Associates, dated September 2019, and *Supplement to Compensatory Mitigation Strategy for Marbled Murrelets Impacted by Operation of the Humboldt Wind Project* by H.T. Harvey & Associates and Stantec Consulting Services, Inc., dated October 3, 2019 in Appendix B of this FEIR for a thorough discussion of the proposed marbled murrelet mitigation strategy. Please also see Section e of Master Response 2, “*Marbled Murrelet*,” for a discussion addressing the topic of curtailment as a mitigation measure for the operational impacts on marbled murrelets.

With respect to the comment that the risk zones provided by the project applicant are difficult to interpret and run counter to information presented by other projects, please note that risk assessments are unique to each project because turbine layouts differ, orientation of turbines relative to murrelet flight paths differs, proximity to murrelet nesting habitat differs, and most importantly survey effort differs. Other risk assessments have not had adequate data to objectively develop spatial extents of high-risk areas. The radar monitoring for this project was designed to identify high-risk zones. The increased radar survey effort associated with this project was key to obtaining data with sufficient resolution to make this determination. Please note that Tables 2 and 3 in the original collision risk assessment included in the DEIR describe the calculated passage rate and associated risk for each zone in 2018. The *Marbled*

*Murrelet Collision Risk Assessment Associated with the Humboldt Wind Project Proposed for Humboldt County, California: 2-Year Report*, in Appendix B of this FEIR, provides figures depicting marbled murrelet passage rates.

With respect to the commenter's statement that it is speculative to suggest that siting turbines on Monument Ridge and Bear River Ridge would have lower impacts to murrelets than would siting the turbines on Shively Ridge. Please note that originally the project proposed turbines for Shively Ridge and that radar sampling stations were established on Shively Ridge. In a field site visit with USFWS to Shively Ridge in 2018 prior to beginning sampling, USFWS representatives expressed strong concern about placing turbines on Shively Ridge based on the known murrelet use of the Van Duzen watershed and their experience on those lands during development of the PALCO HCP (now HRC HCP). In response to those concerns and others, the radar stations were subsequently disassembled and moved to Bear River Ridge and Monument Ridge. It is not possible to quantify the extent of the concerns originally expressed by USFWS, as radar data was not collected on Shively Ridge.

Regarding the commenter's suggestion of mitigation that would involve closure or relocation of campgrounds and/or picnic areas (focal areas for human food sources for corvids) within murrelet nesting habitat to other locations to reduce predation risk, please note that the project applicant did consider these options. However, managing agencies for the campgrounds and picnic areas did not support that approach; therefore, that potential mitigation was found to be infeasible.

With respect to the comment that the DEIR should discuss compensatory mitigation in the form of habitat replacement, please note that mitigation in the form of habitat replacement is not practical or feasible. In California, most of the nesting habitat for murrelets is already in federal, state, or municipal ownership. For the few small patches not currently protected, acquisition for mitigation would require a landowner willing to sell. In discussions with the regulatory agencies and the project applicant, no properties were identified that were known to have murrelets and a willing landowner. Furthermore, lands that are isolated, of small size (fewer than 124 acres), have high edge-to-area ratios, lack murrelets, or are unlikely to soon return murrelets to the population or aid in recovery. The project proponent instead chose a strategy of providing habitat enhancements to stands that are capable of supporting murrelets but which are presently degraded.

With respect to the suggestion that the project be curtailed to avoid impacts to murrelets, the applicant has already agreed to remove the highest risk turbines from the project, thus reducing the projected risk of collisions with murrelets from 10.43 in the DEIR to 7.7 in the FEIR. With respect to curtailing the remainder of the turbines, which are considered to be lower risk for murrelet, the County believes that curtailment of the remaining turbines would not be as beneficial to the murrelet population as the proposed mitigation focused on corvid management. Curtailment would also result in a loss of renewable energy production.

Conservatively, the number of murrelets projected to be at risk of collision over the life of the project with 47 turbines is projected to be a maximum of 7.77 birds. The corvid management program, in contrast, is projected to result in reproductive success for 48 to 97 murrelets over the course the project's life. Please also see Master Response 1, "Site Planning and Avoidance Measures

O9-27 *The commenter recommends that in addition to considering curtailment and the DEIR mitigation measures, the project should consider and evaluate other mitigation actions, and provides as recommendations from USFWS (2011) for short- and long-term conservation actions. The commenter notes that acquisition of habitat for northern spotted owls was proposed and that this should also be proposed for marbled murrelets. The commenter also recommends that the DEIR evaluate closure or relocation of campgrounds and/or picnic areas (focal areas for human food sources for corvids) within murrelet nesting habitat to other locations to reduce predation risk.*

The applicant initially considered several long-term projects that could ultimately have added new nesting habitat or added protections to existing habitat. However, these projects would require development time well beyond the project (100+ years to effect, time to grow trees, etc.) and could not be considered compensatory within the same timeframe as the project. Consequently, these kinds of projects did not garner agency support to meet the compensatory mitigation requirement.

Regarding the commenter's suggestion of mitigation that would involve closure or relocation of campgrounds and/or picnic areas (focal areas for human food sources for corvids) within murrelet nesting habitat to other locations to reduce predation risk, please note that the project applicant considered these options. However, managing agencies for the campgrounds and picnic areas did not support that approach, therefore that potential mitigation was found to be infeasible.

O9-28 *The commenter states that the DEIR impact assessment uses only the results of pre-project marbled murrelet radar surveys from one nesting season but that the murrelet survey design, as presented to the public and public agencies on multiple occasions, called for two full years of radar surveys. The commenter requests any and all radar surveys beyond those described in the DEIR and a discussion of how results of additional surveys would be incorporated into the murrelet impact assessment. The commenter requests that the FEIR incorporate full survey results into the collision risk model and all other aspects of the risk assessment and mitigation, and conduct surveys in the area of overlap to compare between-year variation in passage rates for the overlap area. The commenter states that this would provide valuable information for evaluating the 2018 passage rates and associated collision risk in comparison to other years. The commenter notes that the murrelet collision risk assessment, Appendix O, discloses that the previous radar surveys along Bear River Ridge in 2006 and 2007 (Sanzenbacher and Cooper 2010) reported an average murrelet passage rate about 2.7 times greater than what was observed in the 2018 radar surveys conducted for this project, and requests a discussion as to the extent to which the higher passage rate observed by these studies is explained by different survey locations versus different underlying passage rates between years, or methodologic differences. The commenter notes that the County must recirculate the DEIR if Year 2 studies reveal significant new information.*

Please see *Humboldt Wind Energy Project Marbled Murrelet Radar Survey Report – Year 2: October 2018–September 2019* by H.T. Harvey & Associates, dated September 2019 in Appendix B of this FEIR. Two breeding seasons of radar data are now available to assess passage rates and collision risk. The second year of radar data confirms the conclusions drawn from the first year of data. The second year of survey data does not change the analysis or conclusions of the DEIR.

Regarding the commenter's request for surveys in the area of overlap from previous years to compare between-year variation in passage rates to provide information for evaluating the 2018 passage rates and

associated collision risk in comparison to other years, please note that oceanic conditions that affect breeding effort and thus the magnitude of inland flights by murrelets occur over periods of decades. The researchers conducting the collision risk modeling for the project developed a mechanism to provide better accuracy in the revised Humboldt Wind collision risk model using long-term monitoring data from the Eel River Valley (Humboldt Redwood Company 2019). These data allowed researchers to correlate passage with ocean productivity; years with better ocean productivity have more inland flying birds because there is a greater proportion of the population that engages in reproduction when food supplies are good. Thirty-five years of ocean productivity metrics were considered, and the best predictor for murrelets (the PDO index) was used in the deterministic modeling to correct for inter-annual variability. In the Bayesian model (referenced above), we used 118 years of the PDO to forecast inter-annual variability. Based on these assessments, 2018 passage rates varied only slightly from an “average” year and there will be years where passage is greater and years where passage is lower than what was observed in 2018. Please see *Humboldt Wind Energy Project Marbled Murrelet Radar Survey Report – Year 2: October 2018–September 2019* in Appendix Bof this FEIR for more information.

With respect to the comment that the previous radar surveys were conducted along Bear River Ridge in 2006 and 2007, please note that the risk assessment conducted for the previously proposed ShellWind Project ultimately did not include the area that overlaps the Humboldt Wind Project. In ShellWind’s final analysis, they used only the northwestern radar samples, which are closer to the ocean and at lower elevation than the project.

Regarding the comment about the extent to which the higher passage rate observed by Sanzenbacher and Cooper (2010) is explained by different survey locations versus different underlying passage rates between years, or methodologic differences, please note that model and radar techniques used in the ShellWind Project differed from the Humboldt Wind Project in a few substantial ways, which makes direct comparison of reported absolute numbers inappropriate without standardization. In the updated collision risk assessment, researchers corrected the model adjustments in the ShellWind assessment to conform to the better data collected in the Stantec radar study (use of empirical measures instead of assumptions). When the two passage rates are standardized, the comparable Stantec passage rate is 55% greater than the ShellWind passage rate. It is important to recognize that these different passage rates are calculated for different regions of the ridge.

O9-29 *The commenter states that the DEIR lacks any information on the methods for estimating the value of the proposed compensatory mitigation at Van Duzen County Park and requests a complete compensatory mitigation modeling report for full public review and comment so that sufficient information is provided for evaluating the likelihood of mitigation success. The commenter also requests that the report address the potential for current nest success rates to be substantially higher (and nest predation rates lower) than the rates often used, and expresses the opinion that the success of this mitigation measure will likely be less than predicted. The commenter states that monitoring of the marbled murrelet population under the federal Northwest Forest Plan indicates that the murrelet population in California north of San Francisco has been increasing by an average of 4.5% per year between 2000 and 2017 (McIver et al. 2019) and that this rate of population increase is not consistent with the low rate of nest success typically attributed to the species. The commenter speculates that while there are multiple hypotheses for this inconsistency, one possible explanation is that nest success observed in field studies may be lower than found in the population at large, due to the effects of the study itself, including the capture and*

*attachment of radio transmitters to breeding murrelets (Peery et al. 2006). The commenter notes that predator-proof trash receptacles are already available at Pamplin Grove and Swimmers Delight facilities of the park, that no surveys have been conducted to date to validate the model's assumptions of high density or corvid nests, and that the DEIR should address how food subsidies from the 40 to 50 residences at nearby Riverside Park could affect the mitigation benefit estimates.*

Please see *Compensatory Mitigation Strategy for Marbled Murrelets Impacted by Operation of the Humboldt Wind Project*, prepared by H. T. Harvey & Associates, dated September 2019, and *Supplement to Compensatory Mitigation Strategy for Marbled Murrelets Impacted by Operation of the Humboldt Wind Project* by H.T. Harvey & Associates and Stantec Consulting Services, Inc., dated October 3, 2019 in Appendix B of this FEIR for a thorough discussion of the proposed marbled murrelet mitigation.

Regarding the commenter's statements about obtaining adequate information about the rate of murrelet population increases, please note that radio telemetry is the only way to obtain productivity measures with adequate sample sizes for murrelets. Most investigators (Peery, Golightly, Raphael, Nelson) utilizing radio telemetry acknowledge that there may be study impacts from attaching radio transmitters to adults; specifically, these devices immediately impact the adult's ability to fly and dive for food. While these studies do report frequent failure of nests, there is no link suggesting that these devices alter (increase or decrease) predation rate on eggs and chicks. Notably, high predation rates (principally by corvids) have been documented using various methods that do not involve telemetry, including video and artificial egg experiments. The preponderance of evidence strongly suggests that nest predation occurs at high rates and that corvids are a major predator.

With respect to the comment that monitoring of the marbled murrelet population north of San Francisco, and the 4.5% per year increase not being consistent with the low rate of nest success typically attributed to the species, please note that there is no support for a contradiction between high predation rates and at-sea surveys within one management zone (at-sea trend described in McIver et al. 2019). The zones are not ecological units. The "all zone" abundance of murrelets does not show a trend. Researchers know from recent studies in Oregon that murrelets will move along the coast at the time of the surveys if food is poor in a region and this movement will potentially cause large changes in survey results at finer scales. Others have also reported between-zone movement at various temporal and spatial scales (Peery et al. 2010, Hebert and Golightly 2007, Lorenz et al. 2016). Thus, a more plausible explanation would be increased movement between zones at the time of the surveys. McIver et al. (2019) specifically note the increase in one area is contrasted with a decrease in another. Although also speculative, there is another positively correlated activity in Zone 4 (Northern California) that could change the overall situation for the population: the "Crumb Clean Campaign." Speculation by some has suggested that a positive outcome from this effort is reflected in the at-sea surveys. If so, it does not diminish but rather supports the need for action to correct the anthropogenic food supply in Van Duzen County Park.

Regarding the commenter's statements about predator-proof trash receptacles already being available at Pamplin Grove and Swimmers Delight facilities of the park, this observation is correct: Van Duzen County Park has made strides to obtain "bear proof" trash receptacles. However, corvids can derive a substantial amount of their energy needs from what would appear to humans to be just "crumbs." Thus, the Crumb Clean Campaign requires the comprehensive control of anthropogenic-supplied foods and that all avenues of the supplemental feeding of corvids be managed (referred to as comprehensive corvid

management). This includes food lockers in camping sites, appropriate recycling facilities, and water system infrastructure to eliminate food scraps under faucets. All these attributes can be seen by visiting Humboldt Redwoods State Park or Redwood National and State Parks (RNSP) but are absent from Van Duzen County Park.

With respect to the commenter's statement that no surveys have been conducted to date to validate the model's assumptions regarding the high density of corvid nest predators in the proposed mitigation area and vicinity, please note that a recent study commissioned by Humboldt County Public Works reported the presence of significant corvid activity in and around Van Duzen County Park and neighboring Cheatham Grove (at 15 of 16 survey stations). Regarding Riverside Park, the applicant is working with the County to explore whether Riverside Park could be included in the corvid management campaign. It is important to recognize that the Central California Coast parks have many of these same issues with neighbors and have effectively applied the Crumb Clean Campaign. Despite having more neighbors than the small community of Riverside Park, as well as commercial food vendors and waste management facilities, the Central California Coast parks have reduced corvid abundance in the old-growth forests within the parks (Suddjian 2009). The quantitative expectations for the proposed mitigation in Van Duzen County Park were derived from these same central California parks.

O9-30 *The commenter requests a thorough assessment of collision risk throughout the gen-tie route, noting that the DEIR discusses this briefly on page 3.5-77, but cites only an unavailable 2010 report by Cooper that found an avoidance rate of 1.0. The commenter also notes that the DEIR's discussion of the fatal April 2015 marbled murrelet powerline collision in Redwood National and State Parks were not "suspected collisions" but almost certainly caused by collision with transmission lines. The commenter further notes that the DEIR discusses avoiding placing turbines on Shively Ridge because of the risk of murrelets flying over that ridge, but much of the powerline is in proximity to murrelet flight paths, including along Shively Ridge.*

Regarding the two reported observations of murrelets colliding with powerlines in Redwood National and State Parks (RNSP), that collision involved distribution lines that are closer to the ground and had smaller diameter wire relative to the transmission lines studied by Cooper (2010). More importantly, these two cases in RNSP were where the lines passed through a meadow in the middle of significant murrelet nesting habitat. Consequently, these lines were exactly where murrelets would fly (at a low level above ground and while distracted by the social and mating activity associated with the immediately adjoining nesting habitat). Thus, the one study does not contradict the other observations, but represents two different situations.

The gen-tie powerline will not pass through murrelet nesting habitat and will avoid all nesting habitat. Avoiding marbled murrelet nesting habitat avoids the situation referenced in RNSP. Avoiding sites near nesting habitat allows for ingress or egress by murrelets at tree height into or out of the nesting habitat without exposure to the gen-tie powerline. In general, murrelet exposure to the gen-tie powerline will be minimal as great lengths of this line will be shielded by the adjacent second growth forest that is taller than the height of the top wire. Where wire height is below canopy height and not in nesting habitat, the risk of murrelets being exposed to the powerline should be very low. Where the ridge top is not forested and shielding by adjacent second growth forest does not occur, the line will utilize bird diverters.

Diverters improve the visibility of the lines and can be effective for transiting birds that are flying at a low

height over the ridge. Not all lines in open space will have diverters, but in locations likely to have low-flying murrelets, passive diverters will be applied.

O9-31 *The commenter states that the DEIR fails to do any analysis on the likelihood of take for bald and golden eagles and fails to look at the rate by which other projects have taken these species or apply any modeling to predict the likelihood that a bald or golden eagle will be taken. The commenter notes that both bald and golden eagles are fully protected species and states that the proposed compensatory mitigation, while perhaps necessary for a federal eagle take permit, is not sufficient and cannot make legal the taking of a fully protected species.*

Please see Master Response 5, “*Migratory and Special-Status Birds,*” Master Response 6, “*Eagles and Other Raptors,*” and response to Comment S4-16.

O9-32 *The commenter expresses the opinion that the discussion of the HRC HCP in the DEIR project setting section is misleading because it implies that the HCP is not applicable to the project activities. The commenter states that because some of the project activities are covered activities under the HCP, the HCP conditions must be followed. The commenter also notes that because the project would significantly impact many of the species covered under the HCP, impacts from the project could prevent the HCP from achieving its objectives for the conservation of species such as the marbled murrelet. The commenter states that the DEIR fails to address the fact that the project take of marbled murrelet may exceed that permitted under the HCP and therefore undermine the conservation promised by the landowner under the HCP.*

Please see Master Response 8, “*Conflict with Adopted HCP.*”

O9-33 *The commenter states that the DEIR acknowledges that the project logging and road construction are covered activities under the HCP, but then ignores the operational impacts of the project on covered species under the HCP, even though those impacts would not occur but for the construction activities. The commenter states that because the operational impacts to birds and bats are a direct impact of undertaking the “covered activities” under the HCP, the “take” of covered species from all proposed project activities on lands covered by the HCP must be accounted for under the HCP. The commenter expresses the opinion that the DEIR appears to assume that compliance with the HCP for covered activities and other aspects of the project is voluntary and that compliance with the HCP when “covered activities” occur on lands covered by an HCP is excused if the landowner leases those lands to a third party. The commenter states that if the take of covered species like the marbled murrelet exceeds that authorized under the HCP, it would undermine the conservation purposes of the HCP and that in such circumstances FWS must reinitiate consultation on the HCP and the HCP may be suspended or revoked.*

Please see Master Response 8, “*Conflict with Adopted HCP.*”

O9-34 *The commenter states that forestry-related operations, including felling, bunching, and truck hauling to the mill, should be considered as part of the greenhouse gas analysis, and that the DEIR should consider the carbon loss from habitat conversion, such as from areas that are permanently converted from timberlands to non-timber uses, areas maintained under the gen-tie lines or new permanent roads or pads, and from prairies or other habitat types that are permanently converted. The commenter expresses concern that the DEIR appears to use a constant GHG emission factor estimate for the entire life of the*

*project and requests 1) an estimate of the embedded energy costs of the project not already accounted for in the greenhouse gas analysis (such as concrete and turbine production) and 2) an estimate of the project carbon payback period. In addition, the commenter notes that the project plans to use natural gas for space and water heating for associated buildings and asks that the developer amend the project to use only electricity or that the county impose a requirement to use electricity.*

Please see Master Response 9, “*Adequacy of the Greenhouse Gas Analysis.*” As detailed in this master response, the construction criteria air pollutant and GHG emissions estimates consider on- and off-road equipment and vehicles for all phases of construction, including that anticipated to be used by HRC in the clearing and related transport of trees. In addition, while the project is proposed on land owned by HRC and is subject to harvesting in accordance with the HRC Sustainability Plan, an estimate of the carbon sequestration potential of existing trees on the project site has been added to the GHG analysis. These calculations are provided in the updated Appendix B of this FEIR and the results are shown in Section 3.8 Table 3.8-2 in Chapter 9 of this FEIR. It is important to note that the trees within the proposed project footprint would count toward the HRC lumber yield and, if they were not harvested within the project footprint, then the same volume could be harvested elsewhere on the land, in accordance with the Sustainability Plan.

Overall GHG emissions benefits would be achieved by the project as it would provide a source of renewable energy to support the State’s greenhouse gas reduction targets per SB 32 and EO-S-05. Using the average emission factor for electricity generated by fossil fuel sources within PG&E’s power provides an estimate of the GHG emissions avoided by providing electricity with a renewable source as opposed to using a fossil fuel source to provide that same unit of electricity. While the average emissions factor for PG&E’s power mix will assumedly decrease over time as the percentage of renewable energy resources increases as part of its overall power mix, the emissions that would result per megawatt hour of electricity generated by fossil-fuel sources would not likely change substantially. Similarly, while the power mix will likely become increasingly more dependent upon GHG-free energy sources, the reference for estimating avoided GHG emissions from the proposed GHG-free energy resource is that of fossil-fuel generated energy. Therefore, a constant emissions factor for fossil-fuel generated electricity was used to calculate potential GHG emissions avoided through implementation of the proposed project. However, the discussion of potential GHG emission benefits has also been expanded to reflect the fact that the GHG emission factor for the PG&E power mix (the electricity provider for the project region) will continue to improve (decrease) as the electricity mix moves toward more renewable sources over the lifetime of the project.

Senate Bill 100 requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 60 percent of their supply from renewable sources by the year 2030 and 100 percent by the year 2045. As the regional power mix continues to become increasingly dominated by GHG-free energy sources, the marginal GHG emissions benefit potential of this project could be considered to diminish. Calculations and qualitative discussion to represent this concept have been added to the discussion under Impact 3.8-1. In addition, it is important to note that in support of the analysis of Impact 3.8-1 in the DEIR, GHG emissions that would result from project operations and maintenance were estimated and added to amortized construction emissions and compared to the BAAQMD-recommended operational threshold of significance as a point of reference. The project operational GHG emissions would be well below BAAQMD-recommended threshold of significance.

Even when considering avoided GHG emissions as diminishing over time, the operational benefit of providing a source of renewable energy to support the State’s greenhouse gas reduction targets and the annual GHG-free production of 407,340 megawatt-hours (MWh) (1,389,844 million British thermal units) of electricity would still exceed the relatively small level of GHG emissions generated by construction and operations over the lifetime of the project. Similarly, the concept that GHG emission benefits diminish over time does not negate the overall benefit of the project nor the necessity of projects like this that develop renewable energy resources in order to meet the State Renewable Portfolio Standard requirements and achieve overall State GHG emissions reduction targets.

Emissions associated with the manufacturing of the proposed project’s components would be more indicative of a “life-cycle” emissions analysis. Defining the scope and boundary of such analysis can be subjective and would require the quantification of project supply chain emissions, including emissions from activities overseas or otherwise difficult to verify. The emissions estimates in support of the DEIR estimate direct and indirect emissions associated with construction and operational activities; however, analysis of project component manufacturing would be too speculative for reliable evaluation. Therefore, and in accordance with Section 15145 of the CEQA Guidelines, estimating of such emissions was not included in the GHG analysis.

Regarding the commenter’s request to include project design measures or mitigation to use only electricity to power space and water heating for project-related buildings, please note the project sponsor anticipates using electricity to provide space and water heating in the O&M facility.

O9-35 *The commenter notes that the project will likely to require the use of around 300 construction personnel for 12–18 months, but the DEIR does not identify where temporary housing would be provided or discuss the impacts (noise, waste, disturbance) associated with temporary housing. The commenter stated that this could result in potentially significant impacts and that mitigation could include requirements to hire local contractors, where possible.*

The comment mischaracterizes the nature of construction activity because not all 300 laborers would be on site during a single phase of construction. Project construction is sequential in nature with distinct trades completing tasks required for the next step in the process. For instance, the initial stage involves land clearing and logging to create new and modify existing roads, establish turbine pads, and excavate foundations. Then the turbines are transported to the site by specialized moving teams, and crews assemble and erect each turbine.

As noted in DEIR Section 3.1.2, “Population and Housing,” the project would not result in a permanent increase in population that would induce new housing or displace existing housing stock. Also see Section 5.1.2, “Growth Inducing Impacts of the Project,” where the DEIR indicates that some jobs may be filled by the local labor force and notes that approximately 1,930 of the unemployed in Humboldt County are those involved in the construction trades.

O9-36 *The commenter states that the DEIR lacks sufficient detail on how the vegetation under the gen-tie line will be managed to prevent the re-establishment of forested conditions. The commenter requests additional information about how vegetation management will occur and if herbicides are to be used, and requests that if herbicides are used, the types of herbicides used should be disclosed as well as any analysis of their environmental impacts.*

Please see the “*Revegetation, Reclamation, and Weed Control Plan*” in Appendix B of this FEIR for a discussion of proposed weed control and the potential use of herbicides for vegetation management.

- O9-37 *The commenter expresses the opinion that the DEIR does not provide sufficient information on project decommissioning and requests a discussion of decommissioning and associated environmental impacts. The commenter requests details on sureties, such as a posted bond, to ensure that decommissioning will properly occur at the end of the project life. The commenter requests a discussion of project impacts associated with derelict, abandoned turbines, roads, and other infrastructure if no bonds are required for decommissioning.*

Please see Section 2.5, “Project Decommissioning and Restoration,” in the DEIR for an overview of typical activities associated with project decommissioning or repowering. Under either circumstance, a discretionary permit would be obtained, and the environmental impacts of the activity would be examined at that time. It is speculative to consider what changes in technology or demand for energy will take place over a 30-year timespan. However, it is certain that both decommissioning or repowering would require a separate discretionary permit that is subject to CEQA review.

- O9-38 *The commenter suggests the use of scent dogs to improve the accuracy of searches for post-construction mortality monitoring.*

Please see Section e of Master Response 4, “Bats,” for a discussion of the use of scent dogs during post-construction mortality monitoring. The use of dogs is recognized as one of several methods that may be used during the mortality monitoring.

- O9-39 *The commenter requests clarification and additional details on the objective stated in DEIR Section 2.2.2 regarding meeting the criteria to achieve the maximum federal tax credit by having the project operational by December 30, 2020.*

CEQA case law has established that CEQA documents are generally not required to demonstrate that a proposed project will achieve its objectives. Lead agencies can make reasonable assumptions about how the project will work in the future without guaranteeing that the assumptions will remain true. If, after project approval, it turns out that the project is not achieving its objectives and must be changed, a different project would result and supplemental CEQA review may be required (*Village Laguna of Laguna Beach Inc. v. Board of Supervisors* (1982) 134 Cal App. 3d 1022; *Environmental Council of Sacramento v. City of Sacramento* (2008) 142 Cal. App. 4th 1018).

- O9-40 *The commenter requests the names and affiliations of the biologists who "peer reviewed" each of the DEIR technical reports for technical accuracy, what the substance of the review entailed, and whether the reviewers were independent.*

Please see DEIR Section 8, “Preparers,” for a list of the preparers and reviewers of the DEIR sections. All sections in the DEIR, including the appendices, were reviewed in accordance with AECOM’s Quality Management System (QMS), which is certified in accordance with the International Organization of Standards (ISO) 9001:2015 requirements. The AECOM QMS requires that all deliverables be reviewed by discipline reviewer(s), who are skilled in the discipline under review, with expertise in the subject matter.

Much of the information for the EIR was based on technical reports prepared by Stantec, which is also an accredited ISO 9001:2015 organization; Stantec undertook a similar quality control/quality assurance review process during the preparation of their reports.

O9-41 *The commenter notes that HRC has extensive records for plant and animal species, including but not limited to the many species covered under their HCP, and suggested consultation with HRC to incorporate their records and information into these lists.*

The DEIR made extensive use of the numerous reports and extensive information available from the HRC website. Please see DEIR Section 7, “References,” which lists eight HRC reports cited in the biological resources section of the DEIR. Stantec technical reports, many of which are included as technical reports in the DEIR appendices, also relied heavily on HRC survey results. These Stantec reports also frequently cite HRC reports and personal communication with knowledgeable HRC staff.