
Preliminary Alternatives Screening Report

Alternatives Screening

Introduction

The Shasta County Department of Resource Management is preparing an Environmental Impact Report (EIR) for the Hatchet Ridge Wind project (proposed project), proposed by Hatchet Ridge Wind LLC. Shasta County (County) is the lead agency. Pursuant to the requirements of the California Environmental Quality Act (CEQA), the County must consider a reasonable range of alternatives that have the potential for avoiding or minimizing the impacts of the proposed project (CEQA Guidelines Sect 15126.6). The criteria for alternatives that must be considered are listed below.

- The alternative could attain most (but not necessarily all) of the basic project objectives.
- The alternative is feasible.
- The alternative would avoid or substantially reduce one or more significant impacts of the proposed project.

If an alternative is infeasible, does not meet most of the project objectives, or does not avoid or substantially reduce a significant impact of the proposed project, CEQA does not require its consideration in the EIR. The reasons for dismissing an alternative from further consideration should be identified in the EIR.

This document summarizes a potential range of alternatives to assist the County in selecting a reasonable range of alternatives for analysis in the EIR. To this end, potential screening determinations are suggested and potential significant impacts of certain alternatives are discussed.

Proposed Project

Project Goal and Objectives

The overarching objective of the proposed project is to harness wind power in order to generate and deliver electricity derived from renewable energy sources to one or more electric utilities. The specific objectives are listed below.

- Develop a wind power project in close proximity to an existing transmission line that has available capacity to receive power generated by the project.

- Develop a wind power project in a location that will have minimal impacts on birds, bats, vegetation, and other environmental resources.
- Utilize a location identified by the California Energy Commission as having annual wind speeds to support a wind energy project
- Meet regional energy needs in an efficient and environmentally sound manner.
- Assist California in meeting its legislated Renewable Energy Portfolio standards for the generation of renewable energy in the state; these standards require investor-owned utilities to purchase 20% of their power from renewable sources by 2017.
- Offset the need for additional electricity generated from fossil fuels (which, unlike wind power, emit air pollutants), thereby assisting the state in meeting its air quality goals and reducing greenhouse gases.
- Develop a wind project that will produce up to 100 megawatts (MW) of electricity.
- Develop an economically feasible wind energy project that will support commercially available financing.

Impacts of the Proposed Project

The impact analyses conducted for preparation of the Administrative Draft EIR yielded the results listed below. They are summarized by resource area.

- **Aesthetics (significant and unavoidable)**—The placement of wind turbine structures on the ridgeline of Hatchet Mountain would constitute a significant and unavoidable impact on views of Hatchet Ridge from several locations. No mitigation is available.
- **Forest and Agriculture (less than significant)**—No significant impacts have been identified.
- **Air Quality (less than significant with mitigation)**—During the 6–12 month construction of the project, emissions from construction vehicles and dust would exceed thresholds established by the Shasta County Air Quality Management District. This is a significant and unavoidable impact. However, purchase of emission reduction credits would reduce this impact to a less-than-significant level. Operational impacts would be less than significant.
- **Biological Resources (significant and unavoidable)**—The project is expected to result in significant and unavoidable mortality to avian and bat species. No mitigation is available to reduce this impact to a less-than-significant level; however, if the applicant decides to utilize the larger capacity turbines, fewer turbines would be required to achieve the overall capacity goal; such a design could incrementally reduce avian impacts.
- **Cultural Resources (significant and unavoidable)**—The project would result in visual and audible disruption of an area identified by Native Americans as culturally significant. Accordingly, implementation of the proposed project would result in a significant and unavoidable impact.
- **Geology and Soils (less than significant with mitigation)**—The project would not result in a significant impact on geology and soils with implementation of standard mitigation.

- **Hazards and Hazardous Materials (less than significant)**—No significant impacts have been identified.
- **Hydrology and Water Quality (less than significant)**—No significant impacts have been identified.
- **Land Use (less than significant)**—No significant impacts have been identified.
- **Noise (less than significant)**—No significant impacts have been identified.
- **Traffic (less than significant with mitigation)**—The project would not create a significant traffic impact with implementation of standard mitigation.

Alternatives to the Proposed Project

Potential Range of Alternatives

After completing an initial review of all potential environmental impacts associated with the proposed project, the County's consultants have identified several possible alternatives. These alternatives and their possible ramifications are summarized below.

- **No Project.** CEQA requires analysis of a no-project alternative. Such analysis entails consideration of (a) existing conditions and (b) reasonably foreseeable future conditions that would exist if the proposed project were not approved (CEQA Guidelines Sec. 15126[d][4]). Under the no-project alternative, the conditional use permit would not be issued and the proposed project would not be built. It is assumed that the land would continue to be managed for timber production.
- **Alternative technology.** Alternative forms of energy generation (both renewable and nonrenewable) would theoretically be feasible for development at Hatchet Ridge. The development of a fossil fuel plant at the site is highly unlikely due to a variety of environmental and economic factors, including operational emissions. Other renewable technologies, such as solar generation, would result in similar environmental impacts, including the land coverage required to accommodate a solar array with a capacity of 100 MW. The use of vertical axis wind turbines (VAWTs) could minimize the visual impact because of reduced height; however, the availability—and hence the feasibility—of these devices is unknown.
- **Alternative site.** The California Energy Commission has identified five major wind resource areas (WRAs) in California, the closest being the Solano WRA in Solano County. No other WRA has been identified near Shasta County. No other suitable sites have been identified in Shasta County, although alternative sites with suitable wind speeds may exist.
- **Smaller project.** The proposed project would generate 100 MW of electricity. A reduced project with a smaller capacity (e.g., 30 MW) would be possible and may be feasible.
- **Phased project.** The project could be installed in phases over a period of years. For example, the project could be developed in 3–5 phases of 20–33 MW each. Such a schedule would delay some of the permanent impacts associated with the project and could allow for adaptive management or implementation of improved design features.

- **Alternative site plan.** The arrangement of the turbines and other facilities could be reconfigured within the boundaries of the area that has been leased to accommodate the proposed project.

Preliminary Alternatives Screen

The screening of alternatives as summarized below has been developed to inform the alternatives analysis that will be developed in the EIR.

Project Objectives Screen

The alternatives listed below have the potential to meet the project goal and all (or most) of the project objectives.

- **Alternative site.** Although the applicant has not identified any other sites in Shasta County or other locations in northern California that would be suitable for the project, it is theoretically possible that another site could be found in Shasta County that has adequate wind speed and duration and is in suitable proximity to a transmission system with available capacity.
- **Smaller project.** A smaller project could meet most of the project objectives.
- **Phased project.** The project could be developed in phases. This alternative would meet most of the project objectives.
- **Alternative Site Plan.** A project with varied placement of turbines and other structures (e.g., substation, transmission interconnection points) could be feasible.
- **Alternative Technology.** VAWT technology presents an alternative design option that has been installed at some sites in California. However, as described in the Montezuma Wind Energy Project EIR, “the VAWT arrangement allows the gearbox and generator to be located at ground level and can be activated from wind blowing in any direction. The simple design saves in the cost of the towers and equipment that turns into the wind but is inherently less efficient than the horizontal axis wind turbine (HAWT). As one blade catches the wind and turns the rotor, the opposite blade produces drag and loss of power. Furthermore, wind speeds are lower and more turbulent at ground level...in addition there are no known reliable VAWT suppliers available today for large commercial wind facilities.”

The alternatives listed below do not meet the project goal or all (or most) of the project objectives.

- **Alternative technology.** A project utilizing a different technology (such as a solar energy facility) would not meet the project objective.
- **No project.** This alternative does not meet any of the project objectives

Feasibility Screen

Only the alternatives described above as having the potential to meet most of the project objectives are considered below. CEQA defines *feasibility* as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.”

The alternatives listed below are considered feasible at this time.

- **Alternative site.** Development of a wind project on a different site in Shasta County may be feasible, assuming that most of the project objectives could be met. Of primary concern is the proximity to a transmission line with available capacity.
- **Smaller project.** A project with a smaller overall capacity may be feasible.
- **Phased project.** A project developed in phases over time may be feasible.
- **Alternative site plan.** A project with a different layout of turbines and other facilities may be feasible.

The alternative below would not be feasible.

- **Alternative technology.** As previously mentioned, there are at present no known and reliable sources of VAWT technology.

Impact Avoidance/Reduction Screen

Only the alternatives found to be potentially feasible and that have the potential to meet most of the project objectives are reviewed below in the context of their potential to reduce one or more potentially significant impacts.

- **Smaller project.** A smaller project would reduce the magnitude and extent of impacts identified for the project, but not necessarily to a less-than-significant level.
- **Phased project.** A phased project would delay some impacts of the proposed project on visual and biological (i.e., avian) resources and would reduce the significance of air quality impacts; however, the completed project would ultimately result in the same level of impacts on visual, cultural, and biological resources as would the proposed project. Accordingly, this alternative was eliminated from further consideration and evaluation.
- **Alternative site.** An alternative site may reduce the significance of impacts on cultural resources if a suitable wind area could be located that is not in a culturally significant location. Visual impacts would be reduced if a site that is not visible from a nearby town or other sensitive uses could be found. Impacts on air quality could be reduced if a site with specific conditions (e.g., available paved roads to reduce dust emissions) could be found. It is possible that avian impacts at another location could be less than those associated with the proposed project, but a minimum of 1 year of monitoring data would be needed to support such a hypothesis. Because Shasta County has no identified WRAs for which data are readily available, the selection of a specific alternative site to compare to the proposed project is highly speculative; accordingly, this alternative was eliminated from further consideration and evaluation.
- **Alternative site plan.** The development of an alternative site plan does not have the potential to avoid or reduce significant impacts. Any development on Hatchet Mountain would affect the culturally significant area, result in visual impacts, and result in some level of avian and bat mortality. (Note to County – if the avian impact study determines that an alternative turbine configuration would reduce impacts, it should be considered as an alternative).

Preliminary Range of Alternatives

Using the screening criteria above, the alternatives listed below meet most or all of the project objectives, are considered feasible, and would avoid or substantially reduce one or more potentially significant impacts of the proposed project. These alternatives (along with the no-project alternative, as required by CEQA) constitute the preliminary range of alternatives.

- **No project.** Although this alternative would not meet the project objectives, it is evaluated in the EIR as required by CEQA
- **Smaller project.** A smaller project could permanently reduce the magnitude or extent of some impacts.
- **Phased project.** A phased project would delay certain impacts and provide an opportunity to evaluate the long-term impacts of operation of the project as preliminary phases are constructed. Should impacts on avian or visual resources be greater than predicted, the County could impose additional conditions on the project, such as seasonal shut-downs or other measures that could reduce significant impacts. Moreover, as additional data become available, new design characteristics could be incorporated into later phases.

The alternatives listed below are not recommended for detailed evaluation in the EIR. However, they should be referenced in the EIR as alternatives considered but dismissed to demonstrate that a wide range of alternatives has been considered.

- **Alternative site.**
- **Alternative site plan.**
- **Alternative technology.**