

Solano County

Airport Land Use Commission

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October 13, 2011

MEMORANDUM:

To: Solano County Airport Land Use Commission

From: Jim Leland, Principal Planner

Subject: Item 7: ALUC-11-07 - Proposed Shiloh IV Wind Energy Project (enXco)

Conduct a Public Hearing on a Request for a Land Use Compatibility Determination for Shiloh IV, a commercial wind energy project to be installed on approximately 3,012 acres of combined agricultural parcels in the Montezuma Hills wind resource area south of Highway 12 in the Montezuma Hills. (Applicant: enXco) (Sponsor: County of Solano)

Recommendation

Staff recommends that the Commission adopt the recommended findings and determine that the **Shiloh IV Wind Energy** project **is consistent** with the Travis Air Force Base Land Use Compatibility Plan as well as the Nut Tree Airport and Rio Vista Airport Land Use Compatibility Plans, subject to the conditions outlined in this report.

Project Description

The applicant, Shiloh Wind Partners, LLC (enXco), has submitted a Use Permit application (U-10-10) to install and operate a new commercial wind energy facility in the Montezuma Hills, the Shiloh IV wind energy project. The project would consist of 50 wind turbine generators (WTGs) and 100 megawatts (MW) of electrical generation capacity, plus associated support facilities, such as new operations and maintenance (O&M) building addition, access roads, underground utility lines, a new substation, and three meteorological towers, on approximately 3,012 acres of combined private parcels under long term lease for wind development.

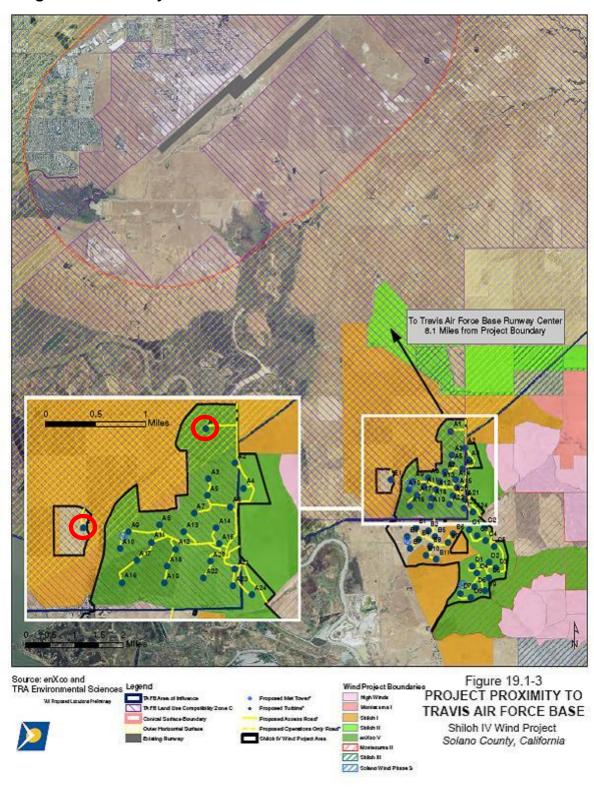
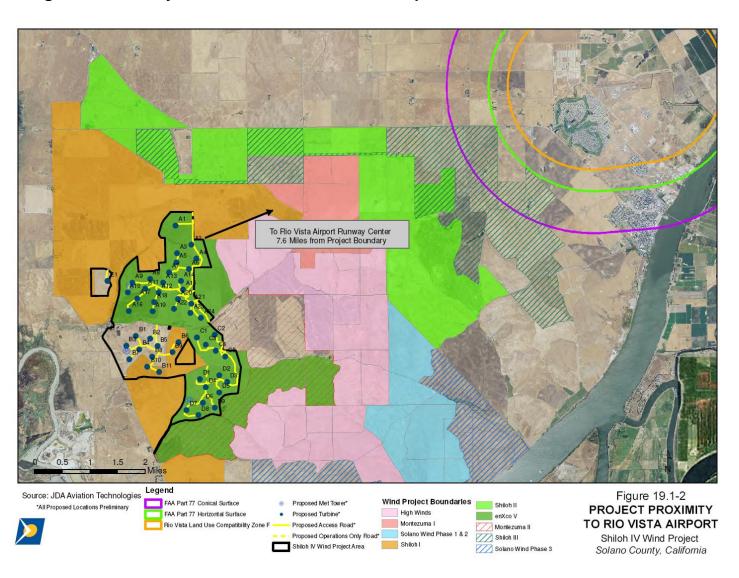


Figure 1: Proximity of Shiloh IV to Travis Air Force Base

Figure 2: Proximity of Shiloh IV to the Rio Vista Airport



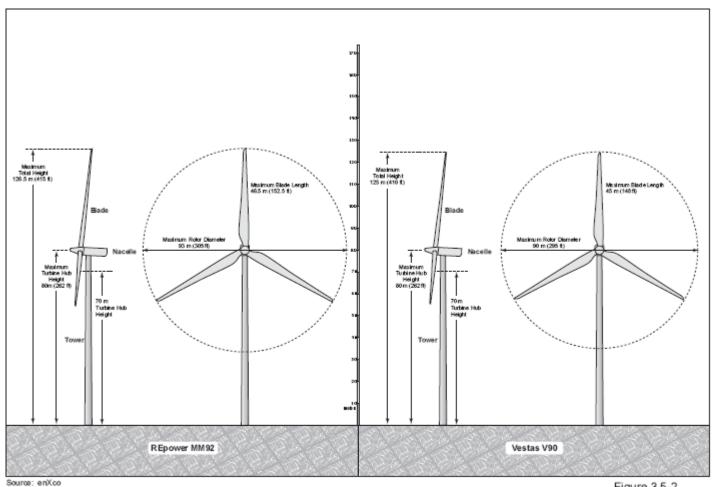


Figure 3: Alternative Turbine Selections for Shiloh IV



Figure 3.5-2
TURBINE SCHEMATIC
Shilloh IV Wind Project
Solano County, California

The project area is located approximately 1.5 miles south of Highway 12, and south of Olsen Road and, with the exception of one parcel, east of Collinsville Road. Birds Landing Road and Montezuma Hills Road run through the project area. It is also bordered by other existing wind projects, Shiloh I to the north and south, enXco V to the east, and the Montezuma II (under construction), also to the east and southeast.

The project area also occupies a portion of the existing enXco V wind project with the older lattice-type (Kenetech) turbines that will be removed (decommissioned) independently by enXco under provisions of the enXco V use permit(s). Shiloh IV is, effectively, a partial repowering project, in that older wind turbines will be replaced with new turbines, except that some of the new turbines will be installed in undeveloped areas and that removal of the older turbines and installation of the new turbines will be occurring at different times.

The land is presently used for dryland farming, livestock grazing, rural residences, and wind energy generation. The agricultural and residential uses will continue while the project is in operation. The electricity generated by the Project would connect to the existing PG&E Vaca Dixon-Contra Costa 230 kV transmission line, which traverses the westerly and central portions of the project.

The project requires a use permit (U-10-10) by the County of Solano.

ALUCP Review Requirements

The Wind Turbine Project lies within the Area of Influence of Travis Air Force Base and outside the Land Use Compatibility Plan defined Compatibility Zones for both the Nut Tree Airport and the Rio Vista Airport. In addition, since the proposed structure exceed 200 feet in height, the project is subject to review by the ALUC pursuant to the provisions in the ALUC's procedures which require that all structures greater than 200' in height be submitted to the ALUC for a consistency determination. Such objects also require Federal Aviation Administration (FAA) review in accordance with the provisions of FAR Part 77.

Analysis of Objects Exceeding 200 Feet in Height

Travis Air Force Base LUCP criteria:

<u>Height</u>

The Travis ALUCP sets forth the supporting criteria for height restriction in Section 2.5.3 of the Travis Air Force Base Land Use Compatibility Plan, as follows:

2.5.3 The basic criteria to be used in assessing whether objects may represent airspace obstructions are established by Part 77 of the Federal Aviation Regulations (FAR), Objects Affecting Navigable Air Space. In general, the height of objects in the vicinity of Travis Air Force Base shall be limited so as

not to exceed the imaginary airspace surfaces defined for the airport in accordance with Part 77 criteria.,

(a) A simplified diagram of the FAR Part 77 surfaces for Travis Air Force Base is depicted in Figure 2C.

Most of the project lies outside the outer boundary of the Part 77 area and thus is not inconsistent with this provision. Two turbines, circled in red on Figure 1 are within the Part 77 Surfaces boundaries, under the uppermost horizontal surface.

The height limit for the horizontal surface is 562' above Mean Sea Level. The applicant is utilizing 70 meter towers for these two turbines in order to keep their maximum height under the 562 'MSL height requirement. The FAA has issued No Hazard determinations for the project, including these two towers.

Staff recommends finding the project consistent with this provision.

- (b) In certain circumstances, objects may need to be restricted to heights less than the limits indicated by Figure 2C.
 - (1) In locations along portions of instrument approach procedure routes, restrictions of object heights to less than indicated by FAR Part 77 may be necessary so as not to impair the utilization of these procedures. The applicable criteria are set forth in the United States Standard for Terminal Instrument Procedures (TERPS). Review of objects relative to these criteria normally is conducted by the FAA as part of aeronautical studies. Independent ALUC review is not necessary; rather, the ALUC's function is to ensure compliance with the FAA recommendations.

The project is conditioned upon obtaining and complying with No Hazard Determinations from the FAA. The FAA granted a No Hazard determination on September 06, 2011. Therefore, there are no further height restrictions pursuant to this requirement.

(2) In other parts of the airport vicinity — especially where common visual flight routes cross areas of moderately high

terrain — tall objects could pose airspace hazards even if they do not exceed FAR Part 77 limits. Based upon airport land use commissioners' knowledge of such locations, the ALUC may find lower height limits to be appropriate or may require objects to be obstruction marked and lighted. Input of Travis Air Force Base personnel should be sought with regard to any such cases that may be brought to the Commission's attention.

The project was referred to Travis Air Force Base. The Base responded on May 30, 2011 that it had reviewed the proposed wind turbine project and has determined that the project fall within the acceptable parameters developed by the Air Force and the wind energy developers under the CRADA process.

- (c) Objects may be permitted to exceed FAR Part 77 criteria under the following conditions.
 - (1) On property over which the Air Force controls an easement, exceptions to the height limits shall be made only if Air Force grants a waiver to the restrictions.

The project does not require an exception under the provisions of this subsection.

(2) In locations where the ground level exceeds or lies within 35 feet of a Part 77 horizontal or conical surface (the Height Review Overlay Zone), objects up to 35 feet in height are permitted. Taller objects may also be acceptable if they would be situated within 100 feet of other objects or high terrain having equal or higher elevation.

The project does not require an exception under the provisions of this subsection.

(3) The ALUC may grant exceptions to other proposed objects if the FAA has completed an aeronautical study of the proposal and concluded that the object would not be a hazard to air navigation. Other factors, including the commissioners' knowledge of local airspace and the views of Travis Air Force

Base personnel, shall also be taken into account in the Commission's decision to grant such exceptions.

The project has obtained a Determination of No Hazard from the FAA. No exception under this provision is required.

Noise

With respect to noise, the Project environmental did not identify any noise impacts associated with the Project, and does not bring sensitive uses within the range of aircraft-related noise, and includes no indoor activities that could easily be disrupted by noise. The Project is outside the noise contours.

Safety of Persons on the Ground

With respect to safety of persons on the ground, the proposed project does not entail land uses with a significant number of people who might gather in the area of the project. In addition, the project is outside of any compatibility zone and thus there are no density or intensity requirements.

Other Hazards to Flight

As mentioned above, the project was referred to Travis Air Force Base for comment. Travis has reported that the project falls within the acceptable operational standards for radar interference. There and no other hazards to flight presented by this project.

Conclusion

Based on the discussion above, the staff recommends that the Commission find that the Shiloh IV Wind Energy project is **consistent** with the Travis Air Force Base Land Use Compatibility Plan, subject to the conditions listed further in this report.

Nut Tree Airport LUCP criteria:

The proposed project lies outside the defined compatibility zones of the Nut Tree Airport LUCP. For projects located outside of an airport LUCP's defined Compatibility Zones review is required for any proposed object taller than 200 feet. The project requires review under this provision. The Nut Tree Airport LUCP does not impose specific review criteria other than FAA approval. Staff recommends that the Commission find that the Shiloh IV Wind Energy project is **consistent** with the Nut Tree Airport Land Use Compatibility Plan, subject to the conditions listed further in this report.

Rio Vista Airport LUCP criteria:

The proposed project lies outside the defined compatibility zones of the Rio Vista Airport LUCP. For projects located outside of an airport LUCP's defined Compatibility Zones review is required for any proposed object taller than 200 feet. The project requires review under this provision. The Rio Vista Airport LUCP does not impose specific review criteria other than

FAA approval. Staff recommends that the Commission find that the Shiloh IV Wind Energy project is **consistent** with the Nut Tree Airport Land Use Compatibility Plan, subject to the conditions listed further in this report.

FAA No Hazard Determination:

The FAA has jurisdiction over hazards to airspace. The applicant has obtained No Hazard Determinations issued by the FAA.

Recommendation

Staff recommends that the Commission find that the Shiloh IV Wind Energy project is consistent with the Travis Air Force Base Land Use Compatibility Plan as well as the Nut Tree Airport and Rio Vista Airport Land Use Compatibility Plans, subject to the conditions that:

- 1. The Project shall obtain and comply with all conditions of the FAA Determinations of No Hazard issued in connection with the Project.
- 2. Prior to commencement of construction of the Project structures, the applicant file with the ALUC a document describing the final latitudes, longitudes, and heights of the structures to be constructed.

In addition, the following Mitigation Measures from the project EIR shall be incorporated into the conditions of approval of the use permit by the County of Solano.

Mitigation Measure TRA-5A: Prohibit Hazards to Air Navigation. To ensure the project does not result in a hazard to air navigation:

- a. The Applicant shall submit to the Solano County DRM:
 - i. Evidence that Form 7460-1, Notice of Proposed Construction or Alteration, requesting that the FAA issue a Determination of No Hazard to Air Navigation for each of the Project's turbines and meteorological towers, has been filed with the FAA.
 - The Applicant shall submit evidence to the Solano County DRM that Form 7460-1 has been filed with the FAA, including the outcome of all notifications and any conditions required by the FAA, prior to the installation of the Project's wind turbines and meteorological towers.
 - ii. Evidence that Form 7460-2, Notice of Actual Construction or Alteration, has been filed with the FAA. The Applicant shall submit evidence to the Solano County DRM that Form 7460-2 has been filed with the FAA prior to the issuance of any final certification of occupancy for the project by the County.
- b. Should a significant revision occur to the height and/or location of a wind turbine or meteorological tower, subsequent to receipt of a No-Hazard determination for the affected wind turbine or meteorological tower, the Applicant shall be required to renotify the FAA, as determined by the Solano County DRM. A significant revision to the height and/or

location of a wind turbine or meteorological tower shall be defined as a change in location that:

- i. Is 100 or more feet in any horizontal direction from the structure's original location, as identified on submitted Form 7460-1;
- ii. Results in a vertical height increase of one foot or more, as compared to the structure's original overall height as identified on submitted Form 7460-1.
- c. The Applicant shall comply with all conditions set forth in all FAA Determinations of No Hazard issued in connection with the project. No wind turbine or meteorological tower shall be installed without prior receipt of and submission to the Solano County DRM of an FAA "Determination of No Hazard to Air Navigation."

Mitigation Measure TRA-5B: Prohibit Penetration of Travis AFB Outer Horizontal

Surface. To ensure that the Project does not penetrate the Travis Air Force Base outer horizontal surface:

a. The Applicant shall submit documentation to the Solano County Department of Resource Management demonstrating that the total height of project turbines and meteorological towers located within the Travis Air Force Base outer horizontal surface, as measured with the turbine blade tip in the 12 o'clock position, is less than 562 feet above mean sea level.

ATTACHMENTS

Exhibit A Draft EIR (previously distributed to the Commission)

Exhibit B Application Packet