



August 15, 2017
L&RA 17-041

Jim Leland, Principal Planner
Department of Resource Management
Solano County
675 Texas Street, Suite 5500
Fairfield, CA 94533

RE: Suggested Amendments to the 2015 Travis Air Force Base Land Use Compatibility Plan

Dear Mr. Leland,

The Solano County Airport Land Use Commission (ALUC) updated the Travis Air Force Base Land Use Compatibility Plan (LUCP) in October 2015. Leading up to the adoption of the updated LUCP, Sacramento Municipal Utility District (SMUD) worked with Solano County, Travis Air Force Base, and the ALUC through the established Renewable Energy Working Group in order to address the repowering of wind projects in the Montezuma Hills area. SMUD's goal was to develop a policy to address wind project repowering while also maintaining the Base's mission. However, it became clear to all parties that there wasn't enough time to develop agreed upon method of analysis and a policy that addressed the repowering of wind projects. To allow the parties to continue to work on these issues, the updated LUCP included implementation program language to convene a working group to explore alternative analysis methods in the Montezuma Hills area for repowering wind projects.

The ALUC established the Windfarm Repower group in March 2016 to further these efforts. Prior to SMUD's development of proposed language to amend the LUCP to allow for repowering projects in Montezuma Hills, SMUD hired consultants to prepare an air space analysis and modeling efforts to evaluate alternatives to the line-of-sight analysis on the SMUD Solano IV site to verify that specific analyses were appropriate and would support specific LUCP policy changes. While SMUD offered to present these analyses to the ALUC and the Base, staff indicated that specific analyses could not be reviewed until a formal application to the County/ALUC has been submitted. In April 2017, SMUD also submitted suggested language on to amend the LUCP for repowering projects in Montezuma Hills. While SMUD's understanding was that the language would be reviewed by the Windfarm Repower Group, ALUC staff gave SMUD conflicting direction as to how the proposed amendments would be handled.

In a meeting with Staff the last week of June 2017, SMUD was informed that Solano County would be recommending that the Windfarm Repower Group be disbanded. To move our SMUD efforts forward, ALUC Staff, at the advice of Legal Counsel, suggested that SMUD submit language to amend the LUCP policies to allow for repowering projects on SMUD property. The language changes would not only address the Solano IV repowering project, but would address future repowering projects on SMUD property.

In the last two years, as all these efforts were ongoing, SMUD has found that wind turbine technology is rapidly changing. SMUD is interested in developing a policy that recognizes the technological changes and that will support SMUD's future repowering efforts. The technological changes do not change SMUD's commitment to minimizing radar interference at TAFB and ensuring the safety of aerial navigation.

SMUD has worked diligently with Solano County, the Base and the ALUC since 2013 to discuss the Solano IV wind repowering project in the Montezuma Hills Wind Resource area. SMUD finalized the purchase of the site in 2014, which included 700 acres, and is proceeding with developing a wind repowering project. SMUD has previously shared that it would be performing environmental studies in 2018. Taking into account the State and Federal permitting process timelines for this project, construction of the Solano IV project would commence in 2022 with a commissioning date in 2023. As a municipal utility, we have remained committed to working with Solano County in the continued balancing of green energy with emerging technologies in both radar systems and turbine design.

SMUD is a not-for-profit community-owned utility company that has made a significant and long-term investment in its wind generation resource in Solano County. Wind is an integral resource for production of renewable energy in California. SMUD began investing in Solano County in the 1990s and has proven to be a strong resource and responsible operator of commercial wind facilities. This included serving as an active participant in the Cooperative Research and Development Agreement (CRADA) of 2009.

Currently SMUD has:

- 5,500 acres of land
- 107 wind turbine generations
- Total installed capacity of 230 MW

Our land management activities follow traditional agricultural practices, including livestock grazing and dry cropping. We actively participate in Solano Land Trust activities and have provided 15+ full time permanent jobs for 15+ years, contributing to the Solano County's local economy.

SMUD is submitting a request to amend LUCP language (provided in Attachment A) and requests that the language be considered by the ALUC. The proposed language reflects SMUD's vision of the future of repowering wind projects within the Montezuma Hills Area. Evaluation of the potential effects of a repowering project on radar should be based on probability of detection, which is the metric employed in the 2009 CRADA and an industry standard. In envisioning the means by which future repowering projects are to be evaluated, it is important to consider the advancements that are occurring in the area of radar technologies, in particular their improving ability to differentiate between wind turbines and aircraft. Similarly, it is important to consider the equally significant evolution of wind turbine technologies that is occurring today and will continue into the future. Given these considerations, SMUD has crafted insert language that will be protective of radar efficacy and aerial navigation while simultaneously supporting green energy for decades to come.

Thank you for willingness to consider amendments to the policy language included in the 2015 Travis Air Force Base Land Use Compatibility Plan. SMUD looks forward to continuing to engage with the County, the Base and the ALUC on this matter.

Sincerely,



Beth Tincher
SMUD. Legislative and Regulatory Affairs

cc: Bruce DuClair, Solano County, Airport Land Use Commission Chair
Bill Emlen, Solano County, Director of Resource Management
Ross Gould, SMUD
Dave Hanson, SMUD
Steve Johns, SMUD
Jose Bodipo-Memba, SMUD
Buck Cutting, SMUD

Attachment A

Proposed Amendment to the 2015 Travis Air Force Base Land Use Compatibility Plan Amending Section 5.6 as follows:

5.6.1 Wind Turbine Facilities

The presence of wind turbines can generate air traffic control radar interference, rotor turbulence, and vertical obstruction hazards for aircraft operations at Travis AFB. To ensure adequate hazard prevention for aircraft operations and to minimize radar interference, the following requirements below present limits for wind turbine development and operation.

The beyond the radar line-of-sight method of siting wind turbines is the most proven and effective method for wind turbine impacts on a radar aircraft detection capabilities. Siting wind turbines outside of the radar's line-of-sight is critical cumulative effects arising from the addition of new turbines to those already existing within the current radar line-of-sight as every turbine within the radar's line-of-sight negatively impacts radar.

New wind turbine facilities, depending on height, are subject to the following limitations. Height of all wind turbines shall be reported in feet AGL as measured at the apex of the blade at its highest point.

(a) This LUCP does not restrict wind turbines, whether commercial or non-commercial, 100 feet or less in height AGL from being built anywhere in the County.

(b) No wind turbine greater than 100 feet in height AGL shall be within a line-of-sight of the Travis AFB Digital Airport Surveillance Radar (RASR) Radar Installation. All commercial and non-commercial wind turbine facilities greater than 100 feet in height AGL shall provide an individual radar line-of-sight analysis to demonstrate that the placement of the proposed wind turbine is not within a line-of-sight to the Travis DASR Radar Installation and shall be referred to the ALUC for a consistency determination. The line-of-site method used in such analysis shall, at a minimum, be performed using a standard curvature of the earth radar bam assessment model to provide an accurate radar line-of-sight. A discussion of the methodology and assumptions that are to be used in the line-of-sight analysis is found in Appendix H.

This requirement applies throughout the AIA (and is advisory outside of Solano County). The five example line-of-sight depictions presenting in Appendix H of this LUCP do not show the boundary of the area within which the line-of-sight requirement applies, but rather depict a shaded area (labeled "viewshed" on the Legend) which illustrates, at a large scale, approximately where wind turbines that are 100 feet, 200 feet, 300 feet, 400 feet, and 500 feet in height AGL, respectively, would like be within the line-of-sight of the Travis AFB DASR Radar Installation. Conversely, the remaining areas that are not shaded as "viewshed" are areas where wind turbines of the specified heights are not likely to be within the line-of-sight of the Travis AFB DASR Radar Installation.

(c) Existing commercial and non-commercial wind turbines, in existence at the time of adoption by the ALUC of this LUCP, can be replaced at identical dimensions and constructed of the same materials without ALUC review; however, the turbine materials shall not increase the height or reflectivity of the

wind turbine. All replacement turbines with different dimensions (e.g., taller or with larger blades or rotor diameter) than the originally permitted turbine are subject to Policy 5.6.1(b) above, if greater than 100 feet in height AGL, and shall be referred to the ALUC for a consistency determination and shall include an individual radar line-of-sight analysis to demonstrate that the placement of the proposed wind turbine is not within a line-of-sight to the Travis DASR Radar Installation.

(d) In locations where new commercial and/or non-commercial wind turbines are authorized under this LUCP, these facilities can be replaced without ALUC review if there is no increase in height or reflectivity.

The Sacramento Municipal Utility District, a special district within the State of California, has constructed a large wind development on their property within the Montezuma Hills Wind Resource Area. In the future, SMUD may sequentially repower the different phases of their development as they reach the end of their useful lives. SMUD may also purchase additional lands within the Wind Resource Area and repower turbines on the newly acquired land. For each repowering project, SMUD will evaluate project effects on radar interference at Travis AFB by computing the net change in the probability of detection (Pd), an industry-accepted performance standard. Changes in Pd associated with a given SMUD repowering project may be the result of several factors, including but not limited to new blade technologies; new turbine siting plans; as well as changes in airplane detection technologies and/or improvements in hardware or software of the Travis AFB DASR Radar Installation. As lead agency under the California Environmental Quality Act, SMUD will demonstrate in its environmental analysis that the net change in Pd associated with a repowering project will not result in a significant impact on radar performance at Travis AFB. SMUD will also ensure repowered projects meet national standards relative to aerial navigation by securing a determination of no hazard from the Federal Aviation Administration.