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Via Email and Federal Express

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Re: Draft Environmental Impact Report for the Solano 4 Wind Project

Dear Mr. Rice:

On behalf of the Solano County Airport Land Use Commission ("ALUC"), we submit the following comments on the Sacramento Municipal Utility District's ("SMUD's) Draft Environmental Impact Report ("DEIR") for the Solano 4 Wind Project ("Project"). This letter follows up on, and incorporates herein by reference, our February 8, 2019 letter regarding SMUD's January 9, 2019 Notice of Preparation of an Environmental Impact Report ("NOP").

As set forth below, the DEIR fails to comply with numerous provisions of the California Environmental Quality Act ("CEQA"), Pub. Res. Code § 21000 et seq., and the regulations implementing CEQA, California Code of Regulations, Title 14, § 15000 et seq. ("CEQA Guidelines"). Specifically, the DEIR violates CEQA in that it does not: (1) adequately describe the Project or its environmental and regulatory setting; (2) adequately analyze the Project's relationship to the Travis Air Force Base Land Use Compatibility Plan ("LUCP"); (3) adequately analyze the Project's significant impacts; (4) adequately analyze the Project's cumulative impacts; (5) provide for adequate mitigation of the Project's significant impacts; and (6) evaluate a reasonable range of alternatives. SMUD must therefore revise and recirculate the DEIR in order to permit an adequate understanding of the issues at stake.

California's airport land use commissions are part of the broader framework of efforts around the country aimed at effectively ensuring compatible land

use in the vicinity of airports. ALUC looks forward to working with SMUD to ensure the Project's safety and land use compatibility with respect to airports within ALUC's coverage area. In order to fulfill this critical mission, ALUC must follow the review provisions set forth in the State Aeronautics Act, Public Utilities Code §§ 21001 et sq. ("Act") and the LUCP. Thus, ALUC reiterates its position stated in our prior letter on the NOP: ALUC strenuously disagrees with SMUD's assertion that it is not required to obtain a consistency determination from ALUC for Project approval. This assertion runs directly counter to the express terms of the State Aeronautics Act. ALUC intends to vigorously enforce the provisions of the Act and the LUCP requiring that SMUD must seek such a consistency determination for the Project from ALUC.

We submit with this letter a review of the DEIR by Dr. Jerry Johnson, Director of Engineering, Regulus-Group, LLC, Washington, DC. Dr. Johnson has extensive recognized experience and expertise in National Airspace System surveillance and navigation systems, including in assessing interference impacts from wind turbines on radar at airport facilities. Dr. Johnson's memorandum, along with his qualifications, are attached hereto as Exhibit 1 and incorporated in full by reference.

I. The DEIR Does Not Adequately Describe the Project or the Environmental Setting.

The environmental impact report is "the heart of CEQA." *Laurel Heights Improvement Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392 (citations omitted) (*Laurel Heights*). It "is an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.' Because the EIR must be certified or rejected by public officials, it is a document of accountability." *Id*. (citations omitted). Where, as here, an EIR fails to fully and accurately inform decision makers, and the public, of the environmental consequences of proposed actions, it does not satisfy the basic goals of the statute. *See* Pub. Res. Code § 21061 ("The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.").

An "accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR." *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730, quoting *County of Inyo v. City of*

L.A. (1977) 71 Cal.App.3d 185, 193. Such a description is "necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *Id*., quoting *McQueen v. Board of Directors* (1988) 202 Cal.App.3d 1136, 1143. An inaccurate or incomplete project description may infect every subsequent section of the EIR and render the analysis of significant environmental impacts as well as feasible mitigation measures and alternatives inherently unreliable. Project descriptions that are internally inconsistent or incomplete are inadequate as a matter of law. *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 83, 89 (holding that an EIR was inadequate because its project description was "inconsistent and obscure" as to the extent of project activities).

Further, CEQA and the CEQA Guidelines mandate that an EIR include a description of "the physical environmental conditions in the vicinity of the project . . . from both a local and a regional perspective . . . Knowledge of the regional setting is critical to the assessment of environmental impacts." CEQA Guidelines § 15125(a) and (c). This requirement derives from the principle that without an adequate description of the project's local and regional context, the EIR—and thus the decision-makers and the public who rely on the EIR—cannot accurately assess the potentially significant impacts of the proposed Project.

According to the DEIR, the Project would involve construction of up to 22 massive new wind turbine generators ("WTGs")—up to 10 in Solano 4 East and up to 12 in Solano 4 West—as well as related transmission facilities. At up to 591 feet tall, the WTGs would be over 40 percent higher than any existing turbines in the area. Indeed they would be amongst the tallest anywhere in the Country. *See* FAA Digital Obstacle File website [at https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dof/]. The turbines would also have a maximum diameter of up to 492 feet. DEIR at 2-10.

The DEIR acknowledges that WTGs increase risks of aircraft collisions and radar signal interference (DEIR at 3.7-21), and further acknowledges that the Project is within the line of sight of 4 different radar facilities, including Travis Air Force Base ("Travis") (DEIR at 3.7-14). *See also* State of California, Department of Transportation, Division of Aeronautics, California Airport Land Use Planning Handbook (Oct. 2011) [https://dot.ca.gov/programs/ aeronautics/airport-land-use-planning] ("Handbook") at 4-39 ("[W]ind-turbine farms have been known to interfere with air traffic control (ATC) or military air defense radar."). Thus, California policy counsels that "Airport land use compatibility should be one of the factors considered in the appropriate placement of these facilities." Handbook at 4-40.

Despite these acknowledged and obvious risks, the DEIR fails to provide relevant information about the Project and the environmental and regulatory setting so that a reader could assess such compatibility. The Project description is inaccurate, incomplete, inconsistent, and/or misleading in four ways. First, the DEIR states the model and final location of the WTGs will not be selected until a later date. DEIR at 2-10. However, to determine a turbine project's individual and cumulative impacts on radar, precise information such as location, height, blade size, and reflectivity need to be known. Also, the position of the turbines relative to one another is critical to assessing impacts.

Second, the DEIR states that "The FAA conducted an aeronautical study of the proposed project . . . ." DEIR at 3.7-8. Likewise, the DEIR says that "The FAA has conducted an independent evaluation of the Solano 4 Wind Project . . ." DEIR at p. 3.7-22. Those DEIR statements are misleading. The Project Description says it involves "22 new WTGs" while instead FAA reviewed only 19 proposed turbines. The DEIR's project description is unstable, inaccurate, and incomplete as it (1) is inconsistent as to whether the 19 turbines will comport with the specifications examined in the FAA determinations or are yet to be determined as elsewhere stated in the DEIR, and (2) gives no information whatever about the additional 3 turbines.

Moreover, the DEIR is incomplete because it attached (as Appendix F) only *one* of the FAA's determinations, which applies directly to only *one* proposed structure that was proposed to be located precisely at Latitude 38-07-54.16N NAD 83 and Longitude 121-46-31.47W. The FAA determination itself says that "This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above." Since the DEIR purports to rely entirely on the FAA determinations in its analysis of the Project's 22 proposed WTGs, the DEIR is inadequate as an informational document for failure to include FAA determinations concerning any turbines beyond that single turbine at that one specified location.

Third, the DEIR's failure to precisely identify which WTGs will be constructed and where is further reflected in the DEIR's shifting Project objective for megawatt (MW) output, which in turn impacts the DEIR's analysis of alternatives. On August 22, 2019, SMUD altered the Executive Summary to the previously circulated DEIR by, among other things, changing the project objective from producing 92 MW to producing 91 MW. (SMUD sent out notices of that change by ordinary mail, without changing the September 6 date for comments.) Meanwhile the DEIR's identification of the environmentally superior alternative is based on 92 MW. DEIR at 6-12. Further, the

DEIR excludes alternatives from detailed consideration on the basis of not meeting project objectives. The DEIR's statement of objectives is not stable and consistent, and the reviewing public cannot tell from the DEIR if there may be an appropriate alternative that would meet the 91 MW objective but was excluded from consideration on the basis of the statement that the objective was 92 MW. The DEIR must be corrected and recirculated with a proper alternatives analysis due to the shifting nature of the project objectives. Moreover, as discussed further below, this discrepancy is a further indication that the DEIR has defined its project objectives narrowly to preclude consideration of reasonable alternatives, conforming the statement of objectives around the proposed Project's details, rather than properly examining alternatives in light of the Project's bona fide objectives.

Fourth, the Project description is unstable and/or the cumulative impacts analysis is improper because the DEIR hints that later actions may be incorporated into the overall project, but does not specify if those actions would or should be included within this Project. DEIR at 2-26. On the one hand, the DEIR talks about "SMUD's overall Solano Wind Project" as if SMUD views it as one thing. DEIR at 2-5. "With a total of 107 WTGs ranging in size from 660 kilowatts (kW) to 3.0 MW, the overall Solano Wind Project currently has a total site rated capacity of 230 MW." DEIR at 2-6. And the DEIR also states that "SMUD is committed to long-term generation of renewable energy in the WRA. At the end of this project's operational life, SMUD would likely repower the Solano 4 Wind Project using current industry technology, or would remove the turbines and restore the project to conform with the surrounding land use." DEIR at 2-6. CEQA requires that an EIR "include an analysis of the environmental effects of future expansion or other action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects." *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 398.

As is common knowledge, and as is patently demonstrated by this phase 4 of the Solano Wind Project, the trend over time in commercial-scale turbine technology is toward larger and larger turbines. The DEIR in effect appears to take the position that it is reasonably foreseeable as part of "SMUD's overall Solano Wind Project" that SMUD will demolish these Phase 4 turbines and install even taller turbines. Yet there is no analysis of any impact of those even bigger turbines, nor even any description of them. For example, how tall will they be? Based on SMUD's saying in the DEIR that "SMUD is committed to long-term generation of renewable energy in the WRA," this defect in the DEIR extends not only to the DEIR's failure to describe and analyze future turbines to replace

Phase 4, but also with respect to the 107 turbines in Phase 1 through 3. DEIR at 2-5. The DEIR says that the maximum height of turbines in those three phases is 410 feet. DEIR at p. 2-5. The Phase 4 proposal is for turbines of 591 feet. DEIR at 2-10. If Phases 1 through 3 were replaced with turbines of Phase 4's proposed height that would be 107 more turbines of 591 feet, each at least 181 feet taller than what exists presently. The DEIR gives no indication of the impacts of that. If, as the DEIR says, those would instead be replaced in the future "using current industry technology" (i.e., the largest conceivable turbine technology then available on the market at that unspecified future time), the DEIR is further defective for failing to describe that aspect of the "overall Solano Wind Project," identify its impacts, and analyze those impacts. Whether viewed as a defect in the DEIR's project description or cumulative impacts analysis, either way the DEIR needs to be recirculated to provide an opportunity for public comment on these issues.

The DEIR likewise fails to disclose necessary information about the environmental setting, including what type of radar equipment is currently being used at the four airport facilities in the Project vicinity, and for what purpose, as well as the relevant attributes of that equipment. It also fails to reveal the number and types of aircraft that fly in the affected airspace, as well as where and when they fly, and for what purpose. Without providing such pertinent information, it is impossible to assess the Project's impacts upon any of those facilities, any plans that area airports may have for orderly expansion consistent with the State Aeronautics Act, and the need to protect people on the ground from the added risks that come with projects of this type, not to mention air safety and the LUCP. As discussed in detail below, the DEIR also fails to accurately describe the regulatory setting, including the role of the State Aeronautics Act, ALUC, and the LUCP. The DEIR is therefore inadequate and must be corrected and recirculated with adequate Project description and setting information.

II. The DEIR Does Not Properly Analyze the Project's Relationship to the Travis Air Force Base LUCP.

As the DEIR recognizes, CEQA requires that environmental impact reports analyze the consistency of a project with applicable local plans. *See Napa Citizens for Honest Govt. v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 386-87; CEQA Guidelines Appendix G, § XI(b); *see also* DEIR at 3.9-4 (adopting Appendix G threshold of significance). Inconsistencies with a general plan or other local plan goals and policies that were enacted in order to protect the environment are significant impacts in and of themselves and can also be evidence of other significant impacts. *See id.*; *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 929.

As stated in our comments on the NOP, the Solano County ALUC exists to protect public health, safety, and welfare by ensuring compatible land uses within the vicinity of the County's airports. Pub. Util. Code § 21670. To that end, the State Legislature has empowered ALUC to develop land use compatibility criteria and to ensure that local agency actions conform to those criteria. Pub. Util. Code §§ 21674 – 21676.5. "In formulating an airport land use compatibility plan, the commission may develop height restrictions on buildings, specify use of land, and determine building standards, including soundproofing adjacent to airports, within the airport influence area." Pub. Util. Code, § 21675(a).

In 2015, ALUC adopted the current iteration of the Travis LUCP to define land use compatibility criteria within the Base's airport influence area ("AIA"). Thus, the DEIR must fully analyze the Project's relationship to the LUCP and identify any feasible mitigation measures to lessen or avoid any inconsistencies. Here, the DEIR's analysis of the Project's consistency with the LUCP is fundamentally flawed.

Because wind turbines—especially those of the Project's size—can generate air traffic control radar interference, rotor turbulence, and vertical obstruction hazards, section 5.6.1 of the Travis LUCP requires that all new and replacement turbines in the County *that are greater than 100 feet in height* AGL "shall be referred to the ALUC for a consistency determination." Travis Air Force Base LUCP, § 5.6.1. The proposed Project's turbines would be up to 591 feet. As the DEIR recognizes, the Project site is in Zone 4 of the LUCP. DEIR at 3.9-6. The DEIR, however, dismisses potential plan inconsistencies and impacts based on three erroneous assumptions. DEIR at 3.9-6, 3.7-11. Because, as set forth below, each of the DEIR's assumptions are wrong as a matter of law, the DEIR's ultimate conclusion that the Project would have no significant land use impacts and thus "[n]o mitigation measures are required" (DEIR at 3.9-7) is unsupportable. The DEIR must be revised and recirculated to address this error.

A. Neither the FAA's Regulations Nor Its Determination of No Hazard Finding Preempt ALUC's Travis Air Force Base LUCP.

First, the DEIR asserts that there is no potential issue to address with respect to the LUCP because "the FAA has issued a Determination of No Hazard Finding for the Solano 4 Wind Project, and FAA and its regulations concerning air safety and aviation navigation preempt the ALUC's land use regulations regarding radar system interference." DEIR at 3.9-6; *see also* DEIR at 3.7-22 (similarly claiming preemption regarding air safety impacts). The DEIR cites no express preemption provision (nor could it) and thus apparently relies on implied preemption (either "conflict" or "field" preemption). However, there is no such implied preemption. Rather, the overwhelming

federal and state authorities demonstrate that the FAA does not have authority over local land use decisions, including those aimed to ensure compatibility with airports, and that such decisions are left in the hands of local authorities such as ALUC.

Notably, the FAA itself espouses this view in general as well as in this particular case. As the FAA's Order that sets forth that agency's "Procedures for Handling Airspace Matters" explains:

> The FAA's authority to promote the safe and efficient use of the navigable airspace, whether concerning existing or proposed structures, is predominantly derived from Title 49 U.S.C. Section 44718 (Section 44718). It should be noted however, that *Section 44718 does not provide specific authority for the FAA to regulate or control how land (real property) may be used in regard to structures that may penetrate navigable airspace.*

FAA Order JO 7400.2M (February 28, 2019) § 5-1-2a (emphases added); *see also* Handbook at 3-28 (stating same).

Thus, "[o]nce issued, a hazard/no-hazard determination has no enforceable legal effect. The FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation." *Aircraft Owners & Pilots Ass'n v. FAA* (D.C. Cir. 1979) 600 F.2d 965, 966 n. 2; *see also* Handbook at 5-11. Such land use authority is left in the hands of local governments. *See Gustafson v. City of Lake Angelus* (6th Cir. 1996) 76 F.3d 778, 784 ("The FAA has acknowledged that land use matters within the federal aviation framework are intrinsically local."); Handbook at 3-11 ("The FAA has no authority over off-airport land uses—its role is with regard to the safety of aircraft operations... State and local agencies are free to set more stringent land use compatibility policies.").

Moreover, the FAA's Determination of No Hazard Finding ("NHD") for the Project's wind turbines included in Appendix G to the DEIR reaffirms this principal with respect to the instant Project in particular. It expressly states that it "does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State or local government body."

A recent decision from the Iowa Supreme Court addressing a situation analogous to the present one provides a case in point. *Carroll Airport Commission v.*

Danner (2019) 927 N.W.2d 635. After a detailed survey of the federal and state cases on this issue, *Carroll* upheld injunctive relief granted to an airport land use commission to tear down a grain "leg" (bucket elevator) that was constructed in a flight path without the proper approvals from the commission. *Id*. at 648-53. The farmer claimed, as does the DEIR here, that the commission's approval process was preempted by the FAA and that the FAA's no-hazard determination regarding the structure was conclusive. *Id*. at 641. Notably, the no-hazard determination for the structure there contained language identical to that used for the Project here, stating that it "does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body." *Id*.

> The court explained its reasoning for rejecting preemption as follows:
>
> > On balance, we decline to hold the FAA no-hazard determination preempted enforcement of local zoning requirements. We reiterate that '[t]here is a presumption against preemption.' *Huck*, 850 N.W.2d at 363 (alteration in original) (quoting *Ackerman*, 586 N.W.2d at 213). Federal courts recognize that the FAA's "hazard/no-hazard determination has no enforceable legal effect" and "[t]he FAA is not empowered to prohibit or limit proposed construction it deems dangerous to air navigation." *Aircraft Owners & Pilots Ass'n*, 600 F.2d at 966–67. Accordingly, that role must fall to state and local government, indicating Congress left room for "cooperative federalism." *See Freeman*, 848 N.W.2d at 83. In our view, the better reasoned authorities discussed above hold state and local regulators can impose stricter height restrictions on structures in flight paths notwithstanding an FAA no-hazard determination. Finally, we rely on the very language of this specific no-hazard determination, which expressly warned the Danners that they still must comply with state and local laws.

Id. at 653. The rationale provided in *Carroll* applies with equal force here.

It is also consistent with the guidance provided by the California Department of Transportation, which is the state agency that oversees implementation of the State Aeronautics Act. *See* Handbook at 3-33 ("[A]n FAA DNH [determination of no hazard] is not a determination that no airport land use compatibility issues exist, and an ALUC may find a project incompatible for other reasons, regardless of the issuance of a DNH."); *see also id.* at 3-48 & *Muzzy Ranch Co. v. Solano County Airport Land Use Com.* (2008) 164 Cal. App. 4th 1, 12 ("*Muzzy Ranch II*") (explaining differences between ALUC

compatibility review for military airports and other standards); *Sierra Pacific Holdings, Inc. v. County of Ventura* (2012) 204 Cal.App.4th 509 (FAA safety standards do not preempt state tort law regarding obstructions near airport runway). There is no federal preemption of ALUC's review of the Project.

B. The LUCP Provisions Apply to SMUD.

Next, the DEIR claims that there is no issue here because "the LUCP provisions do not apply to SMUD WTG facilities under section 53091 of the Government Code (Subdivisions d and e)." DEIR at 3.9-6; *see also* DEIR at 3.7-13, 3.7-22 (concluding same with respect to the Project's air safety impacts). The DEIR's conclusions in this regard conflict with the express provisions of state law, as explained in our January 9th letter on the NOP. By failing to acknowledge that the ALUC review requirements of the Act apply to the Project, the DEIR misleads the public. To ensure that the public—and SMUD decisionmakers—have a full and accurate understanding of the Project and the regulatory process governing its approval, the DEIR must be revised and recirculated to accurately set forth the regulatory setting. Because SMUD failed to do so in the DEIR, we provide that description here.

To begin, the Act broadly empowers ALUC to review the plans, regulations, and actions of local agencies to ensure compatibility with the appropriate LUCP. In granting this authority, the Legislature made clear that ALUC's jurisdiction reaches beyond cities and counties to include special districts and other local agencies such as SMUD. Indeed, the Legislature specifically amended the Act in 2000 to remove any doubt on this point, providing that "special districts, school districts, and community college districts are included *among* the local agencies that are subject to" ALUC review. Pub. Util. Code § 21670(f) (emphasis added); *see also* Senate Floor Bill Analysis for SB 1350 (August 2000) at ¶ 27 (rejecting the Napa Sanitation District's assertion that it was not subject to ALUC authority).

Municipal utility districts such as SMUD are organized under the laws of the State to provide "governmental, or at least quasi-governmental," services to regional service territories. *Sacramento Mun. Util. Dist. v. County of Sonoma* (1991) 235 Cal. App. 3d 726, 733. SMUD is therefore plainly "among the local agencies" that are subject to ALUC review under the Act. *See* Pub. Util. Code § 21670(f). Thus, without an explicit statutory exemption, SMUD must comply with ALUC's review procedures.

The DEIR asserts that Government Code section 53091 provides such an exemption. It does not.

Government Code section 53091 reads, in relevant part, as follows:

> (a) Each local agency shall comply with all applicable building ordinances and zoning ordinances of the county or city in which the territory of the local agency is situated.
>
> …
>
> (d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.
>
> (e) Zoning ordinances of ***a county or city*** shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.

This statutory provision does not exempt SMUD from compliance with the LUCP. On its face, Government Code section 53091 pertains only to "applicable building ordinances and zoning ordinances of [a] county or city." As a matter of law, ALUC is neither a county nor a city. Instead, it is an independent governmental entity empowered and entrusted by the Legislature to implement and safeguard the Act's important public purposes. *See, e.g.*, Pub. Util. Code § 21674; *Muzzy Ranch Co. v. ALUC* (2007) 41 Cal.4th 372, 384-85 (Pursuant to the Act and Government Code, "an airport land use compatibility plan can operate like a multijurisdictional general plan to trump the land use planning authority that affected jurisdictions might otherwise exercise through general and specific plans or zoning."). Accordingly, under the plain terms of the statute, the exemption set forth in section 53091(e) does not apply to ALUC's LUCP.

In short, under the plain language of the statute, SMUD cannot rely on section 53091 for an exemption from ALUC review.

C. SMUD Does Not Have the Authority to Overrule ALUC, Nor Would Such Authority Obviate the Need for CEQA Review.

The final reason the DEIR gives for ignoring CEQA's requirement to analyze the Project's relationship to the LUCP is that "SMUD, as a local agency, can overrule the ALUC determination consistent with the State Aeronautics Act." DEIR at 3.9-6; *see also* DEIR at 3.7-8, 3.7-13, 3.7-22 (citing Pub. Util. Code §§ 21674.7, 21676 and 21676.5). In other words, the DEIR claims that because SMUD can allegedly "overrule" any determination ultimately made by ALUC, SMUD can skip ALUC's review procedures. The DEIR also asserts that, as a result, it need not analyze or mitigate any potential land use inconsistency with the LUCP. The DEIR is wrong on both counts.

First, as with ALUC, SMUD is not a city or a county and thus it does not possess the power the Legislature granted to cities and counties—and *only* to cities and counties—to overrule certain ALUC determinations. *See* Pub. Util. Code § 21676 (granting certain override powers to cities and counties by virtue of their power to adopt and amend general plans); § 21676.5 (same); *see also Pac. Gas & Elec. Co. v. Sacramento Mun. Util. Dist.*, 92 F.2d 365, 366 (1937) (noting that "[SMUD] is not coterminous with any county or municipality."). By virtue of their independent land-use planning authority, cities and counties possess unique discretion to determine whether their land-use plans conform to the ALUC's compatibility criteria. Pub. Util. Code §§ 21676(a), 21676.5. SMUD, by contrast, does not possess independent land-use planning authority to create a general plan and thus cannot avail itself of the powers the Act grants to cities and counties. Thus, the plain language of the Public Utilities Code does not give SMUD the authority to overrule ALUC or the LUCP.

Second, even if SMUD did have the power to overrule ALUC—which it does not—the DEIR may not assume that such an override is a foregone conclusion and on that basis ignore the Project's potentially significant land use impacts. The override provisions in the Act that the DEIR cites require a certain procedure to be followed before an override could take effect. *See* Pub. Util. Code §§ 21676 and 21676.5. This procedure would begin with ALUC completing its consistency review, and then the local agency approving an override only upon a two-thirds vote and making certain findings. *Id*. Thus, as the California Supreme Court has held, "even in the event a local authority invokes the override provision, the State Aeronautics Act scheme still controls." *Muzzy Ranch*, 41 Cal.4th at 384. Furthermore, under CEQA, an agency may make any override findings only *after* a full and complete environmental review. *See* CEQA Guidelines § 15093. Thus, even if SMUD's Board could ultimately override ALUC's determination (and it cannot), SMUD must still submit its Project to ALUC for a consistency determination. And likewise the DEIR must still disclose the Project's relationship to the

LUCP and the significance of any inconsistencies, and evaluate all feasible mitigation measures to lessen such impact.

One unfortunate overall impression this DEIR creates on SMUD's behalf is that SMUD hopes to turn a blind eye to all local considerations and criteria, wishes ultimately to disregard them, and plans instead to proceed unilaterally on nothing more than its own fiat. Meanwhile, Travis Air Force Base: is the largest single employer in Solano County, accounting for nearly 10 percent of the county's total jobs; is responsible for vital strategic airlift and air refueling missions circling the globe; is the West Coast terminal for aeromedical evacuation aircraft returning sick or injured patients from the Pacific area; and regularly undertakes humanitarian response efforts around the globe, such as to areas devastated by hurricanes and earthquakes.[1]

In sum, SMUD must revise and recirculate the DEIR to include an adequate analysis of the Project's land use impacts, including its relationship to the LUCP, and must consider all feasible mitigation measures to lessen such impacts, including but not limited to the measures discussed below.

III. The DEIR Fails To Adequately Analyze or Mitigate the Project's Significant Impacts.

The DEIR begins with the following critical statement regarding the Project's potentially significant safety hazard to air traffic:

> The project site lies within the planning boundary of the Travis AFB LUCP, which contains policies designed to promote land use compatibility with airport operations. Placement of WTGs have the potential to intrude into navigable airspace, thereby increasing the

[1] Solano County General Plan, at pp. ED-4 to ED-5.60th Air Mobility Wing Fact Sheet (Feb. 12, 2016) [at http://www.travis.af.mil/About-Us/Fact-Sheets/Display/Article/855903/60th-air-mobility-wing/]**;** 2nd Lt. Sarah Johnson, *'Doing the good thing': Travis aids mission to improve education in Haiti* (Nov. 28, 2017) [at http://www.jbcharleston.jb.mil/News/Article/1382960/doing-the-good-thing-travis-aids-mission-to-improve-education-in-haiti/]; Master Sgt. Joseph Swafford, *BEEliners bring humanitarian aid to St. Croix* (Sept. 26, 2017) [at http://www.travis.af.mil/News/Article/1325298/beeliners-bring-humanitarian-aid-to-st-croix/]; Taylor Buley, *Solano airmen, humanitarian heroes, at Travis Air Force Base* (Sept. 25, 2017) at p. A1 [at https://www.dailyrepublic.com/solano-news/vacaville/solano-airmen-humanitarian-heroes-at-travis-air-force-base/].

> risk of aircraft collision, or causing interference with radar signals used by air traffic control. Therefore, this impact would be **potentially significant**.

DEIR at 3.7-21 (emphasis in original). The "analysis" that follows this statement, however, is woefully inadequate.

After admitting that the Project would "increas[e] the risk of aircraft collision" and "caus[e] interference with radar signals," the DEIR then proceeds to dismiss these grave impacts with a series of deflections.

First, as with the Project's land use impacts, the DEIR tries to avoid a deeper analysis of this potentially significant impact by claiming SMUD is either exempt from or can override the LUCP. DEIR at 3.7-22. As explained in detail above, this premise is legally faulty. *See supra* Part II.2 & 3. Equally important, even if SMUD were exempt from ALUC review (which it is not), it does not logically follow that the identified potentially significant impact, which is based on physical conditions not legal constructs, somehow disappears. Rather, CEQA dictates that the DEIR must analyze the actual environmental impact, regardless of the legal status of the Project's review. *See, e.g., Communities for a Better Environment v. S. Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320-21.

CEQA requires an EIR to "include[] sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues the proposed project raises." *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 510. Furthermore, the DEIR must adequately discuss the nature of, and analyze, the Project's impacts, not just baldly conclude that an impact may be potentially significant. *Id.* at 514 ("[T]he adequacy of an EIR's discussion of environmental impacts is an issue distinct from the extent to which the agency is correct in its determination whether the impacts are significant. 'An EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect.'") Therefore, the EIR must explain the *nature* and *extent* of the increased risks for aircraft collision and radar interference in a manner calculated for the public to understand. Furthermore, it must set forth standards for determining how much of an increased risk and interference would be considered a significant impact under CEQA and why. When it comes to potential loss of human life and military readiness, is any such increase acceptable? The purpose of CEQA is to disclose such issues so that the public and decision-makers may be adequately informed of the consequences of their decisions.

Instead of undertaking this necessary analysis, the DEIR relies entirely on the FAA's NHD, asserting that document "described and dismissed" the air safety concerns raised by ALUC. DEIR at 3.7-22. This approach is unsupported, both factually and legally. To begin, the NHD did not "dismiss" ALUC's concerns. Instead, it concluded that the wind turbines would be within the line of sight of Travis, as well as three additional facilities, and "will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines. Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines." NHD at 5. The NHD ultimately concludes that such adverse effects are not unacceptable under ***FAA standards*** based on an evaluation of factors that are "not published for public use and are not circulated for public comment." *Id*. at 6 (emphasis added).

Critically, the NHD is clear that it does not purport to satisfy anything other than the FAA's limited criteria.[2] Rather, as noted, the Determination explicitly requires the applicant to comply with "any law, ordinance, or regulation of any Federal, State, or local government body." *Id*. at 3; *see also id*. at 5 (noting that ALUC's comments were not necessarily considered an "'objection' but rather statements," some of which "are simply repeating applicable law/rule/orders."). Therefore, the NHD's ultimate conclusions are both (1) based on the understanding that the applicant would be separately complying with the LUCP and CEQA; and (2) not intended to be, and in fact are not, based on a CEQA-compliant analysis that is sufficient as a public informational document.

Indeed, the NHD does not even purport to review the entire proposed Project. As discussed above, the "Solano 4 Wind Project" is for 22 proposed WTGs, the final model and placement of which has not been determined. Yet, the NHD considered 19 specific proposed structures in specific locations with specific heights. The DEIR provides no assurances that the final Project will align with what the FAA reviewed. Moreover, as to the 3 turbines beyond the 19 reviewed by the FAA, the DEIR's analysis under Impact 3.7-3 appears to be based upon nothing whatsoever.

[2] For example, to the extent that the FAA received input from the military on the No Hazard Determination, such input would be limited to commenting on whether the Project would have an "adverse impact on military operations and readiness." To qualify as having an "adverse impact" for military purposes, the impact must be "demonstrable and [] likely to impair or degrade the ability of the armed forces to perform their warfighting missions." 10 U.S.C. § 183a(h)(1); 49 U.S.C. § 44718(h)(1).

CEQA requires that an EIR evaluate the whole Project's potentially significant environmental impacts, which is far broader in scope than an air "hazard" as defined and considered by the FAA. *Compare, e.g.*, Cal. Pub. Resources Code §§ 21002.1, 21060.5 *with* 14 C.F.R. § 77.17; *see also Town of Barnstable v. FAA* (2014) 408 U.S.App.D.C. 150, 161 (FAA determination insufficient to complete a proper environmental analysis under NEPA). Furthermore, CEQA case law makes clear that an EIR may not simply rely on compliance with certain regulatory standards to avoid an analysis of a Project's potentially significant impacts. *See, e.g.*, *Californians for Alternatives to Toxics v. Dept. of Food & Agriculture* (2005) 136 Cal.App.4th 1, 15-20 (reliance on safety regulations "is inadequate to address environmental concerns under CEQA"; EIR must independently analyze the project's impacts, including safety impacts); *E. Sacramento Partnerships for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 302-03 (agency improperly used city's general plan standard as sole threshold to avoid finding significant traffic impacts).

As set forth in further detail in the report by Dr. Johnson of the Regulus Group (Exhibit 1), it is clear that even current SMUD WTG operations have resulted in impacts. In order to assess whether the addition of even larger and taller WTGs would result in significant impacts, the DEIR would need to provide far more information that it currently does. For example, the DEIR would need to include an adequate assessment of (1) the increase in ATC Minimum Vectoring Altitudes (MVA) for the area of the WTGs; (2) objective metrics for radar interference; (3) clutter and dual tracks; and (4) workload for operator engagement with aircraft because of clutter. *See* Exhibit 1. Without providing information on these topics, the DEIR fails as an informational document and fails to provide substantial evidence to support its determination that the Project will result in insignificant air safety impacts.

Once the DEIR adequately evaluates the Project's significant air safety impacts, it must evaluate all potentially feasible mitigation measures and feasible alternatives to lessen or avoid such impacts. Pub. Res. Code § 21002; CEQA Guidelines §15126.4. Currently, the DEIR relies only upon the NHD's suggested mitigation to "mark and light wind turbine generators during construction" (Mitigation Measure 3.7-3) and then determines, without further analysis, that "implementing this mitigation measure would reduce the impact of hazards to aviation *during construction* to a less-than-significant level." DEIR at 3.7-23 (emphasis added). This is inadequate under CEQA for at least two reasons.

First, Measure 3.7-3 only purports to alleviate *construction* impacts. It does not address impacts related to the wind turbines *operation* at all. It also does not address

the fact that the structures themselves (even in the daytime) can result in radar interference. *See* Exhibit 1.

CEQA requires much more. The DEIR must consider all potentially feasible mitigation to avoid operational impacts. For example, the DEIR acknowledges, but fails to further consider, the DOD's "continued efforts to develop new strategies to identify mitigation solutions to radar interference issues, including development of new radar technology." DEIR at 3.7-13.

One obvious ongoing such effort that the DEIR inexplicably fails to consider is the Wind Turbine Radar Interference Mitigation (WTRIM) pilot mitigation program being conducted at the very airbase most likely to be impacted by the Project—Travis Air Force Base. As detailed in Dr. Johnson's memorandum, this pilot project is studying how small low-cost in-fill radar systems might be used to mitigate wind turbine radar interference. *See* Exhibit 1. The study is nearing completion and clearly has the potential to mitigate any significant impacts from the Project on radar systems. *Id*. Furthermore, another mitigation effort underway is to develop radar processing algorithms that may reduce clutter seen on the ATC screens. *Id*.

The DEIR must consider all such mitigation solutions to determine if they could feasibly be implemented in conjunction with the Project. This could include, *inter alia*: (1) SMUD contributing its fair share to such solutions, and/or (2) SMUD agreeing to schedule Project construction in tandem with the implementation of new radar technologies. The DEIR must also consider any feasible alternate configurations for the wind turbines that would lessen air safety impacts, including moving WTGs from the line of sight. *Id*.

Second, even with respect to construction impacts, it is impossible to know whether Measure 3.7-3 would actually reduce impacts to a less-than-significant level because the DEIR fails to adequately reveal the nature and extent of the Project's construction impacts. Nor does the DEIR reveal how much the impact would be lessened by implementation of the mitigation. "CEQA EIR requirements are not satisfied by saying an environmental impact is something less than some previously unknown amount." *Ukiah Citizens for Safety First v. City of Ukiah* (2016) 248 Cal.App.4th 256, 264 (citation omitted).

IV. The DEIR Fails To Adequately Analyze or Mitigate the Project's Significant Cumulative Impacts.

As the DEIR acknowledges, CEQA requires the lead agency to analyze and mitigate a Project's potentially significant cumulative impacts. CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Guidelines § 15355; *see also Communities for a Better Env't v. Cal. Res. Agency*, 103 Cal.App.4th at 120. An effect is "cumulatively considerable" when the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." Guidelines § 15065(a)(3). A proper cumulative impact analysis is "absolutely critical," *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1217, as it is a mechanism for controlling "the piecemeal approval of several projects that, taken together, could overwhelm the natural environment," *Las Virgenes Homeowners Fed'n, Inc. v. County of Los Angeles* (1986) 177 Cal.App.3d 300, 306.

As explained by Dr. Johnson, utility scale turbines impact primary surveillance radar systems when the turbines are located within the line of sight of radar, and prior turbine projects in the area have already created an impact. *See* Exhibit 1. Yet, instead of actually analyzing this impact, the DEIR disposes of this significant cumulative risk in one conclusory paragraph. *See* DEIR at 4-12.

This paragraph, however, contains no actual analysis of the impact. Instead, it relies entirely on the FAA's NHD: "Regarding impacts on air traffic, the FAA concluded that the cumulative impact of the proposed WTGs, when combined with other proposed and existing structures, is not considered to be significant." *Id*. However, neither the DEIR nor the NHD provides any facts or discussion that demonstrate the latter document evaluated cumulative impacts in the manner required by CEQA. For example, the NHD does not reveal which other projects it considered in its cumulative analysis, and does not purport to use either of the methods prescribed by CEQA Guidelines section 15130. Further, as discussed above, the NHD looks only at cumulative impacts in the context of the FAA's standards, which do not purport to align with CEQA's definition of cumulative impacts or its requirements for a cumulative impacts analysis under California state law. Thus, the DEIR must undertake or present an independent evaluation of the Project's significant cumulative air safety impacts that complies with CEQA. The DEIR cannot attempt to get by on just bare conclusions, nor on an assumption that the FAA NHD, without needing to or meaning to, evaluated such impacts in a way that would conform to CEQA's standards.

V. The DEIR Fails to Adequately Evaluate Alternatives to Lessen or Avoid the Project's Significant Impacts.

Under CEQA, a proper analysis of alternatives is essential to comply with the Act's mandate that significant environmental damage be avoided or substantially lessened where feasible. Pub. Res. Code § 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126(d); *Citizens for Quality Growth v. City of Mount Shasta* (1988) 198 Cal.App.3d 433, 443-45. As stated in *Laurel Heights I*, "[w]ithout meaningful analysis of alternatives in the DEIR, neither the courts nor the public can fulfill their proper roles in the CEQA process . . . . [Courts will not] countenance a result that would require blind trust by the public, especially in light of CEQA's fundamental goal that the public be fully informed as to the consequences of action by their public officials." 47 Cal.3d at 404.

Critically, an EIR must consider a "reasonable range" of alternatives "that will foster informed decision-making and public participation." CEQA Guidelines § 15126.6(a) (emphasis added); *Laurel Heights I*, 47 Cal.3d at 404 ("An EIR's discussion of alternatives must contain analysis sufficient to allow informed decision-making."). The discussion of alternatives must focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. CEQA Guidelines § 15126.6(b). The DEIR for the Project fails to heed these basic mandates.

After presenting CEQA's required "no project" alternative, the DEIR offers only *one* project alternative (the "Reduced Turbine Height Alternative"), which would involve placement of 27 WTGs in a configuration similar to that of the proposed project. DEIR at 6-4 to 6-10. However, the DEIR claims that, except with respect to aesthetic impacts, the Reduced Turbine Height Alternative would result in similar or *greater* environmental impacts than the Project. *See* DEIR at 6-11. For example, with respect to air safety impacts, the DEIR states: "The Reduced Turbine Height Alternative would introduce structures that exceed the 200 foot threshold. … The placement of more WTGs on the project site may increase radar interference compared to the proposed project as the density of WTGs is greater than for the project. Overall, the Reduced Turbine Height Alternative may result in greater hazards or hazardous materials impacts compared to the project. (Greater)." DEIR at 6-10.

While there is no "magic number" for how many alternatives an EIR should examine to present a "reasonable range," at a minimum CEQA requires an agency to examine at least one potentially feasible alternative to try to avoid or lessen significant

environmental impacts that are central to the Project. *See Watsonville Pilots Ass'n.*, 183 Cal.App.4th at 1089-90 (EIR was deficient for failing to include reduced development alternative that would avoid or lessen the project's primary growth-related significant impacts); *Habitat and Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1285, 1305 (invalidating EIR that failed to discuss any feasible alternative that would lessen the project's primary water supply impact). Here, presenting only one alternative that would not even reduce, but in fact would increase, the Project's significant environmental impacts does not contribute to a "reasonable range" of alternatives. *See* § 21100(b)(4); Guidelines § 15126.6(a) & (b).

The DEIR itself underscores its failure in providing a reasonable range of alternatives when it is forced to identify the proposed Project itself as the environmentally superior "alternative." DEIR at 6-12. This defeats the purpose of an alternatives analysis, and does not meet either the letter or the spirit of CEQA's requirement that the DEIR identify an "environmentally superior" alternative to the proposed project. CEQA Guidelines § 15126.6.

There are numerous potentially feasible alternatives that the DEIR could and should have considered to reduce the Project's potentially significant environmental impacts. For example, a revised DEIR should evaluate an alternative configuration of the WTGs that would avoid or reduce the Project's air safety and land use impacts. *See* Exhibit 1. Likewise, a revised DEIR should evaluate alternative phasing for the Project that is coordinated with the implementation of new radar technologies that reduce or eliminate the air safety impacts from WTGs. *See id.*

To the extent SMUD claims that additional alternatives would not achieve the Project objective of meeting SMUD's Renewable Portfolio Standard ("RPS") obligations, an EIR may not so narrowly define project objectives as to preclude an adequate evaluation of alternatives. *See Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 735-37.

Furthermore, as detailed in the attached Exhibit 2, RPS renewables can come from a range of sources and from all over the western part of North America. Under the Renewables Portfolio Standard, "eligible renewable sources" include: biodiesel, biomass, biomethane (including digester gas, and landfill gas), fuel cells using renewable fuels, geothermal, hydro-electric (including conduit hydroelectric, incremental hydroelectric generation from efficiency improvements, small hydroelectric, and water supply and conveyance), municipal solid waste combustion and conversion, ocean wave, ocean thermal, solar (including photovoltaic and solar thermal electric), tidal current, and wind. And renewable generation facilities eligible under the Renewables Portfolio

Standard may be located anywhere within the region of the Western Electricity Coordinating Council, which includes all or parts of the 14 western United States, two Canadian provinces, and the northern portion of Baja California, Mexico.[3] Therefore, in addition to alternatives in terms of potential project design in this location, there are wide ranging alternatives in terms of location and type of project.

Also, there are at least some temporal alternatives. Even if the Renewables Portfolio Standard did require the construction of this specific project here (which it does not), it would not require the Project's construction right now. The Renewables Portfolio Standard requires procurement of renewables such that, overall, they will constitute a specified *percentage* of annual retail sales by specified *target dates*. That does not compel SMUD to construct this particular Project within a year's time. In short, the range of alternatives available to SMUD includes numerous options, which, in the most general terms, include building something else, somewhere else, at some other time. And CEQA requires consideration of those alternatives.

Likewise, according to SMUD's own Policy SD-9, attached hereto as Exhibit 3, SMUD also meets its Net Zero goal via other methods including investments in vehicle and building electrification and energy efficiency. SMUD's Policy SD-9 also states that "[i]n meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits." Such regional environmental benefits would be furthered by ensuring consistency with the LUCP. Finally, as noted, an alternative need not meet every Project objective or be the least costly in order to be feasible. *See* CEQA Guidelines § 15126.6(b).

VI. The DEIR Must Be Recirculated.

Under California law, the present EIR cannot properly form the basis of a final EIR. CEQA and the CEQA Guidelines describe the circumstances that require recirculation of a draft EIR. Such circumstances include: (1) the addition of significant new information to the EIR after public notice is given of the availability of the DEIR but before certification, or (2) the draft EIR is so "fundamentally and basically inadequate

[3] California Energy Commission, *Renewables Portfolio Standard Eligibility, 7th Ed., Staff Final Guidebook* (April 2013), at pp. 16, 163; California Public Utilities Commission website on *33% Procurement Rules*, [at http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/33RPSProcurementRules.htm]; Western Electricity Coordinating Council, *Fact Sheet* [at https://www.wecc.biz/_layouts/15/WopiFrame.aspx?sourcedoc=/Administrative/Fact%20Sheet%20-%20REVISED.pdf&action=default&DefaultItemOpen=1].

and conclusory in nature that meaningful public review and comment were precluded." CEQA Guidelines § 15088.5.

Here, both circumstances apply. Decision-makers and the public cannot possibly assess the Project's impacts through the present DEIR, which is riddled with errors. Among other fundamental deficiencies, the DEIR repeatedly understates and does not provide the relevant information regarding the Project's significant land use and air safety impacts. Instead, it relies exclusively on the FAA's No-Hazard Determinations, which were prepared for another purpose, and assumes without analysis that minimalistic mitigation measures would effectively reduce the Project's impacts on air safety and land use. In order to resolve these issues, SMUD must prepare a revised EIR that would necessarily include substantial new information, including the information included herein. Furthermore, we reiterate that it is mandatory and imperative that SMUD obtain a consistency determination from ALUC prior to proceeding with the Solano 4 Wind Project. ALUC intends to pursue all legal means necessary to enforce this requirement.

ALUC looks forward to working with SMUD to ensure that any future development of the Solano 4 site prioritizes the health, safety, and welfare of Solano County's residents, and is consistent with the development criteria established in the Travis Air Force Base LUCP. Please do not hesitate to contact us if you have any questions or concerns about this letter.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Robert "Perl" Perlmutter

Amy J. Bricker

cc: Thomas Randall, Chair, Solano County ALUC
Lee Axelrad, Deputy County Counsel

Exhibit List

Exhibit 1: Memorandum from Dr. Jerry Johnson, Director of Engineering, Regulus-Group, LLC, Washington, DC; Statement of Qualifications

Exhibit 2: Union of Concerned Scientists, "The Clean Energy Race: How Do California's Public Utilities Measure Up?" SMUD Fact Sheet

Exhibit 3: SMUD Policy SD-9

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EXHIBIT 1

From: Dr. Jerry Johnson, Director of Engineering, Regulus-Group, LLC, Washington, DC
To: Shute, Mihaly, & Weinberger, LLP, San Francisco, CA
Subject: Review of Draft EIR for Additional wind turbines near Travis Air Force Base (Solano 4 Wind Project)
Date: Friday, August 6, 2019

Background
I have reviewed the portions of SMUD's Draft Environmental Impact Report for the Solano 4 Wind Project relating to air safety impacts. There are several key points about the existing wind turbine project and air operations that I'd like to mention. These are:

1. In general, it is well known that utility scale wind turbines impact primary surveillance radar systems when the turbines are located within the line of sight of radar. We discuss this issue further below.
2. Travis Air Force Base provides air traffic control services in the area where the proposed wind turbines are to be installed.
3. Travis Air Force Base air traffic controllers help maintain safe separation distances between aircraft operating in and through this area, including military and civilian aircraft up to 10,000 feet.
4. The existing turbines in the area of SMUD's current proposal have resulted in turbine radar interference affecting the primary surveillance radar system used by Travis Air Force Base.
5. Travis Air Force Base moved, and therefore lost, a circling approach as a consequence of existing turbines.
6. Travis would like to reclaim this airspace for its air operations.

I would like to make the following points about SMUD's plan to add even more wind turbines to the wind resource area near Travis AFB.

Point #1: SMUD's Draft Environmental Impact Report (DEIR) does not include information needed to inform decision makers and the public of the scope of impacts because of the project.

The DEIR refers to the FAA aeronautical study (FAA 2019) conclusion:

> "no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities."

However, the DEIR does not mention that study states:

> "The proposals will affect the quality and/or availability of radar signals. The effects would be unwanted primary returns (clutter) and primary target drops, all in the area of the turbines. Tracked primary targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines."

When wind turbine radar interference (that is, clutter) is high, the controller workload could be increased. More clutter tracks impair the controller's ability to direct air traffic. This impairment is due to the following:

1. Clutter tracks can produce track duals.
    - These dual tracks require the controller to work with aircraft to determine which aircraft target is real and which is false.

2. The clutter tracks and false targets require controllers to increase separation distances between aircraft.
    - ATC is responsible for safe separation between aircraft and a clutter track is viewed as another aircraft in the air space. This added aircraft requires separation from the other aircraft.

3. Pilots, in response to ATC, may have to effect maneuvers (for example, directed turns) for the controller to discern which track is real and which is clutter.
    - This increases the amount of radio communications between ATC and pilots thereby adding to the controller's workload.

Point #2: The DEIR report indicates the structures (wind turbines) would not be a hazard to air navigation, provided the turbines are marked with white paint and properly lighted.

Air lighting is necessary, but it is an obstruction avoidance system and not a radar interference mitigation technique. The lighting systems will not mitigate the interference of wind turbines on radar performance or air traffic control.

Point #3: The DEIR does not mention the ATC Minimum Vectoring Altitudes (MVA) for the area of the turbines would need to be increased.

FAA identified that "the adverse effect as described above on the NCT MVA." While increasing the MVA doesn't impact a significant number of operations, it is a noted adverse effect.

Point #4: The DEIR states the project could have potentially significant adverse impacts, but it does not discuss the impacts in a way that would enable the reader to know the degree or size of each type of impact.

For local public and decision makers to be informed of the degree or size of the potential impacts these proposed turbines present, the DEIR should state and discuss the following.

1. The effects on radar performance should be stated in terms of objective metrics.
    - Objective metrics allow decision makers to compare how the addition of new wind turbines will impact the primary radar.
    - These metrics include probability of false alarms and probability of detection.

2. The usual amount of clutter tracks over the wind turbine area should be stated and compared to any additional clutter expected by the new wind turbines.
    - Metrics such as frequency of clutter tracks (number of tracks per hour), average length of clutter tracks, minimum and maximum length of clutter tracks, and a history of the clutter over a 30-day period would help guide decision makers to assess the impact of the additional wind turbines.
    - Clutter tracks can produce track seductions (a real aircraft track is pulled to a false track) and track breaks. These are further phenomena that show the effects of wind turbines.

3. The expected number of dual tracks compared to real targets should be stated. This will tell the decision makers the effects on ATC operators and pilots, as noted above.
    - Metrics might include: the number of duals per hour; length of duals with customary statistics (such as, minimum length, maximum length, and average length, over a period of, say 30 days). These will help inform decision makers of the wind turbine effects.

4. The workload for operator engagement with aircraft because of clutter should be given to decision makers.
    - Metrics such as time spent directing aircraft due to clutter tracks (hours per month, say), frequency of aircraft told to change course because of clutter (number of aircraft per month, say) are examples.
    - It may be possible to determine workload issues with interviews of current ATC operators at Travis AFB.

My suggestions do not mean those items or details needed to have been included in the FAA determinations. The FAA framed its response to FAA-specific requirements and made its determination. Still, the metrics above could show the effects of the wind turbine clutter on radar performance parameters, the controllers and, by extension, on pilots who respond to controller directions for separation.

Point #5: The DEIR fails to discuss other potentially feasible means to potentially mitigate the Project's adverse impacts.

- There is currently a Pilot Mitigation Program (PMP) at Travis AFB studying how small low-cost in-fill radar systems might be used to mitigate wind turbine radar interference. The PMP has concluded its data gathering work having operated 15 separate Civil Air Patrol flights (over 76-hours of flight time) with various combinations of flight paths, radars, STARS automation configurations, and operator evaluations. The PMP team is currently collecting these data and composing a final report for review and final dissemination.

- Infill radars are currently being evaluated for FAA validation so they can be used in the National Air Space. This effort is projected to take approximately 2 years.

- Another mitigation effort underway is development of radar processing algorithms which may reduce clutter seen on the ATC screens.

While these efforts are promising they are not yet proven effective nor certified for use in the NAS. Consequently, the only way to guarantee turbines have no impact on a primary radar system today is to locate the turbines beyond line-of-sight of the radar.

Jerry Johnson

BS Electrical Engineering, University of Texas at San Antonio
MS Electrical Engineering, University of Kansas
PhD Electrical Engineering, Kansas State University

Jerry Johnson has more than 26 years of engineering experience with 18 of them specifically in NAS Surveillance and Navigation Systems. Most recently he provided Systems Engineering Support to the FAA for the Spectrum Efficient National Surveillance Radar (SENSR) Program, the Wind Turbine Radar Interference Mitigation (WTRIM) working group, and the Surveillance Portfolio Analysis (SPA) working group with focus on developing a strategy for an National Airspace System (NAS) surveillance roadmap from legacy to future systems.
Dr. Johnson joined Regulus Group from Thales and has excellent leadership skills that have allowed him to successfully lead engineering teams to derive requirements, design and develop highly complex products on an aggressive schedule and budget in the aerospace, telecommunications and manufacturing industries including several multi-national projects. Previous to Thales, Jerry served as a project engineer for BioServe Space Technologies where he participated in the design and integration of Life Science research hardware for 10 U.S. space shuttle missions and 2 Russian MIR missions.

Dr. Johnson acquired a Bachelor of Science in Electrical Engineering from the University of Texas at San Antonio, his Master of Science degree in Electrical Engineering from the University of Kansas, and a PhD in Electrical Engineering from Kansas State University.

EXHIBIT 2

Union of Concerned Scientists

Sacramento Municipal Utility District

The Clean Energy Race: How Do California's Public Utilities Measure Up?

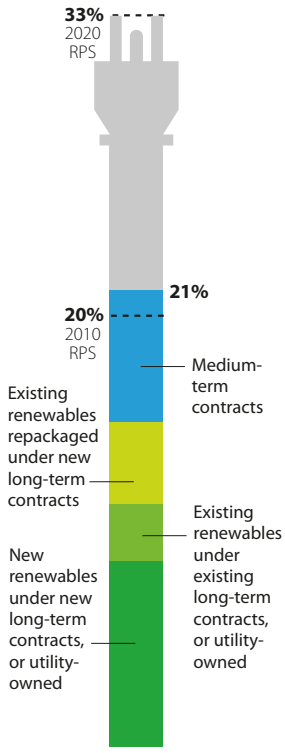
California's local publicly owned utilities, which supply about a quarter of the electricity used in the state, have made significant strides in investing in clean, renewable energy since the state passed its first renewable energy purchase law in 2002. The Renewables Portfolio Standard (RPS) was enacted to help California transition away from polluting fossil fuels and invest in electricity generation from renewable sources such as the wind and sun, in order to improve air quality, reduce global warming pollution, and expand the state's green economy. The original RPS set a goal for each California utility to obtain 20 percent of its electricity sales from renewable sources by 2010. In 2011, the law was strengthened to require all utilities to obtain 33 percent from renewables by 2020.

Not All Investments in Renewable Electricity Are Created Equal

While a utility can take many approaches to procuring renewable energy, direct ownership and long-term contracts best support the development of new resources by providing financial security to developers. These long-term investments also lock in stable electricity prices for customers and help put a utility on track to meet the 33 percent RPS.

We evaluated the renewable energy investments made by California's 10 largest publicly owned utilities. We then classified each utility into one of three categories: "sprinting ahead," "on the right track, but must keep moving," or "false start," based on how much it has promoted the development of new sources of renewable energy, and whether it is on track to meet the 33 percent RPS.

SMUD's 2010 RPS Investments



SMUD'S RPS PROGRAM

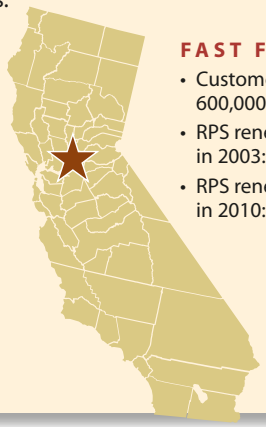
On the Right Track, but Must Keep Moving

SMUD was an early investor in wind and solar energy, and exceeded the state's RPS goal in 2010. However, many of the utility's investments were relatively short in length, and so provided little support for new renewables and must be renewed or replaced for future RPS compliance.

By 2010, SMUD sourced 21 percent of its retail electricity sales from RPS renewables. The utility also made long-term investments in new renewable energy projects equivalent to another 2 percent of sales through its voluntary green pricing program. However, SMUD obtained 30 percent through contracts of eight years. Most of these contracts, if not renewed, will expire before 2020.

Sacramento Municipal Utility District (SMUD)

SMUD is the second-largest publicly owned utility in California, and the sixth-largest in the country. SMUD was established in 1923, and began delivering electricity in 1946. Today it provides electricity to most of Sacramento County, and small portions of Placer and Yolo Counties.

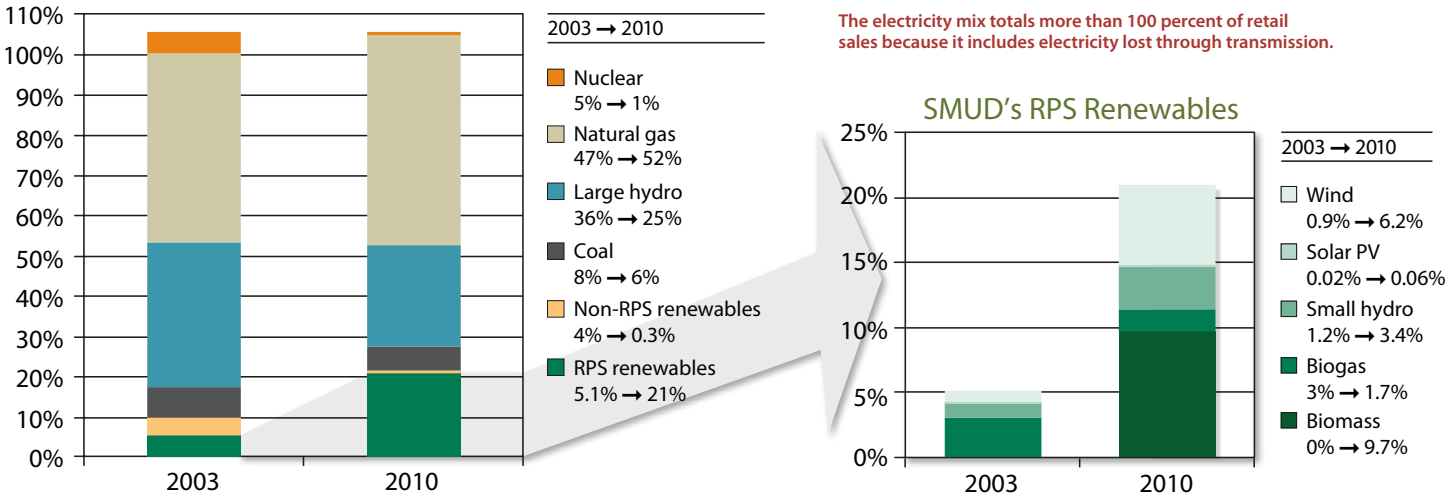


FAST FACTS

- Customers served: 600,000
- RPS renewables in 2003: 5.1%
- RPS renewables in 2010: 21.0%

Photos: © Thinkstock/Jan Wachala (wind); © Thinkstock/Daniel Grill (solar); © Flickr/Patrick Dirden (turbines in field)

SMUD's Electricity Mix, 2003 and 2010



What's Powering SMUD?

In 2003, SMUD relied on "unspecified" market purchases—purchases from other utilities, power traders, and the electricity spot market containing a mix of resources—for just under half of its electricity. The utility generated a quarter of its electricity from its own natural gas plants. SMUD's Upper American River Project and federally owned large hydropower facilities contributed another 25 percent of electricity sales. The utility relied on a mix of renewables for the remaining 5.1 percent.

By 2010, SMUD had built the Cosumnes natural gas plant, which delivered 29 percent of the utility's electricity needs. In total, SMUD relied on natural gas to supply 52 percent of total sales. From 2003 to 2010, SMUD quadrupled its renewables to 21 percent of retail electricity sales. These investments replaced "unspecified" power purchases, which declined to 17 percent in 2010.

SMUD's Renewables

SMUD built the nation's first utility-scale photovoltaic (PV) solar array in 1984, at Rancho Seco, the site of its closed nuclear facility. A decade later, SMUD built wind turbines on land it purchased in Solano County that now hosts 230 megawatts of capacity. By 2003, SMUD sourced 5.1 percent of its electricity from renewables. In addition to its early investments in solar and wind energy, SMUD procured electricity from an existing wood-waste biomass plant in Washington, its own small hydropower facilities, biogas from two local landfills, and two other wind projects that came online in 2003.

SMUD built the nation's first utility-scale PV solar array in 1984, at the site of its closed nuclear facility. A decade later, SMUD built wind turbines on land it purchased in Solano County that now hosts 230 MW of generation capacity.

© Clean Energy Ltd./Alex Marshall

By 2010, SMUD was procuring 21 percent of its retail electricity sales from RPS renewables. From 2003 to 2010, SMUD signed additional contracts with existing small hydropower, biomass facilities in Washington and Idaho, existing small hydropower facilities in California, and biogas from two in-state landfills and a local dairy manure digester. The utility also invested in solar PV through its SolarShares program and the first installations under its feed-in tariff program.[1]

SMUD obtained 30 percent of its 2010 RPS mix through eight-year contracts. Most

1 SMUD's SolarShares program allows customers who cannot install solar on their roofs to invest in solar PV elsewhere and receive credit on their electricity bills for the energy those arrays produce. Of the 10 POUs we reviewed, SMUD is the only one to offer such a program.

of these brought electricity into the state temporarily from existing small hydropower and wood-waste biomass plants in Washington and Idaho. SMUD also purchased a 15-year contract for injected landfill gas from Shell Energy, collected at the McCommas Bluff landfill in Texas. The RPS-eligible electricity associated with this contract is generated at SMUD's Consumnes natural gas power plant. This contract comprised approximately 9 percent of SMUD's 2010 RPS mix. The CEC is currently reassessing how to treat the eligibility of injected landfill gas contracts for the RPS.

SMUD obtained another 37 percent of its 2010 RPS mix through 10- and 12-year contracts with out-of-state wood-waste biomass, local landfill biogas, and in-state small hydropower facilities. This group of contracts also included the 2003 contract with the High Winds wind facility in Solano County.

SMUD obtained just over a third of its 2010 RPS mix through longer-term investments. These include the Solano wind project; a variety of small, in-state hydropower facilities, some owned by SMUD; in-state landfill biogas units; and solar PV through SMUD's various programs and investments.

Most utilities offer voluntary green pricing programs that allow customers to purchase renewable energy at a premium. In most cases, these programs make REC-only purchases on behalf of their customers. SMUD is the only utility we reviewed that made long-term investments for new renewable energy projects as a part of its voluntary green pricing program, called Greenergy. These long-term investments, which otherwise could have been used for SMUD's RPS program, contributed approximately another 2 percent of electricity sales.[2]

SMUD obtained 30 percent of its 2010 RPS mix through eight-year contracts. Most of these brought electricity into the state temporarily from existing small hydropower and biomass plants in Washington and Idaho.

2 By the end of 2010, SMUD's Greenergy program contributed 3.8 percent of its retail electricity sales. Approximately half of this came from REC-only purchases and half from long-term contracts for new renewable energy facilities.

Sources of SMUD's RPS Renewables, 2010

IN-STATE (43%)

PV SOLAR 7 GWh
Sacramento County
New and existing renewables under long-term contracts, or utility-owned

WIND 181 GWh
High Winds
Solano County
New renewables under new long-term contract

WIND 242 GWh
Solano Wind
Solano County
New utility-owned renewables

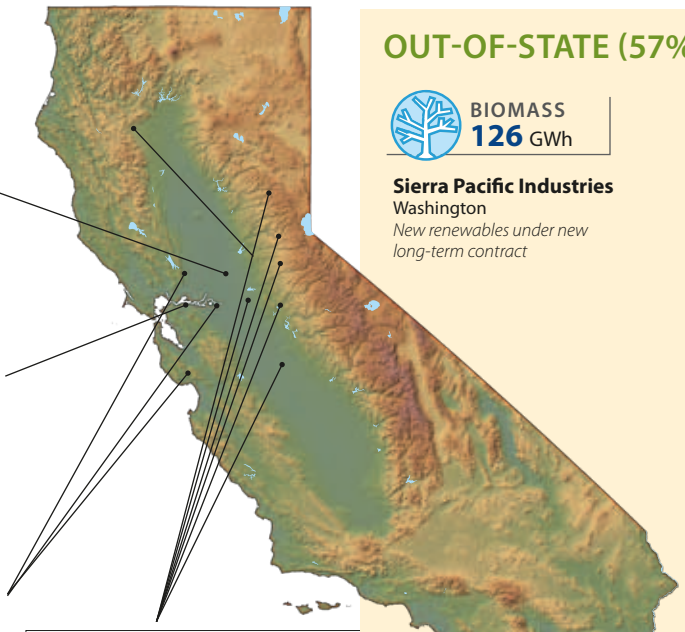
BIOGAS 102 GWh
Kiefer Landfill I & II
Sacramento County
New and existing utility-owned renewables

BIOGAS 46 GWh
Wastewater Treatment Facility
Sacramento County
Existing renewables under existing long-term contract

BIOGAS 17 GWh
MM Yolo Landfill
Yolo County
New renewables under new long-term contract

BIOGAS 0.6 GWh
Tollenaar Dairy
Sacramento County
New renewables under new long-term contract

BIOGAS 9 GWh
Santa Cruz Landfill
Santa Cruz County
New renewables under new long-term contract



OUT-OF-STATE (57%)

BIOMASS 126 GWh
Sierra Pacific Industries
Washington
New renewables under new long-term contract

BIOMASS 600 GWh
Avista
Washington and Idaho
Medium-term contracts

BIOMASS 269 GWh
Iberdrola Renewables
Washington
New renewables under new long-term contract

SMALL HYDRO 40 GWh
Avista
Washington and Idaho
Medium-term contracts

BIOGAS 191 GWh
Shell
Injected Landfill Gas
Texas
Existing renewables repackaged under new long-term contract

SMALL HYDRO 166 GWh
EBMUD Camanche & Pardee
Calaveras County
Existing renewables repackaged under new long-term contracts

SMALL HYDRO 81 GWh
Upper American River Project
El Dorado County
Existing utility-owned renewables

SMALL HYDRO 29 GWh
WAPA
Sacramento, Sierra, Trinity, Merced Counties
Existing renewables under existing long-term contracts

SMALL HYDRO 28 GWh
Camp Far West
Placer County
Existing renewables under existing long-term contract

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Looking Ahead to 33 Percent

The 33 percent RPS law requires each utility to procure 20 percent of its retail electricity sales from renewables by 2013, 25 percent by 2016, and 33 percent by 2020. Each utility must also make "reasonable progress" on renewable energy investments between those deadlines. If the state is to transition to a clean, safe, and sustainable electricity system, utilities must meet these standards in a way that prepares them to move well beyond the 33 percent RPS.

In 2010, SMUD's renewable energy portfolio was diverse, but its contracts were relatively short in length. Nearly 70 percent of SMUD's investments were for 12 years or less and 30 percent were for eight years or less. The utility will need to renew these contracts or sign new ones just to maintain its level of RPS renewables, let alone reach 33 percent. In addition, less than half of SMUD's investments for its 2010 RPS program were comprised of long-term commitments for new renewable energy facilities.

Since 2010, SMUD has more than doubled the generation capacity at its Solano Wind facility. The utility is also expanding the generating capacity of a local wastewater treatment plant, and expects to receive electricity from new solar PV projects through its feed-in tariff program. This additional electricity generation is expected to increase SMUD's RPS mix by another 6 percent of retail sales.

If the state is to transition to a clean, safe, and sustainable electricity system, utilities must meet these standards in a way that prepares them to move well beyond the 33 percent RPS.

Tracking Future Progress

SMUD's RPS Procurement Plan will provide details on the utility's strategy for reaching the 33 percent RPS by 2020. The utility's board of directors must approve this plan and make it available to the public. Any changes to this plan trigger a 10-day public notice that must be posted on the website of the California Energy Commission (CEC): *http://www.energy.ca.gov/portfolio/rps_pou_reports.html*. The CEC also maintains a database of contracts executed to meet the RPS, available on the same website. More information on SMUD's renewable energy programs is also available at *https://www.smud.org*.

Upper American River Project: © Trout Unlimited

Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

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The Union of Concerned Scientists is the leading science-based nonprofit working for a healthy environment and a safer world.

The full report can be downloaded (in PDF format) from *www.ucsusa.org/cleanenergyrace.*

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EXHIBIT 3

SMUD BOARD POLICY	
Category: **Strategic Direction**	Title: **Resource Planning**
	Policy Number: **SD-9**
Adoption Date: **May 6, 2004**	Resolution No. **04-05-11**
Revision: **May 6, 2004**	Resolution No. **04-05-12**
Revision: **September 15, 2004**	Resolution No. **04-09-11**
Revision: **May 17, 2007**	Resolution No. **07-05-10**
Revision: **December 18, 2008**	Resolution No. **08-12-15**
Revision: **November 19, 2009**	Resolution No. **09-11-08**
Revision: **May 6, 2010**	Resolution No. **10-05-03**
Revision: **May 19, 2011**	Resolution No. **11-05-05**
Revision: **December 20, 2012**	Resolution No. **12-12-12**
Revision **October 3, 2013**	Resolution No. **13-10-09**
Revision: **September 17, 2015**	Resolution No. **15-09-11**
Revision: **October 20, 2016**	Resolution No. **16-10-14**
Revision: **October 18, 2018**	Resolution No. **18-10-11**

It is a core value of SMUD to provide its customer-owners with a sustainable power supply through the use of an integrated resource planning process. A sustainable power supply is defined as one that reduces SMUD's net long-term greenhouse gas (GHG) emissions to serve retail customer load to Net Zero by 2040. Net Zero is achieved through investments in vehicle and building electrification, energy efficiency, clean distributed resources, RPS eligible renewables, large hydro, and biogas. SMUD shall assure reliability of the system, minimize environmental impacts on land, habitat, water quality, and air quality, and maintain a competitive position relative to other California electricity providers.

To guide SMUD in its resource evaluation and investment, the Board sets the following interim goal:

Year	Net Greenhouse Gas Emissions (metric tons)
2020	2,318,000
2030	1,350,000
2040	Net Zero
2050	Net Zero

In keeping with this policy, SMUD shall also achieve the following:

a) SMUD's goal is to achieve Energy Efficiency equal to 15% of retail load over the next 10-year period. On an annual basis, SMUD will achieve energy efficiency savings of 1.5% of the average annual retail energy sales over the three-year period ending with the current year.

To do this, SMUD will acquire as much cost effective and reliable energy efficiency as feasible through programs that optimize value across all customers. SMUD shall support additional energy efficiency acquisition by targeting one percent (1%) of retail revenues for above market costs associated with education, market transformation, and programs for hard to reach or higher cost customer segments. The market value of energy efficiency will include environmental attributes, local capacity value and other customer costs reduced by an efficiency measure.

b) Provide dependable renewable resources to meet 33% of SMUD's retail sales by 2020, 44% by 2024, 52% by 2027, and 60% of its retail sales by 2030 and thereafter, excluding additional renewable energy acquired for certain customer programs.

c) In meeting GHG reduction goals, SMUD shall emphasize local and regional environmental benefits.

d) SMUD will continue exploring additional opportunities to accelerate and reduce carbon in our region beyond the GHG goals in this policy.

e) Promote cost effective, clean distributed generation through SMUD programs.

Monitoring Method: GM Report
Frequency: Annual