Second, only one other alternative was considered – the DRECP Alternative. DRECP 5-7 to 5-16. As discussed above, reliance on this *draft* plan violates CEQA. *County of Amador,* 76 Cal.App.4th at 949. Indeed, the *Final* DRECP and EIR/EIS may contain dramatically different alternatives from the draft currently under review. Without a final definition of what the "DRECP Alternative" will be, the impacts of that Alternative cannot be known. *Id.*

Comment 16-8

D. The DPEIR Fails to Adequately Address Project Impacts

The DPEIR must adequately discuss, evaluate, and mitigate the direct, indirect and cumulative environmental impacts of the Project as required by Pub. Res. Code section 21100 and Guidelines sections 15126, 15126.2 and 15126.4. Here, the DPEIR fails to provide an adequate discussion of the Project's impacts and their mitigation, as discussed below.

Comment 16-9

1. Agricultural Impacts

An EIR must "provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment." Pub. Res. Code § 21061; Guidelines § 15026.2. Contrary to this mandate, the DPEIR violates CEQA by ignoring or understating the Project's significant agricultural impacts in at least four ways.

Comment 16-10

First, the County erroneously concludes that the Project would not significantly impact agriculture despite allowing the elimination of farming on nearly *100,000 acres*. According to the DPEIR, "92,113.80 acres of Important Farmland are located within the proposed renewable energy overlay zones." DPEIR 4.2-5. And as DPEIR admits, "future development of renewable energy facilities in the proposed overlay zones would convert Important Farmland to nonagricultural uses and result in a significant impact." *Id.* at 4.2-6. But the DPEIR then claims that "implementation of [the three listed mitigation measures] would reduce impacts associated with conversion of important farmland to nonagricultural use to a level less than significant." *Id.* at 4.2-11. Not so.

As the CEC and the other Renewable Energy Action Team ("REAT") agencies affirmed in their Draft DRECP and EIR/EIS – which plan, along with a related $700,000 grant from the CEC, is the primary driver behind the County's proposed General Plan update – the "conversion of Important Farmland to nonagricultural use would still be a significant and unavoidable impact" *even after mitigation*. DRECP Draft PEIR/PEIS IV.12-21. And there, the REAT agencies were analyzing a much smaller amount of farmland conversion than the General Plan update would allow here – 56,000 acres of Department of Conservation-designated Important Farmland versus a maximum of more than 92,000 acres that the Project would allow to be converted to non-agricultural use. *Id.* at IV.12-14; DPEIR 4.2-6 to 4.2-7.

Comment 16-11

Indeed, the County *itself* acknowledges in the DPEIR that the "temporary conversion of [just] 16,790 acres of agricultural land to nonagricultural uses" by "[t]wenty-five of the existing, proposed, and reasonably foreseeable projects" in the County is a "significant cumulative effect on agricultural resources." DPEIR 4.2-13. Furthermore, the DPEIR affirms that these impacts would remain significant "even though the project proponents would be required to restore the project sites to conditions suitable for agricultural use once the project's useful life is over," a nearly identical mitigation measure to one (AG-1b) proposed for the Project here. *Id.*

Comment 16-11 (continued)

Just as the County and REAT agencies concluded with respect to the elimination of agriculture on even *less* farmland than the Project here would allow, none of the proposed mitigation measures – either individually or cumulatively – would reduce the Project's agricultural impacts to a less than significant level. For example, none of the measures address the lost agricultural production from the converted farmland. DPEIR 4.2-5 to 4.2-11. Instead, the measures focus primarily on mitigating the economic impacts to farmers of converting agricultural land to industrial uses, which, while important, does little to ensure continued agricultural production at levels on which the County – and the nation – have come to rely.

Comment 16-12

Furthermore, contrary to the DPEIR's assertion, the assumption that "[r]enewable energy facilities are typically in operation for approximately 30 years" does not mean that the Project's agricultural impacts would be temporary. DPEIR 4.2-6. Nor does committing project applicants to "restor[ing] [project] site[s] to agricultural use with a soil value equal to the pre-project conditions" "[a]ssur[e] that impacts to important farmland would be temporary." *Id.* at 4.2-11. Nothing would prevent the County from extending the use permits for the facilities allowed by the Project after their initial terms expire – or approving new use permits – and thereby excusing the farmland restoration requirement and allowing continued or new industrial-scale energy generation or other non-agricultural uses. Indeed, based on the elimination of ongoing agricultural use *caused by those projects*, the County could later repeal the agricultural land use designation altogether, claiming there was no impact to "existing conditions." CEQA requires disclosure and analysis of this foreseeable impact. *Laurel Heights I*, 47 Cal.3d at 393, 396-397.

Comment 16-13

Second, while the DPEIR notes that "[c]onstruction and operation of renewable energy facilities associated with the proposed Project would have the potential to result in indirect impacts on adjacent agricultural lands," it ignores numerous major impacts and provides insufficient detail on others to reasonably inform decisionmakers and the public or allow for a meaningful analysis of alternatives and mitigation measures. DPEIR 4.2-12. For example, the DRECP fails to analyze the likely increase in ambient temperature and reduction in ambient humidity caused by utility-scale solar energy generation facilities, which would necessitate additional irrigation on adjacent farmland while likely reducing efficiency and crop productivity. This is due both to greatly reduced evapotranspiration on converted farmland and to the inherent

Comment 16-14

heating effect of utility-scale solar facilities.[8] "Both [Fthenakis and Yu's] field data and . . . simulations show that the annual average of air temperatures in the center of a [photovoltaic] field can reach up to 1.9°C above the ambient temperature," and only begin "approaching (within 0.3°C) the ambient [temperature] at about 300 m [from] the perimeter of the solar farm." Exhibit 1 to Exhibit 1 at 1.

Comment 16-14 (continued)

The DPEIR also overlooks the significant risk posed to crop dusting pilots from the gargantuan electrical generation facilities the Project would allow. These projects would make it more dangerous for crop-dusting pilots to access the land (due to, *e.g.*, increased risk of collision with project components like transmission lines, wind towers and taller solar photovoltaic or concentrated solar photovoltaic panels, and glare from the solar panels). They would also increase the likelihood of the planes inadvertently spraying the adjacent electrical generation facilities and causing complaints and pressure for the farmers to cease or restrict operations. These massive projects are often clustered so closely together – which can be seen in southwestern Imperial County, and which clustering the Project would encourage – that it can be almost impossible to access the remaining farmland isolated within the clusters.

Comment 16-15

Comment 16-16

Third, the DPEIR fails to analyze how the proliferation of industrial-scale energy projects allowed by the Project would impact even non-adjacent farmers. As these massive projects convert more and more agricultural land to non-agricultural uses, more and more agriculture-serving businesses will be forced to close, due both to declining revenues and to logistical problems. And as the quantity and quality of agriculture-service businesses decrease, more and more farmers will find it uneconomical or impractical to keep farming and be forced to sell, lease or use their lands for non-agricultural purposes. The DPEIR notes that "conversion of agricultural resources to renewable energy facilities may . . . have indirect impacts related to jobs, supporting industries, and the local economy associated with agricultural production," but it fails to describe – let alone quantify – these impacts. DPEIR 2.2-12. But an "EIR must contain facts and analysis, not just the bare conclusions of a public agency." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 736.

Nor does the DPEIR explain how any of the proposed mitigation measures would offset the reduction in countywide agricultural production caused by eliminating or downsizing agriculture-serving businesses. Without more facts and analysis, it is impossible for decisionmakers and the public to meaningfully assess the Project's impacts or associated mitigation measures. This violates CEQA. *Id.*

Comment 16-17

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[8] *See, e.g.*, Fthenakis and Yu, "Analysis of the Potential for a Heat Island Effect in Large Solar Farms," *presented at* 39th IEEE Photovoltaic Specialists Conference, Tampa, Florida, June 17-23, 2013 (attached as Exhibit 1 to Exhibit 1).

Fourth, the DPEIR erroneously concludes that the Project would not create any internal General Plan conflicts, and that the "future renewable energy facilities [allowed by the Project] would be consistent with all applicable County land use policies." DPEIR 4.10-12. The DPEIR's failure to acknowledge and confront the Project's grave inconsistencies with the General Plan violates CEQA. CEQA Guidelines section 15152(d) recognizes the vital function of general plan prescriptions in determining the significance of a project's environmental impact. It mandates that the "EIR shall discuss any inconsistencies between the proposed project and applicable general plans. . . ." Guidelines § 15152(d). As discussed above, the General Plan Land Use Element specifically *forbids* on lands designated "Agriculture" many of the industrial-scale electrical generation and transmission uses that the Project would *allow*.

Comment 16-18

In correcting its failure to address that inconsistency, the County must also analyze – and adopt if feasible – alternatives and mitigation measures that would avoid or lessen the significant agricultural impact demonstrated by the General Plan violation. Pub. Res. Code § 21002; Guidelines §§ 15126.4, 15126.6(a)-(b); Office of Planning & Research, *CEQA Technical Advice Series*, "Thresholds of Significance: Criteria for Defining Environmental Significance" (September 1994) ("The agency should also rely upon its general plan as a source of environmental standards. For instance, policies for the conservation of agricultural land may yield a threshold based on soil type, project size, and water availability."); *see also The Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 930.

Comment 16-19

Unlike solar energy, which exists everywhere and can be tapped on sites as small as a residential rooftop, food and fiber can only be grown on high quality, sun-drenched farmland, such as is found in Imperial County. The County should thus *protect* the County's farmland by *prohibiting* rather than *encouraging* industrial-scale energy developments thereon. Concerned Farmers and Conservationists agree with the County's proposal to "not allow for development of renewable energy facilities in properties zoned for agricultural uses outside the proposed overlay zones." DPEIR 4.2-11. But that proposal does not go far enough. To avoid significant agricultural impacts and the aforementioned internal General Plan conflict, the County should prohibit development of industrial-scale electrical generation projects on *all* land that the General Plan designates for "Agriculture."

2. Impacts to Groundwater Resources, Water Supply and Water Quality

The County does not clearly address the likely sources of water for the energy generation and transmission facilities that would be allowed under the Project, or the impacts of supplying that water to the facilities, including the impacts of local groundwater supplies. *Vineyard*, 40 Cal.4th at 421, 434, 440-441. "An EIR that neglects to explain the likely sources of water and analyze their impacts, but leaves long-term water supply considerations to later stages of the project, does not serve the purpose of sounding an environmental alarm bell." *Id.* at 441 (internal

Comment 16-20

quotations and citations omitted); *San Diego Citizenry Group v. County of San Diego* (2013) 219 Cal.App.4th 1, 23; *Watsonville Pilots Association v. City of Watsonville* (2010) 183 Cal.App.4th 1059, 1092. Yet the DPEIR fails to identify, describe and assess the groundwater basins underlying the Renewable Energy and Transmission Element overlay, let alone present a comprehensive discussion of the Project's water supply impacts including reduced surface and groundwater supplies and contamination or degradation of those supplies from hazardous fluids used for industrial-scale energy projects.

Comment 16-20 (continued)

In addition, the DPEIR impermissibly omits the General Plan's Water Element from the DPEIR's discussion of the regulatory setting. DPEIR 4.9-6 to 4.9-8; *see also* DPEIR 7-9 to 7-11 (references cited). The Water Element requires the County to "make every reasonable effort to limit or preclude the contamination or degradation of all groundwater and surface water resources in the County." General Plan Water Element, p. 33. Further, the County requires development proposals to "implement appropriate mitigation measures for any significant impacts." *Id.* The County likewise must "regulate land development and natural resource management to protect the limited but important areas of the County which contribute to groundwater recharge." *Id.* at 34. The DPEIR's failure to include applicable local regulations must be corrected; further, the DPEIR must assess whether the Project's changes to the General Plan will be consistent with the existing Water Element, as discussed above.

Comment 16-21

Comment 16-22

It appears that the proposed Project would allow development in the Anza-Borrego, Salton Sea, and Imperial Valley Hydrologic Planning Areas. DPEIR Figure 4.9-2, DPEIR Figure 2.4-1. While the DPEIR states that all groundwater in the Imperial Valley Hydrologic Planning Area is limited to domestic use only, and thus the reader is lead to believe that no groundwater would be available for development under the Project in those groundwater basins, the DPEIR does not make that limitation explicit. *Compare* DPEIR 4.9-12 to 4.9-13 *with* 4.9-21 ("In most areas within the County . . . , groundwater would likely be withdrawn from local aquifers to meet a specific project's water needs"). Nor does the DPEIR identify an alternative water source for energy projects in this planning area even though the majority of renewable energy development allowed under the proposed Project is to be located there.

Comment 16-23

Further, the DPEIR does not address whether the specific groundwater basins falling within the Anza-Borrego Hydrologic Planning Area are in overdraft, suffer subsidence, or are otherwise stressed. Nor does it attempt to address any groundwater issues related to planned energy development in areas that were once part of the Salton Sea. The proposed Project appears to allow development in the Ocotillo-Clark Valley, West Salton Sea, Salton Sea, East Salton Sea, Imperial Valley and Ogilby Valley groundwater basins. DPEIR Figure 4.9-3; DPEIR Figure 2.4-1. Yet the DPEIR contains *no* specific discussion of these groundwater basins. In addition, despite multiple requests during the scoping process, the DPEIR fails to address the potential impacts to the Ocotillo-Coyote Wells Sole Source Aquifer. Indeed, the DPEIR's only

Comment 16-24

reference to this aquifer is to include it on the map of groundwater basins that it never discusses in relation to the Project. *See* DPEIR Figure 4.9-3.

Comment 16-24 (continued)

Instead of discussing impacts to the various groundwater basins underlying the proposed Energy Element overlay, or proposing alternative water supplies, the DPEIR *presumes* that the Project will have no significant water supply impacts after mitigation. *E.g.* DPEIR ES-38 to ES-45. But it does not establish clear guidance to assure that mitigation would occur. For example, mitigation measures HYDRO-2a defers "defin[ing] significance criteria" to the groundwater monitoring and mitigation plan for each project. DPEIR 4.9-22. Absent a clear discussion of the potential sources of the water for the additional energy development that the Project would allow, and alternatives and mitigations for potentially significant groundwater uses, the DPEIR precludes informed decisionmaking and thereby violates CEQA.

Comment 16-25

3. Impacts to Biological Resources

CEQA mandates that the DPEIR adequately analyze the Project's effects in order to foster informed decisionmaking and to allow the public to understand the Project's impacts. Pub. Res. Code § 21002.1; Guidelines §§ 15121, 15126, 15126.2, 15126.4. Where possible, the County must employ feasible mitigation measures that could minimize the significant adverse impacts of a Project. *Id.* As shown below, the DPEIR fails to adequately address the Project's impacts to biological resources and mitigate these impacts. In addition, the Project's impacts to migratory birds run counter to the Migratory Bird Treaty Act, 16 U.S.C. section 703, *et seq*. ("MBTA"). The DPEIR's biological resources analysis must be revised to address this conflict.

Comment 16-26

Large-scale energy generation projects almost invariably harm wildlife and destroy habitat, both during construction and operation. As the DPEIR admits, "construction and operation of future renewable energy facilities developed under the proposed Project may result in significant impacts on special status plants and animal species." DPEIR 4.4-37, 4.4-35 (same), 4.4-39 (significant impact to "riparian habitat and other sensitive natural communities), 4.4-40 (significant impact to wetlands). Yet despite these admissions, the DPEIR relies on the *draft* DRECP in violation of CEQA, provides an incomplete and insufficient impacts discussion, and makes the unsupported claim that speculative and vague mitigation measures will lessen the Project's impacts.

First, as discussed above, the DPEIR's reliance on the *Draft* DRECP and EIR/EIS violates CEQA, making the entire biological resources analysis deficient. *County of Amador,* 76 Cal.App.4th at 949. For this Project, the "vegetation communities within the County of Imperial are mapped and described using data and descriptions from the 2013 DRECP vegetation map." DPEIR 4.4-6. Furthermore, the DPEIR "refer[s the reader] to the Draft DRECP and EIR/EIS" for "a detailed description of each of the vegetation communities." *Id.* Using the data in a draft

Comment 16-27

document that has not been approved or undergone the appropriate and necessary public review does not suffice. *County of Amador,* 76 Cal.App.4th at 949. Therefore, relying on that *draft* document to declare that plant and animal species are "considered '[a]dequately [c]overed,'" must also fail. DPEIR 4.4-21 to 4.4-25 (declaring eight special status plant species "adequately covered" by the DRECP), 4.4-27 to 4.4-33 (declaring 23 special status animal species "adequately covered" by the DRECP). The DPEIR's biological resources discussion must be revised to rely on concrete data and information.

Comment 16-27 (continued)

Second, the DPEIR's discussion of impacts to biological resources is incomplete. For example, both the proposed Project and the DRECP Alternative propose energy development within the footprint of the Salton Sea. DPEIR 2-5 (Figure 2.4-1), 5-8 (Figure 5.3-1). "The Salton Sea is a critical component of the wildlife habitat in the County that currently sustains migratory birds of the Pacific Flyway," and therefore "the Salton Sea has become an important wintering and staging area for migratory birds." DPEIR 4.4-13. Yet the DPEIR does not even consider the impacts of allowing development within the footprint of the Salton Sea. The DPEIR's biological analysis completely fails to consider the unique impacts that destruction of this biologically important resource will cause. As discussed above, development of these lands has the potential to significantly impact water resources, which will subsequently lead to impacts on the biological resources that rely on that water. Furthermore, construction in the Salton Sea footprint will likely displace biological resources that will be hard-pressed to find similar habitat in the nearby water-deficient areas. *See* DPEIR 4.4-27 to 4.4-33 (Table 4.4-5 identifying special status species in the Project area that rely on the Salton Sea).

Comment 16-28

Despite these unique and potentially significant impacts, the DPEIR's biological resources analysis only discusses the Salton Sea in its "Existing Environmental Setting" section. DPEIR 4.4-6 to 4.4-34.[9] In order to fully understand the Project's biological impacts as required by CEQA, the DPEIR must be revised to provide analysis of the effects of developing the Salton Sea. Pub. Res. Code § 21002.1; Guidelines §§ 15121, 15126, 15126.2

Additionally, the DPEIR states that glint and glare from PV modules "are similar to common sources of glare that already exist in the environment, including surface water." DPEIR 4.1-17. To address this impact, Backcountry previously requested that the DPEIR discuss the impacts of the pseudo-lake effect of large-scale solar projects, especially on birds using the Pacific Flyway route over the Salton Sea. Backcountry Scoping Comments, p. 10. Yet the DPEIR fails to acknowledge the risk to avian species caused by this sort of glint and glare. *See generally* DPEIR 4.4. Indeed, the DPEIR's sole discussion of glint and glare impacts appears

Comment 16-29

[9] The DPEIR also mentions the Salton Sea when quoting the Conservation and Open Space Element of the General Plan with regard to impacts, but provides no analysis. DPEIR 4.4-43.

under the heading "Aesthetics." DPEIR 4.1-14, 4.1-17 to 4.1-18. But because this premise is wrong, so too is its conclusion. And this spurious conclusion provides no basis for sacrificing Imperial County's irreplaceable farmland and agricultural industry.

Comment 16-29 (continued)

Lastly, the DPEIR relies on vague and speculative mitigation measures to claim that the impacts of the Project will be mitigated to less than significant. However, deferral of mitigation measures to a future date with no guidelines on what those mitigations require, violates CEQA. CEQA Guidelines §15126.4; *Endangered Habitats League v. County of Orange* (2005) 131 Cal.App.4th 777, 793-4 (mitigation may be deferred *only where* it includes specific performance criteria). Here, the DPEIR calls for *future* surveys of plant and animal species (DPEIR 4.4-37 to 4.4-38), *future* implementation of some form of a worker environmental awareness program (DPEIR 4.4-38), *future* development of a Habitat Restoration Plan for offsite mitigation (4.4-39 to 4.4-40), *unspecified future* restoration and compensation for affected jurisdictional areas (4.4-40 to 4.4-41), and *unspecified* "[a]dditional biological mitigation," *possibly* including a Bird and Bat Conservation Strategy (DPEIR 4.4-38). These vague and speculative mitigation measures, that do not include any objectives, performance standards, or guidelines for implementation, violate CEQA. CEQA Guidelines §15126.4; *Endangered Habitats League,* 131 Cal.App.4th at 793-4.

Comment 16-30

4. Global Warming

The DPEIR claims that the proper question regarding whether the proposed Project would have significant global warming impacts due to greenhouse gas emissions is whether it would "[g]enerate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment." DPEIR 4.7-9. Yet the DPEIR fails to consider the significant imbedded greenhouse gas emissions associated with renewable energy development, despite scoping comments requesting such analysis. DPEIR 4.7-10.

Comment 16-31

The DPEIR also fails to use its identified significance criteria to address the impacts of the proposed Project. Instead, it relies upon the renewable energy developed under the proposed Project to "displace power currently produced by carbon-based fuels that would otherwise be used to meet regional demand for electricity." DPEIR 4.7-10. Yet the DPEIR cannot identify any such displacement. The DPEIR's premise that the Project will reduce carbon emissions is not supported by the record. First, it is just as likely that energy developed under the proposed Project would supply *new* energy demands. Second, it is unlikely that the Project would displace fossil-fuel energy because *there is no market for new carbon-based energy development in California*. Rather, the choice now is between *industrial-scale* renewable energy sited in remote locations and *distributed* renewable energy sited near the energy demand centers in urban areas. And, the evidence is clear that the latter option is far *less* impactful and far *more* efficient than the remote, utility-scale energy development that the Project would promote.

Comment 16-32

Despite the complete absence of any evidence to support the DPEIR's premise that the Project would displace carbon-based energy, the DPEIR asserts that the "displacement of power currently produced by carbon-based fuels by development of future renewable energy facilities would offset GHG emissions generated during construction, operation, and decommissioning of future renewable energy facilities and reduce impacts to a level less than significant. No mitigation measures would be required." DPEIR 4.7-10, 4.7-11. This unsupported conclusion does not pass CEQA muster.

Comment 16-32 (continued)

5. Noise Impacts

The DPEIR's analysis of noise impacts fails in at least two key respects. It entirely ignores the infrasound produced by wind turbines, which the Project would allow on tens of thousands of acres in the County, and it omits any analysis of impacts from inaudible infrasound and low-frequency noise ("ILFN").[10] DPEIR 4.12-9 to 4.12-10. In so doing, the DPEIR overlooks the significant impact that both audible and inaudible wind turbine-generated ILFN can have on human health and well-being.

Comment 16-33

The DPEIR erroneously implies that wind turbines only "generate broadband noise with frequency components from 20 hertz to 3.6 kilohertz." DPEIR 4.12-10. But the literature is clear that "wind turbine noise [is] dominated by infrasound components."[11] Indeed, a recent study of the ILFN produced by the Ocotillo Wind Energy Facility in Imperial County and the Kumeyaay Wind Farm in San Diego County measured substantial wind-turbine-generated indoor sound pressure levels (up to 69 decibels ("dB") at 1.2 miles away) with peaks centered around 1 hertz (ranging from 0.39 hertz to 2.4 hertz) at homes included in the study.[12] And as research increasingly demonstrates, this inaudible wind-turbine-generated ILFN can harm humans.

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[10] The range of normal human hearing is generally considered to be from 20 hertz ("Hz") to 20,000 Hz. The lower end of that range, from 20 Hz to 200 Hz, is usually regarded as "low-frequency" sound. And "infrasound" is commonly defined as sound energy at all frequencies below 20 Hz. *See* Moller, H. & C.S. Pedersen, 2004, "Hearing at low and infrasonic frequencies," *Noise and Health,* 6:37-57, available at: http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2004;volume=6;issue=23;spage=37;epage=57;aulast=Moller

[11] Salt, Alec & Timothy Hullar, 2010, "Responses of the Ear to Low Frequency Sounds, Infrasound and Wind Turbines," *Hearing Research*, 268: 12-21, at p. 19 (attached as Exhibit 2 to Exhibit 1).

[12] Carman, Richard & Michael Amato, February 28, 2014, "Kumeyaay and Ocotillo Wind Turbine Facilities Noise Measurements," at pp. 23, 26-27 (attached as Exhibit 3 to Exhibit 1)

According to a group of researchers who reviewed the literature on the impacts of wind turbine-generated noise in 2010, "there is increasingly clear evidence that [both] audible and [inaudible] low-frequency acoustic energy from [wind] turbines is sufficiently intense to cause extreme annoyance and inability to sleep, or disturbed sleep, in individuals living near them."[13] Further, besides sleep disturbance and intense annoyance, there is evidence that both audible noise and inaudible ILFN may also create visceral vibratory vestibular disturbance, vertigo, headaches, dizziness, unsteadiness, tinnitus, ear pressure or pain, external auditory canal sensation, fatigue, irritability, memory and concentration effects, loss of motion, cardiac arrhythmias, stress and hypertension, among others. Exhibit 4 to Exhibit 1 at 20-31.[14] While very little research had been done on ILFN impacts until recently, the evidence of these impacts and their causal pathways is now burgeoning. *See* Exhibits 2-5 to Exhibit 1.[15] As Drs. Alec N. Salt and Jeffrey T. Lichtenhan concluded in a recent journal article, "the time has come to acknowledge the problem and work to eliminate it." Exhibit 6 to Exhibit 1 at 27. The DPEIR must do the same to satisfy CEQA. Pub. Res. Code § 21061.

Comment 16-33 (continued)

Furthermore, in analyzing the impacts from wind-turbine-generated ILFN, the County must consider wind turbine sensitive receptor setbacks much greater than the 0.5-mile setback currently proposed. DPEIR 4.12-11. It is primarily because of ILFN's ability to spread its significant health impacts so broadly that Dr. Nina Pierpont recommends setbacks from large

Comment 16-34

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[13] Punch, Jerry, Richard James & Dan Pabst, 2010, "Wind-Turbine Noise: What Audiologists Should Know," *Audiology Today*, July/August 2010, p. 24 (attached as Exhibit 4 to Exhibit 1).

[14] *See also* Paller, Claire *et al.*, 2013, "Wind Turbine Noise, Sleep Quality, and Symptoms of Inner Ear Problems," Poster Presentation (attached as Exhibit 5 to Exhibit 1; finding a statistically significant correlation between distance from operating wind turbines and vertigo, and a correlation approaching statistical significance between tinnitus and proximity to wind turbines).

[15] Salt, Alec & Jeffrey Lichtenhan, 2014, "How Does Wind Turbine Noise Affect People?," *Acoustics Today*, 10:1, pp. 20-28 (attached as Exhibit 6 to Exhibit 1; describing the "many ways by which infrasound and low-frequency sound from wind turbines could distress people living nearby"); Alec Salt, September 18, 2013, Letter to Martti Warpenius (attached as Exhibit 7 to Exhibit 1); Salt, Alec & James Kaltenbach, 2011, "Infrasound from Wind Turbines Could Affect Humans," *Bulletin of Science, Technology and Society*, 31(4): 296-302, at p. 299 (attached as Exhibit 8 to Exhibit 1).

wind projects of *at least* 1.25 miles (approximately 2 kilometers).[16] As Claude-Henri Chouard explained in his report for the French National Academy of Medicine:

> The harmful effects of sound related to wind turbines are insufficiently assessed . . . . The sounds emitted by the blades *being low frequency, which therefore travel easily* and vary according to the wind, . . . constitute a permanent risk for the people exposed to them. . . . The Academy recommends halting wind turbine construction closer than 1.5 km from residences.[17]

Comment 16-34 (continued)

These setback recommendations are bolstered by a recent peer-reviewed study of the health impacts on local residents of both ILFN and audible noise generated by a pair of wind energy facilities in Maine, the Mars Hill and Vinalhaven projects.[18] The study compares the general health, sleep quality and daytime sleepiness, as assessed via validated questionnaires and established sleep and health indices, of a group of residents living within 1.4 kilometers of at least one wind turbine to a group of residents living between 3.3 and 6.6 kilometers from a turbine. The authors found that "[p]articipants living [within 1.4 kilometers of an industrial wind turbine] had *worse* sleep" and "*worse* mental health" than those living at least 3.3 kilometers away. Exhibit 9 to Exhibit 1 at 239 (emphasis added). Furthermore, they found statistically significant "dose-response relationships [between proximity to wind turbines and] important clinical indicators of health including sleep quality, daytime sleepiness, and mental health" – something that no other peer-reviewed, published study to date had even attempted to analyze. *Id.* at 240. Their findings "suggest[] that adverse effects are observed at distances *beyond 1 km*." *Id.* at 242 (emphasis added). The data did not permit the authors to "construct a dose-response curve" for ILFN or audible noise levels and adverse impacts, but they did demonstrate that "this value will be less than an average hourly LAeq of 40 dBA" for audible noise. *Id.*

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[16] Pierpont, Nina, 2009, *Wind Turbine Syndrome: A Report on a Natural Experiment*, K-Selected Books: Santa Fe, NM.

[17] Chouard, Claude-Henri, 2006, *Rapport: Le Retentissement du Fonctionnement des Éoliennes sur la Santé de l'Homme*.

[18] Nissenbaum, Michael, Jeffery J. Aramini & Christopher D. Hanning, 2012, "Effects of Industrial Wind Turbine Noise on Sleep and Health," *Noise & Health*, 14(6): 237-243 (attached as Exhibit 9 to Exhibit 1).

6. EMF Impacts

The County recognizes that electrical transmission facilities "generate electromagnetic radiation and, therefore require a wide, undeveloped corridor for health and safety purposes." County, June 2014, Energy Element "Draft Baseline Environmental Inventory Report," pp. 14-10. Electrical generation facilities create the same health and safety risks from electromagnetic radiation fields and stray voltage. The County fails to even mention these impacts in the DPEIR. Recent studies, such as those by Dr. Samuel Milham and Dr. Magda Havas, have linked EMF exposure with an increase in ailments such as diabetes, fibromyalgia, chronic fatigue syndrome and attention deficit disorder, among others.[19] Similarly, as reported in Jeffrey Lovich's and Joshua Ennen's recent *BioScience* article, Doctor Alfonso Balmori (in a 2010 article) found the "possible impacts of chronic exposure to athermal electromagnetic radiation" on mammal species to include "damage to the nervous system, disruption of circadian rhythms, changes in heart function, impairment of immunity and fertility, and genetic and developmental problems." Exhibit 20 to August 22, 2014 Scoping Comments at 987. Furthermore, even though there remains some disagreement over the impacts of EMF, many "authors suggest that [this] . . . should not be cause for inaction. Instead, they argue that the precautionary principle should be applied in order to prevent a recurrence of the 'late lessons from early warnings' scenario that has been repeated throughout history." *Id.* Therefore, the DPEIR's complete failure to analyze this significant impact must be remedied.

Comment 16-35

7. Air Pollution

The County relies upon its air quality mitigations to reduce impacts caused both by fine particulate matter and by the fungus *Coccidioides immitis*, which lives in the soil in arid areas including parts of Imperial County and causes the pneumonia-like condition Valley Fever. *See* DPEIR 4.3-13 to 4.3-14. These measures include dust control plans that are submitted to the Imperial County Air Pollution Control District ("ICAPCD") for review and approval. DPEIR

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[19] *See, e.g.,* Exhibits 17, 18, and 19 to August 22, 2014 Scoping Comments; Magda Havas, "Dirty Electricity Elevates Blood Sugar among Electrically Sensitive Diabetics and May Explain Brittle Diabetes," *Electromagnetic Biology and Medicine*, 27:135-146, 2008; Magda Havas, "Electromagnetic Hypersensitivity: Biological Effects of Dirty Electricity with Emphasis on Diabetes and Multiple Sclerosis," *Electromagnetic Biology and Medicine*, 25:259-268, 2006, available at: http://www.next-up.org/pdf/Magda_Havas_EHS_Biological_Effets_Electricity_Emphasis_Diabetes_Multiple_Sclerosis.pdf; The National Foundation for Alternative Medicine, "The health effects of electrical pollution," available at: http://d1fj3024k72gdx.cloudfront.net/health_effects.pdf.

4.3-10. But the ICAPCD is ill-suited to address the risks of Valley Fever. The mitigation measure further limits visible emissions to no greater than 20 percent opacity. DPEIR 4.3-10 to 4.3-11. But the DPEIR fails to address whether this opacity criteria is sufficient to avoid the risk of spreading Valley Fever. While the DPEIR claims that these measures will protect sensitive receptors when combined with the proposed 0.5 mile buffer between Energy Element overlay areas and urban areas, this claim fails to account for sensitive receptors who live outside the County's established urban zones. DPEIR 4.3-12 to 4.3-14. For these reasons, the DPEIR's conclusion that the proposed Project's air quality impacts – including Valley Fever – will be less than significant after mitigation is not supported by the evidence.

Comment 16-36 (continued)

The DPEIR improperly concludes that there will be no cumulative air quality impacts based on the speculation that multiple projects would not be constructed simultaneously. Instead of relying on such speculation, however, the County should establish a mitigation measure that would *prevent* multiple projects from creating simultaneous construction-stage impacts. By relying on an unfounded assumption that an impact will not occur, instead of actively preventing the impact, the County has avoided its duties under CEQA.

Comment 16-37

8. Aviation Impacts

As discussed in Backcountry's Scoping Comments, it is essential that the DPEIR analyze the risk to pilots and aircraft caused by the skyward glare that the DPEIR admits would be produced by multiple types of renewable energy projects allowed by the Project, including parabolic trough and power tower systems. DPEIR 4.1-17. Yet the DPEIR *entirely* fails to analyze this risk. Instead, it claims that "impacts regarding light or glare cannot be determined at this time" because the Project "does not contain specific development proposals." *Id.* Not so. Because the Project would allow construction of facilities that would likely produce harmful glare – and because it is reasonably foreseeable that one or more such projects would be built if the Project is approved – the County must analyze the risk in enough detail to inform decisionmakers and the public of both the hazard posed and the available means to mitigate or avoid it. *See* Guidelines § 15151.

Comment 16-38