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September 25, 2012

Jaymie L. Brauer
Kern County Planning and Community Development Department
2700 M Street, Suite 100
Bakersfield, CA 93301

Subject: Comments on the Final Environmental Impact Report and Response to Comments for the Beacon Photovoltaic Project, Kern County

Dear Ms. Brauer:

We submitted comments on the July 2012 Draft Environmental Impact Report (DEIR) for the Beacon Photovoltaic Project ("Project"). The County published a September 2012 Final Environmental Impact Report (FEIR) and Response to Comments ("Responses"). We find the FEIR and Responses to inadequately address our comments in failing to disclose and evaluate issues associated with air quality, hydrology, and hazards and hazardous materials. Prior to certification, the County should disclose and mitigate these issues as necessary in a recirculated FEIR.

AIR QUALITY

Particulate Matter Emissions

Our comments noted that the DEIR did not provide: (1) an adequate explanation of the Project's PM10 emissions estimate; and (2) an evaluation of potential health effects of the Project's PM10 emissions on workers, nearby residents, and schoolchildren. The FEIR does not adequately address these comments; therefore, we have the following supplemental comments.

1. Emissions Calculations:

The Responses state that the implementation of Eastern Kern Air Pollution Control District (EKAPCD) Rule 402 and its measures¹ would reduce the Project's fugitive dust, or PM10, emissions by 68%

¹ http://www.kernair.org/Rule%20Book/4%20Prohibitions/402_Fugitive_Dust.pdf

(Responses, p. 7-200). However, this is just an assumption on the part of Applicant and they, themselves, note that “Rule 402 does not provide a control efficiency for these measures” (Appendix C1, p. 1). The Responses state that the application of the control efficiency can be substantiated by the findings in the Western Regional Air Partnership’s Fugitive Dust Handbook (Responses, p. 7-200). Our review of the Handbook does not reveal any evidence for this claim.

The Responses state that the control efficiency of 68% is reasonable for the Project’s fugitive PM10 emissions (Responses, p. 7-202). The Applicant cannot claim this reduction in fugitive PM10 emissions as reasonable without providing any modeling results or calculations. The Applicant cannot simply list the efficiency of the mitigation measures (Responses, p. 7-201) and assume a 68% reduction in emissions. Instead, the Applicant should provide calculations to specifically show how implementation of the mitigation measures will result in a 68% reduction in fugitive PM10 emissions.

2. Health Effects of Emissions:

Our comments noted the detrimental health effects of exposure to PM10. As stated, exposure to PM10 can cause and exacerbate asthma², especially in children³, as well as cause bronchitis, lung tissue damage, cancer, and even death.⁴ Research identifies that dust from construction is a major contributor to PM10 and that PM10 exposure is associated with asthma.⁵ A report by Imperial County, California states that PM10 inhalation can exacerbate asthma and children are susceptible to higher risks from exposure to PM10.⁶

Red Rock Elementary School is located three miles north of the Project site (DEIR, p. 4.7-1). Four residences are located within 0.5 miles of the Project boundary (DEIR, p. 4.2-2). Construction activities at the 3.6 square mile Project site -- including excavation, filling, and grading -- will result in dust generation. Dust, or PM10, generated from these activities can be transported by wind toward adjacent residences and the school. The Project site is already a “large source of windblown dust” (Fact Sheet, p. 5). The Project’s emissions of PM10, in conjunction with the area’s existing windblown dust, are likely to result in significant health effects to workers, residents, and schoolchildren – an impact not evaluated in the FEIR.

The FEIR should be revised and recirculated to acknowledge the adverse health effects and potentially significant impacts from exposure to dust and PM10 generated from Project construction. The Applicant should also prepare a dust control plan, routinely provided as mitigation for fugitive dust impacts in other Kern County EIRs.⁷ For example, the DEIR prepared for the North Sky Wind Energy project in Kern County states that “the project proponents shall develop a Fugitive Dust Control Plan in compliance with

² http://scerpfiles.org/cont_mgt/doc_files/EH-01-2.pdf

³ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>

⁴ <http://www.epa.gov/airtrends/aqtrnd95/pm10.html> and <http://www.arb.ca.gov/html/brochure/pm10.htm>

⁵ http://scerpfiles.org/cont_mgt/doc_files/EH-01-2.pdf, p. 1

⁶ <http://www.co.imperial.ca.us/airpollution/attainment%20plans/final%20ic%202009%20pm10%20sip%20document.pdf>, p. 1-2

⁷ <http://www.co.kern.ca.us/planning/pdfs/eirs/AltaEast/Body/Tables/Table%20ES-6.pdf>, p. 1

East Kern County Air Pollution District Rule 402 to reduce PM10 and PM2.5 emissions during construction”.⁸

The FEIR does include dust control measures as mitigation (MM 4.2-1 and MM 4.2-4). However, a dust control plan, in accordance with EKAPCD Rule 402’s “Special Requirement for Large Operations”⁹ must also be prepared.

The Applicant should prepare a Rule 402-compliant dust control plan to ensure that dust exposure and the potential health effects to workers, nearby residents, and schoolchildren are minimized to the maximum extent feasible. The plan should be included in a recirculated FEIR.

HYDROLOGY

PV panels containing cadmium telluride (CdTe) are being considered as a possible technology for the Project (DEIR, p. 4.9-6). Our original comments noted that the DEIR does not consider the potentially significant impacts to humans and the environment from panel breakage and subsequent release of CdTe. Catastrophic breakage of some of the 972,000 panels was not considered in the Responses. Breakage of and CdTe release from the panels on a large scale may result from earthquake shaking, flooding, or fire damage.

1. Impacts to the environment

We previously cited a study¹⁰ that found that cadmium, from broken panels, can leach into the groundwater at concentrations exceeding Environmental Screening Levels (ESLs).¹¹ The Responses states that these concentrations are below human health screening levels and that health effects to on-site workers or off-site residents are highly unlikely (Responses, p. 7-203). As our comment focuses on environmental impacts to groundwater and surface water from cadmium leachate, comparison to human health screening levels is non-responsive and irrelevant. The FEIR should be revised to address and respond to our intended comment on the impacts to groundwater and surface water from cadmium leachate releases from broken panels.

The FEIR also does not address or respond to our comments on the potential for panel breakage due to flooding or earthquakes. Our original comments cited the flooding that occurred in the Genesis Solar project area and resulted in the breakage of 200 parabolic trough mirrors.¹² If a similar event were to occur on the Project site, it is reasonable to assume that panel breakage and subsequent releases of CdTe would occur, potentially resulting in impacts to groundwater and surface water. We also previously noted that the Garlock Fault is located on the Project site

⁸ http://www.co.kern.ca.us/planning/pdfs/eirs/northsky_jawbone/DEIR/Subsections/4.3-4.pdf, pp. 4.3-12, 13

⁹ http://www.kernair.org/Rule%20Book/4%20Prohibitions/402_Fugitive_Dust.pdf, p. 402-7

¹⁰ Fate and Transport Evaluations of Potential Leaching Risks from Cadmium Telluride Photovoltaics (2012). Environmental Toxicology and Chemistry, Vol. 31, No. 7

¹¹ Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater.

http://www.swrcb.ca.gov/sanfranciscobay/water_issues/available_documents/ESL_May_2008.pdf

¹² <http://www.earthtechling.com/2012/08/big-desert-solar-project-hit-by-wind-flood/>

and panel breakage is likely to occur during an earthquake along the fault, resulting in potential CdTe release.

In the event of panel breakage (via flooding or earthquake), cadmium leachate, at concentrations exceeding ESLs, will potentially be released to groundwater and surface water, a potentially significant ecological impact. The FEIR should be revised and recirculated to disclose and thoroughly evaluate this impact.

2. Impacts to humans

The County should evaluate impacts to workers, nearby residents, and schoolchildren if CdTe panels will be used for the Project. Workers, nearby residents, and schoolchildren can be exposed to CdTe if panel breakage were to result from fire – a scenario not evaluated fully in the FEIR. The FEIR simply states that fire damage would not result in the release of CdTe (Responses, p. 7-203). This is contrast with recent research that identifies fire damage to potentially result in cadmium exposure.¹³ The study states that fire can consume the PV modules and “releases cadmium from the material into the air”.¹⁴

People can also be exposed to CdTe through inhalation of dust or ingestion of flakes and dust particles.¹⁵ A 2009 Silicon Valley Toxics Association White Paper states that the “potential for dust and fumes creates potential hazards for workers during the preparation of materials, from the scraping and cleaning of CdTe products, and from fugitive emissions”.¹⁶

Other CEQA documents for projects who have proposed to use CdTe technology have disclosed the potential inhalation and ingestion risks. For example, the Environmental Impact Statement (EIS) for the Ocotillo Sol solar project states that release of CdTe could occur if pitting of the panels occurred and human exposure could occur if the panels generated flake or dust particles.¹⁷ The EIS mitigates for these potential impacts by implementing “routine monitoring and inspection activities by the Applicant to identify any potentially damaged panels. If a damaged panel is discovered, the panel would be replaced prior to any degeneration that may result in the release of CdTe.”¹⁸

If the Applicant chooses to use CdTe panels, potential impacts to workers, nearby residents, and schoolchildren through all potential pathways of exposure (inhalation of emissions, ingestion of dust or flake particles) should be evaluated and appropriate mitigation measures, as identified in other EIRs, must be provided to ensure public health.

¹³ http://www.clca.columbia.edu/papers/Life_Cycle_Impact_Analysis_Cadmium_CdTe_Photovoltaic_production.pdf, p. 321

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ <http://www.greencollar.org/UserFiles/ads-media/12526955654aaa9e0d799db.pdf>

¹⁷ http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/elcentro/nepa/ocotillosol.Par.49849.File.dat/Ocotillo_Sol_DEIS_Volume1_508.pdf, p. 2-11

¹⁸ *Ibid.*

Using CdTe panels can result in potentially significant impacts from: (1) release of cadmium during earthquakes or floods to groundwater and surface water as a result of panel breakage; and (2) exposure of onsite workers, nearby residents, and schoolchildren from inhalation and ingestion of dust particles, flakes, and particulate emissions from fire damage. If the Applicant decides to use CdTe panels, these impacts should be disclosed and evaluated prior to certification of the FEIR.

HAZARDS AND HAZARDOUS WASTE

We previously stated the DEIR provided only general information on baseline soil conditions at the Project site that may be harmful to construction workers. According to the DEIR, “pesticides, herbicides, and associated metals may be present in near-surface soils at residual concentrations” (Responses, p. 4.7-4). The DEIR further stated that “older pesticides can linger in the soil for many years” (Responses, p. 4.7-4). Our comments on the DEIR noted that a Phase I Environmental Site Assessment (ESA) was not included in the DEIR to assess these potentially hazardous conditions and that without such an evaluation, construction workers might be at risk during earthwork activities.

In response, a number of Phase I ESAs, prepared in 2007 and 2008, were produced. The Phase I ESAs found no “recognized environmental conditions” to be associated with former pesticide use. Kern County concluded, in response to our comment, that “project impacts related to hazard and hazardous materials have been fully disclosed, adequately analyzed and appropriately mitigated” (Responses, p. 7-206).

We take exception with this conclusion on two counts: (1) the Phase I ESAs that were produced are more than five years old and are unreliable for decision making; and (2) failure to find pesticide use a recognized environmental condition is inconsistent with other Phase I ESA findings in Kern County.

1. Phase I ESAs have a shelf life

The Response relies on the findings from Phase I Environmental Site Assessments (ESAs) completed in 2007 and 2008. A Phase I ESA, according to the American Society for Testing and Materials, Phase IEs are valid for 180 days following acquisition of the property.¹⁹

Because the Phase I ESAs are dated, they are unreliable in evaluating conditions that are potentially hazardous to construction workers and future site personnel. Therefore, the FEIR’s analysis of the Project site based on these Phase I ESAs is inadequate. An FEIR should be recirculated to include a new Phase I ESA that evaluates current Project site conditions.

2. Failure to find a recognized environmental condition

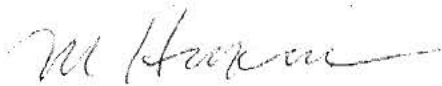
The finding in the Phase I ESAs that potential pesticide residues were not a recognized environmental condition is contrary to findings made in other Kern County Phase I ESAs where

¹⁹ <http://www.astm.org/Standards/E2247.htm>

agricultural use was noted.²⁰ In the three footnoted examples, agricultural use and pesticide application were cited as recognized environmental conditions that warranted follow-up soil sampling.

The Responses state that "soil sampling pursuant to a Phase II ESA is not warranted" (p. 7-205). Contrary to this response, pesticide use in Kern County may be considered to be a recognized environmental condition, one that requires updated Phase I ESAs and soil sampling to determine health impacts. The FEIR should be recirculated to include updated Phase I ESAs and provide for soil sampling to determine if residual concentrations of pesticides are present that would present risks to construction personnel involved in earthmoving activities.

Sincerely,



Matt Hagemann, P.G., C.Hg.



Uma Bhandaram

²⁰ http://www.envirostor.dtsc.ca.gov/regulators/deliverable_documents/8777699112/06-11892%20PH%201%20WUSD%205th%20&%20Palm%20Report.pdf, p. 14; http://www.envirostor.dtsc.ca.gov/regulators/deliverable_documents/6659377872/Wegis%20ES_Phase%201_050105_Report.pdf, p. 11; http://www.ci.wasco.ca.us/Public_Documents/WascoCA_Planning/Phase%20I%20ESA.pdf, p. 15