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Desert Solar May Pose Threat to Desert Biofuels

by Chris Clarke
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Jojoba fruit | Photo: Ken Bosma/Flickr/Creative Commons License

Development in the desert can cause serious dust pollution, and utility-scale solar is no exception to that rule. Any disturbance to the desert's delicate soils can loose tons of dust into the air. (If you've driven past Ford Dry Lake on I-10 on a windy day recently, you've seen an example of this, as heavy dust off the Genesis Solar Energy Project routinely slows transcontinental traffic between Blythe and Indio.)

That dust can do more than decrease visibility, and breathability for that matter. It can also seriously affect desert plant life, including some desert plants that are being farmed as a renewable energy source themselves. And according to jojoba farmer Donna Charpied, dust blowing off the Desert Sunlight construction site adjacent to her farm in the Chuckwalla Valley has seriously damaged this year's crop of potential fuel oil.

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Charpied, who KCET viewers may remember from an popular episode of California's Gold with Huell Howser, has been farming jojoba in the Chuckwalla Valley with her husband Larry for more than 30 years. Jojoba is an evergreen shrub native to the North American Deserts, including California's Mojave and Colorado deserts, whose seed is more than half oil. This oil is generally used in cosmetics and personal care products. Given its very long carbon chains it's long been touted as a potential biofuel crop. That's the use the Charpieds -- who call themselves "Jojoba Witnesses" -- have spent three decades promoting.

First Solar started building the 4,100-acre Desert Sunlight solar facility next door to the Charpieds' farm in September 2011, and Donna Charpied says the resulting dust has done serious damage to their crop. First Solar cleared about 1,000 acres of desert almost immediately on commencement of construction, she told ReWire, and winter dust storms off the site covered their jojoba while it was flowering, with disastrous results. According to Charpied;

When the female blooms, it sends out three little "hairs" or styles that produce a sticky substance to help catch pollen. The jojoba cannot distinguish between a particle of pollen or dust, and once it "thinks" it is pollinated it stops producing that sticky substance and goes into seed setting mode. We lost 50% of our crop this year due to false pollination, which would have been a bumper crop.

Dust above the Desert Sunlight project obscures the view of Joshua Tree National Park's Coxcomb Mountains | Photo courtesy Donna and Larry Charpied

Dust, also called "particulate matter," is a serious health hazard regulated by the EPA and state air quality management districts. Aside from car crashes during dust storms, it can cause asthma and other respiratory ailments. Airborne soil is a known vector for valley fever, and apparently it's bad for a jojoba-fueled future as well.

Charpied finds it ironic that her crop losses due to fugitive dust from the construction site can be seen as a result of development of a utility-scale solar project built with nearly $1.9 billion in Federal loan guarantees. "We grow a true 'green energy' crop that lives 200 years," she says. "It converts CO2, and does not compete for water during the summer months. And we never received a dime in government money to produce it."