

A Kid With 10,000 Magnifying Glasses To Capture The Sun

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Kyle Hill speaks with SolarReserve's heliostat technician, William Allen. 2013

by [Kyle Hill](#)

In one day, the sun bathes the earth in more energy than we have cumulatively produced in the history of electrical power. So it makes sense that if you were looking for a nigh inexhaustible, green energy source, you would look to that great ball of constantly fusing hydrogen in the sky. But when your knees are quivering atop a 600-foot tall tower in the middle of the Nevada desert, it's hard to think about the sun's raw power.

You need a tower taller than most city buildings to get at all that power. While the technology to capture the sun's power through photovoltaic panels is in its relative infancy, there is a much more brute force method tested for centuries—mirrors.

At the Crescent Dunes Solar Energy Project, a \$1 billion investment seeks to reflect enough sunlight to heat millions of pounds of molten salt to over 1,000 degrees. To do this, 10,000 mirrors—each four times the size of your garage door—are pointed at the tower and controlled

with computer models to make sure an incredible beam of sunlight is always on the tower to produce the heat, the steam and eventually the power.

Like a kid with a magnifying glass a kilometer wide, SolarReserve intensely focuses the sun in order to do something that no other solar plants currently do—generate electricity at night. The secret is the salt. Unlike other materials, salt in a molten form can hold a high temperature for a very long time. So even when the sun is down, that hot salt can turn water to steam, and that steam can turn turbines to make electricity. It's engineering a new kind of solar power with materials and technologies we've had for decades.

Peeking my head cautiously over the edge, I looked down at the trucks cleaning and cranes positioning. We were waiting for the sunrise and the illumination of the mirrors. I spent that part of our shoot away from the mirrors' focal point.
