

HARNESSING THE DESERT SUN

Putting
the **SUN**
to use

You're hiking under the blazing sun in California's Mojave Desert, surrounded by dusty shrubs and cacti. But wait, what's that in the distance? You spy a giant tower glowing like a lighthouse. It's more than 40 stories tall. A sparkling lake surrounds it. Getting closer, you see

that the "lake" is actually thousands of glittering mirrors on the ground.

Is this a mirage—a trick your eyes are playing on you?

No, it's a solar power tower, and it's harnessing the desert sun to make electricity. Did you know that in just six hours, deserts get more energy from the sun than all the world's people use in a year? Solar towers are being built in deserts from California to Africa to put that sunshine to work. The biggest Mojave

Desert project is at Ivanpah, California. It has three towers and more than 300,000 mirrors. It can produce enough energy to power 140,000 homes!

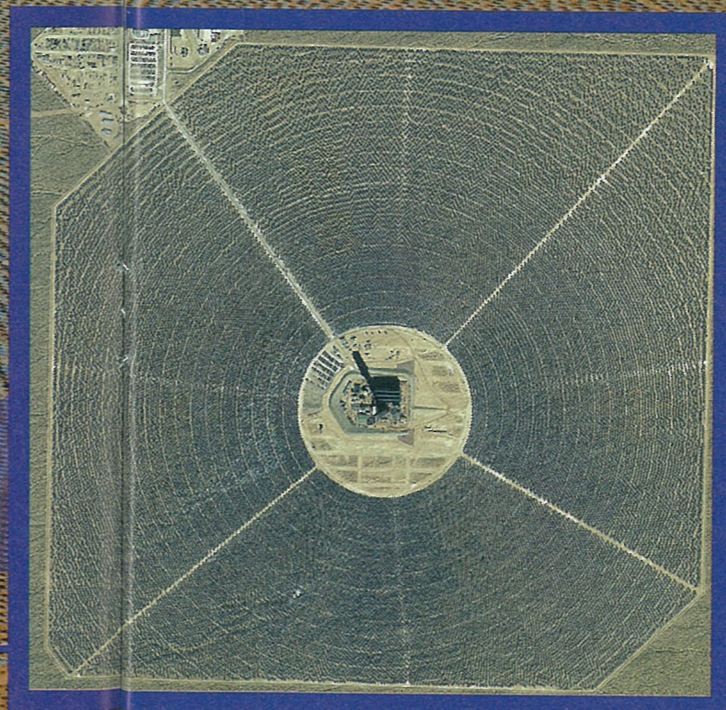
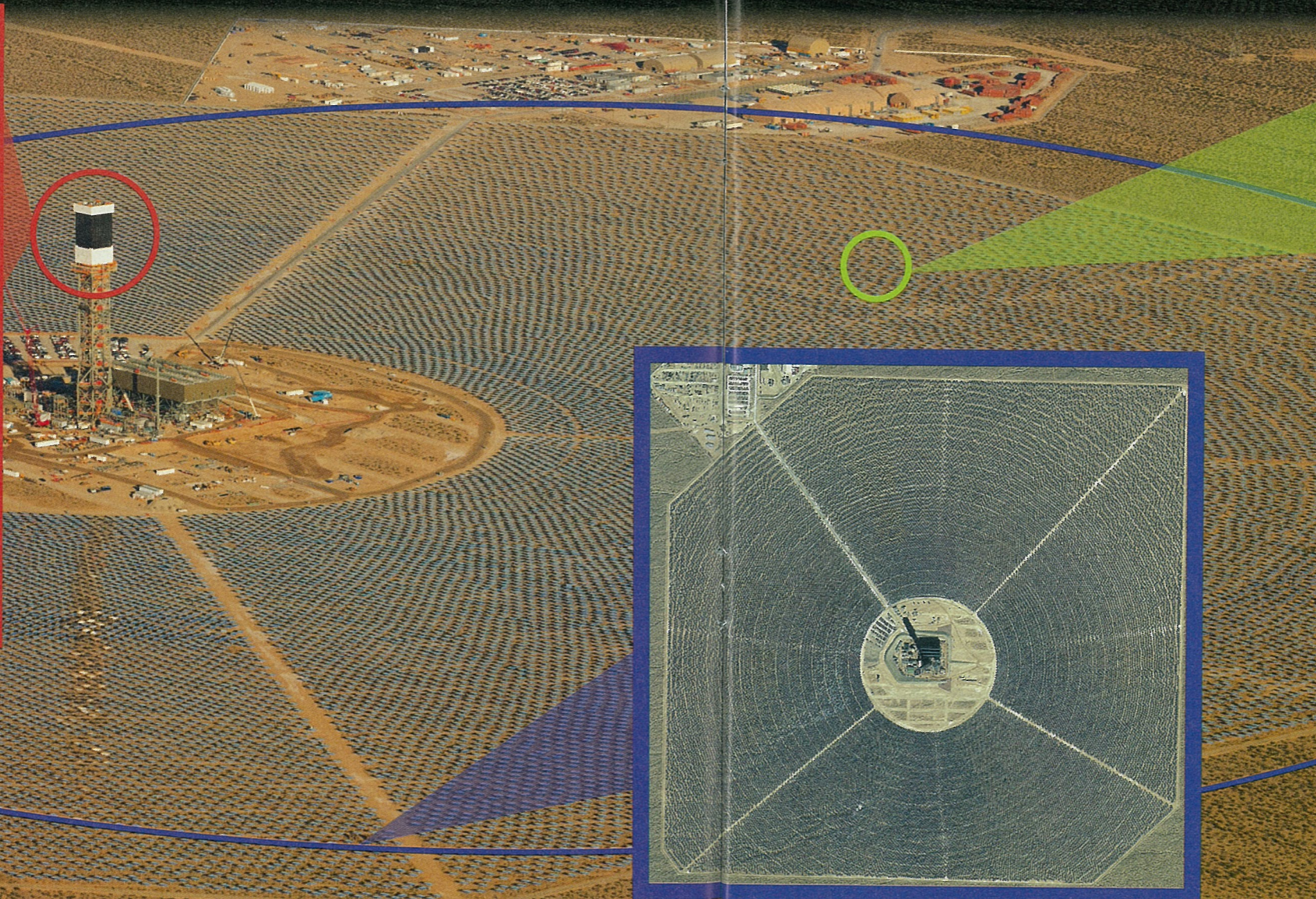
Solar towers work differently from rooftop solar panels. Towers use Concentrating Solar Power (CSP) technology. All those mirrors concentrate the sun's rays, directing them to the tower tops. There, water waits in huge boilers. The concentrated sunlight superheats the water. This changes the water into steam. The steam turns big turbines, which are engines that produce electricity.

Building in the desert poses special challenges. Think of cleaning the dust

from all those mirrors! And what about the desert animals? When the Ivanpah builders found rare desert tortoises on their construction site, they moved them to safer areas. Now, naturalists are worried that birds flying too close to the mirrors can be burned.

It's worth working to solve these problems, because using the sun's energy helps us burn less oil and coal. That means less carbon dioxide goes into the air. And that can help slow global climate change.

Deserts may look like empty wastelands . . . but they could hold the golden key to powering our future: sunshine! ☀️



by Christy Mihaly

Make this solar **cooker** and use the sun to roast **marshmallows**—without a **campfire!**



YOU'LL NEED:

- Sharp scissors
- Empty chip can (about 9½ inches long)
- Clear plastic wrap
- Tape
- Skewer (about 14 inches long)
- Marshmallow



1. Make a 7-inch cut lengthwise along the can, leaving an equal amount of space uncut at both ends.
2. Make a 3-inch cut at each end of the first cut and perpendicular to it.
3. Open the can at the cuts, create flaps, and bend them back.
4. Cover the opening with plastic wrap. Tape it into place.
5. With an adult, make a small hole in the center of the can's lid and another in the center of the base.
6. Remove the lid. Insert the skewer through the hole in the lid. Slide a marshmallow onto the skewer and insert through the hole in the can's base. Replace the lid.
7. Place the cooker so direct sun hits the marshmallow. It will toast in a few minutes!



I'll do anything for smores!

ME NEXT!

After we make smores for the whole Girl Scout troop first!

Hey... when do I get a marshmallow?