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This is an excerpt from [EERE Network News](#), a weekly electronic newsletter.

February 24, 2010 DOE Awards Nearly \$1.4 Billion in Loan Guarantees to BrightSource Energy

DOE announced on February 22 its conditional commitments for more than \$1.37 billion in loan guarantees to BrightSource Energy, Inc. in support of the construction and start-up of three utility-scale concentrated solar power plants (CSP) in the Mojave Desert of southeastern California. The loan guarantee is funded under the American Recovery and Reinvestment Act and is predicated on BrightSource meeting financial and environmental requirements before closing on the loan. The Bureau of Land Management is leading a federal review of the project with support from DOE. Pending local, state, and federal regulatory approval, the new plants will generate approximately 400 megawatts (MW) of electricity using the company's proprietary technology. This output would nearly double the existing generation capacity of CSP facilities in the United States.



The Ivanpah solar project will rely on solar power tower technology, which employs a field of flat mirrors to concentrate the sunlight on a receiver, mounted at the top of a central tower. [Enlarge this image.](#)
Credit: BrightSource Energy

The three-plant Ivanpah Solar Complex will be located on federally owned land near the Nevada border and will be the world's largest operational concentrated solar power complex. BrightSource will employ solar power tower technology, which uses thousands of flat mirrors, or "heliostats," to concentrate the sun's heat onto a receiver mounted at the top of a tower. Water pumped to the receiver is boiled into steam, which drives a turbine to produce electricity. Solar power towers allow the capture of a greater percentage of solar energy than other solar thermal technologies. The first Ivanpah plant is expected to begin construction in the second half of 2010 and come on line in 2012. Commercial operation for the second plant is slated for mid-2013, with the third plant following later that year. Once operational, the project will supply power to approximately 140,000 California homes. The BrightSource loan guarantee is the sixth conditional commitment for a loan guarantee for clean and renewable energy projects entered into by DOE's Loan Programs Office. See the [DOE press release](#) and DOE's [Loan Guarantee Program Web site](#).

BrightSource filed a proposal on February 11 to shrink the footprint of the Ivanpah Solar Complex, reducing its environmental impact. The alternative design—submitted to the California Energy Commission (CEC) and the U.S. Department of Interior's Bureau of Land Management (BLM) as part of Ivanpah's final permit process—came in response to public comments about the project. The proposed changes would reduce the footprint of the third Ivanpah plant by 23% and trim the overall project by about 12%, while avoiding the area identified by environmental groups as posing the greatest concern. The new plans call for dropping the number of solar towers in the third Ivanpah plant from 5 to 1, which brings the overall total number of towers in the power plant to 3. It also cuts the number of heliostats by about 40,000. If approved, these changes would lower the site's total gross capacity from 440 MW to 392 MW. See the BrightSource press release ([PDF 41 KB](#)). [Download Adobe Reader](#).

Although solar power towers were originally developed by DOE and U.S. industries, the technology has so far been deployed mainly on the plains of Spain, where sunlight seems to fall more often than rain. Last September, Abengoa Solar inaugurated its PS20 solar plant, which is the largest solar power tower plant in the world. Located in Seville, PS20 has more than 1,000 mirrors and is designed to produce 20 MW of power. See the [Abengoa Solar press release](#).

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