

# Utility-Scale Solar Power

## Clean Energy Solutions for America's Electricity Providers

### Overview

Utility-scale solar has been generating reliable, clean energy with a stable fuel price for more than two decades. Solar power plants can be developed in a way that balances environmental protection with our energy demands. By enacting federal policies to accelerate growth of utility-scale solar, we can create jobs nationwide and quickly diversify America's energy portfolio.

It's also clear that the United States needs to do more to address the problem of climate change, and do so quickly. The solar industry is ready now to deploy clean energy, and developing utility-scale solar power is one of the fastest ways to reduce carbon pollution in the atmosphere.

### Proven Technologies

A utility-scale solar power plant can be one of several solar technologies – concentrating solar power (CSP), photovoltaics (PV), or concentrating photovoltaics (CPV). What distinguishes utility-scale solar from distributed generation is project size and the fact that the electricity is sold to wholesale utility buyers, not end-use consumers.



*The 25 MW photovoltaic DeSoto Next Generation Solar Energy Center in DeSoto County, Fla., was completed in October 2009.*

*Source: Florida Power & Light*



*The 64 MW Nevada Solar One parabolic trough facility in Boulder City, Nev., was completed in June 2007.*

*Source: ACCIONA North America*

Utility-scale solar plants provide the benefit of fixed-priced electricity during peak demand periods when electricity from fossil fuels is the most expensive. Many utility-scale solar designs can also include built-in storage capacity that provides power even when the sun is not shining, like traditional power plants. Utility customers have repeatedly endorsed investments in utility-scale solar plants.

Nine concentrating solar power plants, totaling 354 megawatts (MW), have been in operation near Kramer Junction, Calif., for the past 18 years. Since 2006, six new CSP plants were constructed. Large photovoltaic plants operate across the country as well, totaling 152 MW. And more solar power is on the way: more than 23,000 MW of utility-scale solar power projects are under development in the U.S., enough to power more than 4.4 million households.<sup>1</sup>

### Creating Jobs

By enacting federal policies to accelerate the growth of utility-scale solar, we can create jobs nationwide and quickly diversify America's energy portfolio. Utility-scale solar will create jobs across the supply chain, from R&D and engineering to manufacturing and project finance to development and construction. This job creation and related economic activity is

occurring not only in the Southwest, where most utility-scale solar power plants are located, but also in the heart of the Midwest's manufacturing region.

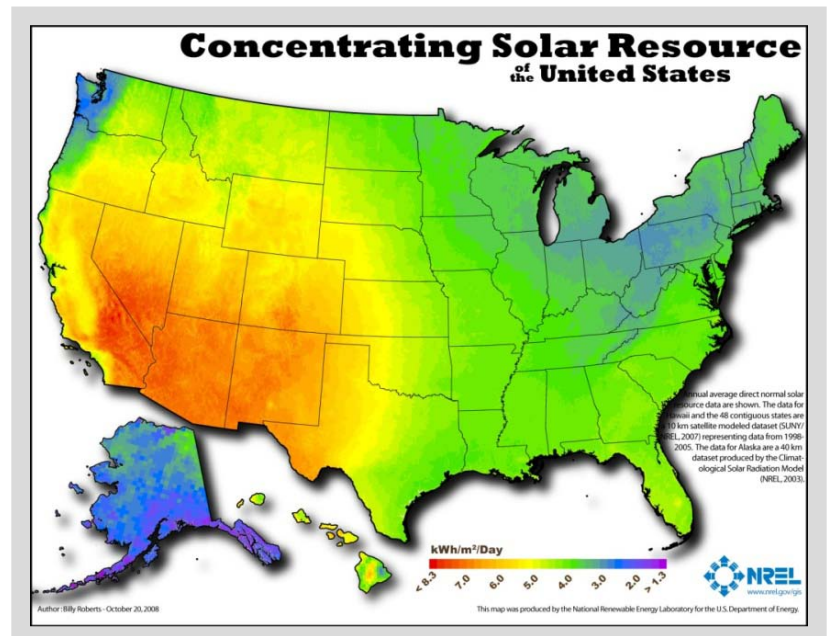
Currently more than 23,000 MW of utility-scale solar projects are under development. When complete, these power plants are expected to create more than 100,000 jobs.

## Meeting Clean Energy Needs through Domestic Resources

We cannot fight climate change and increase our energy independence without clean energy sources like solar. Solar energy is pollution-free, produces no greenhouse gases, and is fueled by an inexhaustible and renewable resource – the sun.

Utility-scale solar power plants will generate extensive amounts of clean energy as part of a diverse energy portfolio that includes distributed generation, solar hot water and other renewable sources, providing one of the quickest ways for states to meet renewable portfolio standards.

- Installation of 4 GW of CSP in the Southwest (comparable to eight coal-fired power plants) will result in 7.6 million tons of CO<sub>2</sub> not being emitted into the atmosphere.<sup>2</sup>
- Utility-scale solar power plants do not produce toxic emissions like mercury, smog-forming chemicals, particulate matter, or greenhouse gasses, such as carbon dioxide, NO<sub>x</sub> and volatile organic compounds (VOCs).<sup>3</sup>
- Deploying 4 GW of solar power in California could save consumers between \$60 million and \$240 million per year in the cost of natural gas typically used to generate electricity.<sup>4</sup>



Source: National Renewable Energy Laboratory

## Thoughtful Development

The solar industry is committed to solving our most pressing energy and environmental challenge in a thoughtful manner. Solar power plants can be developed in a way that balances environmental protection with our energy demands. The Southwest's plentiful solar resources can be harnessed in a way that safeguards water resources, lands, and habitat.

## About the Solar Energy Industries Association

Established in 1974, the Solar Energy Industries Association® is the national trade association of the U.S. solar energy industry. Through advocacy and education, SEIA and its 1,000 member companies are building a strong solar industry to power America. As the voice of the industry, SEIA works to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry and educating the public on the benefits of solar energy. [www.seia.org](http://www.seia.org)

For a referenced version of this factsheet and more information, please visit [www.seia.org](http://www.seia.org).

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<sup>1</sup> “Utility-Scale Solar Projects in the United States: Operational, Under Construction, and Under Development.” Solar Energy Industries Association. Updated 23 July 2010. Accessed online 1 August 2010. <http://www.seia.org/galleries/pdf/Major%20Solar%20Projects.pdf>

<sup>2</sup> *Solar Task Force Report*. January 2006. Western Governors’ Association. Accessed online 10 February 2010. <http://www.westgov.org/wga/initiatives/cdeac/Solar-full.pdf>

<sup>3</sup> See WGA Solar Task Force Report and *On the Rise: Solar Thermal Power and the Fight Against Global Warming*. 8 May 2008. Environment America. Accessed online 10 February 2010. <http://cdn.publicinterestnetwork.org/assets/OfjZtsJDnQCqGKdr9a7Hjg/On-The-Rise.pdf>

<sup>4</sup> L. Stoddard, J. Abiecunas and R. O’Connell. *Economic, Energy and Environmental Benefits of Concentrating Solar Power in California*. April 2006. National Renewable Energy Laboratory. Accessed online 10 February 2010. <http://www.nrel.gov/csp/pdfs/39291.pdf>