

Kimberlina Solar Thermal Power Plant

Solar-generated, superheated steam for clean, reliable energy



AREVA delivers the most cost-effective and land-efficient CSP technology— in the most environmentally responsible and water-conservative manner.



Simple. Scalable. Reliable.

Located in Bakersfield, CA, AREVA Solar's state-of-the-art Kimberlina Solar Thermal Power Plant is the first of its kind in North America. We're ready to power our customers and provide industrial steam for businesses working to cut energy costs with emissions-free technology.

The Kimberlina plant also represents the first solar thermal project to be built and to enter operation in California in nearly 20 years. It showcases AREVA's solar technology that is already operating at the Liddell solar thermal facility in New South Wales, Australia.

The mirrors, or reflectors, at Kimberlina were manufactured at AREVA's factory in Las Vegas, Nevada. At full capacity, Kimberlina's solar steam generators will generate up to 25 megawatts of thermal energy (MWt), or up to 5 megawatts (MWe) of electricity—enough power to light up 3,500 central Californian households.

AREVA Solar recently installed a fourth solar steam generator dedicated to superheated steam production. This superheat solar steam generator demonstrates optical, thermal and control systems advances leading to up to 900°F (482°C) superheated steam conditions.

Low-Cost, Carbon-Free Energy

AREVA Solar delivers energy from the sun. The company is a leader in solar thermal energy design, development, manufacturing and installation. We are committed to serving the global power generation and industrial steam needs of our customers in a dependable, market-competitive and environmentally responsible manner.

Headquartered in Mountain View, Calif., AREVA Solar is the Global Solar Business Unit of AREVA, with operations in the United States and Australia.

Solar Steam Performance

Temperature	Up to 750°F (400°C) Up to 900°F (482°C) available in 2011
Pressure	Up to 1,535 psia (106 bara) Up to 2,400 psia (165 bara) available in 2011
Annual energy per 5.3 Hectares (13 acres)	91,630 MMBtu (26,850 MWh)

AREVA's solar steam generators can deploy quickly to provide steam to your operations reliably and cost-effectively.

The AREVA Solar Advantage

Cost-Effective Steam

- Most land-efficient solar technology
- Water-efficient
- Eliminates fuel and emissions cost risks
- On-peak energy delivery

Reliable and Robust

- Proven technology
- Low wind profile
- Steel-backed mirrors for long life
- Suitable for demineralized or produced water operation

Rapid Deployment and Installation

- High-volume, automated production and standard materials eliminate supply chain constraints
- Rapid solar field installation (6-18 months)

Application Areas

- Power generation (standalone and solar-hybrid power plants)
- Power augmentation
- Industrial processes
 - ▶ Petrochemical refining and processing
 - ▶ Enhanced oil recovery
 - ▶ Food and chemical processing
 - ▶ Desalination
 - ▶ Mining

AREVA Solar's CLFR Technology

AREVA Solar's Compact Linear Fresnel Reflector solar steam generators boil water with concentrated sunshine. Mirrors track the sun, reflecting solar heat onto elevated boiler tubes to produce steam without the costs and pollution of fossil-fired boilers.

Direct steam generation makes integration into existing systems simple, either as retrofits or new designs. The result is a system that produces steam and electricity directly from the sun, at competitive prices.

Our solar steam generators are durable and reliable. AREVA Solar is the first and only solar steam boiler manufacturer to receive the American Society of Mechanical Engineers' "S" Stamp Certification of Authorization – the industry hallmark for acceptance and certification. The company has also received the National Board Certificate of Authorization "NB" to register its boilers.

Most Land-Efficient Solar Technology

- Lower natural habitat mitigation costs
- Less time-intensive permitting process as a result of smaller site footprint
- Easier access to contiguous, flat land (<3% grade) and transmission
- Lower land and grading costs, and ongoing O&M costs
- Greater ability to site at existing power plant and industrial sites



CSP Reference Plant

250 MWe CLFR = 890 Acres = 360 Hectares*
* Daggett, CA weather and radiation data

“AREVA provides reliable, scalable and cost-competitive CSP solutions for power producers and industrial customers.”

AREVA Solar

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