

Mojave Solar



Mojave supplies power to 91,000 households in California.

The plant will prevent around 223,500 tons of CO₂ emissions per year.

More than 2,200 people were involved in the construction.

Abengoa

Abengoa (MCE: ABG.B/P SM /NASDAQ: ABGB) applies innovative technology solutions for sustainability in the energy and environment sectors, generating electricity from renewable resources, converting biomass into biofuels and producing drinking water from sea water.

Energy



The growing global demand for energy calls for new solutions, prioritizing those that use clean and renewable sources. Abengoa develops infrastructure projects that convert energy from renewable sources into electricity and biofuels, and constructs the transmission lines that make up our electricity networks.

Environment



The growth of the global population, improving living conditions in developing countries and climate change are going to lead to significant changes in the demand for natural resources. Aware of this trend, Abengoa produces drinking water from sea water and waste water.



Abengoa executes its engineering, infrastructure concessions and industrial production activities in both the energy and environmental sectors:

1 Engineering and construction

Engineering and construction includes our traditional engineering activities in the energy and water sectors, with more than 70 years of experience in the market. We specialize in carrying out complex turn-key projects for solar thermal electric power (STE) plants, solar-gas hybrid plants, conventional generation plants, biofuels plants and water infrastructures, such as large-scale desalination plants, and transmission lines, among others.

2 Concession-type infrastructures

We have an extensive portfolio of proprietary concession assets that generate revenues that are governed by long term sales agreements such as take-or-pay contracts, tariff contracts or power purchase agreements (PPAs). This activity includes the operation of electric (solar, cogeneration or wind) energy generation plants and transmission lines. These assets generate no demand risk and we focus on operating them as efficiently as possible.

3 Industrial production

This covers our businesses with a high technological component, such as biofuels, or the development of solar technology. The company holds an important leadership position in these activities in the geographical markets in which it operates.

Mojave**Figures**

- Location: Barstow, California (USA)
- Capacity: 280 MW gross
- Technology: parabolic trough
- Solar field: 1,765 acres
- Homes that will be supplied with clean energy: 91,000
- Tons of CO₂ prevented from entering the atmosphere: 223,440 annually
- Generating more than US\$ 169 million in tax revenues over next 25 years

Mojave Solar is located about 100 miles northeast of Los Angeles, near Barstow, California. Construction began in 2011 with a total investment of approximately \$1.6 billion and started commercial operation in late 2014. The US Department of Energy (DOE), through the Loan Programs Office, issued a loan guarantee in the amount of \$1.2 billion, which facilitated the financial closing with the Federal Financing Bank (FFB) and the start of the plant's construction.

Abengoa signed a power purchase agreement (PPA) with Pacific Gas & Electric, one of America's largest electric utilities, to buy the energy produced by the Mojave Solar for a period of 25 years.

Mojave Solar has a nameplate capacity of 280 MW gross and it uses advanced proprietary parabolic trough technology that increases the plant's efficiency and lowers the total cost.



➤ Parabolic trough collector technology

Mojave Solar operates using mirrored parabolic trough collectors. The structures track the movement of the sun, concentrating the solar radiation onto a receiver tube that contains a heat transfer fluid (HTF). The HTF is heated as it circulates inside the tubes and is then circulated back to a central power plant. It passes then through a series of heat exchangers to produce superheated steam that is used to generate clean electricity in a conventional steam turbine generator.

The solar field covers nearly 2 square miles with 2,200 mirrored parabolic trough collectors and 1.5 million square meters of reflective area.

The parabolic trough technology is a mature and viable solution, with more than 25 years of proven operation experience since the launch of the first parabolic trough plants in the US (Solar Energy Generating Systems in California).



Environmental benefits

From an environmental perspective, Mojave supplies clean energy, free of pollution and greenhouse gases, to around 91,000 homes, preventing the emission of nearly 223,500 tons of CO₂ every year. These reductions contribute to achieve the state's renewable energy targets as well as to meet national targets for climate change mitigation.

Mojave Solar will bring many environmental benefits to California and will support the state's goals for clean energy. California is meeting its renewable energy standards through various energy technologies and the addition of the Mojave Solar will provide additional value to Pacific Gas & Electric (AMEX: PCG-PE) portfolio and increase California's electricity generation reliability by energy source diversification.



Mojave Solar has the support from all of the major environmental organizations in California.

Socioeconomic benefits

Over the past three years, thousands of jobs were created in California both through construction and the supply chain. At the peak of construction, 2,200 people were working on the site. The plant will additionally support around 70 permanent operation and maintenance jobs.

Abengoa's supply chain, initiated by its other plant, Solana, now spans more than 22 states. The need for key components and related services creates the foundation upon which to expand solar energy technology manufacturing capabilities to support current and future STE projects in the U.S., as well as to export to other countries. Through this expansion, thousands of indirect jobs are created across the country, in states not normally associated with STE, such as Kentucky, Illinois, Ohio, Minnesota, and Missouri.

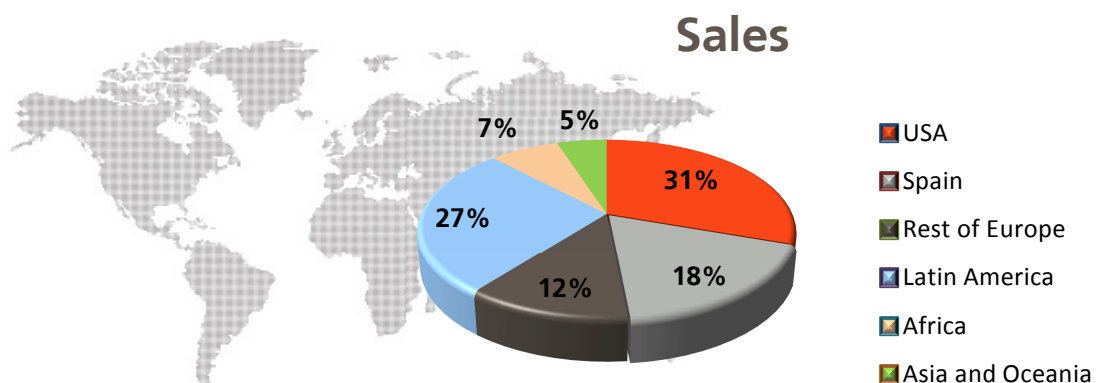
Mojave Solar will generate around \$169 million in tax revenues over the next 25 years.

Abengoa: a global company

Abengoa is committed to offering innovative solutions for sustainability with a local perspective integrated in a global outlook.

Abengoa is committed to internationalization as a key aspect of our strategic plan. With a presence on five continents, our strategy is based on the following points:

- Promoting, constructing and operating innovative solutions for sustainable development.
- Providing customized solutions for all the sectors in which we operate.
- Guaranteeing efficient and responsible distribution and sales of our technologies and products around the world.
- Leading technological development such as second-generation biofuels or concentrating solar power plants in order to supply a sustainable energy alternative.



Data as of August, 2013.

Abengoa in the USA

Abengoa's presence in the US has grown exponentially since the company decided to set its business in the world's leading economy more than a decade ago. Abengoa has a wide range of activities in this market, including bioenergy and solar thermal energy projects as well as numerous activities in the areas of engineering and the environment. Some 26% of the company's assets are currently in the US, which is Abengoa's largest market in terms of sales.

1 Solar thermal electricity

This activity focuses on developing new technologies that produce electricity from the sun. Abengoa is a global leader in solar thermal electricity (STE).

The geographical strategy is based on promoting and selling energy at a local scale with presence of specialized teams in different locations, manufacturing components on a regional level and developing new technologies globally.

Abengoa's solar business is made up of 280 employees in the USA, with offices in Arizona, California, Colorado, strategically positioned in the areas with the greatest solar resources, as well as an office in the capital, Washington, DC.

The company's STE activities in the US, in addition to the development of new projects, are currently focused on the operation and maintenance of Solana (280 MW), in Arizona, and Mojave Solar (280 MW, gross), in California. Together these two plants have created more than 4,000 direct jobs during the construction process, providing a major boost to their local economies.

Solana is located about 70 miles southwest of Phoenix, close to Gila Bend, Arizona, and came online in 2013. It is the largest solar thermal electric power plant in the world using parabolic trough technology, with a gross capacity of 280 MW and six hours of thermal energy storage, capable of meeting the peaks of demand in this region: in early morning and early evening in winter, and in evenings and night-time hours, in summer.

One of the advantages of solar thermal technology compared to other renewable energies is its capacity to store energy efficiently. The thermal storage system makes the generated energy more dispatchable, allowing electricity generation at peak demand times. Storage allows the plant to continue to operate without direct solar radiation, whether it is night or cloudy periods.

Solana produces enough energy to serve 70,000 homes, preventing the emission of nearly half a million tons of CO₂ every year.

Abengoa received a federal loan guarantee from the US Government in the amount of \$1.45 billion to help finalize the funding with the Federal Financing Bank (FFB) and to begin construction of Solana.

Solana created more than 2,000 jobs over the course of the project, as well as numerous indirect positions in the region. Furthermore, it created over 80 full-time, high-paying permanent jobs for plant operation.

In 2012, Abengoa was selected to engineer, construct and commission one of the largest photovoltaic plants in the world, in California, with a 200 MW capacity, which came into operation during 2014.

Abengoa also has resources specifically for solar energy research and development. In the US, where there are more than 32 people dedicated to research in collaboration with the National Renewable Energy Laboratory (NREL) as well as other leading institutions and universities. The team includes some of the world's leading experts, including NREL employees, at plants such as Mojave.

In addition to our activities in the US, Abengoa's solar business spans through multiple and different geographies in four continents. Plants in commercial operation are located in Spain, Algeria and United Arab Emirates, reaching a total installed capacity of 1,503 MW. Furthermore, Abengoa has 150 MW under construction in South Africa, 210 MW in construction in Chile, 110 MW in preconstruction in Israel and another 100 MW in South Africa.

15 STE power plants in Spain



693 MW of installed capacity in commercial operation are located in Spain, including the first two commercial solar towers in the world as well as 13 parabolic trough plants.

The largest parabolic trough plant in the Middle East

Shams-1, a 100 MW plant, includes a proprietary dry-cooling system, significantly reducing water consumption, and an auxiliary heating boiler, boosting the cycle's efficiency.



150 MW under construction in South Africa

Abengoa has nearly completed construction of KaXu Solar One, a 100 MW parabolic trough plant with 3 hours of storage in molten salts. Additionally, the company builds Khi Solar One, a 50 MW tower plant with 2 hours of steam storage, uses superheated air and a dry cooling system to reduce water consumption.



2 Biofuels

Abengoa produces and sells bioethanol and has a leading position in the US market. Indeed, it is the only company with a presence in the three major biofuels markets of USA, Europe and Brazil.

Abengoa understands that ethanol production reduces the United States' dependence on oil and contributes to energy supply security and diversification. Ethanol also reduces CO₂ emissions and therefore plays a fundamental role in slowing down climate change. Lastly, ethanol production also offers an alternative use for agricultural land, which helps to provide secure incomes for the local population.

The company currently focuses its activities on developing second-generation biofuels technologies using lignocellulosic biomass, especially for bioethanol, by means of enzymatic hydrolysis and the gasification and catalytic synthesis of alcohols, and on obtaining high value-added bioproducts.



Abengoa currently has six bioethanol plants in the USA in York (NE), Portales (NM), Colwich (KS), Ravenna (NE), Mount Vernon (IN) and Granite City (IL), with a combined capacity of 380 Mgal/year and an investment of more than \$1.4 billion.

In Hugoton, Kansas (US), Abengoa is developing the first second-generation bioethanol plant that it will operate commercially. It will use cereal straw instead of grain to produce 95 ML of bioethanol per year and 20 MW of power. It is scheduled to come into operation in 2014.

3 Water treatment

Abengoa is recognized as an innovator in the private development of water-related infrastructure projects, offering a range of successful alternative project delivery models, such as public delegated services, public-private partnerships and turn-key design-build-finance-operations contracts. The U.S. is the leading geography in terms of revenues for Abengoa, accounting for 26 percent of global revenues in 2012 and is also the company's fastest growing market. Abengoa has successfully designed and constructed over 200 water supply treatment and transmission infrastructure projects, including a total of over 317 million gallons per day (MGD) of desalination capacity.



4 Other activities

In the transmission lines business, the US continues to be a priority due to the ageing of existing transmission systems, the huge distances between generation and consumption centers, and the inclusion of renewables into the energy mix. With its accumulated experience and involvement in other regions in this sector, the company expects to become a key player in electricity transmission lines in the North American market.



Furthermore, as part of its ongoing commitment to the environment, Abengoa is studying new opportunities under existing and future regulations in the country, both for advisory services for reducing greenhouse gas emissions, and emissions neutralization and labeling.