

Hugoton project



Located in Hugoton, Kansas, Abengoa's new plant has the capacity to convert more than 300,000 dry tons of agricultural residues into up to 25 Mgal of ethanol and 21 MW of renewable electricity.

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, as well as constructing the transmission lines that make up our electricity networks.



Environment



The growth of the population, improved living conditions in developing countries and climate change will lead to significant changes in the demand for natural resources.



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

Engineering and construction

Engineering and construction include our traditional engineering activities in the energy and water sectors, with more than 70 years of experience around the world. We specialize in the completion of complex turn-key projects for concentrating solar power (CSP) plants, solar-gas hybrid plants, conventional generation plants, biofuels plants and water infrastructures, as well as large-scale desalination plants and transmission lines, among others.

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 and 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 with high operational efficiencies.

Industrial production

This aspect of our business includes a highly technological component, such as biofuels, industrial waste recycling and the development of solar technology. Abengoa is considered a leader in these areas, across the globe, in the markets in which we operate.

Hugoton

Figures

- Location: Hugoton, Kansas (USA)
- Production capacity: 25 Mgal of ethanol and 21 MW of renewable electricity
- Technology: enzymatic hydrolysis technology to extract sugars from cellulosic materials by using proprietary enzymes developed by Abengoa
- Biomass used: 300,000 dry tons of locally sourced biomass per year
- Gasoline that will be supplied with clean energy: 250 Mgal/year
- Tons of CO₂ prevented from entering the atmosphere: 139,000
- Jobs creation: 76 full-time jobs
- This project received a \$97 million U.S. Department of Energy grant.

Abengoa has a broad experience in the construction and operation of facilities for the production of sustainable biofuels. The company has 70 years of experience in engineering and construction of these facilities. We are the largest international contractor of energy infrastructures with three decades of operational experience as well as a world leader in production for almost two decades.



Abengoa's new commercial-scale ethanol production plant, located in Hugoton, Kansas (USA), will use more than 300,000 tons of dry agricultural waste to produce up to 25 Mgal of cellulosic ethanol and 21 Mw of renewable electric power.

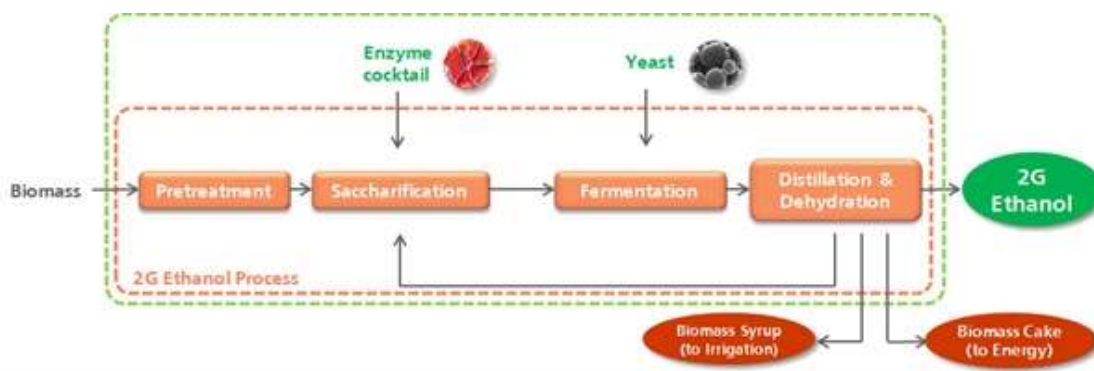
Over the last 10 years, Abengoa has developed its enzymatic hydrolysis technology to extract sugars from cellulosic materials. At each developmental scale (lab, pilot plant, demonstration plant and commercial), Abengoa has operated its facilities with patented technology. With the commissioning of the cellulosic ethanol (also known as second-generation ethanol) plant in Hugoton, the company plans to license and partner with interested parties, for future projects and products.

The commissioning of this new plant places Abengoa as a world leader in the production of sustainable fuel.



➤ Cellulosic technology

The new commercial-scale cellulosic bioethanol refinery is the first facility to use Abengoa's patented technology. The intellectual property was developed and tested over the last 10 years to produce renewable fuel from vegetable fibers and cellulosic biomass.



The new Hugoton plant can process more than 300,000 tons of dry agricultural waste per year. Primary feedstock sources are corn stover (stalks and husks) and wheat straw. Abengoa's highly advanced and patented enzymes break down waste material into sugars that can be fermented to produce a sustainable ethanol product.

Environmental benefits

It is expected that the bioethanol produced in the Hugoton plant will replace up to 25 Mgal of fossil gasoline every year, which will result in a reduction of 139,000 t of CO₂ emissions from the atmosphere.

Most of the electric power generated in the Hugoton plant will be used for its operation. This provides the plant with an environmentally-friendly energy source, which is cost-effective.

Moreover, operation of this facility will be beneficial for the population of Stevens County, Kansas; the plant will supply renewable electricity to the community, meeting current energy demand of all households in the county.

Social benefits

The economic benefits for Stevens County, resulting from the plant's operation, are substantial. Some 300-plus jobs were created during the four-year plant construction process and at least \$9,000,000 was spent in the procurement of local services, goods and supplies.

At full operation, the plant will employ 76 people. Not only does the project provide important benefits to local communities, but it impacts the entire region. Abengoa will purchase cellulosic material (crop waste) from farmers in southwest Kansas and the panhandles of Oklahoma and Texas, covering 85,000 acres.

The second-generation ethanol plant's impact on the regional economy and that of its renewably-sourced cellulosic fuel will make Abengoa a worldwide expert in this field.

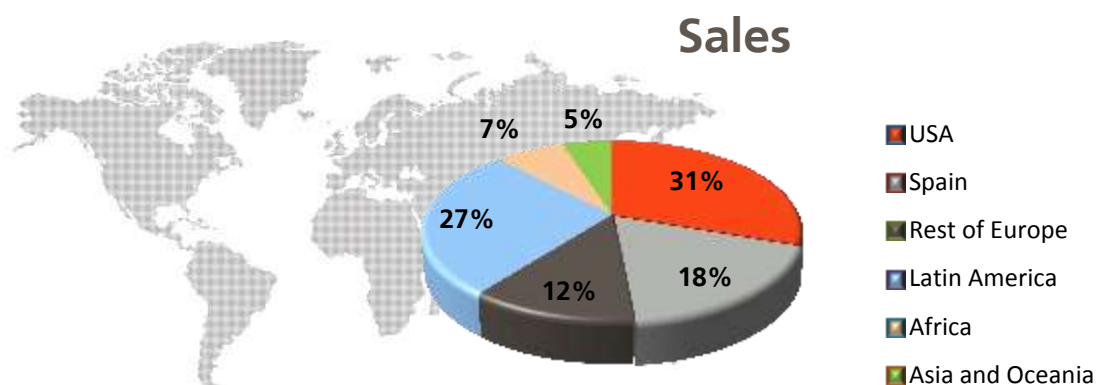


Abengoa: a global company

Abengoa is committed to offering innovative solutions for sustainability by integrating local perspectives with a global outlook.

Abengoa is committed to making internationalization a key initiative within its strategic plan. With a presence on five continents, Abengoa's strategy is based on the following points:

- Promoting, constructing and operating innovative solutions for sustainable development.
- Providing customized solutions for all sectors it operates in.
- Guaranteeing efficient and responsible distribution and sales of technologies and products around the world.
- Leading technological development, such as second-generation biofuels and concentrating solar power plants.



Data as of August, 2013.

Abengoa in the USA

Abengoa's presence in the USA has grown exponentially since the company's global expansion more than a decade ago. Abengoa has a wide range of activities in the sustainable market, including bioenergy, solar thermal energy, engineering and other environmental areas. The USA accounts for 26% of the company's global revenue, which is Abengoa's largest market [in terms of sales].

1 Concentrating Solar Power

Abengoa Solar focuses on developing new technologies that produce electricity from the sun. Abengoa is a global leader in concentrating solar power (CSP).

The company's strategy is based on promoting and selling energy on a local scale, manufacturing components on a regional level while developing new technologies globally.

Abengoa's solar business employs 160 people in the USA, with four offices in the southwest: Denver (CO), Phoenix (AZ), San Francisco and Victorville (CA). Each location is strategically positioned in an area with the greatest solar exposure. The company also has an office in Washington, DC.



CSP activities in the USA are currently concentrated on the operation and maintenance of Solana, the world's largest parabolic trough plant with a gross capacity of 280 MW, and the construction of Mojave Solar (280 MW) in California. Together these plants have created more than 3,000 direct jobs during their construction, providing a major boost to local economies.

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

In the USA, Abengoa has more than 20 people dedicated to solar energy research in collaboration with the National Renewable Energy Laboratory (NREL), as well as other leading institutions and universities.

In addition to activities in the USA, Abengoa's solar business spans across multiple geographies within four continents. Commercially operated plants are located in Spain, Algeria and the United Arab Emirates, with a combined installed capacity of 1,223 MW. Furthermore, Abengoa has 150 MW under construction in South Africa, and 110 MW in preconstruction in Israel, with another 100 MW plant to be built in South Africa.



Spain has 693 MW of installed capacity in commercial operation, which includes 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 and an auxiliary heating boiler. The plant is able to significantly reduce water consumption while boosting cycle efficiency.



150 MW under construction in South Africa:



Khi Solar One, a 50 MW tower plant with two hours of steam storage, uses superheated air and a dry cooling system to reduce water consumption. KaXu Solar One, a 100 MW parabolic trough plant uses molten salts as its storage material, providing three hours of reserve power.

2 Biofuels

Abengoa is a leader in the US biofuels market, as a producer and wholesaler of bioethanol. It is the only company with a presence in the three major biofuels markets (USA, Europe and Brazil).

The company understands that ethanol production reduces crude oil dependency and contributes to supplying energy security through diversification. Ethanol also reduces CO₂ emissions. Therefore, it plays a fundamental role in slowing down climate change. Ethanol production also offers an alternative use for agricultural waste, which helps provide additional income for local populations.

Currently, the company focuses its activities on developing second-generation biofuels technologies using lignocellulosic biomass. Technologies used in its facilities are enzymatic hydrolysis and gasification and catalytic synthesis of alcohols.



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

In Hugoton, Kansas (USA), Abengoa has constructed its first commercial-scale second-generation bioethanol plant. The plant is the first commercial-scale plant using enzymatic hydrolysis technology developed by Abengoa. It will use cereal (corn and/or wheat) straw instead of grain to produce up to 25 Mgal of bioethanol per year and 21 MW of power.

Abengoa has been authorized by the US Environmental Protection Agency (EPA) to produce E15 (15% ethanol and 85% gasoline), the blend allowed for light-duty cars and trucks manufactured after 2007.

The plant is expected to convert more than 300,000 dry tons of agricultural waste annually into approximately 95 million liters (25 million gallons) of ethanol. The

plant will maximize the use of agricultural crop residues, which would otherwise go unused. It is estimated that each year the plant will replace up to 25 million gallons of gasoline, eliminating 139,000 tons of atmospheric carbon dioxide.

3 Water treatment

Abengoa is recognized as an innovator in the development of water-related infrastructure projects. The company offers 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 country is also the company's fastest growing market. Abengoa has successfully designed and constructed over 200 water supply treatment and transmission infrastructure projects, a total of over 317 MGD of desalination capacity.



4 Other activities

In the transmission lines business, the USA continues to be a priority due to the obsolescence 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 of this sector, Abengoa expects to become a key player in electricity transmission within the North American lines market.



As part of its ongoing commitment to the environment, Abengoa is studying new opportunities under existing and future US regulations for greenhouse gas emission reduction advisory services and emissions neutralization and labeling.