

ABENGOA

Energy
statement of qualifications



Innovative leader in engineering

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. (www.abengoa.com)

Abeinsa

Abeinsa, Abengoa's engineering and construction business unit, is a technology based company offering integrated solutions to the energy, water, environment, infrastructure and service industries. Abeinsa has been recognized as the number one international contractor in electrical infrastructures (*).

Abeinsa covers the whole value chain of promotion, procurement, engineering, construction and operation of new and existing power and industrial stations. All within a framework that contributes to sustainable development, with a clear orientation towards the client based on efficient management of projects.

Abeinsa demonstrates the ability to lead the energy engineering and construction markets with sustainable projects in three business areas:

Power: Abeinsa has 10 GW of installed capacity in conventional generation projects. Because of that, we have been recognized as the number two international contractor in cogeneration power plants (*). Our expertise is guaranteed by a large number of simple and combined cycles, add-ons, diesel power, cogeneration and biomass plants.

- Abeinsa is newly constructing the largest commercial biomass power plant in Ghent (Belgium), which will produce 215 MW of electricity, burning 100 % of raw material biomass (wood chips and agro residues).
- In Mexico, the largest cogeneration plant (300 MW) is currently operating at full capacity and will continue to expand, supplying energy and steam to the Nuevo Pemex gas processing complex. The next phase will be an efficient 265 MW cogeneration plant, and the third phase will be a 680 MW combined cycle high efficiency plant with possible future interconnection with the previous phases of the same complex. Also in Mexico, Abeinsa launched the operation of a 42 MW diesel power plant, and most recently, Abeinsa was chosen by Mexico's Federal Electricity Commission (CFE) to execute a 924 MW combined cycle plant. This plant is the second that Abeinsa will have constructed for CFE, after the 640 MW Centro Morelos plant currently under construction.
- Abeinsa is currently working on the construction of the largest combined cycle plant in Poland with 450 MW and an additional 270 MWth supporting a district heating system.
- In the United States, we continue to work on the construction of a 440 MW combined cycle plant that will supply electricity to half the population of Portland, Oregon. In 2014, a 15 MW cogeneration plant was completed in Texas.

The combination of power plants with innovative renewable energies has resulted in the ISCC technology (Integrated Solar Combined Cycle). Abeinsa has completed the world's first two ISCC plants. Located in Algeria (150 MW, 20 MW from solar field) and Morocco (470 MW, 20 MW from solar field), both have been operating successfully since 2011 and 2010, respectively. These two projects secure our position as a world technological leader, once again fulfilling the company's social and environmental responsibility.

and construction

Solar: Abeinsa is pioneer in the construction of solar energy plants with more than 2,200 MW built and 600 MW under construction worldwide. Abeinsa is the number one international contractor in solar power plants (*). A large part of the solar projects is the result of a completely clean process that combines the latest technologies of solar resource exploitation and our commitment to sustainability and the environment.

- In 2014, we were selected by the National Energy Commission (CNE) of the Chilean Government to supply 950 GWh/year in Chile for 15 years. Moreover, Abeinsa was awarded to build in Atacama Desert, Chile, the largest South American solar thermal project consisting of two plants: Atacama-1 and Atacama-2. Each one consists of a 110 MW solar tower plant and a 100 MW PV plant.
- Also in tower technology, after the success of PS10 (11 MW) and PS20 (20 MW), the first two commercially operated plants in the world, we are currently constructing the first Solar Thermal Electric (STE) tower plant (50 MW) in South Africa. Furthermore, Abeinsa is developing two parabolic trough plants: Kaxu Solar One and Xina Solar One. These two 100 MW plants will jointly shape the largest solar complex in Africa.
- In 2014, Abeinsa completed Solana's first year of operation, the largest parabolic trough plant worldwide, located in Arizona, producing 280 MW. Mojave, another 280 MW solar power plant located in California, also became operational in 2014.
- One of our main achievements in 2014 was the completion of a 200 MW photovoltaic plant in California for AES Solar. Thanks to the development of this new project, Abeinsa is becoming a key player in the photovoltaic market in the USA.
- In the Middle East, the largest solar thermal power plant, Shams-1 (100 MW), located in Abu Dhabi (United Arab Emirates), started operating in 2013.
- In Spain, Abeinsa completed thirteen 50 MW parabolic trough plants that are operating at full capacity,

including: Écija Solar Complex, El Carpio Solar Complex and Castilla-La Mancha Solar Complex (comprised of two 50 MW parabolic troughs in each complex) and Extremadura Solar Complex (integrated by four 50 MW plants).

Biofuels: Abeinsa is the first European EPC of bioethanol plants, with more than 2,500 ML/year in production worldwide. In 2014, we launched the first second generation bioethanol plant worldwide from biomass (95 ML/year), located in Kansas. It has also completed a 70 ML/year bioethanol plant in Uruguay. In the US, two plants have been executed in Indiana and Illinois at 333 ML/year; each operating at full capacity since 2010. In 2010, we completed the largest bioethanol plant in Europe: Rotterdam producing 480 ML/year.

Abeinsa develops industrial engineering and construction activities through the criteria of sustainability, ongoing improvement and a commitment to the future as well as a commitment as a market leader through developing global benchmark projects.

Over the last few years the energy infrastructure focused on sustainability and renewable energy has experienced considerable international growth in the most developed countries as well as those with emerging economies or in the process of development. Therefore, our current lines of activity can easily adapt to these focal points as experience and references are provided that few companies in the world can offer.

With a presence in more than 40 countries in five continents, Abeinsa has developed a global business with a local presence. The expertise of the team, integrated by more than 20,000 professionals, gives the strength to manage and adapt to different geographies and the client's needs.

(* Source: Engineering News Record magazine 2014)



Experience is our key asset

Abeinsa provides a full range of services for projects, including basic and detailed engineering, process integration, strategic planning and market assessments, feasibility studies, procurement, and construction services.

At Abeinsa, efficiency continues to improve while meeting increasingly stringent environmental standards.

We have designed simple and combined cycle power facilities, industrial power plants using waste fuels and biomass, solar thermal, photovoltaic, ethanol and biodiesel, and sulfuric acid plants with power generation from waste heat. We analyze construction, operation and maintenance requirements and incorporates the findings into the designs, developing innovative alternative engineering solutions to maximize project value. To facilitate project development, Abeinsa performs feasibility studies and detailed estimates to assist customers with budgeting and decision making for its customers.

Abeinsa has highly skilled engineering, supervisory and management capabilities, coupled with strong project management control systems, which are used on all industrial construction projects.

Our most valuable skill sets are:

- Experience working in operating plants and mill environments
- Performing demolition and new installations in small or complex footprints
- Working in areas with restricted and limited access
- Ability to manage multiple subcontractors
- Develop complex execution plans and schedules
- Sequence work to achieve earliest commissioning and startup



Basic engineering and project development

Feasibility studies of power and renewable projects can be complex and time consuming. Retaining a consultant with experience on such studies, and with the multidisciplinary resources required to conduct them, is a crucial element in any project's success. Since Abeinsa has full capabilities across the range of engineering and scientific disciplines, studies are conducted thoroughly and efficiently.

Abeinsa conducts project feasibility studies using the multidisciplinary resources on staff to technically scope and define the project; this effort often results in an indicative or definitive estimate. Our team prepares a site layout, technical specifications, P&ID's, major equipment specifications or datasheets, and a capital cost estimate for project development scopes.



Safety is param
however, quali

ount; ty is the most important product.

Construction and project management

Abeinsa specializes in complex turnkey projects of energy generation plants, water treatment plants and environmental infrastructures, using engineering and knowledge management capabilities. Detailed engineering and management knowledge is applied through teamwork to perform all phases of the projects in which we participate; from feasibility studies, basic and detailed engineering, fulfillment of specialized project requirements, financing, procurement and construction, to the operation of single facilities or complex plant systems.

In addition, Abeinsa deepens its core strengths by ongoing involvement in research, development, and innovation (R+D+i) initiatives. We strive to provide top-quality service at all times covering the entire value chain, maintaining a clear orientation of each project around client requirements with attention to design, efficient management and successful results. Our leadership in renewable energy projects, combined with water and environmental expertise, is demonstrated in leading-edge projects within the emerging area of water and energy optimization.

Quality and environmental programs

Safety is paramount; however, quality is the most important product.

A site-specific quality program that incorporates and conforms to the engineer and equipment manufacturer's specifications is developed for each project. Abeinsa's policy is that every

project must meet or exceed the established quality standards. Teamwork and information sharing is encouraged among the employees and subcontractors to ensure continued quality and improvements in activities and products. We are also committed to protecting the environment, operating on the principle that prevention of pollution or other harmful environmental impacts is far better than mitigating the effects. Every effort is made to ensure all legal and regulatory requirements are met and that we do not leave a negative impact in the surrounding communities.

Project management approach

Abeinsa develops a balanced approach to every project by applying managerial emphasis to those areas most critical to the project's success, and bringing the skills of veteran management to each phase of the project's activity. We are system driven and understand what it takes to check out and start up new facilities. Routinely, Abeinsa has total EPC responsibility on projects including all commissioning and start-up services. The project management team and control systems provide an interactive tool for managers to know the project's current status at all times. The key to management effectiveness throughout the project is emphasized through open lines of communication between the owner, engineer, major vendors, subcontractors, project staff and executive management. By defining project procedures during the planning stages, we are able to ensure that tasks from the simplest to the most complex are well documented and easy to follow.

We pride ourselves in our co innovative technology solut

Norte III, the largest combined cycle constructed by Abeinsa in Mexico

The Norte III project, consists of a 924 MW combined cycle plant in Ciudad Juárez (Mexico). Our teams will be responsible for the engineering, design and construction of this plant, as well as its subsequent operation and maintenance for a 25 year period.

The plant will produce enough power to supply more than 500,000 homes every year, providing an efficient response to the needs of the region's inhabitants while improving the country's energy independence. It will also reduce greenhouse gas emissions and the end cost of electricity to consumers.

Stalowa Wola, the largest combined cycle in Poland

With 450 MW of power, this plant, located in Stalowa Wola, some 200 km south east of Warsaw, has a gas turbine, a steam turbine and a heat recovery boiler for producing electricity. It also has a district heating system with 270 MW of thermal power, which will supply hot water to 10,000 homes in Stalowa Wola and nearby villages. This will increase the performance of the system as well as reduce costs and greenhouse gas emissions compared to traditional central heating systems. Once the construction is finished, this project will include the operation and maintenance of the gas turbine for the first 12 years.

Ghent biomass plant, the largest commercial biomass power plant in the world

The plant, located in the city of Ghent (Belgium), will produce 215 MW of electricity, burning one hundred percent of the raw material biomass (wood

chips and agro residues). Requiring no support fossil fuels, the plant will generate clean energy free from carbon dioxide, which will be used for the power supply industry. Through the "district heating" system, approximately 100 MW of thermal energy will be distributed to supply heating to industries and households in the city of Ghent.

Atacama-1, the largest solar thermal project in South America

A solar thermal electric tower with thermal storage system is being constructed in Cerro Dominador in the Atacama Desert. The plant will have an installed capacity of 110 MW and 18 hours of thermal storage with molten salt. The plant will be capable of supplying clean electricity for 24 hours a day and represents an important opportunity for a region in which electricity consumption is strongly tied to the mining sector. It will prevent the emission of 643,000 tons of CO₂ every year.

Solana, the world's largest solar thermal parabolic trough plant

With 280 MW of power and six hours of thermal energy storage, Solana, the largest parabolic trough plant worldwide began operating in 2013. The six hours of thermal energy storage allows the plant to produce and supply electricity even during cloudy periods or after sunset, meeting the peak demand of this region during the summer months. The solar field is composed of more than 32,000 collectors.

The supply chain for Solana spanned 27 states from coast to coast, including Kentucky, Kansas, Louisiana, Missouri, New

Commitment to Innovations

York and Oregon; with contracts executed with 90 companies. As a result, a new workforce was trained that contributes to the needed cost reductions in an industry that continues to keep the United States competitive in the twenty-first century.

From the environmental perspective, Solana produces clean electricity to power the equivalent of 70,000 homes and reduces CO₂ emissions by around 475,000 tons per year. These reductions help reach state renewable energy goals, as well as reaching the national goals of the United States for climate change mitigation.

Abeinsa is constructing similar projects, one in the United States, specifically the Mojave Desert, and two in the Northern Cape province of South Africa.

Shams-1, the largest solar power plant in the United Arab Emirates (UAE)

With 100 MW, Shams-1 has been in operation since 2013, supplying thousands of homes in the UAE and displacing approximately 175,000 tons of CO₂ per year. Covering an area of 2.5 km², or 465 football fields, Shams-1 generates electricity to power 20,000 homes in the UAE. Also, because solar power is generated during peak demand, the UAE is able to reduce the need for “peak shaving” generators, which are expensive and idle most of the year. Shams-1 incorporates the parabolic trough technology and features more than 258,000 mirrors mounted on 768 tracking parabolic trough collectors. By concentrating heat from direct sunlight onto oil-filled pipes, Shams-1 produces steam, which drives a turbine and generates electricity. In addition, the solar project uses a booster to heat steam as it enters the turbine



to dramatically increase the cycle’s efficiency. The project also includes a dry-cooling system that significantly reduces water consumption – a critical advantage in the arid desert of western Abu Dhabi.

Hugoton, one of the first second generation bioethanol plants from biomass for commercial operation worldwide

The facility, located near Hugoton (Kansas), will utilize Abengoa’s proprietary enzymatic hydrolysis technology to produce approximately 95 ML/year of ethanol fuel from plant fiber, instead of utilizing starch from coarse grains which are typically used in other ethanol facilities. The feedstocks for the facility will be primarily agricultural waste products such as the stalks of corn or grain sorghum, but it is also expected to use wheat straw and potentially prairie grasses and wood wastes. The plant will also utilize the same biomass feedstocks to produce 20 MW of electricity to adequately power the ethanol production operations and help to make the entire facility even more energy efficient and environmentally friendly.

References

Power

Natural gas combined cycle

Project	Location	Client	Capacity (MW)	Completion date
CCGT Norte III	Mexico	Abengoa - Comisión Federal Electricidad	924	Under construction
CCGT A4T	Mexico	Abengoa	680	Under construction
CCGT Portland General Electric	USA	Portland General Electric	440	Under construction
CCGT Stalowa Wola	Poland	Elektrociepłownia Stalowa Wola	450	Under construction
CCGT Centro Morelos	Mexico	Comisión Federal Electricidad	640	Under construction
CCGT Hassi R'Mel	Algeria	Abengoa - Neal - Cofides - Sonatrach	130	2011
CCGT Ain Beni Mathar	Morocco	Office National de L'Electricité	450	2010
CCGT Emilio Portes Gil	Mexico	Comisión Federal de Electricidad	225	2007
CCGT Hermosillo	Mexico	Comisión Federal de Electricidad	230	2006
CCGT Arcos "A"	Spain	Iberdrola Generación	800	2004
CCGT El Sauz	Mexico	Comisión Federal de Electricidad	414	2003
CCGT Bahía de Bizkaia	Spain	Consorcio Bahía de Bizkaia	800	2003
CCGT Salta	Argentina	Termoandes	630	2000
CCGT Nehuencho	Chile	Siemens	370	1999
CCGT Ventanilla	Peru	Proyectos Andinos de Energía	300	1998

Coal

Mejillones thermal power plant	Chile	Ansaldo Energía	160	1998
--------------------------------	-------	-----------------	-----	------

Engine power plants

Baja California Sur IV	Mexico	Comisión Federal de Electricidad	42	2014
Baja California Sur II	Mexico	Comisión Federal de Electricidad	43	2007
Puerto San Carlos II	Mexico	Comisión Federal de Electricidad	40	2001



References

Power

Biomass

Project	Feedstock	Location	Client	Capacity (MW)	Completion date
Ghent biomass plant	Wood chips and agro residues	Belgium	Belgian Eco Energy	215	Pre-construction
Hugoton cogeneration plant	Agro residues	USA	Abengoa	20	2013
Sao Joao cogeneration plant	Sugarcane bagasse	Brazil	Abengoa	70	2013
Sao Luiz cogeneration plant	Sugarcane bagasse	Brazil	Abengoa	70	2010
EHN Sangüesa	Cereal straw	Spain	Energía Hidroeléctrica de Navarra	29	2003
Fife biomass plant	Chicken manure	UK	Energy Power Resources	13	2000
El Tejar	Olive waste	Spain	Vetejar	13	1995

Cogeneration

Project	Location	Client	Capacity (MW)	Completion date
Nuevo Pemex cogeneration third train plant	Mexico	Abengoa - Pemex	265	Under construction
Pasadena cogeneration plant	USA	Rentech Nitrogen	15	2014
Nuevo Pemex cogeneration plant	Mexico	Abengoa - Pemex	300	2013
Abengoa Bioenergy Netherlands cogeneration plant	Netherlands	Abengoa	45	2010
Biocarburantes de Castilla y León	Spain	Abengoa	25	2006
Carrigo	Portugal	Carrigo Cogeração	30	2003
El Romeral	Spain	LOCS Oil	8	2002
Galicia bioethanol plant	Spain	Abengoa	25	2002
Sniace cogeneration plant	Spain	Sniace	83	2001
Motril cogeneration plant	Spain	Torraspapel	48	2001
Ecocarburantes Españoles	Spain	Ecocarburantes Españoles	21	2000



References

Solar

STE Tower

Project	Location	Client	Capacity (MW)	Completion date
Atacama-2	Chile	Abengoa	110	Under construction
Atacama-1	Chile	Abengoa	110	Under construction
Khi Solar One	South Africa	Abengoa - IDC	50	Under construction
PS20	Spain	Abengoa	20	2009
PS10	Spain	Abengoa	11	2007

STE parabolic trough

Xina Solar One	South Africa	Abengoa - IDC	100	Under construction
Ashalim	Israel	Abengoa - Shikun & Binui	110	Under construction
Kaxu Solar One	South Africa	Abengoa - IDC	100	2015
Mojave	USA	Abengoa	280	2014
Solana	USA	Abengoa	280	2013
Shams 1	UAE	Abengoa - Total - Masdar	100	2013
Solaben 1 & 6	Spain	Abengoa	50 x 2	2013
Solaben 2 & 3	Spain	Abengoa - ITOCHU Corporation	50 x 2	2012
Solacor 1 & 2	Spain	Abengoa - JGC Corporation	50 x 2	2012
Solar field in India	India	Indian Institute Technology of Bombay	1	2012
Helios 1 & 2	Spain	Abengoa	50 x 2	2012
Helioenergy 2	Spain	Abengoa - E. ON	50	2012
Helioenergy 1	Spain	Abengoa - E. ON	50	2011
Solnova 4	Spain	Abengoa	50	2010
Solnova 1 & 3	Spain	Abengoa	50 x 2	2009

ISCC

Agua Prieta	Mexico	Comisión Federal de Electricidad	14	Under construction
Hassi R'Mel	Algeria	Abengoa - Neal - Cofides - Sonatrach	20	2011
Ain Beni Mathar	Morocco	Office National de L'Electricité	20	2010

Photovoltaic

Atacama-2	Chile	Abengoa	100	Under construction
Atacama-1	Chile	Abengoa	100	Under construction
Lone Valley	USA	EDP Renováveis	30	2014
Mount Signal	USA	AES Solar	200	2014

References

Biofuels

Bioethanol 1G

Project	Location	Client	Production (ML/year)	Completion date
Paysandu bioethanol plant	Uruguay	Alcoholes de Uruguay	70	2014
Illinois bioethanol plant	USA	Abengoa	333	2010
Indiana bioethanol plant	USA	Abengoa	333	2010
Rotterdam bioethanol plant	Netherlands	Abengoa	480	2010
France bioethanol plant	France	Abengoa	250	2007
Castilla y León bioethanol plant	Spain	Abengoa	200	2006
Galicia bioethanol plant	Spain	Abengoa	195	2002
Ecocarburantes Españoles	Spain	Abengoa	100	2000

Bioethanol 2G

Hugoton	USA	Abengoa	95	2014
---------	-----	---------	----	------

Waste to biofuels

Sierra biofuels plant	USA	Fulcrum BioEnergy	38	Pre-construction
W2B Babilafuente	Spain	Abengoa	1.5	2013

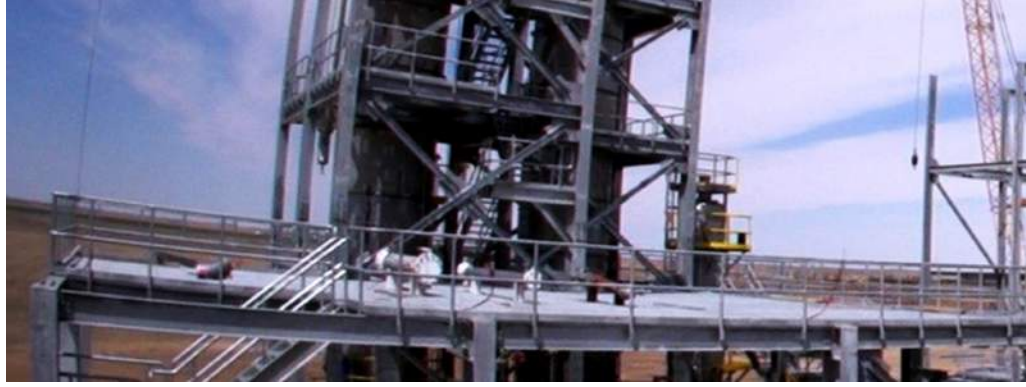
Biodiesel

Biodiesel San Roque	Spain	Abengoa	200	2008
---------------------	-------	---------	-----	------

ETBE

ETBE Huelva	Spain	ETBE Huelva	46	2004
-------------	-------	-------------	----	------





Select projects

Power

Portland General Electric combined cycle, USA

The combined cycle plant of 440 MW will be able to produce enough electricity from natural gas to supply half of the population of Portland, in the state of Oregon (USA). Abeinsa executed the engineering, design and construction of the combined cycle plant under the turnkey system (EPC).

Nuevo Pemex cogeneration plant, Mexico

The largest cogeneration plant in Mexico with 300 MW, is located in the state of Tabasco (Mexico). This plant supplies electricity and steam to the gas processing complex in Nuevo Pemex. We have developed the construction and operation of the plant for 20 years and will be expanding in two phases, starting in 2015: first expansion of 265 MW and second expansion of 680 MW.

Pasadena cogeneration plant, USA

The cogeneration plant, located in Pasadena, Texas (USA), generates 15 MW of electricity of which is intended to operate a fertilizer plant. The cogeneration plant uses surplus steam from a sulfuric acid plant to power the generator. Our team carried out the engineering, design and construction of the plant under a lump sum turnkey contract (EPC) over 18 months, ensuring the highest levels of quality in every process. Furthermore, the client plans to sell excess power produced.

Centro Morelos combined cycle, Mexico

Centro Morelos is a combined cycle plant with a combined capacity of 640 MW. The plant includes three gas turbines, one steam turbine, wet cooling system, sewage treatment, and all equipment necessary to integrate a combined cycle plant. Abeinsa developed the engineering, design and construction of the combined cycle plant.

Ghent biomass plant, Belgium

The largest commercial plant in the world of new construction in Ghent (Belgium) and will produce 215 MW of electricity. The plant will use raw material wood chips and agro-residues. Through the technology of "Circulated Fluidized Bed" the biomass is transformed into high pressure steam, which subsequently passes through a steam turbine to produce electricity.

Solar

Atacama-1, solar thermal project, South America

The STE tower will have an installed capacity of 110 MW and 17 hours of thermal storage with molten salt. The plant will be capable of supplying clean electricity for 24 hours a day and represents an important opportunity for a region in which electricity consumption is strongly tied to the mining sector. It will prevent the emission of 643,000 tons of CO₂ every year.

Khi Solar One, solar thermal power plant with tower technology, South Africa

Khi Solar One (50 MW) will represent important technological advances in efficiency as it uses higher temperatures during the generation process and has more than double the capacity than the last tower Abengoa built in Spain. Khi Solar One will have two hours of thermal storage and will prevent approximately 183,000 tons of CO₂ emissions per year. Khi Solar One, along with Kaxu Solar One and Xina Solar One, contributes to South Africa's goal to introduce up to 17,800 MW of renewable energy by 2030 and reduce its dependence on oil and natural gas.

Solana, parabolic trough solar plant, USA

Solana, the largest parabolic trough plant in the world, in operation since 2013, is rated at 280 MW (gross) and is located in Arizona (USA). The plant uses parabolic trough technology and has six hours of storage, allowing it to produce and supply electricity during cloudy periods and after sunset, meeting the electricity peak demand that exists in this area in the summer months. The solar field consists of 32,000 collectors that reach a production equivalent to 70,000 homes and avoid emitting into the atmosphere 475,000 tons of CO₂ per year.



Kaxu Solar One, parabolic trough solar plant, South Africa

Kaxu Solar One is a 100 MW parabolic trough plant constructed close to Pofadder, a city in the north of the Northern Cape Province (South Africa), next to Xina Solar One. These two plants will jointly shape the largest solar complex in Africa. Kaxu Solar One uses the technologically advanced dry cooling system and has three hours of storage capability. This plant became operational in the first quarter of 2015 and will prevent 315,000 tons of CO₂ emissions each year.

Hassi R'Mel ISCC plant, Algeria

Abeinsa developed the first hybrid solar-gas plant in Algeria with a capacity of 150 MW, located in Hassi R'Mel. The project, in operation since 2011, included the engineering, design and commissioning of the plant, which consists of a natural gas combined cycle and a solar field consisting of 224 parabolic trough collectors, with capacity to produce up to 20 MW of energy. The

plant generates electricity on a large scale from two energy sources: natural gas and solar energy. This combination of technologies, innovative and sustainable, manages to produce energy from the sun, without compromising the performance and stability of the network; all while avoiding issuing 33,000 tons of CO₂ per year.

Biofuels

Hugoton second generation bioethanol plant, USA

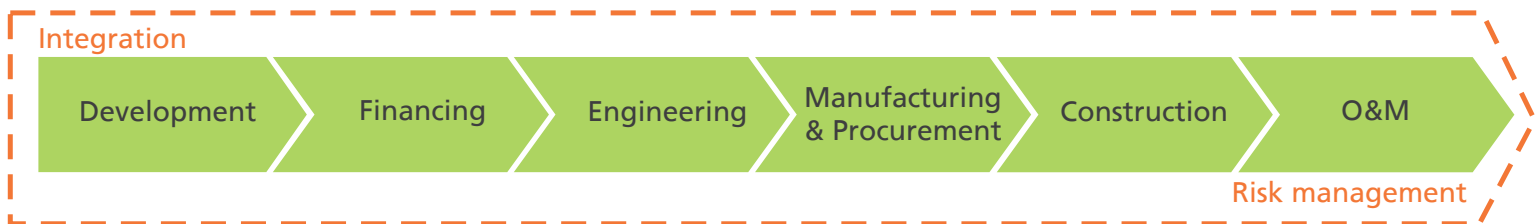
Hugoton is one of the first commercial plant producing bioethanol of second generation from biomass. Located in Kansas (USA), the plant uses the technology of enzymatic hydrolysis to produce approximately 95 ML of bioethanol per year from agricultural waste such as corn stalks or grain sorghum, as well as wheat straw and wood waste. The plant will also use the same biomass feedstock to produce 20 MW of electricity, which is used in

the ethanol production process and contribute to increase the efficiency of the plant.

Bioethanol Indiana & Illinois plants, USA

Both facilities started full scale production operations early in 2010. Each plant has a production capacity of 333 million liters of ethanol annually, as well as 300,000 tons per year of high protein distiller's grains feed products from cereal. Water access provides both facilities with alternative low cost routes to new and existing markets for both the ethanol and feed products produced.

Abeinsa develops an integrated business model covering the entire EPC and O&M value chain.



ABENGOA

C/Energia Solar, 1
Palmas Altas
41014 - Seville (Spain)
+1 34 954 937 000

www.abengoa.com

Follow us:

