

SPANISH COMPANIES,
LEADERS
IN RENEWABLE
ENERGIES



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Spain is a world leader in all fields, boasting an industrial fabric that includes companies of high international standing. Their operations all over the world and enormous R&D+i efforts have given them a competitive edge over the global competition. In recent years, a policy has been put in place that fosters renewable and clean energies. The Spanish model is recognised the world over. In Spain, a country with no hydrocarbon deposits, the contribution from renewable energies to the generation mix has already reached close on 40%. As a result, Spanish companies hold leading positions on the world rankings for the various energy types. Here are some figures that confirm these statements:

- Spain is the second-placed country in Europe in terms of wind power generation and the fourth worldwide in terms of installed power (22,974 MW at the end of 2014).
- It is the fifth-placed country in Europe in terms of installed solar photovoltaic power (4,772 MW) and eighth-placed worldwide.
- It has the largest installed capacity of solar thermal energy in the world (2,250 MW at December 2014), with commercially operating power plants in the four available technologies: tower, enclosed-parabolic trough, Fresnel and dishes. 73% of the projects undertaken worldwide are carried out by Spanish companies.
- It is sixth-placed in the European Union for primary energy production from biomass.
- It is third-placed in the European Union for installed hydroelectricity (18,801 MW).
- CECRE is the leading renewable energy control centre in the world.
- It has the second-highest number of renewable energy patents per inhabitant in the world (behind Germany and ahead of the USA), fifth in absolute terms and seventh in terms of investment (Unión Española Fotovoltaica Report).
- The world leader in renewable energy production is Spanish and it is also one of the five largest electricity companies in the world.
- The company with the largest installed photovoltaic capacity in the world is Spanish.
- The leading companies in the thermoelectricity sector are also Spanish.
- The fourth-largest manufacturer of wind turbines in the world in terms of total market share at December 2014 is Spanish.

The information contained in this document has been checked, confirmed and approved by the companies involved in its creation. Given that it has not been possible to include all the projects carried out around the world by Spanish companies in the renewable energies sector, specific examples have been selected to provide the broadest and most varied overview possible and reflect the outstanding international operations by Spanish companies in this sector. This document will be updated on a regular basis to incorporate the new projects and programmes undertaken by Spanish companies overseas.

NOUAKCHOTT WIND FARM

MAURITANIA

Awarded to ELECNOR, this project comprises the engineering, construction, substation connection, start-up, operation and maintenance for 11 years of this 30 MW wind farm.



LIANZHOU WIND

FARM

CHINA

Undertaken by GAMESA, this project includes 50 wind turbines of 2 MW each and an installed capacity of 100 MW located in Canton Province in south-east China.





WIKINGER OFFSHORE WIND FARM

GERMANY

An IBERDROLA project, Wikinger is a 350 MW offshore wind farm in the Baltic Sea where the water depth varies between 37 and 43 metres. The project spans an area of approximately 34 km², in which 70 turbines will be built. It will generate 1,300 GWh of electricity per year to supply 360,000 German homes. It will enable a saving of over 500,000 tonnes of CO₂. Total investment in this project amounts to 1.4 billion euros.



SALO WIND FARM

FINLAND

Installation of a wind farm undertaken by GAMESA; the first at which it has installed its new G128-5.0 MW wind turbines, the most powerful the company has.



TAGGUPARTHY WIND FARM

INDIA

Undertaken by GAMESA, it comprises 72 turbines of 2 MW each to provide a total of 144 MW.



OAXACA WIND FARMS

MEXICO

Fully-owned by ACCIONA, it is the largest wind power complex in Ibero-America at 306 MW. The wind farms produce electricity equivalent to the consumption of 700,000 Mexican homes and avoid the emission of 670,000 tonnes of CO₂ per year.

BII HIOXO WIND FARM

MEXICO

GAS NATURAL FENOSA operates the Bii Hioxo wind farm in the State of Oaxaca. At 234 MW, it is the company's largest wind farm in the world and the second-largest in Mexico. It avoids the emission of over 420,000 tCO₂/year.



SUPPORT STRUCTURE

Complex installation for offshore wind turbines, built by NAVANTIA for IBERDROLA.

L'ERABLE WIND FARM

CANADA

Awarded to ELECNOR, the project comprises the development, design, supply, construction, start-up, operation, maintenance and operation of this 100 MW wind farm.





PARQUE WIND FARM PERU

A facility built by Grupo ACS (COBRA) with an installed power of 32 MW. COBRA has construction experience in the wind power sector amounting to 2,150 MW and O&M experience amounting to 1,150 MW, of which the construction of 456 MW took place in Latin America.



LOMA BLANCA I WIND FARM ARGENTINA

A project awarded to ISOLUX CORSÁN by the Government of Argentina. It has a total installed capacity of 200 MW and comprises four modules.



TATANKA WIND FARM

USA

This was the first major facility for ACCIONA in the United States, in a problematic region due to the tough winter conditions and geographic isolation. It was also the first wind farm based on turbines with ACCIONA Windpower technology in the country. It has installed power of 180 MW. It generates clean energy equivalent to the consumption of 60,000 homes and avoids 550,000 tonnes of CO2 per year.

AMAZON WIND FARM

USA

IBERDROLA was awarded this 208 MW wind farm (still under construction) to produce 630,000 MWh per year. The wind farm will supply energy to 60,000 homes and will avoid the emission of 434,000 tonnes of CO2. Upon completion in 2016, a total of 353 million euros will have been invested.



WAUBRA WIND FARM AUSTRALIA

Fully owned by ACCIONA; at 192 MW it is the largest wind farm operated by the company in Oceania. It generates clean energy every year equivalent to the electricity consumption of some 110,000 homes, avoiding the emission of 650,000 tonnes of greenhouse gases. 200 jobs were created during the construction stage and it has a community development programme in the surrounding towns.



SISHEN
PHOTOVOLTAIC PLANT
SOUTH AFRICA

At 94.3 MW, built and operated by a consortium led by ACCIONA, it is the largest photovoltaic plant in Africa. It generates 216 GWh per year, equivalent to the consumption of some 100,000 homes and avoiding the emission of 208.000 tonnes of CO2 from coal-burning power plants into the atmosphere.



MOREE SOLAR
PHOTOVOLTAIC PLANT
AUSTRALIA

Undertaken by ELECNOR, the project comprises the engineering, supply and construction of a 56 MW solar photovoltaic power plant.

GUERNSEY SOLAR
PHOTOVOLTAIC PLANT
USA

A project undertaken by ELECNOR that includes the engineering, supply and construction of a 20 MW solar photovoltaic power plant.



HORUS I SOLAR
PHOTOVOLTAIC PLANT
GUATEMALA

This plant was designed by GRUPO ORTIZ and has an installed power of 50 MW. Over 700 jobs were created during the construction process, on which 30 companies from Guatemala took part. Production by the plant will account for 1.25% of all power produced by the country each year. It is the largest power plant in Central America.

COOPER CROSSING
SOLAR PLANT
USA

Built by IBERDROLA, this solar plant produces approximately 52,000 MWh per year and supplies electricity to 5,000 homes, avoiding the emission of 36,000 tonnes of CO2.



LETSATSI
PHOTOVOLTAIC PLANT
SOUTH AFRICA

COBRA has recently built 150 MW DC at two 75 MW DC plants in South Africa, producing 300 GWh per year and completing the work in a period of 18 months.



LAS ANIMAS SOLAR PLANT
MEXICO

A solar plant built by TSK with an installed capacity of 66.6 MW to produce 130.84 MWh per year.



BARCALDINE
SOLAR PHOTOVOLTAIC PLANT
AUSTRALIA

Awarded to ELECNOR, this project comprises the development and construction of a 20 MW solar photovoltaic power plant.



DEWA PHASE II SOLAR PLANT
UNITED ARAB EMIRATES

Undertaken by TSK, this project has an installed capacity of 260 MW. It generates total energy of 504,391 MWh per year.



AURA II SOLAR PLANT
HONDURAS

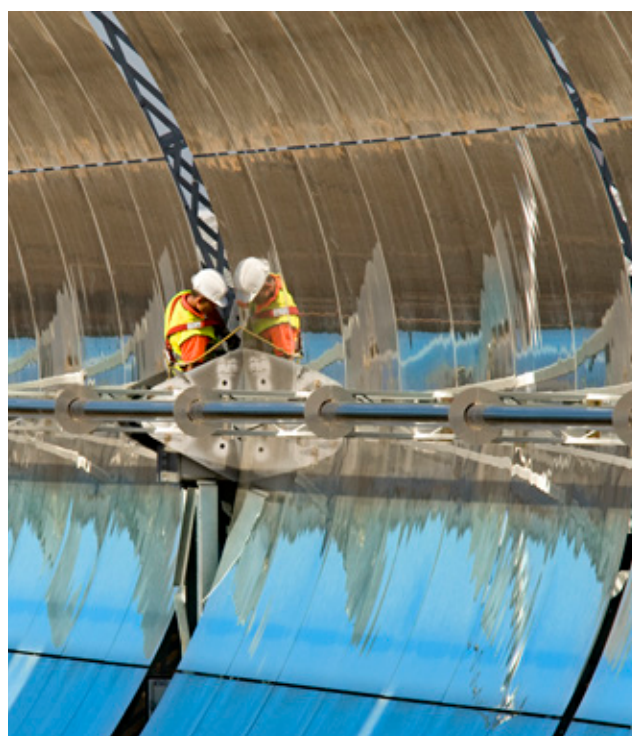
This project by ISOLUX CORSÁN has 61.48 MWp. It will generate 109,000,000 KWh per year, equivalent to supplying clean energy to over 80,000 Honduran households and avoiding the emission of 40,000 tonnes of CO2 per year. It covers an area of 145 hectares and comprises 200,000 photovoltaic modules. At its peak, it employed over 700 people.





NOOR I
THERMOSOLAR PLANT
MOROCCO

A 160 MWe thermosolar power plant that uses enclosed-parabolic troughs and has a molten salt storage system with 3.5 hours of capacity. The project is based on a turnkey contract and was led by ACCIONA, SENER and TSK. This highly energy-efficient and modern power plant forms part of the largest thermosolar complex on the planet being built in Ouarzazate (Morocco) and comprising the Noor I, Noor II and Noor III power plants.



SHAGAYA I
THERMOSOLAR
PLANT
KUWAIT

A project undertaken by TSK with an installed capacity of 50 MW.



BOCKPOORT SOLAR PLANT
SOUTH AFRICA

A 55 MWe thermosolar power plant based on enclosed-parabolic collectors with a molten salt storage system with 9.3 hours of capacity. The project is based on a turnkey contract and was led by ACCIONA, SENER and TSK.

GEMASOLAR THERMOSOLAR PLANT
SPAIN

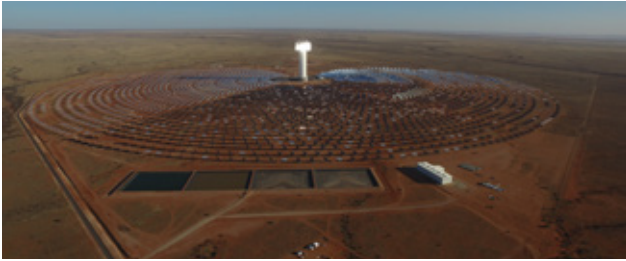
Developed by SENER, this is the most innovative power plant in the world based on thermoelectric solar energy and the first to produce electricity 24-hours a day, non-stop, from solar energy alone. It is the project that represented Spain in the European 'United for the Climate' campaign at COP21. It has received various international awards, including DESERTEC 2014, The European Energy Awards 2013 and the Award of Merit from the International Federation of Consulting Engineers FIDIC, which listed this facility among the best engineering projects worldwide in the last 100 years.



SOLANA THERMOSOLAR PLANT

USA

Designed, built and operated by ABENGOA, it is one of the largest thermosolar plants based on enclosed-parabolic technology in the world. Located in Arizona, it has a total installed capacity of 280 MW and has six hours of capacity for storing thermal energy. Solana received various awards, including the Energy Storage North America Innovation Awards and the Arizona Forward Environmental Excellence Awards.



KHI SOLAR ONE

THERMOSOLAR PLANT

SOUTH AFRICA

Built by ABENGOA, it is the first thermosolar power plant based on tower technology operating in Africa and one of the largest tower technology plants in the world with 50 MW of power, two hours of storage capacity and including numerous technological innovations developed by AGENGOA.

THERMOSOLAR PLANT

SPAIN

Assembly and installation of SCEs, assembly of pylons and prefabrication and installation of the BOP and conduits for the 50 MW C.T. Casablanca built by COBRA.



SHAMS THERMOSOLAR PLANT

UNITED ARAB EMIRATES

This 100 MW thermosolar project supplies thousands of homes in the United Arab Emirates and avoids the emission of 175,000 tonnes of CO2 per year. Undertaken by ABENGOA, construction of the project required a total investment of almost 500 million euros.

The Crescent Dunes Energy project was undertaken by Grupo ACS (COBRA). It was one of the largest thermosolar electricity plants based on a central tower configuration in the world at the time of its construction, providing a service to some 75,000 homes. The 110 MW plant had a construction budget of close on 1 billion dollars (760 million euros). The facility has a central tower standing 160 metres tall, the largest in the world of this nature, and 10,000 heliostats surrounding it. COBRA is a leader in the field of enclosed-parabolic thermosolar power plant construction with salt storage systems, with a construction experience of 600 MW and O&M experience of over 500 MW.

CRESCENT DUNES PLANT

USA





WASTE TREATMENT PLANT

SPAIN

An integrated waste treatment plant operated by Grupo ACS (URBASER). It has a capacity of 550,000 tonnes/year and an installed power of 29 MW. Waste to incineration: 280,000 tonnes/year.



BIOMASS PLANT

DOMINICAN REPUBLIC

A 28 MW plant powered by sugar cane pulp and coal, built by COBRA (GRUPO ACS).



SALTO DEL NEGRO

BIOMETHANISATION PLANT

SPAIN

A turnkey project for this waste management and conversion to natural gas for subsequent re-use of the gas in combustion engines for the generation of electricity. Built by ISOLUX-CORSAN, it has a capacity of 75,000 tonnes/year and cost 13 million euros.



WASTE TREATMENT PLANT UNITED KINGDOM

A facility built by Grupo ACS (URBASER). It encompasses all waste treatment processes (Classification, Anaerobic Digestion, Composting and Energy Recovery), thus providing an optimum solution to waste management that prioritises material recovery and energy production from those materials that cannot be materially recovered.

WASTE TREATMENT PLANT

SPAIN

A facility built by Grupo ACS (URBASER) with the following specifications: Waste to Incineration (Phase I): 300,000 tonnes/year; Installed Power: 22 MW; Waste to Incineration (Phase II): 432,000 tonnes/year; Installed Power: 40 MW; Transferred Waste: 146,000 tonnes/year; Slag Treatment: 85,000 tonnes/year; Safety Deposit: 32,000 tonnes/year.



WASTE TREATMENT PLANT FRANCIA

An integrated waste treatment plant built by Grupo ACS (URBASER) of 35 MW and 2 MW installed biogas power. It treats 450,000 tonnes per year of waste to incineration (300,000 tonnes/year), Anaerobic Digestion (111,000 tonnes/year), to Composting (50,000 tonnes/year) and Slag (60,000 tonnes/year).

RUSKIN DAM

CANADA

A project awarded to Grupo ACS for renovation and improvement.



BARRO BLANCO DAM

PANAMA

Built by Grupo ACS (COBRA), this is a concrete dam measuring 332 metres in length and 56 metres in height.

EL ALTO DAM

PANAMA

Built by Grupo ACS (COBRA), it is 160 metres in length and 50 metres in height.



TORITO HYDROPOWER PLANT

COSTA RICA

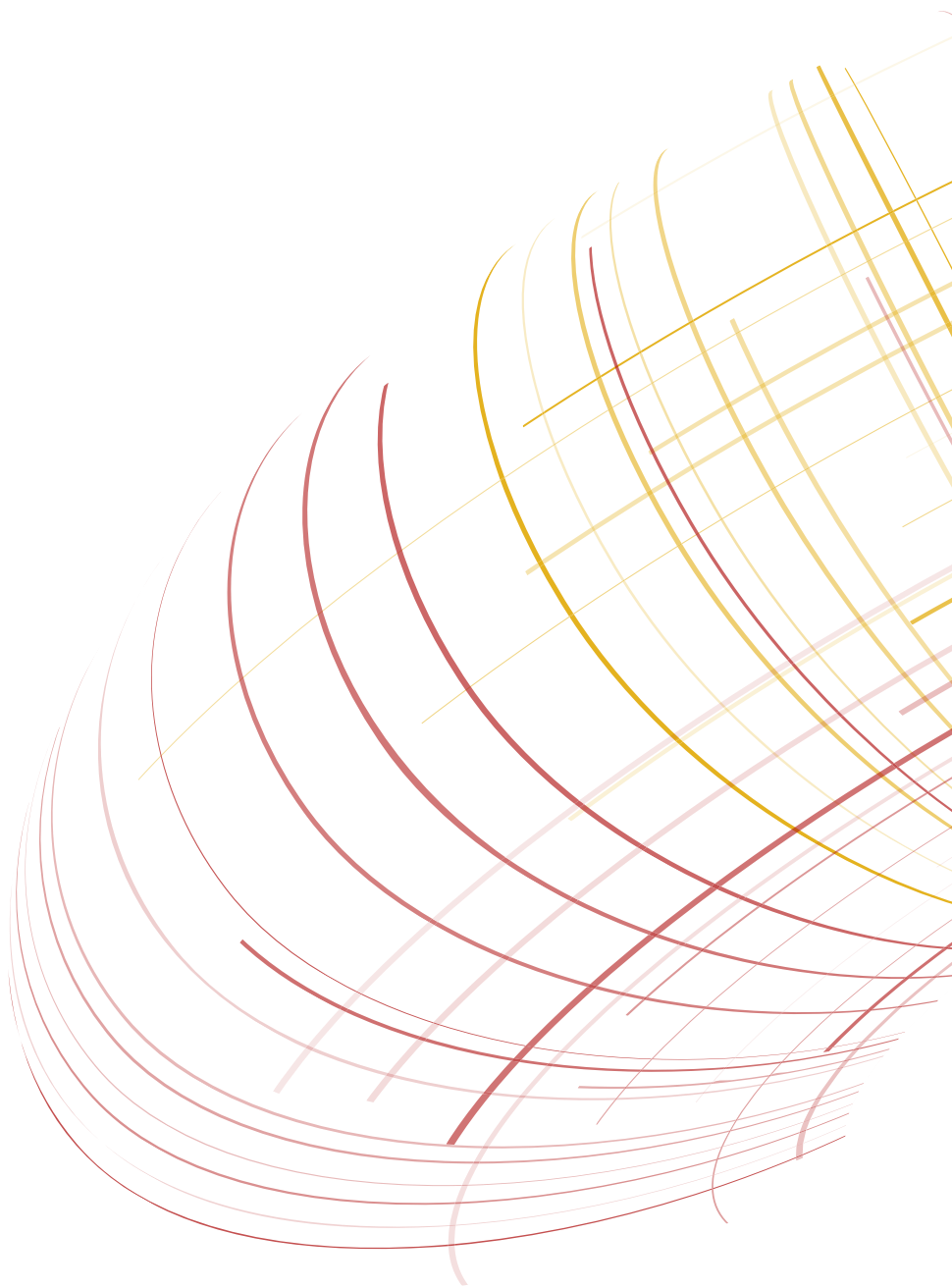
GAS NATURAL FENOSA built this power plant, which has an installed power of 50 MW. Over 600 direct jobs were created during its construction and various social action initiatives were developed in the local area.



CALABERAS DAM

USA

Built by Grupo ACS (DRAGADOS), the Calaveras Dam will be one of the largest dams built in the State of California in the last 30 years. It will have a height of over 67 metres and a length in excess of 360 metres. The dam is designed to withstand a 7.25 magnitude seismic event.



GOBIERNO
DE ESPAÑA

MINISTERIO
DE ASUNTOS EXTERIORES
Y DE COOPERACIÓN