

# Building of state-of-the-art solar power plant kicks off

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RIYADH - Torresol Energy, the strategic alliance between Spanish engineering group SENER and **Masdar**, Abu Dhabi's multi faceted renewable energy initiative, has announced on Wednesday a 171 million euro financing deal which will allow construction to commence on Gemasolar.

**Abu Dhabi** is driven by the Abu Dhabi Future Energy Company (ADFEC), a wholly -owned company of the government of Abu Dhabi through the Mubadala Development Company.

Gemasolar is the world's first utility grade solar power plant with central tower and salt receiver technology and will provide clean and safe energy as well as create more than 1,500 jobs in Spain. The plant is located in Fuentes de Andaluc?a, in Seville.

The funding which has been secured through the open market with Banco Popular, Banesto and the Instituto de Crédito Oficial acting as mandated lead arrangers, highlights the attractive proposition that the strategic alliance offers in this challenging financial market.

The plant will be operational in 2011 and will produce 17MWe of renewable energy reducing CO2 emissions by more than 50,000 tons a year.

"The construction of Gemasolar represents a gigantic step forwards in Torresol's technological development and positions us as world leaders in central tower solar thermal projects", said Enrique Sendagorta, Torresol Energy's chairman.

"This strategic alliance brings the best of Abu Dhabi and Spain together to help drive forward the large scale deployment of renewable energy projects. The response of the financial markets is further proof that the industry will continue to advance."

The project is the first-of-its-kind in the world due to the application of this technology in a commercial environment. The project will open the way for a new solar thermal electricity generation technology that is a better alternative to cylindrical - parabolic type commercial solar thermal power plants that are currently being built.

"Gemasolar is an important milestone for the CSP industry and its success is likely to revolutionize this industry, " said Dr. Sultan Al Jaber, chief executive officer at **Masdar**. " **Masdar** is very excited at the prospect that this technology promises to deliver and look forward to building similar but larger capacity towers in Abu Dhabi and elsewhere using this technology."

The EPC contract has been awarded to a consortium, including SENER and AMSA, a ACS Cobra subsidiary.

In the consortium, SENER will be in charge of providing the technology, and the detail design and commissioning of the plant, The technology which includes Sensol software and SENER's world class receiver, which is able to absorb 95 percent of the radiation from the sun's spectrum and transmit this energy to the salt compound that circulates within the receiver.

The technology provided includes the innovative thermal molten salts storage system, which is capable of reaching temperatures over 500 degrees centigrade.

In terms of performance and operation, the technology inherent within the Gemasolar plant will treble electricity production in the rest of the thermoelectric solar power plants with the same power but under conventional technology basis. This is due to the fact that the majority of thermoelectric plants, that are being developed, do not have a thermal storage system, whilst Gemasolar has high temperature heat storage that extends the normal operating period of these plants.

Salts, made up by sodium and potassium nitrates, are kept molten using the solar energy collected from the heliostats, so that they store excess accumulated heat during sunshine hours, which makes it possible to continue to produce electricity even when there is not enough solar radiation.

Due to this advanced technology, Gemasolar's autonomy will be 15 hours without sunlight. Furthermore, the high temperature at which solar energy is captured in the salt receiver allows to have more pressurized and hotter steam, which considerably increases the steam turbine's performance.

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