



Masdar, Total and Abengoa Launch Shams 1, the World's Largest Concentrated Solar Power Plant in Operation

- The inauguration of Shams 1, a 100 MW solar thermal plant, is a major milestone in the development and deployment of renewable energy in the Middle East.

Abu Dhabi, UAE: 17 March, 2013 – Masdar, along with its partners, today launched Shams 1, the largest concentrated solar power plant (CSP) in operation in the world. Masdar, Abu Dhabi's renewable energy company, partnered with French energy company Total and Spain's energy infrastructure company Abengoa. The 100 MW solar thermal project will power thousands of homes in the United Arab Emirates and displace approximately 175,000 tons of CO₂ per year. The 600 MUS\$ project took three years to build.

"The inauguration of Shams 1 is a major breakthrough for renewable energy in the Middle East," said Dr. Sultan Ahmed Al Jaber, CEO of Masdar. "Just like the rest of the world, the region is faced with meeting its rising demand for energy, while also working to reduce its carbon footprint. Shams 1 is a significant milestone, as large-scale renewable energy is proving it can deliver electricity that is sustainable, affordable and secure."

Located in the UAE's Western Region, in the emirate of Abu Dhabi, Shams 1 was designed and developed by Shams Power Company, a joint venture between Masdar (60 percent), Total (20 percent) and Abengoa Solar (20 percent). With the addition of Shams 1, Masdar's renewable energy portfolio accounts for almost 68 percent of the Gulf's renewable energy capacity and nearly 10 percent of the world's installed CSP capacity.

"Abu Dhabi is investing and incubating a new energy industry, domestically and internationally," said Dr. Al Jaber. "Through Masdar, the UAE is redefining the role it plays in providing the world with energy. From precious hydrocarbons exports to sophisticated renewable energy systems, we are balancing the energy mix and diversifying our economy – moving toward a more sustainable future. Today, the UAE is the only OPEC nation delivering both hydrocarbons and renewable energy to the international market."

Shams 1 is an example of how collaboration between companies can achieve large-scale, clean-energy solutions that help meet the world's growing energy demands.

"As a long-lasting partner of Abu Dhabi, we are particularly proud to have been part of the challenging adventure that was Shams 1 construction. This is a major step in the process of transforming the capabilities of solar power in the region," said Christophe de Margerie, chairman and CEO of Total. "We share Abu Dhabi's vision that renewables have a

promising future alongside fossil energies. Total is today a world leader in solar industry. As such, we are pleased to accompany the Emirate in the diversification of its energy mix.”

Covering an area of 2.5 km², or 285 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.

“The Middle East holds nearly half of the world’s renewable energy potential,” said Santiago Seage, CEO of Abengoa Solar. “The abundance of solar energy is an opportunity to integrate sustainable, clean sources of power that address energy security and climate change. The region needs more projects like Shams 1, and we look forward to pushing the boundaries of future energy.”

Incorporating the latest in parabolic trough technology, Shams 1 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.

A source of great pride, the Western Region of Abu Dhabi is the centre of the country’s hydrocarbon industry and represents the roots of its Bedouin heritage. With the addition of Shams 1, the region is evolving. Today, alongside oil fields, renewable energy and civil nuclear power is being developed to support the country’s long-term energy requirements.

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About Masdar

Masdar is Abu Dhabi’s renewable energy company advancing the development, commercialisation and deployment of clean energy technologies and solutions. The company serves as a link between today’s fossil fuel economy and the energy economy of the future. Backed by the Mubadala Development Company PJSC, the strategic investment company of the government of Abu Dhabi, Masdar is dedicated to the Emirate’s long-term vision for the future of energy.

For more information about Masdar, please visit: www.masdar.ae
Stay connected: facebook.com/masdar.ae and twitter.com/masdar

About Total

Total is a leading international oil and gas company with operations in more than 130 countries. The Group is also a world-class chemical producer. Its 96,000 employees put their expertise to work in every part of the industry - exploration and production of oil and natural gas, refining and marketing, new energies, trading and chemicals. Total is working to keep the world supplied with energy, both today and tomorrow.

Total is striving to diversify its supply to help meet growing energy demand in the long term. The Group, which holds a 66 % stake in SunPower, is a world leader in solar energy. Additionally, Total is actively engaged in a number of renewable R&D projects, such as solar and biomass.

About Abengoa

Abengoa (MCE: ABG.B) is an international company that applies innovative technology solutions for sustainable development in the energy and environment sectors, generating electricity from the sun, producing biofuels, desalinating sea water and recycling industrial waste. (www.abengoa.com)

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