

Addressing the growing demand in energy while reducing greenhouse gas emissions

Total is one of the world's major oil and gas groups, with activities in more than 130 countries. Its 97,000 employees put their expertise to work in every part of the industry - exploration and production of oil and natural gas, refining and marketing, gas & power and trading. The Group is also a first rank player in chemicals.

Total is working to keep the world supplied with energy, both today and tomorrow. That is why, tackling tomorrow's challenges in terms of energy supply and climate issues, the Total Group is making sustainable investments in new energies, with low-carbon emissions.

Renewable, widely available, environment-friendly and soon to be competitive without governmental helps, solar energy is progressively becoming a critical source for the energetic future. Complying with its mission of Energy Company, Total started to develop its solar activities in 1983, with the founding of Tenesol¹.

Total aims at becoming a major player of the solar photovoltaic industry, through its investments on the different segments of the value chain, and thanks to an ambitious R&D strategy (for instance the research partnership with the MIT on energy stocking) dedicated to anticipate tomorrow's leading technologies, like solar organic technology, developed by Konarka. Total owns close to 25% of the American start-up based in Lowell, Massachusetts. The company was founded by Alan Heeger, winner of the Nobel Prize for Chemistry in 2000 for his work on conducting polymers.

Total's implication on the industrial crystalline chain

The Group possesses upstream activities, more precisely on the silicon purification segment: Total acquired in June 2010 a 25,4% share in AE Polysilicon, an American company based in Fairless Hills, Pennsylvania. AE Polysilicon has created innovative silicon purification processes, less energy-consuming than the standard ones.

Total is also present on the silicon crystalline cell manufacturing segment, through its Belge subsidiary, Photovoltech, jointly and equally owned with GDF-Suez. Photovoltech develops high value-added technological products.

Finally, regarding the solar panels manufacturing, the design and system installations, Tenesol, a Total subsidiary, is also involved in the Positive Energy Consortium. One of the major players on the French photovoltaic market, with an increasing international position (exports represented 50% of the company turnover in 2010), Tenesol is a creative and dynamic company regarding Building Integrated Photovoltaic (BIPV) innovations.



Why did the Total Group become a member of the Positive Energy Consortium?

As a critical energy for the future, solar photovoltaic is an essential technical solution to create buildings producing more energy than they are actually consuming.

Willing to bring its contribution to the research & development for adapted and efficient technical solutions dedicated to tomorrow's eco-friendly buildings, Total has decided to co-lead with its subsidiary TeneSol¹ the Photovoltaic Working Group dedicated to "Tertiary Buildings and Solar Photovoltaic Integration". The objectives are to develop a better understanding of the general building problematic and to anticipate the future evolutions so as to provide the more relevant solutions to successfully integrate solar photovoltaic to building of offices.

More informations on : www.total.com, www.tenesol.com

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¹ TeneSol is a subsidiary jointly and equally owned by Total and EDF. Today's leader of the French Photovoltaic market, TeneSol designs, manufactures builds and manages integrated solar system. With more than 1 000 employees in 20 subsidiaries all around the world, TeneSol possesses two manufacturing plants: one in France (Toulouse) and one in South Africa (Cape Town).