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Total, GDF SUEZ, and Photovoltaech join IMEC's silicon solar cell research program

Leuven, Belgium – September 21, 2009 – The two major energy companies Total and GDF SUEZ and their common solar cells manufacturing subsidiary Photovoltaech join the IMEC industrial affiliation program (IIAP) on next generations of crystalline silicon solar cells. The multi-partner R&D program concentrates on sharply reducing the silicon use, whilst at the same time increasing the efficiency of solar cells. This will substantially lower the cost for solar energy.

With its IIAP, IMEC sets up a research ecosystem with the aim to create innovative processes to fabricate the next generations of silicon solar cells. GDF SUEZ, Total and Photovoltaech will dedicate researchers to this program. Thus, researchers from energy companies, solar cell manufacturers and material and equipment suppliers work together with IMEC's solar experts on developing these advanced processes and testing them on a semi-industrial pilot line.

Luc Van den Hove, President and CEO at IMEC said: "We are excited that such major energy companies and Photovoltaech join our research program. This agreement shows the importance of our research for the global energy market. By 2025 at least 20% from the worldwide energy supply will come from renewables. Solar energy will ensure at least 10% of the total electricity supply, but to achieve this, we need to join forces to strongly reduce the cost of solar technology."

Philippe Boisseau, President Gas and Power at Total said: "This agreement with IMEC, a world-class research center and historic partner of our branch Photovoltaech, will give us access to promising new technologies for silicon solar cells. It will strengthen our skills and our scientific and technical commitment in new energies."



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"This program reinforces our partnership with IMEC and will allow us to develop key competitive positioning in the crystalline silicon solar cells technology", said Henri Ducré, Member of the GDF SUEZ Executive Committee in charge of the Energy France business line. "This collaboration will also strengthen our position in a market where R&D choices are crucial and will extend our research capacity in the solar energy field."

Johan Nijs, General Manager of Photovoltaech said: "In order to cope with market requirements in terms of price and quality we need to deliver solar cells with ever improving electrical, optical and mechanical characteristics at lower cost. Collaborating with an outstanding R&D-center like IMEC offers unique opportunities to meet these challenges."

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News release can be downloaded at http://www2.imec.be/imec_com/total_-gdf-suez_-and-photovoltaech-join-imec__08217_s-silicon-solar-cell-research-program.php?year=2009&month=09

About IMEC

IMEC is a world-leading independent research center in nanoelectronics and nanotechnology. IMEC is headquartered in Leuven, Belgium, and has offices in Belgium, the Netherlands, Taiwan, US, China and Japan. Its staff of more than 1,650 people include over 550 industrial residents and guest researchers. In 2008, IMEC's revenue (P&L) was 270 million euro.

IMEC's More Moore research targets semiconductor scaling for the 22nm technology node and beyond. With its More than Moore research, IMEC invents technology for nomadic embedded systems, wireless autonomous transducer solutions, biomedical electronics, photovoltaics, organic electronics and GaN power electronics.

IMEC's research bridges the gap between the fundamental research at universities and R&D in the industry. It has unique processing and system know-how, intellectual property portfolio, state-of-the-art infrastructure, and a strong and



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worldwide network position. This makes IMEC a key partner for shaping the technology of the future.

Further information on IMEC can be found at www.imec.be.

IMEC is a registered trademark for the activities of IMEC International (a legal entity set up under Belgian as a "stichting van openbaar nut"), IMEC in Belgium (IMEC vzw supported by the Flemish Government), stichting IMEC Nederland (IMEC-NL) and IMEC Taiwan Co. (IMEC-TW).

About Total

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. Total is working to keep the world supplied with energy, both today and tomorrow. The Group is also a first rank player in chemicals.

Total has been active in solar energy since 1983 through its interest in two companies, Tenesol and Photovoltaech. Photovoltaech produces photovoltaic cells based on a crystalline silicon technology and Tenesol specializes in designing, manufacturing, marketing and operating photovoltaic energy systems.

In December 2008, Total became a core industrial shareholder in US startup Konarka, specialized in organic photovoltaic technology after Total Gas & Power USA (SAS) recently underwrote a share issue to acquire a stake slightly less than 20%.

About GDF SUEZ

One of the leading energy providers in the world, GDF SUEZ is active across the entire energy value chain, in electricity and natural gas, upstream to downstream. It develops its businesses (energy, energy services and environment) around a responsible-growth model to take up the great challenges: responding to energy needs, ensuring the security of supply, fighting against climate change and maximizing the use of resources. GDF SUEZ relies on diversified supply sources as well as flexible and high-performance power generation in order to provide innovative energy solutions to individuals, cities and businesses.



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The Group employs 200,000 people worldwide and achieved revenues of €83.1 billion in 2008. GDF SUEZ is listed on the Brussels, Luxembourg and Paris stock exchanges and is represented in the main international indices: CAC 40, BEL 20,

DJ Stoxx 50, DJ Euro Stoxx 50, Euronext 100, FTSE Eurotop 100, MSCI Europe and ASPI Eurozone.

GDF SUEZ is active along the value chain of photovoltaics through its interests in Photovoltech, Soltech (polysilicon module producer) and Sulfurcell (CIGS modules producer). The Group is also committed in a number of photovoltaic projects development with a current portfolio of about 200 MWp. Moreover, the Group develops energy efficient offers for its clients including a large array of PV solutions and services.

About Photovoltech

Photovoltech was created in December 2001 by Total, GDF SUEZ and IMEC. Photovoltech had a turnover close to 100 M€ in 2008 and announced an increase of the photovoltaic cell production capacity of its plant in Tienen, Belgium to 260 MWp by 2011-2012. A new large building is being built at the current site in order to host the necessary new production lines.

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