

## Consolidating Leadership in Photovoltaic Industry

**Air Liquide becomes the main supplier to the three largest photovoltaic production sites worldwide**

*press release*

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### Air Liquide Electronics

With 3,000 employees and €1,044 million revenue in 2008, Air Liquide Electronics has activities in ultra-pure and specialty gases, new molecules, related equipment and customized services.

The Electronics division management is based in Tokyo to enhance its proximity to the semiconductor, TFT-LCD and PV markets in Asia.

### The use of gases in the photovoltaic industry

Gases are used at all stages of solar cells manufacturing process:

- to produce Poly-Silicium: high-volume of nitrogen (N<sub>2</sub>) and hydrogen (H<sub>2</sub>)
- to produce Si wafers: large quantities of nitrogen, argon (Ar) and helium (He)
- to produce crystalline-Si cells: carrier gas (N<sub>2</sub>) & specialty gases such as silane (SiH<sub>4</sub>), ammonia (NH<sub>3</sub>)
- to produce Si Thin Film cells: carrier gases (N<sub>2</sub>, H<sub>2</sub>), specialty gases (SiH<sub>4</sub>, NF<sub>3</sub>, dopant mixtures) and coating precursor materials.

In a period of significant consolidation, leading Photovoltaic (PV) manufacturers continue to invest in new capacity to cope with the next phase of demand growth, expected during 2010.

**In this context, Air Liquide significantly enhanced its leadership position by signing several new contracts** since January 2009 with solar cell manufacturers **in 5 countries** and will invest globally **€13 million** to meet the needs of those customers.

Amongst those, Air Liquide became the partner of **two of the largest solar science parks in the world**, having a production capacity of more than 1,000MW per year each:

- In **Singapore**, Air Liquide will supply all carrier and specialty gases as well as on-site services to **REC's new Gigawatt wafer and solar cells production campus**. This project is the **largest Photovoltaic investment underway in South-East Asia**, with a planned combined production of 1,500MW pa. REC is the **world leading supplier of Si materials** to the PV industry with planned Poly-Si and Si wafers global capacity of more than 20,000 tons per year and 2,000MW per year respectively.
- In **Wuxi, China**, Air Liquide signed a contract to supply carrier gases to **Suntech Gigawatt-size existing facilities**. Suntech is the **world's second largest solar cell manufacturer** with production capacity exceeding 1,000 MW pa.

Those two contracts, combined with the existing supply of the PV market leader **Q-Cells** in the **biggest production site worldwide in Germany** and also in Malaysia announced on 19 January 2009 make **Air Liquide the number one partner of the 3 largest production sites in the world**.

In parallel, multiple long-term supply contracts were awarded to Air Liquide by **Bosch-Ersol** for its new Thin Film plant in Erfurt (Germany) and by **five new solar cell companies** in Europe and Asia.

**Francisco Martins**, Vice-President World Business Line Electronics of the Air Liquide Group, declared: **« We are pleased to be the chosen supplier of the three largest solar cells production campuses in the world. These new signatures with PV market leaders confirm the success of our solar global offer, reinforcing our number one position in a fast-changing industry. The photovoltaic activity is at the crossroads of Energy and the Environment, two growth drivers of the Air Liquide Group. »**

**Air Liquide is the world leader in gases for industry, health and the environment, and is present in over 75 countries with 43,000 employees.** Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide's activities since its creation in 1902. Using these molecules, Air Liquide continuously reinvents its business, anticipating the needs of current and future markets. The Group innovates to enable progress, to achieve dynamic growth and a consistent performance.

Air Liquide combines many products and technologies to develop valuable applications and services not only for its customers but also for society. **Innovative technologies** that curb polluting emissions, lower industry's energy use, recover and reuse natural resources or develop the energies of tomorrow, such as hydrogen, biofuels or photovoltaic energy... Oxygen for hospitals, homecare, fighting nosocomial infections...

**A partner for the long term**, Air Liquide relies on employee commitment, customer trust and shareholder support to pursue its vision of sustainable, competitive growth. The **diversity** of Air Liquide's teams, businesses, markets and geographic presence provides a solid and sustainable base for its development and strengthens its ability to push back its own limits, conquer new territories and build its future.

**Air Liquide explores the best that air can offer to preserve life, staying true to its sustainable development approach.** In 2008, the Group's revenues amounted to **€13.1 billion**, of which almost 80% were earned outside France. Air Liquide is listed on the Paris Euronext stock exchange (compartment A) and is a member of the CAC 40 and Dow Jones Euro Stoxx 50 indexes.