

## Electronics: Air Liquide signs a major contract with China's leading display manufacturer

Worldwide demand for **next-generation flat panel displays** is booming, driven by the increasing popularity of smart phones and tablets as well as ultra-high-definition screens. China has now become the **largest consumer market for electronic goods** in the world. In recent years, several manufacturers have built state-of-the-art flat panel display fabs to meet local and overseas demand.

**Air Liquide is further expanding its relationship with BOE Technology Group with a major contract award** to supply BOE's new G8.5 Flat Panel Display Device and System Project located in Chongqing, China.

The project - a new display production line - will be commissioned in the first half of 2015 and produce displays for laptops, tablets and high-end monitors, using BOE independent core technologies such as Oxide-TFT or touch technology. Air Liquide will invest **30 million euros** in a high efficiency, turnkey on-site gas supply system that will produce **30,000 Nm<sup>3</sup>/h** of ultra-high purity nitrogen and associated bulk gas infrastructure.

With this new contract, Air Liquide will supply the majority of BOE's fabs in China with a total of **100,000 Nm<sup>3</sup>/h** of nitrogen for sites in Beijing, Chengdu, Hefei, Ordos and Chongqing.

Founded in 1993, BOE has become **the largest supplier focusing on flat panel display technologies, products and solutions in mainland China**. BOE ranks top 5 in the global industry in terms of shipment and market share. Up to now, BOE's accumulated usable patents total over 18,000, with newly increased 4,282 patent applications in 2013.

**Mr. Liu Xiaodong**, Chief Operating Officer of BOE, commented: ***"Air Liquide has proven its competitiveness, its supply reliability, and its responsiveness over the years. In particular, Air Liquide understands our needs and is a source of ideas in the development of added-value solutions. We are pleased to count on Air Liquide for this new project in Chongqing and we look forward to a long and fruitful cooperation with Air Liquide."***

**Michael J. Graff**, Air Liquide Group Senior Vice-President for the Americas and Executive Committee member overseeing Electronics, commented: ***"This new contract highlights the long-term partnership and the confidence placed in Air Liquide by BOE for their latest Oxide-TFT display fab in Chongqing. This new contract attests to our ability to supply electronics customers with products and services that meet the highest standards, and reaffirms the value and competitiveness of our offer and our position in the fast-growing flat panel industry in China and advanced display technologies in Asia."***

### **Air Liquide Electronics**

With over **3,500 employees** and **€ 1,127 million in revenue in 2013**, Air Liquide Electronics has activities in ultra-pure and specialty gases, new molecules, related equipment, and customized services.

The Electronics business line is based in Asia to improve its proximity to the markets for semiconductors, flat panel displays, and solar photovoltaics.

### **Air Liquide China**

operates more than **70 plants** and employs **4,000 employees today, with a strong presence in the key coastal industrial areas**. It is also expanding into the center, south and west of China. Air Liquide also has a strong Engineering and Construction activity (Global E&C Solutions). Air Liquide resumed the development of its activities in China in the 1970s, with the supply of Air Separation Units, and restarted gas operations in 1990.

### **The use of molecules in Flat Panel Industries**

High-purity gases are used to manufacture Thin Film Transistors (TFT), which lie at the heart of FPD technologies: the main role of nitrogen (N<sub>2</sub>) is to ensure a clean process environment. Electronics Specialty Gases (ESGs), along with other carrier gases, are used either to deposit, etch or functionalize the material layers that constitute the TFT, and to clean inside the deposition chambers.

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World leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with more than 50,000 employees and serves more than 2 million customers and patients. Oxygen, nitrogen and hydrogen have been at the core of the company's activities since its creation in 1902. Air Liquide's ambition is to be the leader in its industry, delivering long-term performance and acting responsibly.

Air Liquide ideas create value over the long term. At the core of the company's development are the commitment and constant inventiveness of its people.

Air Liquide anticipates the challenges of its markets, invests locally and globally, and delivers high-quality solutions to its customers and patients, and the scientific community.

The company relies on competitiveness in its operations, targeted investments in growing markets and innovation to deliver profitable growth over the long-term.

Air Liquide's revenues amounted to € 15.2 billion in 2013, and its solutions that protect life and the environment represented around 40% of sales. 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.