

Linde wins three new long term thin film contracts to capture over 50% of the market in China.



China fuels Linde's market position in global PV industry

Technology company The Linde Group announced three new multi-million US Dollar contracts to capture more than 50% of the thin film photovoltaic (PV) market in China. The agreements bolster the company's position as a supplier of bulk and specialty gases to the thin film PV industry. The Linde Group's local subsidiary, Linde LienHwa has been awarded contracts by Tianwei Baoding, Hangzhou Amplesun Solar and ENN Solar in China. As part of these new long term contracts, The Linde Group will be providing ongoing delivery of bulk and specialty gases essential to make thin film solar cells, including large volumes of silane and hydrogen gas, used to deposit silicon light absorbing layers on large area sheets of glass used in solar panels.

China is fast emerging at the forefront of the global solar industry, with over 50% growth in solar cell manufacturing in 2008, a huge jump compared to only 1% five years ago. Linde has the full capability to deliver both gases and chemicals to solar customers. However, Linde's involvement in the solar industry is much more comprehensive than just materials supply. Customers rely on Linde to bring gas technologies into their manufacturing processes and to help them deliver in reducing the cost of solar cell production.

"China is a strong contender to become a model for the global solar energy market, with the recent growth in the PV market," said Andy Cook, President of Linde LienHwa China. "Linde's relationships with Tianwei Baoding, Hangzhou Ample Solar and ENN Solar illustrate our commitment to deploy innovative approaches to production and utilisation of materials in solar manufacturing. Ultimately, Linde's collaboration with such companies is aimed at the universal industry goal of reducing cost per watt of solar cell production and bringing the cost of solar electricity to grid parity."

The first phase of the ENN Solar plant in Langfang will start commercial production by Q2 of 2009, with a capacity of 60 MW, and possible future expansion up to 0.5 GW.

Dr. Rick Wan, General Manager at ENN Solar said: "PV module manufacturing is an important part of ENN's strategy to contribute to the clean energy revolution in China and other countries of the world. Linde brings synergies with our history of innovation and experience in energy production to develop this renewable alternative energy source at competitive pricing."

Baoding Tianwei Solarfilms is working with Linde to future proof its gas installation and supply chain. Tianwei's new thin film solar production facility in Baoding worth over RMB 6 billion will go online in the first quarter of 2009.

Dr. Huang Yuelong, Deputy GM at Tianwei Solarfilms said: "There is a huge supply vacuum in the PV markets in the United States, South Korea, Spain and Italy. Linde is enabling us to become a manufacturer of high efficiency thin film modules with lower production costs to overcome challenges of oversupply in a burgeoning market."

Hangzhou Amplesun Solar Technology is a privately invested high tech company devoted to next generation green power with a current investment of RMB 2.2 billion (about USD 320 million). The company has been introducing production lines from Ulvac, one of the major equipment suppliers in solar industry. Amplesun is installing two turnkey production lines in Hangzhou with a total capacity of 50 MW and plans to achieve a manufacturing capacity of 120 MW by the end of year 2010.

Mr. Jin Qing Guo, CEO of Amplesun Solar said: "AmpleSun is very pleased to co-operate with Linde. And Linde has been facilitating our needs on specialty gases as well as on site services, which will greatly speed up our capacity scale up in the production of thin film solar modules."