

Press Release

Linde brings six major air separation units on stream in Northwest China

- Oxygen production capacity of at least 600,000 Nm³/h at the six-train plant
- Shenhua Ningxia's coal-to-liquid project in Lingwu requires huge volumes of oxygen
- Linde plants are part of the world's largest connected ASU complex comprising 12 individual units

Munich, 3 January 2017 – Technology company The Linde Group has brought six major air separation units (ASU) on stream for its customer Shenhua Ningxia Coal Industry Group Co. Ltd. in Lingwu near Yinchuan in the Ningxia Hui Autonomous Region of Northwest China. Shenhua Ningxia is a member of Shenhua Group Co. Ltd., the largest coal-producing company in China, whose activities include the production of coal-derived chemicals. Linde was awarded the contract to build the units in February 2013.

Each of the six air separation units has a production capacity of around 100,000 standard cubic metres of gaseous oxygen per hour (Nm³/h). Shenhua Ningxia requires the oxygen for its coal-to-liquid (CTL) complex at the Ningdong Energy Chemical Base to produce four million tonnes of CTL products – mainly liquid fuel derived from coal – per year. This makes it one of the largest coal-to-liquid projects worldwide.

“CTL complexes on this scale require air separation units that can similarly offer benchmark capacity and efficiency performance. Thanks to our wealth of experience in large-scale plant engineering and our network of global and local partners, we were able to successfully complete this project on time. These execution capabilities provide further proof of our leading market position in the ASU segment,” comments John van der Velden, Member of the Board of Directors of Linde Engineering Division.

To realise this project, Linde's engineering centres in Pullach (Germany) and Hangzhou (China) collaborated with its Schalchen (Germany) and Dalian (China) production locations. Collaboration with local contractors ran equally smoothly. It took just four months to assemble all six rectification coldboxes with their 2,000-plus tonnes of steel structures and various vessels.

In addition to the six plants started up by Linde, a further six ASUs are set to be soon completed in Lingwu. This will make it the world's largest connected air separation complex with an overall oxygen production capacity of approximately 1.2 million Nm³/h.

In the 2015 financial year, The Linde Group generated revenue of EUR 17.944 bn, making it one of the leading gases and engineering companies in the world, with approximately 65,000 employees working in more than

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100 countries worldwide. The strategy of The Linde Group is geared towards long-term profitable growth and focuses on the expansion of its international business, with forward-looking products and services. Linde acts responsibly towards its shareholders, business partners, employees, society and the environment in every one of its business areas, regions and locations across the globe. The company is committed to technologies and products that unite the goals of customer value and sustainable development.

For more information, see The Linde Group online at www.linde.com

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