

# *Capabilities and Experience in China*

- > Shanghai engineering office*
- > Caojing manufacturing facility*
- > Largest reference ASU train sizes*
- > Technology and equipment for gas separation, purification and recovery systems*
- > Varied scope of supply*



*“Air Products entered mainland China in 1979. Since then, we have demonstrated our commitment to the region by investing more than RMB 3,800,000,000 (US\$500,000,000), established more than 30 joint venture and wholly owned companies, and established engineering and manufacturing facilities in country.”*

Mark Stoelinga, Director, Large Air Separation Unit Equipment Sales





### **Think globally . . .**

Air Products has an impressive and proven record of designing, engineering, constructing and operating air separation units to supply oxygen for major coal and heavy oil gasification projects, as well as for chemical, refining and other projects worldwide. A US\$10 billion company with more than 200,000 customers, we built the world's largest single oxygen Sale of Equipment in 2005, and our ASU onstream record is above 99%.

### **. . . Act locally.**

Air Products has been building large-scale ASUs in China since 1979, beginning with a 30,000 Nm<sup>3</sup>/hr gaseous oxygen (GOX) plant for Anshan Steel. We built the highest-pressure ASU in the country—a 10 MPa plant for Nanjing Chemical. The 72,000 Nm<sup>3</sup>/hr ASU we built for Baosteel represents the country's largest GOX capacity.

Further, we designed, engineered, manufactured, installed and operate a 48,200 Nm<sup>3</sup>/hr ASU for an integrated coal-to-methanol and CO plant in Nanjing, and we built a 32,200 Nm<sup>3</sup>/hr ASU and natural gas liquefier in Tongxiang. We have delivered more than 185 nitrogen PSAs, oxygen VSAs and membrane purification systems to mainland China and Taiwan, including Prism<sup>®</sup> membrane separators to produce enriched oxygen for the Qinghai-Tibet train, and the high-pressure membrane for hydrogen purification for the Shenhua Direct Coal Liquefaction project.

### **What we can offer**

#### **Shanghai Engineering Center**

- Full range of engineering disciplines; basic to detailed engineering
- Project management expertise
- 150+ engineers at the center; 250+ in Asia region

#### **Caojing Manufacturing Facility**

- Manufactures structured packing, vessels, columns and coldboxes
- Capable of making cryogenic columns up to 204,000 Nm<sup>3</sup>/hr
- Only ASU manufacturer to test all of distributors before installation
- Distributor and X-ray testing inside the factory
- Chinese GB150 and ASME qualified; ISO 9001-2000 certified
- 45 km from Shanghai Engineering Center with access to deepwater port, rail and roadway

#### **Permea China Ltd.**

- Manufactures membranes at our wholly owned subsidiary in Yantai

### **What our offerings mean to you:**

#### **Minimize technical risk**

- Innovative technology proven across a broad range of project types, including our 300+ owned and operated ASUs

#### **Minimize field construction risks and delays**

- Air Products has experience in a number of fabrication and construction methods, including proprietary adsorbent and unique instrumentation strategies
- We consider a range of determining factors, including access and shipping limits, availability of skilled workforce and availability of large cranes
- We evaluate risk vs. cost vs. schedule

#### **Confidence to focus on your business**

- Global spare parts inventory
- Best safety record in the chemical industry
- Contract operating and maintenance services, from supervision to complete staffing
- Quick response due to our local presence in China

### **For More Information**

To learn more about our ASU capabilities in China, contact us at one of the locations listed here.

#### **Asia**

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