

## Air Liquide and Aster sign MOU to collaborate on low-carbon hydrogen production in Singapore

Air Liquide Singapore, a world leader in industrial gases, technologies, and services, and Aster Chemicals and Energy Pte. Ltd. (Aster), a leading provider of chemical and energy solutions in Singapore and Southeast Asia, have signed a Memorandum of Understanding (MOU) to jointly collaborate on the development of an innovative Auto Thermal Reformer (ATR) unit for the production of hydrogen with integrated carbon capture capabilities in Singapore.

This strategic partnership marks a major milestone in advancing the decarbonization of Singapore's energy and chemicals sector. Under the MOU, Air Liquide will leverage its proprietary expertise in autothermal reforming technology, while Aster provides its integrated refining-petrochemical infrastructure and market knowledge. Together, the companies will assess the technical and commercial potential of the ATR with carbon capture which will support Singapore's broader energy transition, in line with the national hydrogen strategy that positions low-carbon hydrogen as a key pillar in achieving net-zero emissions by 2050.

Associated with carbon capture technology, the ATR process delivers high energy efficiency, excellent reliability and enables a carbon capture rate of up to 99%. This collaboration is in line with Singapore's commitment to diversifying its energy mix, decarbonizing hard-to-abate sectors, and building a resilient low-carbon economy.

**Tina Loke**, CEO of Air Liquide Singapore, commented: *"Air Liquide is proud to partner with Aster on this crucial initiative, which aligns with its global strategy to actively accelerate the development of a low-carbon society. Leveraging our global expertise with more than 30 ATR and a number of carbon capture references worldwide, this collaboration underscores our dedication to providing innovative gas solutions that drive industrial performance and contribute to Singapore's ambitious climate goals."*

**Erwin Ciputra**, Group CEO of Aster, said: *"Aster's commitment to green energy is demonstrated through strategic investments and pioneering collaborations that are positioned to deliver tangible impact. By partnering with Air Liquide, we seek to harness advanced ATR technology to supply low carbon hydrogen that strengthens the efficiency and reliability of our integrated infrastructure. This collaboration directly supports Singapore's hydrogen strategy and aims to accelerate pathways to reduce emissions in hard to abate sectors. Together, we are striving towards a resilient, affordable, and competitive low carbon energy future for businesses and communities across Singapore."*

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## JOINT PRESS RELEASE

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(L-R): From Aster - Kee Khoo Foo (Business Development Director); Andre Khor (Group CFO & Deputy CEO); Erwin Ciputra (Group CEO); From Air Liquide - Ilyong Park (CEO, East Asia Pacific); Tina Loke (CEO, Singapore); Michele Gritti (VP, Large Industries & Hydrogen Energy)

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### **About Air Liquide**

Air Liquide is a world leader in gases, technologies and services for industry and healthcare. Present in 60 countries with approximately 66,500 employees, the Group serves more than 4 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the Group's activities since its creation in 1902.

Taking action today while preparing the future is at the heart of Air Liquide's strategy. With ADVANCE, its strategic plan, Air Liquide is targeting a global performance, combining financial and extra-financial dimensions. Positioned on new markets, the Group benefits from major assets such as its business model combining resilience and strength, its ability to innovate and its technological expertise. The Group develops solutions contributing to climate and the energy transition — particularly with hydrogen — and takes action to progress in areas of healthcare, electronics and high technologies.

Air Liquide's revenue amounted to more than 27 billion euros in 2024. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, CAC 40 ESG, EURO STOXX 50, FTSE4Good and DJSI Europe indexes.

### **About Aster**

Aster is a leading provider of energy, chemical, and infrastructure solutions in Southeast Asia, supplying products and services to various manufacturing industries in both domestic and international markets. It is a Chandra Asri-led joint venture with Glencore. Since Chandra Asri Group's establishment in 1992, the Group has grown from strength to strength to build its reputation as a reliable growth partner, with strategically well positioned assets in Indonesia and Singapore. The Group's total asset base includes a refinery with a capacity of more than 300,000 barrels per day with ongoing asset rejuvenation, alongside a 1.1 million metric ton naphtha cracker on Bukom Island, 2.5 million metric tons of downstream chemical assets on Jurong Island, and a 0.9 million metric ton naphtha cracker in Cilegon. The company's business is supported by core infrastructure assets, including energy, electricity, water, jetty, and tank farm facilities. For more information, visit [www.aster.com.sg](http://www.aster.com.sg).