

## Air Liquide and Aquaponi launch joint R&D initiative for seawater-based aquaponics

**Air Liquide Japan and Air Liquide R&D have partnered with Aquaponi Inc. to launch a collaborative Research and Development (R&D) project to explore and develop innovative seawater-based aquaponics for commercial use. This research aims to advance the understanding and implementation of practical seawater-based aquaponics, contributing to a more sustainable food production system.**

Air Liquide and Aquaponi Inc. will evaluate the feasibility of a new seawater-based aquaponics technology for a sustainable and efficient food system. Through this project, the partners aim to contribute to the development of solutions that facilitate the cultivation of aquatic animal species and enhance plant growth in a saltwater environment. By leveraging Air Liquide's gas application technologies in aquaculture and hydroponics combined with Aquaponi's expertise in establishing aquaponics systems, **this innovative approach represents the world's first attempt at commercial-scale seawater aquaponics.**<sup>1</sup>

The oxygen and carbon dioxide dissolution technologies developed by Air Liquide enable a reduction in the fish rearing and plant growth times. As part of this project, the Group will be responsible for the design, manufacturing, installation and data analysis of these gas applications in a seawater environment. Meanwhile, Aquaponi, which has a track record of 52 aquaponics farm installations across Japan, will be responsible for the design, manufacturing, installation, and management of the aquaponics system, as well as the shrimp and plant production.

**Aquaponics is a recirculating system that combines aquaculture** (raising aquatic animals) **and hydroponics** (cultivating plants in water). In this system, fish waste is broken down by microorganisms and transformed into nutrients for plants. The water, purified by the plants, is then returned to the fish tank, **promoting efficient water use and reducing environmental impact.**

While conventional aquaponics has focused on freshwater fish, thus limiting the variety of fish species that can be raised, **the use of seawater opens up new opportunities** for cultivating shrimp, saltwater fish, and other marine species.

**Koji Makihara, President and CEO, Air Liquide Japan stated: "The collaboration between Air Liquide and Aquaponi is an innovative initiative representing a significant step towards a more sustainable food production. By synergizing the technologies and knowledge that each company has cultivated, and by conducting commercial-scale validation tests, we believe we can reduce environmental impact and build viable next-generation food systems."**

### **Air Liquide in Japan**

Air Liquide has been present in Japan since 1907, and has been contributing to the development of Japanese industries for over 100 years. Supported by a highly-skilled workforce of approximately 2,000 employees, The Group supplies key molecules to companies in electronics and other industrial fields, collaborating with our clients in problem solving and joint research.

### **CONTACTS**

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<sup>1</sup> As of March 24, 2025, according to Air Liquide's research

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Air Liquide is a world leader in gases, technologies and services for industry and healthcare. Present in 60 countries with 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, digital 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.