

## Interstellar Technologies Adopts Biomethane Derived from Livestock Manure for Microsatellite Launch Vehicle 'ZERO'



Hokkaido, Japan - Interstellar Technologies Inc. (hereinafter referred to as "IST"), a comprehensive space infrastructure company committed to tackling global challenges through space transportation and utilization, is pleased to announce the use of Liquid Biomethane (LBM) as the fuel for its microsatellite launch vehicle 'ZERO.' LBM, a biogas produced from underutilized livestock manure in Hokkaido, is supplied by Air Water Hokkaido Inc., a major industrial gas company.

IST plans to conduct single-engine static fire testing this fall at the Hokkaido Spaceport (HOSPO) Launch Complex-0 (LC-0) in Taiki, utilizing LBM supplied by Air Water Hokkaido. Together, they are embarking on an initiative to pave the way for eco-friendly rocket launches.

### **High Performance and Sustainable Rocket Fuel for Environmentally-Conscious Launches**

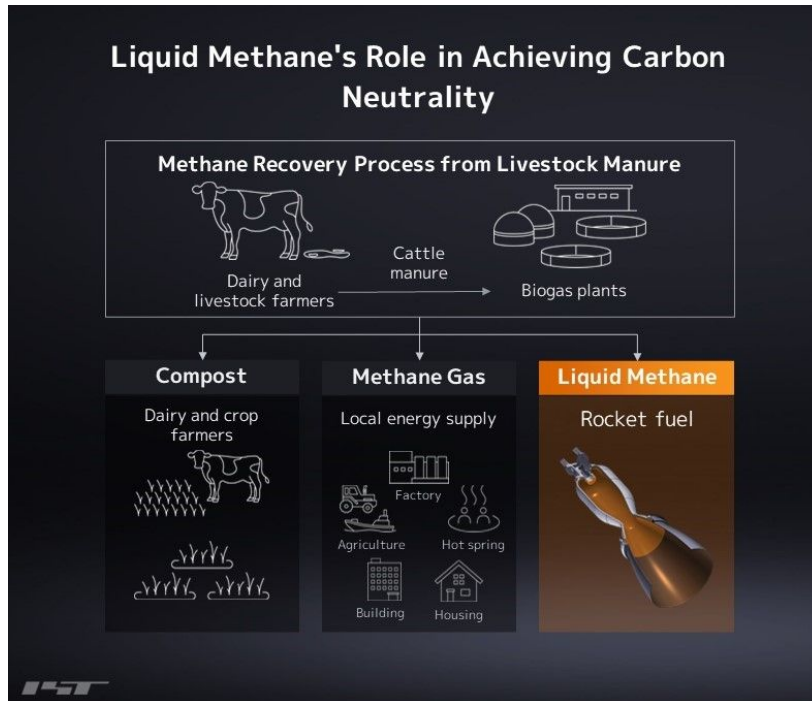
Liquid methane has emerged as a superior fuel choice for rocket launches due to its comprehensive advantages in price, fuel performance, ease of handling, availability, and environmental impact, making it the preferred choice for rocket companies worldwide, including SpaceX's Starship. Recognizing the need for high-purity methane free of impurities in rocket propellants, IST has been deliberating on the procurement methods since selecting liquid methane as the fuel in 2020.

Meanwhile, Air Water Group has been at the forefront of establishing a regional circular supply chain, centered around the conversion of biogas derived from livestock manure in the Hokkaido Tokachi area into LBM - a sustainable alternative to liquid natural gas (LNG). In October 2022, the successful launch of the first domestic LBM manufacturing facility in Tokachi area marked a pivotal milestone in advancing fuel supply demonstrations to food processing plants, LNG trucks, and marine vessels.

The LBM used in the upcoming test is produced by separating and refining methane, the primary component of biogas, and subsequently liquefying it at approximately -160°C. It achieves the same high purity (99% or higher) as conventional rocket fuels used in the past. IST, impressed by the performance and procurement excellence of LBM, has decided to adopt Air Water's LBM as the fuel for the 'ZERO' rocket.

## Contributions to Combating Global Warming and Environmental Challenges

Since May 2021, Air Water Hokkaido has been part of IST's corporate partnership program, supporting the company with LNG supply and propellant tank manufacturing. Methane, a potent greenhouse gas next to carbon dioxide, poses a challenge in global warming due to its emissions from cattle. Moreover, within the region, issues such as odor and water pollution arising from livestock manure have become societal concerns. Through the use of LBM, IST and Air Water Hokkaido aim to make the majority of rocket fuel sustainable, contributing concretely to climate change mitigation. As a Hokkaido-based company in a thriving dairy industry, IST actively contributes to local energy self-reliance and environmental solutions.



### Interstellar Technologies Inc.

IST, a dynamic Japanese start-up, envisions a future where space becomes accessible to all through low-cost and convenient space transportation services. With the headquarters placed in Taiki, Hokkaido, IST's product development spans four locations: the Tokyo branch, Fukushima branch, and a laboratory at the Muroran Institute of Technology.

IST has achieved three successful flights into space using the suborbital launch vehicle MOMO, establishing it as the first and only Japanese private company to reach outer space. Fueling its ambition, IST is currently engaged in the full-scale development of microsatellite launch vehicle ZERO.

IST is also operating a next-generation satellite business, Our Stars, which aims to be the first vertically integrated launch vehicle and satellite service in Japan.

Location: 149-7 Memu, Taiki, Hiroo-gun, Hokkaido, Japan

Representative: Takahiro Inagawa, CEO

Business: Space Transportation Services

<https://www.istellartech.com/en>

Inquiries about coverage of this issue

Satomi Takahashi / Tomoka Kikuya, Public Relations, Interstellar Technologies Inc.

Mail: [press@istellartech.com](mailto:press@istellartech.com)