



Bio Methane value chain for space propulsion

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Considering the ramp up of bio methane needs by 2025 -2030 for launchers such as Themis, SIRIUS, The Exploration Company, Morpho... and political context inciting all space players to contribute to the decarbonization of launches and launch pads, Air Liquide offers a complete value chain for the production and distribution of biomethane, also including the recovery of boil off, thus participating in the circular economy of biomethanization.

This value chain integrates both the management of inputs, the transformation into biogas, purification, then liquefaction, thus making it possible to obtain a quality that meets the criteria required by space. Then, the storage, the logistical supply which must correspond to the requirements of the space market, and if necessary the sub-cooling allowing to maintain over a long period the quality and the quantity of liquid biomethane, and finally its distribution to the launcher as well as the recovery of boil offs caused by equipment chilling down and degassing, which could correspond to around 20% of total propellant consumption and constitute both an environmental and economic impact.

This abstract can lead to a round table in which Air Liquide will be delighted to participate or an Air Liquide plenary presentation on the subject or a poster, to be defined by the GBSF organization.