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Abstract #XXX (to be filled by the organizers)

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Title

A prospective market & business perspective on Lunar ISRU for propellant applications

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Abstract

Lunar resources are increasingly being considered as a key element of future exploration missions. By reducing the need for incoming material fluxes, In-situ resources utilization (ISRU) might act as an enabler to long-term, sustainable human presence on the Moon, and facilitate the use of the Moon as a starting point for further exploration of the Solar system. While it is crucial, the economic sustainability of lunar ISRU currently remains a subject of research [1,2].

Our study aims at exploring the potential Lunar ISRU economic landscape. Given the importance of propulsion in space exploration and the already identified possibilities to leverage Lunar resources for the production of energetic materials [1], we focus our investigations on the latter purpose. After a preliminary review of the current knowledge on available lunar resources, we begin by envisioning potential future human activities on the Moon. We first assess the main parameters influencing human activities and identify possible uncertainty and divergence points, leading to different demand scenarios. We then review and define the use cases of lunar propellants and identify possible structure of the corresponding value chain and stakeholders ecosystem.

References

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- [2] COLVIN, T., CRANE, K., LINDBERGH, Rachel, *et al.* Demand drivers of the lunar and cislunar economy. *Science and Technology Policy Institute*, 2020.