

21st IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)
Late Breaking Abstracts (LBA) (LBA)

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STUDY OF THE SUSTAINABILITY OF A EUROPEAN COMMERCIAL SPACE STATION

Abstract

Quick changes in the Earth's climate system causes today unprecedented challenges for humanity. A

European roadmap to sustainable economies, the European Green Deal, has thus been established to face these challenges and find greener solutions, including in the space sector. Although constructing space stations holds significant allure for companies due to their profitability, it is essential to acknowledge that such projects impose substantial demands in terms of emissions and climate impact. In pursuit of sustainability, one promising approach is considering the reuse of modules from the International Space Station. This idea aligns with the principles of resource conservation and waste reduction. Leveraging existing infrastructure and repurposing viable components could mitigate the environmental impact of this project. This paper summarises the ecological impact of a European Commercial Space Station in LEO and several possible solutions to align its ambitions with the pressing needs of our planet.