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IAF SPACE POWER SYMPOSIUM (C3)
Space Power System for Ambitious Missions (4)

Author: Mr. Sebastian Alba Martinez
Instituto Politécnico Nacional, Mexico

Ms. Karla Fabiola Mayo Sánchez
Facultad de Ingeniería-UNAM, Mexico

"THE BEGINNING ENERGY PLAN"

Abstract

We can define energy as the key to life, through its procurement and the ways in which it can be harnessed makes it possible to approach to replicate life as we know it. The space conquest is more and more inherent, in this context it is necessary to obtain energy as the most important factor for the development of life outside our planet.

Through research, a solar energy plan that is scaleable to different phases is proposed, focused on the energy supply and storage of a lunar village, considering changes in the population index, as well as in the infrastructure and superstructure requirements. The plan is composed of three stages, being:

- Stage one: With scalability to 2.5 years, focusing on simplicity for assembly and maintenance.
- Stage two: With scalability to 7.5 years, focusing on the improvement of previous systems, increasing their productivity and laying the groundwork to take advantage of lunar resources.
- Stage three: With scalability to 15 years, establishing an electrical generation system more adapted to the demands of the village, as well as the hostile environments of the moon.

The feasibility, innovation and originality of this project, through the composition of the scenario is ideal for long-term implementation in the mission of a lunar village. The diversification, modular design and approach make "The Beginning Energy Plan", a tangible and viable plan, which provides the opportunity to apply and develop science and technology in interplanetary missions, winning first place in the Moon Village Design Hackathon 2021 in the category of Solar Energy Power.