

GRID POWER NODE

The Grid Power Node (GPN) offers a modular, operationally scalable, & resilient solution for Moon Base Power Management & Distribution (PMAD), designed to accommodate evolving surface user power needs

GPN is the foundational building block for the Lunar Power Grid

Capabilities:

- Grid controller for both single node network to a multi-node system-of-systems
- Compliant to ISPSIS Power Quality 120VDC switched feeds
- Long-distance 3kV AC power feeds, with bidirectional AC/DC power conversion
- Rapid fault isolation autonomy, coupled with ground response mission services
- Grid forming inverter designs, compliant with black-start
- Grid management features allow integrated power & communications infrastructure (wired point-to-point, wireless LunaNet V5 services, local 3GPP)
- Stable, Reliable Power

Vertical Solar Arrays:

GPN pairs naturally with Vertical Solar Arrays, and can integrate collocated arrays where there is high illumination, or integrate multiple geographically separated arrays to generate light-phased surface power.

Fission Surface Power:

GPN is the user interface to make continuous fission surface power available for users, including high-efficiency long-distance AC down-conversion.

Mobility & Logistics:

Wireless charger kitting to enable rapid, remote charging. Supports logistics powering needs and can be integrated with a variety of auxiliary payloads to support science missions.

Habitation:

GPNs connect all power providers with all Moon Base surface users to provide resilient, surface power to everything from class D science missions to class A crew Environmental Control and Life Support Systems. Modular design enables operational scalability, and flexibility as the Moon Base evolves over time.

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