



NASA's Lunar Nuclear Reactor

[Source: IE](#)

NASA is accelerating its plans to build a **nuclear reactor on the moon by 2030**, with the goal of establishing a permanent human presence on the lunar surface, all while adhering to the [Artemis Accords](#).

- **Reactor Specifications:** The reactor is expected to generate **100 kilowatts of power**, which is smaller than on-shore wind turbines (typically generating 2-3 megawatts).
 - Nuclear reactors are explored because **solar power is unreliable on the Moon due to extended darkness**, and nuclear energy provides consistent power for habitats, rovers, and missions, particularly in shadowed craters.
 - The UN's 1992 **Principles Relevant to the Use of Nuclear Power Sources in Outer Space** recognize **nuclear energy as essential for deep-space missions**, especially when solar power is insufficient.
- **Global Competition:** Nasa's push comes after similar plans by **China and Russia** to set up automated nuclear power stations on the moon by 2035.
 - Other countries, including **India and Japan**, are also trying to explore the moon and establish human settlements.
- **Legal Framework:** The [1967 Outer Space Treaty](#) allows peaceful use of **nuclear power** in space, setting guidelines for transparency, safety, and international cooperation.
 - Also, the **Artemis Accords** provides for international cooperation in space exploration, emphasizing **transparency, peaceful use, and responsible use of space resources**.

Read more: [Exploring Space, Advancing Life on Earth, India Joins Artemis Accords](#)

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