

Extraterrestrial Renewable Energy Facts

Renewable Energy · Answer Key · 8 Questions

1. What is the primary source of power for the International Space Station (ISS)?

- A) Radioisotope thermoelectric generators
- B) Photovoltaic solar arrays**
- C) Nuclear fission reactors
- D) Hydrogen fuel cells

2. Approximately how much more solar energy is available in space compared to the Earth's surface due to the absence of atmospheric interference?

- A) 5-10% more
- B) 25-30% more
- C) Over 100% more**
- D) It is exactly the same

3. Which planet in our solar system has been studied as a potential site for large-scale solar power collection due to its proximity to the Sun?

- A) Mercury**
- B) Neptune
- C) Saturn
- D) Uranus

4. What physical phenomenon makes space-based solar power a constant energy source, unlike solar power on Earth?

- A) Reflection from the Moon
- B) Lack of day-night cycles**
- C) Stronger magnetic fields
- D) Higher atmospheric pressure

5. What type of energy conversion do solar panels on the Mars rovers primarily use to generate electricity?

- A) Thermal expansion
- B) Photovoltaic effect**
- C) Piezoelectric effect
- D) Kinetic harvesting

6. Which major energy-producing process powers the Sun, serving as the ultimate model for future fusion energy technology on Earth?

- A) Nuclear fission
- B) Chemical combustion
- C) Gravitational contraction

D) Nuclear fusion

7. Why are thin-film solar cells often preferred for space satellite applications?

- A) They are highly flammable

B) They are lightweight and flexible

- C) They convert wind into energy
- D) They operate better in cold vacuums

8. The concept of a 'Dyson Sphere' involves surrounding a star with structures to capture what?

A) All of the star's radiant energy output

- B) The star's solid matter
- C) The star's planetary debris
- D) The star's magnetic radiation