

Solar Energy | Advanced ESL Reading Worksheet PDF

Topic: Solar Energy | Worksheet from www.tahricteaches.com

READING PASSAGE

For most of the twentieth century, electricity generation depended almost entirely on fossil fuels such as coal, oil, and natural gas. These resources, however, are **finite**, meaning that the planet's reserves will eventually be exhausted no matter how carefully they are managed. This looming scarcity, combined with growing concern over climate change, has pushed governments and corporations alike to search for cleaner, renewable alternatives capable of meeting rising global energy demand.

Solar power has emerged as one of the most promising solutions. **Photovoltaic** cells, typically made from silicon, convert sunlight directly into electrical current through a process first observed in the nineteenth century. When photons strike the semiconducting material, they dislodge electrons, generating a flow of electricity. Modern manufacturing techniques have dramatically reduced the cost of these cells, making rooftop and utility-scale installations increasingly common across both wealthy and developing nations.

Despite these advances, solar generation remains **intermittent** by nature, since panels produce no electricity after sunset and far less output during cloudy weather. Engineers have responded by developing large battery arrays and smart grid technologies that store excess daytime power for use during periods of low sunlight. Without such storage solutions, utilities cannot guarantee a stable supply, which is why grid reliability remains one of the central technical challenges facing widespread adoption.

Financial support has also played a decisive role in solar's growth. Many national governments offer a **subsidy** or tax credit to homeowners and businesses that install panels, lowering the upfront cost and shortening the payback period considerably. These incentive programs, paired with falling equipment prices, have transformed solar from a niche technology into a mainstream investment option for millions of property owners worldwide.

Looking ahead, many architects now design new buildings with integrated solar roofing, while older structures can be economically upgraded through a straightforward **retrofit**. Such efforts form part of a broader shift toward a more sustainable energy system, one that reduces dependence on imported fuel and lowers carbon emissions. If current cost trends continue, solar power could soon become the cheapest source of electricity in most regions of the world.

VOCABULARY

Word	Definition	Example
finite	limited in size or extent; not endless	

photovoltaic

COMPREHENSION QUESTIONS

1. Why are fossil fuels considered an unreliable long-term energy source?

2. How do photovoltaic cells generate electricity?

3. What role do government subsidies play in the growth of solar energy?

TRUE OR FALSE

Circle T (True) or F (False) for each statement.

1. **T / F** Fossil fuel reserves are considered finite.
2. **T / F** Photovoltaic cells convert sunlight directly into electricity.
3. **T / F** Solar panels generate the same amount of power at night as during the day.
4. **T / F** Battery storage helps address the intermittent nature of solar power.
5. **T / F** Government subsidies have made solar installation more affordable for many households.
6. **T / F** Solar panel costs have risen sharply over the past decade.
7. **T / F** Retrofitting older buildings with solar panels is impossible.
8. **T / F** The passage suggests solar power could become the cheapest electricity source in many regions.
9. **T / F** According to the passage, climate change concerns have had no influence on the shift to renewable energy.
10. **T / F** Smart grid technologies are mentioned as a way to manage solar power's variability.

DISCUSSION QUESTIONS

1. Do you think governments should continue offering subsidies for solar energy, or should the

market develop without financial support? Why?

2. What are some challenges your country might face in switching from fossil fuels to solar power?

ANSWER KEY (Teacher Only)

Comprehension:

1. Because they are finite resources that will eventually run out, and burning them contributes to climate change.
2. Sunlight striking the semiconducting material dislodges electrons, creating a flow of electrical current.
3. They lower the upfront cost of installing panels, making solar power more affordable and shortening the payback period for property owners.

True / False:

1. True
2. True
3. False
4. True
5. True
6. False
7. False
8. True
9. False
10. True

