

6 Renewable energy and conservation

– Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
solar	太阳能	_____
wind	风能	_____
hydroelectric	水电	_____
geothermal	地热能	_____
Biomass	生物质	_____
hydrogen fuel cell	氢燃料电池	_____
Energy conservation	节能	_____

Recall

In Part A you met fossil fuels and nuclear power. Now the cleaner alternatives:

- Solar panels and wind turbines make electricity without burning anything.
- Dams use flowing water to generate power.
- Saving energy is often the cheapest option of all.

Each idea has a short worked example before the Practice.

New ideas

■ 1 The main renewables

Clean, renewable sources make electricity without fuel:

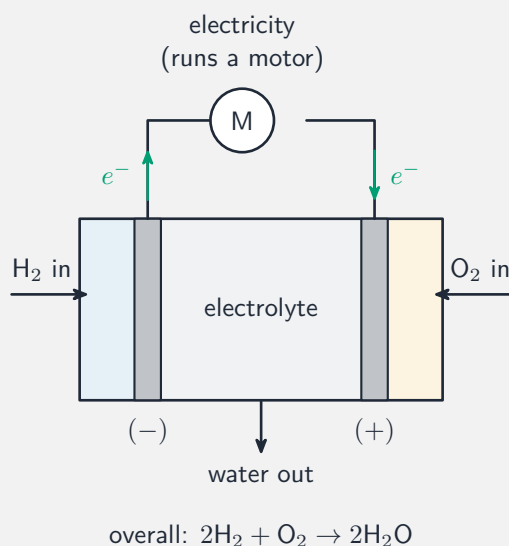
- **solar** 太阳能—from sunlight (but only in daytime),
- **wind** 风能—from moving air (but only when it blows),
- **hydroelectric** 水电—from flowing water in dams,
- **geothermal** 地热能—from Earth's internal heat.

■ 2 Their trade-offs

They are clean during use, but many are **intermittent** (sun and wind come and go) and need particular locations or large areas.

■ 3 Biomass and hydrogen

Biomass 生物质 (wood, crops, waste) is renewable but pollutes when burned. A **hydrogen fuel cell** 氢燃料电池 makes electricity from hydrogen and oxygen, with only water as waste.



■ 4 Energy conservation

Energy conservation 节能—using less through efficient lights, insulation, and public transport—is often the cheapest and cleanest choice, because the energy you do not use needs no fuel.

Watch out: solar and wind are **intermittent**—they only produce power when the sun shines or the wind blows—so they usually need storage (batteries) or a backup supply to give steady electricity.

Practice

Try these in order. The methods are all above.

2.1 Name four renewable sources of electricity.

[2]

2.2 State what "intermittent" means for solar and wind power. [2]

2.3 State the only waste product of a hydrogen fuel cell. [1]

2.4 Explain why energy conservation is often described as the cheapest and cleanest option. [2]

2.5 Give one drawback of hydroelectric dams. [1]
