



A GREEN FUTURE



Scan to review worksheet

Expemo code:
15RE-S7J9-PMNA

1 Warm up

These pictures show vocabulary that we use to talk about renewable energy.

1. Which two items produce energy from the movement of water and wind?
2. Which two items describe how energy systems work in a house?
3. Which two items describe how well an energy system works?
4. Which two items use heat or light to produce energy?



solar panels



ground source heating



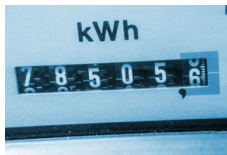
hydropower



wind turbines



install a system



produce electricity



reliable



break down

1. Have you installed solar panels in your home, or do you use other types of renewable energy to produce electricity?
2. Does your country produce lots of energy from the sun, wind or water?
3. How reliable do you think these types of energy are?



2 Listen

Listen to a podcast, "Energy of the future" and put these topics in the order that you hear about them.



fossil fuels ____

ground source heating ____

hydropower ____

solar panels ____

wind turbines ____

Listen again and decide if these sentences are true or false.

1. There are three differences between fossil fuels and renewable energy.
2. Solar panels have become much less expensive since the year 2000.
3. There are no problems with using wind turbines.
4. Ground source heating is perfect for producing electricity in cities.
5. Climate change can have a negative effect on hydropower.

3 Language point

Study the sentences and answer the questions below.

We can connect two ideas in one sentence using **conjunctions**. These words explain the relationship between the two ideas: we may be **adding** a similar piece of information, contrasting the second idea with the first, or expressing **cause and effect (reason and result)**.

Part 1

- 1) **If** it stops raining and rivers or lakes dry out, there's not enough water to move the turbines.
- 2) Ground source heating is very reliable **because** it almost never breaks down.
- 3) You need a lot of land to heat one home, **so** ground source heating is not very useful in cities.

Answer these questions:

1. What is the relationship between the two ideas in sentences 1-3?
2. A **clause** is a piece of a sentence with a subject and a verb. How many clauses does each sentence contain?
3. Circle the subjects and underline the verbs in both clauses of the sentences.
4. What's the difference between **so** and **because**?
5. Which sentences use a **comma** to separate the clauses?
6. How is this sentence different to sentence 2? **Because** the price is now so low, it seems like a great future source of energy.



Part 2

- 4) Renewable energy, like solar power, will never run out, **but** there is a limited amount of fossil fuels.
- 5) Fossil fuels cause global warming or climate change **while** renewable energy is cleaner and safer.
- 6) Wind turbines are cheap to operate **although** they can be noisy.

Answer these questions:

1. What is the relationship between the two ideas in sentences 4-6?
2. How many clauses does each sentence contain?
3. Circle the subjects and underline the verbs in both clauses of the sentences.
4. Which sentence uses a **comma** to separate the clauses?
5. We can change the order of the clauses in sentences 5 and 6. **While** they can be noisy, wind turbines are cheap to operate. **Although** they can be noisy, wind turbines are cheap to operate. When we change the order of the clauses, what other change do we need to make?

Part 3

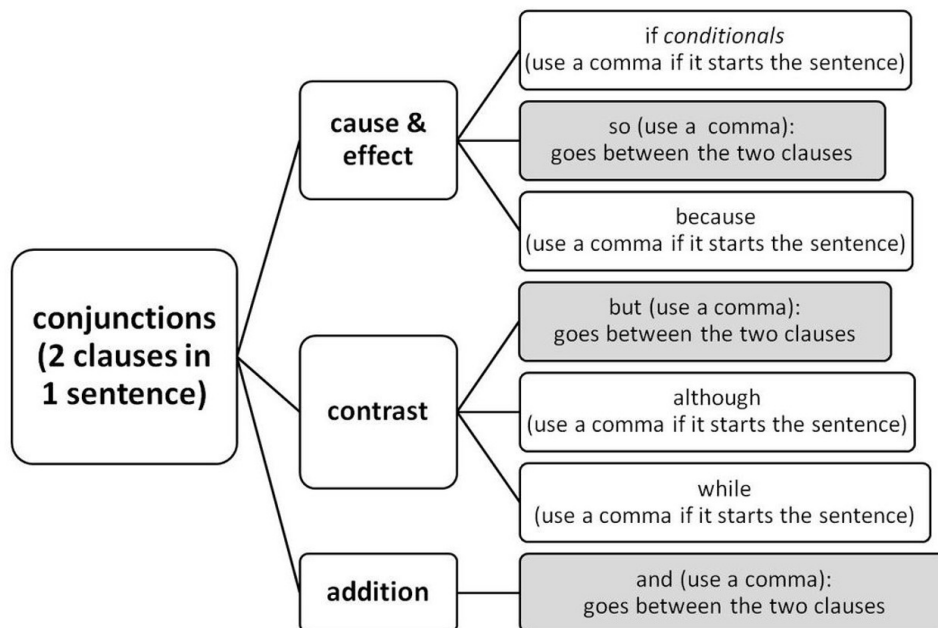
- 7) Solar power works in many parts of the world, **and** the cost of solar panels has gone down by 80% in the last 20 years.

Answer these questions:

1. What is the relationship between the two ideas in sentences 7?
2. How many clauses does the sentence contain?
3. Circle the subjects and underline the verbs in both clauses of the sentence.
4. Do we use a **comma** to separate the clauses?
5. Why don't we need a comma in this sentence? "Solar panels don't produce electricity at night and take up a lot of space."



This diagram can help you remember how to use these conjunctions.



4

Practice

Find and correct mistakes in some of these sentences. If the sentence is correct, put a tick ✓ next to it.

1. If you don't have a lot of space ground source heating energy isn't a good option.
2. Solar panels can't work at night, so they aren't as productive as other types of renewable energy.
3. Hydropower is a very old idea so it's reliable.
4. Because wind turbines can be dangerous to birds, so many people don't like them.
5. In the future, we will not have any more fossil fuels, but renewable energy will always be available.
6. Hydropower works 24/7 but it is expensive to build.
7. While wind turbines look beautiful to some people, they make a lot of noise.
8. Although climate change means there may be less rain in the future, hydropower won't always work.
9. Although solar power works in most parts of the world, takes up a lot of space.
10. There isn't always enough wind to move the turbines, and some people think they're ugly.



5

Writing

Scientists are also looking for new types of fuel that we can use in our cars. Look at the table to find out about three types of biofuels.

name	how it is made	positives	negatives
ethanol	made from sugar cane or corn	Countries can become more independent by making their own fuel. It reduces some types of pollution.	People use their land to produce fuel instead of growing food. People cut down forests to grow plants to produce fuel. It's expensive.
biodiesel	made from vegetable oil or animal fats	It makes your car engine last longer. It reduces some types of pollution.	It can damage some parts of your car. It's expensive.
green diesel	made from algae, simple small plants that grow in the water.	It can be used in many other types of products. It can grow in many different places.	It's expensive. It needs a lot of water to produce.

Words to help

- damage: harm or hurt something so that it breaks or doesn't work well.
- pollution: dirty air or water
- reduce: make something become smaller in quantity.

Work in A/B pairs. Work alone to write 5 sentences about biofuels using the conjunctions you are given. Then share your sentences with your partner. Check each other's sentences for grammar and punctuation.

Student A	Student B
if	but
and	so
while	and
but	because
because	although



6 Extra practice/homework

Read the sentences and add a missing conjunction from the box. You should also add a comma in the correct place, if you need one.

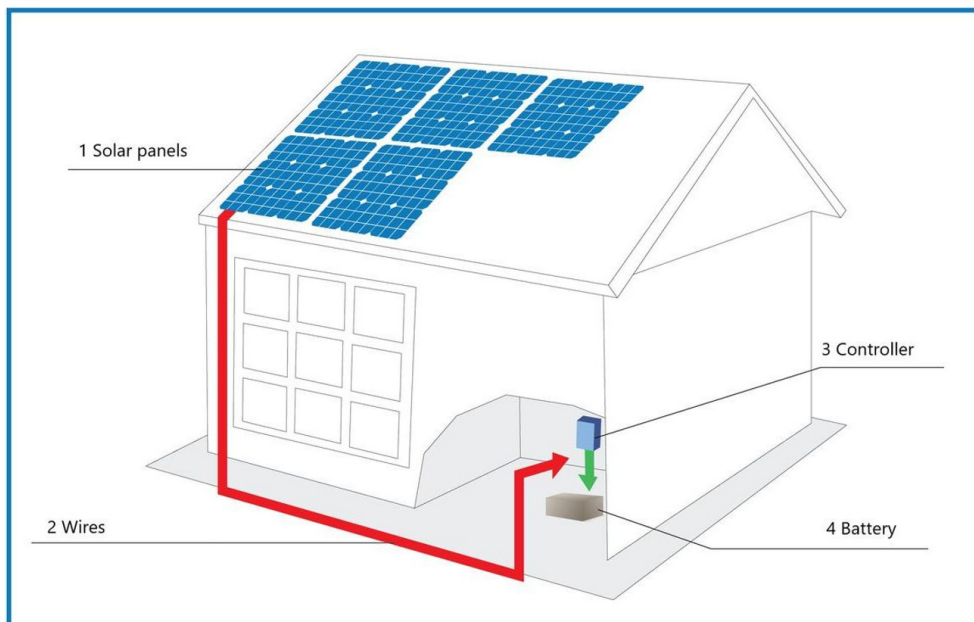
although / and / because x 2 / but / if / so / while

1. We need to find new types of fuel for our cars fossil fuels cause climate change.
2. There are several new types of biofuel they are all expensive.
3. countries produce their own biofuel they will become more independent in some ways.
4. we can produce lots of vegetable oil biodiesel seems like a renewable resource.
5. People cut down forests to produce plants to make ethanol many animals lose their homes.
6. Biodiesel is made from vegetable oils green diesel is made from algae.
7. green diesel can grow in many different places it needs a lot of water.
8. We need to find more types of biofuel we need to make these less expensive to produce.

7 Optional extension

Look at the picture. Use this information and the words you are given to give a simple explanation of how solar panels work.

1. roof / collect
2. carry / in the house
3. uses some / sends some
4. stores / later



Why is the battery so important?