Homework sheet (11-16s)

How much can you remember about the UK's energy mix and different power sources?

Name: _____

Give TWO pros and cons for each of the power sources listed below:

Wind

Pros:	Cons:

Solar

Pros:	Cons:

Nuclear

Pros:	Cons:

Gas

Pros:	Cons:

These questions appeared in the game. Circle the correct answer.

Q1. Which of the following is NOT a renewable power source?

a) Wind
b) Gas
c) Hydro

Q2. In 2016, what renewable power source generated more electricity than coal?

a) Solar
b) Hydro
c) Wind

Q3. Which of the following is TRUE about gas?

a) It will run out
b) It's an inflexible power source
c) It's a renewable power source

Q4. Today's nuclear power stations create heat through a process called what?

a) Nuclear fusion
b) Nuclear bonding
c) Nuclear fission

Q5. Which of the following is NOT a fossil fuel?

a) Gas
b) Uranium
c) Coal

Q6. To produce 1TWh of electricity from wind, you need the equivalent space of how many football pitches?

a) 1,000
b) 5,000
c) 7,000

Give a definition and example of a power source for each of the following terms:

*(Clue: see the **Supporting notes** in the game if you need help)*

1) Low carbon

Definition: _____

_____

Example: _____

2) Renewable

Definition: _____

_____

Example: _____

3) Reliable

Definition: _____

_____

Example: _____

4) Variable

Definition: _____

_____

Example: _____

To play Power the UK again, visit www.jointhepod.org/powertheuk

For teachers

Homework sheet (11-16s)

How much can you remember about the UK's energy mix and different power sources?

Name: _____

Give TWO pros and cons for each of the power sources listed below:

Wind

Pros:	Cons:
▶ Low carbon; no pollution ▶ UK is the windiest country in Europe ▶ Offshore wind turbines can generate more electricity than onshore wind ▶ Relatively low cost to run and no fuel costs	▶ Variable power source (no wind = no electricity) ▶ Limited development onshore by available land space ▶ Offshore wind farms are trickier and more expensive to build

Solar

Pros:	Cons:
▶ Low carbon; no pollution ▶ We get enough sunlight in the UK to make it a viable energy source ▶ No fuel costs	▶ Variable (doesn't work well in cloud or at all at night) ▶ Restricted by the amount of land space required ▶ Solar power can't be stored very easily or cheaply over a long period

Nuclear

Pros:	Cons:
▶ Low carbon ▶ Not likely to run out any time soon ▶ Reliable: provides baseload electricity ▶ Higher output and less land space required than for renewables	▶ Uses a non-renewable fuel (uranium) ▶ Building a nuclear power station is a big investment project, involving government and other organisations

Gas

Pros:	Cons:
▶ Reliable ▶ Flexible ▶ Fairly low-cost way to generate power	▶ Gas is a fossil fuel, so it will run out ▶ Not low carbon ▶ It produces pollution and contributes to climate change

These questions appeared in the game. Circle the correct answer.

Q1. Which of the following is NOT a renewable power source?

a) Wind
b) **Gas**
c) Hydro

Q2. In 2016, what renewable power source generated more electricity than coal?

a) Solar
b) Hydro
c) **Wind**

Q3. Which of the following is TRUE about gas?

a) **It will run out**
b) It's an inflexible power source
c) It's a renewable power source

Q4. Today's nuclear power stations create heat through a process called what?

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Q6. To produce 1TWh of electricity from wind, you need the equivalent space of how many footballpitches?

a) 1,000
b) 5,000
c) **7,000**

Give a definition and example of a power source for each of the following terms:

*(If students need help, share the game's **Supporting notes**)*

1) Low carbon

Definition: A low-carbon power source doesn't emit any carbon emissions to generate electricity.

Example: Nuclear, wind, solar, tidal, wave, hydro, geothermal and biofuels.

2) Renewable

Definition: These power sources will never run out. Sunlight and wind will never get used up, for instance.

Example: Wind, solar, tidal, wave, hydro and geothermal.

3) Reliable

Definition: These are power sources that we can predict with a high degree of accuracy (e.g. the week before) what their output will be across the UK. Weather-dependent renewables – like solar and wind – are NOT reliable or predictable, for instance, since their power output depends on the sun shining or the wind blowing.

Example: Any non-renewable power source, like nuclear, gas or coal.

4) Variable

Definition: The output of the power source changes, so they can't be relied on to meet a sudden increase in demand.

Example: Weather-dependent renewables, such as solar and wind, and hydro (to an extent).

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