



Geography: the language of Europe

Lesson 4: Windenergie in Deutschland (Wind energy in Germany)

Key questions:

- What are the key terms associated with sustainable energy and renewable sources?
- How can atlases be used to locate and plot features?
- What is an example of a renewable energy project within an EU country?

Starter activity:

Key terms 'Snap!' (geography starter)

Introduce the lesson by talking about the EU's sustainability policy, and highlight the fact that sustainable energy is top of the agenda. You can find out more about this on the [Europa website](#).

In order to introduce / recap the key terms linked with sustainable energy and renewable sources of energy, students are provided with key terms, definitions and pictures in the starter resource.

They should cut these out and can then play a game of *Snap!* in groups of three. The aim is to identify matching sets of 3 cards.

After about 10 minutes, the correct sets can be revealed – either as a teacher-led session or individual students can be asked to contribute.

Windenergie in Deutschland (MFL starter)

This activity introduces key words for the lesson in German. Students are provided with a list of thirteen terms – in code – and crack the code to reveal the words. They then look up the English meaning of the words using a German dictionary.

Answers:

1.	Energie	Energy
2.	Die Nordsee	The North Sea
3.	Nachhaltigkeit	Sustainability
4.	Erneuerbar	Renewable energy
5.	Windparks	Wind farms
6.	Wind	Wind
7.	Deutschland	Germany
8.	Dänemark	Denmark
9.	Die Europäische Union	The European Union
10.	Projekt	Project
11.	Wellen	Waves
12.	Wasser	Water
13.	Brennstoff	Fuel

Main activity:*The Alpha-Ventus project*

During the main activity, students are introduced to the offshore Alpha-Ventus project in the North Sea, off the coast of Germany. There are four tasks to complete on the main activity work sheet, involving atlas skills, research and interpretation of websites, and displaying information. The tasks are as follows:

1. **Key locations** – students label a range of countries and places on an outline map of Europe.
2. **Locating the Alpha-Ventus project** – students are provided with the longitude and latitude references for the four corners of the wind farm site. They must use an atlas to accurately plot the site on their map.
3. **True or false?** – students are provided with a set of statements. Using the websites given, they must decide which are true and which are false, and correct those which are false. (The answers are given below.)
4. **Completing your map** – once they have got all of the true statements organised, students should display them in a clear, attractive and informative way on their outline map.

By the end students should produce an annotated map showing the location of the wind farm site and information about the project.

Correct answers to task 3

Statement	True (T) or false (F)?	Correct statement
There will be 8 'REpower 5M' turbines	F	There will be 6 'REpower 5M' turbines
There will also be another 6 'Arriva multibrid' turbines	T	-
The site is 50 km north of the coast	F	The site is 45 km north of the coast
Installation began in July 2009	T	-
Alpha Ventus is the first German off-shore wind farm	T	-
They will be built at a water depth of 30 metres	T	-
A 70 metre cable will connect the farm to the mainland	F	A 60 metre cable will connect the farm to the mainland
The connection point will be Wilhelmshaven	F	The connection point will be Emden
Once they're all built, the total capacity of the wind farm will be 600 MW	F	Once they're all built, the total capacity of the wind farm will be 60 MW
This is a test-project. No other wind farm projects have yet taken place at such depths and at such great distances from the coast anywhere in the world	T	-

Plenary:

Map display

Re-cap the main activity as a class, by projecting a large version of the map onto the board. Individual students can be asked to come to the front and contribute labels to it until it is complete.

The lesson could then finish with a brief discussion / brain-storming activity to look at the advantages and disadvantages of wind farms, especially off-shore ones. Some notes and ideas for this have been provided in the fact sheet. They can also discuss the most appropriate sources of renewable energy for the UK, and what they as individuals can do to reduce their own levels of energy use.

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