



Junior Cycle Geography Lesson Plan

Wind Energy

Curriculum link

SECTION A: Human habitat – processes and change.

Key idea

In Ireland we depend on fossil fuels to meet over 90% of our energy needs. We need to develop renewable energy sources to reduce this dependence.

Learning outcomes

Students should be able to:

- Outline the long term consequences of our overdependence on fossil fuels.
- Describe the changes that we need to make to ensure a long term, viable energy supply.

Eco Eye Clip – Sustainable resource use

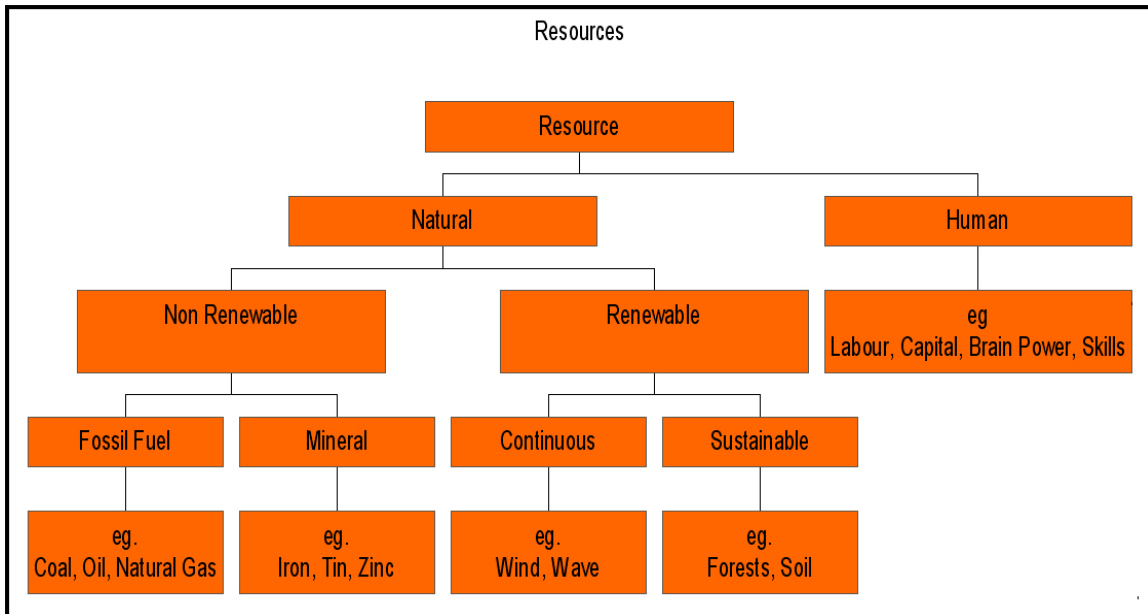
Wind energy – powering the future

The Government has set a target of producing 40% of our electricity from renewable resources by 2020. Given that we depend on fossil fuels for 90% of our energy needs this will be a challenge. In this clip Duncan explores wind energy and hears about the challenges and opportunities that exist for increasing our use of this clean, green energy.

Watch the clips and complete the comprehension exercise.

Before you begin make sure you are familiar with the terms below in the Resources flow chart.







Comprehension

Wind energy - powering the future

1. What are the problems with depending on coal and gas as our main sources of fuel?

2. Our electricity supply in the future needs to be:

F.....

S.....

Secure

Low

What are the problems with Moneypoint power station?





3. Combined cycle gas plants are inflexible as a back up to wind power when the wind does not blow because:

4. The remote location of our existing power plants means we have to dump...

5. Why do you think that Ireland should spend money on developing wind power?

6. _____% of power generation must come from renewable sources by _____

7. We now produce _____ megawatts of electricity from wind power. By 2020 we need to produce _____ megawatts.

8. By 2020 our electricity demand will have increased by _____%. Where will this electricity have to come from?





9. To encourage investors to develop wind power the Irish Government must provide “incentives”.
What do we mean by incentives?

10. What role does Eirgrid play?

11. We can also harness the energy of the wind using micro energy. Give examples from the video:

12. If micro-energy is to be developed we need to:

a) _____

b) _____





Extension Activities

Group work

Snowball (group work strategy that can be used as below)

- Pairs of students discuss an issue or brainstorm some initial ideas.
- Then double up to groups of four and continue the process.
- Then into groups of eight in order to compare ideas.
- This is a useful strategy to promote class discussion and debate.

Map work/IT

Log on to <http://maps.scoilnet.ie/>. Open the OSI 1:50,000 map and Aerial photo.

- Identify suitable sites for wind farms on the west coast of Ireland.
- Write down the reasons for absence of settlement in these areas.
- Outline the arguments for and against these sites and any possible objections that might be made by local residents.
- You can Google the “Derrybrien landslide” to develop the above topic.

Or

Group work - Can of worms

When a controversial topic is discussed, it is often said that it “opens a can of worms”. Make a tin and print off thin strips of pink card (these are the worms), each one with a statement relating to the pros and cons of developing wind energy. Fill the tin; students have to talk about the contents for one minute. Vary the difficulty of the worms.





Individual work

- Log on to the Met Eireann <http://www.met.ie/climate/wind.asp> and <http://www.dpenergy.com/about%20wind/aboutwindenergy.htm>
- Examine the wind rose diagrams. Write a brief account of the prevailing wind direction, wind speeds and Ireland's potential for developing wind power.

