

Lesson 05

Mapping Wind Energy

Learning Intentions

At the end of this lesson students should be able to

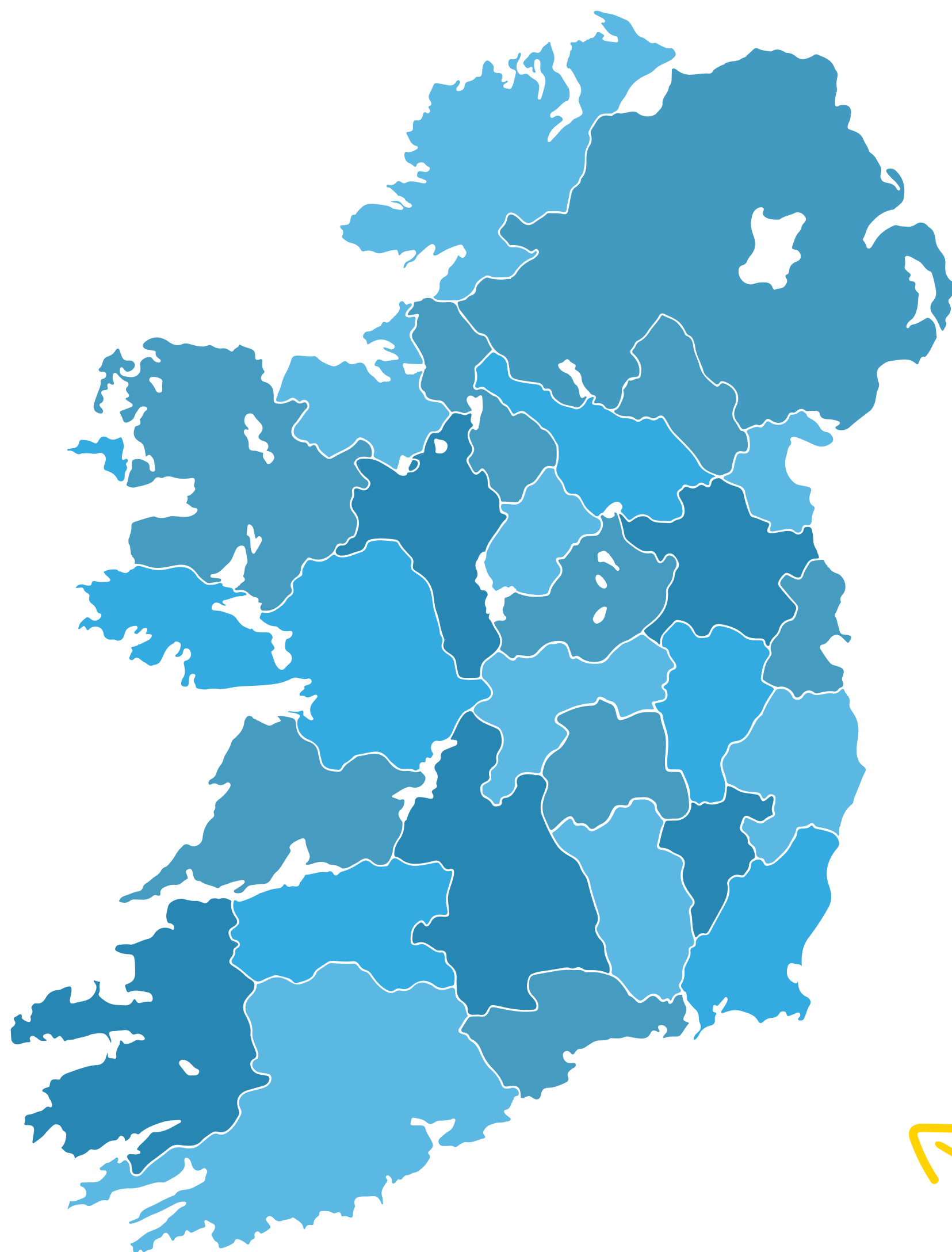
- Use OS maps and aerial photos to identify physical and human features of a wind farm site.
- Explain how physical geography (relief, land use, access, settlement patterns) influences the choice of site.
- Describe the benefits and challenges of wind energy development for people and the environment.
- Appreciate the role of renewable energy in Ireland's sustainable future.

What is renewable energy?



[Click here to watch](#)

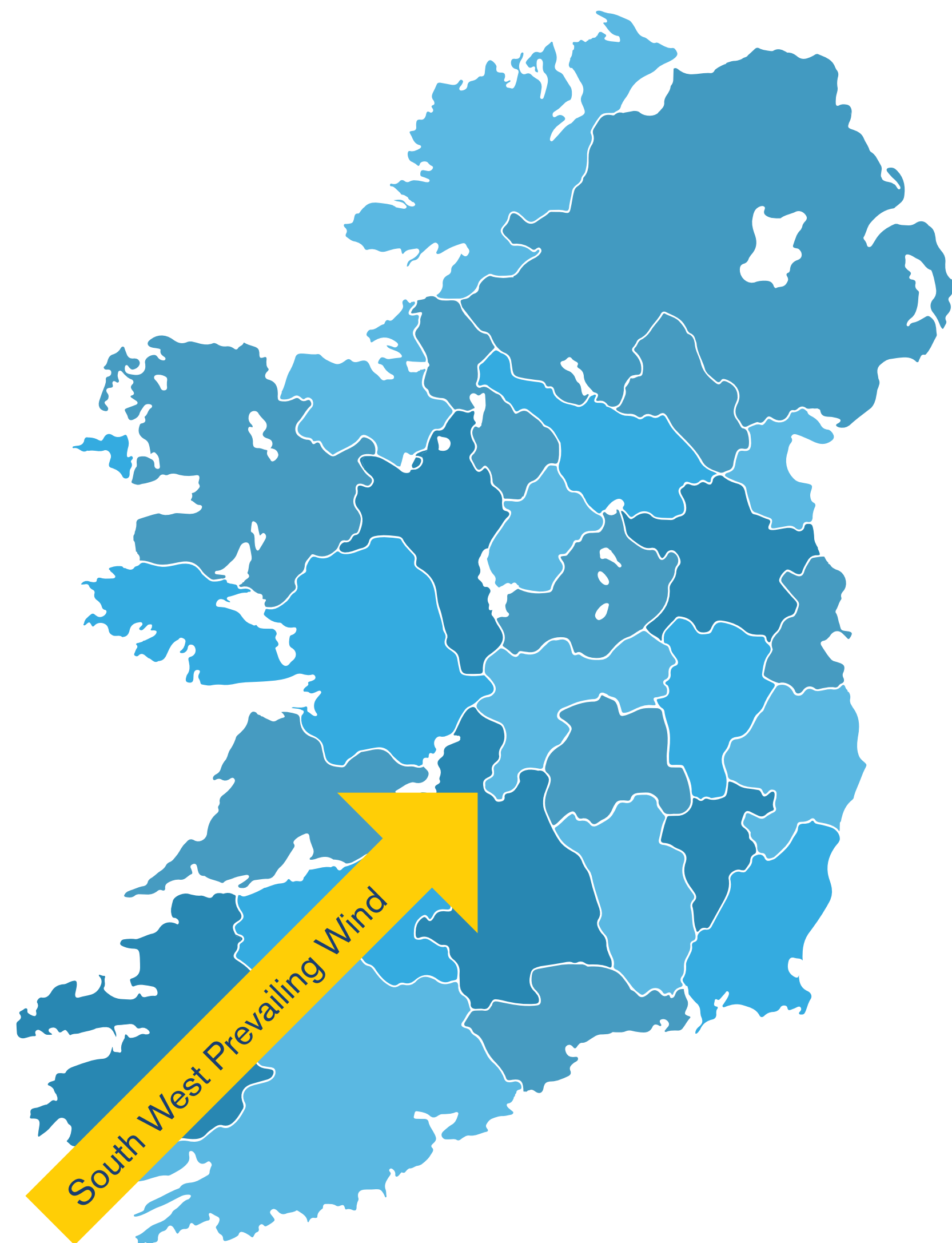




- Each group has a map, aerial photo and fact sheet.
- Each group should come up to the board and mark the location of their windfarm on the map of Ireland
- What comment can you make about the location of some of the biggest windfarms in Ireland?

A yellow curved arrow pointing from the instruction box towards the map of Ireland.

Mark your windfarm on the map



- The connection between windfarms and the prevailing wind

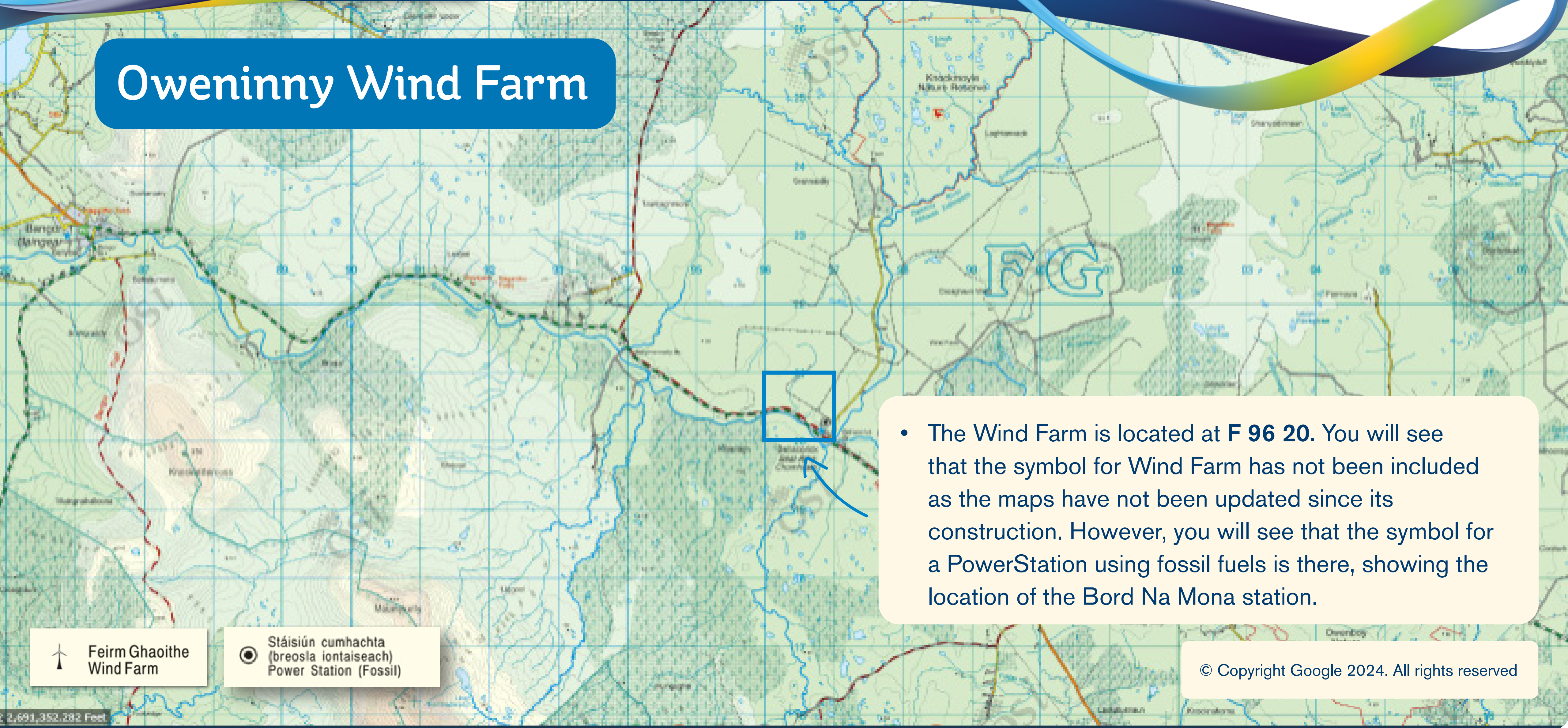
Factors influencing the position of windfarms

- Is the site windy? Altitude, aspect and gradient are all factors.
- Sometimes a gap between two upland areas will help funnel wind towards the turbines.
- Is the site near buildings or houses?
- Could the large lorries carrying the turbine parts access the site?
- Are there any other constraints such as proximity to an airport, or communication mast?
- Is the landscape significant? Is the area a protected habitat?




NETWORKS

Oweninny Wind Farm



- The Wind Farm is located at **F 96 20**. You will see that the symbol for Wind Farm has not been included as the maps have not been updated since its construction. However, you will see that the symbol for a PowerStation using fossil fuels is there, showing the location of the Bord Na Mona station.

 Feirm Ghaoithe
Wind Farm

 Stáisiún cumhachta
(breosla iontaiseach)
Power Station (Fossil)

Oweninny Wind Farm

- Looking at this map what comments can you make about the physical landscape and why it is suitable for a wind farm?



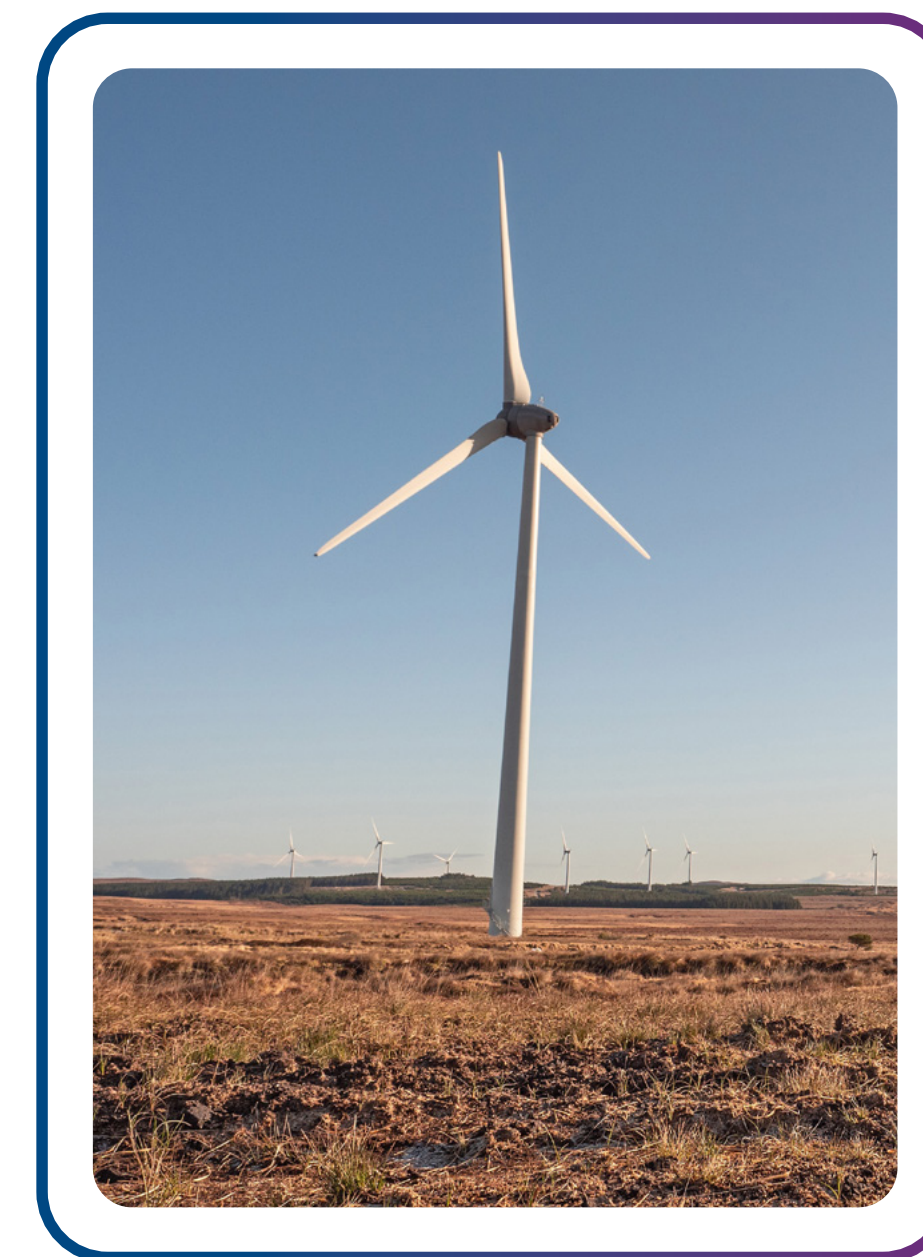
Feirm Ghaoithe
Wind Farm



Stáisiún cumhachta
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Power Station (Fossil)

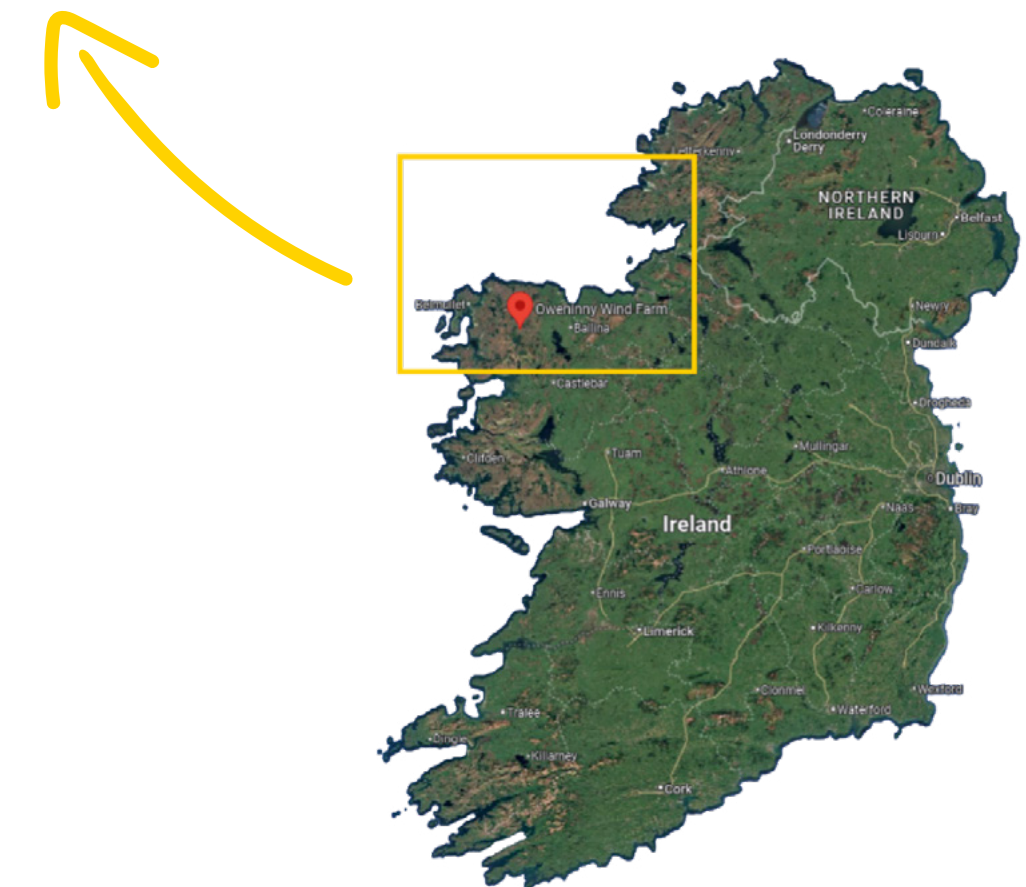
Oweninny Wind Farm

- Oweninny is located in North West Mayo.
- The wind farm is on land that is 2,400 hectares and was formerly utilised for peat harvesting by Bord na Móna to provide fuel for the ESB Bellacorick peat fired power station.
- Oweninny Wind Farm is the largest onshore wind farm in Ireland. It generates enough energy to meet the demand of approximately 140,000 homes and businesses annually.
- The wind farm is a joint venture between ESB and Bord na Móna reflecting the commitment of both organisations to the Government's target of achieving 80% renewable energy by 2030.
- The wind farm was built in two parts. In 2019, twenty nine turbines were erected, while in late 2023, thirty one wind turbines began to operate. There are another eighteen wind turbines planned for this windfarm.



Oweninny Wind Farm and Infrastructure

- There is a good road network in the area which facilitated the construction of the wind farm. Turbine blades are imported in one piece and are logistically difficult to get into place.
- The good road network and the presence of Killybegs port on the West coast (as opposed to Dublin port on the East coast) mean that this is a good location for a wind farm. There was also existing infrastructure for electricity and broadband at this location.



Link to Oweninny on Google maps: <https://maps.app.goo.gl/QTpQcBf3me9jhTvs8>

Look at the road network by searching for Oweninny on Scoilnet maps: <https://maps.scoilnet.ie/OSiMaps/EsriVer17/index.html>

Class Activity

Locate and Describe:

- Identify the wind farm site on the OS map.
- Describe the surrounding landscape (upland/lowland, vegetation, drainage, land use).
- Identify access routes and nearby settlements.

Compare Map & Aerial Photo:

- Use the aerial photo to confirm what you saw on the OS map.
- Identify visible features of the wind farm (turbine layout, access roads, substations).

Analyse:

- Why might this location have been chosen for a wind farm?
- What evidence of human activity or land use changes can you see?

Reflect:

- What are the possible benefits and challenges for people living nearby?

Present your findings!



Well Done!

You have completed Lesson 5.

Completed all five lessons

- Now you have completed all five lessons, please complete a short student survey.
- Thank you, we value your opinions.

[Link to student survey](#)