

# Muinín Catalyst STEAM Education for Sustainable Development and Futures Literacy

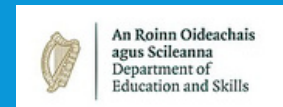
## SDG14 The Future Of The Ocean



**Programme Phase1: Research and Development**

**Micro-Module 3: Offshore Renewable Energy Century**

**Subject Areas: Climate Action and Sustainable Development, Design, English, Enterprise, Science**



# SDG14 Future of the Ocean

## MM3: Offshore Renewable Energy



### Micro-Module 3: Offshore Renewable Energy

### Research and Development

### Module Overview

**Subject Areas: Climate  
Action and Sustainable  
Development, Design,  
English, Enterprise, Science**

**7** AFFORDABLE AND  
CLEAN ENERGY



**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



**11** SUSTAINABLE CITIES  
AND COMMUNITIES



**13** CLIMATE  
ACTION



### Micro-module Summary: Offshore Renewable Energy

In the Offshore Renewable Energy module, learners begin to discover the critical role of renewable energy, with a particular focus on offshore wind in combating climate change. The module is designed to equip learners with a comprehensive understanding of various aspects related to offshore wind energy and its broader environmental and societal implications.

Learners will gain a holistic understanding of renewable energy's significance, its engineering aspects, environmental considerations, and the broader societal context. By cultivating teamwork, creativity, and a sense of responsibility, learners will be well-prepared to contribute to a sustainable and cleaner future for the planet.

### In this Module, the learner will:

- Understand the importance of renewable energy, especially offshore wind, in fighting climate change.
- Discover the basics of engineering design and how it relates to building offshore wind turbine foundations.
- Learn about the environment and marine life and why we must protect them in our offshore wind adventures.
- Work as a team and make new friends while collaborating on projects.
- Use creativity and critical thinking to solve challenges faced in the world of renewable energy.
- Explore how wind turbines connect with nature and our communities.
- Learn how we can all play a role in creating a sustainable and cleaner world for everyone.

### Materials

- Lesson plans
- Accompanying resources
- Optional assessments
- Internet Access required

# SDG14 The Future of the Ocean

## MM3: Offshore Renewable Energy



### Offshore Renewable Energy

#### Lesson 1: Introduction to Wind Energy and Sustainability

This lesson plan introduces learners to renewable energy, focusing on wind power's environmental impact and advantages. By the end of the lesson, learners are primed with the foundational knowledge necessary to embark on an exploration of wind energy's intricacies and its broader implications.

Resources: Yes / No Worksheet

#### Lesson 2: Analyze Maps Related to Onshore Wind Farms

In this lesson, learners engage with interactive online maps displaying wind turbine generation capacity. This lesson fosters digital navigation, data interpretation, and analytical skills in understanding wind energy's geographical distribution and impact.

Resources: Onshore Wind Farms Worksheet, Teacher's Notes

#### Lesson 3: Exploring Offshore Wind Farms

In this engaging lesson, learners virtually explore the world of wind energy through three videos. They begin with a tour of Arbuckle Wind Farm, gaining insight from the Operations Manager's drive-through. After exploring a number of professions Learners craft 'day-in-the-life' diaries for construction workers, considering elements like weather, safety, turbine size, and the offshore environment.

Resources: Day-In-The-Life Worksheet

#### Lesson 4: Protecting Our Ocean Friends

In this lesson, the topic of offshore wind's impact on marine life is explored. After a video, a whole-class discussion encourages learners to share their viewpoints on offshore wind, influenced by the video, and debate its pros and cons. The discussion aims to foster critical thinking while capturing the exchange on a visual platform.

Resources: Offshore Wind Farms and Animal Life Worksheet

#### Lesson 5: Classroom Debate on Onshore vs. Offshore Wind

In this lesson, learners engage in a debate comparing offshore and onshore wind energy. The lesson begins with a brief introduction to the debate topic, with Learners conducting individual research identify the pros and cons of each type of wind energy. The facilitated debate where teams present their viewpoints using the synthesised information to encourage critical thinking, research skills, and collaborative discussion on renewable energy sources.

Resources: Debate Questions Worksheet

#### Lesson 6: Building Strong Foundations 1

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## MM3: Offshore Renewable Energy



### Offshore Renewable Energy

In this lesson, learners engage in a comprehensive exploration of foundations and their significance across various structures. The lesson starts with an introductory video on foundation concepts and functions, leading to a whole-class discussion. The lesson concludes with a hands-on activity where learners create tall, stable towers to solidify their understanding of strong shapes and foundations.

Resources: Foundations and Their Functions Worksheet

#### Lesson 7: Building Strong Foundations 2

Building on the last lesson, the focus shifts to wind turbine foundations through a brief video, followed by brainstorming, concluding with a brief brainstorm and 2D prototype of a strong offshore wind turbine which will be built on in the next lesson.

Resources: Foundation Design Worksheet

#### Lesson 8: Learners Design Wind Turbine Foundations

In this lesson, learners become offshore wind turbine engineers who design and construct strong and stable foundations for wind turbines at sea. Working in small groups, they are provided with materials to create their turbine foundations. The learners are challenged to think critically about stability, the weight of the turbine, the depth in the sand that their foundation will be buried, and the ability to withstand waves and strong winds.

Resources: Turbine Foundation Options Worksheet

#### Lesson 9: Learners Test Wind Turbine Foundations

In this lesson, learners will test the foundations they built in the previous lesson in a simulated sea environment using a large plastic crate filled with water and sand. Working in small groups, the learners are challenged to think critically about stability, the weight of the turbine, the depth in the sand that their foundation will be buried, and the ability to withstand waves and strong winds.

Resources: Teacher's Notes

#### Lesson 10: Teamwork and Problem Solving

In this lesson, learners engage in a practical activity to select suitable sites for a wind farm through online research. Divided into teams, they explore the Marine Atlas Tool on the Marine Institute's website to identify potential locations for a wind farm. They consider factors like water depth, wind speeds, fishing patterns, and challenges such as shipwrecks. To conclude, teams present their selections to the class, providing justifications for their choices. This activity encourages hands-on learning about renewable energy and marine environments.

Resources: Site Selection Worksheet

# SDG14 The Future of the Ocean

## MM3: Offshore Renewable Energy



### Offshore Renewable Energy

#### Lesson 11: The Future of Offshore Wind

This lesson introduces learners to the concept of a super-grid, a vast interconnected electricity network spanning countries – which is the future of offshore wind. The lesson aims to foster awareness of offshore wind's potential, the role of super-grids in energy distribution, and their significance in international electricity trade.

Resources: The Super-Grid Worksheet

#### Lesson 12: Offshore Wind in the Community

In this lesson, two engaging activities explore the benefits of wind farms within communities. In Activity 1, learners watch a series of brief videos showcasing testimonials from various communities benefiting from wind farms, Activity 2 follows, prompting learners to create posters advocating the advantages of wind farms for public display. The lesson aims to deepen learners' understanding of renewable energy's positive impact and develop their communication skills through poster creation.

**Module development and expertise: Dr. Jennifer Keenahan, University College Dublin, Assistant Professor, School of Civil Engineering**

#### Using the Resources:

If you wish to use these resources, we can offer an induction and online support throughout the module to help you plan integration into your projects and timetable. To register for this option, please contact us e:hello@futurefocus21c.com

For more information on the resources please visit [www.muinincatalyst.com](http://www.muinincatalyst.com)

#### Setting up an online learning environment for the lessons on this module:

Our lessons integrate the use of virtual learning environments. To ensure seamless use of our lessons, a module should be setup on your school's virtual learning environment such as Teams, Google Classroom, etc. Learners are encouraged to upload documents to share with their peers. You can also use Google Sites or Microsoft Sway to encourage learners to present their work over the year - this can easily be set up to reflect the aims of TY and provide a showcase for their work as well

#### Setting up a Canva Education account:

As our lessons integrate design, our lessons also refer to Canva. Educators and schools are able to open a free Canva for Education account by registering here: <https://www.canva.com/education/>

Canva for Education provides primary and secondary school teachers and students with premium features and templates. You can then also set up lessons and invite your learners to the class.

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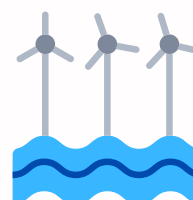




YES / NO



YES

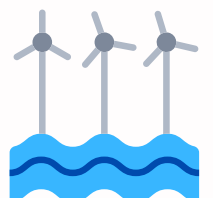


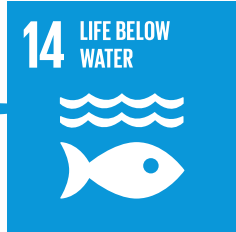


YES / NO



NO





## OFFSHORE WIND FARMS

Answer the following questions based on information you can find on Eirgrid's website and Wind Energy Ireland's website:

Website: Wind farm maps on Eirgrid website:

<https://www.smartgriddashboard.com/#all/transmission-map>

Website: Wind farm maps on Wind Energy Ireland Website:

<https://www.windenergyireland.com/about-wind/interactive-map>

1. How many wind farms are in Ireland?

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2. Where are they mostly located?

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3. Name 5 different wind farms; why do you think they were named that?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

4. What other types of renewable energy do you see on the map?

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5. Which wind farm has the largest energy capacity, and what is that capacity?

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6. What is the wind farm with the least amount of energy capacity; what is that capacity?

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## OFFSHORE WIND FARMS

7. Why do you think there are such differences in capacity?

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8. Which year had the most new wind farms constructed?

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9. When was the first turbine constructed?

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10. Try and produce a bar chart showing the number of new wind farms commissioned each year – which will show an interesting trend. What is that trend?

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11. Calculate the amount of energy produced in each county or each province by adding the amounts quoted in the maps for each individual wind farm.

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## MM3: L3 WS A-DAY-IN-THE-LIFE

14 LIFE BELOW WATER



Complete the following chart with what you think a day-in-the-life of a typical offshore wind-farm construction worker is like:

<b>Location</b>	
<b>Date</b>	
<b>8am</b>	
<b>9am</b>	
<b>10am</b>	
<b>11am</b>	
<b>12pm</b>	
<b>1pm</b>	
<b>2pm</b>	
<b>3pm</b>	
<b>4pm</b>	
<b>5pm</b>	

## MM3: L3 WS A-DAY-IN-THE-LIFE

14 LIFE BELOW WATER



Complete the following chart with what you think a day-in-the-life of a typical offshore wind-farm construction worker is like:

6pm	
7pm	
8pm	
9pm	
10pm	
11pm	

## MM3: L3 WS A-DAY-IN-THE-LIFE



Now, from your table above, create an infographic of your construction worker's day.

See examples of infographics here:

<https://visual.ly/community/Infographics/technology/day-life>

<https://www.behance.net/gallery/64936517/A-Day-In-The-Life>

### Step 1: Define the Purpose

- Decide on the purpose of your infographic. What do you want to convey about the construction worker's daily routine?

### Step 2: Plan Your Content

- Make a list of the key activities and events you want to include in your infographic. Think about what makes their day unique and interesting.

### Step 3: Choose a Layout

- Determine the layout of your infographic. Will it be a vertical or horizontal design? You can also browse online templates for inspiration.

### Step 4: Create Sections

- Divide your infographic into sections or time intervals (e.g., morning, afternoon, evening).
- Use a ruler or grid lines if you're drawing on paper to keep your sections neat.

### Step 5: Design Icons and Graphics

- Create icons or small illustrations to represent each activity or event in their day. These visuals should be simple and easy to understand.
- If you're using digital tools, you can find free icons or design your own.

### Step 6: Add Text

- Write short descriptions or labels for each activity or event. Be concise and use clear, legible fonts.
- Include the time or approximate time for each event to give a sense of their daily schedule.



### Step 7: Add Colors

- Use colours to make your infographic visually appealing. You can assign specific colours to different sections or activities.
- Ensure that your colour choices are harmonious and easy to read.

### Step 8: Create a Title and Introduction

- Add a catchy title to your infographic, such as "A Day in My Life" or something more creative.
- Include a brief introduction that sets the context for their day.

### Step 9: Arrange Elements

- Arrange your icons, text, and graphics within each section, following a logical sequence from morning to night.
- Ensure that your infographic flows smoothly and is easy to follow.

### Step 10: Review and Edit

- Double-check your infographic for accuracy, clarity, and any spelling or grammar errors.
- Ask a friend to review it for feedback.

### Step 11: Finalise and Share

- Make any necessary revisions based on feedback.
- If you're creating a digital infographic, save it in a format suitable for sharing (e.g., JPEG, PNG, PDF).
- Share your "Day-in-the-Life" infographic with the class.





## OFFSHORE WIND FARMS AND ANIMAL LIFE

Answer the following questions:

Overall, do you think Patrice McCarron and Jason Joyce are in favour or against offshore wind farms?

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Where do they say companies want to install offshore wind farms? Why do they think that?

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Where do companies want to mount the wind turbines? Why is this significant?

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What are they most concerned about in relation to offshore wind farms?

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What animals do they think wind farms will affect?

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What problems do they say wind farms cause for marine life?

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What problems do they say wind farms cause for birds?

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**OFFSHORE WIND FARMS AND ANIMAL LIFE**

What Island do they refer to? What birds live there? Why are they concerned?

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How do they say the offshore wind farms will affect fishermen?

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Why is the physical structure of wind turbines a concern?

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What do they think is motivating the construction of offshore wind farms? Why do they say this is a problem?

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What kinds of solutions do you think would be better?

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What evidence do they give to support their point of view?

*Remember, evidence is based on data, scientific studies, statistics, observation, historical records, published peer-reviewed scientific papers, etc.*

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Do you think this video represents a fair reflection of the challenge, or is there some bias? Give reasons for your opinion.

*Note: A biased argument is a type of argument that presents information, evidence, or reasoning in a partial, prejudiced, or one-sided manner, typically to support a particular viewpoint, perspective, or agenda while neglecting or downplaying opposing viewpoints or evidence. Biased arguments often lack objectivity and fairness and can be used to manipulate or persuade people without providing a balanced or complete picture of the topic under discussion.*

*In a biased argument, the presenter may selectively choose evidence that supports their position while ignoring contradictory evidence, use emotionally charged language to sway opinion, or rely on fallacious reasoning to make their case appear stronger than it is. These arguments can be misleading and are not conducive to open, rational, and constructive discourse.*

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## MM3: L5 WS DEBATE QUESTIONS



Use this worksheet to structure your research. Use the following websites as a starting point, but you will need to do more research on your own. You may need to use additional paper to take notes.

Onshore vs offshore wind energy: what's the difference?

<https://www.nationalgrid.com/stories/energy-explained/onshore-vs-offshore-wind-energy>

Onshore vs Offshore Wind: What Are the Differences and Facts?

<https://greencoast.org/onshore-vs-offshore-wind/>

Which is cheaper: onshore wind turbines or offshore wind turbines? Why?

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What are the economic implications of investing in onshore wind energy compared to offshore wind energy?

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How do onshore and offshore wind energy projects affect job creation and local economies?

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Which is more environmentally sustainable: onshore wind turbines or offshore wind turbines? Why?

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When thinking about the visual impact of wind turbines, are people more likely to be badly affected by offshore wind turbines or onshore wind turbines?

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### DEBATE QUESTIONS contd.

Which type of turbine is easier to build, onshore or offshore?

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Which type of turbine can be connected to the electricity grid more easily: onshore or offshore?

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Which type of turbine is likely to generate the most amount of electricity?

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Could there be a negative impact on wildlife and sea-life because of the construction of wind turbines?

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Which type of wind energy is more reliable and less susceptible to weather-related disruptions: onshore or offshore?

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What are the geopolitical implications of relying on onshore or offshore wind energy for a nation's energy needs?

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How do the permitting and regulatory processes differ for onshore and offshore wind projects, and which is more efficient?

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### DEBATE QUESTIONS Contd.

Are there safety concerns related to onshore wind turbines (e.g., blade failures) or offshore wind turbines (e.g., maintenance in harsh marine environments) that should influence the choice between the two?

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## FOUNDATIONS AND THEIR FUNCTION

Answer the following questions after watching the video. You may need to use Google to help.

What are the two basic components of a building?

1. \_\_\_\_\_
2. \_\_\_\_\_

What are the main functions of a foundation?

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What are the requirements of a good foundation?

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What is a dead load?

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What is an imposed load?

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What are the two classifications of foundations?

1. \_\_\_\_\_
2. \_\_\_\_\_

Write a definition for both classifications.

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

Why do you think foundations might be important for offshore wind turbines?

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## Part 1

After the video, answer the following questions.

What are the types of support structures for wind turbines?

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What is the industry favourite?

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What are the parts of the monopile?

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Why is it popular?

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What depths of water is it used in?

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What must be done to the monopile if there is a heavier structure or it is placed in deeper water?

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What are the limiting factors?

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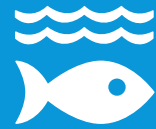
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## MM3: L7 WS FOUNDATION DESIGN

14 LIFE BELOW WATER



What is an alternative method for deeper waters?

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How is it connected to the seabed?

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What is the limiting factor?

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What are the benefits?

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### Part 2

After the video, answer the following questions.

What is Fugro? What do they do?

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What challenges are they facing when building new wind turbines? Why are they using site-specific information to build turbines?

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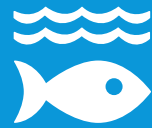
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## MM3: L7 WS FOUNDATION DESIGN

14 LIFE BELOW WATER



What are their selling points (e.g. cost effective)?

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Why is having the right kind of foundation important? What do the turbines need to withstand?

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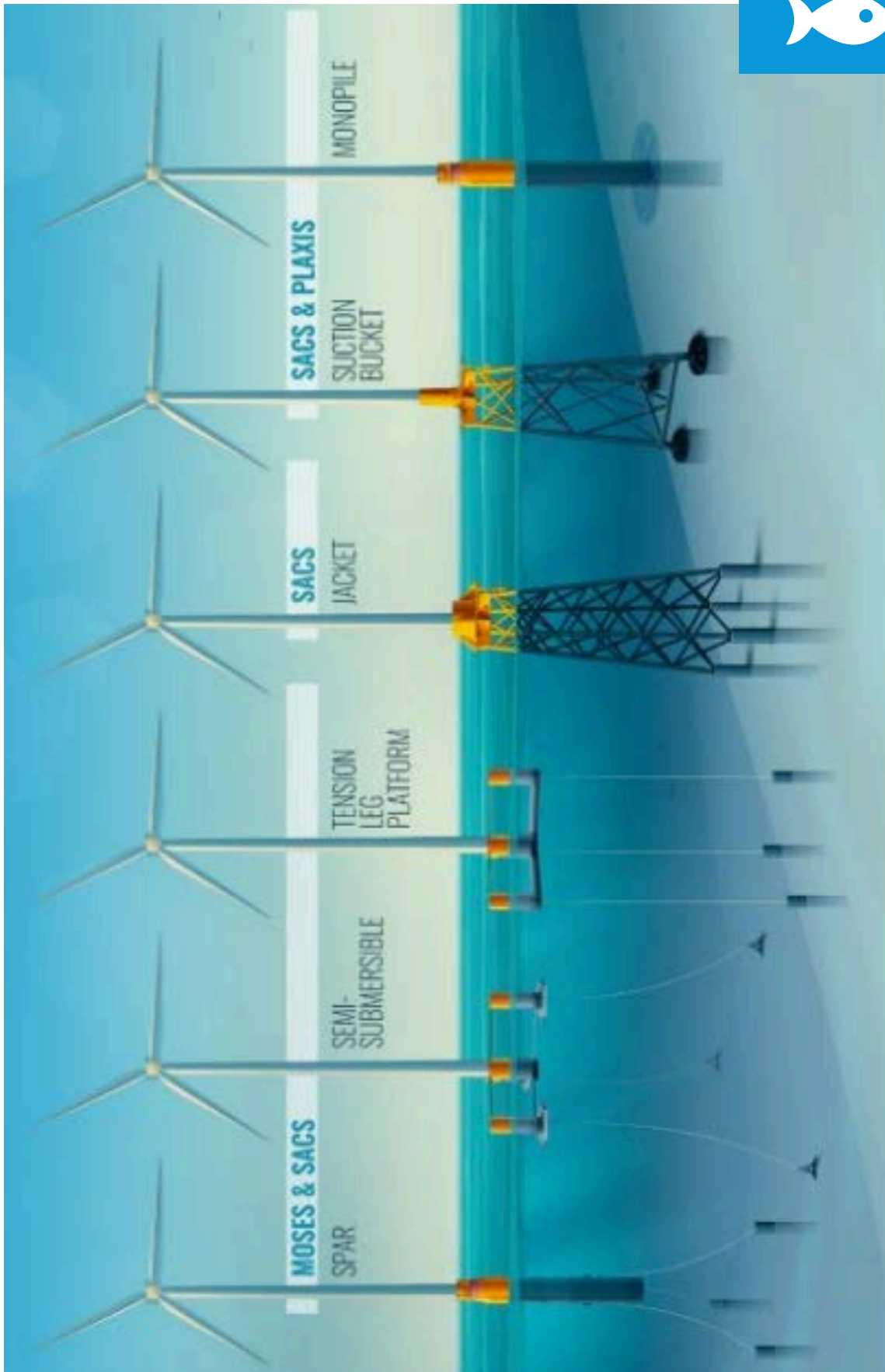
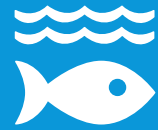
### Part 3

Your teacher will pause on a number of images from the video. For each image, discuss the following questions with your partner. You may want to take notes of your discussion on a separate piece of paper.

What do you see in the image?

What kind of foundation are they using in each image? Why do you think they chose this type of foundation for the turbines shown in the each image?

Which types of foundation do you like? Which ones do you think are the best?



Types of wind turbine foundations, and Bentley software to address each type of foundation, <https://blog.bentley.com/software/all-about-offshore-wind-turbine-foundations/>

## MM3: L10 WS SITE SELECTION



You will use the [Ireland's Marine Atlas tool](https://atlas.marine.ie/#?c=53.3899;-13.0518;6) on the Marine Institute's website to select a suitable site in Ireland for offshore wind turbines.

<https://atlas.marine.ie/#?c=53.3899;-13.0518;6>

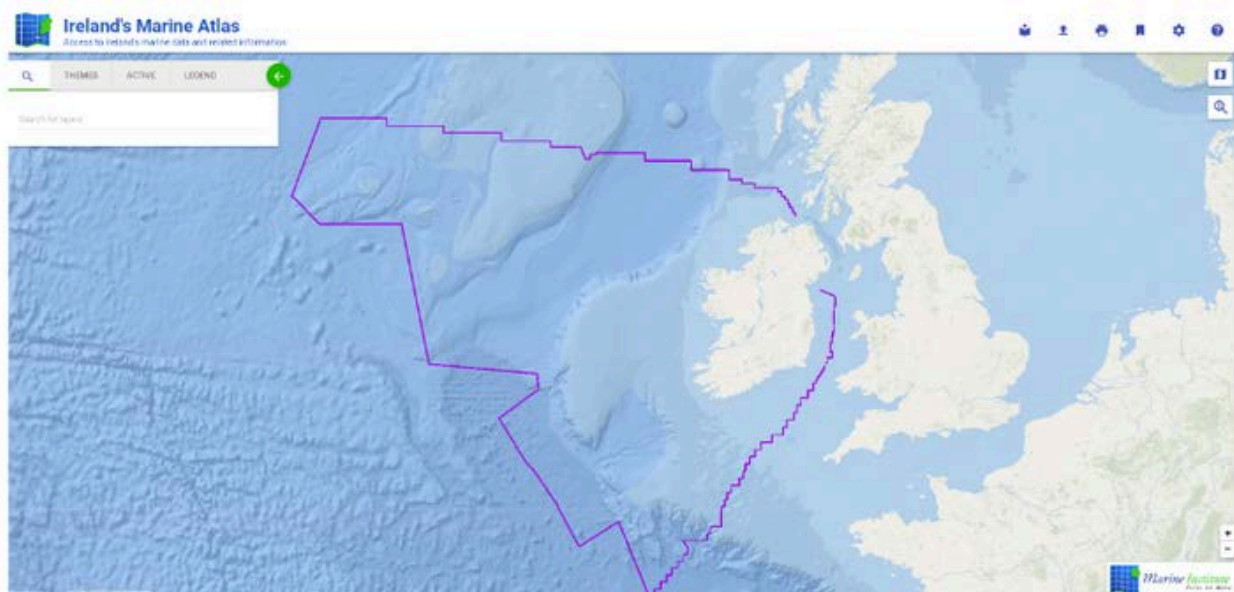
You will have to consider the following aspects when selecting a site:

1. Water depth
2. Fishing patterns
3. Wind speeds
4. Shipwrecks
5. Marine mammal species distribution
6. Protected areas

Before continuing, discuss as a group why these 6 aspects would be important to consider when building offshore wind turbines? Which ones do you think are most important and least important? Can you think of any other aspect the government should consider when building offshore wind turbines?

On the following pages, you will be guided through how to use the Ireland's Marine Atlas Tool to discover these six aspects.

The landing page will look something like the figure below. When you click on the 'themes' button, there are many opens for information that can be shown on map.

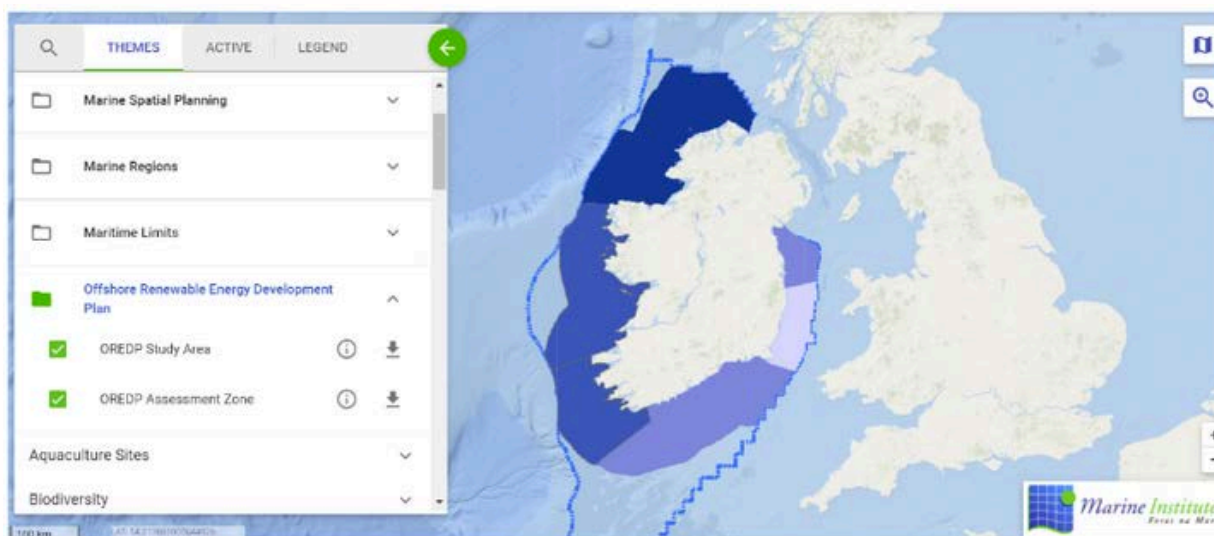


## MM3: L10 WS SITE SELECTION

14 LIFE BELOW WATER



For example, you can turn on the view that shows the regions allocated as part of the Offshore Renewable Energy Development Plan under the heading 'administrative boundaries'. The Department of Communications, Climate Action and Natural Resources commissioned the Offshore Renewable Energy Development Plan Strategic Environmental Assessment boundary of full assessment area for tidal, wave and wind assessments and definition of zones into specific strategic renewable sectors. These are the zones the government is potentially targeting for offshore wind farms.



Then, if you turn off this setting, and then turn on 'INFOMAR Bathymetry' under the 'Hydrography' tab, as per the image below, you will see a map showing how deep the water is in the areas surrounding Ireland. It's relatively shallow (100m) near land, and gets much deeper (up to 1000m) off the west coast. The depth of water is something that needs to be considered, as in shallow water we can use monopile turbines, but in deep water we may need to use floating turbines.

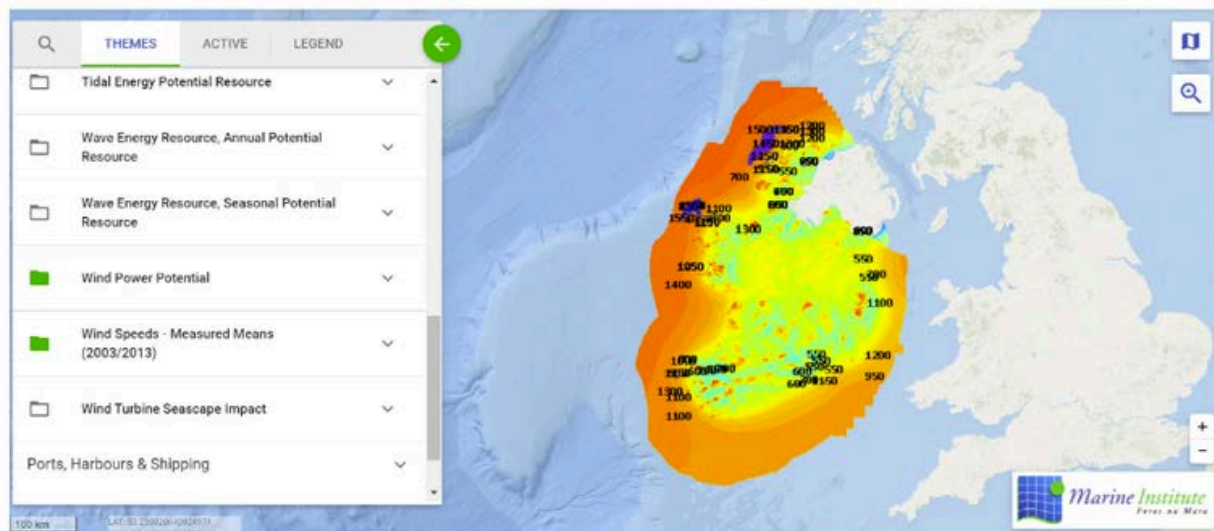


## MM3: L10 WS SITE SELECTION

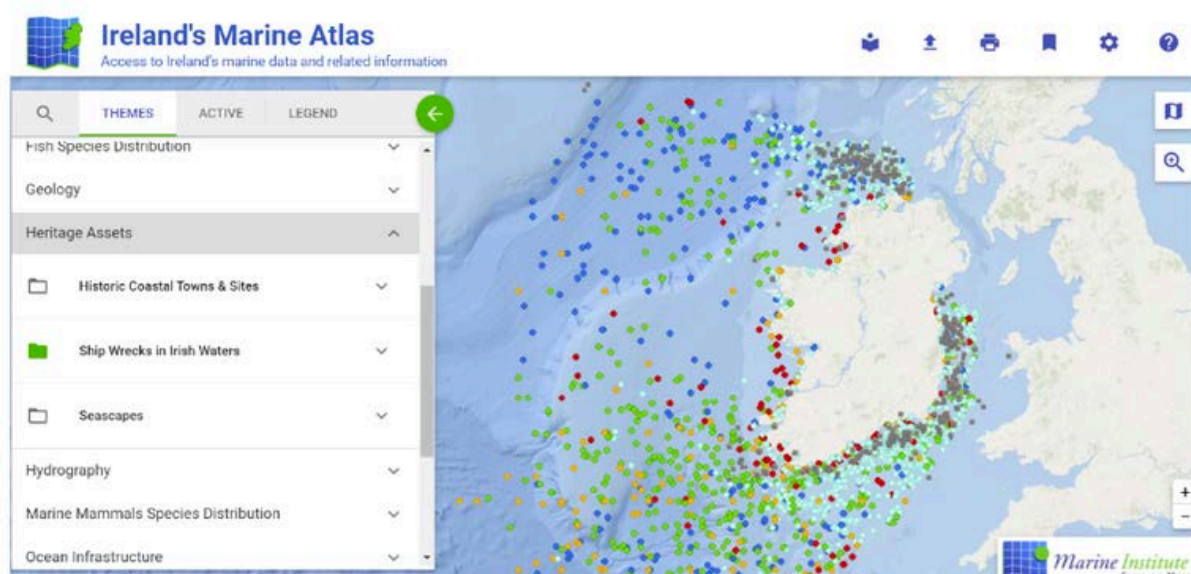
14 LIFE BELOW WATER



If you turn off this setting, and instead turn on the view that shows 'wind power potential' and 'wind speeds' under the tab called 'Offshore Energy – Resource Potential'. This should give you a map that looks something like the figure below and gives an indication of how high the winds speeds are in the regions offshore around Ireland, and consequently, the potential energy that might be generated. Choosing a site that's going to be windy enough is important.



Now turn off this setting, and turn on the setting called 'Shipwrecks in Irish Waters' under the tab called 'Heritage Assets'. This should give you a map that looks like the figure below showing all the thousands of shipwrecks that lie on the bottom of the seabed in the waters around Ireland. When choosing a site for your wind farm, you'll need to make sure you avoid the locations of these shipwrecks.

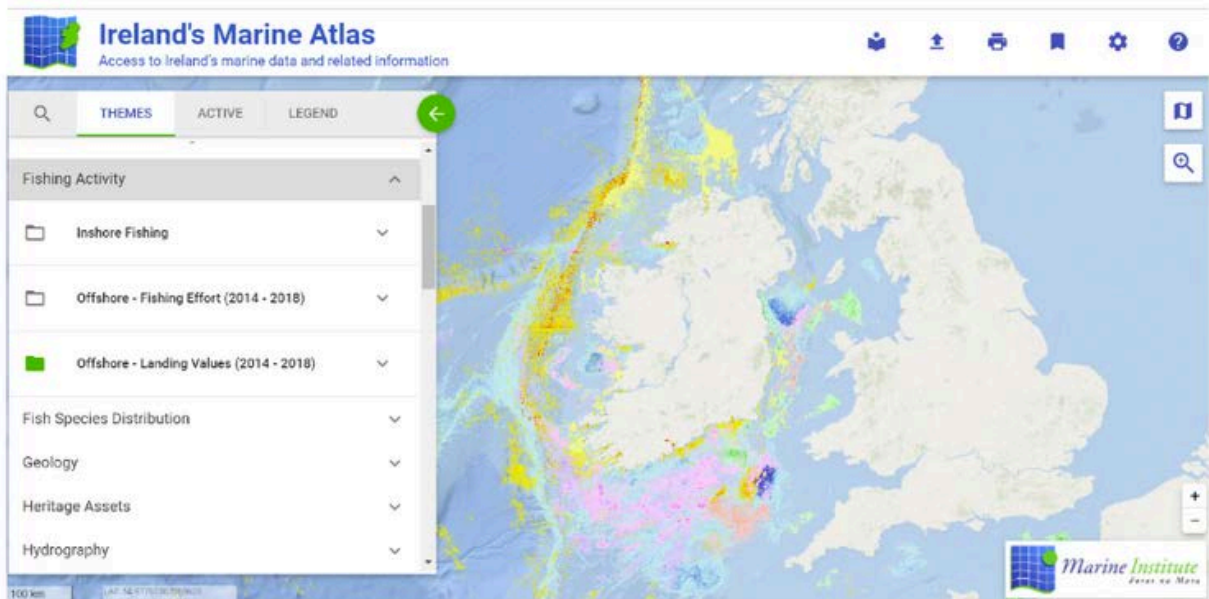


## MM3: L10 WS SITE SELECTION

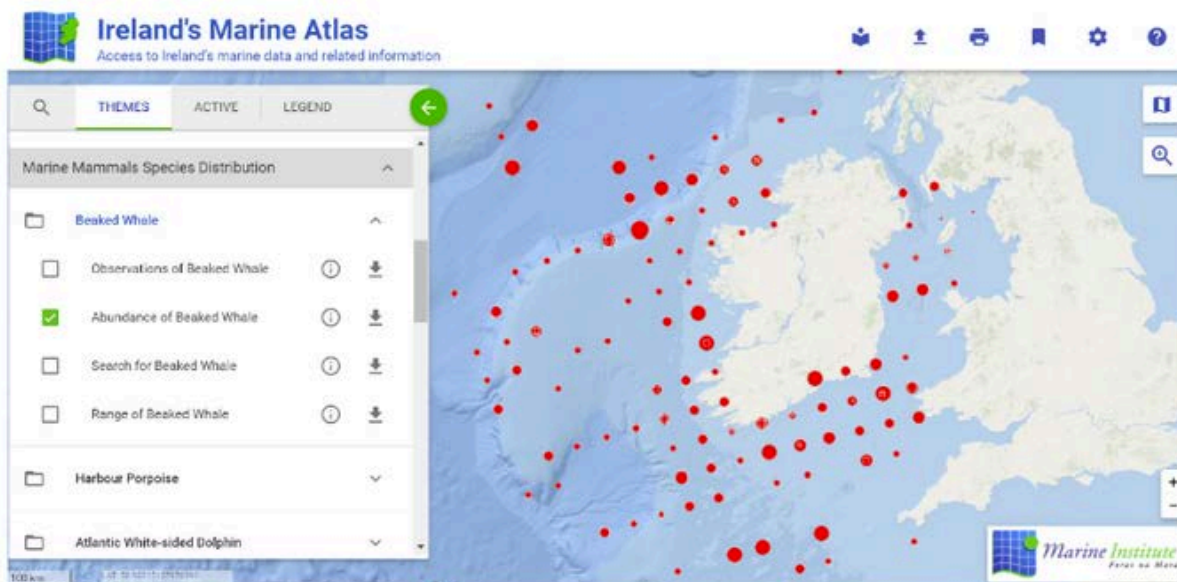
14 LIFE BELOW WATER



Turn off the shipwreck setting, and instead turn on the setting for 'offshore landing values' under the tab 'fishing activity'. This gives an indication of the value of the fishing industry in the waters around Ireland, and this is something that can't be interrupted due to the construction of a wind farm. When choosing your site, consider the fishing patterns in the area.

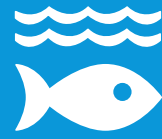


Linked to this, you'll also need to consider the regions of water where certain marine species tend to congregate. By turning off the previous settings, and instead turning on the settings for 'marine mammals species distribution', you'll get a map showing something like the figure below. It will be equally important to avoid these areas not just for the construction of the turbines, but also so as not to displace wildlife into the future due to the presence of the turbines.



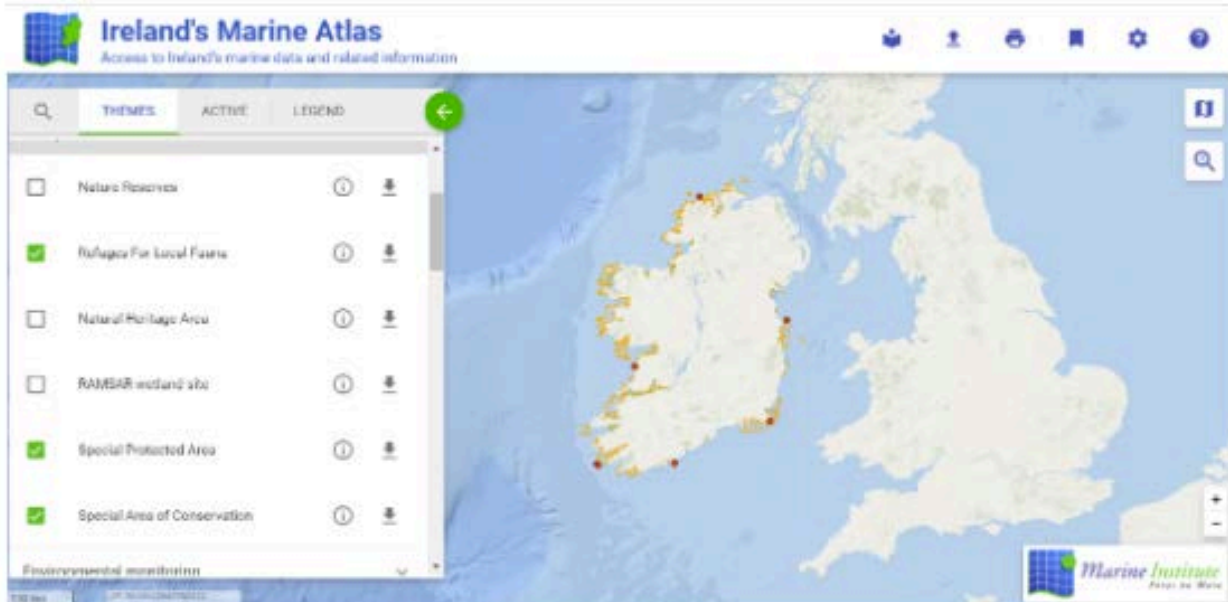
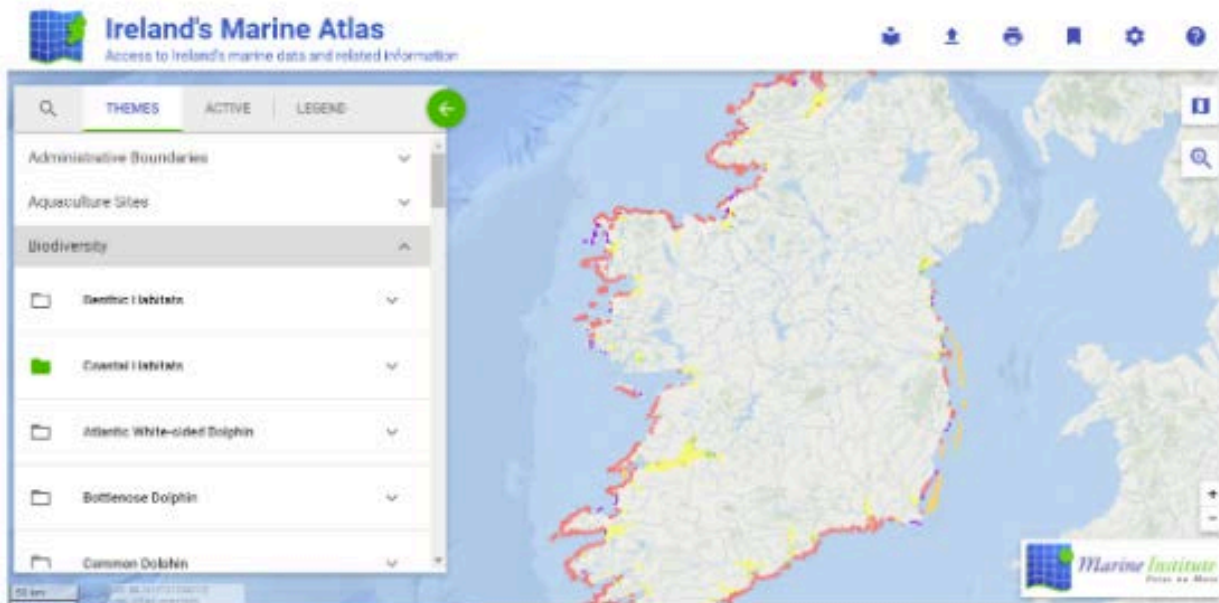
## MM3: L10 WS SITE SELECTION

14 LIFE BELOW WATER



In case you were tempted to put the turbines really near the shoreline, in shallow water to avoid all these challenges, you should also be aware that the coastlines around Ireland tend to be protected areas.

Take a look at the two images below – for ‘coastal habitats’ under the ‘biodiversity’ tab and the various options under the ‘Designated sites’ tab.



After considering these six aspects, what are your top three sites where you would build wind turbines (you may write the coordinates and / or show on a map):

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_





## Part 1

After watching the video, answer the following questions:

What is a super-grid?

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What are the benefits of a super-grid?

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Will the EU share wind energy that is generated or will each country produce / use their own?

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What are supernodes?

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Where will supernodes be built?

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What voltages do supernodes use? What does each voltage do?

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What is the process of bringing energy to the consumer?

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## MM3: L11 WS THE SUPER GRID

14 LIFE BELOW WATER



When is the super-grid supposed to be created / implemented? Do you think this is soon enough? Do you think it is feasible?

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### Part 2

After watching the video, answer the following questions:

Who is Pat Cox? What is his view on climate change and the government's actions?

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What does he think the government needs to do?

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What is Supernode? What do they do?

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What is their main technological challenge?

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What are they developing?

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What are superconductors?

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## MM3: L11 WS THE SUPER GRID

14 LIFE BELOW WATER



Why are superconductor cables beneficial?

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What challenges do they talk about?

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What do they think Ireland's role in wind energy could be?

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What do they hope to do by 2030?

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What is the Gore Street Energy Storage Fund?

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What are the strengths of renewables they mentioned?

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What are the weaknesses of renewables they mentioned?

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## Part 3

After watching the two videos about the super-grid, answer the following questions:

What are the biggest technical challenges to the adoption of widespread offshore wind energy? (For example, the wind isn't always blowing where we need the energy, and so we need a fast and efficient way of transporting it).

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Currently, most electricity systems (i.e. the cables that transport electricity from the generator to people's homes and businesses) are developed and operated at a national level (country by country). How does a super-grid differ from this?

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What potential does Ireland have when it comes to the idea of a super-grid? How can we participate and how might we benefit?

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Can a super-grid help with exporting and importing electricity to and from other countries?

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What words or concepts did you not understand in these videos?

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## Part 1

After watching the video, answer the following questions:

1. What wind farm do they discuss?

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2. What is unusual about the ownership of this wind farm?

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3. What do they say about the economic benefit of the wind farm to the community?

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4. How do they help support local young people? What do you think of this?

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5. How did they name the turbines?

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6. What two types of turbines do they have?

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7. How do you they us AI - Artificial Intelligence?

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## MM3: L12 WS COMMUNITY TESTIMONIES

14 LIFE BELOW WATER



8. What do they say the wind farm brings to the table?

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### Part 2

After watching the video, answer the following questions:

1. How much money do they generate per year?

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2. How much will they have have made?

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3. What do they do with that money?

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### Part 3

After watching the video, answer the following questions:

1. Why might wind turbines be the new 'cash crop' for farmers?

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2. What did the farmer say wind turbines have done for them?

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## MM3: L12 WS COMMUNITY TESTIMONIES



3. What challenges did the farmers say they are facing at the moment (e.g. drought)?

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4. How much does one of the farmers make per year from the wind turbines?

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5. What were the broader benefits of the wind turbines to the community?

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6. What impact does it have on young adults? Does your area in Ireland face a similar problem?

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7. What do the wind turbines help pay for in the community?

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### Part 4

After watching the video, answer the following questions:

1. What do you see in this video?

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2. What do you think of the process of installing a wind turbine?

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3. How do you think this relates to community benefits?

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4. How could old parts from a wind turbine be reused for the community?

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## Part 5

Now that you have watched the videos, discuss these questions in your groups. You may want to use a separate piece of paper to take more notes:

1. Does your town in Ireland face any of the same problems as the communities in the videos (e.g. young people moving away due to lack of opportunities)? If so, what?

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2. What other social and economic problems does your community face?

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3. How could wind turbines benefit your town?

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4. What would you want your community to do with the revenue from wind turbines?

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