

## **Ireland's Export Opportunity**



**Presentation To Department of Finance**

**National Offshore Wind Association of Ireland**

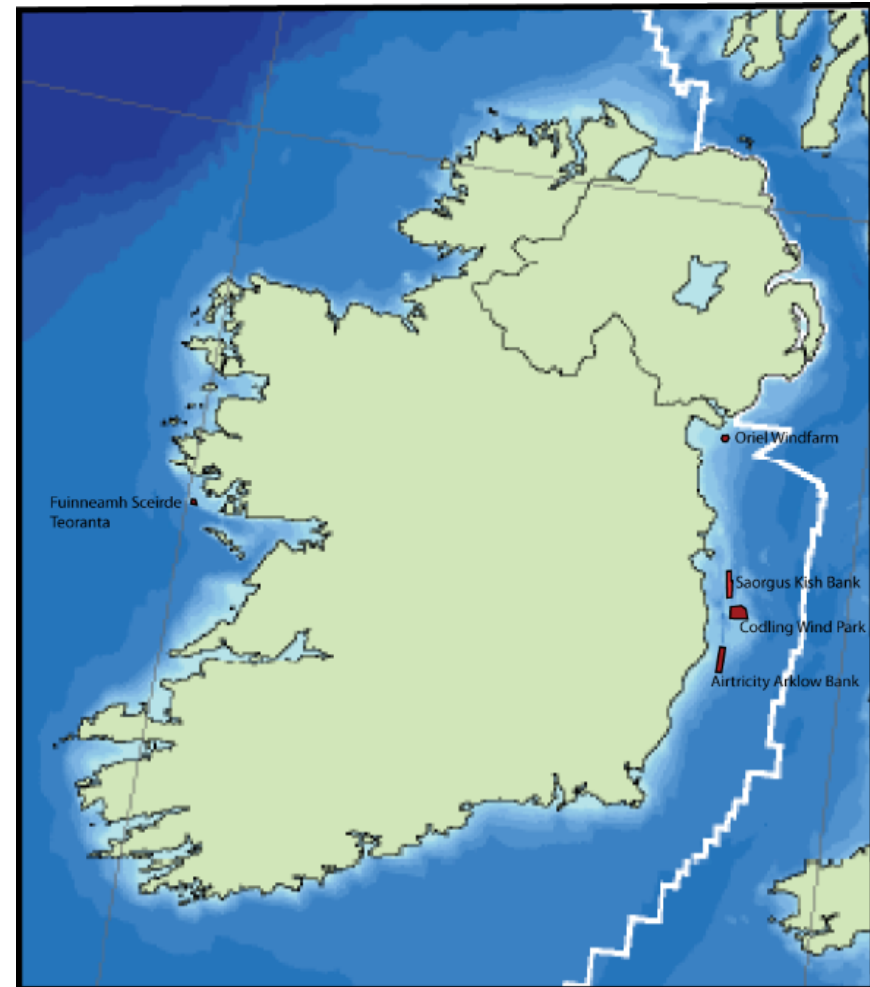
**18<sup>th</sup> March 2010**

## NOW Ireland

The National Offshore Wind Energy Association of Ireland was established in 2007 to promote the development of Ireland's substantial offshore wind resource and to ensure that our island leads the way in building a sustainable, green economy.

### Set up by Ireland's five largest operators

- Oriel Windfarm Limited
  - SSE Renewables
  - Codling Wind Park
  - Saorgus Energy Limited
  - Fuinneamh Sceirde Teo
- Capacity of over 2680MW from existing project areas with potential for a further 4000MW.
  - Potential investment of over €8bn.
  - This equates to ??? jobs for existing projects and ??? jobs, when all built out.
  - Potential exports € ??? b from renewable energy, with even more from within supply chain.



## Current Status of NOW Ireland Projects – A Case of Regulatory Disconnect

▪ SSE Renewables	Lease for 200 Turbines on the Arklow Bank	Not in Gate 3
▪ Codling Wind Park	Lease for 220 Turbines on the Codling Bank plus application for extension	Not in Gate 3
▪ FST	Application for 20 turbines on Skerd Rocks	In Gate 3
▪ Oriel Windfarm	Application for 55 turbines West of Dundalk bay.	In Gate 3
▪ Saorgus energy	Application for 145 turbines on the Bray and Kish Banks	In Gate 3

## **Indecon Cost Benefit Analysis**

- Independent study commissioned by NOW Ireland in March 2008 resulting in “Economic Analysis of the Potential for Offshore Wind Energy Generation in Ireland” published by Indecon in September 2008
- Report Objective 1: Estimate net cost/benefit for enhanced offshore wind development in Ireland
- Report Objective 2: Estimate other benefits including Non-GHG emissions abatement, Kyoto compliance, tax and employment, fuel-price risk reduction, etc
- A Financial model based on a 1000MW wind farm for a 15 year period starting in 2012 was used.
- Conservative cost base used, i.e. €3.5 million per megawatt capital cost – Approximately €1m higher than costs used by EWEA
- Conservative fuel price forecasts used.

## Cost Benefit Analysis Conclusions

- Shows primary net direct benefit for Ireland Inc. of up to €1.7 billion 2012-2027
- Extra quantifiable indirect benefits €2.1 billion including Merit Order Effect, employment, carbon fines saved, reduced emissions, etc.
- In virtually all scenarios there is a direct net benefit, in all scenarios there is an economic benefit when indirect benefits are included
- Cost to Government of carbon fines 2008 – 2012 €1.17 billion
- 2680MW in the consenting process for NOW Ireland Members and an estimated further 4000MW possible on Irish east coast alone

## Status of Irish Wind Energy

- The Irish government has set a target of 40% renewables by 2020. To achieve this will require circa 5,800 MW of renewable generating capacity, mostly wind.
- The government has indicated in its NREAP Forecast Statement that it will require 44% of electricity, circa 6,500MW, to come from renewable sources by 2020 to meet its EU energy target of 16% of all fuel consumption,.
- About 1,400MW of Wind powered generation has been brought onto the system since the early 1990's.
- 230MW was brought onto the system last year.
- Many of the projects in the Gate 3 process for a grid connection will not be built, due to planning and financial constraints.
- The scale afforded by offshore wind power is needed to meet our renewable energy targets.



## The Most Pressing Reason for Renewables

- Ireland is the fourth most energy insecure country in Europe
- Corrib will help secure medium term security of supply but not price security
- Increase in price of oil and gas prices has a disproportionate impact on Irish GDP because of our circa 90% dependence on imported fossil fuels
- Ireland holds 11 days of gas supply, our resources come from the same source as the UK gas supply
- OFGEM Chief has recently described UK as heading off the edge of a cliff – Ireland is in the same position unless we develop a hedge

## Ireland has huge Offshore Wind Resources

With more renewable energy  
generating capacity than required

**Strongest  
potential**



**Very high  
potential**



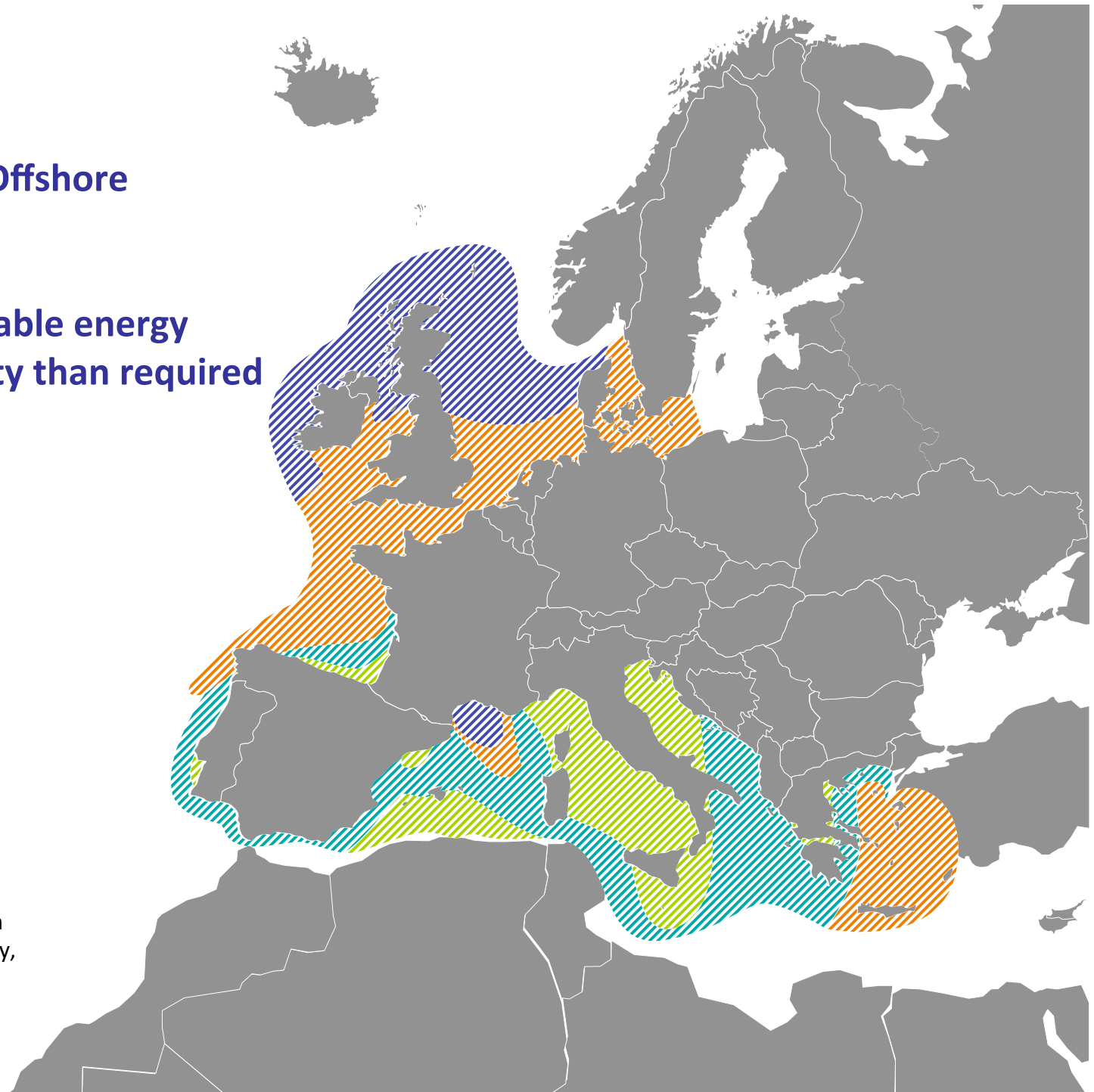
**High/medium  
potential**



**Medium/low  
potential**



Simplified map based on  
Risø National Laboratory,  
Denmark, 1989





## Export Opportunity – Energy

- EU Renewables Directive issued June 2009 allows:
  - EU inter state trading.
  - Requires individual member states plan to reach targets by June 2010.
- Affords a country like Ireland with its massive offshore wind and ocean resource the opportunity to export.
- Critical path analysis / timeline review for the industry 20/30 years out with coordinated forward planning required.
- Mechanism for export then needs to be developed by stakeholders in Ireland with objective of:
  - Protecting the consumer
  - Encouraging export development



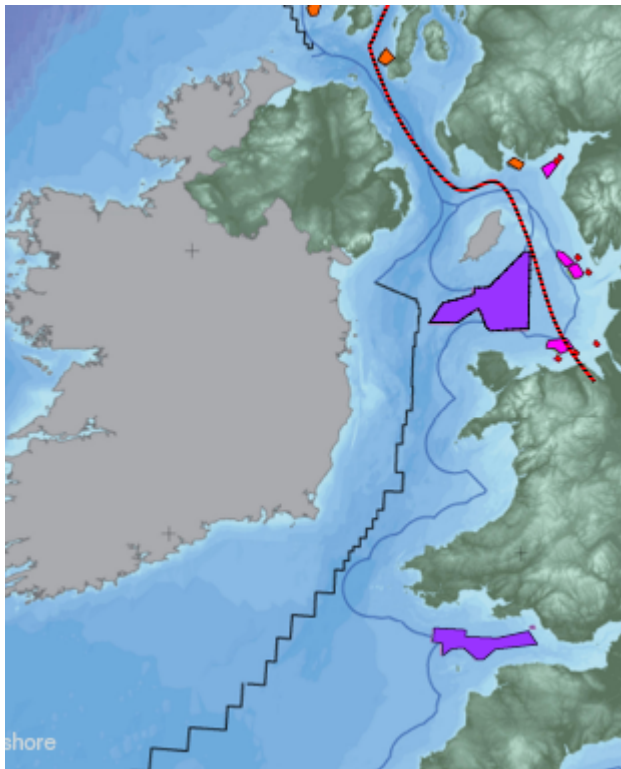
## Export Opportunity - Supply Chain

- There is over 100,000MW of offshore wind capacity under development in European waters.
- The European Commission expects the creation of 2.8m jobs by 2020 from renewable energy industry in Europe.
- Siemens have predicted that there will be €300bn invested in the offshore wind industry alone in the next 20 years.
- The UK is planning the installation of 33,000MW of offshore wind generation capacity over the next 10 years.
- The EWEA has predicted annual installations of offshore wind in Europe over the next few years as 1,100MW per year



Offshore Wind Projects in Development in Europe

## Export Opportunity - Supply Chain



Project	Status	Capacity MW's	No of Turbines	Developer
<b>Irish Sea - UK Round 1</b>				
Barrow	Operating 2006	90	30	Centrica / DONG
North Hoyle	Operating 2003	60	30	RWE Npower Renewables
Burbo Bank	Operating 2007	90	25	DONG
Rhyl Flats	Operating 2009	90	25	RWE Npower Renewables
Robbin Rig	In Construction	180	60	E.ON UK Renewables
Ormonde	Construction 2010	150	30	Vattenfall
<b>Round 1 Total</b>		<b>660</b>	<b>200</b>	
<b>Irish Sea - UK Round 2</b>				
Walney	Construction 2010	370	102	DONG/SSE Renewables
Gwynt y Mor	Consented	750	250	RWE Npower Renewables
West Duddon	Consented	500	139	DONG/E.ON/Eurus
<b>Round 2 Total</b>		<b>1620</b>	<b>491</b>	
<b>Irish Sea - UK Round 3</b>				
Irish Sea	Awarded	4000	800	Centrica & RES
Bristol Channel	Awarded	1500	300	RWE Npower Renewables
<b>Round 3 Total</b>		<b>5500</b>	<b>1100</b>	
<b>Irish Sea - Scottish Territorial Waters</b>				
Solway Firth	Awarded	300	60	E.ON UK Renewables
Wigtown Bay	Awarded	280	56	DONG
Kintyre	Awarded	378	76	SSE Renewables
Islay	Awarded	680	136	SSE Renewables
Argyll Array	Awarded	1500	300	Scottish Power
<b>Scottish Total</b>		<b>3138</b>	<b>628</b>	
<b>Irish Sea - Republic Of Ireland Projects</b>				
Clogher Head	Firm Access- Gate 3	330	55	Oriel Windfarm Ltd
Dublin Array	Firm Access- Gate 3	725	145	Saorgus Energy Ltd
Codling Bank	Consented (Awaiting Grid)	1100	220	Treasury / Fred Olsen Ltd
Arklow Bank	Consented (Awaiting Grid)	525	200	SSE Renewables
<b>ROI Total</b>		<b>2680</b>	<b>620</b>	
<b>Offshore Northern Ireland (600 - 900 MW) expected to develop on completion of the SEA in 2010</b>				
TBC	TBC	750	150	TBC
<b>Irish Sea Total</b>		<b>14348</b>	<b>3189</b>	

- The biggest supply chain market for offshore wind in the world is 40 miles across the Irish Sea



## Ireland is already involved in Offshore wind exports

- Development Companies
  - SSE Renewables
  - Mainstream Renewable Power
- Project Delivery Management
  - Sepam
- Port facilities
  - Harland and Wolf



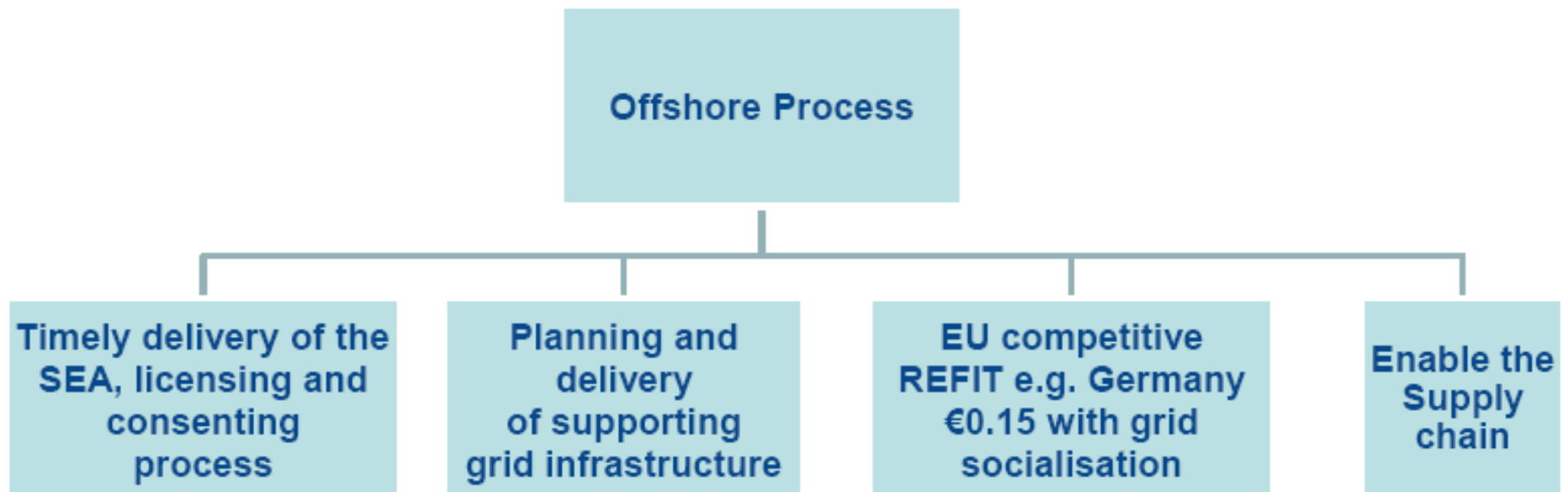
- Marine Services

- Diving Companies
- Work boats
- Forecasting
- Engineering and Environmental services

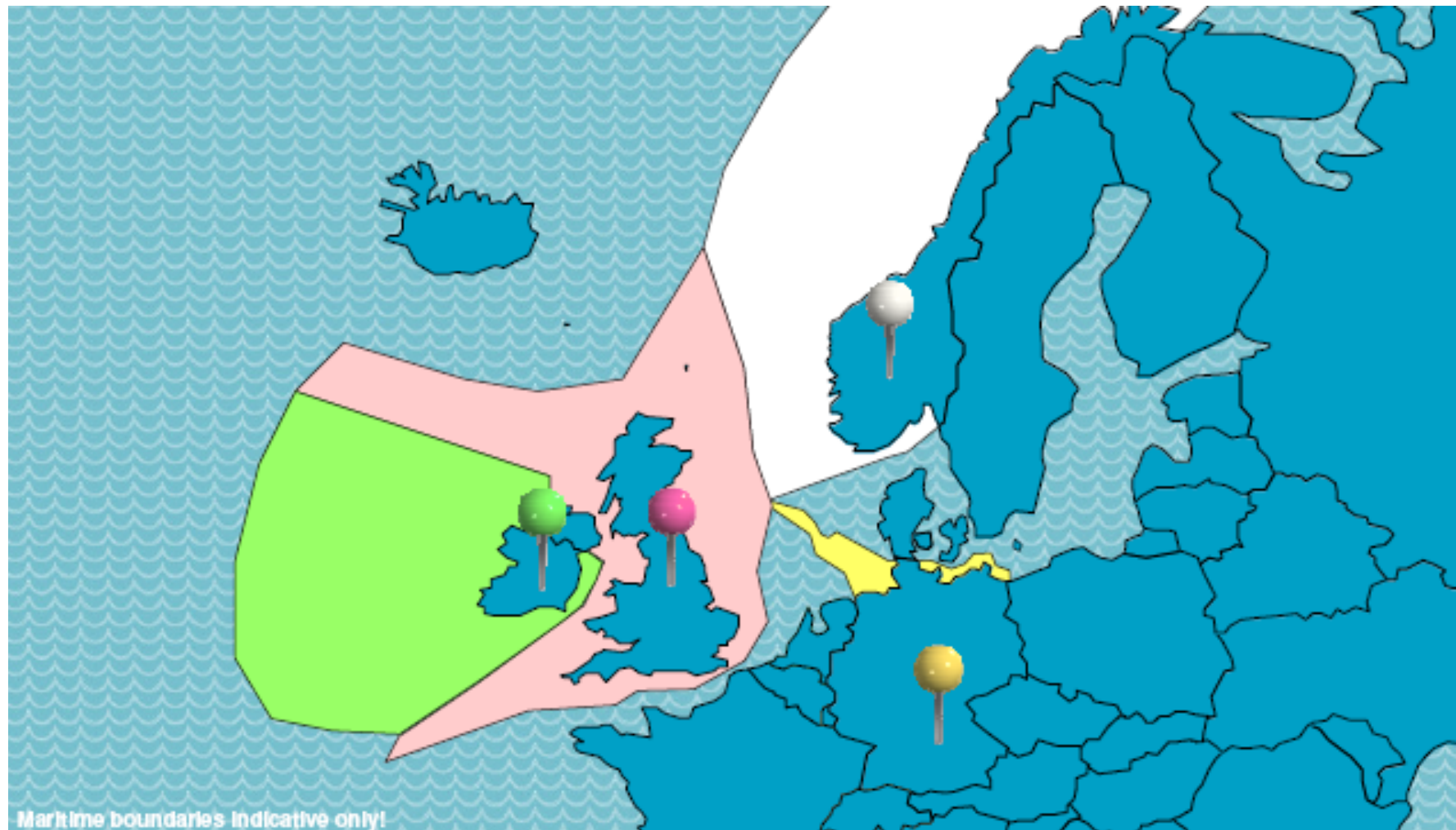


.....and many more

## What are the keys to unlocking these opportunities



**Europe needs renewable energy**  
**Ireland, Norway, & UK own the windy parts of the sea**





## Conclusion

**Ireland has a number of opportunities from Offshore Wind:**

- To meet and exceed our renewable energy targets
- To export high value green electricity to europe
- To create jobs building and operating Irish Offshore wind farms
- To get a foot hold in the Supply Chain
- Opportunities afforded by the development programmes for offshore wind in the UK and the rest of Europe

