What’s on in European Offshore
A UK Perspective

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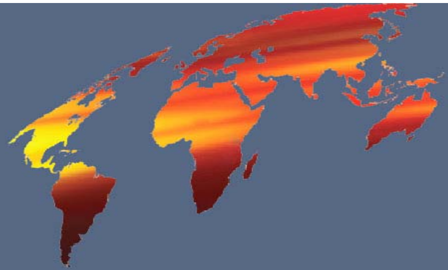

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Introduction

This presentation will investigate the present and future opportunities offshore in the:

Southern North Sea

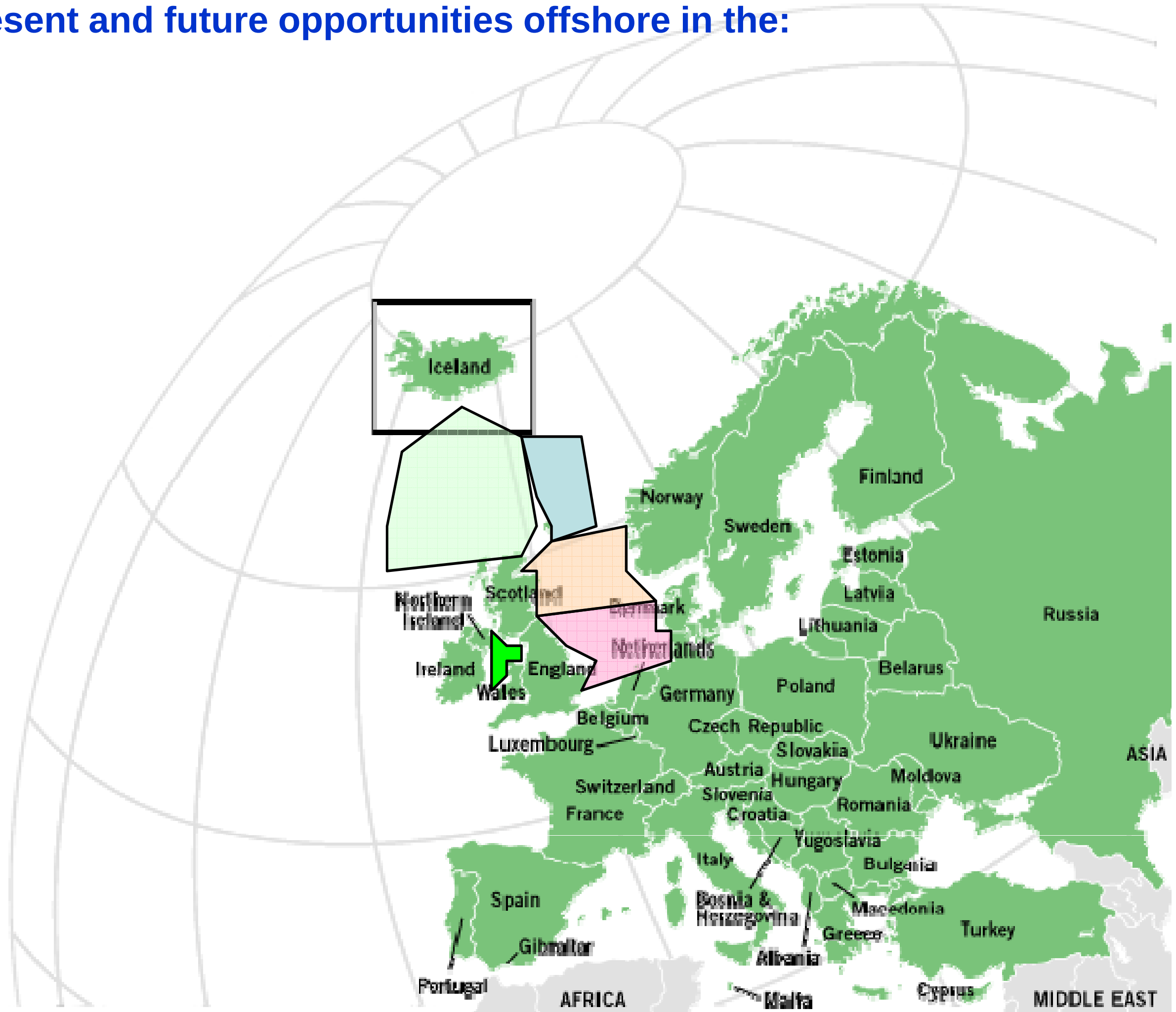
Central North Sea

Irish Sea

West Of Shetland / Atlantic Frontier

Northern North Sea

Renewables



Southern North Sea – UK Sector

- This area of the North Sea is predominantly a gas basin.
- Gas fields in the Southern North Sea have been in production for the last 40 years or so.
- A complex network of infrastructure has been built up, producing a mature gas province.
- Technologies are being matured to develop increasingly smaller gas accumulations, often by different operators than the traditional players in the area.

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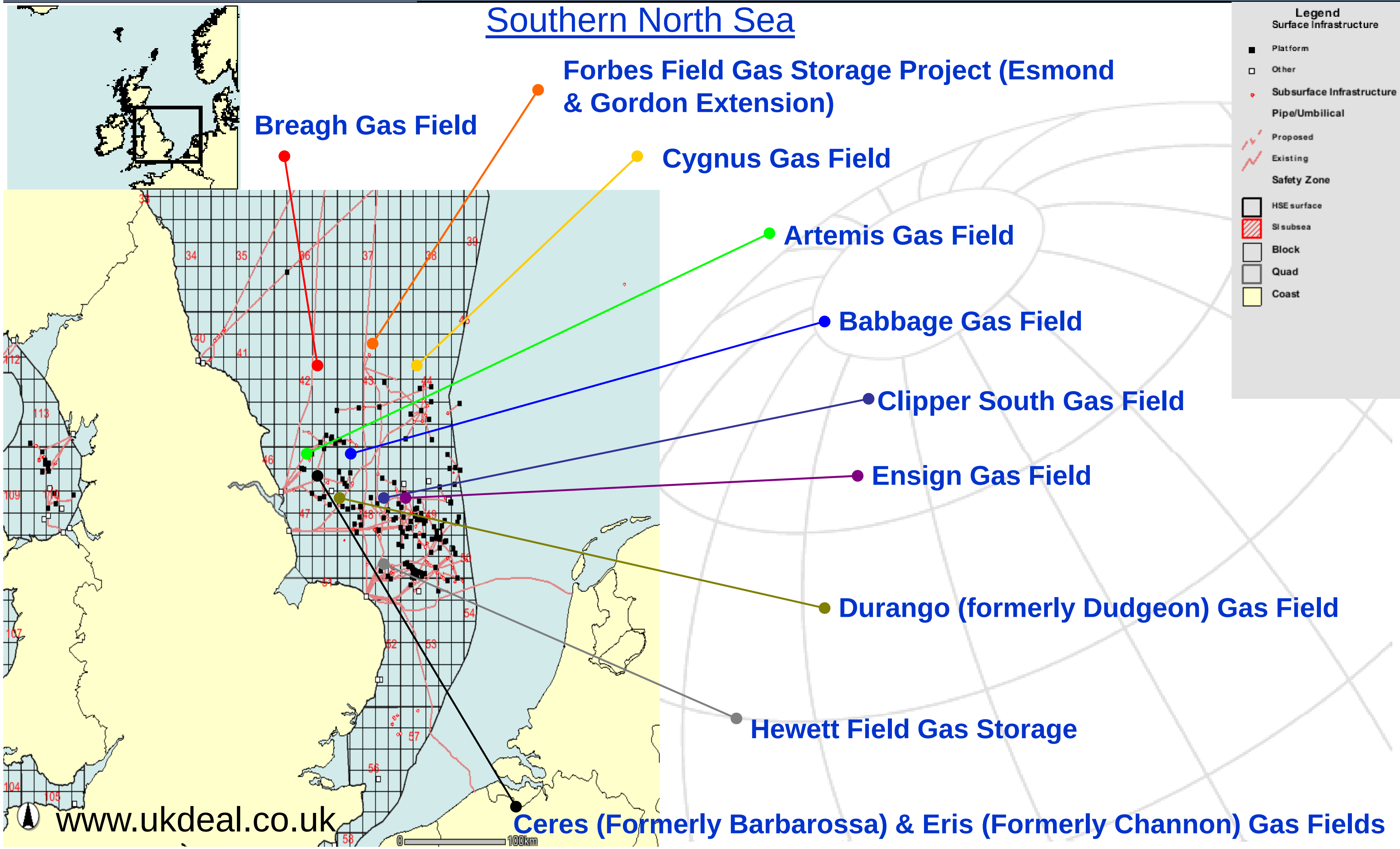
Southern North Sea



Irish Sea – UK Sector

Bains Gas Storage Facility

The Bains project proposes to convert the existing partly depleted Bains field, eight miles northeast of Centrica’s South Morecambe field, to a storage facility with a dedicated 20 mile pipeline to the Barrow onshore terminal.

Gateway (Irish Sea) Gas Storage Project

Construction of an under seabed gas storage facility and an onshore terminal in Barrow-in-Furness by Stag Energy. The Gateway project is located in the East Irish Sea, approximately 24 kms offshore of the coastline of Fylde in north-west England. The facility will have offshore under seabed gas storage of 1.1 billion cubic metres (around two days peak UK winter demand). Gas would come ashore at Barrow using existing infrastructure and pipeline transmission capacity.

Central North Sea - UK

- **Even though the North sea is now a ‘Mature Province’, the Central North Sea has over 20 fields that are under appraisal and are on track to full production.**
- **This area produces the highest amount to UKCS hydrocarbons.**

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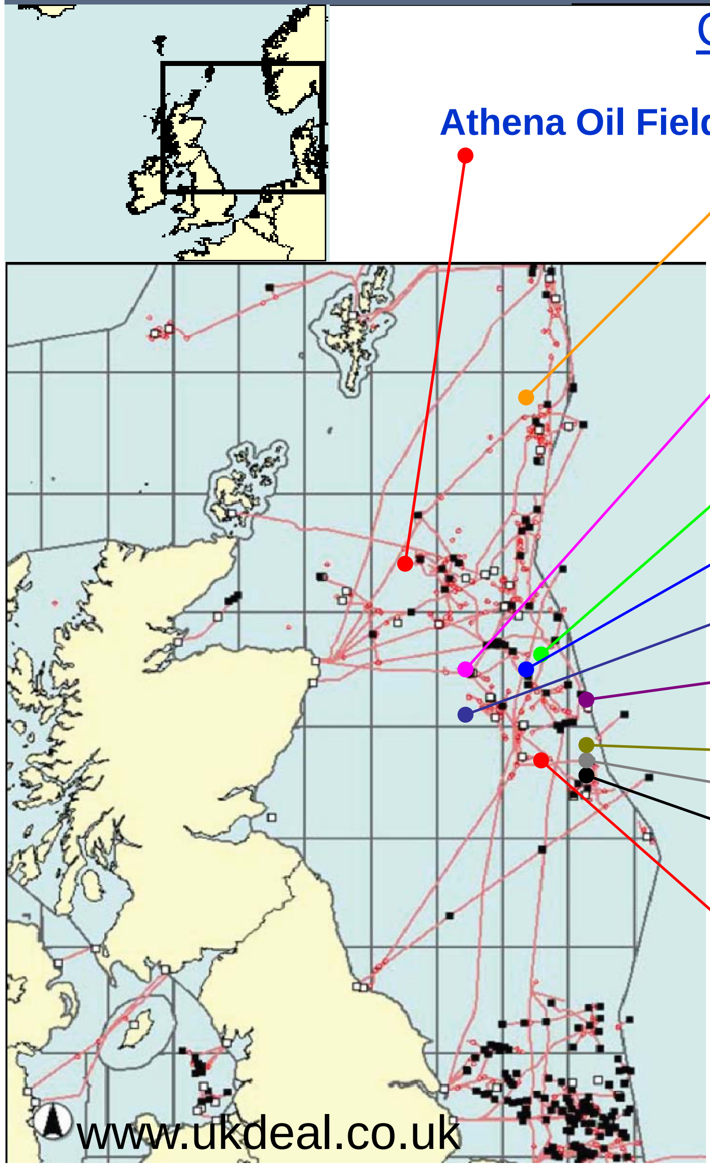
Central North Sea



Athena Oil Field (Athena East Discovery)

Mermaid & Kraken Heavy Oil Fields

Bligh Gas & Condensate Field

Huntington Oil Field

Cayley Gas Condensate Field

Fyne and Dandy Oil Fields

Moth Gas Condensate Field

Jasmine (formerly Shoei) Gas & Condensate Field

Jackdaw HP/HT Condensate Field

Auk Oil Field Redevelopment

Acorn & Beechnut HP/HT Oil Fields

Legend
Surface Infrastructure
Platform
Other
Subsurface Infrastructure
Pipe/Umbilical
Proposed
Existing
Safety Zone
HSE surface
SI subsea
Quad
Coast

West of Shetland / Atlantic Margin - UK

- Exploration of the basins to the West of Shetland has, historically, been slower and more difficult than exploration in the North Sea.
- To date, about 1.5 billion barrels of oil or its equivalent in gas has been found. This is equal to 5% of all UK oil discoveries so far.

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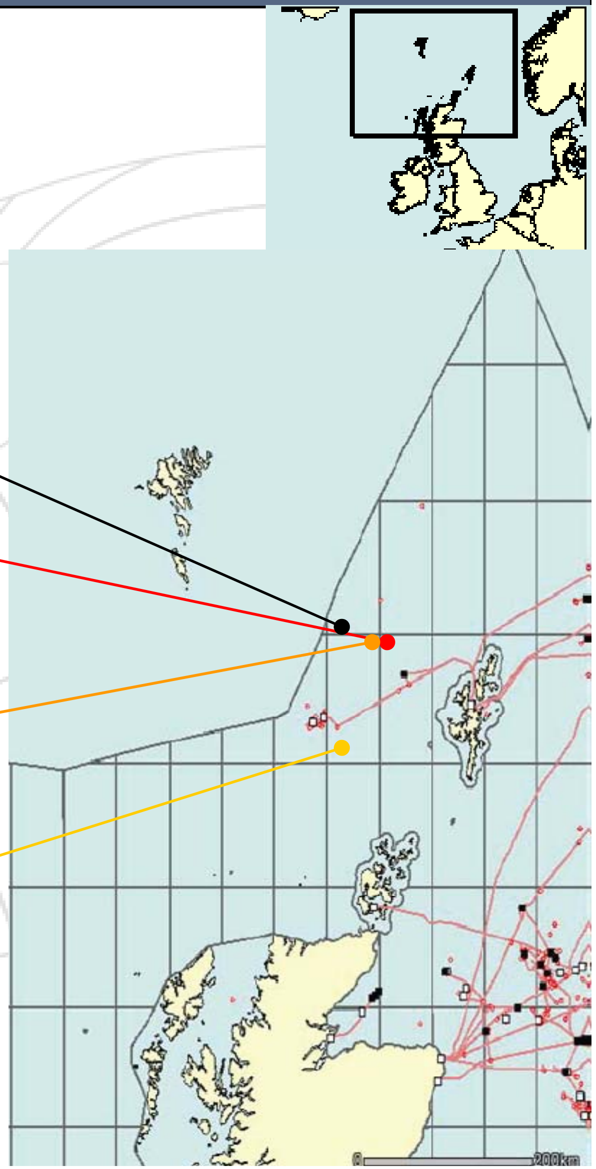
West of Shetland / Atlantic Margin

Rosebank & Lochnagar Oil & Gas Fields

Laggan Gas Field

Tormore Gas & Condensate Field

Solan Oil Field



Legend
Surface Infrastructure
- Platform
- Other

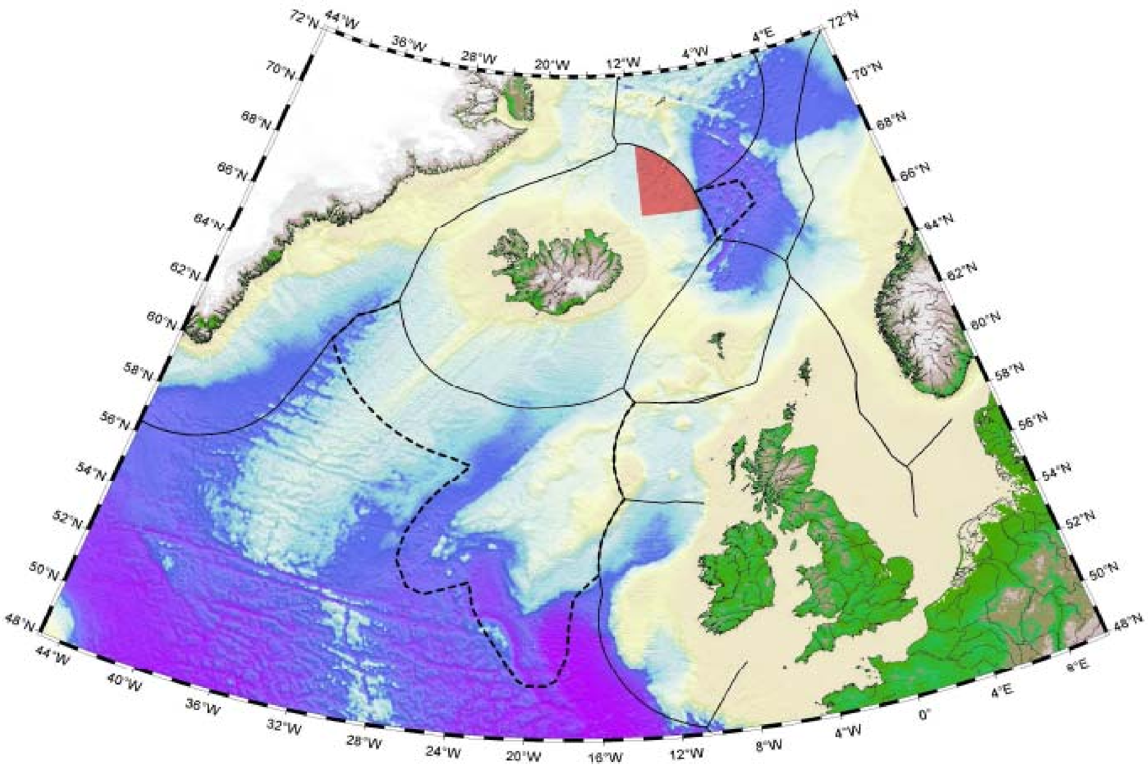
Subsurface Infrastructure

Pipe/Umbilical
- Proposed
- Existing

Safety Zone
- HSE surface
- SI subsea
- Quad
- Coast

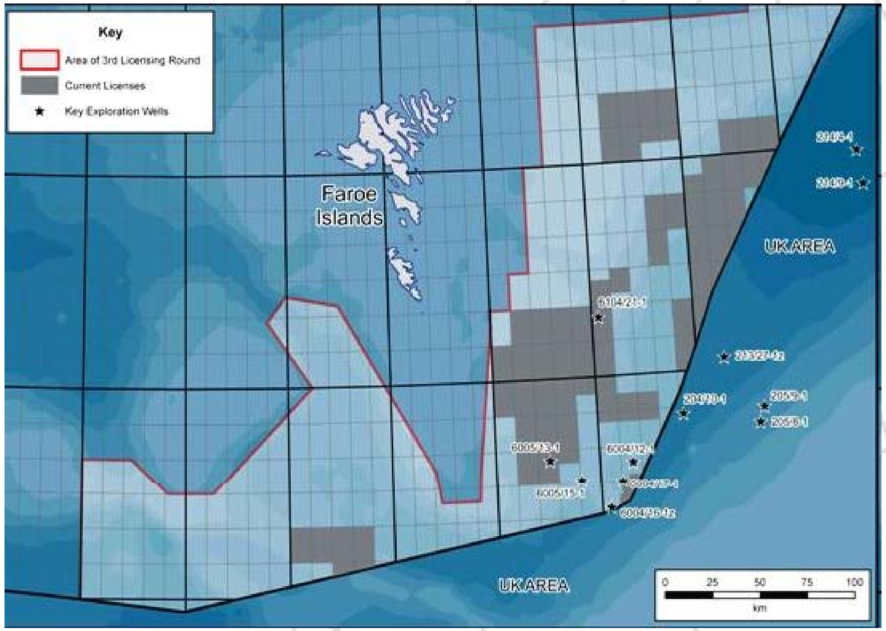
West Of Shetland/Atlantic Frontier - Iceland

The Icelandic government is to start tendering exclusive licenses in January 2009 for oil exploration in the Dreki area (in the Atlantic, northeast of Iceland on the Jan Mayen Ridge, between Iceland and Jan Mayen Island). Water depths are between 1000 and 2000 metres in about 80% of the area. About 30% of the area on offer is covered by a treaty with Norway, which gives Oslo the right to take a 25% stake in licences. The Dreki area's potential at an estimated 15 billion to 20 billion barrels of oil equivalent.



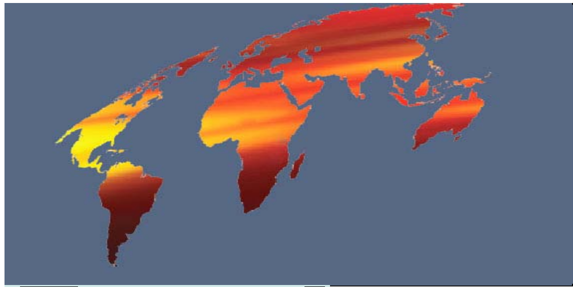
West Of Shetland/Atlantic Frontier – Faroe Islands

The Faroe Islands has unveiled its third licensing round, with applications due in on 3 November.
The acreage on offer covers 38,405 square kilometres to the east, south and south-west of the islands in the North Atlantic between Iceland and Norway. Awards will be made by the end of the year.
The ministry said proposed work programmes will play a large role in terms of awards.
Only six exploration wells have been drilled around the Faroes, a self-governing Danish territory.
The most recent was the deep-water William probe drilled by BP earlier this year. William was suspended in April after no hydrocarbons were found. The Faroe Island Energy Minister has indicated the any discoveries will be produced via facilities and infrastructure in Shetland due to lack of existing infrastructure in the Faroe Islands.



Northern North Sea - UK

- Discovery of the southern North Sea gas fields and, by 1970, several billion-barrel oil fields in the central North Sea encouraged oil companies to explore in the deeper, less hospitable waters of the northern North Sea.
- Seismic surveys revealed a pre-Cretaceous unconfmity with 'highs' forming potential oil traps. One of the largest of these buried 'highs' was drilled by Shell/Esso, and oil was found in quantity in Middle Jurassic deltaic sandstones. This led to the discovery of eight major oil fields with reserves in excess of 7500 million barrels.
- Detailed studies of the sandstone reservoirs of the Brent Delta are enabling petroleum geologists and engineers to maximize recovery from these northern fields.



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A UK Perspective

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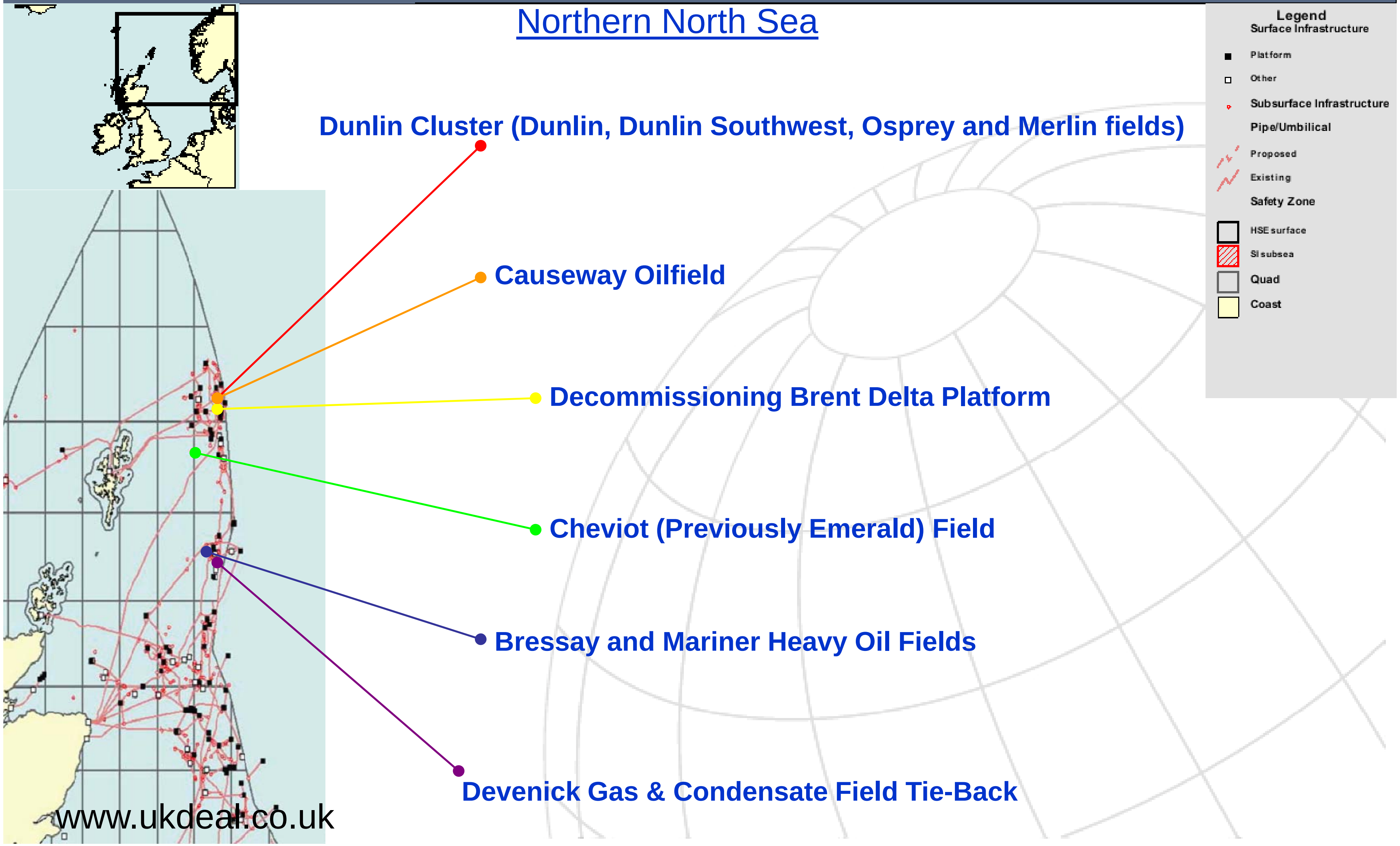


Dunlin Cluster (Dunlin, Dunlin Southwest, Osprey and Merlin fields)

Causeway Oilfield

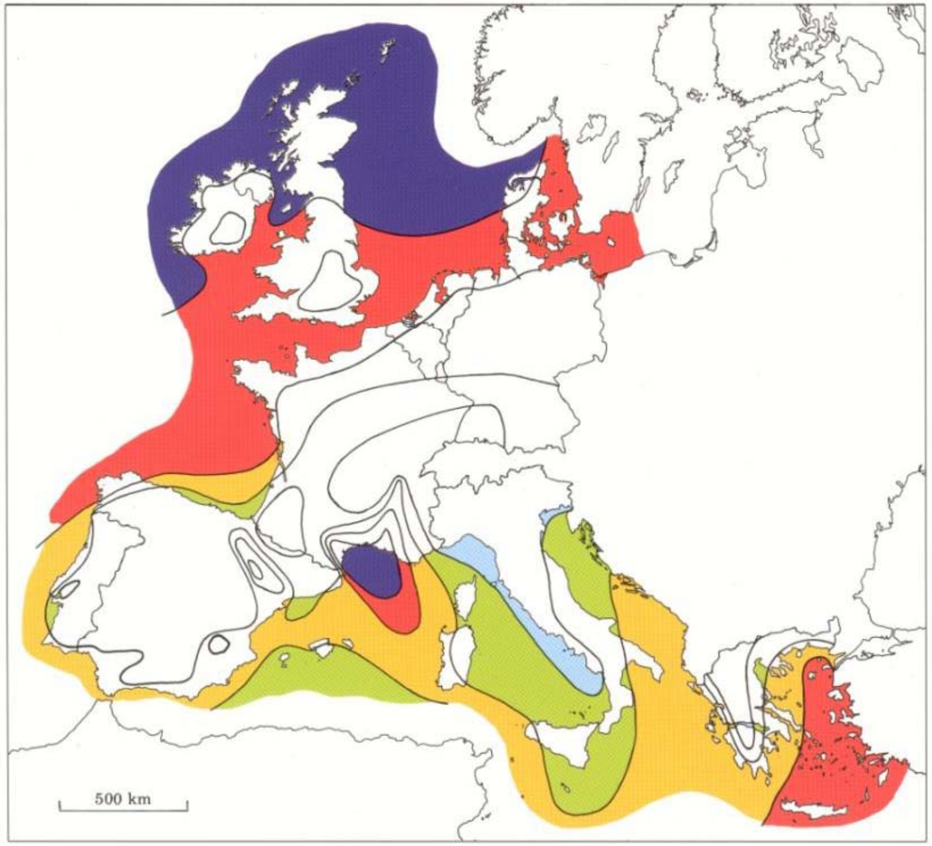
Decommissioning Brent Delta Platform

Cheviot (Previously Emerald) Field

Bressay and Mariner Heavy Oil Fields

Devenick Gas & Condensate Field Tie-Back

UK Offshore Wind Power



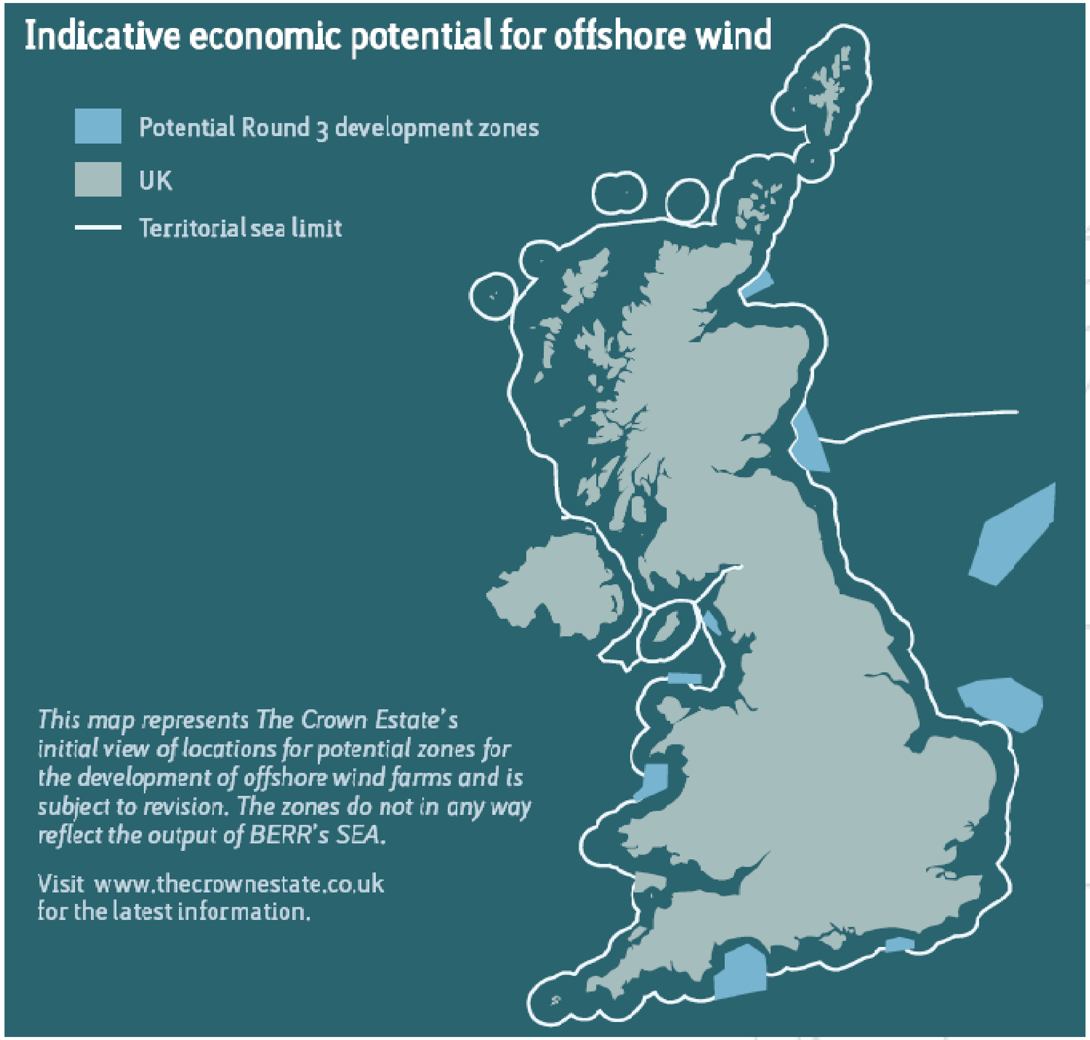
Wind resources over open sea (more than 10 km offshore) for five standard heights										
	10 m		25 m		50 m		100 m		200 m	
	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}	$m\,s^{-1}$	Wm^{-2}
	> 8.0	> 600	> 8.5	> 700	> 9.0	> 800	> 10.0	> 1100	> 11.0	> 1500
	7.0-8.0	350-600	7.5-8.5	450-700	8.0-9.0	600-800	8.5-10.0	650-1100	9.5-11.0	900-1500
	6.0-7.0	250-300	6.5-7.5	300-450	7.0-8.0	400-600	7.5- 8.5	450- 650	8.0- 9.5	600- 900
	4.5-6.0	100-250	5.0-6.5	150-300	5.5-7.0	200-400	6.0- 7.5	250- 450	6.5- 8.0	300- 600
	< 4.5	< 100	< 5.0	< 150	< 5.5	< 200	< 6.0	< 250	< 6.5	< 300

Scotland has 25% of Europe‘s offshore wind energy potential

Capacity factors in Scottish and UK waters are high, 40-55%, offering higher returns on investment

The Robin Rigg 180MW project in the Solway Firth is due to be completed in 2009 - largest offshore wind farm yet to be constructed in the UK.

UK Offshore Wind Power



In June, The Crown Estate launched the third round of offshore wind farm leasing, to be known as Round 3. The Crown Estate will take a prominent lead role in the programme, which will take wind farm development to new heights in the UK.

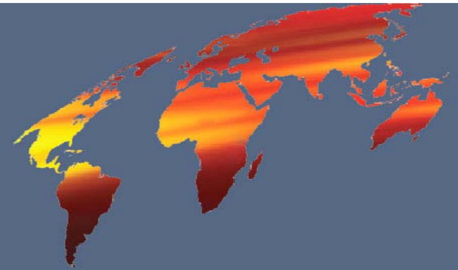
ROUND 3 will see up to 25GW of offshore wind energy generated, and the way in which The Crown Estate, as owner of the UK seabed, will facilitate this will be very different to the role it played in Rounds 1 and 2. The Crown Estate has initially identified zones around the UK where it sees good economic potential for offshore wind farm development. It has also announced that it will be co-investing up to 50% of the costs of developing the zones, and identifying specific sites within each zone where wind farms could be built.

The tender closes in March 2009. A shortlist will be drawn up soon after, and awards to zone partners will be made by the end of 2009.

UK Offshore Marine Energy

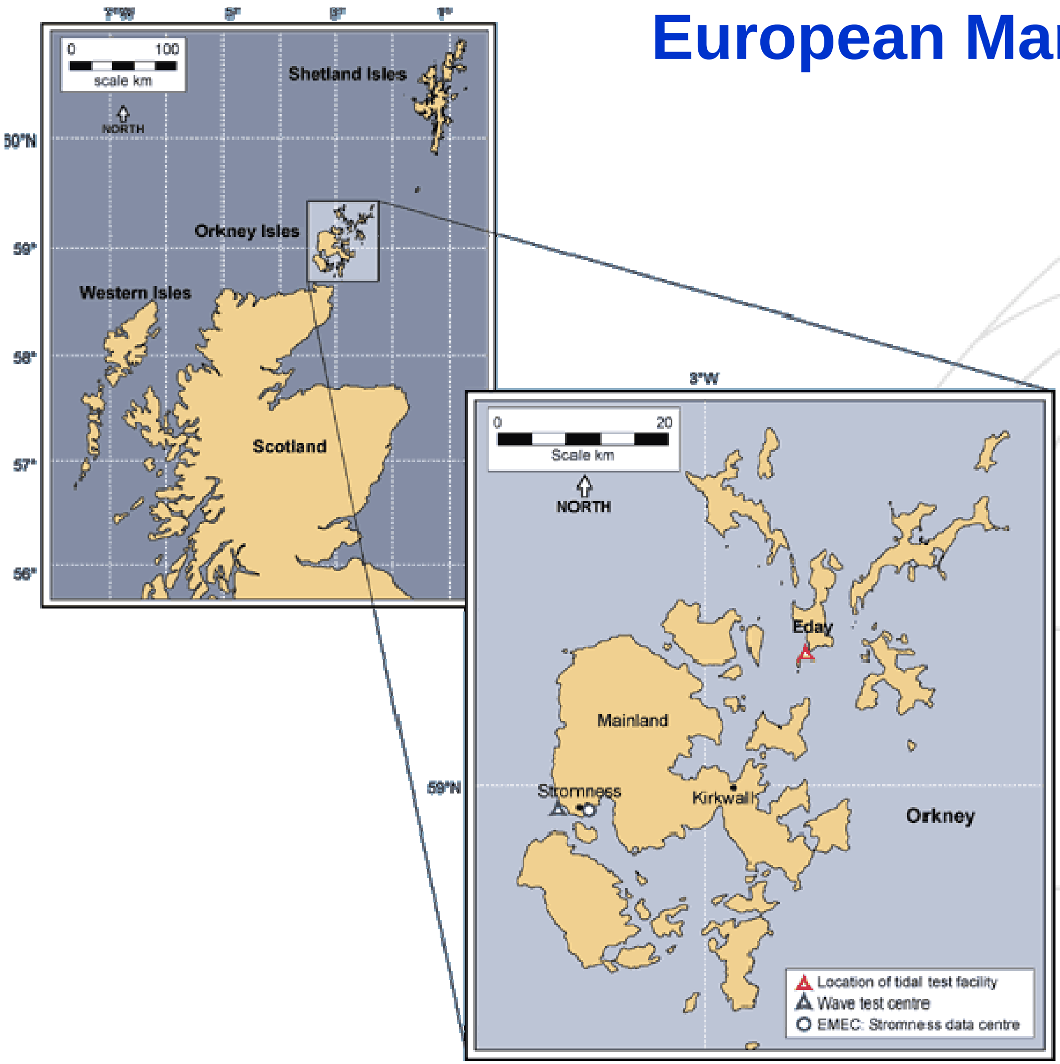
The 1.2 MW SeaGen tidal flow generator in Northern Ireland's Strangford Lough.

It is estimated that between 15 and 20% of current UK electricity demand could be met by wave and tidal stream energy, which is equivalent to carbon dioxide abatements of several tens of millions of tonnes. The UK is in a prime position to capitalise on the growing interest in marine energy; it has considerable indigenous energy resource and is a global centre for marine energy. Already home to the European Marine Energy Centre, the UK also has a concentration of technology development companies and a globally renowned offshore energy industry, with highly relevant knowledge and skills that can be deployed to drive forward the development of the marine energy industry.



UK Offshore Marine Energy

European Marine Energy Centre - EMEC



5 Wave Berths

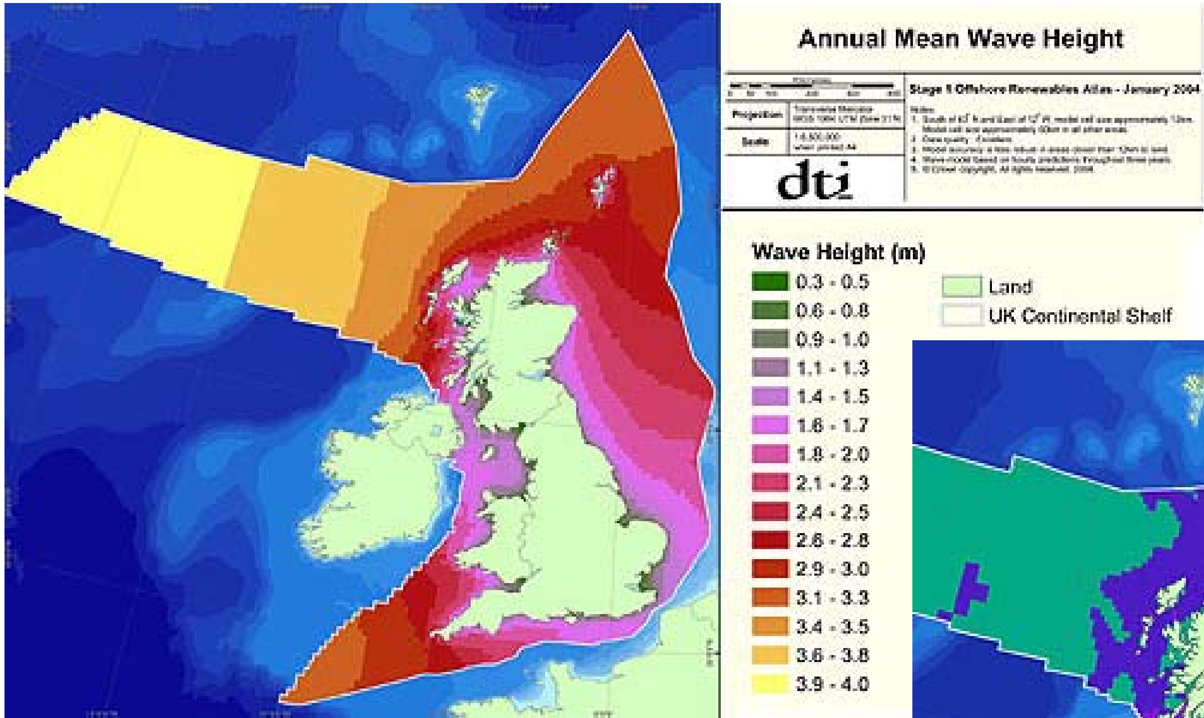
- world's only grid connected wave and tidal test centre
- 4 deep water wave berths and one near shore
- based in Orkney, Scotland
- UK Accreditation Standard

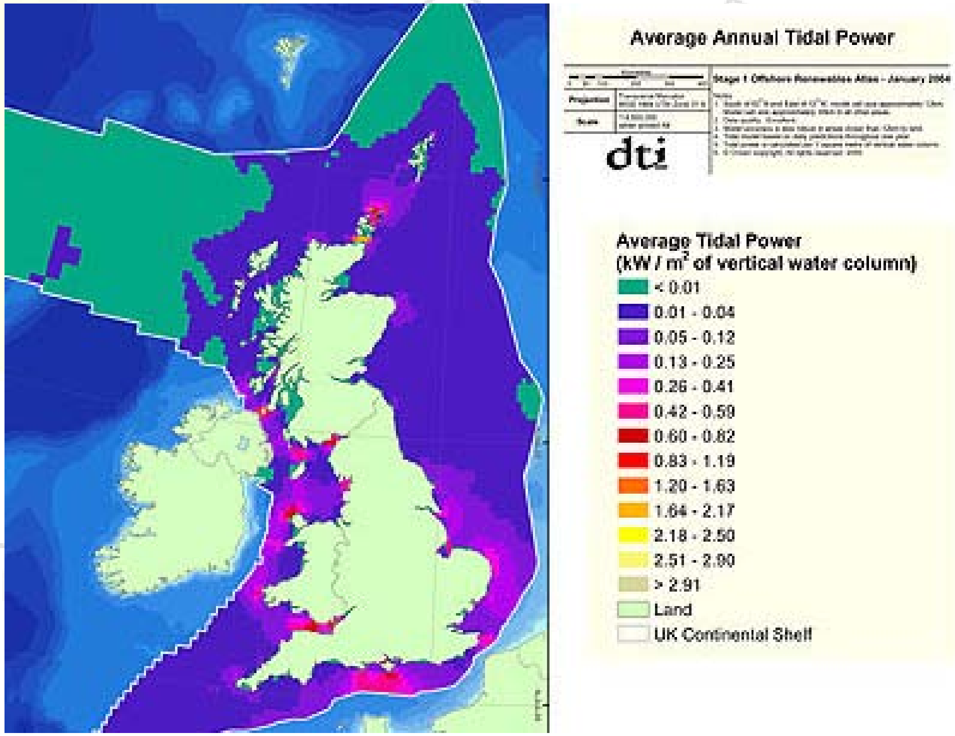
5 Tidal Berths

•open sea, grid connected
•5 x 11kv, 5MW subsea cables
•independent controls for each cable
•Pentland Firth has largest tidal resource in Europe
•substation houses switchgear, backup generator & communications equipment

UK Offshore Marine Energy

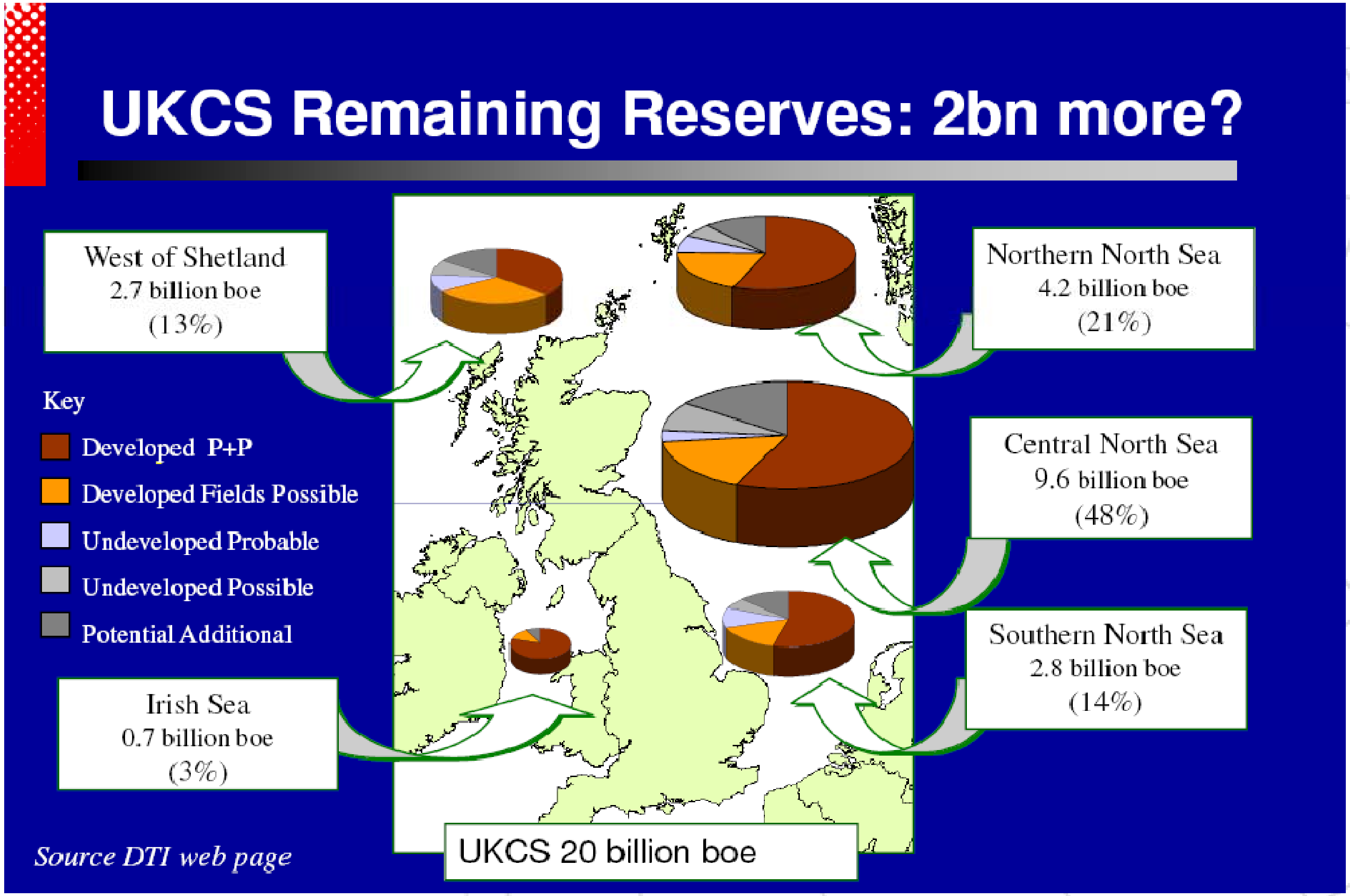
Scotland’s position next to the Atlantic Ocean results in tremendously energetic waves





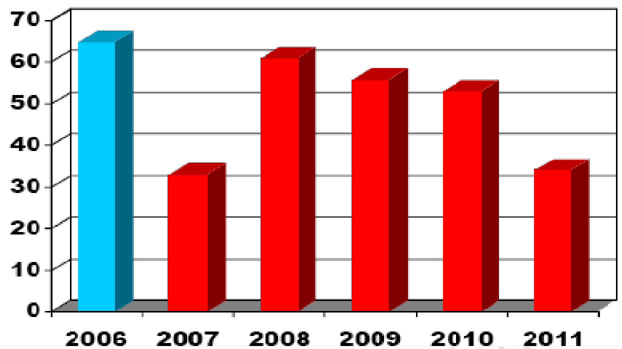
Scotland has over 70% of the UK’s tidal power which estimated at 13 billion kwh per annum

The Future of the UKCS



UKCS – XT Target Market Potential

Client \ Year	2007	2008	2009	2010	2011	PERIOD TOTAL
Chevron	2	12	15	14	4	47
Talisman	5	8	8	8	5	34
Venture	7	4	6	5	3	25
Total		9	4	6	3	22
Oilexco	1	5	4	4	4	18
Ithaca	6	2	6	2	2	18
Additional Projects	12	21	13	14	13	73
Unidentified Projects						
TOTAL PR. YEAR	33	61	56	53	34	237



Market Value
~$ 200 M/yr

- Forecast 2007 – 2011
- Actual 2006

Not considered in the forecast:
- Shallow water market
- Competitors' frame agreements, i.e. Shell, BP, Maersk, Nexen

Source: FMC Technologies

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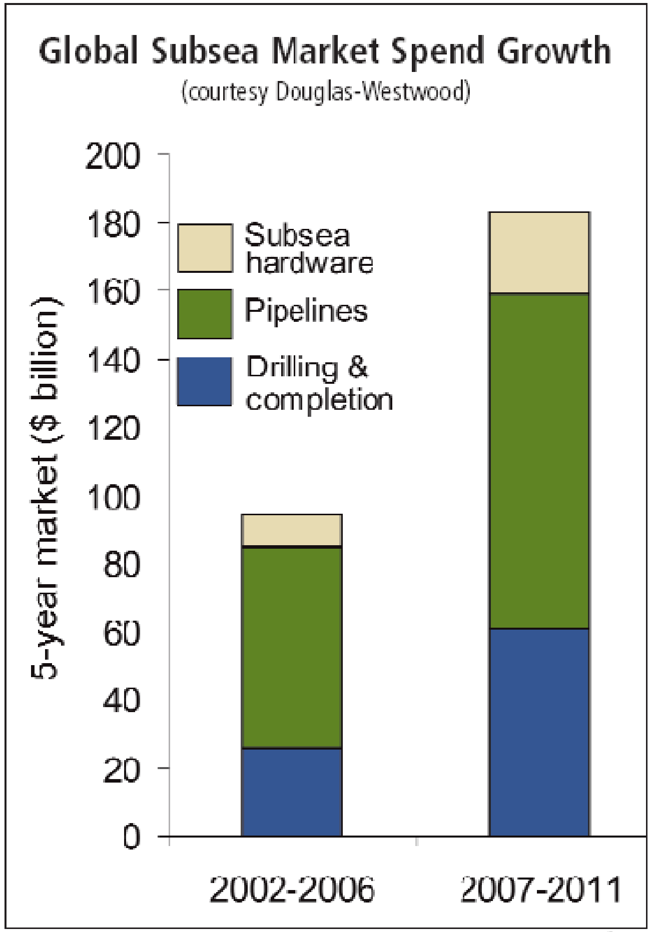

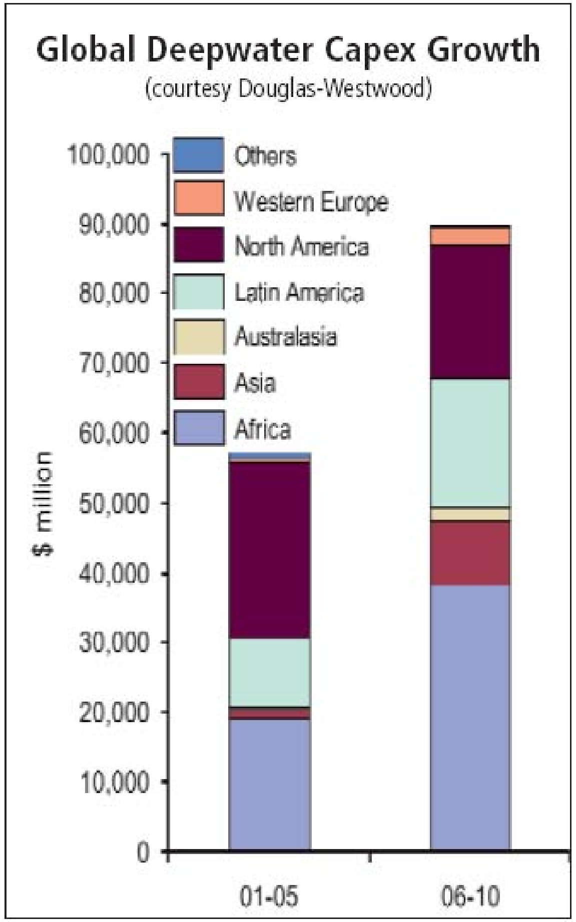

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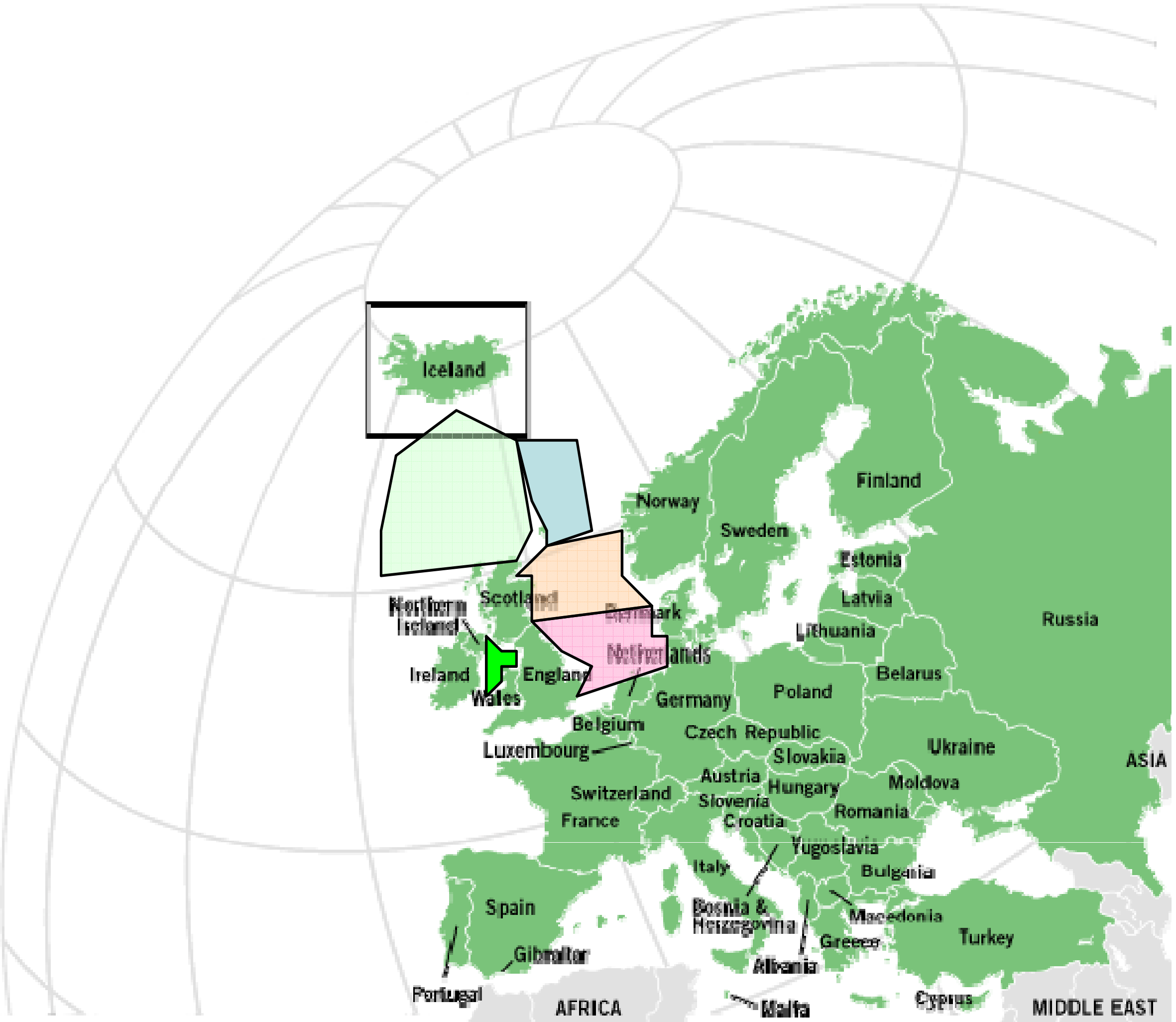

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