

Offshore Wind In the UK

Mike Blanch

- DECC's UK Renewables Service
- Why the UK needs renewables
- Why offshore wind is so important
- The market
- Maximising UK content

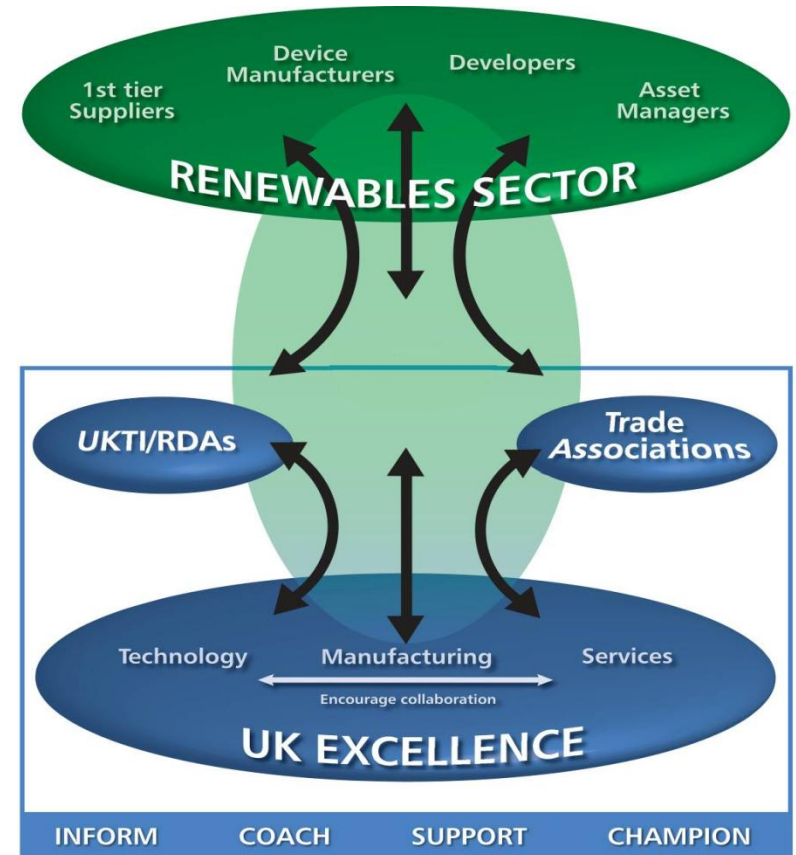
Trade promotion and supply chain development service to:

“support the growth of a world-scale UK renewable energy industry with increasing global market share, and capabilities sufficient to support the achievement of the UK’s 2020 renewable energy targets”

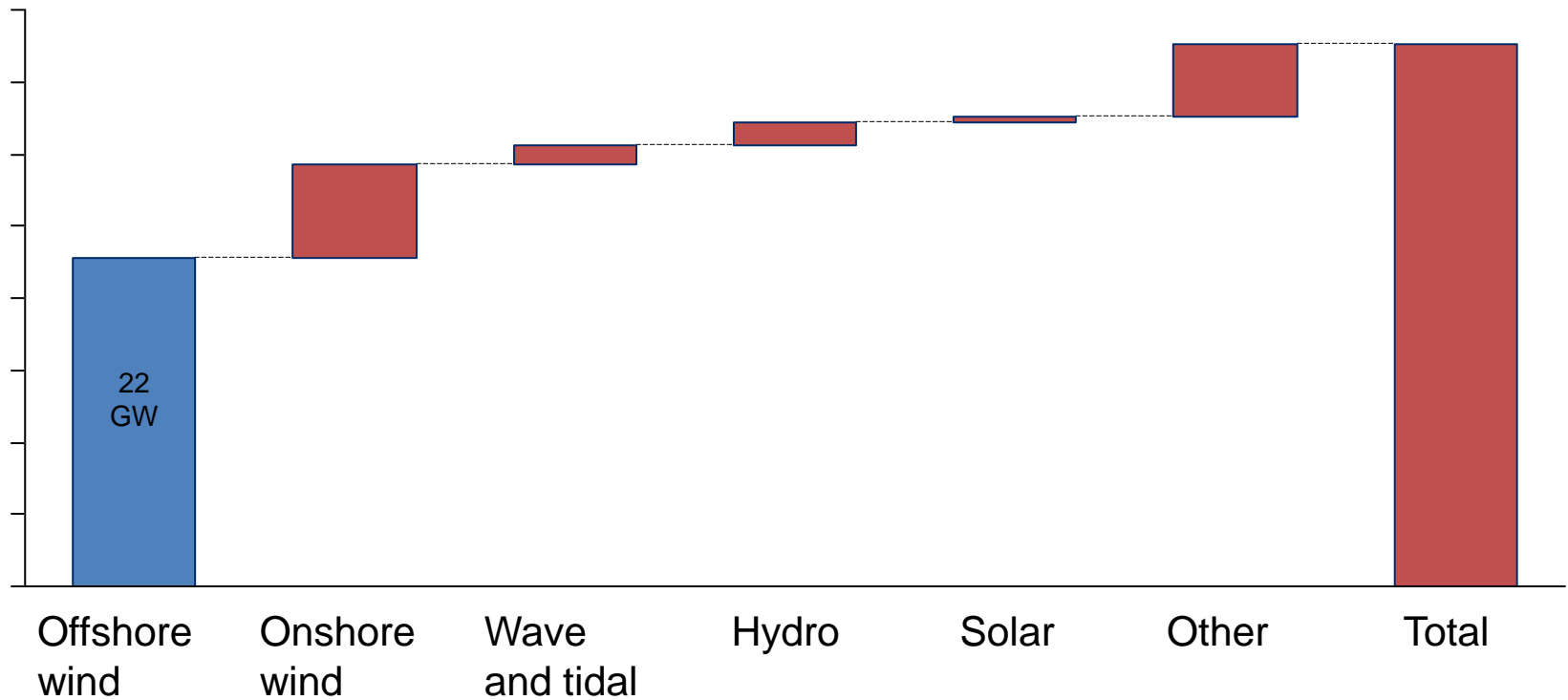


DECC's UK Renewables Service

- Inform, coach, support and champion UK businesses
- Focus on excellence
- Respond to requests :
 - Wind industry
 - Market entrants
 - UK enabling bodies
- Host UK stands at global events
- Proactively create opportunities for UK:
 - Supply & innovation
 - Inward investment & joint ventures



Why Offshore Wind is so important to the UK

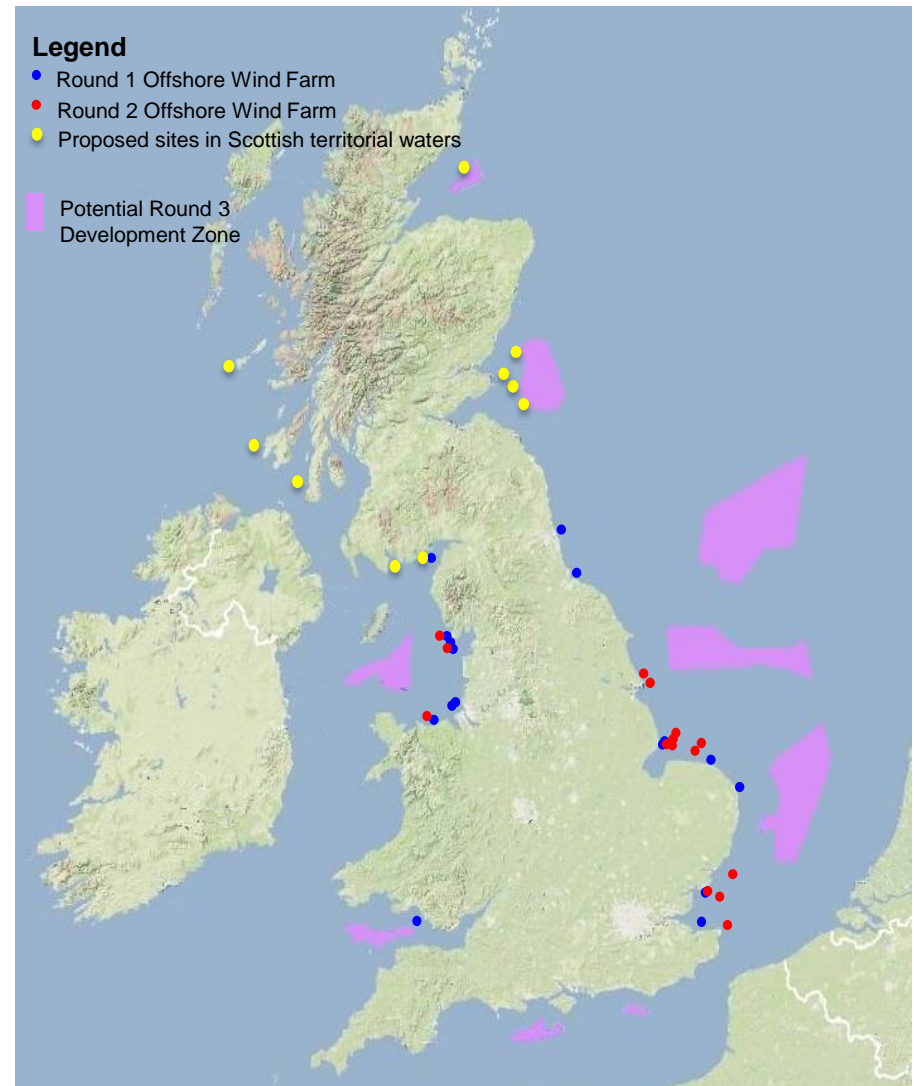


Offshore wind is the best placed technology to deliver 2020 electricity targets

Forecast UK 2020 electricity supply in 30% scenario

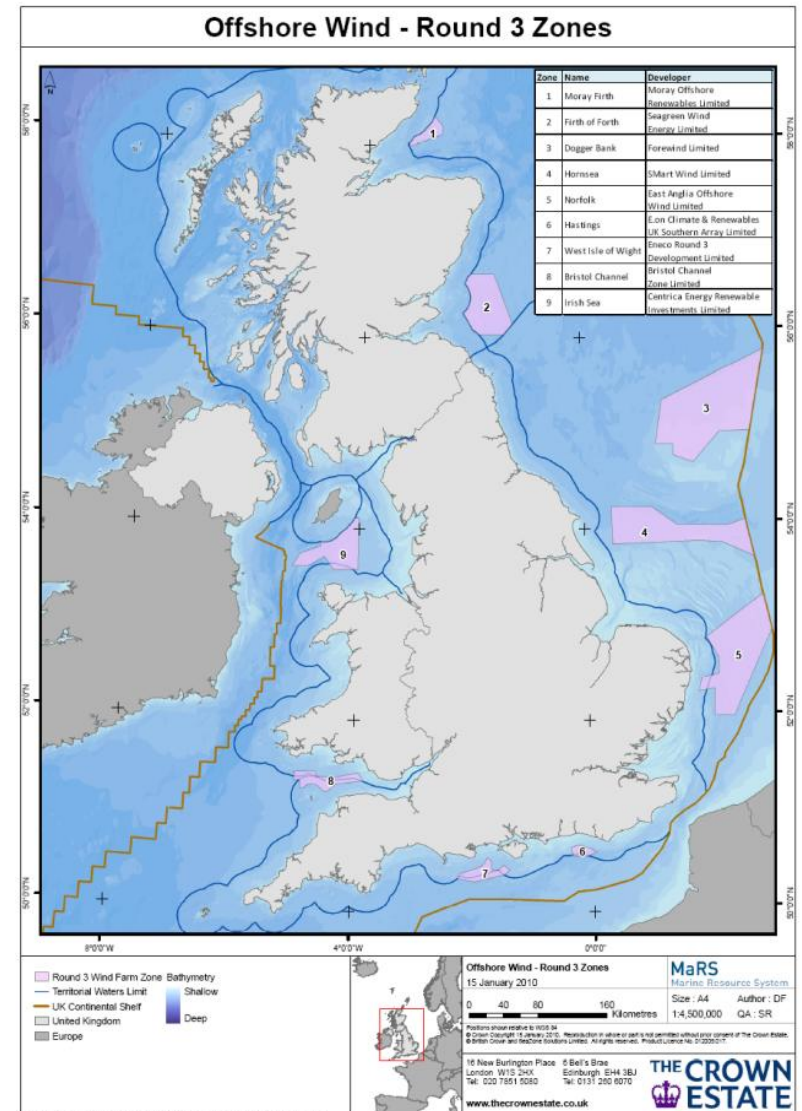
It is an achievable goal...

- Already the world leader
 - 4.1GW operating (900MW+ offshore #1 globally)
 - 9.4GW consented (3.1GW offshore)
 - 2009 1st GW+ year
 - By 2020 #2 in EU; offshore #1 globally
- Best wind resource in the EU
- Sustained and growing portfolio
- Strong framework for development (DECC, Crown Estate, Ofgem, marine planning etc.)
- Good history of consenting
- Good history of delivering on time
- Good history of Government commitment

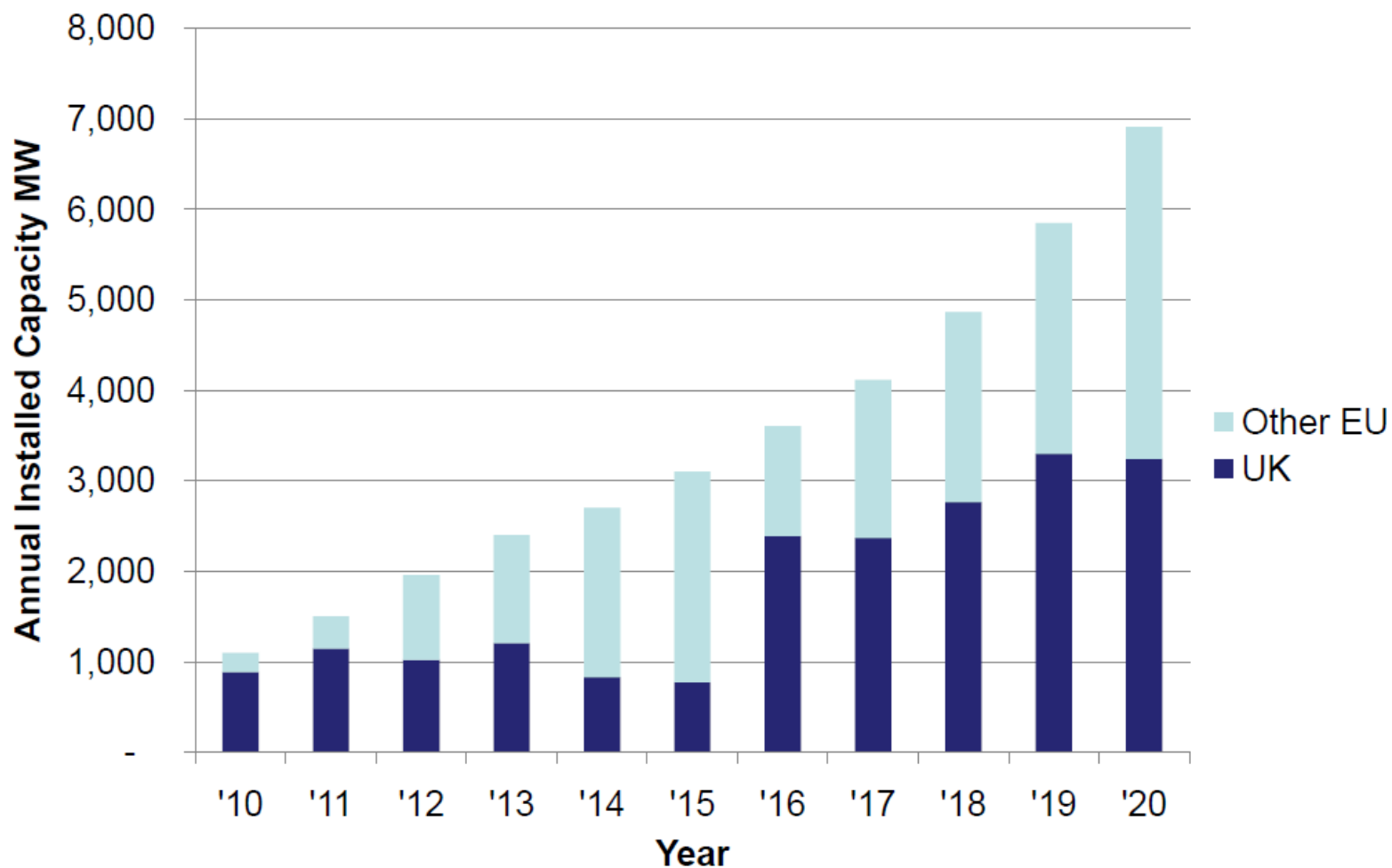


...but a huge challenge

- Number of turbines to be installed
- Water depth
- Distance from shore
- Capital Cost

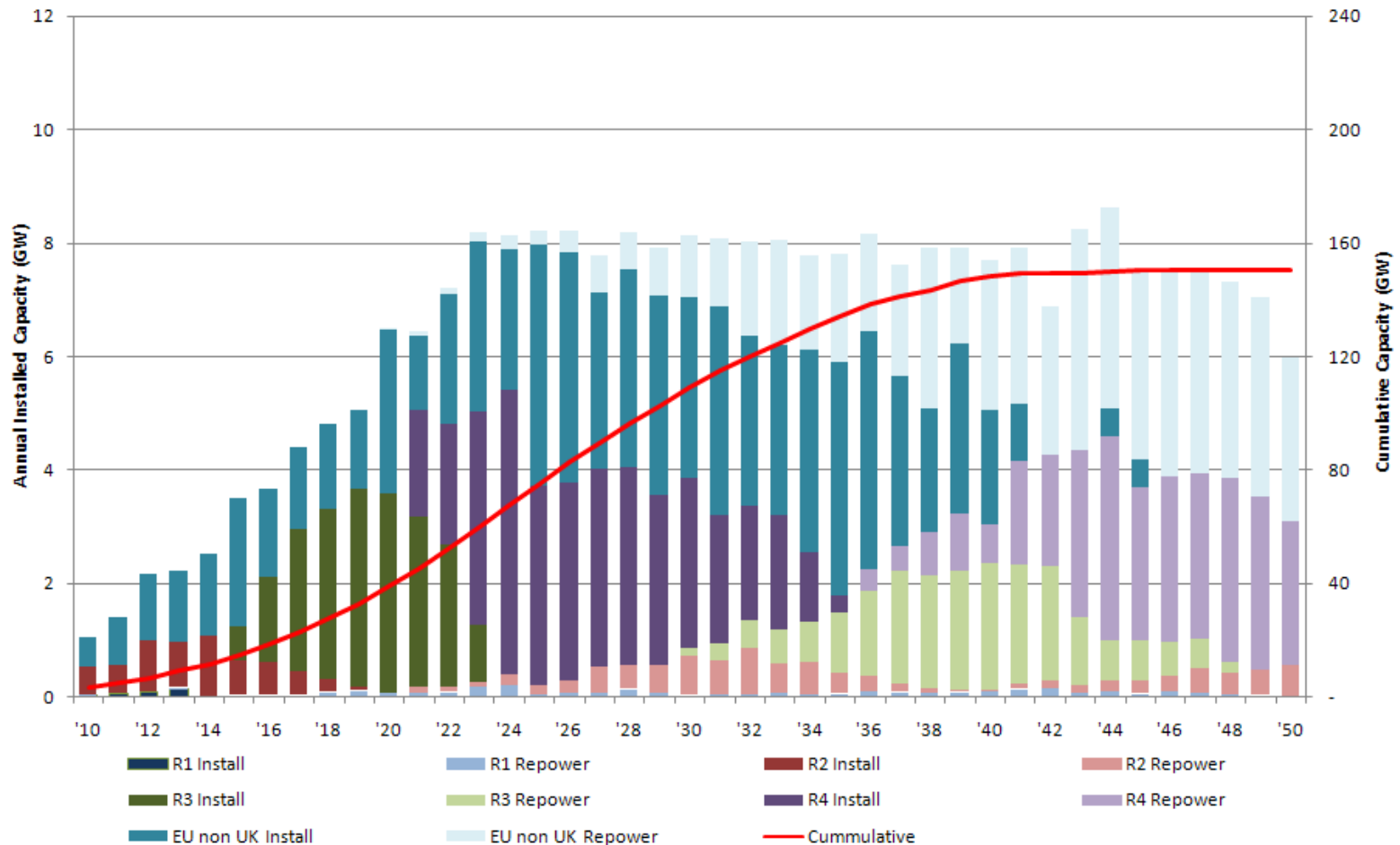


Expected UK Offshore Wind Installed Capacity



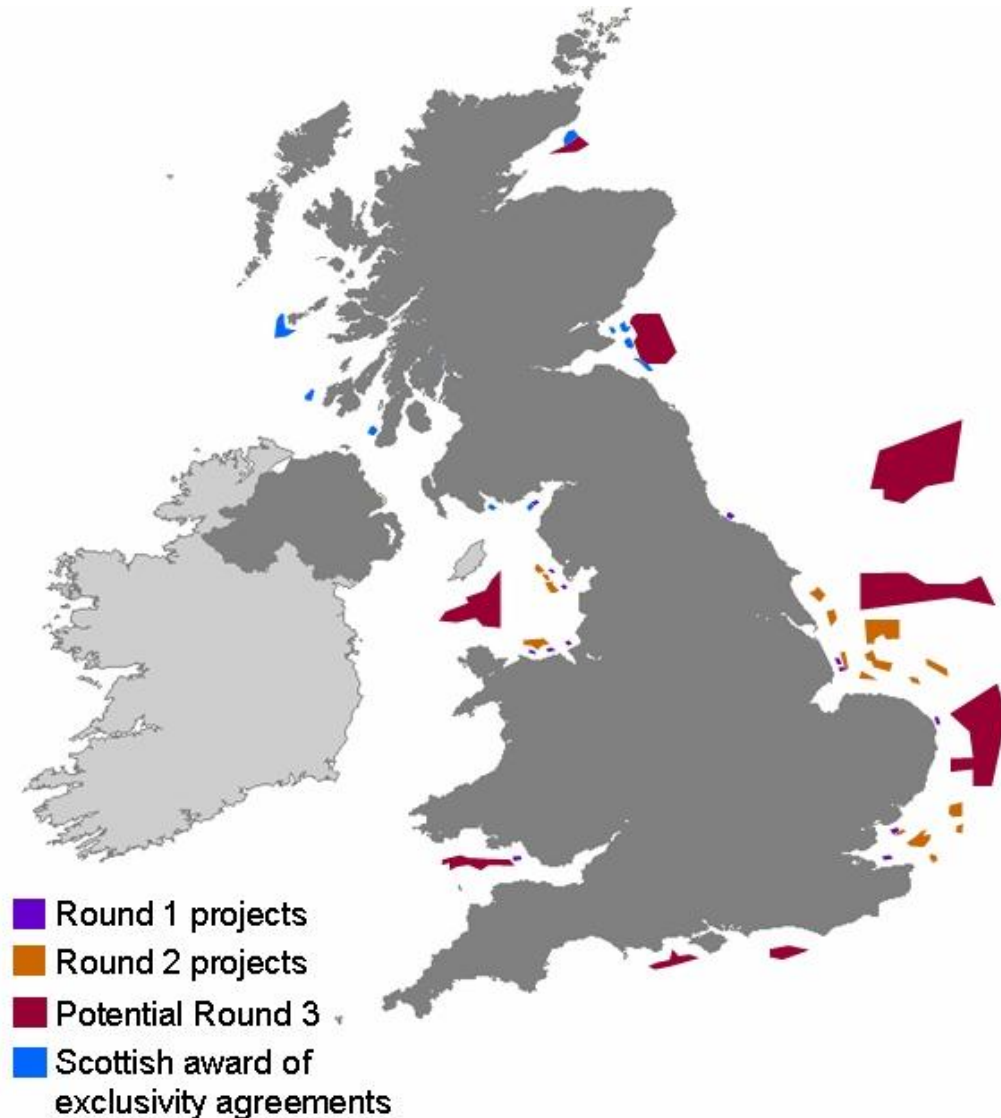
This is a long term commitment

Market is forecast to see long term activity allowing greater investment



Addressing barriers to deployment

- Effective & proactive planning regime
- Robust evidence bases for decisions
- Provide market certainty – e.g. SEA process
- Addressing grid, radar & aviation issues



Maximising UK content

Meeting the UK offshore target will need an estimated £75 billion capital investment

Opportunity for generating UK economic benefit and green jobs

Recognised that skills and facilities aren't in place at the moment so cooperation and engagement with Continent needed

Major goal is to build a substantial UK offshore wind supply chain



Maximising UK content

Meeting the UK offshore target will need an estimated £75 billion capital investment

Opportunity for generating UK benefit and green jobs

Recognise

plan

... in
... and
... needs

PO.46

... to build
... supply of

PO. 14

**UK Offshore Wind Energy:
A vision for industrialisation**
Mike Blanch, Ian Fletcher, Bruce Valpy
BVG Associates

Value of the Wind Industry to the UK
Alun Roberts, Mike Blanch, Chris Jones, Bruce Valpy
BVG Associates

DEPARTMENT OF
**ENERGY
& CLIMATE CHANGE**
Office for Renewable Energy Deployment
DECC's UK Renewables Service

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Backing words with action

- UK has a built a world-class market
- Now attracting world class industry leaders to base themselves here and government is leading this process
- UK Government also recognises that costs need to be driven down
- Has already allocated large multi-million grants to key manufacturers including Siemens, Vestas, Mitsubishi, Clipper, BiFab and TAG (Tees Alliance Group)
- Building up world class testing and R&D facilities e.g. £30m supporting a drive train test rig in the North East
- Carbon Trust's Offshore Wind Accelerator programme which is developing innovations in foundations, access systems, wake effects and electrical systems



UK Supply Chain Capability






- The UK has hundreds of companies experienced in the wind industry.
- The UK has the world largest offshore installation experience.
- Some examples of UK capability:

Company	Capability
Anderson Precision Gears	Gears
B9 Energy (O&M) Ltd	O&M services
BAE Systems	Radar solutions
BGB Engineering	Sliprings
BiFab (Burntisland Fabrications)	Foundations
Bryan J Rendall (Electrical) Ltd	Generator servicing
Compact Orbital Gears	Gears
Converteam Ltd	Inverters and generators
Coupe Foundry	Castings
Culham Lightning	Lightening testing
Fibreforce Composites	Composite components
Formax	Composite re-inforcements
FT Technologies	Ultrasonic anemometers
Gill Instruments	Ultrasonic anemometers
Hindle Gears	Gears
Hydratight	Bolt tensioning
JDR Cable Systems	Subsea cables

Company	Capability
Latchways plc	Fall arrest systems
Limavardy Gear Company (LGC)	Gearbox servicing
Lofrix Associates	Gearbox additive
Macom	Condition monitoring
MOOG (Insensys Ltd)	Condition monitoring
MPI Offshore	Jack-up vessels
NaREC	Blade testing
Phoenix Bearings	Bearings
QinetiQ Ltd	Development studies
Ricardo UK Ltd	Gearbox technology
Romax	Gearbox technology
Rotabolt	Bolt tensioning
Seajacks UK Ltd	Jack-up vessels
Serck Controls	SCARDA data
SLP Energy	Foundations
Solent Composite Systems	Blade components & materials
Tentec	Bolt tensioning
WindPower Renewable Solutions	Spares management service

UK Supply Chain Capability

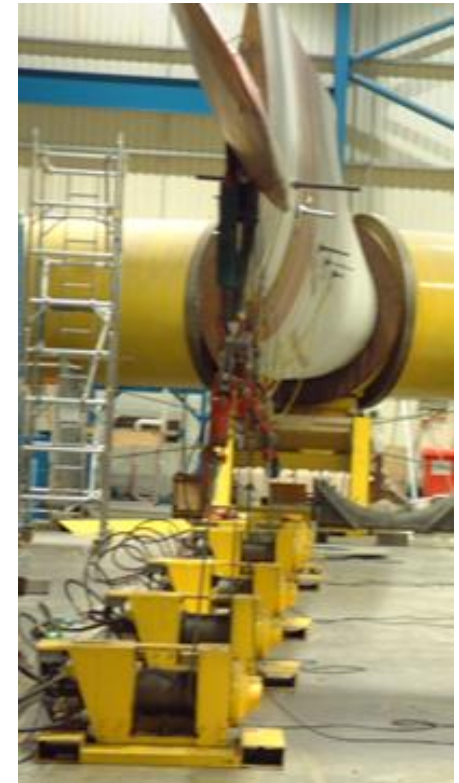
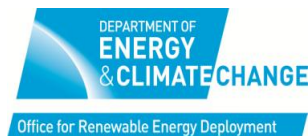
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- Some examples of UK capability:

Company	In addition manufacturers that have located or stated public intention to locate in UK include...		
Anderson Pre	<div></div> <p>...with many others considering the UK.</p>		
B9 Energy (O&			
BAE Systems			
BGB Engineer			
BiFab (Burntis			
Bryan J Renda			
Compact Orbi			
Converteam L			
Coupe Foundr			
Culham Lightr			
Fibreforce Cor			
Formax			
FT Technolog			
Gill Instrumen			
Hindle Gears			
Hydratight			erials
JDR Cable Systems	Subsea cables	Tentec	Bolt tensioning
		WindPower Renewable Solutions	Spares management service

- DECC
 - National Wind Turbine Test Centre
 - Environmental Technology Fund (£30m+)
- The Carbon Trust
 - Offshore Wind Accelerator (£50m+)



- Energy Technologies Institute
 - 3-4 wind turbine designs (£10m phase 1)
 - Condition monitoring (£5m)



- The Crown Estate
 - Supporting demonstration of new technology
- Technology Strategy Board
 - Regular public funding rounds in materials and other related areas
- EPSRC
 - Underpinning research
 - Funding of doctorates etc.
- Regional Funding
 - Eg. Northern Way Innovation Programme



- The Crown Estate
 - Supporting demonstration of new technology
- Technology Strategy Board
 - Regular public funding rounds in many other related areas
- EPSRC
 - Underpinning research
 - Funding
- Researcher's Career Development Innovation Programme

Offshore Innovation in the UK:
charting new waters
Dr Alun Roberts, Bruce Valpy
BVG Associates



Why invest in the UK?

- Best offshore wind market, sustained long-term
- #1 investment location in Europe
- Competitive tax environment
- Strong, flexible labour market (not experienced in wind turbine technology)
- One of most productive locations for innovation
- Global financial centre; international language
- Government committed to green jobs
- Power sold in £ - buying in £ reduces exchange rate risk

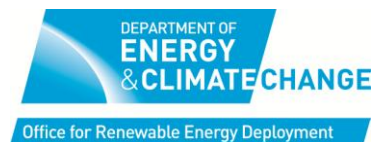


Doing Business in the UK

- Easiest country in EU to do business in. Rated best for by World Bank (2008):
 - Starting a business
 - Employing workers
 - Registering Property
 - Raising finance
 - Protecting Investors
 - Low taxes
 - Competitive salaries
 - Flexibility of workforce
- More than 50% of European HQ's in UK (Ernst & Young, 2008)
 - Open and transparent system for foreign workers
 - Stable economic and political environment
 - Sound legal and regulatory environment
 - Good international transport links and communications infrastructure
 - Strong access to talent (38,620 engineering graduates per year) HESA, 2007
 - Globally recognised innovators and business leaders



Supply Chain Enablers – National



Supply Chain Enablers – Regional



- Sites available
- Understanding growing
- Dialogue deep
- Industry focussing on East Coast
- UK Ports Prospectus



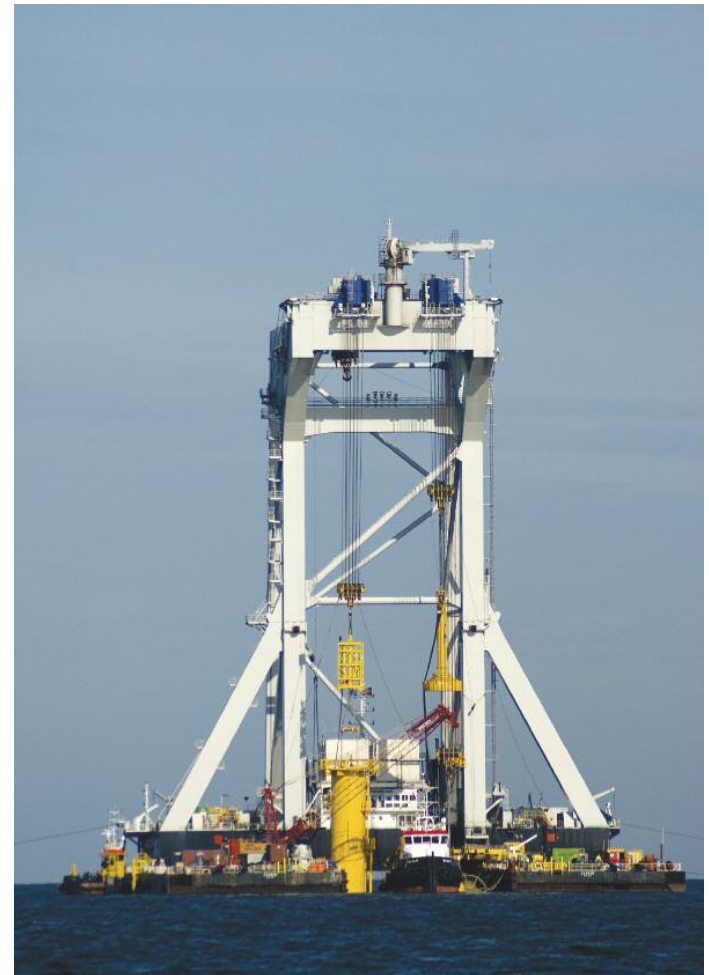
DECC's UK Renewables Service – here to help

- We can connect you to UK:
 - Ports
 - Suppliers
 - Innovators
 - JV collaborators
 - Funders / enablers
 - Customers
- We will work with you to:
 - Explain how UK works
 - Smooth your journey
 - Help you **collaborate** with UK



Summary

- UK is leading in offshore wind
- UK wants economic benefit not just to meet targets
- UK wants to **collaborate** more to deliver
- DECC's UK Renewables Service is here to help make it happen



Thank You

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DECC's UK Renewables Service