



# EIC

## Offshore Wind Supply Chain Challenges

MAY 2012



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## **The EIC**

The EIC is the leading trade association for UK companies supplying goods and services to the energy industries worldwide. The EIC has over 600 Member companies and provides them with the capability to understand, identify and pursue global business opportunities.

The EIC membership comprises contractors and suppliers from all areas of the energy sector who make a significant contribution to the UK economy.

The EIC services include: EIC DataStream, our unique global projects tracking database; EIC Consult, our market and bespoke consultancy group, business / networking events in the UK and overseas; trade missions and exhibitions; training and marketing / information services. The EIC was established in 1943 and is a not-for-profit organisation independent of government.

## **EICDataStream**

EICDataStream is the EIC's online projects tracking database. We currently track over 9,000 energy projects around the world and across a range of sectors in the energy industries, representing billions of dollars of potential capital expenditure.

Our team of industry experts make daily updates to EICDataStream, giving Member companies an unparalleled level of in-depth information including contact details of key decision makers throughout the supply chain.

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## Abbreviations

DECC	Department of Energy and Climate Change
EPC	Engineering, Procurement and Construction
AREG	Aberdeen Renewable Energy Group
SEA	Strategic Environmental Assessment
IPC	Infrastructure Planning Committee
NSIP	Nationally Significant Infrastructure Projects
EIA	Environmental Impact Assessment
ES	Environmental Statement
DCO	Development Consent Order
NGET	National Grid Electricity Transmission
GB	Great Britain
SPT	Scottish Power Transmission
SHETL	Scottish Hydro Electric Transmission Limited
SONI	Systems Operator of Northern Ireland
Ofgem	Office of Gas and Electricity Markets
OFTO	Offshore Transmission Owner
PPA	Power Purchase Agreement
PFI	Public Financial Institutions
RFI	Request for Information
TED	Tenders Electronic Daily
EU	European Union
SME	Small and Medium Enterprises
EMR	Electricity Market Reform
CAPEX	Capital Expenditure
OEM	Original Equipment Manufacturers

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## I. Executive Summary

### Challenges in the Offshore Wind Supply Chain

As the country's offshore wind industry expands, the UK supply chain is under pressure to gain a footing within the sector. With this growth comes operational and strategic challenges and the need for the UK to compete with existing European suppliers. The EIC has undertaken research to identify these challenges and gain the thoughts of the UK Supply Chain, details of which will be presented and discussed at All-Energy 2012 alongside some potential strategies to overcome these.

The UK has the largest number of proposed offshore wind farms and could see a further 35GW of capacity added with an estimated value of £112.16bn. The UK supply chain sees a future for their businesses in offshore wind. However, there are concerns about whether projects will actually be built and supply chain development. Improved communication and better education about the sector could potentially remove or reduce a number of barriers and challenges which were voiced by both the supply chain and developers. Advice to those looking to work in the sector included understanding the market and the industry fully. Developers advised potential suppliers to really know their business and how their product or service can benefit them. It is important that new entrants to the industry recognise that it is not an easy industry to break into and that it can take a few years. However, there are opportunities for UK businesses to tap into if they are willing to put in the work.

### Acknowledgements

A huge thank you to EIC member companies who completed our questionnaire and participated in the focus groups. Thanks must also go to David Wylie from Centrica, Alastair Gill from RWE npower renewables, Robert East from SSE, Ali Qureshi from Iberdrola, Steven White from Alstom, Julian Brown from Areva and Matthew Knight from Siemens for their help in this investigation.

## 2. Introduction

The UK has a target of achieving 15% of its energy consumption from renewable sources by 2020 as set out in the 2009 Renewable Energy Directive. The Scottish Government has set itself the target to deliver 100% of its energy consumption from renewable sources by 2020. Offshore wind will play an important role in achieving these ambitious targets. In 2011, the Department of Energy and Climate Change (DECC) published its Renewables Roadmap with the aim of setting out a comprehensive action plan to achieve these targets and accelerate the deployment and use of renewable energy. The roadmap lists eight technologies that DECC envisage as having the greatest potential to meet the 2020 targets in a cost effective and sustainable way, with offshore wind recognised as having the potential of being the biggest contributor to achieving the targets. DECC has predicted that as much as 18GW of offshore wind could be deployed by 2020, with the possibility to reach 40GW by 2030. However, to achieve this target there are a number of challenges which must be addressed.

One key question is with such enormous investment from the government in the industry, are UK businesses benefiting?

### 2.1 Aim

The aim of this research is to investigate the challenges that exist in the UK offshore wind supply chain.

In order to achieve this aim the report will be divided into sections with the following objectives:

### 2.2 Objectives

- Establish the UK supply chain's view of the offshore wind industry as a whole and the opportunities available in the industry.
- Discover the views of the UK supply chain on what challenges exist in entering the offshore wind industry.
- Discover developers' views of the challenges facing the UK offshore wind supply chain.

- Examine suggestions of what can be done to overcome challenges in the UK offshore wind supply chain.

### 2.3 Methodology

In order to fulfil the aims of this research a questionnaire was sent to all EIC member companies. The questionnaire was designed to establish their views on the industry and what their concerns are. 69 member companies completed the questionnaire. Focus groups were also held in the EIC's offices in London and Aberdeen. The EIC also carried out a series of face to face and telephone interviews with main developers and turbine suppliers. Internet sources have also been used as part of this research.

#### KEY

- Authors View: **BLACK**
- Members View: **BLUE**
- Developers/Engineering Procurement & Construction View **ORANGE**
- Quotes in *italic*

### 3 Opportunities in Offshore Wind

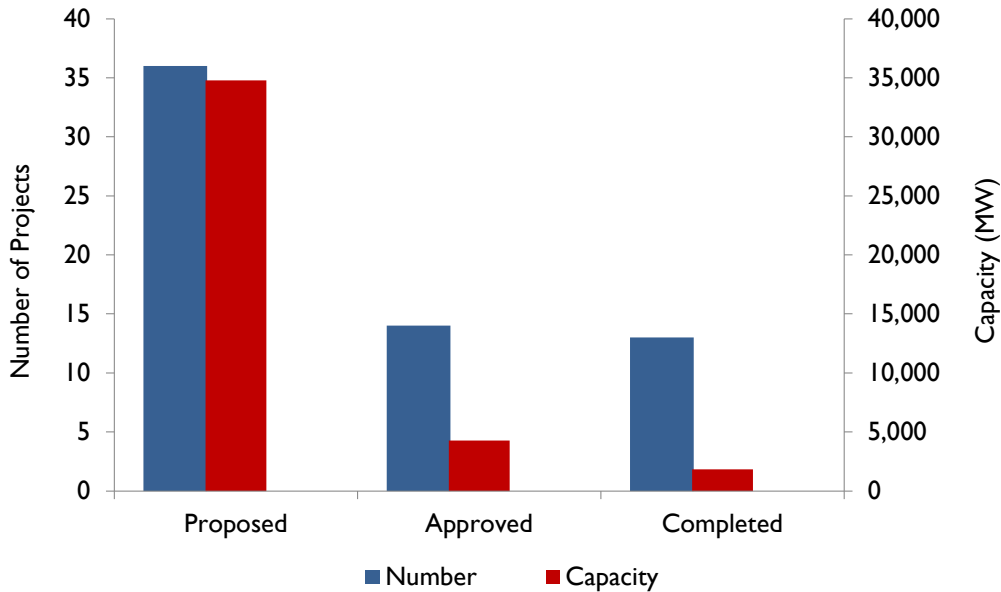
#### 3.1 UK Offshore Wind

The UK, according to EICDataStream, has 14 approved offshore wind projects currently being developed with a further 37 offshore wind projects proposed (See Graph 1). Projects include demonstration/test sites and phases of major offshore wind farms.

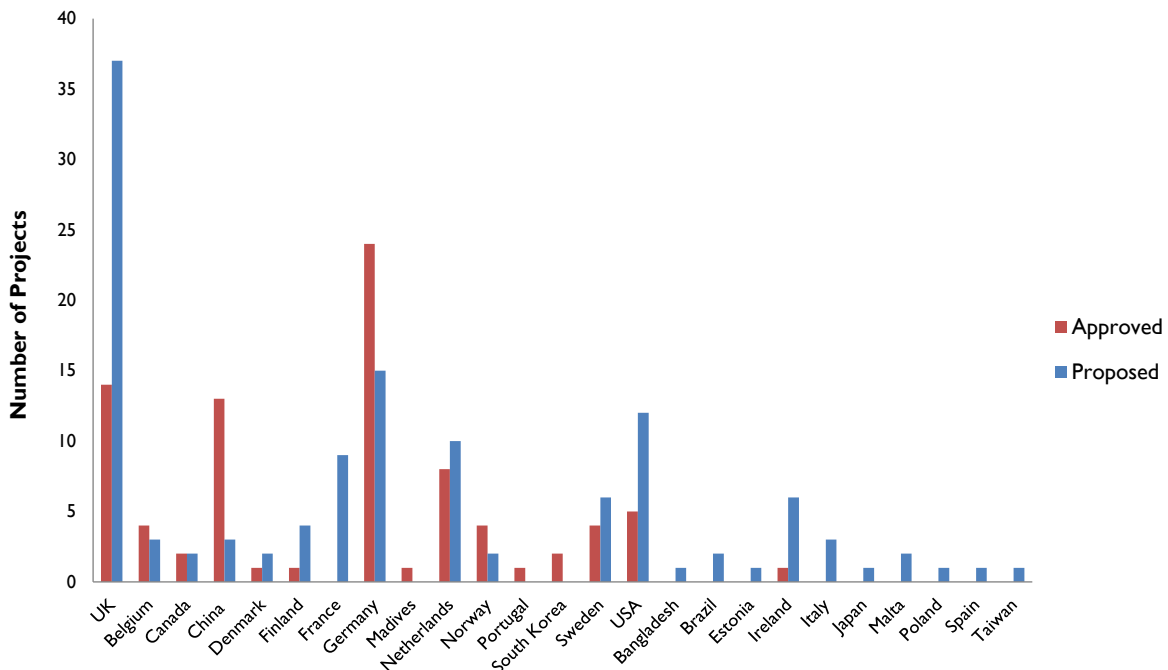
The total capacity of approved projects is 4.19GW which will see estimated Capex of £13.41bn. Proposed developments in the UK could see a further 35GW of capacity added with an estimated cost of £112.16bn.

#### 3.2 Global Offshore Wind

Globally, the UK has the most offshore wind projects planned, followed by Germany, USA and the Netherlands (See Graphs 2 and 3).

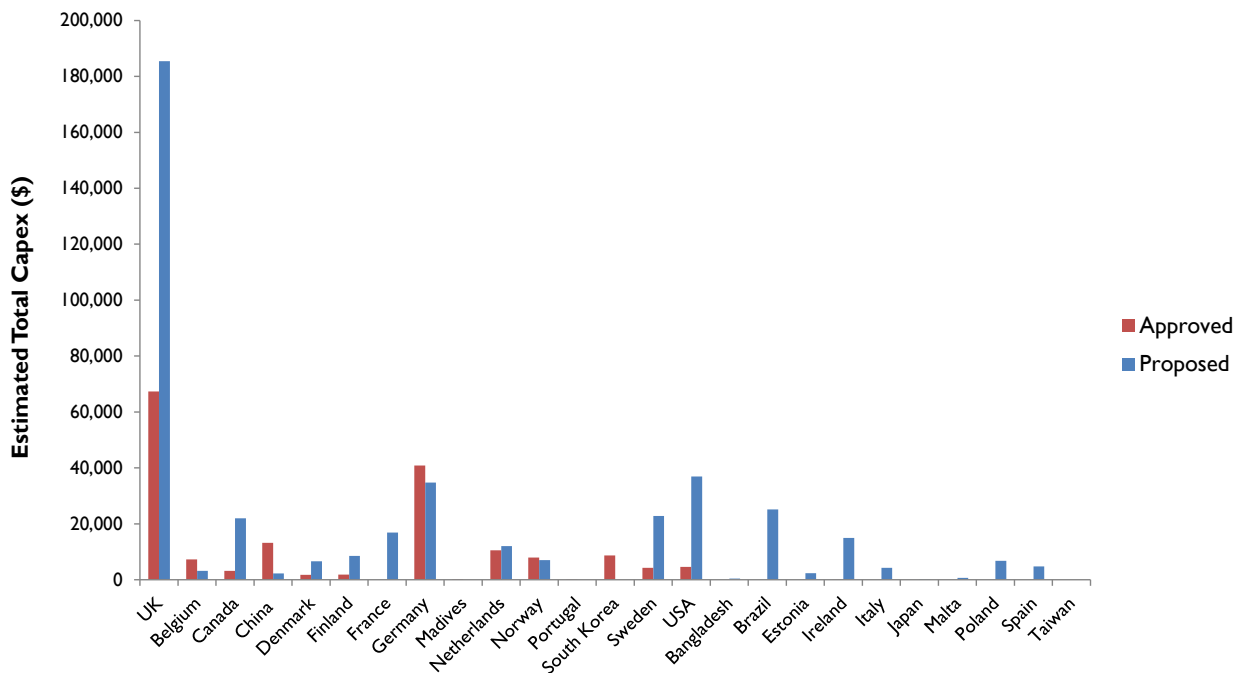


**Graph 1: Number and capacity of Proposed, Approved and Completed Offshore Wind Projects in the UK**



**Graph 2: Global Overview Total Number of Proposed and Approved Offshore Wind Projects**





**Graph 3: Global Overview Estimated Total CAPEX for Proposed and Approved Offshore Wind Projects**

### 3.3 What are the opportunities?

**3.3.1** Members are aware of where the opportunities in offshore wind are going to be. Members identified the UK and German offshore wind markets as the most interesting, with some feeling the German Baltic coast will be the next biggest development after Scotland and that UK business’ subsea expertise could be utilised here.

Interest was also expressed in France, Northern Ireland, Denmark, Belgium, Holland, US, Africa, Sweden and China.

In terms of what the actual opportunities are for UK companies, members felt that they lie in services and seabed cables, but not in supplying components for above the foundation level of the structures as that market was seen as already saturated. Members stated that the money is in the main components and that area is already supplied for. It was felt that opportunities are only in the variables e.g. deeper water, niche markets.

**3.3.2** Developers saw offshore wind as a core part of their portfolio and expect it to continue to remain prominent. A huge amount of capital and investment provide opportunities for services and

components that companies should be able to tap into. Operation and maintenance is also stated as a huge market.

‘Challenges but we will be ok – future is bright! Huge opportunity but it is going to take a lot of work!’

Opportunities in offshore wind for the UK supply chain vary. There are pockets of opportunity and a steady pipeline of work will be most beneficial to the supply chain. One of the challenges is the timing of developments which is dependent upon utilities that currently have no incentive to develop at certain times.

The UK has both generating experience and expertise in the development side. As the industry matures, more opportunities will be created by existing companies moving to the UK e.g. existing turbine manufacturers opening facilities in the UK.

Contractors state that the UK had no bearings, generators or blade manufacturers for the market. They felt that metal bashing (the making of metal items using traditional techniques) was too expensive in the UK and that for cables and nacelles there are lots of better options outside the UK.

**3.3.3** Globally, the UK currently has the largest number of proposed projects, followed by Germany and the USA. The opportunities in offshore wind can be categorised into three areas:

- Installation – e.g. Oil and gas vessels, cranes etc.
- Materials – e.g. Turbines, metal work, jacket tower, welding, structural parts, cabling, electronics, and converters.
- Service Providers – e.g. operation and maintenance, transport and logistics, engineering, hired hands.

EIC members and developers agreed that there were opportunities for the UK supply chain in offshore wind. Members felt that opportunities were in the installation, foundations, services and niche markets. Developers appeared to agree with this and recognised that the UK has expertise which can be used in the development side, particularly as projects move into deeper waters.

Members felt that the UK had ‘missed the boat’ with supplying turbine components and that this was where the money was in the industry. However, as turbine suppliers look to set up manufacturing facilities in the UK, more opportunities will become available to UK companies.

### Conclusions:

- The UK has the largest number of proposed wind farms and could see a further 35GW of capacity added with an estimated value of £112.16bn.
- After the UK, Germany, USA, Netherlands and France have the highest number of proposed projects.
- Members wishing to find out more about projects and their status can find out using EICDataStream or contacting the developer directly.
- There are opportunities for the UK supply chain in the offshore wind industry.
- Opportunities are seen in niche areas e.g. installation, foundations and services.
- The supply chain for the turbine components is perceived as saturated. However, as turbine

manufacturing facilities are built in the UK there could be further opportunities for UK companies.



## 4. Main Developers and Contractors

The majority of members are aware of who the main developers and EPC contractors are in the offshore wind industry. Respondents cited that they were made aware through EICDataStream and attending events such as the RenewableUK Annual conference.

Surprisingly, a proportion of respondents did not know or had limited knowledge of who the main developers and contractors in the industry are and requested this be made clearer.

### 4.1 Developers

Developers who are working in the UK:

Developer	Website
<b>E.ON</b>	<a href="http://www.eon-uk.com/about/eonclimateandrenewables.aspx">http://www.eon-uk.com/about/eonclimateandrenewables.aspx</a>
<b>RWE npower renewables</b>	<a href="http://www.rwe.com">http://www.rwe.com</a>
<b>DONG Wind</b>	<a href="http://www.dongenergy.com">http://www.dongenergy.com</a>
<b>Scottish and Southern Energy</b>	<a href="http://www.sse.com">http://www.sse.com</a>
<b>Centrica</b>	<a href="http://www.centrica.com/">http://www.centrica.com/</a>
<b>Vattenfall</b>	<a href="http://www.vattenfall.com">http://www.vattenfall.com</a>
<b>Enertrag</b>	<a href="https://www.enertrag.com">https://www.enertrag.com</a>
<b>Statoil ASA</b>	<a href="http://www.statoil.com">http://www.statoil.com</a>
<b>Aberdeen Offshore Wind Ltd</b>	<a href="http://www.aberdeenrenewables.com/">http://www.aberdeenrenewables.com/</a>
<b>Warwick Energy Limited</b>	<a href="http://www.warwickenergy.com/">http://www.warwickenergy.com/</a>
<b>ScottishPower</b>	<a href="http://www.scottishpower.co.uk/">http://www.scottishpower.co.uk/</a>
<b>SeaGreen Wind Energy Ltd: Scottish and Southern Energy, Fluor Corporation</b>	<a href="http://www.seagreenwindenergy.com/home.asp">http://www.seagreenwindenergy.com/home.asp</a>
<b>Forewind Consortium: Scottish &amp; Southern Energy, RWE npower, Statoil ASA, Statkraft</b>	<a href="http://www.forewind.co.uk/">http://www.forewind.co.uk/</a>
<b>Eneco Energie</b>	<a href="http://corporateuk.eneco.nl/Pages/Default.aspx">http://corporateuk.eneco.nl/Pages/Default.aspx</a>
<b>East Anglia Offshore Wind Ltd: ScottishPower, Vattenfall</b>	<a href="http://www.eastangliawind.com/">http://www.eastangliawind.com/</a>
<b>SMart Wind Ltd: Siemens Project Ventures, Mainstream Renewable power, Hochtief Construction</b>	<a href="http://www.smartwind.co.uk/">http://www.smartwind.co.uk/</a>
<b>Scira Offshore Energy</b>	<a href="http://www.scira.co.uk/">http://www.scira.co.uk/</a>

Table 1: List of developers working in the UK

## 4.2 Turbine Suppliers

Supplier	Website	Offshore Wind Turbines Models
Siemens	<a href="http://www.energy.siemens.com">http://www.energy.siemens.com</a>	<ul style="list-style-type: none"> <li>· SWT- 2.3 – 82</li> <li>· SWT- 2.3 – 93</li> <li>· SWT- 2.3 -101</li> <li>· SWT- 3.6 -107</li> <li>· SWT- 3.0 -101</li> <li>· SWT- 3.6 -120</li> <li>· SWT- 6.0 -154</li> <li>· SWT-6.0 – 120 (Prototype)</li> </ul>
Vestas	<a href="http://www.vestas.com">http://www.vestas.com</a>	<ul style="list-style-type: none"> <li>· V80-2.0MW</li> <li>· V90-3.0MW</li> <li>· V112-3.0MW</li> <li>· V164-7.0MW</li> </ul>
Alstom	<a href="http://www.alstom.com">http://www.alstom.com</a>	<ul style="list-style-type: none"> <li>· Haliade 150-6MW (Prototype in development)</li> </ul>
Areva Wind	<a href="http://www.areva.com">http://www.areva.com</a>	<ul style="list-style-type: none"> <li>· M5000-116</li> <li>· M5000-135</li> </ul>
Gamesa	<a href="http://www.gamesacorp.com/en">http://www.gamesacorp.com/en</a>	<ul style="list-style-type: none"> <li>· G128.50MW</li> <li>· Azimut Project (Concept)</li> </ul>
Bard Engineering	<a href="http://www.bard-offshore.de/">http://www.bard-offshore.de/</a>	<ul style="list-style-type: none"> <li>· BARD 5.0"</li> <li>· BARD 6.5 (Prototype)</li> </ul>
Repower (Suzlon)	<a href="http://www.repower.de/">http://www.repower.de/</a>	<ul style="list-style-type: none"> <li>· Repower 5MW</li> <li>· Repower 6MW</li> </ul>
GE Energy	<a href="http://www.ge-energy.com/wind">http://www.ge-energy.com/wind</a>	<ul style="list-style-type: none"> <li>· GE 4.1-113</li> <li>· GE 15 MW (Concept)</li> </ul>
Sinovel Wind	<a href="http://www.sinovel.com/en/index.aspx">http://www.sinovel.com/en/index.aspx</a>	<ul style="list-style-type: none"> <li>· SL6000 (Prototype)</li> <li>· SL5000</li> <li>· SL3000/90</li> <li>· SL3000/105</li> <li>· Sinovel 10 MW (Concept)</li> </ul>
AMSC-Sinovel		<ul style="list-style-type: none"> <li>· AMSC-Sinovel 5 MW (Prototype in development)</li> </ul>
XEMC	<a href="http://www.xemc-wind.cn/en/">http://www.xemc-wind.cn/en/</a>	<ul style="list-style-type: none"> <li>· XEMC Z72-2000</li> </ul>
XEMC- Darwind	<a href="http://www.xemc-darwind.com/">http://www.xemc-darwind.com/</a>	<ul style="list-style-type: none"> <li>· XD115/5MW (Prototype)</li> </ul>
Goldwind	<a href="http://www.goldwindglobal.com">http://www.goldwindglobal.com</a>	<ul style="list-style-type: none"> <li>· GW 3000</li> <li>· GW 70/1500</li> <li>· GW 100/2500</li> <li>· GW 10 MW (Concept)</li> </ul>

**Table 2: List of turbine suppliers and offshore wind turbine models**

### Conclusions:

- Developers and EPC contractors for individual projects can be found on EICDataStream. Members can access further information on developers and EPC contractors and their products by visiting their website.

## 5. Opinion of Offshore Wind

**5.1** The majority of respondents answered ‘yes’ when asked if they are currently doing business in the offshore wind industry. A number of members that are involved were relatively new entrants into the industry, having only worked on one or two projects. Others had been involved for a number of years.

Members not currently doing business in the industry showed a desire to be involved and stated that they believed they had expertise which could be utilised. A need for market intelligence was voiced and some members had joined organisations such as Aberdeen Renewable Energy Group (AREG) to gain industry knowledge. Others had expressed their interest to various companies in the hope it would lead to contracts. Other members were involved in the industry indirectly.

Many members had a positive perception of the future for offshore wind with the view that it is a growth market provided costs continue to be driven down. Offshore wind has an important role to play in the energy mix and in helping to meet the ambitious targets the UK has set itself. As fuel supplies deplete and prices become more expensive alternative sources of power are becoming paramount. Greenhouse gas emissions need to be reduced globally, meaning new green technologies will ultimately have to play a bigger role in solving the energy crisis. Respondents saw offshore wind as becoming an important part of their business as their skills and experience in the offshore oil and gas industry are transferrable to renewables.

Members primarily working in oil and gas did state that they envisaged a future for their business in the offshore wind industry. Their strategy is to work on offshore wind projects to build up experience for the future during quieter periods in oil and gas. Oil and gas will take priority in the short term, but it is recognised that renewables will play a big role in many respondents future and therefore they need to start building up their profile now. Members felt that renewables will eventually adopt an ‘oil and gas mentality’ and there will be a future in decommissioning and recommissioning platforms in the industry.

Members expressed the view that as projects enter deeper water more oil and gas supply chain companies will have to get involved as only they have the expertise to conduct work at such depths. There is a belief that contractually everything will change.

Areas respondents are hoping to do business in include improvements to SCADA systems and telemetry systems, corrosion prevention, construction of towers and platforms, installation of pipelines, logistics, metal products supply and consultancy.

Despite the belief that there was a future in the industry, concerns were raised. These included concerns about supply chain development in the UK; difficulty in breaking into the industry; insufficient investment; uncertainty in whether projects will come to fruition due to technical, environmental, financial, political and social factors; immaturity of the industry; the level of government credits and the view that the main developers and contractors are uninterested in details and are happy to pass down the responsibility. There is a feeling that the industry is still embryonic and that there is a great deal of knowledge and experience still to be acquired.

Others were more sceptical. Respondents cited a belief that they felt the offshore wind industry is being promoted to follow a political agenda and the costs of generating power by it are far greater than alternatives. Members were uncertain of the future of the industry due to political influence, acknowledging that subsidies are an important motivator for developers. There were members that felt offshore wind did have a future, but due to competition opportunities for UK companies were limited. The perception that the industry was monopolised by a few key players was voiced.

**5.2** Developers and EPC contractors had no concerns about the future of offshore wind with all of them sure that it will continue to be developed in the UK. In the next two or three years, the future of the industry will become more determined and by 2020 wind will be competitive.

*‘Don’t worry about it – there is no precipice. There will be farms built – issue is market confidence.’*

Developers felt that nobody will invest in an industry which is not long standing so it is less about what happens after 2020 and more about what happens in the next eight years leading up to 2020. Developers felt that 2020 is a reasonable timeline for the delivery of the first of the Round 3 projects. However, it was felt that not all will be built by 2020 with developments continuing beyond that point. This was seen as a positive as it is better to have a steady stream of work.

**5.3** Overall there was a very positive perception of the future of offshore wind. Members recognised that offshore wind was going to have a future and saw it as a growth area for their business. Although oil and gas would in the short term take priority, companies were looking to expand their renewables portfolio. Concerns were voiced around uncertainty about whether projects will be built and the development of the UK supply chain. However, developers and EPC contractors were positive that Round 3 projects will be built.

### Conclusions:

- The UK supply chain see a future for their businesses in offshore wind.
- Concerns about whether projects will actually be built and supply chain development.
- Round 3 projects will be built with the first expected to be online by 2016. Not all developments will be built by 2020 and construction is likely to go beyond this date which is beneficial to the supply chain.

## 6. Timelines for Projects

A number of members asked for greater clarity on the timelines of projects. This section aims to give an overview of the development process.

### 6.1 Leases Granted

The Crown Estate manages the UK seabed out to the 12 nautical mile limit and plays a major role in the development of the offshore wind energy industry in the UK. Leases for the projects and programmes are associated with all the UK waters.

Since 2000, The Crown Estate has run five leasing rounds for offshore wind programmes. Under the leasing rounds areas of the seabed are made available for the development of offshore wind projects. In each round the size and complexity of projects has increased.

Round 1 started in December 2000 and there are 12 Round 1 projects fully operational with a generating capacity of just under 1GW with a further two sites under construction.

In July 2003, Round 2 was launched and there are 17 Round 2 projects which if all were constructed would generate a capacity of 7.2GW. Three of the projects are fully operational with six under construction.

In 2010, The Crown Estate announced the award of development rights to four Round 1 and Round 2 sites to extend their geographical areas. Developers are planning for these extensions to be fully operational by 2016<sup>1</sup>.

### Round 3

In 2009 the UK Offshore Energy Strategic Environmental Assessment (SEA)<sup>2</sup> identified up to 33GW of offshore wind capacity in UK waters which formed the basis of the Round 3 offshore wind programme. Nine offshore wind farm zones were identified in the SEA. Developers were asked to bid for exclusive rights to develop offshore wind farms within these zones and in 2010 the successful bidders for each zone were announced (See Table 3). Figure 1 shows the development zones with Round 3 projects being in green, Round 2 in red and Round 1 in yellow. In each round the zones get bigger and into deeper waters (Figure 1).

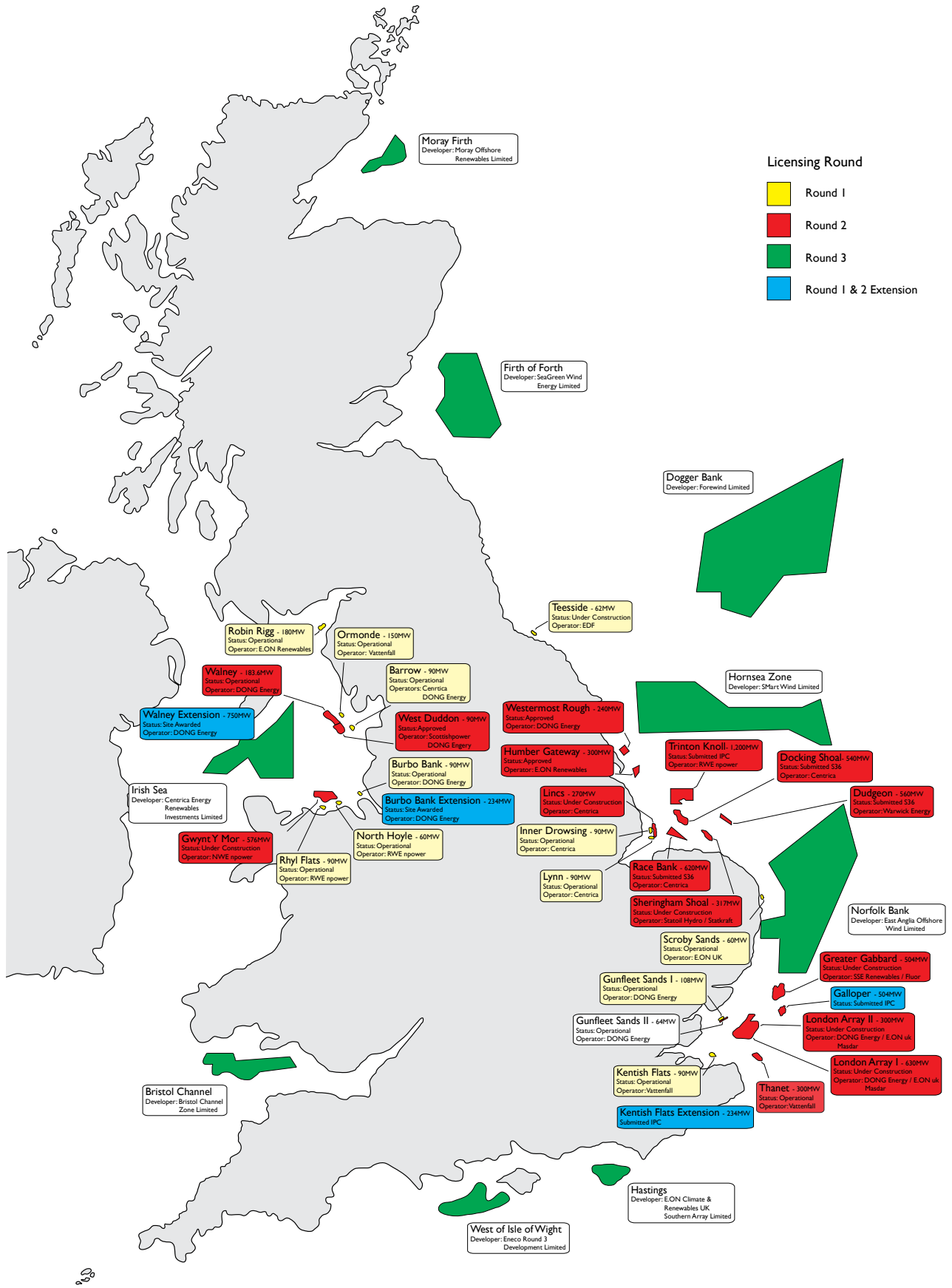


Figure 1: Map showing Round 1, 2 and 3 offshore wind zones

Round 3 Wind Farm	Developer	Status	Capacity (MW)
Atlantic Array	RWE npower	Proposed	1500
Moray Firth	Moray Offshore Renewables Ltd: EDP, SeaEnergy Renewables Limited	Proposed	1500
Firth of Forth	SeaGreen Wind Energy Ltd: Scottish & Southern Energy, Fluor Corporation	Proposed	3500
Dogger Bank	Forewind Consortium: Scottish & Southern Energy, RWE npower, Statoil ASA, Statkraft	Proposed	9000
Hornsea Zone	Smart Wind Ltd: Siemens Project Ventures, Mainstream Renewable Power, Hochtief Construction	Proposed	4000
Norfolk Bank	East Anglia Offshore Wind Ltd: Scottish Power, Vattenfall AB	Proposed	7200
Navitus Bay	EDF Energy, Eneco Energie	Proposed	900
Rampion	E.ON UK	Proposed	665
Irish Sea	Centrica, DONG Energy, Renewable Energy Systems (RES)	Proposed	4200

**Table 3: Round 3 Projects and Developers**

## 6.2 Pre-Application and Proposed Project

Until recently, the Planning Inspectorate's functions in offshore wind were carried out by the Infrastructure Planning Commission (IPC). The IPC was abolished on 1 April 2012. For projects where an application or proposed application has been formally notified to the IPC before 1 April 2012, anything done before that date is treated as having been done for the purposes of the 2008 Planning Act provisions as amended under the Localism Act 2011. The developer informs the Planning Inspectorate that they intend to submit an application in the future before carrying out any consultation. The Planning Inspectorate will then add the project to the Programme of Projects on the National Infrastructure portal<sup>3</sup>. Before submitting an application, the developer must carry out extensive consultation on their proposals. The time it takes to prepare and consult on a project varies depending upon its scale and complexity.

### 6.2.1 Feasibility Studies, Planning and Consultations

Developers are required to provide information about their project proposal to various statutory and non-statutory bodies and the wider community, listening to suggestions and responding to questions. Developers are required to take into consideration suggestions and concerns which must influence and inform their planning application.

In order to provide the necessary information required at consultations and pre-application developers will need to carry out the following:

- Development services- feasibility, licensing, planning, radar.
- Met station Surveys
- Geophysical Surveys



- Environmental Surveys - Ornithological and mammal surveys
- Sea Bed Surveys
- Human Impact Studies
- Front-end Engineering and Design
- Community Consultation

Under the Planning Act 2008, offshore wind farms are classed as nationally significant infrastructure projects (NSIP) due to the size and nature of the projects. The Infrastructure Planning (Environmental Impact Assessment) Regulations (2009) implement the requirements of the European Directive on Environmental Impact Assessment (EIA) into UK Law. The legislative framework for an EIA is set by European Directive 85/337/EEC for the assessment of the effects of certain projects on the environment, as amended by Directive 97/11/EC and Directive 2003/35/EC. Offshore wind farms come under paragraph 3(a) of schedule 2 of these regulations and an EIA should be determined by the relevant competent authority. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 set out the requirements and provisions for screening, scoping (setting out the scope for the EIA) and the submission of an Environmental Statement (ES). A list of the information an ES must provide is set out in Schedule 4 of the Regulations. The ES may have separate offshore and onshore volumes in support of the application for a Development Consent Order (DCO).

Regulation 8 of the Infrastructure Planning (Environmental Impact Assessment) Regulation 2009 allows a prospective applicant to ask the Planning Inspectorate for a scoping opinion. The scoping opinion sets out the information that should be provided in an ES. Scoping is an early stage of the planning process and provides an overview of the proposed development. It is designed to ensure that the environmental surveys provide all the relevant information on impacts of the project, alternatives to the project and any other matters are included. It is undertaken in order to refine the scope of the assessment of environmental impacts and ensure that it is robust in its approach. A scoping report supports the request for a scoping opinion and will be issued to

the Planning Inspectorate, who will then identify the consultation bodies as set out in regulation 8 (6) of the EIA regulations. The scoping report will be placed on the Planning Inspectorate's website<sup>4</sup> and consultation bodies have 28 days in which to respond to it. These responses will be collated by the IPC which will issue a formal scoping opinion to the developer within 42 days. Once the scoping opinion has been received, the response will be reviewed and the relevant points that have been raised will be taken forward and used to inform the environmental assessment process. The process is designed to provide feedback on any additional information to be included in the ES in support of an application for a DCO, which will then be submitted to the IPC.

### 6.3 Submitted

Under section 37 of the Planning Act 2008, any developer wishing to construct an offshore wind farm requires a DCO. The relevant Secretary of State will appoint an 'Examining Authority' from the Planning Inspectorate to examine the application. The Examining Authority will either be a single inspector or a panel of three or more Inspectors. The DCO application may be submitted for the entire project, including both onshore and offshore elements, in order to ensure that the project is consented as a whole. However, not all developers choose to do this and some might submit DCO for separate parts of the project.

### 6.4 Connecting to the Grid

Offshore wind farms need to secure grid connection for the projects. Grid access arrangements can delay or prevent projects developing. Investment in projects depends on whether they have secured grid connection – if a project can't connect to the grid it is effectively worthless.

UK grid connection availability is recognised as a challenge and will continue to be so if the UK is to achieve its ambitious renewable energy targets. Significant new investment will be required in both the onshore and offshore transmission infrastructure. Offshore transmission assets transport electricity from offshore wind projects back the grid. The government recognises that the timely and efficient installation of this

infrastructure is fundamental if the UK is to reach its 2020 renewable energy targets.

Each offshore wind project goes through a grid connection application process. The developer submits an application to National Grid Electricity Transmission (NGET). NGET will make a connection date offer to the developer, who has three months to accept, reject or refer to Ofgem.

There are four transmission system owners in Great Britain (GB) (See Table 4). National Grid is the system operator for GB and is responsible for overseeing and managing the flow of electricity across the whole of the GB transmission network. This includes elements owned and operated by Scottish Power Transmission (SPT) and Scottish Hydro Electric Transmission Limited (SHETL). National Grid also co-ordinates connection offers to new generators. In Northern Ireland, the Systems Operator for Northern Ireland (SONI)<sup>5</sup> manages the electrical system and flows. The Office of Gas and Electricity Markets (Ofgem) regulates the transmission networks.

In June 2008, DECC and Ofgem published the Transmission Access Review<sup>6</sup>. The joint review of the electricity transmission arrangements sets out a programme of reform. In May 2009, the ‘Connect and Manage’ interim regime was implemented and allowed National Grid to offer earlier grid access to new and existing generation projects. It also provides greater certainty for generators about the rules for access to the grid over the long term. In July 2010, the Government announced the implementation of a new enduring regime for grid access which enables new generation to connect to the grid more quickly.

Generators have the option of constructing the transmission assets themselves or opting for an Offshore Transmission Owner (OFTO) to do so. Ofgem requires that the cable connection is transferred to an independent third-party OFTO, so if a developer chooses to construct the assets themselves they must then transfer them to an OFTO post-construction and pre-operation. OFTO’s are selected on a competitive basis through a tender process which is run by Ofgem. OFTO’s have been introduced as a way to encourage new investment and to help share the costs of grid connections.

**6.5 Acceptance**

The acceptance stage begins when a formal application for DCO is submitted by the developer to the Planning Inspectorate. Once the application is submitted, the Planning Inspectorate has 28 days in which to consider whether or not the application meets the standards required to be formally accepted for examination.

**6.6 Examination by Planning Inspectorate: Consented or Rejected**

The Planning Inspectorate has six months to carry out the examination and decide whether to grant a DCO or reject the proposal. The Planning Inspectorate must prepare a report on the application to the relevant Secretary of State, including a recommendation, within three months of the six month examination period. The Secretary of State then has a further three months to make the decision on whether to grant or refuse consent.

Once a decision has been issued by the Secretary of State, there is a six week period in which there is the opportunity for legal challenge and a decision may be challenged by the High Court.

Country	Transmission System Owners
England and Wales	National Grid
Scotland	Scottish Power Transmission (SPT) and Scottish Hydro Electric Transmission Limited (SHETL)
Northern Ireland	Northern Ireland Electricity

**Table 4: Transmission System Owners**

## 6.7 Financial Close

*‘Banks at the end of the day control the industry’.*

Achieving financial close is essential if the project is to come to fruition. Financial close occurs when all the project and financing agreements have been signed and the required conditions contained in them have been met. It allows funds to start flowing so that project implementation can commence. There are two primary methods with which offshore wind projects are financed:

- On-balance sheet

With balance sheet financing, a company uses its own money and/or debt secured against its assets as a whole.

This is the cheaper option as the overall risk to the company is less than that of the specific offshore project and it also involves fewer parties allowing the developer to maintain greater control over the project and saving time.

However, it is capital intensive and reduces the company’s financial flexibility. Developers often have other projects to finance and it exposes them to the full risk of the project. Increased exposure to offshore wind on balance sheet could also affect their corporate credit rating.

- Project finance/off-balance sheet

Project finance involves the developer establishing a stand-alone entity and securing financing based solely on the estimated cash flows of the project. Project finance reduces the amount of capital needed from the project sponsor and insulates the sponsor from the project’s failure. However, it is typically more expensive and difficult to arrange given the number of parties involved and the amount of due diligence required.

Project finance is the preferred method of financing by many developers, but due to the recession and the perceived risks of offshore wind, access to project financing has been largely unavailable. Balance sheet financing has been the predominant method in Europe. However, it is unlikely as projects get bigger, more complex and therefore more costly that this is sustainable and a project

finance approach is likely to be taken in the future. For Round 3 projects and other offshore wind projects of a similar scale in Europe, project finance is looking the most likely way that projects will be financed. Some projects have been financed through ‘bank clubs’ where commercial banks club together to provide financing.

In non-recourse project finance, lenders base their decisions on expected cash flows of the project. Lenders need to have confidence in the assumptions about the cash outflows and inflows.

The biggest risks on the cash outflow side are delays and cost overruns during the construction and operation of a project. Coordination issues with multiple contractors, supply chain constraints, new foundation types and intermittent weather can impact the cost of the project and whether deadlines are met. In order to mitigate these risks strong project management is required to increase project coordination. Preassembly of components onshore mitigates weather risk and enables quicker installation offshore.

The most significant cash inflows for offshore wind projects are the power sales. It is essential a Power Purchase Agreement (PPA) is signed for financing as without a long term PPA projects are unlikely to obtain financing.

In terms of cash inflows another key aspect for financiers is the uptime of the wind turbines. There are many factors which can lead to the loss of power sales. One of the big issues is that the technology is new and the larger turbines which are being developed don’t have a sufficient operating history. Severe weather can damage turbines and put them out of service and also makes it difficult to access the turbines for maintenance and repair. To reduce these risks financiers will look for projects using turbine models with a history of strong operating performance. Remote condition monitoring and predictive maintenance can enable repairs to be made in periods of low wind and good weather. Financiers will also look for warranties and guarantees from turbine manufacturers.

For larger projects, the support of Public Financial Institutions (PFI) will be critical either in terms of loans or loan guarantees. Project financed wind farms in Europe typically receive support

from state-owned banks and/or export credit agencies. PFIs can provide about as much funding as commercial banks for a project.

Vendor financing may also be used when other sources are unavailable. Siemens for example has a stake in a number of offshore wind projects.

In order for a project to receive financing it will require:

- Stable subsidy schemes and consistent governmental support
- Fixed price PPA
- Proven, reliable technology, when new technologies are to be used, strong guarantees are important
- Solid, creditworthy and reliable partners
- Long term operation and maintenance contracts
- Good insurance package
- Strong project management

### 6.8 Contracting Activity

Conditional offers of contracts are in place for the main components of the project before financial close is reached and developers often have suppliers lined up for the EPC contracts in the planning stage of the project. Once financial close is reached, contracts are then confirmed and awarded. Suppliers must enter a process to become qualified before they can bid for contracts. For more information about the contracting process, see Section 6.

### 6.9 Under Construction

Once projects have received planning permission, achieved financial close and awarded contracts, construction work will begin on the project.

### 6.10 Commissioning

Projects undergo final testing before they are officially opened.

### 6.11 Inauguration and Operating

The project is officially opened with all turbines inputting power to the grid.

### Sources

<sup>1</sup> The Crown Estate: <http://www.thecrownestate.co.uk/energy/offshore-wind-energy/our-portfolio/>

<sup>2</sup> Offshore Energy SEA Environmental Report: [http://www.offshore-sea.org.uk/site/scripts/book\\_info.php?consultationID=16&bookID=11](http://www.offshore-sea.org.uk/site/scripts/book_info.php?consultationID=16&bookID=11)

<sup>3</sup> Infrastructure Planning Portal: [www.planningportal.gov.uk/infrastructure](http://www.planningportal.gov.uk/infrastructure)

<sup>4</sup> <http://infrastructure.independent.gov.uk/>

<sup>5</sup> <http://www.soni.ltd.uk/index.asp>

<sup>6</sup> Transmission Access Review (TAR): <http://www.ofgem.gov.uk/Networks/Trans/ElecTransPolicy/tar/Pages/Traccrw.aspx>



## 7. Contracting Process

The contracting process for offshore wind appears to be a bit of an enigma, with many members feeling it needs more clarity. One of the main points to come out of the research was that there was a great difficulty in finding out about contracts and that there was a lack of understanding of how the process works.

Although some suppliers think that offshore wind contracting is similar to oil and gas others believe that this is not the case. One EPC contractor viewed the procurement process as more complex than that of oil and gas. Oil and gas is more collaborative and takes advantage of more long-term relationships. In offshore wind, companies are starting to move towards alliancing.

**7.1** A number of members did have an understanding of the contracting process relevant to their involvement. However, some respondents cited that their experience was limited.

*'We have little experience in the supplier vendor approval process, and find it difficult to progress with manufacturers.'*

A large number of respondents did not have an understanding of the contracting process and would like a better understanding of it. Respondents had the perception that it was more of an obstacle than a help, that it is complicated and that it differs from project to project. For contracts, members wished to know where, what, when, how and who?

*'I have found the process is more of an obstacle than of help.'*

Members were asked how they heard about contracts. They answered the following:

- Existing clients
- EICDataStream – can see who subcontractors are
- Direct – relationships with end users
- Speak to developers/contractors at events

Members have heard about contracts through existing clients in oil and gas. Others have put

a lot of effort into establishing relationships with developers through attending events and approaching developers directly. Others spoke of using databases and websites to find out who was developing and who has been awarded contracts for particular projects. Others had registered with developers as a potential supplier.

There was an overwhelming response that contracts were difficult to find out about and bid for successfully. Contracts appear to be rather secretive until they have been awarded and even then the successful contractor is often not disclosed until too late in the day for suppliers to attempt to do business with them. There is a feeling that as public money is being spent on offshore wind projects that contracts and contract awards should be in the public domain. Members who were successful at finding out about contracts expressed issues with tendering. One issue members raised was that 'blind tendering' is often practiced and there is very little, if any, face-to-face interaction. Online bidding was also common. Respondents felt that tendering seemed to be done abroad and so it is difficult to progress and be awarded contracts.

Members that were successful in winning contracts spoke about bidding for lots of contracts which involved lengthy negotiations and could take between 6 to 12 months to full contract award. There was also a perception that it would be the same as the oil and gas industry.

In order to become prequalified, suppliers had completed questionnaires and audits from turbine suppliers and developers.

**7.2** Developers and EPC contractors stated that it is the procurement team that should be approached. One developer advised anyone looking for a contract to aim to have half a dozen contact points within the company in individual departments within procurement, project management and business development. The relationship should not just be one to one.

At present offshore wind is generally tendered by multi contract. Fixed price EPC contracts have been used before, for example for the Greater Gabbard project, but unfortunately that has

proved to be costly. Developers are looking to reduce the risk as much as possible and this is likely to be done in the future by using a multi contract approach, with only two or three big contracts being issued.

For utilities, tendering is price and regulator driven. Tendering varies for different elements of the project. Developers usually researched the market and then issued a request for information (RFI) – approaching the supplier and inviting them to bid. Others advertised contracts on their website or on databases such as Tenders Electronic Daily (TED) or Achilles (See Appendix). Developers tend to use a standardised tender process via sealed bid. Developers usually work upfront with suppliers to tell them what their needs are. Some developers were not captured by European Union (EU) procurement directives which require tenders to be advertised in the Official Journal, but did follow the same process.

In order to become prequalified there is a standard checklist which is usually included in the RFI document. This includes questions about financial stability, responsible supply chain, safety, experience (can be in a related industry), cost reduction/efficiency improvements and the future of the company. Developers understand that experience is difficult to get as offshore wind is a new industry, so do look at how suppliers demonstrate their experience in related fields e.g. oil and gas, maritime. A risk assessment of the contracts is then carried out. The award of the contracts depends on the product or category they fall into. Contracts with more risk tend to go with a low risk company.

For wind turbines, the size is normally already known which will mean by default there will be only one or two available suppliers. These suppliers are invited to tender and a price is negotiated with the lowest bidder invariably winning the contract.

Another contractor described how they used a benchmark where they use a standard against which the performance of suppliers can be measured. They benchmark companies and send tender invitations to them. Companies and contacts are identified by using internet searches or through meeting at events. A non-disclosure

agreement is signed, technical information sent and a quote from the company received. The contractor examines what the supplier is doing and whether this will fit with their investments. For prequalification, companies are instantly qualified if they have made it post-benchmark. If the company is viewed as not able to provide what is required, the bid is stopped after the benchmark. Usually, they might have used the successful supplier before for onshore wind.

Other contractors said that the major contract elements are awarded on a competitive tender basis. They invite companies to tender and form alliances. Bidders go through assessment rounds and must fulfil a checklist to become prequalified. Contracts tend to be awarded on a project basis, with the view to use the supplier again i.e. on a serial production basis. Suppliers are selected on a long term contract basis, based on them having the necessary component for the design of the turbine. However, for turbine parts, this does not generally go out to tender as they are part of the design of the turbine.

One contractor stated it was necessary when bidding to think not of an individual wind farm but more about the turbine. Know the wind turbine and then select where your product will fit in. Approach the procurement team and tell them how your product/service will reduce costs or make the turbine more efficient.

A number of companies have a supply chain database which has information on sub tier companies so that if a Tier I contractor is looking for suppliers they can use the database. The intention is not to recommend suppliers but instead provide a comprehensive list that the contractor may or may not want to try. Developers are keen to use local suppliers as it generally brings down costs.

**7.3** There is an obvious need for more transparency and consistency in contracting within the industry, as a lack of understanding of the process is evident. It is clear that a combination of not knowing where to find information about contracts, and secretive tendering and contract awards is leading to UK businesses missing out. There is a view that

the process is too secretive and that contracts should be advertised more openly. Contracts are difficult to find out about and suppliers often find out too late. There is a strong feeling that contracts and contract awards should be in the public domain as public money is used to fund the projects. Those that did find out about contracts found the process complicated and difficult to progress further.

Developers use a combination of advertising tenders on websites and researching suppliers and inviting them to tender. A multi contract approach is generally used and allows developers to reduce their costs by sharing the responsibility with Tier 1 and Tier 2 contractors. It is likely that using a small number of contracts is the approach that developers will take with future projects. Suppliers need to understand what developers and EPC contractors are looking for and understand their business. Suppliers should attend supply chain focused events, such as EIC Business Presentations where they can hear about opportunities. Suppliers need to draw the developer's attention to themselves in order to find out about contracts.

Advice on how to find out about contracts included attending trade shows and establishing relationships with project managers. Once a project manager has been identified, it is important to maintain that contact as they tend to move from project to project. Other advice was to use existing relationships in oil and gas as many companies will be moving into renewables



## Conclusions:

- Members heard about contracts through existing clients, databases and speaking directly to developers/EPC contractors at events.
- Contract awards are secretive, and often disclosed too late for companies to approach winning bidders for business. The UK supply chain feels finding out about contracts in time and bidding successfully is difficult.
- A feeling that as public money is spent on developing these projects, information about contracts should be in the public domain.
- Perception that contracting is the same as oil and gas when in fact there are differences.
- UK supply chain should always approach the procurement team of the developer/EPC contractor. Try to have more than one contact at the company.
- Once a relationship is established, it is important to maintain it.
- Offshore wind is tendered by multi contract.
- Developers tend to research the market and send out Request for Information (RFI and/or advertise on databases.
- Developers use tools like Google to research suppliers. This indicated a need for a procurement guide. Developers also had databases which potential suppliers can register their interest in (See Appendix).
- In order to become prequalified developers and EPC contractors generally use a standard checklist which includes questions about financial stability, safety, experience and cost reduction.
- The offshore wind industry needs a more open and standard contracting process.

## 8. Barriers to Business

**8.1** A number of members did not feel there were barriers to entering the industry and had utilised skills and expertise from offshore oil and gas to break into the market. However, those that felt that there were no barriers did feel there was a misunderstanding of the basic needs of the offshore wind industry, a need for a better understanding of who does what and to become acquainted with the purchasing decision makers.

*‘When we become aware of any barrier we actively look to understand it and progress past it’*

*‘We have not encountered any barriers so far but we feel that if the business is to grow any barriers that may be in place must be overcome by negotiation or legislation’*

A number of respondents did feel there were barriers.

*‘There are always barriers but it’s about understanding them and the risks’.*

These include:

### Communication Barriers

- Identifying and obtaining contact details
- Transparency of information and data sharing
- Difficult to follow supply chains due to non-disclosure contracts
- Need to understand who does what
- More detailed information on actual requirements
- Lack of information on finance

*‘There are a number of barriers; the key is transparency of information and sharing of data. Sharing data, knowledge and experience is critical and developing together as a group is key rather than competing as individuals. There are too many elements in the offshore wind industry to tackle them alone’*

*‘offshore wind industry is secretive; it is difficult for us as a company to follow supply chains without being told that ‘we cannot tell you because we have signed a non-disclosure contract’.*

The obvious solution to overcoming this barrier is to improve communication and education within the sector. Members need to get to know who the key players are and understand what their plans are for projects at the earliest possible stage. Databases, like EICDataStream, can be a useful tool in data sharing and identifying developers, the status of projects and contract awards. Members felt that it was important to look at offshore wind in the broadest possible context – from design to manufacturing to transmission. Once members could see the bigger picture they can then make suggestions of possible cost reductions and efficiencies. As part of the development process, developers hold public exhibitions and consultations where potential suppliers can attend for information on the project. Developers also publish their plans for projects online which are easily accessible to the public.

Events, such as All-Energy, are great opportunities to become familiar with who does what in the industry. Organisations, like the EIC, can also work with developers to provide information to our members about projects. ‘Opportunities with’ events are perfect forums for suppliers to find out about projects and what work is available.

### Competition

- Supply chain already established
- Difficult to break into European companies
- Existing players making it difficult for new entrants
- Experience
- Customers viewing suppliers as potential competitors
- Size

Competition is undoubtedly a barrier for UK companies entering the industry, particularly with existing major players being based in Europe. There is a feeling that overseas competitors are favoured at present due to already established relationships and track record. Competition with European companies in particular was seen as a major barrier to entering the industry with Danish and German turbine manufactures, Dutch installation contractors and German/French power electronics were viewed as the main beneficiaries of UK offshore wind by one respondent. It was



felt that the industry was monopolised by a few key players and that the supply chain was already established. As the vendor approval process requires so much work, manufacturers are not currently keen to consider other suppliers.

Lack of experience and the size of the company are also viewed as barriers. Manufacturers had experience losing out to competitors partly due to their geographical locality and sheer size.

*‘There are big barriers. Current turbine designs are all in Europe, not the UK. Once designed there is no new business’*

*‘most materials are imported and those supply chains are established. We need manufacturing in the UK’*

*‘we are fairly late into the market and against established players. We can overcome this by understanding the market, forming relationships with the major players, learning of opportunities and being competitive and responsive’.*

Many members feel that the UK should have a local content agenda, similar to the ones the French have, and that the UK government should be supporting these. It was felt that the UK currently imports components which don't meet British standards and that regulation is missing in the industry, allowing developers to opt for cheaper foreign companies rather than companies from offshore oil and gas where they have higher standards and regulations. Health and safety in offshore wind was seen a black hole and that the industry is not currently health and safety focused. Members felt that lessons could be learnt from oil and gas in this area.

## Procurement

- No common and open procurement system
- Getting on to approval lists – prequalification needs to be simplified
- Lack of technical understanding from procurement teams
- More standard terms and conditions

It is evident that procurement within the supply chain is poorly understood by the majority of

respondents and more clarity is needed. The secretive way in which contracts are advertised and awarded means that many potential suppliers miss out. Members felt that the prequalification process needs to be simplified, especially for Small & Medium Enterprises (SMEs). Members felt that the current ‘one size fits all’ for contracting was not suitable and that a renewables equivalent ‘FPAL’ was required

Members spoke of good contracting experience being dependent upon the developer/contractor's requirements. Members felt that there was a disconnection between technical knowhow and the procurement teams in developer companies. Members felt that often developer's procurement teams did not have a good enough technical understanding and this would cause problems.

Other barriers included:

- Timescales
- Offshore wind sector believe that oil and gas sector is too expensive
- Performance and warranty guarantees
- Developers spreading risk
- Impact of other industries
- Transport barriers

Members stated that timescales for projects are unrealistic and this prevents organisations bidding for contracts as it is not possible to complete the work in the time frame. Another issue with timing was when financial close is achieved. Members are reluctant to bid for projects when financial close has not yet been achieved as they are worried about whether the project will be able to go ahead. This means that they often miss the opportunity to bid as contracts tend to be lined up before it is achieved. A number of members spoke of being approached last minute which meant they were unable to identify the need of the developer/contractor at the earliest possible moment.

*‘Timescales are unrealistic. There is an overwhelming sense of naivety in the sector as there is an immaturity in project planning.’*

Members also felt that developers were looking to build projects ‘on the cheap’ and that as the industry moves into deeper waters this would not

be possible. Members felt that developers saw the oil and gas sector as too expensive and that they needed to reduce their price if they wanted to win business in the offshore wind industry.

Performance standards and warranty guarantees were cited as another barrier, particularly for SMEs. Performance standards were viewed as expensive and some members were concerned that they may ‘cripple SMEs’. Long warranty periods provide limited opportunities for SMEs. Uncertainty over how the offshore wind industry valued health and safety was also viewed as concern.

Members also mentioned concerns about developers spreading risk, transport barriers and the impact of other energy industries such as nuclear on the prospects of offshore wind. Other concerns were whether projects actually make any money and whether offshore wind is a profitable business. One member said it will be five years before they get a decent volume of sales related to it.

## 8.2

*‘There are two industries – past and now, and the future. The past and now is expensive and foreign. The future is cost effective and in the UK.’*

Biggest issues in offshore wind industry:

### Economic Viability

The economic viability of offshore wind projects is a major challenge. As projects go into deeper water the challenge is to reach financial decisions and make the project viable. The cost of Round 3 projects is expected to go into the hundreds of billions and there is concern about how this is going to be financed. Costs need to be reduced and this will only happen if there is volume and increased competition. Developers felt there was a limited turbine choice with only two or three models which are proven. They did recognise that there are others in the side-lines which are proving themselves. However, despite this, there is still not much competition. Lack of competition in the industry allows suppliers to demand higher prices.

*‘Costs can be reduced by 1/3 by 2020 but requires there to be a pipeline of work’*

*‘as the industry becomes larger scale prices will naturally get lower’.*

### Market Confidence and Political uncertainty

Some respondents felt that it is difficult for the government to do much at present except provide more information. However, other developers felt that there were a lot of ways the government could support suppliers in the offshore wind industry. They feel that lack of confidence in the industry puts off investors and so the government must help create certainty in the industry. Developers acknowledged that the government is doing things to derisk the offshore wind industry. However, they need to give confidence by clarifying the contracts for difference mechanism. More government intervention was seen as needed with the following suggested:

- Implement electricity market reform (EMR) and create certainty – clarify what’s happening post 2017
- Incentives for companies to develop UK manufacturing bases
- Development corporations - enable local authorities to make attractive situations for businesses to come in. This is starting to happen with turbines but need the same for foundations, substations etc.
- Look at existing cable companies and target them – onshore to offshore
- Learn from Germany’s model – they have very little installed capacity in comparison to how much they supply
- Credit solution for investment and capital expenditure (CAPEX) issues
- Positive legislation on subsidies

### Timing

Timing was seen as the biggest issue by one of the EPC contractors. It is important not to invest too early nor too late. The UK supply chain needs a steady pipeline of work but developments are in the hands of the utilities, which will do it when they want and have no incentive to do it at certain times.

## Consenting

Consent is very much an issue at present. Achieving consent for a project is very timely and issues emerge with sticking to deadlines which can be costly. In order to mitigate this developers and contractors are looking at an insurance underwriting scheme. The scheme has the premise that the date that the planning consent is decided is agreed by the developer and the government. If the government does not make a decision by the agreed date and it is then rejected at a later date, the government should pay back the money the developer has spent between those two dates. The risk will be minimal to tax payers as most projects will be approved. It was suggested that this might actually be a better way for the government to use its money instead of the Green Investment Bank.

## Migrating from Offshore Oil and Gas

Migrating from oil and gas is seen as a big challenge. There is a lot less money in the wind industry compared to oil and gas, it is marginal at best. Offshore oil and gas companies are not competitive as their rates are much more expensive. It was also felt that there are more differences than suppliers realise between oil and gas and offshore wind. Offshore wind has an automotive, repetitive supply chain and not so much a project on project basis. Companies are moving from one project to multiple – not job costing. There is the potential to repeat business, but oil and gas companies will need to realise that they need to reassess and adjust profit margins and revenues in order to compete.

## Skilled People

One of the major challenges for the offshore wind industry was having enough skilled people. The industry is fairly immature and lack of specialists can cost money and lives. Contractors believe the industry will go forward but specialists need to be trained. This concern about having enough skilled people can be addressed by investing in people and training. There is also the concern that skilled people will move to oil and gas as there is more money to be made. One of the

big strengths the industry has in attracting new talent to it is that it is seen as more ‘sexy’ than oil and gas.

## Public Opinion and Political Opposition

Public opinion was also viewed as a major challenge in offshore wind. Developers feel that we need to sell the benefits of wind as part of the overall energy portfolio. There is a need to inform the public of how wind is important as it will in the future supply a significant percentage of the energy we need. Concerns from the public about the intermittency of wind are legitimate and need to be addressed by talking about how wind is needed as part of a balanced energy supply.

## Volume and Gaps in Supply

Gaps in supply and volume were stated as a challenge for offshore wind. Developers expressed concern about whether there will be enough to deliver the quantity required for projects. The UK has factory space which could be used for major fabrications but they need investment. Vessel availability was also stated as a challenge for the industry. Getting the right vessel at the right place at the right time requires meticulous planning. It causes difficulty when unforeseen delays occur and the vessel has to move onto another project. However, vessels are being built and one contractor did not view this to be a big problem in the near future. Offshore wind cabling was also voiced as a concern and the need for manufacturers and layers of cables. Castings and rolling are also needed.

*‘The capability is there but not the investment’.*



**8.3** Concerns regarding the economic viability of offshore wind were expressed by both the UK supply chain and developers. Members are concerned about whether such expensive projects will be financed and come to fruition. Members are reluctant to invest time and money in building up their renewable business if there is a high risk the projects will not be developed. Although developers are confident projects will be built, they have concerns about making the project viable. Costs need to be reduced and this will be achieved with increased experience, innovation, competition and volume. The UK Government has set up a cost reduction task force with the aim of reducing the levelised cost of offshore wind to £100 per MW/h by 2020. Innovation has a key role to play in improving technology and reducing the cost of offshore wind. DECC announced in the UK Renewables Roadmap funding of up to £30m in innovation support for offshore wind cost reduction. Up to £15m has been allocated to the Offshore Wind Component Technologies Development and Demonstration Scheme and a second round of funding has been announced with a broad scope which includes turbines, foundations, installation and operation and maintenance<sup>7</sup>. At present, both members and developers agree that the industry is monopolised by a few key EPC contractors. The UK supply chain felt that these key players use the same suppliers, making it difficult for UK companies to enter the industry. Lack of competition allows turbine suppliers to charge what they want for their products. Developers feel turbine suppliers need to be aware that if they charge too much, the projects are unlikely to be built.

Offshore wind projects need to attract investors and this will only be done if investors are confident in the market and there is little political uncertainty. The Electricity Market Reform (EMR) is causing big problems with current projects. The government needs to implement the EMR as soon as possible and ensure that they answer investors' and developers' questions to resolve uncertainty. At present, there is no date to announce for the EMR.

Competition with other suppliers is a big barrier for the UK supply chain, particularly with European companies. Members felt lack of experience, the

size of their company and an already established supply chain are major barriers to them entering the industry. One solution to this problem could be to set up alliances with other companies in order to gain work in the industry. This is in fact actively encouraged by some developers.

Another solution suggested was that the government could help the UK supply chain by providing subsidies for SME's new to the industry. This could be used to help them gain experience required for bidding for projects by reducing the risk involved or contribute to getting the necessary standards and warranty guarantees requested by EPC contractors. A Local Content Agenda was also seen as a solution to competition from foreign companies. DECC announced in February 2012 that the offshore wind industry will commit to a vision that more than 50% of the supply chain content should come from UK companies. The Crown Estate, DECC and the industry will submit a report which will specify how UK content in offshore wind will be measured and whether 50% local content is being met by individual projects which is expected to be published imminently. It is hoped that with turbine suppliers looking to build manufacturing facilities in the UK, the UK supply chain will be able to tap into the opportunities this provides. Siemens is planning to build a £210m turbine plant in Hull for 6MW turbines which has recently secured local planning committee approval and will now be considered by government ministers. Gamesa announced in March it is looking to build a £125m offshore wind farm facility at the port of Leith in Scotland. In May 2011, Vestas announced after the launch of the V164-7.0 MW turbine that they had signed an agreement for 70 hectares of land at the Port of Sheerness in Kent to serve as a manufacturing base for the turbine. In May 2012, Vestas won local approval from councillors at Swale Borough Council for the turbine facility, subject to an agreement related to jobs. Once an agreement is reached, applications can be approved and sent to the secretary of state for final permission.

Developers are concerned about gaps in the supply chain. One solution was for developers and the government to identify where these gaps are and support UK companies in filling these gaps. For example, support UK onshore cable companies move to offshore.

There is a need for the UK to invest in its supply chain to increase its competitiveness. UK companies could save on transport but pricing is not in line with Europe, even with transport factored in. UK costs are higher than Europe (Spain and Belgium for example) which is why EPC contractors and developers opt for European companies. If members can't compete on price, a solution to overcoming this barrier could be to provide something substantially different which will reduce costs or minimise inefficiencies. Some contractors said they had not found companies that offer something substantially different. If a company cannot beat the price, they need to show a technical advantage. In order to successfully gain business, companies need to fully understand the project, the technology and the company and start establishing relationships and start gaining experience now. Ideally they need to go to Europe and meet the EPC contractors and learn about their turbines.

In order to be able to compete, it is essential that businesses understand the industry and where their goods or services fit in. Understanding how your product/service can benefit your customer over a competitor is fundamental. It is also necessary to build relationships with key decision makers and start getting yourself known.

*'Don't just say what you do. Say what you can do for us'.*

Timescales are a concern for both members and developers. Members felt that timescales for the development of projects are unclear. Some members felt that timescales for completion of work are unrealistic and it has meant that they have had to turn down work. It is likely that as the industry matures, timescales will become clearer. However, in the meantime, developers need to work with the supply chain and communicate as early as possible what they require and when they need it by. In order for UK companies to reap the maximum benefit from offshore wind there needs to be a steady pipeline of work. Although most developers felt that this would occur naturally, EPC contractors had concerns about the timing of Round 3 projects and felt an incentive was required to create a steady pipeline of work. This would also help to solve the concern of whether

companies would be able to provide enough volume for what is needed. Regulator Ofgem could influence this through their transmission decisions.

Migrating from offshore oil and gas was another concern for developers. Developers are not willing to pay the high prices which oil and gas companies command for wind and so oil and gas companies need to readjust their prices if they wish to work in the offshore wind sector. They felt that suppliers had too high expectations of wind and they are too expensive. However, some members believe that developers of offshore wind need to be more realistic about their cost and that as projects go into deeper water they will approach oil and gas companies for their expertise.

Concerns about whether the UK will be able to provide the skilled people required in offshore wind was voiced. A real challenge is to ensure that the UK can provide the expertise required to build these projects. Businesses, the government, universities and schools need to work together promote offshore wind careers to young people and ensure that high-standard university courses and training is available in the UK. There is still time for this to be achieved.

## Conclusions:

- Improved communication and better education about the sector could potentially remove or reduce a number of barriers and challenges voiced by both the supply chain and developers.
- Communication can be improved by using databases such as EICDataStream, attending events, looking at websites and speaking directly to developers. Developers often hold public events in the early planning stages of the project and post information on their websites about projects. Members could use this to get more details and create a bigger picture of the project. Organisations like the EIC can also support the UK supply chain by holding events with developers about specific projects.
- Investment is required to overcome a number

of barriers, particularly for SME's who struggle to compete with larger businesses.

- Local content agenda will help UK business compete. The government has committed to more than 50% of the supply chain coming from UK companies. Questions still remain as to how this will be achieved. Solutions could include the implementation of standards and health and safety regulations.

## Sources

<sup>7</sup> Applicants have until Friday 29 June 2012 to submit an application for funding.

## 9. Advice

*‘There is business out there, there are operators looking for reliable supply chain companies, and it doesn’t always come down to cost’.*

**9.1** A number of respondents had a positive experience of working in the offshore wind industry. Advice included:

- Understand the market
- Establish a niche market and exploit it
- Learn from other industries such as oil and gas
- Plan ahead and prepare for longer time gaps between stages of a project
- Form consortia of experience and adaptable teams capable of seeking flexible solutions
- Understand risks to your business and that of your customers
- Engage early with developers
- Engage with all stakeholders and businesses at all levels of the supply chain
- Reliability and quality at supply stage are important
- Get the necessary certifications and approvals
- Don’t underestimate the resources you will need
- Form partnerships and knowledge transfers
- Research, network and attend industry events
- Get involved with organisations like the EIC and RenewableUK
- Deliver the work on time and effectively
- Find out if there is money in it for you
- Get in now!

*‘Our advice would be to engage with all stakeholders and business at all levels of the supply chain because you can be sure on one project you may well be a tier one supplier and on the next a tier two, particularly as the global supply chains evolves with time. Many business models are undergoing reiteration and these will no doubt lead to opportunities with prospects who were previously not on the business development radar’*

*‘concentrate on what you know and try to adopt practices from the industry that you are in that you know will work rather than trying to re-invent the wheel’*

*‘it is easy to underestimate the resources you will need. We are very stretched by our commitments’*

*‘if we have the chance and are given the problem, we may be able to provide the solution the client requires so that both parties benefit’*

*‘deliver the work on time and effectively then businesses will come to you. You are as good as your last job’.*

**9.2** Developers and EPC contractors’ advice includes:

*‘Give the developers the feeling you understand what their issues are’.*

- Educate yourself in the industry
- Engage in the industry
- Attend events
- Detail how you can meet the aims of the project
- Look carefully- what kind of business and how much cost upfront
- See where you fit in
- Get out to Europe to where the factory is – get to know us!
- Keep trying

If you want to get the attention of developers, understand their business and what you can do to solve their problems. Suppliers may need to make strategic investments too. For example, if a new manufacturing facility is being built see if you can have a base near it. Developers also advised to get experience now. The industry is moving away from one EPC contract to multi contract. It is important to work up your product and start bidding. One developer said it is good learning experience to just bid and even if you are unsuccessful at least learn why before trying again.

*‘Ask the contractor: You have contracts coming up – how can I bid for them?’*

*‘How can you help our project become more economically viable?’*

*‘Have a proven product!’*

*‘Tell me how many units at what rate for how long – tell me the process’.*

Other advice was to think longer term - don't just quote price today – think about how you can drive down costs on volume basis. How are you going to deal with cost reduction? Think about cost reduction techniques such as volume procurement. Invest in state of the art equipment – what machines you are going to buy to produce the product?

Venturing abroad to Europe and understanding the market was advised. A sit and wait attitude is unlikely to generate any business. It is important suppliers understand that entry into the industry isn't easy – it can take years. However, there is help out there, consultancy firms who can tell you where your business fits in the industry and save you a lot of time.

*'Some suppliers say they have tried for six months but didn't get anywhere – keep going, try for 2 years and then rethink!'*

**9.3** The key message was 'do your homework'. Get to know the industry and who the key players are and know where you fit in. Utilise databases and websites, speak to key players and attend events such as RenewableUK and All-Energy. Tier 1 contractors need to talk to developers, sub-tier contractors need to talk to Tier 1 and Tier 2 contractors. Sub-tier contractors can also talk to developers to ask who they think are the big Tier 1 contractors so they know who best to approach. Once you get a feel for the industry and begin to familiarise yourself with potential clients you will begin to know what contracts are coming up. Think about what you can do to make the project more economically viable and meet the aims of the project. Think about if you can bring innovation to the project and how you can deal with any issues the developer might have – this will make you stand out over competitors.

### Conclusions:

- Advice included understanding the market and the industry fully. Understand who the big players are, the details of the projects, technology and timelines.
- Members were advised to get in the industry early and engage with project developers at the earliest possible stage. Advice included establishing relationships at all levels and forming partnerships.
- Developers advised potential suppliers to really know their business and how their product or service can benefit them.
- It's important that new entrants to the industry recognise that it is not an easy industry to break into – it can take years. New entrants need to invest in their renewables division in order to be successful – get the necessary certifications and consider where you are based – you may need to look at bases near the turbine manufacturing facilities. This is not an easy industry, but those that had worked in it which the EIC spoke to had made money in it.





## 10. Is the UK Supply Chain Reluctant?

**10.1** The majority of respondents did not feel the UK supply chain is reluctant to get involved in the offshore wind industry. Members felt that the UK supply chain was in fact showing more commitment, and attracted to the offshore wind industry as it was an opportunity for diversification.

*'I think the level of reluctance has reduced as people are coming round to the fact that it is happening therefore more companies are conforming to opportunities that are available'*

*'our experience is there is no reluctance, quite the opposite; there is an eagerness to be involved in a growing opportunity'*

Despite a feeling that there were opportunities in offshore wind, others felt that there was very little supply chain to get involved in. They perceived there to be no major original equipment manufacturers (OEM's) in the UK and much of the fabrication is undertaken in Northern Europe. Doubts as to whether there are opportunities for their specific product/service were also voiced.

Some members did feel that there was a reluctance to get involved due to:

- Lack of government support and political uncertainties
- Immaturity of sector
- Uncertainty of future development
- Controls from higher up in the supply chain
- Waiting for larger companies to start issuing orders
- Investment required
- Unattractive due to enough work from Oil and Gas – does it make money?

*'There are too many possible variables to predict the future development of the industry that are preventing companies from making any significant monetary investments when we are in such a tight financial market'*

*'fundamental reluctance to accept it is happening. Out of sight, out of mind. Communication, public perception, government policy, planning, funding. UK companies coming together to mobilise themselves. I*

*think the wind industry should promote itself to its near neighbour – the oil and gas industry'*

*'not seen as a high priority which may allow foreign investors an opportunity to secure market position'*

*'would rather our European neighbours took the first risks. Also UK O&G is protected and has more value still'*

*'the UK supply chain does need to demonstrate that it has the hunger and interest to engage with the R 2.5 and R3 developers to seek to displace overseas competitors and engage with the Tier 1 suppliers as they explore setting up operations in the UK'.*

Oil and gas companies were keen to get involved but soon discovered the margins are not so profitable, so have reverted back to concentrating solely on oil and gas which is far more profitable. During a focus group session, the question of whether working in the offshore wind industry actually does make money was raised. However, the answer from those who had done work in the industry was that it had been profitable. There is a feeling that offshore wind developers are trying to develop 'on the cheap' and this cannot be done. Some members felt that they are waiting for developers to realise this and for developers to approach them for work. There are lots of lessons which could be learned from oil and gas moving over.

Some UK companies do not see the renewables industry as attractive. There is a feeling that if manufacturing was done in the UK the industry would be more appealing. Some members did not seem to feel particularly positive about recent announcements about turbine suppliers setting up manufacturing facilities in the UK. They felt that there will be limited local effect, with only a few jobs being produced but that contracts would still be awarded to foreign companies. Despite ports being done up, it feels like it is still for the benefit of foreign companies, and not UK companies.

*'Yes, risk averse due to political uncertainty'.*

However, others felt that the recent interest in turbine manufacturers building facilities in the UK would have a positive impact and provide more opportunities for UK suppliers.

A number of developers and EPC contractors do not feel the UK supply chain is reluctant and that the supply chain was already in place in the UK. Developers did recognise that there are barriers to entry into the market. Lack of consents and the risks with the EMR make the industry a risky one to enter. Developers felt that those companies that aren't involved are more reluctant due to market clarity and so are reluctant to get capital. Developers said that they were already working with lots of UK businesses and, in terms of construction, a lot of people are involved in the UK. In the operation side of the offshore wind industry it is generally locally based.

*'Enthusiasm seems to be there – no lack of appetite'*

*'don't know where the market is going'.*

Some developers felt that despite smaller players being involved in the industry, larger ones appear to be reluctant. It was felt there was an attitude of 'don't want to produce things or take risk' and that they didn't want to look at new markets. Developers wanted to know why suppliers are not involved. It seemed they were only interested in niche markets like high end R&D and high value services.

*'Why are suppliers not asking the UK government to support them?'*

It was felt that suppliers were not competing in a proper market – their prices are too high for offshore wind and they need to adjust this in order to compete and win the orders. Although they are happy to support suppliers, developers felt that the idea that it is their responsibility to assist the UK supply chain is not right. It was felt that it should be the suppliers doing the work to get contracts – not developers chasing UK suppliers. It was recommended to look at Europe as a whole, not just the UK, as reluctance to venture abroad was observed. Advice included going onto the continent and speaking to companies there. UK companies can compete but must understand what they are competing in.

*'Yes we have experienced reluctance'*

*'suppliers need to bang on the UK government's door and get them to support them as there is a market there. We are way behind!'*

*'sit and wait and it is unlikely to happen'.*

On the whole the UK supply chain is not reluctant to get involved in offshore wind and is in fact keen to grow their business in this area. However, there did seem to be somewhat of a blame attitude and a number of businesses struggling to get work in the industry were frustrated by how difficult it was. The offshore wind industry is not an easy one to get into and it will take time. However, there are opportunities for UK businesses to tap into if they are willing to put in the work.

### **Conclusions:**

- The UK supply chain does believe that there are opportunities in offshore wind and on the whole they are keen to get business.
- However, reluctance has been experienced by some developers who feel that suppliers are missing out due to an unwillingness to reduce prices and a sit and wait attitude.

## 11. Final Conclusion

It is evident that both developers and the UK supply chain are enthusiastic about the future of offshore wind and regard it as an expanding market. UK businesses see offshore wind as a growing part of their business and are looking to increase their renewables portfolio. Round 3 projects will be built and it is likely that a steady pipeline of work will continue beyond 2020 which will be beneficial to the supply chain.

However, there is a feeling of frustration at the difficulty of being awarded work in the industry. Offshore wind is not as profitable as other industries and it takes a lot of time, effort and resources to successfully gain contracts. This is deterring to UK businesses who feel that the reward of successfully gaining work in the sector is not worth the effort and time it takes in achieving this. Many feel that their resources could be used in other sectors more effectively.

The barriers which suppliers encounter make offshore wind a risky business to enter and it can be difficult to successfully work in the industry. A lack of open communication between developers and the supply chain at all levels has emerged as a major barrier. This could be overcome, or at least reduced, by improving communication through a number of mediums including trade associations like the EIC, the internet and presentations at events, to get information in to the public domain.

It is clear that both developers and the UK supply chain want to talk about the issues facing offshore wind. However, a forum in which they can do this appears to be missing. Challenges in the offshore wind sector could be solved through encouraging debate. Once solutions have been presented, the government, developers and the supply chain need to work together to execute them and bring about the changes required. The cost of offshore wind needs to be reduced in order for it to become competitive with conventional power generation. Again, improved communication is fundamental in achieving this goal. Developers need to communicate more effectively detailed plans for projects to the supply chain and give them the opportunity to suggest cost reduction strategies.

UK companies also need to look outside of the UK. UK companies need to engage with developers and all levels of the supply chain as early as possible and start forming relationships now. UK companies need to get out to Europe and visit turbine manufacturers to understand their business and their products. Really understanding the needs of your customers and delivering what they require efficiently and on time is key to success in any industry and it is no different for offshore wind.

Overcoming and minimising risks is a major challenge for the offshore wind industry especially as the industry enters into deeper, unfamiliar waters. The industry is relatively immature and with that comes risks as developers and contractors tackle the unknown. However, if developers and the supply chain work together these risks can be minimised. There is money to be made in offshore wind, but it will take a lot of work and some time to reap the benefits.



## 12. Appendix

### Achilles

Achilles is an online procurement service. Achilles operates different databases for different sectors and regions. Suppliers undergo preregistration screening according to quality criteria, including health, safety and environmental management.

### Utilities Vendor Database (UVDB)

A number of developers advertise their contracts on Achilles Utilities Vendor Database. The UVDB is an online system which can be used for one-off purchases or for contract and framework agreements for the UK utilities. The database is operated as a qualification system under article 30 of the EC Utility Directives. Information is gathered about suppliers and is checked for accuracy and that it is in date. The qualification system looks at information which includes financial performance, health, safety, environmental policy, CSR, and products and services data. Once the information is checked, it made available online to the buyer. The UVDB pre-qualifies suppliers and contractors under certain headings.

### Sellihca

Sellihca is an online supplier database which is also operated by Achilles. It is operated for utilities in Northern Europe. Buyers use Sellihca to identify potential suppliers supplying products and/or services, to qualify suppliers and maintain specific information about suppliers. Sellihca has a list of qualification requirements for the standard registrations which the supplier must demonstrate.

### Connexio

Connexio is an online supplier database that Achilles Central Europe operates. The database is for the procurement of utilities in Germany, Eastern and Central Europe. Suppliers complete an online questionnaire they have the opportunity to become a pre-qualified supplier for all utilities at once. Only suppliers that currently or want to supply to utilities can register with Connexio.

### Tenders Electronic Daily (TED)

Tenders Electronic Daily (TED) is the online version of the Supplement to the Official Journal of the European Union and is dedicated to European public procurement. The registration and usage of TED is free.

Company	Description
<b>Centrica</b>	Centrica is a signatory to The Prompt Payment Code <sup>13</sup> . Centrica also has a Responsible procurement and supplier management policy <sup>14</sup> .  DONG Energy Suppliers have to comply with the DONG Energy Code of Conduct <sup>15</sup> for suppliers. DONG Energy is subject to the Directive 2004/17/EC of the European Parliament and the Council of the 31st of March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal service sectors. The tender process must therefore be carried out in accordance with this legislation. DONG posts overview of the current Annex IV B-services in tender on their website under upcoming tenders. Other tenders are published in the Official Journal of the European Communities or run through Achilles/Sellihca/Connexio or SKI <sup>16</sup> .
<b>EDF Energy</b>	Companies interested in providing contractual services can register at EDF Energy Renewables website <sup>17</sup> .
<b>EDF Renewables</b>	Companies interested in supplying to EDF Renewables (or Renovaveis) can register their products and services using the EDP Group Suppliers Registration System <sup>18</sup> . The system allows companies to browse, select and classify suppliers who wish to work for the EDP group. Depending on the category of the project or service, the supplier must register at either a basic level or Reprro level. Basic level is products or services which are not technically complex and are easy to acquire. At the REPRO level, products or services are strategic and/or technically complex. Once companies are registered the Registration System (REPRO), which EDP Renewables has developed along with Achilles, analysis the information and documentation provided by the supplier. Once the information is validated, companies can become qualified suppliers.
<b>Eneco Energy</b>	Suppliers interested in supplying the Navitus Bay Project can register on their suppliers database .
<b>E.ON</b>	E.ON asks potential suppliers to register on the Achilles Utilities Vendor Database. Once companies have registered their interest, E.ON will be able to view their profile and they will have the opportunity to pre-qualify. E.ON has a responsible procurement policy <sup>20</sup> which all suppliers to E.ON will as a minimum requirement comply with.
<b>Forewind</b>	Forewind, a consortium of SSE, Statoil, Statkraft and RWE npower renewables, have a supplier database where potential suppliers to the Dogger Bank project can register <sup>21</sup> . Forewind will be selecting consultants and contractors via a transparent tendering process. Interested companies will go through a pre-qualification process before being invited to tender or else it will be an open tender.
<b>RWE npower Renewables</b>	Companies can register to show interest in becoming a supplier <sup>22</sup> . Suppliers interested in supplying to the Atlantic Array project can complete a registration form where the company information is automatically entered in the Atlantic Array supply chain database <sup>23</sup> . Orders from RWE are subject to conditions for suppliers and services employed by the various companies and to any additional conditions included in the order. The conditions can be found at RWE's website <sup>24</sup> .
<b>ScottishPower</b>	Potential suppliers <sup>25</sup> can register on ScottishPower's online questionnaire <sup>26</sup> . All suppliers wishing to supply must register via the questionnaire and thereafter will be contacted by Achilles to verify the data. The questionnaire requires the supplier to pick 5 core products/services, there is an opportunity to choose more further on in the process. For any product categories deemed to be high risk, suppliers are further required to submit to the Achilles Verify process whereby a thorough assessment of Health and Safety, Quality and Environmental capabilities is undertaken and an evaluation rating is produced. Through the completion of the online questionnaire, suppliers can pre-qualify to work with ScottishPower. ScottishPower has a policy to encourage the use of the Internet as a channel for transactions with suppliers and therefore utilise an electronic tool for all of their tenders. Suppliers who have received a formal invitation to tender must submit their bid via this tool <sup>27</sup> .

<p><b>Seagreen Wind Energy Ltd.</b></p>	<p>Seagreen Wind Energy Limited has SCOREI, supplier and Contractor Online Registry E-version, where companies can register their interested in supplying goods and services<sup>28</sup>. When registering suppliers should state they are specifically interested in the Seagreen project. They can do this by entering 'Seagreen' in the referral field on the references page.</p> <p>Suppliers interested in supplying goods or services to SSE generally need to register with the Achilles Utilities Vendor Database (UVDB). Suppliers complete the online UVDB questionnaire then have the opportunity to pre-qualify for work with SSE.</p> <p>For services/goods which are deemed to be high risk by SSE, suppliers will need to submit to the Achilles Verify process and demonstrate compliance with health, safety, environment and quality requirements<sup>29</sup>.</p> <p><b>SSE</b></p> <p>The SSE Offshore Wind Alliance has been set up under which companies form an alliance to collaborate on SSE's offshore wind programme, with the aim of securing substantial reductions in the cost of delivered power from projects. SSE has selected preferred partners whom they will work with to achieve targets. SSE will decide which people to bring in as suppliers. SSE has developed the alliance in response to the problems with the EPC contract issues with Greater Gabbard. Whether EPC is still a viable option for developers is still in question – lessons are being learnt.</p>	<p><b>Vattenfall</b></p> <p>Vattenfall has a supplier qualification system Vattenfall Supplier Bank (VSB). VSB contains level 1 qualification, Sellihca, Connexio and UVDB.</p> <p>To become a supplier, companies can register at Vattenfall's supplier bank<sup>30</sup>.</p> <p>The exact steps the qualification process will entail depends on your company's spend level and/or risk profile of the products/services you supply.</p> <p>Vattenfall's EU tenders can be found on Tenders Electronic Daily (TED). All Vattenfall suppliers should agree to the 10 principals set out in the UK Global Compact<sup>31</sup> and follow the recommendations in Vattenfall's Code of Conduct for suppliers<sup>32</sup>.</p>
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**Table 5: How Developers Tender**

## Sources

- <sup>13</sup> Prompt Payment Code: <http://www.promptpaymentcode.org.uk/>
- <sup>14</sup> Centrica Responsible procurement and supplier management: [http://www.centrica.com/index.asp?pageid=1115&item=7#item\\_7](http://www.centrica.com/index.asp?pageid=1115&item=7#item_7)
- <sup>15</sup> [http://www.dongenergy.com/SiteCollectionDocuments/NEW%20Corporate/PDF/Indk%C3%B8b/Code\\_of\\_conduct\\_for\\_suppliers.pdf](http://www.dongenergy.com/SiteCollectionDocuments/NEW%20Corporate/PDF/Indk%C3%B8b/Code_of_conduct_for_suppliers.pdf)
- <sup>16</sup> The Danish National Procurement Agency Ltd
- <sup>17</sup> EDF Energy Renewables: <http://www.edf-er.com/Suppliers/index.htm>
- <sup>18</sup> EDP Renewables Suppliers Global Registration: [http://www.tsms-ase.com/EDP\\_Q1/logon.aspx?Lng=UK&Origin=EDPRENEU](http://www.tsms-ase.com/EDP_Q1/logon.aspx?Lng=UK&Origin=EDPRENEU)
- <sup>19</sup> Navitus Bay Suppliers database: <http://www.navitusbaywindpark.co.uk/Suppliers.aspx>
- <sup>20</sup> E.ON Responsible procurement policy: <http://www.eon-uk.com/about/6519.aspx>
- <sup>21</sup> Forewind: <http://www.forewind.co.uk/suppliers.html>.
- <sup>22</sup> RWE supplier registration: <http://www.rwe.com/web/cms/en/90098/suppliers/go-to-the-contact-form/>
- <sup>23</sup> Atlantic Array Supply Chain database: <http://www.atlanticarraysupplychain.co.uk/>
- <sup>24</sup> Conditions for supplies and services: <http://www.rwe.com/web/cms/en/89916/suppliers/conditions-for-supplies-and-services/>
- <sup>25</sup> Scottish Power Suppliers webpage: <http://www.scottishpower.com/Suppliers1.asp>
- <sup>26</sup> Scottish Power Supplier Registration Page: <http://tsmsprequal.achilles.com/TSMSScheme/ScottishPower/Pages/TSMSLogin.aspx>
- <sup>27</sup> ScottishPower access to the tendering application: <https://www.iberdrola.es/sap/bc/nwbc/?sap-language=en>
- <sup>28</sup> SCORE! Registration Link: [http://www.fluor.com/services/procurement/supplier\\_and\\_contractor\\_registry/pages/default.aspx](http://www.fluor.com/services/procurement/supplier_and_contractor_registry/pages/default.aspx)
- <sup>29</sup> SSE Responsible Procurement Charter: <http://www.sse.com/PotentialSuppliers/>
- <sup>30</sup> Vattenfall Supplier Bank: <http://supplierbank.vattenfall.se/Vattenfall/RegisterSupplier.aspx?language=en-GB>
- <sup>31</sup> [www.unglobalcompact.org](http://www.unglobalcompact.org)
- <sup>32</sup> [http://www.vattenfall.co.uk/en/file/Code-of-Conduct-090331\\_8459961.pdf](http://www.vattenfall.co.uk/en/file/Code-of-Conduct-090331_8459961.pdf)

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