Foreword

The UK’s offshore wind industry continues to have a positive economic impact across the UK, as well as producing renewable electricity at scale. It already supplies over 5% of Britain’s power and this is set to increase to 10% by 2020. The sector has created thousands of jobs, helping grow local businesses and regenerating coastal communities.

The Offshore Wind Industry Council (OWIC), the joint industry-government body which I co-chair, is working to drive down cost and deliver increased UK content in offshore wind projects. To help track this we agreed a rigorous methodology to be used for all new offshore wind farms to measure UK content. This report, delivered by RenewableUK on behalf of the offshore wind industry, is the second time that our sector has published a comprehensive assessment of our progress.

Since the last report was published in 2015, the industry has continued to mature; projects coming forward are more ambitious than ever – deploying larger components and at greater scales than previously seen. This has helped the industry deliver significant reductions in cost, aided by innovations ranging from the installation of more efficient turbines to the utilisation of drones for maintenance.

In the past few years, leading manufacturers have made significant investments and commitments to the UK market. MHI Vestas Offshore Wind (MVOW) now has a strong presence on the Isle of Wight producing the blades for the new 8-megawatt turbine (already deployed at two UK projects) whilst in December 2016 Siemens officially opened its much celebrated blade factory in Hull. This combined £310m investment from Siemens and ABP is providing an important boost to the regional economy both through job creation and further supply chain opportunities. The progress the industry has made is reflected in the overall increase in UK content levels across projects.

2017 is also a significant year for the sector. The second CfD auction round will see offshore wind compete with other renewable technologies to produce clean power at the most cost-effective price. We are confident that the dramatic cost reductions in the UK and European markets will continue. And as an industry, we are bullish in our own ambitions: we will be cost competitive with other new build generation within a decade.

The offshore wind sector is also making a strong case for a central role in the Government’s new Industrial Strategy. We are confident offshore wind can support the Government’s ambition to bolster productivity, deliver affordable decarbonisation, and help rebalance the economy. Offshore wind is now in the top ten for infrastructure spending in the UK, and has committed £11.5bn into the economy over the next four years. This surpasses the amount being invested, for example, in broadband infrastructure. It is also comparable to the amount being spent on housing and regeneration schemes.

Our industry is confident that upcoming auction rounds will directly lead to significant new investments by offshore developers. We already have a thriving supply chain which stretches from established ports to new factories across the country. And we are committed to their future so that new offshore projects can continue to collaborate with competitive and robust businesses around the UK.

Benj Sykes | Co-Chair,
Offshore Wind Industry Council
Summary

Since the publication of the 2015 report, the UK content of offshore wind farms has risen by 5% and now stands at 48%, with growth in UK content at development, construction and operational stages of the project lifecycle. The standout growth has been for construction (CAPEX), which has seen a 11% increase from the baseline, owing to increased UK manufacturing and construction capability.

In development (DEVEX) UK content levels have increased to 73% as the expertise of UK supply chain businesses has grown. In operation and maintenance (OPEX) UK content levels have increased by two percent to 75% as the industry has retained skilled staff and companies in the areas around port and wind farm infrastructure.

This growth in UK content is important because there is more offshore wind installed in the UK than in any other country around the world. As our world-class market has grown, there has been a rapid expansion of UK companies working in the sector. This UK-wide value chain is driven by, and additional to, the substantial inward investment made into the UK market by international offshore wind companies.

The UK’s offshore wind sector has huge growth potential: it remains one of the UK’s largest infrastructure investment pipelines by value, with the sector due to invest £11.5bn in the UK between 2017 and 2021. Industry is demonstrating progress and will continue to strive to maximise benefits to the UK, but this is not the end of the story. The UK offshore wind sector has been driven by the need to produce clean, secure and affordable electricity for consumers. But the growth of the sector in the UK has proven the industry as a full-scale industrial project. It delivers modern infrastructure, local community investment, technological innovation and export opportunities. Most importantly, it delivers the component underpinning the analysis in this report; a burgeoning UK supply chain.

The increase in UK content is good news, and we expect the positive story to be continued by future UK investment and UK success, as during the time period this report covers we have seen further UK investment. But this is just a snapshot of the investment and value that the UK’s offshore wind sector is delivering. The methodology the industry uses to measure UK content does not capture the wider investment in local jobs or distributed benefits for local communities. Nor does it capture the export opportunity that is growing with our international leadership in wind; UK expertise is highly valued in emerging markets like the US, China and other European markets. A strong domestic sector has enabled the UK to export around the world as the global renewables industry takes off.

Results

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<thead>
<tr>
<th></th>
<th>Lower</th>
<th>Upper</th>
<th>Weighted average 2017</th>
<th>2015</th>
<th>Change against baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEVEX</td>
<td>27%</td>
<td>92%</td>
<td>73%</td>
<td>57%</td>
<td>+16%</td>
</tr>
<tr>
<td>CAPEX</td>
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<td>38%</td>
<td>29%</td>
<td>18%</td>
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</tr>
<tr>
<td>OPEX</td>
<td>52%</td>
<td>89%</td>
<td>75%</td>
<td>73%</td>
<td>+2%</td>
</tr>
<tr>
<td>TOTEX</td>
<td>44%</td>
<td>53%</td>
<td>48%</td>
<td>43%</td>
<td>+5%</td>
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</tbody>
</table>

**TOTAL UK EXPENDITURE**

48%, +5 percentage points

48% of the total expenditure (TOTEX) for projects in the survey was based in the UK. This figure includes both generation and transmission assets and shows increasing UK content from the 2015 baseline of 43%. All areas of expenditure (below) have shown an increase in UK content from the baseline year.

This growth reflects the continued development of the UK’s offshore wind sector, and it should be noted that UK expertise is now a vibrant export commodity. Separate sector analysis shows increased export activity for UK offshore wind sector products and services to growing wind markets on the continent, in the US and in the Far East.3

**EXPENDITURE DURING DEVELOPMENT**

73%, +16 percentage points

UK expenditure during development (DEVEX) in the UK is delivering 73% UK content on average.

The published range shows the greatest variation of the three separate figures, reflecting the fact that offshore wind is now a global industry, with many companies looking to manage costs by developing schemes on a portfolio basis. This means that development activity can sometimes take place in other countries. However, we also know that a number of companies are using UK offices to support or lead on the development of wind farms outside of the UK. This international work, which benefits the UK, is not included in these figures.

**EXPENDITURE DURING MANUFACTURING AND CONSTRUCTION**

29%, +11 percentage points

UK expenditure relating to manufacturing and construction (capital expenditure or CAPEX) has seen significant UK growth, with an increase in UK content from 18% to 29% by weighted average.

These figures have been achieved by both the development of UK supply chain companies and inward investment from international businesses. High-profile investments made in UK capability include those by Siemens and MHI Vestas Offshore in UK blade production. However, alongside these, we have seen investment in other areas of UK expertise, such as for cables and fabrication, construction and vessels. Many of these investments have supported UK companies that have been active in other sectors, such as marine engineering or oil and gas, to transfer their expertise and diversify into this new sector.

**EXPENDITURE DURING OPERATION**

75%, +2 percentage points

Operational expenditure (OPEX), which includes services such as logistics or maintenance, is at 75% for UK content. This relatively high score is consistent with the baseline expectations set in 2015 and should be unsurprising, as services to offshore wind farms are likely to be permanently located along the UK coastline, within easy reach of sites. Importantly, we have seen UK content continue to increase from the 2015 figure of 73%, with investments being made in UK ports and local supply chains to offer support across the 25-year expected lifetime of offshore wind farm assets. These long-term contracts mean a pipeline of work that can ensure local community development.

Offshore Wind Industry Investment in the UK

Figures presented for 2015 and 2017 differ slightly in their methodology. The 2015 analysis analysed contracts at £4m or above as opposed to £10m or above in the current methodology.

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Growing the UK Offshore Wind Supply Chain

The UK companies that are servicing the UK offshore sector make up a diverse supply chain. The offshore wind sector has awarded contracts to UK businesses across the full lifecycle of wind farm projects, from the initial development of projects, through to the supply of manufactured components, and the operation and maintenance of offshore wind farms.

Contracts awarded to UK companies included in this analysis include:

- Wind farm design
- Design of seafastenings
- Transition pieces
- Secondary steel work
- Substation design, fabrication and installation
- Foundation design and engineering
- Grouting
- Crew transfer services
- Cable protection systems
- Array cable manufacture
- Training services
- Technicians
- Marine co-ordination
- Preassembly of towers and turbines
- Unexploded ordnance management
- Inspection services

In addition, even where contracts have been awarded to companies based outside the UK, significant aspects of these contracts are being met by UK sub-contracts for products or services. A number of UK manufacturers also supply components such as bearings and electrical control equipment into the wind turbine market. Many such components are excluded from these figures owing to the type and nature of contracts.

Investing for a world-leading UK industry

In 2016, UK companies won work in offshore wind in 17 countries across the globe. The UK is a world leader in offshore wind and is providing expertise to growing wind markets overseas. Supporting a strong domestic market, and maximising the use of our natural resources in the UK has enabled a flourishing overseas trade.

Looking to the future

Looking ahead, there is an expectation for industry to continue to demonstrate further progress, and a potential boost, for UK content in the offshore wind sector. There are several wind farm projects for which we have already seen significant contract awards to UK-based companies, as well as additional inward investment from international companies in UK-domiciled fabrication and component manufacture.

Around the UK coastline 10 projects are under construction and between now and 2020 we expect to double offshore wind output as more projects come online. Total investment in new UK offshore wind farms from now to 2021 will total £11.5bn. This does not include any investment that might happen in the successful projects in the current CfD auction. The current Industrial Strategy offers an opportunity to ensure the economic benefits of offshore wind are maximised to the UK, by ensuring it is at the forefront of thinking, with a clear forward pipeline which will encourage supply chain to base itself in the UK.

The UK’s offshore wind sector is a globally important success. But even at its present scale, most of the industry’s full potential value in the UK is yet to come. At all levels, the growth of offshore wind still has much to offer the UK economy, consumers, and communities.

Study methodology

As part of their commitment to delivering value for the UK, in 2012, the sector set an aspirational target of achieving 50% UK content in offshore wind projects by 2020. Leading companies then developed a shared methodology for assessing projects, so that the whole sector uses the same calculator to report.

In November 2014, the Offshore Wind Industry Council (OWIC) approved the adoption of an industry-wide methodology to measure the UK content of offshore wind farms. This methodology was published in May 2015. Industry submits anonymous, aggregated data from all contracts worth over £10m in value that come from UK wind farms to the industry trade body, RenewableUK, for analysis. New offshore wind projects are added to the analysis as they reach either a Final Investment Decision (FID) or commence operation. The methodology produces four key output figures: expenditure on development (DEVEX); manufacturing and construction (CAPEX); planned operation and maintenance (OPEX); and total expenditure (TOTEX).

This puts the offshore wind sector at the forefront of the energy sector as one of the few sectors tracking actual progress. In 2015, industry reported their baseline figure of 43% UK content for offshore projects. This 2017 report is the first report to set out UK content levels for projects coming to Final Investment Decision between 2010 and 2015 which represents 4.6GW of capacity.

New Data in this Report

This 2017 report includes data from wind farms that have reached FID 2010 and 2015. The analysis provides anonymous, aggregated data from 8 wind farms for contracts over £10m.

UK wind farm owners have signed up to monitor and were asked to report on the following:

- Development expenditure (DEVEX) until FID
- Capital expenditure (CAPEX) including the cost of the construction of transmission assets
- Operational expenditure (OPEX), excluding the local transmission use of system charges
- Total expenditure (TOTEX)

The methodology also gives owners the option to submit more detailed information on their projects.

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7. The period covered in this report reflects financial years rather than calendar years.
8. The methodology produced states projects that are operational within the stated catchment years should be included in UK Content analysis. However, following agreement with industry, a decision has been taken not to report retrospectively on operational projects. As a result, projects that have reached their Works Completion Date have not been included in this analysis.
9. Following agreement with the industry, the methodology used to collate UK content data differs slightly to that used in the collation of baseline data published in 2015. Following a review of the initial data gathering exercise, industry now tracks contract values of £10m and above, compared to £4m or above. This change was made following an industry review of the methodology. With cost reduction an important consideration, it was agreed only contracts above £10m would be monitored. To ensure that this did not impact accuracy, a review of baseline projects under alternate £10m and £4m criteria was conducted, which demonstrated that this did not impact on reported results.