OFFSHORE WIND OPERATIONS AND MAINTENANCE

Fife, at the heart of renewable energy development in Scotland
**Location of choice**

Fife’s strategic location, company expertise, skilled workforce and excellent ports make it ideal for the Operation and Maintenance of Offshore Wind arrays.

Fife is the ideal location to take advantage of the rapidly growing Offshore Wind market. Its location on the east coast of Scotland gives the industry easy access to development zones in the North Sea. There are plans for three Offshore Wind developments within a short distance of Fife. This presents a massive opportunity for Fife based firms. These developments total 4,765MW of capacity and could result in 950 5MW turbines. All of these turbines will require operation and maintenance over their lifetimes.
Business opportunities
The Operations and Maintenance market around the UK is expected to be worth up to £25bn over the next 25 years.

The Offshore Wind market within UK waters is predicted to grow to over 8,000 turbines by 2020. Once installed, these turbines will need to be carefully operated and maintained over their 20 year life times. Operations and Maintenance facilities located near to wind farms will benefit from reduced time and costs of travelling to the sites. This presents a range of opportunities for companies based close to wind farm sites to carry out scheduled and unscheduled maintenance.

With the larger Round 3 wind farms expected to be operating by 2014/15 at present there is a degree of uncertainty around how the Offshore Wind industry will maintain and operate these sites. It is likely that some developers will award the Operations & Maintenance contract to the turbine supplier following the initial warranty period. Other operators may appoint third party companies to carry out the operation and maintenance of their developments. This presents opportunities for companies to develop innovative models to reduce project costs.
Excellent ports and access
There are four ports in Fife which are ideally suited to play key roles in the operation and maintenance of Offshore Wind sites - Rosyth, Burntisland, Inverkeithing and Methil.

The ports are located in the Firth of Forth which is a popular shipping channel and all the ports mentioned in this document are covered by Regional Selective Assistance (RSA) grants.

Inverkeithing
There are a number of landowners within this Bay who are keen to bring forward sites to support the offshore renewables sector.

Located only one mile from the Forth Road Bridge, Inverkeithing has excellent links to the Scottish motorway system.

There are 8 acres currently available with quayside access and proposals are being progressed to bring forward a further 18 acres in the Bay to support the Offshore Renewables sector.

**Details**

Dedicated Access Road
Quay Length: 110m
No air draft restrictions
Distance to nearest development zone, Neart Na Gaoithe: 39Na
Distance to furthest edge of Firth of Forth development: 74Na
**Burntisland**

The port is located in the small town of Burntisland to the west of Kirkcaldy. Consave previously manufactured structures for the Oil & Gas industry until a management buy-out in 2001 which resulted in the formation of Burntisland Fabrications (BiFab). BiFab currently operate on the site employing up to 400 people fabricating structures for the Oil & Gas sector.

The port is also home to Briggs Marine who are vastly experienced in supporting the Oil & Gas and Renewables market. They supply a wide range of services including the installation and maintenance of subsea cables.

The port is owned by Forth Ports and has approximately 15 acres of land available for development. This would be ideal for a wide range of Operations and Maintenance activities as there is space to construct storage space and workshops.

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**Details**

West Dock - entrance 29.5m wide. Depth of entrance 4m at MHWS. Largest vessel: loa 115m, beam 27m, max draft 4m.

East Dock - no lock entrance. Largest vessel: loa 122m, beam 16.7m, max draft 6.7m

No air draft restrictions

Distance to nearest development zone, Neart Na Gaoithe: 35Na

Distance to furthest edge of Firth of Forth development, Firth of Forth: 70Na
Methil

The Port of Methil is adjacent to the Energy Park Fife. The docks are located in the centre of the Fife Energy Zone which encompasses various sites including Energy Park Fife, Methil Docks, Methil Docks Business Park and the former Methil Power Station site. Scottish Enterprise, Fife Council and Forth Ports are leading on proposals to develop a masterplan for these sites with a focus on opportunities and locations for Renewable Energy activity.

The docks would be ideal for an Operations and Maintenance facility as there are many workers with experience of the Oil & Gas industry in the area. There are 10 acres of land within the docks that can be developed into an O & M facility. Companies based in Methil can work closely with the tenants of the Energy Park, including BiFab and Samsung Heavy Industries. The Docks are owned and operated by Forth Ports and the two docks can take vessels up to 3,000 dwt.

Details

No lock entrance.
Largest vessel - No 2 Dock: loa 102m, beam 14.5m, max draft 5m
No air draft restrictions
Distance to nearest development zone, Neart Na Gaoithe: 25Na
Distance to furthest edge of Firth of Forth development, Firth of Forth: 60Na
Rosyth

Rosyth has a long naval history and is well known for its large dockyard. Located 15 miles from Edinburgh (Edinburgh airport 12 miles) it benefits from excellent road links to the main road network (M90). Babcock Marine operates the dock and they are active within the marine engineering sector. There is potential for large components to be repaired by Babcock using their heavy lifting facilities.

Babcock’s dock benefits from unhindered access to the Firth of Forth at all times. A non-tidal basin 512m x 457m can be accessed via a direct entrance which is 42m wide. Alternatively, access can be gained via the entrance lock which is 253m long, 33m wide and can be used as a dry dock. There is 610m of tidal berthing available with light loading capability.

The Port of Rosyth, which is adjacent to the Dockyard, is owned and operated by Forth Ports. The port is used by a range of freight companies for shipping goods to Europe and is Scotland’s only direct freight link to Europe. There is a 44m air draft restriction due to the Forth bridges.

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<thead>
<tr>
<th></th>
<th>Max depth</th>
<th>Quayside length</th>
<th>Max beam</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Wall</td>
<td>8.3 metres</td>
<td>540 metres</td>
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<tr>
<td>O, P, Q berths</td>
<td>5.0 metres</td>
<td>450 metres</td>
<td>n/a</td>
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<tr>
<td>RoPax berth</td>
<td>7.2 metres</td>
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<td>Non-tidal basin</td>
<td>10.7 metres</td>
<td>1,500 metres</td>
<td>42m</td>
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<tr>
<td>Tidal berthing</td>
<td>10.7 metres</td>
<td>610 metres</td>
<td>n/a</td>
</tr>
</tbody>
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Distance to nearest development zone, Neart Na Gaoithe: 41Na
Distance to furthest edge of Firth of Forth development, Firth of Forth: 76Na

Helicopter access at Fife Airport

Fife Airport is located on the south side of Glenrothes and has excellent road access via the A92 and B921 dual carriageway. It is currently used by private individuals flying predominately light aircraft and helicopters. As well as private and corporate aircraft, the airport is primarily used by trainee pilots for flight training and around 30 students at the airport are in the process of earning their pilot wings.

The airport covers an area of approximately 55 acres and has a tarmac airstrip and several hangers and maintenance buildings. The airport offers the opportunity for development of a helicopter O & M facility within an established airfield. The airport could also be used to train helicopter pilots to operate around wind turbines.

Within the 55 acre site there is 40 acres of expansion land owned by Fife Council. This land would be ideal for companies supplying products to the Offshore Wind market, especially products that would be transported direct to wind farms by helicopter. The town of Glenrothes has a strong base of engineering companies many with experience of the energy industry.

The owners of the airport are interested in exploring potential uses of the airport by companies involved in the Offshore Wind industry.
Local company expertise and a skilled workforce
Fife is set to become a centre of excellence for renewable energy in Scotland.

The private and public sector in Fife are working together to ensure the right support is in place for companies looking to locate their business here. Fife has a number of companies already operating in the Offshore Wind sector and work is underway on a range of skills & business development initiatives to make sure companies in this rapidly emerging sector will have access to suitably qualified staff.

Company expertise

A number of companies in Fife are well placed to enter the Offshore Wind O & M market due to their vast experience of the Oil & Gas industry. The North Sea Oil & Gas market has evolved over time and is now one of the safest in world. Health and Safety will be vital within the Offshore Wind industry due to the frequency of visits that will be required within each development.

Korean giant, Samsung Heavy Industries are developing the next generation of Offshore Wind turbines. Bifab are world leaders in the fabrication of sub-structures for Offshore Wind turbines. In addition, Briggs Marine are applying their oil and gas experience, which includes the installation of sub-sea cables, to the renewables sector.

To ensure that the Offshore Wind industry has access to local companies with the relevant skills and experience of the industry, Fife has recently developed a Renewables Supply Chain directory which can be found at www.investinfiferenewables.co.uk

This web based tool has been specifically designed to help technology developers, contractors and procurement specialists easily identify and assess potential suppliers and their capabilities in Fife.

In addition to companies with direct experience of the Offshore Wind industry, the directory also brings together businesses who have extensive experience of several related markets such as Oil & Gas and Defence and who are now seeking to apply their expertise to the Offshore Wind industry.
Skilled workforce
A report by Scottish Enterprise and Scottish Renewables predicts that up to 28,000 people could be employed in the Scottish Offshore Wind sector by 2020. To help meet the demand for skilled workers, a Fife Renewable Energy Skills Group has been established to ensure that companies in this rapidly emerging sector will have access to suitably qualified staff.

This proactive partnership, brought together by Fife Council, currently comprises representatives from:

Adam Smith College
Carnegie College
Elmwood College
Fife Council
Job Centre Plus
Skills Development Scotland
The Hydrogen Office

The Group has established the following priorities for action:

- To work with stakeholders to identify outstanding information gaps relating to the Renewables Sector and develop a research programme to address knowledge gaps
- To work with the Renewables Industry and its associated supply chain to assess future skills and training infrastructure requirements and implement a range of tailored solutions
- To incorporate Renewables Sector training and education into the schools curriculum
- To promote the Renewables Sector as a career of choice and provide appropriate intelligence to schools and school careers advisors
- To help develop relationships between employers in the Renewables Sector and Fife schools
- To secure appropriate funding to meet the objectives of the Group
- To develop an awareness raising campaign to promote employment opportunities in this rapidly growing sector
- To provide regular updates on skills developments within the Renewables Sector
Carnegie College has recently opened its Whitlock Energy Collaboration Centre in Rosyth which offers an interactive demonstration facility for emerging energy technologies in addition to training and education programmes designed specifically for the Renewable Energy sector.

Carnegie has been at the centre of the development of the UK’s first Wind Turbine Technician Modern Apprenticeship and is working with some of the UK’s leading companies, including Scottish and Southern Energy, Siemens UK, Babcock, Bifab and Repower UK in the development and delivery of bespoke training solutions for the Renewables industry.

Adam Smith College has also recently opened a new £16 million Centre which provides state-of-the-art facilities in Construction, Engineering and Science. The Centre, which will offer courses from introductory level through to degrees and industry recognised qualifications, boasts:

- 9,600 square metre campus building.
- 5,100 square metres of learning space.
- 31 specialist workshops with a further 3 purpose-built laboratories for science and 12 general classrooms.
- £1.5 million investment in new equipment
To find out more about the opportunities within the Offshore Wind market visit [www.investiniferenewables.co.uk](http://www.investiniferenewables.co.uk) or contact the Invest in Fife team:

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