

RWE INNOGY

GWYNT Y MÔR OFFSHORE WIND FARM LTD

Spring 2015

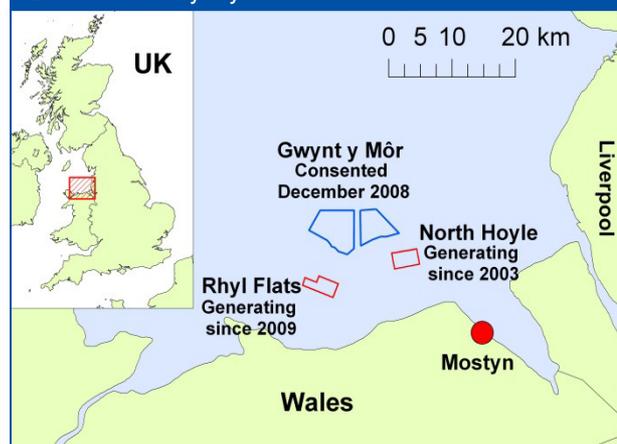
Facts & Figures – Gwynt y Môr Offshore Wind Farm

Construction of Gwynt y Môr Offshore Wind Farm, more than eight miles offshore in Liverpool Bay, is complete, and commissioning is almost complete. Once fully operational, it will become the second largest operating offshore wind farm in the world, producing enough electricity approximately equivalent to the energy needs of 400,000 homes⁽¹⁾.

Facts & figures at a glance

- > Capacity of 576 MW
- > Site area of 79km²
- > 160 x 3.6 MW Siemens wind turbines
- > 13 km (8 miles) off the coast of North Wales
- > Water depth 12 - 28 m
- > Application submitted in 2005
- > Offshore consent received 3 Dec 2008
- > Consent for grid connection received Nov 2009
- > Offshore construction 2012 – 2014
- > Commissioning 2014 - 2015

Location of Gwynt y Môr Offshore Wind Farm



- > At 576MW, Gwynt y Môr (Welsh for “Wind of the Sea”) Offshore Wind Farm is currently one of the largest offshore wind farms in construction.
- > RWE Innogy, Stadtwerke München GmbH (Munich Municipal Utility) and Siemens have entered into a joint venture to build Gwynt y Môr. RWE Innogy holds a 60% stake in this joint venture, Stadtwerke München GmbH 30% and Siemens AG 10%. RWE has also agreed terms for the UK Green Investment Bank to take a 10% share of the project, once the wind farm is complete.
- > The project represents an investment of over £2billion into the UK and European offshore wind industry
- > The project is being developed by RWE Innogy UK and will be the company’s third major offshore wind farm in Liverpool Bay, alongside the 60MW North Hoyle and 90MW Rhyl Flats Offshore Wind Farms
- > Gwynt y Môr has a 50-year UK lease and was granted consent by the Department of Energy and Climate Change (DECC) in December 2008
- > The Gwynt y Môr site is located 13 kilometres (8 miles) off the North Wales coast at the nearest point to shore, 16 kilometres (10 miles) from Llandudno, and 18 kilometres (11 miles) from the Wirral
- > Two offshore substations along with subsea and onshore interconnection cables export electricity to the National Grid
- > A base harbour port facility was constructed on land leased from Cammell Laird Shipyard on the River Mersey in Birkenhead, from which foundation and cable installation took place
- > Wind turbine installation took place from the Port of Mostyn where a dedicated operations and maintenance service base has been built to support 100 long term, skilled jobs and our wind farm in Liverpool Bay.



Project details – Gwynt y Môr Offshore Wind Farm

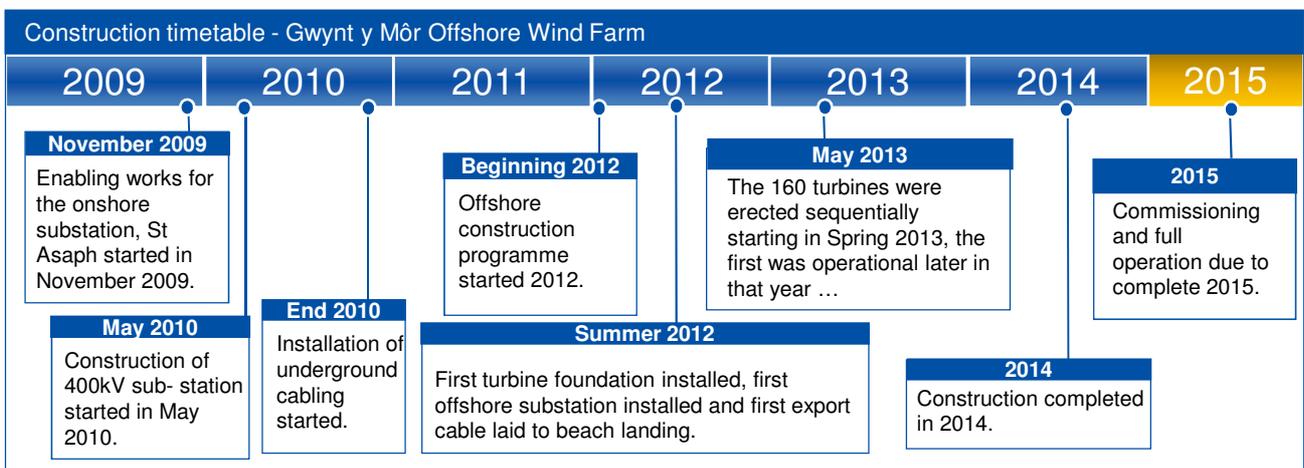
Offshore details

- > The offshore construction programme commenced in Q1 2012 with the laying of scour protection.
- > The two offshore substations, all 160 foundations and wind turbines, and four export cables are in place.
- > The foundations were installed by the Stanislav Yudin, The Friedrich Ernestine and JB-114
- > Each wind turbine foundation consists of a steel monopile between 45 - 64 metres long and approx. 6metres wide, a yellow transition piece and access platform.
- > The jacket foundation structures for the two offshore substations were fabricated in Scotland and installed in May 2012.
- > The two topsides for the offshore 33/132kV substations were designed and built by Siemens in Manchester and Harland and Wolff in Belfast and installed in August 2012.
- > Wind turbine installation took place from the Port of Mostyn from May 2013 – June 2014, with first generation achieved in August 2013.
- > Turbines were installed using two A2SEA jack-up vessels, SEAJACK and SEAWORKER.
- > The project uses 3.6MW turbines – similar to those installed at Rhyl Flats and Greater Gabbard wind farms.
- > Array cable installation is complete, and used a number of specialist offshore vessels.

- > Four subsea export cables were installed, connecting the North Wales coast and the two offshore substations using the cable laying barge, Cable Enterprise.

Onshore details

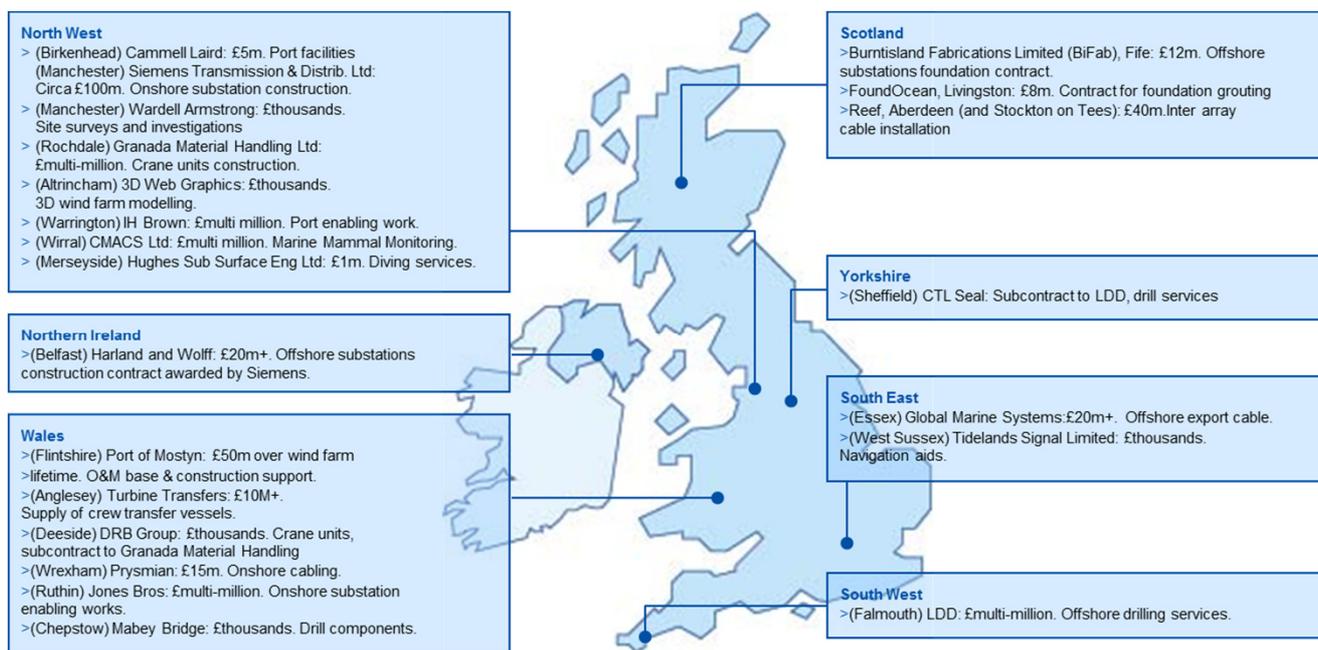
- > An 11 km underground cable route connects the wind farm from the beach landing point to the new electricity substation at St Asaph.
- > By burying the onshore power cables underground we avoid the need for lengthy overhead power lines.
- > The cable route and associated reinstatement works are complete.
- > The cable is hidden underground and the land has now been returned to its previous mainly agricultural use.
- > A 132/400kV electricity substation has been constructed, energised and is transmitting electricity into the National Grid, south of St Asaph Business Park, Denbighshire.
- > A short section of around 500 metres of overhead power line, is transferring electricity from the substation to the National Grid. The substation was deliberately located close to the existing National Grid transmission lines to minimise the requirement for lengthy overhead power lines.



RWE INNOGY

GWYNT Y MÔR OFFSHORE WIND FARM LTD

Over £660million invested into the UK supply chain and economy



UK mapping 'snapshot' of some of the key contracts awarded during construction.

Contract	Value
> Port of Mostyn (Flintshire, North Wales)	£50m (over 25yrs)
> Cammell Laird (Birkenhead, Wirral)	£5m+
> Prysmian (North Wales – onshore cables)	£15m
> Turbine Transfers (North Wales – supply of crew transfer vessels)	£10m+
> FoundOcean (Scotland – foundation grouting)	£8m
> Jones Bros (North Wales – enabling works)	£1m+
> Burntisland Fabrication (Scotland - jacket foundations for offshore substations)	£12m
> Global Marine Systems (SE England - subsea export cable installation)	£20m+
> Siemens Transmission & Distribution (Manchester - on and offshore substations, incl. Harland & Wolff sub-contract for offshore substation platforms)	£100m+
> Granada Materials Handling (Rochdale - contract for cranes)	£multi-million
> Large Diameter Drilling (LDD, Cornwall - contract for specialist monopile drill and services)	£multi-million
> CMACS Ltd (Wirral - Marine Mammal Monitoring)	£multi million
> Hughes Sub Surface Eng Ltd (Merseyside - diving services/array cable installation support)	£5m



Significant jobs and investment into the local community

Around £90m worth of contracts have been awarded to companies in Wales and more than £660m into UK based businesses. Construction of Gwynt y Môr also brings considerable community investment and benefits.

Local jobs

The construction of a dedicated operations and maintenance base at the Port of Mostyn requires at least 100 long term skilled engineers.

Community Benefit Package

Gwynt y Môr Offshore Wind Farm is accompanied by a Community Benefits Package of £768,000 per annum, index-linked in line with inflation. Worth approximately £19million, it will be available throughout the operational lifetime of the wind farm. Gwynt y Môr undertook an independent consultation exercise at the end of 2011 to ask the local community how the funds should be administered. The fund will become available once Gwynt y Môr is operational, with the first full payment likely in 2015.

Tourism Fund

A £690,000 tourism fund has been delivered during the three year offshore construction period. The first projects to benefit were announced in June 2012 and include: Major improvements to the Victorian pier at Llandudno, allowing steam and cruise liners to once again dock in the town; provision of new disabled access ramp onto Rhyl beach to make it easier for disabled visitors and people wanting to launch small water craft. In 2013 money was awarded to the redevelopment of Rhyl Harbour and the Green Links project promoting walking and cycling.



www.rweinnogy.com/gwyntymor



1) Footnote:

(Energy predicted to be generated by the proposal is derived using wind speeds monitored in the local area. This enables a calculation to be made to estimate the average annual energy production for the site based on 160 turbines each of rated capacity 3.6 MW. The energy capture predicted and hence derived homes equivalent figures may change as further data are gathered.)
(Equivalent homes supplied is based on an annual electricity consumption per home of 4700 kWh. This figure is supported by recent domestic electricity consumption data available from The Digest of UK Energy Statistics and household estimates and projections from the UK Statistics Authority.)