



“This project has been a real team effort, benefiting from a multi-disciplinary approach, drawing on the expertise of specialists within the company to realise the project and satisfy the Regulators’ requirements.”

Greg Shaw , Environmental Liaison Officer
Royal HaskoningDHV

World’s largest wind farm to power 240,000 UK homes

If there was ever any uncertainty about the UK’s commitment to clean, renewable energy, then the Thanet Offshore Wind Farm (known as Thanet) should leave no doubt. When commissioned in September 2010, it became the largest offshore wind farm in the world. Occupying 35km² (roughly the same size as the city of Norwich), Thanet is capable of generating 300MWe of renewable electricity – enough to power up to 240,000 average homes.

Before any of the 100 turbines could be constructed off the Kent coast, there was an extensive six-year planning, legislative and logistical process to complete. Royal HaskoningDHV was appointed to apply its considerable environmental expertise and knowledge to this flagship project.

Royal HaskoningDHV was commissioned by Thanet Offshore Wind Limited (TOW), a subsidiary of Vattenfall Wind Power (Vattenfall) Limited, in 2004 to undertake an Environmental Impact Assessment (EIA) to gain the necessary consents for the construction, operation and eventual decommissioning of the wind farm. EIA is one of Royal HaskoningDHV’s core capabilities. It offers EIA services and solutions to a wide range of sectors,

from renewable energy and port development, to flood alleviation schemes and urban planning. The company has extensive experience and knowledge of compliance regulations for the UK, Scotland and the rest of the European Union, and as such, is often used as an expert witness to support EIA applications. Royal HaskoningDHV has also been appointed to independently audit environmental statements, particularly for potentially contentious projects.

The EIA work for Thanet involved extensive consultation with more than one hundred statutory and non-statutory organisations. Royal HaskoningDHV undertook detailed data collection and managing surveys, as well as an assessment of the potential impacts on areas including: archaeology, birds, fisheries, marine mammals, recreation and navigation. Following the award of consents, Royal HaskoningDHV was appointed Environmental Liaison Officer (ELO) for the project and continues to provide consents advisory services to TOW and Vattenfall.

Royal HaskoningDHV has shown its true versatility on this project, facing a range of challenges and finding practical solutions. By taking a very flexible approach in response to survey findings and legislation, the company

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has helped TOW overcome a number of technical hurdles. For example, surveys undertaken at the Thanet site showed the presence of a reef-forming Ross worm, *Sabellaria spinulosa*, whose habitat is listed in Annex 1 of the European Habitats Directive. The presence of this species on the Thanet site meant that a number of the turbines required repositioning to mitigate any potential ecological damage.

Royal HaskoningDHV advised TOW on the re-siting of turbines and cables and the creation of exclusion zones to ensure the ongoing success of the wind farm. As a result of the approach recommended by Royal HaskoningDHV, no Public Inquiry was required on this issue in spite of Thanet being the first offshore wind farm to be developed at an Annex I site. Royal HaskoningDHV's approach to sea-bed analysis has since been adopted by Natural England as best practice. This project has been a real

team effort for Royal HaskoningDHV, benefiting from the company's multi-disciplinary approach and drawing on the expertise of Information Management and Geographical Information Systems (GIS) – our dedicated team of information technology specialists and spatial planners – to undertake the cartography work, locating the turbines and micro-siting.

Greg Shaw, Royal HaskoningDHV's Environmental Liaison Officer for the project, has been leading the work. "We have been advising TOW throughout the Thanet development process. Now that the Thanet Offshore Windfarm is firmly in its operational phase we have an eight-year commitment to the project in terms of the post-construction consent management and survey work. Many of the initial post construction surveys have been completed and the submission of the compliance reporting to the Regulators is expected shortly."



The reporting includes analysis of data to determine the effects that the project has had on the natural environment.

Tony Francis, Client Site Manager for Vattenfall Wind Power Ltd, explained how Royal HaskoningDHV has helped and is continuing to help to realise the company's dream:

"Everyone at Vattenfall is delighted to be a part of Thanet Offshore Wind and Royal HaskoningDHV has helped to make this hugely ambitious dream become a reality. The highly-flexible, multi-disciplinary team has navigated complex legislative and logistical issues to help to ensure the success of the project. We have worked with Royal HaskoningDHV on the Thanet project since our acquisition of the project in 2008. We find the quality of the work and the project management of the environmental compliance to be of the highest quality and standards. We have no hesitation in recommending the organisation to support this industry in its future ambitious endeavours."

Royal HaskoningDHV's considerable expertise in providing Environmental Clerk of Works services (amongst others) to a number of clients has been further enhanced by the valuable experience it gained on the Thanet project.



A photograph of an offshore wind farm with several wind turbines in a row across the sea under a clear sky. The image is partially overlaid by a green and blue geometric shape.

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The company is already involved in a number of the Round 3 sites (Dogger Bank, East Anglia, Firth of Forth, Navitus Bay, Hornsea) and is working on recently announced extensions (Kentish Flats, Walney) to current offshore wind farms. Other notable offshore projects within Royal HaskoningDHV's portfolio include the Sheringham Shoal, Greater Gabbard and Dudgeon offshore wind farms. To date, Royal HaskoningDHV have been involved in 1,228MW of consented offshore windfarm developments and the lead EIA/consent advisors for a further 14GW.

Royal HaskoningDHV supplies environmental, technical and engineering consultancy services to all these projects including EIA, consents management throughout the lifecycle of the project including operation, Environmental Liaison Officer (ELO), due diligence and regulatory risk reviews, CDM, tender reviews and procurement and the development, implementation and reporting of mitigation and monitoring plans.

These are exciting times for the offshore wind industry as a whole. Having signed up to the EU Renewable Energy Directive, the UK government has committed to providing 15 per cent of its energy from renewable resources by 2020. This ambitious target is equivalent to a seven-fold increase in UK renewable energy consumption from 2008 levels: the most challenging of any EU Member State.

Studies have shown that using a third of the available renewable energy resources around UK shores could generate the electricity equivalent of one billion barrels of oil each year. This would match North Sea oil and gas production and allow Britain to become a net exporter of electricity by 2050, which can only be good news for local employment and the UK economy.

Royal HaskoningDHV is at the forefront of developments within the wind industry and continues to be a key player in helping the government to reach its ambitious targets.

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