

Safely acquiring new resources

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The UK has one of the largest dredging industries in the world and marine-sourced aggregates make a vital contribution to the UK aggregate supply for construction, coastal protection and land reclamation.

To date, more than 900 million tonnes of marine sands and gravels have been extracted from the UK's continental shelf and marine dredged aggregates account for about a fifth of the UK's sand and gravel production. Due to increasing pressure on onshore resources and the large quantities of material likely to be needed for infrastructure projects, this offshore demand is unlikely to decline.

This, combined with competing demands for space on the sea bed from rapidly growing new developments, means that it is more important than ever to ensure offshore resources are planned and managed effectively.

Along with increased competition for sea bed access, recent changes to the UK offshore planning system are driving demand for better spatial information on marine aggregates. The Marine and Coastal Access Act 2009 and the Marine (Scotland) Act 2010 introduced a new system for marine planning and licensing in the UK. It aims to reduce conflict and encourage ecosystems maintenance in alignment with moves from the EU towards a more integrated, ecosystems-led planning framework.

The UK-wide marine policy statement, announced in March 2011, set the framework for the preparation of marine plans under the guidance of the Marine Management Organisation (MMO). These plans, currently being developed, will provide detailed policy and spatial guidance for marine activities. The marine policy statement specifically states that plans should ensure provision for the long-term supply of sand and gravel and take into account the need to safeguard mineral resources for future extraction.

Effectively and sustainably managing marine minerals while minimising conflict with other users requires accurate and comprehensive information on the distribution and quality of mineral resources. This information has been supplied by the British Geological Survey (BGS) as a series of mineral resource maps which cover the UK's continental shelf and are designed for strategic planning. This work has been commissioned by the Crown Estate as part of its role in managing the exploration and use of the non-hydrocarbon resources of the continental shelf. It owns the rights to all non-energy marine mineral resources and issues commercial licences for marine aggregates extraction.

This work has drawn on BGS's extensive experience of onshore mineral resource assessments and similar principles have been applied. The maps and associated digital data form an accessible information base for marine minerals and allow all interested parties to visualise the distribution of offshore minerals to a common standard and at a common scale; an important requirement of an integrated planning system. The maps may also safeguard marine mineral resources.

Four maps, together with accompanying reports have been produced by the Crown Estate:

- The mineral resources of the English Channel and Thames Estuary.
- The mineral resources of Welsh waters and the Irish Sea.
- The mineral resources of the east inshore and east offshore marine plan areas.
- The mineral resources of Scottish waters and the central North Sea.

The maps incorporate data from the BGS 1:250,000 offshore geological map series. This includes its database of seabed sediment samples, cores and geophysical information and data gathered for the Marine Aggregates Levy sustainability fund regional environment characterisation reports. The multiple data sources were modelled in a GIS environment and the results were interpreted using core and geophysical records.

The methodology categorises marine sand and gravel resources into national and regional importance, giving users an indication of the relative significance of a particular resource area.

The methodology uses European standards to define the suitability of sediments for aggregate applications. Construction aggregate is split into coarse aggregate (gravel), fine aggregate (fine sand) and fine aggregate (coarse sand). The relative scarcity of coarse sand for concreting aggregate is driving high levels of demand.

The maps also show areas prospective for coarse sand and gravel (where resources are known to exist but lack of data means they cannot be resolved) and areas known to contain important sand and gravel resources. These categories are designed to highlight confidence (or lack of) in the location of some resources and to ensure areas of high quality and economically-important minerals are considered during development planning.

Now these maps are complete it is important that this information is used in the planning process. The marine policy statement outlines a need to protect mineral resources and the MMO has placed a high weighting on the importance of the marine aggregates industry in the draft plan for the east inshore and east offshore plan area.

The MMO has stated in their 'Draft Vision and Objectives' report that the safeguarding options proposed by BGS should be considered as part of the planning process and that mineral safeguarding areas need to be defined. As a result, the MMO is using the BGS resource information on its online planning portal and associated documents. They are focusing on areas with the potential to produce 'in demand' high quality material. As a consequence, information is restricted to areas of known or prospective coarse sand and coarse aggregate.

More information on the MMO's approach to spatial planning for marine aggregates will be revealed in the east inshore and east offshore plan, which was due to be released for public consultation in early June.

Further information about the Crown Estate maps can be found at www.thecrownestate.co.uk/energyinfrastructure/aggregates