

1. Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended), Regulation 22 - EIA Consent Decision

- 1.1 Title:** Marine Mineral Extraction Bedwyn Sands, Severn Estuary
- 1.2 Regulatory Approval:** Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended)
- 1.3 Operators:** Severn Sands Ltd
- 1.4 Marine Licence Application No:** MMML1516
- 1.5 Location:** Bedwyn Sands, Severn Estuary

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3. Purpose

- 3.1** This document constitutes an EIA consent decision under Regulation 22 of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (MWR), in respect of a Marine Licence application (ref: MMML1516) submitted by Severn Sands Ltd. The application was supported by an Environmental Statement. The Marine Licensing Team has considered the application and information provided in support of the application and is now in a position to make an EIA consent decision to Severn Sands Ltd.
- 3.2** In accordance with Regulation 22 of the MWR, the Natural Resources Wales Marine Licensing Team, as appropriate authority have considered the application, environmental statement (ES), representations of consultation bodies and members of the public and have had regard to the relevant legislation. Following the conclusion of a Transboundary Screening Assessment it was determined that consultation with other EEA states was not necessary.

4. Application

- 4.1** Severn Sands Ltd is applying for a Marine Licence to continue to extract marine minerals from Bedwyn Sands in the Severn Estuary. The dredge area crosses the English/Welsh border and additional Licences are required from the Marine Management Organisation and Monmouthshire County Council. Dredging to date has been operating without a Marine Licence and the current permission which was issued by Monmouthshire County Council expired on 30 June 2015, dredging was allowed to continue on the knowledge that a Marine Licence application is under determination.
- 4.2** The details of the application are listed below;
- 9 year Licence with dredging activities ceasing after 7
 - Maximum annual tonnage 250,000 across the whole Licence area (Welsh and English Waters)
 - Proposed total to be extracted 1,750,000
 - Type of material sand
 - Extraction Method Trailer Suction Hopper
 - Exclusion Zone all areas north of Northing 183000N
 - Operational Monitoring – benthic, bathymetry and LIDAR.

5. The Environmental Statement (ES) – MWR 12 (1)(d)

- 5.1** The Environmental Statement outlined the possible impacts of the proposed project organised under the following topic headings:
- 5.2** Technical chapters:
- Physical Processes
 - Water and Sediment Quality
 - Impact Assessment

- Nature Conservation
- Benthic Habitats and Species
- Fish and Shellfish
- Marine and Coastal Ornithology
- Marine Mammals and Turtles
- Commercial and Recreational Fisheries
- Commercial and Recreational Navigation
- Marine Archaeology
- Coastal Protection and Flood Defence
- Air Quality
- Infrastructure and Other Marine Users
- Cumulative and In-combination Effects
- Mitigation and Monitoring

5.3. The ES is considered to satisfy the requirements of Regulation 12 (1)(d) and Schedule 3 of the MWR

6. Public Notices – MWR Regulations 16(2)(g)

6.1 These were advertised to notify interested parties of the proposed works and give any interested parties or members of the public an opportunity to make representation on the application as necessary.

6.2 The application documents were made available as follows;

- A translated public notice was placed in the Western Mail on 20th & 27th April 2015 and in the Bristol Post on 3rd & 10th July 2015 and in the Fishing Post on 10th July 2016.
- The application documents were made available to the public at: Monmouthshire County Council, County Hall, Rhadyr, Usk, Mons NP15 1GA and Bristol Central Library, College Green, Bristol, BS1 5TL for 49 days following the publication of the first public notice.
- No public representations were received

7. Consultation – MWR Regulations 17(1)(a)(iv)

7.1 The Marine Licence application was consulted upon on 14th April 2015 for a period of 42 days. It was sent to the following consultation bodies:

7.2 Natural Resources Wales Permitting Service (NRW PS) Natural Resources Wales Technical Experts (NRW) , The Centre for Environment, Fisheries and Aquaculture Science (Cefas), Ministry of Defence (MoD), Maritime and Coastguard Agency (MCA), The Crown Estate (TCE), Local Planning Authorities (LPA) for Monmouthshire, Bristol City Council and North Somerset Council, Local Harbour Authorities Associated British Ports, Gloucester Harbour Trustees, The Bristol Port Company, Local Biodiversity Officers (LBO), Royal Yachting Association (RYA), Royal Society for the Protection of Birds (RSPB), Trinity House (TH), Cadw, Welsh Government Fisheries Branch, Marine Enforcement Officers (MEO) Natural England (NE), The Environment Agency (EA), Glamorgan Gwent Archaeological Trust,

Historic England, Marine Management Organisation (MMO), National Federation of Fishermen's Organisation (NFFO), Association of Inshore Fisheries and Conservation Authorities (IFCA), Shellfish Associating of GB and The Swansgrove Estate.

- 7.3 The following organisations submitted comments: Cefas, NRW, MCA, Bristol City Council, GHT, The Bristol Port Company, GGAT, EA, NE and HE.
- 7.4 Consultees who did not provide a response were assumed to have no comment

8. European Protected Sites

- 8.1 The proposal is located within a European Protected Site.
- 8.2 The effects of proposal on the following European Sites, their features and conservation objectives have been considered by NRW during the licence determination:
- Severn Estuary SAC
 - Severn Estuary SPA
 - Severn Estuary Ramsar
- 8.3 A test of likely significant effect (TLSE) was undertaken and potential significant effects on features of the European Sites listed above could not be ruled out. The following features were taken through appropriate assessment; estuaries, subtidal sandflats, intertidal mudflats and sandflats and Atlantic salt meadow. Following AA It was concluded that the proposal, when considered alone and in-combination, will not adversely affect the integrity of the European sites concerned.
- 8.4 Further details are described within the Habitats Regulations Assessment.

9. Issues arising for consideration of the Environmental Statement, Marine Licence Application and representatives received

- 9.1 In taking a Regulation 22 EIA consent decision, we have considered the issues that have been identified following consideration of the ES, representations from consultation bodies, and any resultant supplementary information provided in response by the applicant.
- 9.2 The material issues that were highlighted by the ES and consultation process and the extent to which they have been addressed are detailed in this section
- 9.3 **The following organisations provided no comment;** MOD, RYA,

9.4 Project Description

- 9.4.1 Both NRW and NE requested more information on the location of dredging activity. The ES only illustrates dredging locations for a short time period from November 2014 to March 2015. This information is required to assess changes in bathymetry in particular the significant

deepening in some areas. The ES states that these areas of seabed deepening are due to natural processes, any seabed depressions created by dredging is in filled quickly. NE and NRW state it is not possible to support these assumptions without knowing where dredging has taken place in relation to the deepened areas. This information would be important in identifying dredge zones within the Licence area. Severn Sands responded by means of an ES addendum. The addendum stated that Bedwyn Sands is not a Crown Estate Licence area and so it has not been a requirement to submit EMS data yearly as it is with CE leased dredge sites. The only record of dredging location is from the ships log, the information provided is the full extent of information available. NE accepts that no EMS data is available but still required more evidence to support the assumption that changes in bathymetry are due to natural processes. NE requested that the extraction locations provided for 2014 and surface charts are overlaid to represent a full load of a 1,000 tonne capacity dredger in a tidal cycle. Severn Sands provided in a further clarification document a figure showing dredging locations overlain with calculated bathymetric change. NE satisfied with the response and suggest a condition within the licence requiring fully analysed EMS data to be submitted.

- 9.4.2** NRW PS satisfied with the responses given by Severn Sand in the both the addendum and further clarification document. Although additional dredging location information would have been useful to inform the assessment the reasons given for not having this data have been explained by the applicant and understood by NRW and NRW PS. The NRW PS will include a condition within the Licence that will require fully analysed EMS data to be submitted as part of the annual report.
- 9.4.3** NRW and NE encourage the use of active dredge zones (ADZ's) and welcomed the reference within the ES as being common practice. Given that extraction is on a designated feature NRW feel that by implementing ADZ's the disturbance footprint of the dredge would be limited. Seven Sands responded within the addendum and stated that the implementation of ADZ's has been previously discussed and discounted due to the changeable behaviour of the site and the wider bank system. Applicant is not adverse to ADZ's provided they allow suitable flexibility with regards to targeting aggregate material type. NRW unable to find any records of any discussions discounting the use of ADZ's, NRW would like to see a reduction in the dredge footprint. NE also supported the implementation of an ADZ in following common aggregate extraction protocol allowing restricted extraction areas help regulate and manage any changes in morphology and impact across an area.
- 9.4.4** Following further discussions with Seven Sands and NRW, NRW PS will not include as part of the conditions ADZ's within this Licence but will consider it for future Licences,
- 9.4.5** NRW stated that they would like to see the exclusion zone currently in place (area north of northing 183000N) to protect sensitive habitats to be excluded from the Licence area defined within the Marine Licence Application. Severn Sands stated that current monitoring has shown no cause for concern when considering the offshore bathymetry indicating no associated effect on the foreshore of presence of sensitive habitat. Thus the applicant would like to keep the exclusion zone as part of the licence area for potential future applications. NRW accepted Severn Sands response.
- 9.4.6** NRW PS accepted the response from Severn Sands, will keep the dredge area as requested and implement an exclusion zone within the licence conditions north of Northing 183000N. Monitoring conditions and annual reports will also be implemented to assess any change within the licence area or foreshore.

9.5 Physical Processes

- 9.5.1** NRW raised concerns over the validity of the HR Wallingford wave modelling report relating to the cumulative effects of aggregate extraction on the Middle and Welsh Grounds which was submitted in support of the application. The initial concerns were raised during pre-application discussions but NRW felt that the issue was not addressed within the submitted ES. Severn Sands responded to NRW with an additional document providing clarification on why the 2008 report was fit for purpose. The relevant survey data was analysed to calculate the volume of surveyed bank above Chart Datum (CD) and analysis undertaken to ensure that the volume of the bank under the future planned dredge scenario remains within the limits of that modelled by HR Wallingford. Following on from the submission of this document NRW raised further concerns over the potential cumulative impact of the various extraction activities. NRW did not disagree with the data presented however requested that further evidence was provided to support the assumption that all areas of the bank are accreting and remain at safe levels. Additional data was requested for the following; the subtidal areas forming part of Bedwyn and all of North Bristol Deep, the area above 4mCD for the whole of Middle and Welsh Grounds to help describe fluctuations for that part of the bank. Severn Sands responded as part of the addendum with the additional data, as requested by NRW. NRW welcomed the information which provided an improved assessment of the health of the wider bank resource and cumulative impacts. NRW recommends that the same analysis is repeated and presented in the monitoring review.
- 9.5.2** NRW PS satisfied that the additional information provided by Severn Sands is sufficient and addresses the concerns raised by NRW. NRW PS to include as part of the monitoring conditions that this analysis must be carried out and presented to enable an accurate calculation of the remaining total permitted extraction volume and available headroom.
- 9.5.3** The EA requested clarification regarding the impact of the proposal on the English coastline and that the original wave modelling report used to inform the evidence base is provided. Severn Sands responded stating that there had been a large range of studies and principal data sources that had been used to inform the ES. These data sources have been used to inform the evidence that there is no present pathway between the Bedwyn Sands licence renewal area and the leeward coastlines. Consequently a mechanism does not exist by which aggregate dredging could affect the sediment supply to either the Welsh or English coastline. A copy of the report was supplied with the addendum. EA satisfied with the clarification, no further action taken.
- 9.5.4** The EA stated the conceptual model of sediment transport described in the ES essentially one of a closed system of mobile relic sediments. It is not clear from the evidence presented where the sediments to maintain the elevation of Bedwyn Sands originates and what the potential long term impacts on other dependant inter-tidal sandbanks, tidal regime and wave climate affecting the English coast. Severn Sands responded stating that a range of sources have been used including existing reports, collated datasets and numerical modelling studies to inform the potential effects on ongoing aggregate extraction. The findings conclude that it is highly unlikely that the continued extraction of aggregate from within the Severn Estuary will result in any significant effect on physical processes of the wider study area. EA satisfied with this clarification, no further action taken by NRW PS.
- 9.5.5** The EA recommended that appropriate monitoring of the sandbank system is maintained and that consideration should be given to the potential need to include monitoring of the English shoreline. Severn Sands responded stating that results described in section 5.1.7.2 of the ES, the annual monitoring reports and the HR Wallingford 2008 wave modelling report indicate that there is no impact pathway for aggregate extraction over the Bedwyn Sands to affect the sediment sources of wave climate in the lee of the resource. As a result it is not considered

necessary to include monitoring of the entire Middle and Welsh Grounds or of the English coastline. EA satisfied with this clarification, no further action taken.

- 9.5.6** EA stated that it is not clear from the ES how deep the proposed dredge will be and that it would be helpful to describe the extraction volumes as a percentage of available sand deposits. Severn Sands responded stating the mitigation measure described within the ES require an adequate depth of 0.5m to be left after cessation of dredging. Given the nature of the Severn Estuary and the rapid recovery of the renewal area it is considered unlikely that dredging activity will reach this capping limit in the foreseeable future. EA satisfied with this clarification.
- 9.5.7** NRW PS to use the condition stating that resource thickness must be >0.5m after the cessation of dredging.
- 9.5.8** NE raised concerns over the volumetric calculations within the ES which led to the conclusion that the sandbank at Bedwyn was experiencing large rates of accretion whilst subject to active dredging. NE were concerned that calculating volumetric difference over an area much larger than the extraction area would prevent any volumetric change resulting from dredging being observed, they also requested a map showing the perimeter of the bounded area within which the volumes displayed in figure 5.15 & table 5.6 were calculated. Severn Sands responded as part of the addendum stating that the calculations of variation in the resource have been carried out over a range of areas in order to assess the in-combination effects. The figures already presented within the ES namely 5.13 and 5.5 already show the survey extent. NE satisfied with the clarification but felt it would be beneficial for the comments to be incorporated into the ES.
- 9.5.9** NRW PS consider it sufficient for the clarification to be included within the addendum. No further action taken.
- 9.5.10** Cefas requested that if a Marine Licence is granted then a pre-dredge report must include i) a resource thickness isopach chart, ii) a chart with seabed features iii) a chart of the differences between the modelled & current bathymetries. Severn sands responded with the submission of an addendum stating that it is considered that the information requested by Cefas has already been provided within the ES and annual monitoring reports by an extensive collection of existing literature, data and reports. Cefas satisfied with the clarification but still requested the provision of a chart showing the resource survey information to establish the thickness and nature of the resource. Severn Sands submitted this as part of the further clarification document, figure 2. Cefas satisfied with the chart provided as part of the further clarification document.
- 9.5.11** NRW PS satisfied with the clarifications provided as part of both the addendum and further clarifications document. No pre-dredge survey will be required as part of the conditions. No further action required.

9.6 Water and Sediment Quality

- 9.6.1** NE requested that further details on the sediment samples be provided in particular sediment type of the sample, all metal values and the Severn specific information provided in Langston et al 2010 (Marine Pollution Bulletin 61:68-82) Severn Sands addressed these concerns and provided the additional information as part of the addendum. NE satisfied with the additional information provided. No further action required.

9.7 Benthic Habitats and Species

- 9.7.1** Both NRW and NE raised concerns over the current monitoring and mitigation measures for benthic habitats. NE suggested a new benthic characterisation and baseline monitoring survey to be undertaken prior to the issuing of any new licences. NE advised that the spatial coverage of the application area and upstream is increased to allow for full coverage of the activity footprint and further afield to the East. NE and NRW also recommend that the regional seabed monitoring programme (RSMP) is adopted once available. Severn Sands responded as part of the addendum and stated that a detailed monitoring programme will be included as part of the licence conditions, this will be discussed and agreed by the relevant organisations. Severn sands have also agreed to adopt the RSMP once details and survey plans for the Severn Estuary are made available.
- 9.7.2** NRW raised concerns over biosecurity and the need to properly risk assess the impacts associated with aggregate dredging in particular the potential spread of non-native species (NNS). Severn sands responded with an addendum and updated information. NRW not satisfied with the response provided as part of the addendum and still require information on discharge locations, NNS known to be present and the mechanism by which the activity may assist the transfer of each species. The current understanding of NRW and the knowledge of NNS in the Severn Estuary it is considered that the proposed activity is unlikely to pose a risk and so no further assessment will be required at this stage. NRW suggested that future assessments are included as part of the regular reviews.
- 9.7.3** NRW PS to include a condition within the licence relating to biosecurity, further discussions held between NRW PS, NRW and MMO regarding the benthic monitoring programme. A survey design was submitted by Keith Cooper, this has been submitted, agreed and approved by NRW, Severn Sands and NE. The RSMP approach to monitoring will be conditioned as part of the ML.

9.8 Fish and Shellfish

- 9.8.1** NE stated that a large variety of survey data had been used to populate the information regarding fish and shellfish however, the limitations/selectivity of each gear type had not been provided. This was important to evaluate the catch data and its conclusions. Severn Sands responded with an updated addendum which addressed the concerns highlighted by NE. NE accepted the response however Cefas provided comment on the addendum. Cefas was seeking further clarifications with regards to details such as mesh size, towing distance, net depths etc. A meeting was held between NRW PS, ABPmer and Cefas on 01/02/2016 where by Severn Sands explained they were unable to provide further clarification with regards to the surveys. Cefas confirmed that further clarifications would not be necessary in order to agree the conclusions of the ES.
- 9.8.2** NRW PS satisfied this issue had been sufficiently addressed and no further action taken.

9.9 Commercial and Recreational Navigation

- 9.9.1** Both the BPC and GHT provided comment on details within the ES that are either missing or incorrect. Topics included; limitations on the use of AIS data in navigation assessments, RYA

cruising routes, RYA heavy recreational vessel routes within GHT area and transit lines. Severn Sands responded with an update to the addendum addressing the concerns raised. GHT responded, satisfied with the clarifications provided, BPC contacted but no further correspondence received.

9.9.2 NRW PS to assume BPC has no further comments to make and are satisfied with the response. No further action taken by NRW PS.

9.10 Marine Archaeology

9.10.1 HE believed that there was insufficient relevant and up to date material and sources used to identify the known and potential heritage assets that reside within the Bedwyn Licence renewal area. HE requested that an archaeological assessment is undertaken by an accredited and professional marine archaeological contractor which utilises all cross border datasets to provide a holistic understanding of primary and secondary impacts and that further information should be obtained through borehole and vibrocore logs. HE and BCC also requested that a more detailed and appropriate plan of mitigation and monitoring was prepared. In response to these comments a meeting was held between NRW PS, HE, ABPmer and Wessex archaeology who had been employed by the applicant to address the concerns raised by HE. From the meeting it was concluded that the issues would be addressed by; including a wider range of data sources, increased cross referencing with the physical processes section, greater consideration of English Waters and marine policy statement referencing. It was agreed that geophysical surveys would not be required as with improved data the baseline description can be adequately updated. Mitigation measures will be updated and required to follow BMAPA guidelines and protocol for reporting finds and for Severn Sands to participate in the BMAPA awareness programme. The addendum was then submitted this addressed the concerns of HE who were satisfied with the detail. From this addendum GGAT although mostly very impressed by the information, requested that relevant datasets curated by RCAHMW were included to show wrecks and aircraft crash sites in Wales and thus providing a complete picture of archaeological resource in the Bristol Channel. Severn Sands responded with a further clarification document addressing the issues raised by GGAT, GGAT satisfied with the response within the further clarification document.

9.10.2 NRW PS satisfied that all the archaeological issues have been resolved and the licence will include conditions that reflect the advice of both HE and GGAT. These conditions will ensure BMAPA guidelines and protocols for reporting finds of historic importance are implemented. NRW welcomes Severn Sands approach to participate in the BMAPA awareness programme.

9.11 Cumulative Impacts

9.11.1 EA raised the issue that although Swansea Bay Tidal Lagoon has been considered as part of the cumulative impacts study the Cardiff and Newport Tidal Lagoon proposals have not, despite being much closer. EA believed that ABPmer had already carried out modelling of the potential impacts of Cardiff, Newport and Bridgwater Bay TLP proposals. Severn Sands responded as part of the addendum document stating that there is presently insufficient information to make a detailed assessment of the likely cumulative effects as the Cardiff and

Newport lagoons are only at preliminary stage. Some hydrodynamic effects had been provided as part of the scoping report however, these assessments are only considered sufficient for an initial characterisation study. EA provided no further comment.

- 9.11.2** NRW PS do not consider it necessary to include the Cardiff and Newport lagoons as part of the cumulative impact study, both developments are in such early stages that information available at present would not be sufficiently developed to include as part of the cumulative impacts assessment for Bedwyn Sands.
- 9.11.3** NRW noted that cumulative impacts is only assessed with reference to other aggregate sites, this chapter should refer to the overall health of the Middle and Welsh Grounds and the SEAWG wave modelling, Severn Sands addressed these concerns with additional information in the addendum. NRW welcomes additional information and are satisfied with the assessment.
- 9.11.4** NRW PS satisfied with the additional information provided as part of the addendum, no further action required.

9.12 Habitats Regulations Assessment

- 9.12.1** BCC assessment of the implications of the proposal on nature conservation features requires detailed modelling of the impacts of removing sediment and the resulting alterations to coastal processes. Severn Sands responded as part of the addendum stating that a large range of studies and reports have been used to inform the ES, these issues have already been addressed.
- 9.12.2** NRW PS contacted with BCC with the response as part of the addendum, BCC did not respond, NRW PS assume no further comments and no further action to be taken.

9.13 Water Framework Directive Assessment

- 9.13.1** EA noted that the WFD assessment does not mention seagrass beds, this habitat needs to be included as part of the assessment. Severn Sands responded with an update within the addendum which included details of the requested data. EA welcomed the clarification. NRW also requested that the most up to date data is used to inform the assessment, this would mean including saltmarsh as a failure. Severn Sands responded with an update to the relevant sections. NRW accepted the clarification.
- 9.14.2** NRW PS satisfied that all concerns raised have been resolved with the provision of the clarification document. No further action taken.

Regulatory Evaluation and EIA consent decision

In considering the application for Marine Mineral Dredging at Bedwyn Sands the following has been considered:

- The ES, including the mitigation measures proposed;
- The relevant provisions of Marine and Coastal Access Act 2009 and
- The representations received.

The Marine Licensing Team has determined that the environmental impacts of the marine minerals dredge have been adequately identified, described and assessed and that mitigation can be secured which would be sufficient to allow the dredging licence application to be approved.

Sign off

Signed: 

Date: 01 December 2016

Approved by: Eleanor Smart

Signed: 

Date: 18 April 2017