Rampion 2 Wind Farm

Category 8: Examination Documents Without Prejudice Measures of Equivalent Environment Benefit (MEEB) Review for Kingmere Marine Conservation Zone (MCZ)

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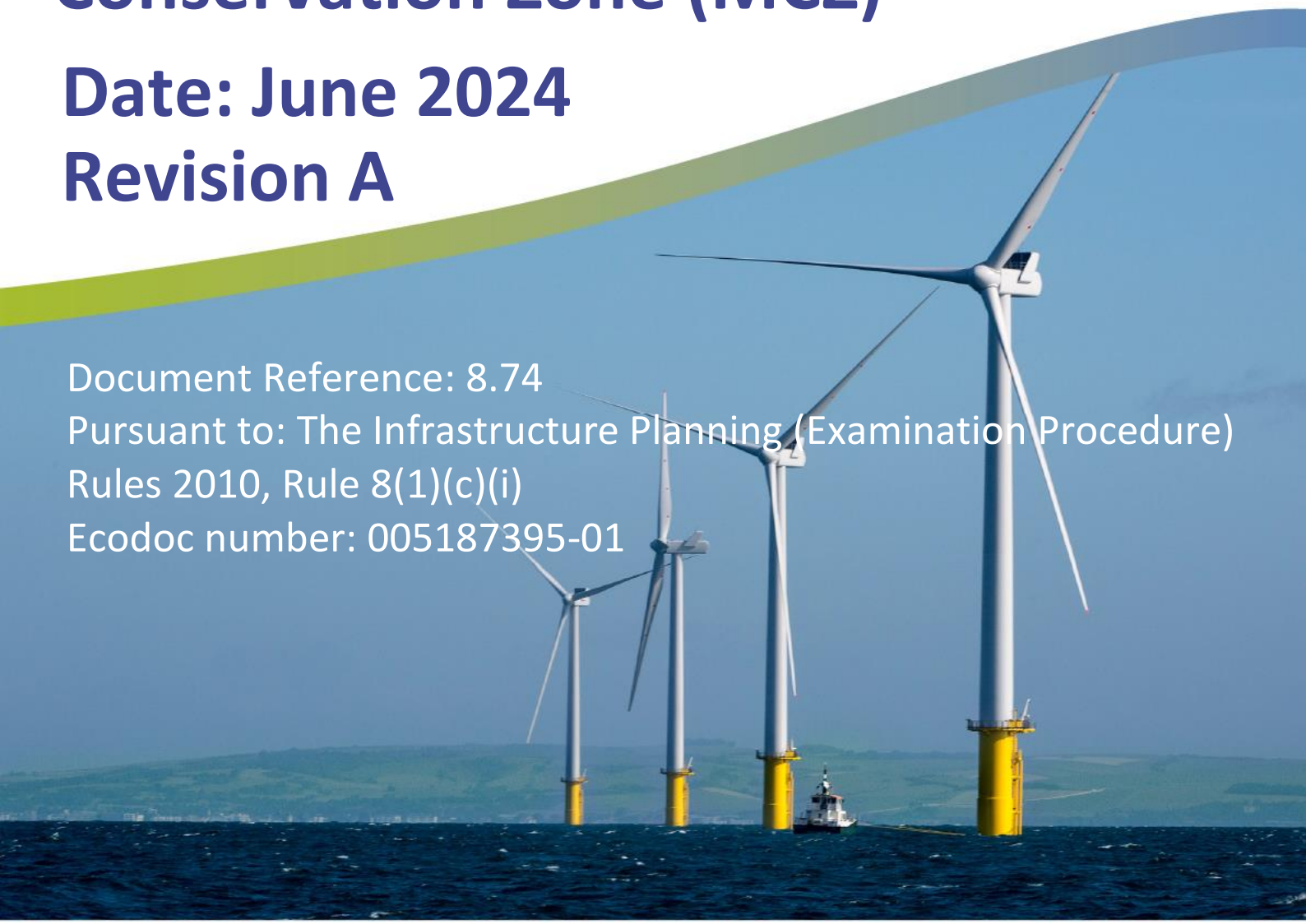

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1. Introduction

1.1 Project Background

1.1.1 Rampion Extension Development Limited (hereafter referred to as 'RED') (the 'Applicant') is developing the Rampion 2 Offshore Wind Farm Project ('Rampion 2' or the 'Proposed Development') located adjacent to the existing Rampion Offshore Wind Farm Project ('Rampion 1') in the English Channel.

1.1.2 Rampion 2 (hereafter "the Proposed Development") will be located between 13km and 26km from the Sussex Coast in the English Channel and the offshore array area will occupy an area of approximately 160km^2. A detailed description of the Proposed Development is set out in **Chapter 4: The Proposed Development, Volume 2** of the Environmental Statement (ES) **[APP-045]**, submitted with the Development Consent Order (DCO) Application.

1.1.3 The offshore array area is 3.04 km from the Kingmere Marine Conservation Zone (MCZ) at its closest point. It is possible that underwater noise effects from the construction of the project could be capable of affecting (other than insignificantly) black seabream *(Spondyliosoma cantharus),* a protected feature of the MCZ. Therefore, this site has been screened into a MCZ assessment (MCZA) for further consideration. The Stage 1 MCZA concludes that the conservation objective of maintaining the protected features of the Kingmere MCZ in a favourable condition will not be hindered by the construction, operation and decommissioning phases of the Proposed Development alone or cumulatively with any other plan, project or activity.

1.1.4 However, in light of consultation from stakeholders RED (hereafter "the Applicant") is providing a Stage 2 MCZA, on a precautionary and without prejudice basis, should it be required during the consent determination process.

1.1.5 The Stage 2 MCZ assessment considers whether the conditions in Section 126(7)(b) and (c) can be met (see **Section 2**). In doing so the Secretary of State (SoS) will use information supplied by the Applicant with the licence application, advice from the SNCBs and any other relevant information to determine whether;

- the benefit to the public of proceeding with the act clearly outweigh the risk of damage to the environment that will be created by proceeding with it; and, if so, then whether
- the Applicant can satisfy the SoS that they will undertake or make arrangements for the undertaking of measures of equivalent environmental benefit to the damage which the act will or is likely to have in or on the MCZ.

1.2 Purpose of the Document

1.2.1 This document sets out the 'Without Prejudice' Measures of Equivalent Environmental Benefit (MEEB) Review to support the Stage 2 MCZA, in the event that the SoS is unable to reach a conclusion of no significant risk of piling during

construction at the Proposed Development hindering the conservation objectives of the MCZ (either alone or in-combination).

1.2.2 This document sets out the proposed options for MEEB specifically relating to the effects on black seabream within the Kingmere MCZ, and how they would be secured and delivered, if required.

1.2.3 This 'Without Prejudice' MEEB Review has been produced to demonstrate the feasibility of the proposed options to provide the SoS with confidence that the measures are viable and securable.

1.2.4 If the SoS is unable to conclude no significant risk to the Proposed Development hindering the conservation objectives of the MCZ, the Applicant would propose that an article be added to the DCO requiring the submission and approval of a MEEB Implementation and Monitoring Plan for the Kingmere MCZ prior to the commencement of works as set out in a new Schedule to the draft DCO. A new schedule (**Schedule 18 - Measures of Equivalent Environmental Benefit (on a without prejudice basis)** (Document Reference 8.80) to the draft DCO has been proposed that the SoS could include in the final DCO.

1.3 Measures of Equivalent Environmental Benefit (MEEB)

1.3.1 The 2011 and 2024 Overarching National Policy Statements for Energy (EN-1) highlight the purpose of MCZs of conserving marine fauna or flora and marine habitats and notes that the SoS's decision making is bound by the duties in relation to MCZs imposed by sections 125 and 126 of the Marine and Coastal Access Act (MCAA) 2009.

1.3.2 Defra (2021) best practice guidance for developing compensatory measures in relation to Marine Protected Areas (MPAs) states that MEEB should be secured before the impact takes place, recognising that ideally the MEEB would be functioning prior to construction but that this is not always possible.

1.3.3 The following is a list of minimum requirements for MEEB provided in Defra (2021) which would be set out within the MEEB Implementation and Monitoring Plan:

- The extent of the impact – the number and status of the features affected;
- The environmental value and function of the affected feature;
- The environmental value and function of the proposed MEEB measure;
- The location of the proposed compensatory measure;
- How quickly compensatory measures are expected to be functioning and contributing to the network;
- The confidence in the measure being entirely effective; and
- Ability for its success to be monitored and managed accordingly

1.3.4 The implementation of MEEB would only take effect if the SoS cannot determine that the Proposed Development would not represent a significant risk of hindering the conservation objectives of the Kingmere MCZ and imposes the suggested DCO article requiring the provision of MEEB in accordance with the proposed

(Document Reference 8.80). The measures described in Section 5 are deliverable and sufficient to provide equivalent environmental benefit for the worst-case extent of the Proposed Development's effect within this designated site.

1.3.5 Factors which may influence the content of a 'Without Prejudice' MEEB Implementation and Monitoring Plan include the spatial extent of any impact on black seabream spawning grounds that is deemed to represent a risk of hindering the achievement of the conservation objectives of the MCZ, the final scheme design (noting that the current proposals are based on a Rochdale Envelope approach and associated worst case assumptions, and not the final scheme design that will be taken forward into construction) and the results of pre-construction surveys.

2. Legislation and Guidance

2.1 Marine and Coastal Access Act 2009

2.1.1 The relevant statutory provisions set out in the MCAA are detailed within the Stage 1 MCZA (**Draft Marine Conservation Zone assessment [APP-040]**).

2.1.2 With regard to MEEB, Section 126(7) of the Marine and Coastal Access Act (MCAA) 2009 states:

"…although the person seeking the authorisation is not able to satisfy the authority that there is no significant risk of the act hindering the achievement of the conservation objectives stated for the MCZ, that person satisfies the authority that:

(a) there is no other means of proceeding with the act which would create a substantially lower risk of hindering the achievement of those objectives,

(b) the benefit to the public of proceeding with the act clearly outweighs the risk of damage to the environment that will be created by proceeding with it, and

(c) the person seeking the authorisation will undertake, or make arrangements for the undertaking of, measures of equivalent environmental benefit to the damage which the act will or is likely to have in or on the MCZ."

2.1.3 This **Kingmere Marine Conservation Zone (MCZ): Without Prejudice Stage 2 MCZ Assessment** (Document Reference 8.67) addresses parts (a) and (b) and this document focuses on part (c) that may be required under Section 126(7) of the MCAA 2009.

2.2 Guidance on MEEB

2.2.1 Department for Environment, Food & Rural Affairs (Defra) has published a draft document setting out best practice guidance for developing compensatory measures in relation to Marine Protected Areas (MPAs) (Defra, 2021). The consultation for the final guidance closed on 1st May 2024, which is expected to be published later this year.

2.2.2 The Overarching National Policy Statement for Energy (EN-1) (DESNZ, 2024a) highlights the purpose of MCZs of conserving marine flora or fauna, marine habitats or types of marine habitat or features of geological or geomorphological interest and notes that the SoS decision making is bound by the duties in relation to MCZs imposed by sections 125 and 126 of the MCAA 2009. The National Policy Statement for Renewable Energy Infrastructure (EN-3) (DESNZ, 2024b) states that applicants must refer to the latest Defra compensation guidance when making their assessments.

2.2.3 The 2021 draft Defra guidance sets out the following principles that compensation/MEEB should satisfy:

- "*Link to the conservation objectives for the site or feature and address the specific damage caused by the permitted activity;*

- *Focus on providing the same ecological function for the species or habitat that the activity is damaging OR, where this is not technically possible, provide functions and properties that are comparable to those that originally justified designation;*
- *Not negatively impact on any other sites or features;*
- *Ensure the overall coherence of designated sites and the integrity of the MPA network; and*
- *Be able to be monitored to demonstrate that they have delivered effective and sustainable compensation for the impact of the project. The monitoring and management strategy must require further action to be taken if the compensation is not successful."*

2.2.4 The guidance provides a hierarchy approach to the application of MEEB (**Table 2-1**).

Table 2-1 Hierarchy approach to the application of MEEB

Hierarchy of Measures	Description
Address same impact at same location	Address the specific impact caused by the permitted activity in the same location (within the site boundary)
Same ecological function different location	Provide the same ecological function as the impacted feature; if necessary, in a different location (outside of the site boundary)
Comparable ecological function same location	Provide ecological functions and properties that are comparable to those that originally justified the designation in the same location as the impact
Comparable ecological function different location	Provide ecological functions and properties that are comparable to those that originally justified designation; if necessary, in a different location (outside of the site boundary)

2.2.5 The guidance states that the MEEB should be secured before the impact takes place, but recognises that this is not always possible:

"Where this is not possible, it is important that necessary licences are in place, finances secured, and realistic implementation plans have been agreed with the appropriate bodies to demonstrate that the compensatory measure is secured."

3. Development of Potential MEEB

3.1 Methodology for Developing MEEB

Longlist

3.1.1 The first stages of the "Without Prejudice" MEEB Review involved reviewing all OWF projects that have proposed compensatory measures to date and exploring other options based on knowledge of the features of the MCZ (black seabream, specifically) and the impact that we are looking to develop MEEB for.

3.1.2 A longlist of measures was then collated and presented in table format (**Appendix A**).

Shortlist Ranking System

3.1.3 The longlist options were then assessed using a Red Amber Green (RAG) assessment (**Appendix A**), which included an assessment of the measures deliverability, spatial scale, timescale, and an overall feasibility score. Whilst not explicitly considered within the feasibility score, the manner in which each measure meets the MEEB hierarchy (as outlined in Section 2 above) is considered within the longlist.

3.1.4 The three MEEB options that were ascribed a 'green' (i.e. a 'likely' feasibility scoring) have been taken forward to the shortlist and are discussed further in this report. Those measures for which the feasibility scoring was determined to be either 'uncertain' or 'unlikely' have been discounted on the basis that the measures do not have the required certainty to be deliverable; as such, it is considered that these would not provide sufficient certainty to the SoS.

3.2 Proposed Measures of Equivalent Environmental Benefit

3.2.1 The proposed short-list of options from which the final MEEB for the Kingmere MCZ would be selected, in the event that the SoS is unable to rule out a significant risk to the conservation objectives of the MCZ and concludes that MEEB is required, is summarised in **Table 3-1**.

Table 3-1 Measures of Equivalent Environmental Benefit developed by the Proposed Development for the Kingmere MCZ.

MEEB measure	Description
Reduction in disturbance from watercraft within the Kingmere MCZ through:	Promotion of voluntary speed limits on vessels passing through the MCZ, and voluntary no anchoring zones over the Black Bream spawning grounds through awareness and education campaigns. This could also include funding for

MEEB measure	Description
• **Voluntary Seasonal Speed Limit and/or:** • **Voluntary No Anchor Zone**	additional resource within local partner organisations to facilitate these campaigns. The no anchor zone would likely also incorporate the use of eco-moorings to provide an alternative to anchoring in the defined areas.
Removal of marine litter, including awareness and engagement	Marine litter (predominantly expected to constitute plastic) removal within the Kingmere MCZ and measures to increase the awareness of marine litter (within the Sussex Inshore Fisheries and Conservation Agency (IFCA) district) within the MCZ and wider area.
Monitoring and research of black seabream movements within the Kingmere MCZ and surrounding areas	Funding for research projects focused on seabream behaviour within the MCZ and wider surrounding areas. This may include studies focused on both macro and micro scale movements during the breeding season or wider non-breeding tracking studies. Such studies would then be used to aid in the general conservation of the species both at the MCZ and more broadly through a greater understanding of key habitats during the non-breeding season.

Strategic Compensation

3.2.2 One of the principal challenges for developers in relation to derogation is identifying and securing robust compensatory measures which are acceptable to regulators and Statutory Nature Conservation Bodies (SNCBs). To address this challenge, Defra is proposing to "*develop a library of ecologically robust strategic compensatory measures in partnership with industry and environmental stakeholders that are commercially feasible and deliverable*" (Defra, 2022).

3.2.3 Defra (2022) defined 'strategic compensatory measures' as measures "*that work across a wide area, joining-up across projects and organisations to deliver an ecological benefit greater than the sum of its parts and/or measures that can only be delivered by Government (e.g., enhanced protection of MPAs).*"

3.2.4 The Applicant understands that Natural England regards strategic compensation as ecologically effective and could provide a solution to species or habitats impacted by multiple offshore windfarms. Furthermore, the British Energy Security Strategy (BESS) commits to both speeding up the deployment of offshore wind and to the measures proposed in the Offshore Wind Environmental Improvement Package policy paper, including strategic compensatory measures and a centralised Marine Recovery Fund (MRF) to help facilitate delivery of these measures.

3.2.5 Once in place, the proposed MRF will provide a framework to allow developers to deliver strategic compensation in a coordinated way through contributions to the

fund. The MRF would also provide a mechanism for the delivery of strategic compensation measures, with appropriate input from regulators and SNCBs. This coordinated approach should enable ecological benefit to the national site networks to be maximised and delivered in a timely manner. The Energy Act received Royal Assent on 26 October 2023. However, subsequent secondary legislation will be required to set up the MRF. At present there is a lack of clarity about the timing for establishing the MRF, although it is expected to be operational by the end of 2024.

3.2.6 **Schedule 18 - Measures of Equivalent Environmental Benefit (on a without prejudice basis) (Document Reference 8.80)**, in the event that MEEB is required allows for the Proposed Development to rely on the MRF where the SoS grants permission for this as an alternative to the reliance just on the project-alone measures outlined above.

3.3 The Kingmere MCZ Engagement Group (KMEG)

3.3.1 If the SoS cannot rule out that the Proposed Development would represent a significant risk of hindering the conservation objectives of the Kingmere MCZ, then as part of the MEEB Implementation and Monitoring Plan, a Kingmere MCZ Engagement Group will be created/or joined post-consent to inform the delivery of the MEEB, including ongoing monitoring and adaptive management (as set out in the DCO). This would be secured through a schedule that will be included in the draft DCO, if MEEB is required (**Schedule 18 - Measures of Equivalent Environmental Benefit (on a without prejudice basis) (Document Reference 8.80)).**

3.3.2 The KMEG will comprise a steering group, which will shape and inform the scope and delivery of the MEEB Implementation and Monitoring Plan Plan. The KMEG would be consulted to steer the MEEB Implementation and Monitoring Plan prior to submission to the SoS and during the approval process as necessary.

3.3.3 The membership and meeting schedule of the KMEG is yet to be defined but membership is likely to comprise of the Applicant, key Delivery Partner(s) and key stakeholders. Once in place, members of the KMEG will finalise schedules for monitoring and implementation.

3.3.4 Monitoring will be required for all stages of the proposed MEEB that are adopted, should this be required. The details of monitoring proposals will be discussed with the KMEG, with key details to be agreed upon including the frequency, duration, and nature of monitoring, methodology, as well as data analysis and reporting requirements.

4. Kingmere MCZ

4.1 Overview

4.1.1 The Kingmere MCZ covers an area of 47km^2 of and is located 5 to 10 km off the West Sussex coast to the south of Littlehampton and Worthing.

4.1.2 The MCZ contains rocky habitats and subtidal chalk outcropping reef systems which support a wide range of marine life including algae, sponges and sea squirts, and are therefore important for biodiversity. The site has been designated for the rock and chalk habitats as well as to protect black seabream. Kingmere MCZ is the most important and well-known area in the UK for breeding black seabream, which build their nests on hard bedrock overlain with thin sands and gravel. The protected features of the MCZ are therefore:

- Subtidal chalk
- Moderate energy infralittoral rock and thin mixed sediments
- Black seabream (*S. cantharus*)

4.1.3 Kingmere MCZ contains two marine Sites of Nature Conservation Interest: Kingmere Rocks and Worthing Lumps. Kingmere Rocks is the main reef in the MCZ and comprises a large area of sandstone and mudstone boulders (~ 500 m wide and 6 km long). Cracks and overhangs in these rocks provide shelter for a variety of benthic fauna, including fan worms and edible crabs. Worthing Lumps is Cretaceous chalk outcrop which provides habitat for red seaweeds on the cliffs' upper surfaces, whilst colonial species, sponges, tube worms and anemones inhabit the cliff walls.

4.1.4 Within the MCZ, the moderate energy intertidal rock is covered with a thin veneer of mixed sediment. This creates a complex mosaic of habitats that have proved to be particularly important to black seabream which are known to migrate to this area of the English Channel when the water temperature begins to rise in spring to breed.

4.1.5 This 'Without Prejudice' MEEB Review is being developed for the black seabream feature of the MCZ.

4.2 Conservation Objectives

4.2.1 The following conservation objectives apply to the Kingmere MCZ. There are two conservation objectives for this site, but it is the black seabream feature alone which is relevant to this MEEB Review and subsequent MEEB Implementation and Monitoring Plan:

4.2.2 The first conservation objective of the zone is that the protected habitats (moderate energy infralittoral rock and thin mixed sediment; and subtidal chalk):

1) are maintained in favourable condition if they are already in favourable condition, or

2) be brought into favourable condition if they are not already in favourable condition.

4.2.3 For each protected habitat feature, favourable condition means that, within a zone both:

1) its extent is stable or increasing

2) its structure and function, its quality, and the composition of its characteristic biological communities (including diversity and abundance of species forming part or inhabiting the habitat) are sufficient to ensure that it remains in a condition which is healthy and does not deteriorate.

4.2.4 As the impact from the proposed development is specific to the black seabream feature of the Kingmere MCZ, the conservation objectives of the habitat features are not relevant to the proposed MEEB detailed within this review, although these features may indirectly benefit from any measures carried forward (if required).

4.2.5 The second conservation objective of the zone is that, in relation to black seabream (it is this feature alone which the proposed MEEB applies to):

1) the habitat used by individuals of that species for the purposes of spawning (spawning habitat); (a) are maintained in favourable condition if they are already in favourable condition, or (b) be brought into favourable condition if they are not already in favourable condition.

2) the population (whether temporary of otherwise) of that species occurring in the zone be free of the disturbance of a kind likely to significantly affect the survival of its members or their ability to aggregate, nest, or lay, fertilise or guard eggs during breeding.

4.2.6 For the spawning habitat of black seabream within the zone, favourable condition means that the habitat is of sufficient quality and quantity to enable individuals of this species using the habitat to survive, aggregate, nest, lay, fertilise or guard eggs during breeding.

4.2.7 No condition assessment has been undertaken for the Kingmere MCZ, which is currently noted as ‘Not Assessed’ (Natural England, 2024).

4.3 Quantification of Effect on Kingmere MCZ

4.3.1 The Applicant is continuing to discuss the potential impacts to the MCZ with the MMO and Natural England, with the intention to agree that the proposed mitigation measures (as detailed in the **In Principle Sensitive Features Mitigation Plan [REP3-045]** (updated at Deadline 4) are sufficient, or to reach agreement on an appropriate behavioural impacts threshold to inform mitigation measures the Applicant has already agreed to.

4.3.2 The Applicant considers that the use of an underwater noise threshold of 141dB SELss from piling within the array area is sufficient to ensure that there will be no significant effect on black bream at the Kingmere MCZ. The Applicant has committed to the use of a combination of no piling zones and noise abatement systems during the black sea bream breeding season to reduce the received sound at the Kingmere MCZ to no greater than this threshold. As this threshold is

set based on the sound propagation from the use of the maximum hammer energy, the actual received sound level during the majority of all piling events will be lower than this, and potentially substantially lower.

4.3.3 It should also be noted that underwater noise modelling is inherently precautionary, and any impact ranges from underwater noise should be assumed as such**. Appendix 11.3: Underwater Noise Assessment Technical Report, Volume 4 [APP-149]** details the inbuilt precaution in the modelling, including the use of worst case piling parameters for hammer energies, soft starts and piling durations. Furthermore, the precautionary disturbance threshold for black bream has been applied ((141dB SELss) based on the startle response of sea bass). Following Popper *et al*., (2014), "disturbance" is considered to comprise "*substantial changes in behavior for a large proportion of the animals exposed to a sound. This may include long-term changes in behavior and distribution, including moving from preferred sites for feeding and reproduction, or alteration of migration patterns. This behavioral criterion does not include effects on single animals or small changes in behavior such as a startle response or minor movements*". Therefore, the use of the 141 dB SELss disturbance threshold is inherently precautionary.

4.3.4 Additionally, this threshold is set to be the modelled received sound level at the boundary of the MCZ, and only at the maximum hammer blow,and as such, the sound level perceived by breeding black bream within the MCZ will be lower. Therefore, the Applicant is confident that there is no risk of a significant impact to the conservation objectives of the MCZ from piling at the array area.

4.3.5 In the absence of agreement on this, it is not currently possible to confirm whether MEEB is required or the potential quantum of MEEB if it is to be required. However, the measures identified above and detailed below are considered to be scalable and therefore would be adaptable to meet the final quantum determined by the SoS, if MEEB is required in the consent.

5. MEEB Review

5.1 Overview

5.1.1 This section provides details on the proposed short-listed MEEB options, including information on how the measures provide equivalent ecological benefit, the implementation of the measures and timeframes for the delivery of the measure. The intention of this section is to provide comfort to the SoS that proposed MEEBs are securable and deliverable in the event that the SoS cannot conclude that there is no risk of the Proposed Development hindering the conservation objectives of the Kingmere MCZ.

5.2 Reduction in Disturbance from Watercraft

Introduction

5.2.1 This section details the option of implementing a voluntary seasonal speed limit zone and/or no anchor zone in order to reduce recreational disturbance associated with watercraft within the Kingmere MCZ. The proposed measure(s) could be implemented singly or jointly.

5.2.2 For the purpose of the MEEB, 'disturbance from watercraft' consists of (i) disturbance from engine noise and (ii) physical disturbance and habitat damage from anchoring, which affects the functionality of the designated features of the relevant MCZ.

5.2.3 Engine noise has been shown to negatively impact fish species. In addition, anchoring has been evidenced to impact sensitive habitats through damaging the seabed. The nesting behaviours of black seabream requires specific environmental conditions (see 'Value and Function' sub-section below). By reducing levels of physical and noise disturbance from watercraft, it will alleviate existing pressures that are faced by black seabream within the Kingmere MCZ during the spawning season. It is also anticipated that a seasonal Voluntary No Anchor Zone can, as per the amendment below, reduce levels of angling activity within the site and consequently reduce the impact from angling on feature of the Kingmere MCZ.

5.2.4 The voluntary measures would be implemented on a seasonal basis, covering the extended spawning season for black seabream (1 March – 31 July) within the Kingmere MCZ for a minimum of three years.

5.2.5 These voluntary measure(s) would serve to maintain the black seabream population and habitat features required for spawning in a favourable condition.

Value and Function

5.2.6 Black seabream have a swim bladder that is involved in hearing, and therefore are known to be sensitive to underwater noise. Black seabream are demersal

spawners and are therefore considered stationary receptors in the assessment during the spawning season, increasing their theoretical exposure to underwater noise effects (injury or hearing impacts). The ecological consequences of sound levels which may cause disturbance to fish species is an active area of research, with no set thresholds for disturbance effects (Popper and Hawkins, 2019).

5.2.7 There is evidence to suggest that noise from boat traffic can negatively impact marine fishes, including implications for settlement and population dynamics, influence on communication and behaviour, and impact on the way fish assess risk, which reduces fitness and survival (Haviland-Howell *et al.,* 2007; Codarin *et al.,* 2009; Holles *et al.,* 2013; Whitfield and Becker, 2014; McCormick *et al.,* 2018). Once the female has laid her eggs, the male seabream will fertilise them and then guard the eggs from predators until they hatch. This measure would provide benefit to the affected feature from a similar pressure (noise) and, therefore, constitute MEEB.

5.2.8 Black seabream require particular environmental conditions for spawning and to build and maintain their nests. They will migrate to shallow coastal waters where they will seek out suitable substrate (Dipper, 2001). The substrate required for nesting is hard rock (bedrock or compacted gravels) overlain with a shallow veneer of sediments made up of sands and gravel. The male will typically build circular craters 1–2 m wide, and 5–30 cm in depth by creating a depression in the substrate (Collins and Mallinson, 2012). The male will remove any algal turf that is present and will constantly maintain the nest by ensuring wayward gravel particles are removed. Substrate availability is a key factor the nesting behaviour of black seabream, but water temperature, ocean acidification, and visual and olfactory cues also play a role in triggering spawning (Neves *et al*., 2018).

5.2.9 Physical disturbance from boating to fish habitats within coastal environments has been evidenced (Sandström *et al*., 2005). Anchoring is a particularly damaging activity that negatively impacts essential fish habitats through scouring and abrasion of the seabed (Davis *et al.,* 2016). As mentioned above, black seabream need specific conditions in order to spawn, build and maintain their nests, it is considered that anchoring would negatively impact the supporting habitat and as a result, affect the natural function of the fish. Therefore, the removal of this pressure could constitute MEEB. An education campaign could be supported by the provision of eco-moorings to provide an alternative option to anchoring in these areas (Egerton, 2011; Demers *et al*., 2013; Outerbridge, 2013).

5.2.10 A seasonal Voluntary No Anchor Zone may also reduce levels of angling activity within an area of the Kingmere MCZ (See Objective and Scale). Although angling is still permitted to occur during this time, it is anticipated that adherence to the no-anchoring zone will reduce levels of angling activity within the boundaries of the Kingmere MCZ. As a result, this would reduce the impact from angling, alleviating this pressure to the black seabream feature of the Kingmere MCZ.

Objective and Scale

5.2.11 The MEEB would be applied through the establishment of a recreational disturbance and awareness raising project. This will be achieved through the implementation of voluntary, seasonal measure(s): speed limit zone and/or no anchor zone.

5.2.12 The objective of the MEEB is to reduce existing pressures from recreational disturbance within the MCZ during the spawning period.

5.2.13 The geographical scale of the Voluntary Speed Limit Zone measure is proposed to cover the entire area of the Kingmere MCZ. The Voluntary No Anchor Zone will use the boundaries of the Sussex IFCA management approach for fishing activity (see **Figure 5-1** and **Figure 5-22**). The No Anchor Zone will avoid Zone 3 as this is open to towed gear for a proportion of the spawning period. However, it is proposed that the No Anchor Zone will cover the remaining areas of the Kingmere MCZ (Zone 1, Zone 2 and Zone 4). However, this may be refined through the consultation process and is subject to agreement with the KMEG.

Figure 5-1 Fishing activity zones in the Kingmere MCZ (Sussex IFCA 2024)

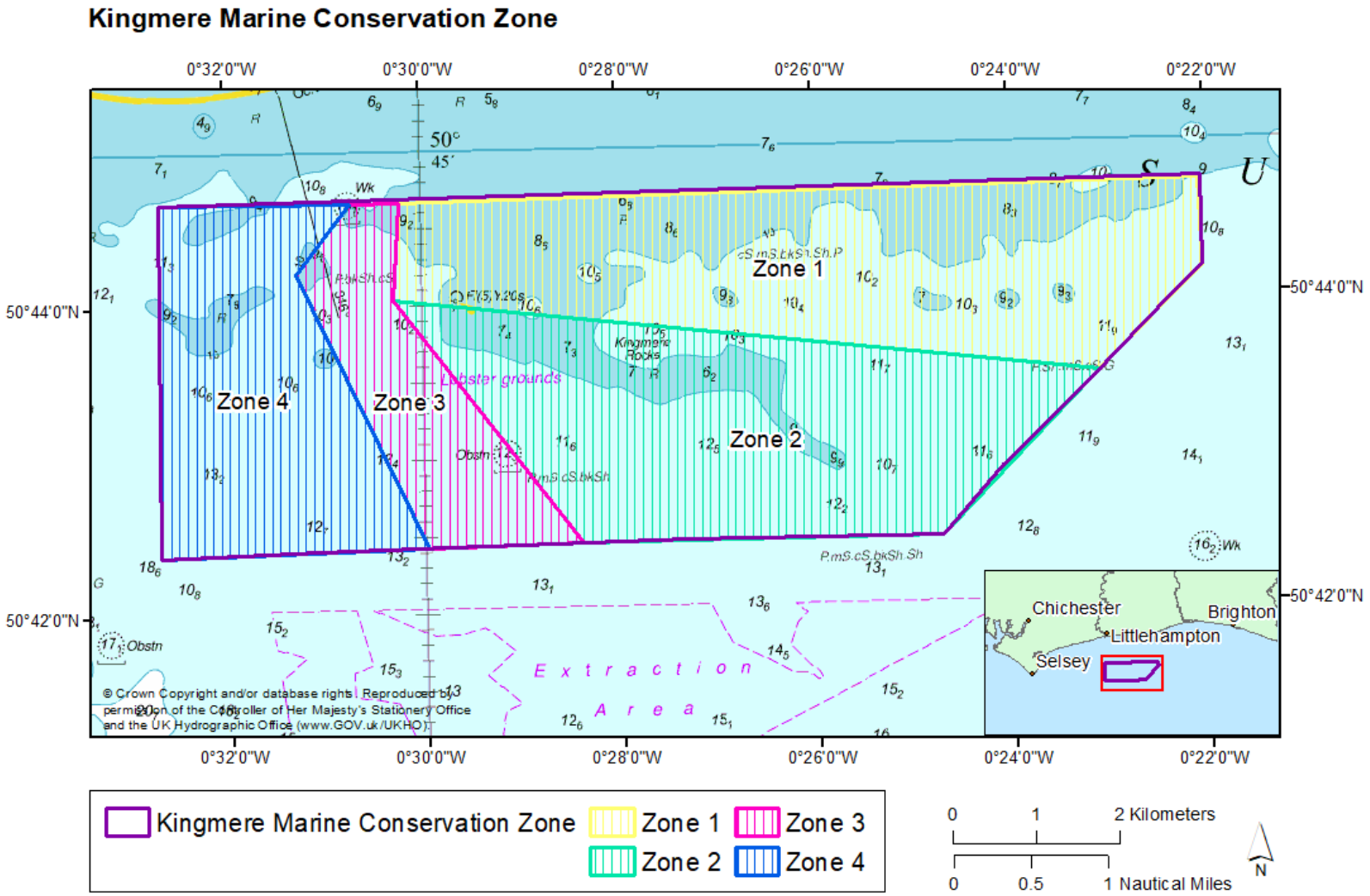

Figure 5-22 Seasonal restrictions for different fishing activities for black seabream in the Kingmere MCZ (Sussex IFCA, 2024)

1st April-30th June Bream Season Management

	Towed gear	Netting gear	Potting & trap gear	Lining	Angling	Dive gathering
Zone 1	X	X	X	X	X	X
Zone 2	X	X	X	X	✓4	X
Zone 3	X	X	✓0	✓0	✓4	✓0
Zone 4	X	X	✓0	✓0	✓4	✓0

Key:

X	Prohibited
✓4	Open but maximum of 4 bream per person bag limit
✓0	Open but no retention of bream

1st July-31st March Management

	Towed gear	Netting gear	Potting & trap gear	Lining	Angling	Dive gathering
Zone 1	X	✓	✓	✓	✓4	✓
Zone 2	X	✓	✓	✓	✓4	✓
Zone 3	✓	✓	✓	✓	✓4	✓
Zone 4	X	✓	✓	✓	✓4	✓

Key:

X	Prohibited
✓	Open
✓4	Open but maximum of 4 bream per person bag limit

Delivery Process

5.2.14 The Applicant would work with the agreed Delivery Partners through the KMEG, following consent approval (if required). The KMEG for this measure (if required as MEEB) would consist of the Applicant and made up of members of Natural England, MMO, Sussex IFCA and an NGO which would likely be Sussex Wildlife Trust.

MEEB Strategy

5.2.15 The MEEB strategy will be produced if the SoS deems that the Proposed Development represents a significant risk of hindering the conservation objectives of the Kingmere MCZ and imposes a DCO requirement for the provision of MEEB.

5.2.16 If the measure(s) are taken forward, a detailed MEEB Strategy will be agreed between the KMEG which will subsequently guide the structure and planning for the associated recreational disturbance project.

5.2.17 A MEEB Implementation and Monitoring Plan would then be developed for this MEEB option in consultation with the KMEG, if required and chosen.

Consultation

5.2.18 Consultation will be a key element of the project and will be required from the early stages. In order for the voluntary measure to work, it is key to engage with the relevant stakeholders, industry and user groups that the measure will apply to.

5.2.19 Consultation will provide valuable insight into the perception of key stakeholders around the proposed voluntary measures. Feedback from consultation will help shape the voluntary restrictions i.e. spatial and temporal extent of the measure(s) and will indicate potential challenges that the project is likely to face.

5.2.20 It is likely that there will be several stages of consultation to gather feedback on the various phases of the project i.e. before and after the measures are implemented, and potentially at the end of the project's lifespan.

Licences and Infrastructure

5.2.21 Once the final scope of the measure is defined, the relevant licenses required to carry out the project will be attained prior to the impact occurring.

5.2.22 It is anticipated that an MMO Marine Licence will be required for the deployment of eco-moorings for marker buoys around the area of the Kingmere MCZ and/or within the No Anchor Zone.

5.2.23 The marker buoys that outline the speed limit zone and/or no anchor zone will be installed in a way that minimises any impact to the seabed. For example, by using eco-moorings which are evidenced to reduce impacts from scouring caused by anchoring and mooring on sensitive features (Egerton, 2011; Davis *et al.,* 2016).

5.2.24 Marker buoys will meet the design and safety requirements as required by Trinty House. Each marker buoy will be installed with signage to indicate details of the speed limit zone and/or no anchor zone i.e. dates of compliance and voluntary speed restriction.

Project Management

5.2.25 A Project Liaison Officer would be employed by one of the Delivery Partners for the duration of the measure, agreed through the KMEG (funded by the Applicant).

5.2.26 Key roles of the Project Liaison Officer would be to liaise with sub-contractors, ensure project outputs are meeting deadlines, to undertake consultations, raise awareness of the voluntary measures through engagement with stakeholders/user groups, and to produce educational materials and install signage (in marina and harbour offices, for example).

Outreach and Awareness

5.2.27 The role of outreach and awareness raising will be important in helping user groups to understand the 'rules' of the voluntary measure(s). Outreach and awareness will also play a vital role in the restoration of the MCZ through an improved understanding of the impact that users may have on the MCZ features and therefore creating more conscious decisions by the user.

5.2.28 Bespoke workshops would be provided for key commercial and recreational user groups such as tourism operators, divers, commercial fishers, recreational anglers, and personal watercraft owners. The workshops would be focussed on the first year (see **Table 5-1**) to raise key awareness around the impacts and to explain the voluntary restrictions and how they will be implemented, but additional workshops may be required throughout the duration of the measure.

5.2.29 Face-to-face engagement would be utilised to talk to users that may not attend bespoke workshops or find out information via other means. For example, the Project Liaison Officer would spend time at local harbours and marinas or suitable public places to engage with members of the public and promote and explain the voluntary measures.

5.2.30 Digital and print materials would be produced to highlight the voluntary measure(s). These materials would be distributed to Tourist Information Centres, Recreational Activity Centres, local harbours and marinas. They would also be placed on websites of these organisations/businesses and other suitable websites, for example, Sussex Wildlife Trust, Sussex IFCA, Sussex Heritage Coast Partnership, Living Coast Partnership and Wild Coast Sussex. Social Media posts and campaigns would be similarly applied.

5.2.31 Signage would be installed to promote the voluntary measures at locations where there is confidence that user groups are likely to view them. For example, at marinas or by harbour slipways.

Delivery Timeframe

5.2.1 As stated in the Defra guidance (Defra, 2021), relevant licences associated with the MEEB will be attained (including licences for the installation of marker-buoys) and agreed with the appropriate bodies prior to the impact (piling) taking place. The final MEEB strategy and MEEB Implementation and Monitoring Plan would be produced and submitted to the SoS for approval post-consent if required.

5.2.2 A three-year monitoring programme is being proposed. With this in mind, the project would likely require a total of four years to enable project set-up and baseline evidence gathering to occur prior to monitoring. **Table 5-1** provides an example of how this might be achieved and high-level delivery timeframe. It should be noted that these years may not be consecutive as consideration to the project plans for construction would need to be given. For example, baseline monitoring could occur prior to the piling. The voluntary measures (and monitoring of these measures) could then be implemented prior to construction, with monitoring undertaken both during and post-piling.

5.2.3 Outreach would begin in the first year of the project to ensure that sufficient consultation and engagement with the relevant user groups has occurred. This

would also coincide with the production and distribution of educational materials and the installation of signage.

5.2.4 It is proposed that monitoring of effectiveness of the voluntary measure (s) would run from 1 March until 31 July, to cover the black seabream spawning season. A three-year timescale will allow for monitoring and reporting to occur to allow for the effectiveness of the measure(s) to be quantified along with other the collection of other associated data (see Monitoring and Reporting).

5.2.5 If the monitoring concluded that the voluntary measure(s) was effective, it is possible that other relevant organisation may maintain the measures after the end of the monitoring studies. However, this is not part of the scope of the proposed measure, which is intended to deliver MEEB for the impact associated with impacts during piling activity from the Proposed Development, with it not considered that long-term measures are required.

Table 5-1 Key objectives and timelines for reduction in disturbance from watercraft.

Year	Key Objectives
Year 1* **1 year prior to construction (piling) commencement*	• Recruit a 'Project Liaison Officer'. • Project Delivery Plan to be produced using guidance from the MEEB Strategy and discussions with the KMEG. • Consultation to begin with user groups and stakeholders. • Outreach and awareness raising to begin. • Signage installed and educational materials produced and distributed. • Baseline data collected prior to the implementation of management measure(s) • Licence obtained for the installation of marker-buoys • Installation of the marker buoys and implementation of voluntary measures (speed limit and no anchoring).
Year 2 & Year 3	• Project Liaison Officer to continue outreach, awareness raising and distribution of educational materials. • Monitoring of voluntary measures(s) to begin • Project Liaison Officer to produce an Annual Report and present/distribute to stakeholders
Year 4	• As above in Year 2 and Year 3. • Final monitoring report to be produced by the independent consultancy and presented/distributed to stakeholders.

Year	Key Objectives
	• Project review and final report to be produced by the Project Liaison Officer and presented/distributed to stakeholders.

Monitoring and Reporting

5.2.6 Regular meetings with the KMEG would be set up to provide opportunities to report on the progress of the Project and for members to provide input and approve (if necessary) any associated deliverables and outputs.

Baseline Data Gathering

5.2.7 Baseline data gathering will help to understand levels of activity and potential impacts from these activities within the site prior to the implementation of any voluntary measure(s). This could help shape the measures i.e. what speed limit to apply to reduce sufficient levels of disturbance. This could be achieved by monitoring of vessel usage under baseline conditions combined with a data gathering exercise (including AIS). Alternatively, a model approach could be applied to demonstrate the impact of various speed limits in similar conditions.

5.2.8 Similarly, it will be important to understand levels of anchoring within the Kingmere MCZ prior to a No Anchor Zone in order to assess the impact of the voluntary measure. This could be achieved through bespoke monitoring or through evidence gathering exercises and consultation.

Monitoring and Recording

5.2.9 Monitoring will be a key element of the project as this will provide evidence on the effectiveness of the voluntary restrictions. An independent consultancy or Delivery Partner such as Sussex IFCA could be responsible for monitoring the effectiveness of the measure(s). Monitoring would likely occur over a period of four years including baseline evidence gathering and three years of post-implementation monitoring (see **Table 5-1**. This method has previously been used when monitoring the effectiveness of voluntary restrictions for recreational activities (SEDHRP, 2021).

5.2.10 Various methods could be applied to monitor the effectiveness of the voluntary measure(s). It is anticipated that the independent consultant or Delivery Partner will propose their chosen methodology during any procurement process. Monitoring of the effectiveness of the voluntary measures would be the primary data requirement of the project. However, other data would also be collected in order to improve the understanding of recreational users within the site, for example:

- Speed of vessel within the MCZ;
- Number of vessels within the MCZ;
- Type of vessel (including engine type) within the MCZ;
- Activity occurring from the vessel within the MCZ; and

- Duration the vessel spends within the MCZ.

5.2.11 Records of engagement would be kept and compared with the baseline data gathered prior to the implementation of the measures. Surveys would also be carried out to understand the various user's awareness of the measure and whether there have been any behavioural changes as a result of its implementation.

Reporting

5.2.12 A Project Delivery Plan would be developed and shared with the EEG for consultation, which may include the development of annual reports and a final report at completion of the work.

5.2.13 The Annual Report could include project updates, key milestones achieved, how outreach has been applied, feedback from consultations and workshops and any findings from the monitoring (and other data) from the independent consultancy.

5.2.14 The Final Project Report could include similar information as the Annual Reports, but would importantly summarise and evaluate the project, and demonstrate the effectiveness of the voluntary measure(s).

5.2.15 Presenting the findings from the reports mentioned above could be done through workshops and in-person/virtual Forum events. Project updates could also be provided through digital platforms such as webpages, emails, and social media or through printed articles in bulletins, newsletters and newspapers.

Adaptive Management

5.2.16 In the event that 'reduction in disturbance from watercraft' is an unsuccessful MEEB measure, adaptive management will be required.

5.2.17 Adaptive management will be developed in collaboration with the KMEG and detailed within the MEEB Implementation and Monitoring Plan. This may entail additional workshops or engagement with stakeholders.

Summary

5.2.18 The Applicant is confident that the MEEB outlined above is sufficient to offset and provide benefit of equivalent value to the maximum extent of the Proposed Development's effect on the black seabream spawning grounds, due to the highly limited extent.

5.3 Removal of Marine Litter, Including Awareness and Engagement

Introduction

5.3.1 This section details the implementation of marine litter removal, including awareness and engagement in order to reduce existing pressures on the black seabream feature of the Kingmere MCZ.

5.3.2 Marine litter, including plastic, is defined as any persistent, manufactures, or processed solid material which ends up in the marine or coastal environment due to being discarded, disposed of, or abandoned. This includes domestic plastic packaging, but also plastics used in fishing gear along with a full range of applications (The Royal Society, 2024).

5.3.3 Plastics, have harmful effects on the marine environment by entangling marine animals (Gall and Thompson, 2015), destroying habitat (Sheavly and Register, 2007) and depositing in sediment, leading to potential negative effect on the marine animals that require the benthos for habitat and foraging (Brandon *et al*., 2019) as they can have both physical and chemical impacts when ingested.

5.3.4 The chemical impacts of ingested micro and macroplastics are a growing concern as they may serve as delivery systems of toxic pollutants. For example, some microplastics have been shown to contain additives that are known carcinogens and reproductive toxins (Wright and Kelly, 2017). These chemicals may bioaccumulate up the food chain through ingestion at multiple trophic levels. The implications for food webs are not yet fully understood (Lusher *et al.,* 2018).

5.3.5 There is increasing evidence that ghost gear contributes to the problem of marine plastics. **Appendix 10.1: Commercial fisheries technical baseline report, Volume 4** of the ES **[APP-146]**, concluded that the key fleets operating across the Proposed Development use the following gear: pots, fixed nets, angling gear, scallop dredgers, beam trawlers, otter trawlers and pelagic trawlers. In a study assessing the highest risk abandoned, lost and discarded fishing gear (Gilman *et al*., 2021), fixed nets were rated the highest risk to the environment, followed by bottom trawlers, pots and pelagic trawls.

5.3.6 The removal of marine litter, specifically plastic, would also be a direct means to improve habitat quality and food chain environmental benefit within the Kingmere MCZ serving to support the restoration of the fragile chalk reef, rock and mixed sediments habitat. It is expected that any litter to be removed would predominantly constitute macroplastics.

5.3.7 It is logical that the reduction of the input of litter into the marine environment at the source is the first step in alleviating this pressure. Consequently, a reduction and awareness campaign would be implemented with the aim of reducing future marine litter entering the Kingmere MCZ to support removal of marine litter and thus providing a longer-term measure.

5.3.8 This measure would comprise working with a delivery partner to remove marine litter located within the Kingmere MCZ, and the delivery of a programme to increase awareness and measures to improve the recovery of lost fishing gear and

reduce marine litter entering the environment at source. Recovery of lost fishing gear and marine litter would be targeted at drifting or surface litter, particularly plastics.

5.3.9 This measure would serve to maintain the black seabream spawning grounds and other features of the Kingmere MCZ, in a favourable condition.

Value and Function

Removal of marine litter

5.3.10 The problems caused by marine litter, specifically macro and microplastics are well documented (Schmaltz *et al*., 2020), with the chemical impacts of ingested plastics a growing concern (Brennecke *et al*., 2016; Karbalaei *et al*., 2018).

5.3.11 It is estimates that between 4.8 and 12.7 million tonnes of plastic enter the world's oceans every year (Jambeck *et al.,* 2015). Plastic pollution is a growing environmental concern in the English Channel. In a study documenting microplastics in fish in the English Channel, more than one-third of fish were found to contain microplastics (Lusher *et al.,* 2013).

5.3.12 The removal of marine litter, specifically plastic, would be a direct means to improve habitat quality and food chain environmental benefit within the Kingmere MCZ serving to support the restoration of the fragile chalk reef, rock and mixed sediments habitat. It is expected that any litter to be removed would predominantly constitute macroplastics.

5.3.13 The removal of marine litter would support the restoration of the MCZ and its associated features in a holistic manner. This measure would support environment and ecosystem improvement within the MCZ. Such action is in line with the Marine Strategy Regulations.

Awareness campaign

5.3.14 The awareness campaign would focus on stakeholder engagement to promote a 'stopping at the source' approach to reducing marine litter and aim to target several marine litter sources including fishing gear, litter from other industries, recreational activities, and onshore sources at local locations. This campaign would aim to promote long-term changes in activities and processed from those groups that the awareness campaign would target.

5.3.15 The awareness campaign would include the provision of collection bins in strategic local locations.

Objective and Scale

Removal of marine litter

5.3.16 The objective of marine litter removal is to restore black seabream spawning grounds within the extent of the Kingmere MCZ. Depending on the technology used, this will be achieved through the direct removal of such material from the marine litter search area, where safe and appropriate to do so.

5.3.17 The geographic focus of this offshore MEEB measure, would, as a minimum, be within the Kingmere MCZ, although, if necessary, the scale of this measure could be expanded further to include marine litter removal to areas within close proximity to the Kingmere MCZ and within the Sussex IFCA, where there is evidence of black seabream nesting habitat.

Awareness campaign

5.3.18 An awareness and education programme would be set up in agreement with the MMO, with the aim of reducing the quantity of litter being added to the marine environment. This would include consultation with the fishing industry and the provision of better methods for static gear removal, and the provision of collection bins in strategic local locations. This will make the disposal of waste easier and more cost effective, reducing the marine litter that may otherwise be discarded at sea. A scheme where fishermen are encouraged to report lost gear with coordinates for recovery would also be implemented.

5.3.19 Industry awareness events for the fishing industry would be closely linked to the rapid retrieval campaign in terms of illustrating success through use of technology or other strategies but would also focus on disseminating the economic cost and potential loss to catch resulting from presence of marine litter. Workshops will additionally aim to encourage the fishing industry to play an active role in collecting marine litter identified at sea, where practicable. Existing best practice guidance would be promoted.

Delivery Process

5.3.20 The Applicant would work with agreed Delivery Partners through the KMEG, following consent approval (if required).

MEEB Strategy

5.3.21 A MEEB strategy would be produced if the SoS were unable to conclude that the Proposed Development poses no significant risk of hindering the conservation objectives of the Kingmere MCZ and imposes a DCO requirement for the provision of MEEB.

5.3.22 Following consultation on the proposed MEEB with the relevant SNCB's it will be deemed which measure(s) will be carried forward. If the measure(s) are taken forward, a detailed MEEB strategy will be agreed between the KMEG which will subsequently guide the structure and planning for the associated recreational disturbance project.

5.3.23 A MEEB Implementation and Monitoring Plan would then be developed for this MEEB option in consultation with the KMEG, if required and chosen.

Consultation

5.3.24 Consultation will be a key element of the project and will be required from the early stages to engage with the relevant stakeholders and industry.

5.3.25 Feedback from consultation will help shape the spatial and temporal extent of the measure and will indicate potential challenges that the project is likely to face.

Removal of marine litter

5.3.26 It is not possible (at this stage) to precisely establish the volume of marine litter that could be removed, therefore, whilst the primary target for such removals would be the Kingmere MCZ itself, removal could be extended to the qualifying features outside of the MCZ, where there is evidence of black seabream nesting habitat.

5.3.27 There are a number of innovative techniques to reduce the amount of global plastic pollution. Technologies addressing the issues of plastic in the marine environment are often geared towards collecting existing plastic pollution and include large-scale booms, drones and robots, boats and wheels, waterway litter traps and sand filters (Schmaltz *et al.,* 2020).

5.3.28 Identification of suitable measures to ensure valuable recovery of marine litter would be developed and agreed with the KMEG and detailed within the MEEB Implementation and Monitoring Plan, if taken forward. These may comprise options such as voluntary reporting.

5.3.29 It is proposed that the delivery of this measure would be a single removal campaign undertaken in partnership with the relevant IFCA, the local fishing industry and potentially other conservation organisations involved in ocean clear-up campaigns.

Awareness campaign

5.3.30 Marine litter removal works would be accompanied by awareness events within the Sussex IFCA's district and for stakeholders that operate within and surrounding areas of the Kingmere MCZ. These could be undertaken in partnership with relevant Non-Governmental Organisations (NGOs), the MMO and National Federation of Fishing Organisation (NFFO), and would focus on the ecological, safety and economic risks associated with marine litter (particularly plastics).

5.3.31 The education and awareness campaign would aim to conduct a variety of awareness events and work with various stakeholder groups/industries to launch initiatives, or support ongoing initiatives, to help reduce marine litter entering the marine environment in the long term.

5.3.32 The education and awareness campaign would focus on engagement with stakeholders such as the fishing industry, watercraft user groups, and tourism operators to identify opportunities where projects can facilitate the reduction of marine litter by managing the problem at the source. This would involve a number of strands:

- Strand 1: Consultation with stakeholders to:
  - Ensure awareness of the legal requirements to not discard marine litter and/or waste at sea, to attempt to retrieve it if lost, to carry equipment to

allow retrieval, and to report lost fishing gear or equipment within 24 hours if it has not all been retrieved;

- Identify possible ways that the Proposed Development could contribute to stopping forms of marine litter entering the sea and minimising the risk of lost fishing gear.

- Strand 2: The provision, by the Proposed Development, of better methods for static fishing gear retrieval such as beacons and tracking systems to ensure that static gear can be swiftly retrieved or relocated if it has been moved.
- Strand 3: The provision, by the Proposed Development, of safe marine litter disposal bins at local ports and on vessels. Once placed in the disposal bins, the Proposed Development would then arrange for safe disposal or recycling of the marine litter. It is anticipated that the bins will largely be used for discarded or damaged fishing gear, but they can also be used for other forms of marine litter that has been retrieved at sea.

5.3.33 Strand 1 would involve the creation of Codes of Best Practice for the various user groups to reduce the impact of marine litter. Once a draft code has been established, a consultation process with stakeholders would be undertaken with the aim of agreeing and finalising the code.

5.3.34 As part of Strand 2, it is proposed that the identification of suitable measures to facilitate the rapid recovery of lost gear/equipment would be developed with the Delivery Partner and KMEG. These may comprise options such as voluntary reporting and provisions of technical solutions that can be fixed to static gear.

5.3.35 As part of Strand 3, collection days would be arranged, which would involve the deployment of a large commercial skip in which the fishing community, watercraft users and tourism operators could deposit hard-to-recycle fishing gear and any other marine litter which they have. Smaller bins may be introduced at strategic locations (popular beaches and harbours) in addition to the large skips which could be used by the general public. The handling and transport of materials to the relevant processors for recycling would then be organised. Data collected during this exercise would provide a measurable way to demonstrate how the MEEB is succeeding.

Delivery Timeframe

Removal of marine litter

5.3.36 The MEEB strategy would be approved prior to construction of the Proposed Development and any associated adverse impacts arising. The implementation of the physical MEEB measures would be conducted in accordance with the programme provided within the MEEB plan, should they be required.

Awareness campaign

5.3.37 The programme of delivery to improve the recovery process of marine litter and plastics would be agreed withing the approved MEEB prior to the commencement of offshore cable protection installation works, and ideally delivered prior to completion of those works. The first year of delivery would focus on the

identification of appropriate solutions and engagement within the fishing industry and other relevant stakeholders, potentially including education and awareness events.

Monitoring and Reporting

Removal of marine litter

5.3.38 The monitoring of litter removal work would be limited to the duration of the works themselves. The removal process would be monitored, and the amount of litter recorded and reported, but there would not be an ongoing monitoring/adaptive management process.

5.3.39 The report would include photographs of the litter following removal, a categorisation of the litter (i.e., size, volume and type of litter), a figure showing the locations of each item of marine litter, a breakdown of the various pathways the litter took following its collection, and any products the recycled material have become used for.

5.3.40 The main overall requirement of the reporting would be to understand the volume of litter recovered and therefore how much litter has been prevented from entering or re-entering the marine environment.

5.3.41 Once the litter has been removed, the impact will have been removed, and the affected area would be expected to recover. It is not considered that ongoing monitoring following completion of the litter removal works will be needed to provide any further evidence of habitat restoration following removal of the litter.

Awareness campaign

5.3.42 An Annual Report for the awareness and engagement campaigns is proposed for the duration of the relevant offshore construction works. The report would cover measures associated with the uptake of technology aimed at the rapid identification and reporting of lost gear.

5.3.43 Management and monitoring of the awareness of marine litter would include the quantification of marine litter and discarded material disposed of within bins and monitoring of how often litter retrieval was successful following any provision of new technology. Attendance at the provided events and industry forums would also be monitored.

Adaptive Management

5.3.44 In the event that ‘removal of marine litter’ is an unsuccessful MEEB measure, adaptive management will be required.

5.3.45 Adaptive management will be developed in collaboration with the KMEG and detailed within the MEEB Implementation and Monitoring Plan. This may entail additional workshops or engagement with stakeholders.

Summary

5.3.46 The Applicant is confident that the MEEB outlined above is sufficient to offset and provide benefit of equivalent value to the maximum extent of the Proposed Development's effect on the black seabream spawning grounds if the SoS cannot determine that the Proposed Development would not represent a significant risk of hindering the conservation objectives of the Kingmere MCZ.

5.4 Research on Black Seabream

Introduction

5.4.1 This section details the provision of further monitoring and research of black seabream migration and fine-scale movements in and around the Kingmere MCZ.

5.4.2 The MEEB could be achieved through either (i) enhancement of previous projects or (ii) through the provision of a PhD based on known evidence gaps of movements of black seabream in the area.

5.4.3 The monitoring and research would likely use acoustic telemetry utilising the existing acoustic receiver network and acoustic transmitter tagging regime along the Sussex Coast and wider area through the FISH INTEL[1] and Angling for Sustainability[2] projects. New techniques and methods may also be applied depending on which approach is taken forward.

5.4.4 An improved understanding of the migration, fine-scale movements, site fidelity of black seabream is fundamental in helping to understand when the species is likely to be present within the MCZ. Knowledge, understanding and education of black seabream will help to inform appropriate management measures for the species which will ultimately support and improve the condition of the black seabream feature of Kingmere MCZ.

5.4.5 The MEEB would serve to maintain the black seabream spawning grounds and other features of the Kingmere MCZ, in a favourable condition.

Value and Function

5.4.6 There is a growing evidence base to which helps understand the nesting behaviours and movements of black seabream. However, there is still evidence gaps and room for further research, particularly around the fine-scale movements and site fidelity of black seabream, including their temporal and spatial distribution within the Kingmere MCZ.

5.4.7 By providing the opportunity for the continuation of research on black seabream, it would allow for larger sample size and/or longer-term research. This may therefore help to better understand e.g. the migration and movement patterns of the species over a longer timescale and/or provide an improved understanding of

[1] https://www.plymouth.ac.uk/research/marine-conservation-research-group/fish-intel-interreg
[2] https://anglingtrust.net/sea/sea-angling-science/angling-for-sustainability/

the species and the biotic and abiotic factors that may influence movements of the species throughout its life history. These are elements of research that may otherwise not be possible to evaluate from smaller scale projects or studies.

5.4.8 The provision of a PhD could enable questions that have not been answered through existing projects to be addressed. These would be specific to the Kingmere MCZ and surrounding area which will help inform species-specific and localised management which in turn will improve the condition of the Kingmere MCZ.

5.4.9 The value of the research has the potential to inform policy and management measures for black seabream. This ranges from local management of the Kingmere MCZ which will help to improve the condition of its features through to regional and national plans and policies. For example, the findings of the research could influence adaptations of the Black Seabream Fisheries Management Plan which is understood to be targeted for publication by the end of 2025.

5.4.10 Communicating the research through a variety of means will make users of the Kingmere MCZ more aware of the behaviours and potentially sensitive periods for the species. This has the potential to influence a personal and voluntary behaviour change which would alleviate pressures on the features of the Kingmere MCZ for years to come.

Objective and Scale

5.4.11 The objective of the MEEB would be to improve understanding of the movements, nesting behaviour and site fidelity of black seabream. This evidence-based approach which help to inform any future management measures that are required to improve the condition of the feature of the MCZ.

5.4.12 The geographical scale of the measure would cover the Kingmere MCZ and may also include a wider area which could enable both the long-range migratory and fine-scale movements of black seabream to be better understood.

Delivery Process

5.4.13 The Applicant would work with the agreed Delivery Partners through the KMEG, following consent approval (if required).

MEEB Strategy

5.4.14 The MEEB strategy would be produced if the SoS is unable to conclude that the Proposed Development does not represent a significant risk of hindering the conservation objectives of the Kingmere MCZ and imposes a DCO requirement for the provision of MEEB.

5.4.15 A MEEB Implementation and Monitoring Plan would then be developed for this MEEB option in consultation with the KMEG, if required and chosen.

Additionality on Previous Research Projects

5.4.16 New research may utilise an existing acoustic receiver network in and around the Kingmere MCZ but could also look to install new receivers in particular areas of interest (subject to consultation with the KMEG) expanding this network and increasing monitoring capabilities.

5.4.17 The Applicant is proposing to provide funding to build on previous research undertaken by the FISH INTEL and Angling for Sustainability projects. However, as mentioned previously, this would be specific to black seabream only. This could be achieved by funding post-doctorate researcher positions and associated research costs e.g. maintaining an existing acoustic network and potentially installing new acoustic receivers in and around the Kingmere MCZ for the duration of the research, and/or the provision of additional tags.

Provision of a PhD

5.4.18 Regarding the provision of a PhD, this differs to the 'Additionality of Previous Projects' as this could be based on new techniques not previously used to study black seabream movements in the area or to answer discrete evidence gaps regarding the movements of black seabream.

5.4.19 The PhD would be developed with a suitable research institute and agreed with the KMEG to ensure that the outputs of the research will contribute to improving the condition of the Kingmere MCZ.

5.4.20 The Applicant would provide the funding to cover the cost of employing a research student.

Outreach and Engagement

5.4.21 Engagement with the users of the Kingmere MCZ, particularly the angling community would be a key element in the research. As has been demonstrated by the 'Angling for Sustainability' campaign, the local knowledge of recreational charter boat skippers would be fundamental. They would also play a vital role in the tagging and monitoring of the fish if this approach is to be taken forward.

5.4.22 Engagement with the angling community would be fundamental, but outreach may also be conducted with wider stakeholders such as Sussex Wildlife Trust, Sussex IFCA, Sussex Heritage Coast Partnership and the Living Coast Partnership. This would be achieved through a series of bespoke workshops and presentations at relevant committee meetings and forums.

Delivery Timeframe

5.4.23 The research, and any licenses that are required to undertake it, would begin prior to the impact occurring, as stated within the Defra guidance (Defra, 2021).

5.4.24 The delivery timeframe will be dependent on the delivery process of the research i.e. whether the research is an enhancement of a previous project or whether the provision of a PhD project is taken forward and the duration of the research.

5.4.25 A current research project (Angling for Sustainability) is currently funded by Defra for the period of 2023-2024 with the final project conference event scheduled for early 2025. Other recent projects associated with black seabream movements have concluded. The Applicant is proposing to continue and enhancing the research for 4 to 5 years.

5.4.26 Alternatively, the Applicant is proposing the provision of a new PhD. If this approach as taken it would be subject to the timescales of a PhD. This would likely require 4 to 5 years to include the PhD itself and any research conception.

Monitoring and Reporting

5.4.27 Monitoring would be conducted by the research team/PhD student depending on the approach taken forward.

5.4.28 Recreational charter vessel operators will monitor and record individuals that are captured during their excursions and will check for previously tagged individuals. This data will be passed onto the researcher for analysis.

5.4.29 Monitoring and reporting of the findings of the research will be pivotal in raising awareness of the species and its behaviours. This will consequently influence the behaviours of users that may be exerting pressure on black seabream and the features of the Kingmere MCZ.

5.4.30 The research team would be required to regularly update the KMEG with the progress and findings of the research when reaching key milestones.

5.4.31 Communicating the research could be achieved through a variety of ways including hosting workshops and presenting at relevant conference events and interested organisations. The findings could also be communicated through digital platforms such as webpages, emails, and social media or through printed articles in bulletins, newsletters and newspapers.

Adaptive Management

5.4.32 In the event that ‘research on black seabream’ is deemed an unsuccessful MEEB measure, adaptive management will be required.

5.4.33 Adaptive management will be developed in collaboration with the KMEG and detailed within the MEEB Implementation and Monitoring Plan. This may entail additional workshops or engagement with stakeholders.

Summary

5.4.34 The Applicant is confident that the MEEB outlined above is sufficient to provide benefit of equivalent value to the maximum extent of the Proposed Development’s effect on the black seabream spawning grounds if the SoS cannot rule out that the Proposed Development would represent a significant risk of hindering the conservation objectives of the Kingmere MCZ.

6. Conclusions

6.1.1 Whilst the Applicant considers that, with the mitigation proposed, there is no significant risk of piling during construction at the Proposed Development hindering the conservation objectives of the Kingmere MCZ (either alone or in-combination), in the event that the SoS is unable to reach the same conclusion the Applicant has reviewed and developed a series of MEEB options to support a 'without prejudice' MEEB case for effects to black seabream of the Kingmere MCZ arising from impacts from underwater noise during piling activity from the Proposed Development during the construction phase.

6.1.2 Following the development of a long-list of compensation measures, a short-listing process was undertaken; considering, amongst other factors, the ecological benefits of the measure, the feasibility of implementation and the similarity between the proposed measure and the impacted feature. The measures proposed are:

- Reduction in disturbance from watercraft;
- Removal of marine litter, including awareness and engagement; and
- Research on black seabream.

6.1.3 For each of these measures, information on the value and function, objective and scale, the delivery process and time frame, monitoring and reporting and details of proposals for adaptive management has been provided.

6.1.4 The Applicant is anticipating feedback on the measures from the relevant stakeholders following submission of this document.

6.1.5 The Applicant will continue to progress the development of each measure in addition to creating the Outline MEEB Implementation and Monitoring plan.

7. Glossary and Abbreviations

Abbreviation	Definition
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
ES	Environmental Statement
HRA	Habitats Regulations Assessment
IFCA	Inshore Fisheries and Conservation Agency
KMEG	Kingmere MCZ Engagement Group
MCAA	Marine and Coastal Access Act
MCZ	Marine Conservation Zone
MCZA	MCZ assessment
MEEB	Measures of Equivalent Environmental Benefit
MMO	Marine Management Organisation
MPA	Marine Protected Area
NFFO	National Federation of Fishing Organisation
NGO	Non-Governmental Organisation
RAG	Red Amber Green
SNCB	Statutory Nature Conservation Body
SoS	Secretary of State

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Appendix A
MEEB Longlist Options and RAG Scoring

Compensation Measure	Potential Measure and Method	Defra Hierarchy Level	Proposed Delivery Mechanism	Deliverability	Spatial Scale	Timescale	Overall Feasibility Score
Reduction in Recreational Disturbance from Watercraft (noise)	Reduction in noise impacts from Watercraft within the boundary of the MCZ.	Same function, same location	Implementation of a Seasonal Voluntary Speed Limit Zone. This would be achieved through the installation of marker buoys (using eco-moorings) around the MCZ. This would reduce the impacts from boat engine noise through voluntary speed limits within Kingmere MCZ during the black seabream spawning season. This would be supplemented with an educational programme.	Deliverability would be subject to suitable NGO to lead the project. Licenses would need to be agreed with regulators. This measure would require consultation with marine user groups.	To cover the area of Kingmere MCZ and possibly wider area (subject to nest locations).	Potential to be implemented between consent and construction	Likely. Noise reduction from reduced speeds would reduce the impact from noise on black bream during the spawning period. Monitoring and reporting of the effectiveness of the measure is achievable.
Reduction in Recreational Disturbance from Watercraft (physical disturbance)	Protection from seabed disturbance due to anchoring	Comparable function, same location	Implementation of a Seasonal No Anchor Zone. This would be achieved through the installation of marker buoys (using eco-moorings) around the MCZ. This would reduce the physical disturbance of anchoring on black seabream and the impacts to the habitats they rely on. This would be applied during the spawning season. The measure would be supplemented with an educational programme.	Deliverability would be subject to suitable NGO to lead the project. Licenses would need to be agreed with regulators. This measure would require consultation with marine user groups.	To cover the area of Kingmere MCZ and possibly wider area (subject to nest locations).	Potential to be implemented between consent and construction	Likely. An exclusion of anchoring during the spawning season would reduce the impact from on black seabream. Monitoring and reporting of the effectiveness of the measure is achievable.
Marine Litter Removal and awareness raising	Removal of marine litter inside and outside of the Kingmere MCZ.	Comparable function, same location	Removal of marine litter within the MCZ and surrounding areas (within the Sussex IFCA District). A consultation process would be required to identify an appropriate location to target. Awareness raising campaign to support the removal effort.	This is comparable in deliverability to that being undertaken by other OWFs. This would be subject to an appropriate location being identified.	A search area would be defined within the Sussex IFCA district.	Potential to be implemented between consent and construction.	Likely. This would be subject to information from stakeholders and third parties to assist in identifying an area to target. If an area can be identified the measure is feasible due to precedent set by other OWFs.

Compensation Measure	Potential Measure and Method	Defra Hierarchy Level	Proposed Delivery Mechanism	Deliverability	Spatial Scale	Timescale	Overall Feasibility Score
Monitoring and Research (acoustic telemetry)	Improved understanding of the movements of black seabream within the Kingmere MCZ and surrounding areas.	Comparable function, same location	Improved understanding through a research project / PhD. There is currently research being carried out via acoustic telemetry to further understanding of the migration movements and fine-scale nesting behaviours of black seabream. Potential to provide additionality to previous research or to develop new complimentary research.	Funding a research team / PhD student is feasible. The area of research is current and has knowledge gaps that could be addressed.	To cover the area of Kingmere MCZ and surrounding area.	Subject to the timescales of the requirements of the research.	Likely. The application of the measure is feasible and will provide valuable information which could help inform management measures for the Kingmere MCZ.
Habitat Creation	Use of reef cubes or other artificial habitat creation measures to encourage further nest building for black bream outside of the Kingmere MCZ	Comparable function, different location	Funding provided for the implementation of artificial habitat that could be used as the foundation for bream nesting sites resulting in a biodiversity gain.	Deliverability is subject to identifying a suitable area for the artificial habitat to be placed. Structure design (including material) will need to be considered and tested to ensure its suitability as a nesting foundation.	Uncertainty over spatial scale required.	Potential to be implemented between consent and construction. Time may be required to test and demonstrate the effectiveness of the artificial habitat design.	Uncertain. The concept is potentially feasible, but would rely on the artificial habitat being evidenced as functional for black seabream nests
Recreation Disturbance (physical disturbance)	Increased protection from recreational disturbance (angling, diving, freediving, spearfishing) through voluntary measures to be applied within the Kingmere MCZ.	Comparable function, same location	Funding provided for an Officer (NGO) to engage with stakeholders to create voluntary measures to reduce recreational pressure on black seabream.	Deliverability would be subject to suitable NGO to lead the project. Licenses would need to be agreed with regulators. This measure would require consultation with marine user groups.	To cover the area of Kingmere MCZ.	Potential to be implemented between consent and construction.	Uncertain. The measure would be a replication of existing efforts as there is currently Codes of Conduct in place for the MCZ.

Compensation Measure	Potential Measure and Method	Defra Hierarchy Level	Proposed Delivery Mechanism	Deliverability	Spatial Scale	Timescale	Overall Feasibility Score
Infrastructure Removal	Removal of disused infrastructure outside of the Kingmere MCZ.	Comparable function, different location	There is no significant infrastructure within the Kingmere MCZ. Removal of disused infrastructure would be outside of the MCZ.	Deliverability is subject to agreement with owner(s) of any infrastructure	Uncertainty over spatial scale. It would be dependent on a worst-case scenario for the population of black bream, but a spatial scale which is relative to the impact (at a minimum) would be applied.	Potential to be implemented between consent and construction.	Uncertain. There are not many possible options for infrastructure removal within a suitable distance to the MCZ
MCZ Extension	Designation of feature in different location. Identify alternative area of suitable feature for protection.	Same function, different location	Technical input and/or financial support to SNCB to progress site designation of alternative location or extension to existing MCZ.	Deliverability would be subject to identification of appropriate alternative area (where there are known black seabream breeding sites) and agreement with the Regulator/SNCB.	An area that is proportionate to the impact, whilst sufficient to achieve meaningful protection should be identified. The precise size of the designation/ extension would be agreed with the Regulator in consultation with relevant stakeholders. There is limited opportunity for areas of MCZ extension.	It is estimated that the designation process would take around 4 years, subject to the identification of suitable area(s).	Unlikely. Feasibility is subject to confirming that suitable areas are available to be taken forward which are limited. This would then be subject to the statutory designation process and timescales

Compensation Measure	Potential Measure and Method	Defra Hierarchy Level	Proposed Delivery Mechanism	Deliverability	Spatial Scale	Timescale	Overall Feasibility Score
Marine Aggregates	Removal of marine aggregate pressure outside of the Kingmere MCZ.	Comparable function, different location	Purchase of marine aggregate license or negotiation over relocation to avoid impact to the Kingmere MCZ.	Deliverability is subject to willing licence owner that is open to negotiations	Spatial scale would be subject to the aggregate license	Uncertainty over the negotiation period between the applicant and applicable marine aggregate licence owner.	Unlikely. There would be a disproportionate expense involved as well as a disproportionate impact on another marine industry.
Marine Disposal	Removal of marine disposal pressure outside of the Kingmere MCZ.	Comparable function, different location	Purchase of marine disposal license or negotiation over relocation to avoid impact to the Kingmere MCZ.	Deliverability is subject to willing licence owner that is open to negotiations	Spatial scale would be subject to the disposal license	Uncertainty over the negotiation period between the applicant and applicable marine disposal licence owner.	Unlikely. There would be a disproportionate expense involved as well as a disproportionate impact on another marine industry.
Fisheries Management	Fisheries Management Measures (i.e. reduction in bag limit, displacement of gear types) within the Kingmere MCZ	Comparable function, same location	Financial contribution to develop additional fisheries management measures	This measure would require strategic support from the Government and agreement with Sussex IFCA/ DEFRA.	To cover the area of Kingmere MCZ	Timescale would be subject to IFCA meeting schedule, consultation process and potential officer time to develop any new Byelaws or management measures	Unlikely. Local management measures already exist for black seabream within the Sussex District. Unlikely at this stage to receive support for further restrictions.

Rampion 2
WIND FARM