Rampion 2 Wind Farm

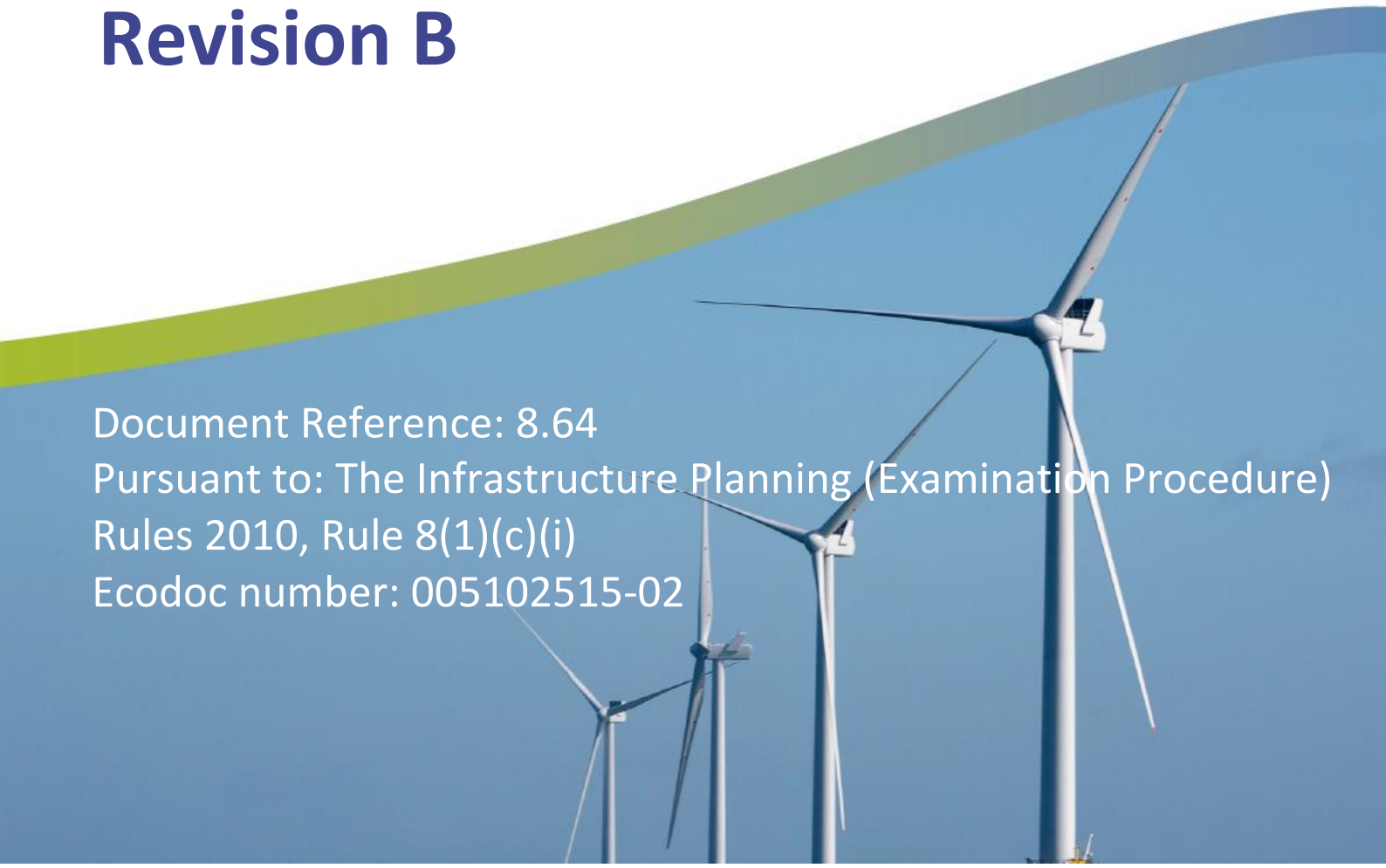
Category 8:

Examination Documents:

Kittiwake Implementation and Monitoring Plan (clean)

Date: July 2024

Revision B



Document Reference: 8.64
Pursuant to: The Infrastructure Planning (Examination Procedure) Rules 2010, Rule 8(1)(c)(i)
Ecodoc number: 005102515-02

Document revisions

Revision	Date	Status/reason for issue	Author	Checked by	Approved by
A	25/04/2024	Deadline 3	GoBe	WSP	RED
B	09/07/2024	Deadline 5	GoBe	WSP	RED

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1. Background

1.1 Project overview

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') located adjacent to the existing Rampion Offshore Wind Farm Project ('Rampion 1') in the English Channel.

1.1.2 Rampion 2 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 Before a DCO can be granted, the Secretary of State of the Department for Energy Security and Net Zero is required to undertake a Habitats Regulations Assessment (HRA) under Regulation 63 of the Habitats Regulations (2017 and Regulation 28 of the Offshore Marine Conservation (Natural Habitats, &c.) Regulations (2017)). The Applicant must therefore provide the Examining authority and the Secretary of State with the information it needs to undertake the HRA and establish the potential implications of Rampion 2 for The National Site Network. The National Site Network comprises of 'European sites' in the UK that already existed on 31 December 2020 (or proposed to the EC before that date) and established under the Nature Directives (Department for the Environment, Food and Rural Affairs (Defra), 2021).

1.1.4 Where the potential for adverse effects on integrity (AEoI) cannot be ruled out, measures providing compensation for the impacted populations can be considered. In the case of Rampion 2, the Applicant's **Report to Inform Appropriate Assessment** **[APP-038]** concluded that Rampion 2 will not result in an AEoI on any sites within the National Site Network alone or in-combination with other plans / projects, however this Kittiwake Implementation and Monitoring Plan ("KIMP") has been developed in the event that the Secretary of State does not agree with the conclusions of the Applicant's **Report to Inform Appropriate Assessment** **[APP-038]** in relation to the impact on kittiwake at Flamborough and Filey Coast Special Protection Area (FFC SPA) from the operation of the proposed wind farm.

1.2 Document Purpose

1.2.1 This document will outline the KIMP for the delivery of the Rampion 2 without prejudice kittiwake compensation (see **Habitats Regulations Assessment (Without Prejudice) Derogation Case** **[APP-039]**). The preferred compensation strategy of using artificial nesting structures (ANS) will be justified and presented along with any previous stakeholder input or consultation. An ANS that has already been constructed at Gateshead has been identified as a suitable site, after consultation with Natural England. This document also outlines the other stakeholders that will be involved in this compensation process, including any

landowners and partner offshore wind farm (OWF) developers. In addition, this document presents a timeline for the implementation of the ANS compensation measure. The ongoing maintenance, monitoring, and adaptive management programs are also presented.

1.2.2 The Applicant also proposes participating in the Department for Environment Food and Rural Affairs (Defra) strategic compensation via the Marine Recovery Fund (MRF) as an alternative option to the Gateshead ANS. If the MRF is progressed as the preferred option then the Project will cease involvement in respect of the Gateshead tower.

1.2.3 This document supersedes **8.25.7 Appendix 7 - Further information for Action Point 33 – Kittiwake Implementation and Monitoring Plan [REP1-026]**.

1.3 Species Overview

1.3.1 Kittiwake are predicted to be affected by the Proposed Development due to their high collision risk with OWF (Bradbury *et al.*, 2014). Both their sensitivity to OWF and potential as a compensatory subject are determined by their yearly movements and seasons and their ecology.

1.3.2 Kittiwake are small (38-40cm) (del Hoyo *et al.*, 1996), surface feeding gulls (Robinson, 2005; Coulson, 2011). Their diet consists of predominantly energy rich prey like sandeels (*Ammodyte* sp.) (Joint Nature Conservation Committee (JNCC), 2021), especially during their breeding season, as well as other gadoids, clupeids and discards from fishing vessels (Harris and Wanless, 1997; Bull *et al.*, 2004; Swan *et al.*, 2008; Chivers *et al.*, 2012).

1.3.3 There are approximately 380,000 breeding pairs in the UK, ~20% of which (76,000 pairs) are within England (JNCC, 2021). During the UK breeding season (March-August) kittiwake nest on narrow ledges along steep cliffs (Coulson, 2019), ranging from the North Atlantic (from Spain) to the Arctic Ocean (Furness, 2015). During the non-breeding season kittiwake are largely pelagic and disperse across the North Atlantic and North Sea during the winter (Bogdanova *et al.*, 2011; Frederiksen *et al.*, 2012). Kittiwakes undertake two migrations during the non-breeding season; autumn or post breeding migration (August to December) and spring or return migration (January to April) (Furness, 2015).

1.3.4 Between the late 1960s and mid-1980s, the UK kittiwake population increased rapidly, concurrently kittiwake began breeding on artificial structures in coastal urban environments (Coulson, 2011; JNCC, 2021). However, from 1995 the UK population declined rapidly and despite an overall increase since then, UK kittiwake populations remain ~50% under the 1986 baseline (Burnell *et al.,* 2023). Regardless of the population declines this species continues to urbanise, with kittiwake increasingly colonising buildings and piers (Coulson, 2011; Christensen-Dalsgaard *et al.*, 2020). These man-made structures provide similar and at times better (e.g. positioning can be created to maximise use and success, i.e., north facing etc.) nesting requirements than the species natural sites (i.e., narrow ledges on steep cliffs near water) and refuge to kittiwake as natural populations decline (Coulson, 2011; Christensen-Dalsgaard *et al.*, 2020).

1.4 The need for compensation

1.4.1 As noted above, the Applicant's **Report to Inform Appropriate Assessment [APP-038]** concluded that Rampion 2 will not result in an AEoI on the National Site Network alone or in-combination with other plans / projects. However, Natural England disagrees with the conclusion of no AEoI for kittiwake FFC SPA when in-combination with other plans / projects. While Natural England has recognised that the predicted impacts from the Proposed Development are low, they have stated that even small contributions risk furthering the adverse effect to existing in-combination impacts on the kittiwake feature of FFC SPA (Natural England's Relevant Representations **[RR-265]**). Natural England therefore considers that an AEoI cannot be ruled out.

1.4.2 There are no paragraphs in the 2011 NPS relevant to the application in terms of the requirements for the securability and provision of compensation options. The Applicant has therefore progressed a without prejudice derogation case, which aligns with requirements within the Energy National Policy Statement (EN-1) revised 2023 version (DESNZ, 2023) which is a material consideration for the determination of the application:

1.4.3 *"Before submitting an application, applicants should seek the views of the SNCB and Defra/Welsh Government as to the suitability, securability and effectiveness of the compensation plan to ensure the development will not hinder the achievement of the conservation objectives for the protected site"* [5.4.31].

1.4.4 *"Provision of such information will not be taken as an acceptance of adverse impacts and if an applicant disputes the likelihood of adverse impacts, it can provide this information as part of its application 'without prejudice' to the Secretary of State's final decision on the impacts of the potential development"* [5.4.28].

1.4.5 Having demonstrated that there are no Alternative Solutions and that there are imperative reasons of overriding public interest (IROPI) for Rampion 2 (**Habitats Regulations Assessment (Without Prejudice) Derogation Case [APP-039]**), this report demonstrates that compensatory measures can be put in place, if necessary, to ensure the overall coherence of the National Site Network is protected, should the Secretary of State conclude AEoI in respect to the kittiwake feature of the FFC SPA.

2. Consultation

2.1.1 The Applicant recognises the importance of engaging with the relevant stakeholders with respect to derogation and the development of any potential compensation measures. The Applicant has therefore sought the advice of key stakeholders and kept them updated on project developments. The Applicant has engaged openly through consultations and a series of online Evidence Plan Process (EPP)) Expert Topic Group (ETG) meetings from December 2020 to April 2023. Attendees have included Natural England (the SNCB), the Marine Management Organisation (MMO), Centre for Environment, Fisheries and Aquaculture Science (Cefas), Sussex Ornithology Society, Sussex Wildlife Trust, The Wildlife Trust, and the Royal Society for the Protection of Birds (RSPB).

2.1.2 The Applicant will summarise all relevant consultation that has been undertaken during the development of the Final KIMP. Going forward, key decisions, agreements, and any outstanding issues remaining under discussion (with resolution pathways) will be captured. Ongoing engagement, for example to provide updates on monitoring, (post-discharge of the KIMP) will be outlined here.

Table 2-1 Summary of relevant consultation

Date	Consultee	Consultation	Description / Agreement
December 2020 to April 2023	Natural England, MMO, Cefas, RSPB	Evidence Plan Process (EPP)) Expert Topic Group (ETG)	An EPP was adopted by the Applicant to ensure that key technical stakeholders were consulted on a regular and formalised basis. Final outcomes of the Evidence Plan Process prior to DCO application, reflecting the discussions and agreements made with its members throughout the pre-application process can be found in the **Evidence Plan (Part 10 of 11) [APP-252]**.
September 2023	Natural England	Kittiwake Strategic Compensation Meeting	The Applicant held a 'Kittiwake Strategic Compensation Meeting' with Natural England in September 2023, with the aim being to focus discussion on the potential need for HRA derogation and relevant compensatory measure options.
November 2023	Natural England	Relevant Representation **[RR-265]**	Key comments from Natural England relating to kittiwake compensation measures:

Date	Consultee	Consultation	Description / Agreement
			"Natural England does not agree with the Applicant's conclusion that there is no increased risk of Adverse Effect on Integrity (AEOI) for kittiwake at Flamborough and Filey Coast (FFC) Special Protection Area (SPA). This site has already reached AEoI for this species, and therefore even small increases could have the potential to act in-combination." *"The most promising opportunity is the provision of additional nest spaces on an existing or proposed Artificial Nesting Structure (ANS) through a collaborative approach. This intervention is likely to be practicable and proportionate to the level of risk and given any AEOI will be in-combination with other projects, a collaborative approach is logical and appropriate. At present, insufficient details on the proposals are provided for the compensatory measures to be considered secured."* *"We also consider that a Marine Recovery Fund (MRF) payment could provide an opportunity to contribute to strategic compensatory measures in the future but highlight that at present the MRF is not in place, and that limited information on the likely scope and delivery mechanism of the Fund is available. Therefore, it may be that at the point of decision-making, the Secretary of State may not have sufficient confidence in the MRF to mandate its use as a compensatory measure."*

2.1.4 The recommendation from Natural England with regards to kittiwake compensation within Natural England's Relevant Representations **[RR-265]** was:

"We recommend that the Applicant develop the collaborative ANS option further, and that specific proposals (i.e. confirmed location of the ANS to be used, number of nest spaces to be provided etc.) are submitted into the Examination in due course through an updated Kittiwake Implementation and Monitoring Plan (KIMP)."

2.1.5 The following sections of the KIMP provide an update of the Applicant's position with regard to this.

3. Proposed compensation measures

3.1.1 Following Natural England's advice detailed in Section 6.1 of the Applicants **Habitats Regulations Assessment (Without Prejudice) Derogation Case [APP-039]** the delivery of compensation through collaboration with other OWF developers is proposed for Rampion 2. A proportionate compensatory measure selection process, in the **Habitats Regulations Assessment (Without Prejudice) Derogation Case [APP-039]**, resulted in the following list of options selected for compensation as part of the derogation case for Rampion 2:

- Onshore kittiwake tower at Gateshead.
- Participating in the DEFRA strategic compensation via the MRF.

3.1.2 Although Natural England no longer generally supports the use of onshore artificial nesting structures for kittiwake, they have stated support for its use for Rampion 2 as a measure, which is proportionate to an impact of less than one breeding adult per annum (Natural England's Relevant Representations **[RR-265])**. This collaborative approach between developers has been supported and encouraged by Natural England during consultation.

3.1.3 The Secretary of State recently approved measures for strategic compensation via the MRF including offshore ANS for kittiwakes in English Waters for projects up to and including Round 4. The Applicant will propose participating in the Defra strategic compensation via the MRF as an alternative option to the Gateshead ANS.

4. Scale and location of compensation.

4.1 Predicted Impact

4.1.1 As detailed in Section 8.5 of the Applicant's **Report to Inform Appropriate Assessment [APP-038]**, the Proposed Development will potentially impact the kittiwake feature of the FFC SPA through a minimal in-combination contribution of 0.72 kittiwake mortalities per annum. The **Report to Inform Appropriate Assessment [APP-038]** concludes therefore that there is no potential for an increased risk of an AEoI to the conservation objectives of the kittiwake feature of the FFC SPA in relation to collision effects from Rampion 2 alone and in-combination with other OWFs.

4.1.2 At Natural England's request [REP1-026], the Applicant also calculated the predicted impact for the kittiwake feature of the FFC SPA utilising the Upper 95% Confidence Interval (CI) which resulted in a predicted impact of 1.69 mortalities per annum. The Applicant considers the central estimate, and not the Upper 95% CI, to be the most appropriate to calculate compensation requirements. There are already several levels of significant precaution included within the assessment process including parameters for flight heights, avoidance rates, flight speeds, and nocturnal activity, which combined lead to a highly precautionary level of predicted impact. An example of the sensitivity of these inputs to influencing the level of impact predicted when using precautionary values vs more recent evidence is demonstrated within Section 3 of the **Great black-backed gull assessment [REP1-038]**, which is also equally applicable for kittiwake collision impacts. This found differences in assessment approach of over 85% when changing a single input value. A similar impact sensitivity study was also undertaken for kittiwake as part of the Hornsea Four Examination process (APEM, 2022), which found a difference of over 90% in impact values when comparing Natural England's recommended approach against latest empirical evidence to inform assessments. The recommendation of Natural England to then provide further inclusion of precaution via the use of the 95% CI will mean that the Applicant may be required to compensate for an impact level which is unrealistic and does not reflect the level of impact expected from the Project, when considering impacts recorded from recent post construction collision studies (Skov et al., 2018; AOWFL, 2023).

4.1.3 Furthermore, for the most recent kittiwake derogation cases in England (Hornsea Four (DESNZ, 2023) and Hornsea Three (BEIS, 2020)), the Secretary of State has concluded the level of compensation required based on the mean estimate rather than the upper 95% CI, which further suggests that compensation quantum should be informed by the mean estimate only, as undertaken by the Applicant.

4.1.4 The RIAA **[APP-038]** concludes therefore that at the central impact, there is no potential for an increased risk of an AEoI to the conservation objectives of the Kittiwake feature of the FFC SPA in relation to collision effects from Rampion 2 alone and in-combination with other OWFs.

4.1.5 However, the FFC SPA (particularly the kittiwake feature) is considered particularly sensitive to adverse impacts and Natural England has advised that it cannot rule out an AEoI in-combination with other plans and projects.

Estimated compensation quantum

4.1.6 The method used to estimate the compensation requirement for the Hornsea Project Three (Ørsted, 2020) was applied to the Rampion 2 Impact of 0.72 breeding adults to calculate the number of additional breeding pairs required to compensate for the impact. This method was accepted by the Secretary of State in determining to grant consent for that project. The compensation requirement for the upper 95% CI impact of mortality of 1.69 breeding adults is also presented.

4.1.7 The Hornsea Three method works by using the kittiwake UK national survival and productivity rates in Horswill and Robinson (2015) to calculate the survival until adulthood. This is then multiplied by the productivity to determine the number of nests, and consequently the number of fledglings, required to re-enter the population as breeding adults. In addition to this the natal philopatry rate has been considered. There is also a second stage to the calculations, a preferred option by Natural England for Hornsea Three. Stage 2 considers the number of birds with potential to recruit to different colonies. To achieve this, 0.8 is subtracted from the productivity rate, as this is considered the productivity required for the colony to maintain numbers (i.e. these birds will remain at the same colony). Any residual productivity above 0.8 will export birds to different colonies. Both stages are presented in **Table 4-1** below.

4.1.8 A range of compensation ratios have been calculated, in previous examples for the sites that have close connectivity with the FFC SPA a compensation ratio of 1:2 has been used, although up to 1:3 ratio has also been calculated reflecting the ratio adopted for other ANS compensation examples (for example East Anglia One North & Two Offshore Windfarms).

4.1.9 For the reasons outlined in paragraph 4.1.2, the Applicant considers the CIV, applying a 2:1 ratio for Stage 1 of the Hornsea Three calculation method to be most appropriate. This value has been highlighted in red within **Table 4-1**.

Table 4-1 Estimated additional breeding pairs required to compensate for the impacts to FFC SPA from Rampion 2 on kittiwake (0.72 at CIV, 1.69 at U95% CI) using the Hornsea Project Three method stage 1 and 2

Ratio	Stage 1	Stage 2
Central Impact Value (0.72)		
1:1	2.17	4.66
1:2	4.34	9.32
1:3	6.51	13.99
Upper 95% CI (1.69)		
1:1	5.09	11.00
1:2	10.18	22.00
1:3	15.27	33.00

4.2 Location for implementation

4.2.1 As outlined in **Section 3**, the delivery of artificial nesting for kittiwake may be undertaken using the below option:

- Use of an existing structure at Gateshead;

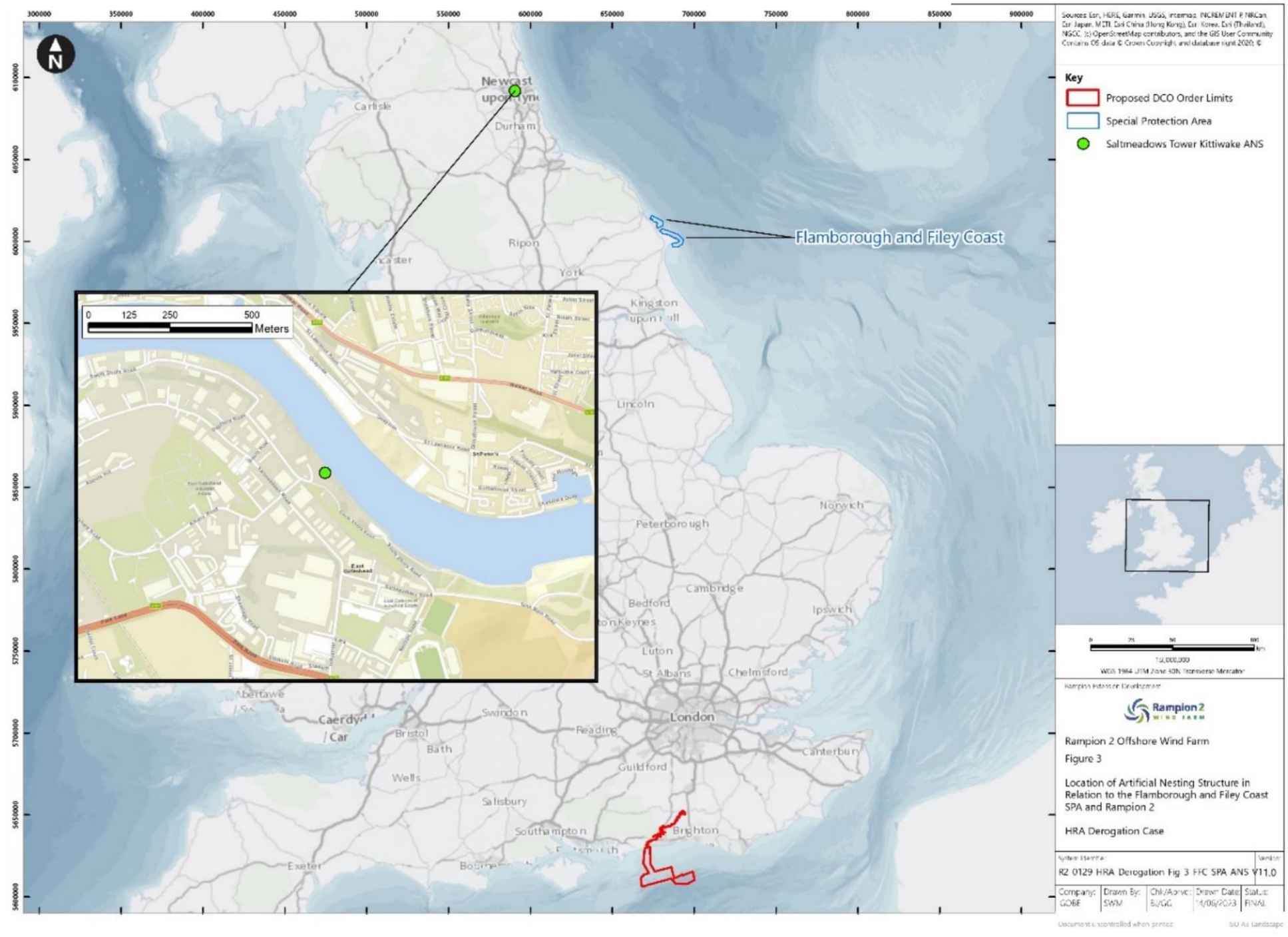
RWE kittiwake tower at Gateshead

4.2.2 RWE Renewables UK Dogger Bank South (East) Limited & RWE Renewables UK Dogger Bank South (West) Limited (together referred to as DBS herein) have interests in an existing kittiwake ANS at Gateshead that was constructed on behalf of DBS.

4.2.3 The Applicant is currently in discussions with DBS and has secured formal agreement to contribute towards a defined share of the kittiwake tower DBS constructed at Gateshead (See Section 6.1 for further details). The Applicant believes that the onshore ANS built at Gateshead is an appropriate site as there is evidence of man-made structures already being utilised in the area (Turner, 2010), and the population using man-made structures is, in some cases, increasing. The east coast of England kittiwake population is mainly found on the stretch of coast between Humberside and Northumberland, so the location of the site has strong connectivity with existing colonies and core foraging areas. The structure is built to allow for reconfiguration until the required breeding success is achieved (FLI Structures, 2023). The design of the structure is aimed to enable the kittiwake to maintain the ideal nesting microclimate by mitigating against solar heat or wind related cold stress (FLI Structures, 2023), thus providing the perfect nesting location for the compensation measure.

4.2.4 The location of the ANS at Gateshead is thought to be at the optimal location as it has connectivity with existing kittiwake colonies, including being adjacent to the existing nesting tower at Saltmeadows. With the FFC SPA being the only SPA designated for kittiwake in English waters, and consequently having almost all impacts from OWFs apportioned to it, the compensation measure will likely aim to deliver breeding birds back into the biogeographical region within the North Sea. Further evidence supporting the proposed location of compensation delivery is provided in **Section 5.1**.

Figure 4-1 Location of ANS in relation to the FFC SPA and Rampion 2



5. Design of compensation measures

5.1 Ecological evidence

5.1.1 This section will outline the design for the ANS at Gateshead, including ecological considerations, structural designs and layout, which ensure the compensation measure has the maximum potential for success.

Evidence of kittiwake using ANS

5.1.2 Kittiwakes have been documented colonising and breeding on man-made structures since the early 90s, across the Norwegian and North Seas (Christensen-Dalsgaard *et al.*, 2020). In the UK, the first known successful breeding on a UK offshore platform occurred in 1998 at Morecambe Gas Platform (Irish Sea) (Unwin, 1999). According to a recent survey 1,394 breeding pairs were recorded across a handful of offshore platforms in the UK southern North Sea (Orsted, 2021). The number of offshore breeding colonies are also thought to be increasing, with kittiwake colonising new structures as recently as 2016 (Christensen-Dalsgaard *et al.*, 2020).

5.1.3 Kittiwake have also been colonising artificial structures inland; since 1994 this species has successfully bred on various man-made structures along the River Tyne, Newcastle (Turner, 2010). The most notable colony nests on the Tyne Bridge (17 km inland) which was first colonised in 1996 with 2 successful nests (raised 1 'well grown' chick) (Turner, 2010). The Tyne Bridge colony then grew to 150 pairs the next year (1997) and in recent years there are ~1000 pairs recorded within the colony (Turner, 2010). Kittiwake have colonised other structures along the Tyne including the Baltic Centre for Contemporary Art (201 pairs in 2022), North shields lifeboat house (36 successful pairs between 1994-97), and Newcastle Quayside buildings (26 pairs in 2009) (Turner, 2010). Kittiwake nesting in UK on man-made structures appear to be stable or in some cases increasing (JNCC, 2021; Turner, 2010 & 2018).

5.1.4 Kittiwake nests can also be added at natural breeding sites, for example in 2019 the RSPB carved out 50 new ledges into the cliffs on Coquet Island (England) (RSPB, 2022) creating more suitable nesting sites on the cliffs. The following year (2020) all the new ledges were occupied by nesting kittiwake, thereby increasing the colony to 453 pairs, over 100 more pairs than in 2016 (RSPB, 2022; JNCC SMP database). The method of carving the cliff to create ledges was considered too time consuming, therefore instead the RSPB decided to install stainless steel hammocks around Coquet Island, on which kittiwake immediately began to nest and have since successfully raised chicks (RSPB, 2022).

5.2 Design of infrastructure

Design

5.2.1 The kittiwake ANS at Gateshead was designed, built and installed by FLI Structures in partnership with Shoney Wind for DBS. The tower is tailored to the location and allows reconfiguration until the desired breeding success is achieved. The structure mitigates against solar heat and wind related cold stress due to climate change, enabling kittiwake to maintain the ideal nest microclimate required to successfully incubate eggs and protect young chicks.

5.2.2 To achieve the best performance and respond to changes in performance or required performance or the surrounding environment; the tower has a layout of the nest ledges that can be altered, and additional nesting cabins can be added. The tower can be raised, lowered, realigned or extended. The entire tower, complete with foundations can be moved to a new site if required as part of adaptive management measures (and that site can be on land or offshore).

5.2.3 The ANS comprises a support structure and a kittiwake module topside up to 15 m in height and accommodates up to 200 nests. The topsides nesting components are a combination of ledges and boxes. The nesting components have in ward swinging doors to help with monitoring. The key benefits to the structure's design are:

- Accessible topside to ornithologists (safe design with no need for ropes);
- Design includes feeding holes for supplemental feeding, if required;
- Accessible hatches and one-way glass to help monitoring;
- Designs are modular, such that breeding space can be increased by increasing tower height, or cladding the support structure with further nesting ledges; and
- The ANS is relocatable, recyclable, and installable with screw piles (subject to ground conditions).

5.2.4 The design of the ANS can be found in Site design and layout section below.

Site design and layout

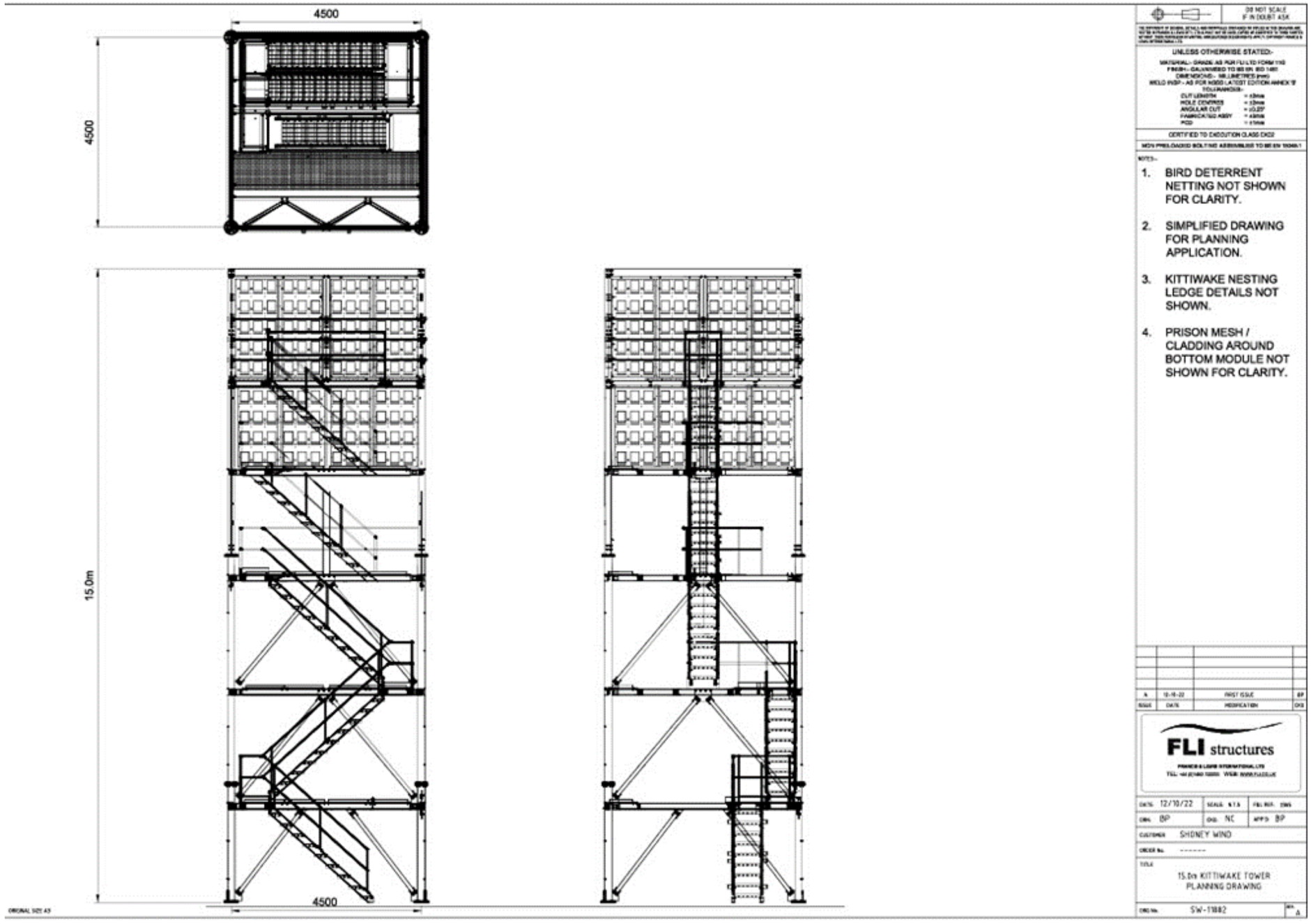
5.2.5 In terms of compensation for offshore wind related mortality, a site with more 'predictable' productivity is critical to quantifying the likely success of compensation measures. Thus, coastal locations were not considered because SWL's analysis of historical productivity, historical overnight air temperatures and historical wind data, showed that coastal colonies have widely differing productivities from year to year which correlated with weather conditions.

5.2.6 The Gateshead site was selected due to being adjacent to the existing Saltmeadows ANS colony, where there is long term historical data. It offers an opportunity to undertake scientific study and comparisons to the existing tower and other urban inland sites on the Tyne.

5.2.7 A further reason for selection of the Gateshead site, was because two sides of the kittiwake ANS are oriented such that one side will experience sunrise and the

other sunset, enabling comparison with each other. According to the ‘time limited sun compass theory’ (Guilford *et al.* 2014; Padget *et al.* 2018; Togunove *et al.* 2021) nests facing sunrise or sunset may improve the accuracy of geolocation, which in turn may improve foraging efficiency (RWE, 2022).

Figure 5-1 Artificial Nesting Structure Diagram



6. Delivery and maintenance

6.1 Delivery mechanism

6.1.1 The DBS ANS at Gateshead was constructed on land that has been leased for 60 years from H Nichol and Sons, South Shore Road, Gateshead in 2023. The 60-year time frame exceeds the expected life of DBS and will therefore adequately provide compensation for the lifetime of the project (RWE, 2022: Document Reference 004551509-01).

6.1.2 The Applicant has written agreement with DBS, which was submitted as an appendix to the **Pre-Exam Procedural Deadline Submission – 1.1 - Cover Letter** [**PEPD-001**] by the Applicant at Pre-Examination Procedural Deadline 1 on 16 February 2024, outlining their position. The key text from that agreement states that:

"*In the event that Secretary of State decides that the Rampion 2 project can only be consented in reliance upon a derogation case then Dogger Bank South confirms that it would be willing to allocate nesting platforms at its existing onshore artificial nesting structure or any other artificial nesting structure that may be provided as part of the Dogger Bank South project to Rampion 2".*

6.1.3 As detailed in Section 8.5 of the Applicant's **Report to Inform Appropriate Assessment [APP-038]**, Rampion 2 will potentially impact the kittiwake feature of the FFC SPA through a minimal in-combination contribution of 0.72 (UCI = 1.69) kittiwake mortalities per annum. Therefore, RED are seeking to coordinate with DBS OWF for a defined share of the ANS that will cover the required compensation quantum (**Section 4.1**). This collaboration with another OWF developer is key to the success of these compensation measures.

6.2 Delivery quantum

6.2.1 The Applicant considers that five additional nesting spaces at the existing DBS ANS tower at Gateshead would adequately compensate for the impact to the kittiwake feature of the FFC SPA as detailed in **Section 4.2** and **Table 4-1**.

6.2.2 If the Secretary of State were to accept Natural England's calculation method for the required compensation considering the 95% UCI and a ratio of 3:1 the existing DBS ANS tower at Gateshead would be able to accommodate the 16 nesting spaces required to adequately compensate for the impacts of the Proposed Development assuming the 95% UCI and a 3:1 ratio.

6.2.3 The predicted benefit does not consider the further productivity gain that the structure is likely to provide compared to those birds breeding within the wider population.

6.3 Delivery timescales

6.3.1 The DBS kittiwake tower has already been constructed and is already providing artificial nesting spaces for kittiwake to utilise. This will mean the project will be able to deliver compensation in line with NE advice provided in point 11 of Appendix A1: of their Written Representations **[REP1-059]** submitted at Deadline 1: "*We advise that condition 4 is amended to ensure compensation is delivered four full breeding seasons prior to operation of the offshore wind farm".* Therefore, this site will potentially receive a benefit from these compensation measures by the time Rampion 2 becomes operational.

6.4 Maintenance schedule

6.4.1 Structural and certification inspections will be completed at an appropriate frequency to ensure that the structure is safe for personnel to internally access the tower via the internal stair well. Continued monitoring of these structures will also ensure a safe and effective structure for kittiwake breeding.

7. Monitoring and adaptive management

7.1.1 If it is determined by the Secretary of State that an AEoI cannot be ruled out, then as part of the Final KIMP an Offshore Ornithology Engagement Group (OOEG) will be created/or joined post consent to inform the delivery of the kittiwake compensation measures and ongoing monitoring and adaptive management measures set out in the DCO. This would be secured through a schedule that will be included in the draft DCO if the derogation case is required.

7.1.2 Membership and meeting schedule of the OOEG is yet to be defined but membership is likely to comprise multiple developers and key stakeholders. Once in place, members of the OOEG will finalise schedules for monitoring and implementation.

7.1.3 Monitoring will be required for all stages of the proposed artificial nesting program. The details of monitoring proposals will be discussed with the OOEG, with key details to be agreed upon including the frequency, duration, and nature of monitoring methodology, as well as data analysis and reporting requirements. However, this document will present an initial monitoring methodology upon which the final monitoring plan can be decided.

7.2 Monitoring Plan

7.2.1 First, pre-implementation monitoring will be undertaken at the DBS ANS to form a robust baseline from which future changes can be measured. This will involve monitoring both the current proposed structure and ensuring that existing colonies with connectivity to the structure have up to date, regular monitoring to determine the impact of a new structure on those colonies.

7.2.2 Other locations that will be monitored are the Leonardo Hotel, Saltmeadows Kittiwake Tower, Baltic Arts Centre, Tyne Bridge and Howick cliffs. This is in line with the monitoring carried out by RWE Dogger Bank South in 2023 for the Kittiwakery Tower at Gateshead.

7.2.3 When monitoring, the same environmental variables will be recorded on each visit to ensure that clear comparisons can be made to baseline conditions and between visits. Following colonisation, additional data, such as productivity and diet, may be collected to make further comparisons between birds nesting on the artificial structure and natural colonies. A monitoring programme will be discussed and developed with the OOEG, but it is expected that monitoring will be undertaken throughout the operational lifetime of Rampion 2.

7.2.4 Once implemented, monitoring will take place to determine the success of these compensatory measures. Its success will be based on its ability to attain an additional 4.66 breeding pairs of kittiwake (at a 1:1 ratio) based on the central impact value of 0.72 adult kittiwake. Therefore, productivity of the site will be monitored, along with natal dispersal and colony interchange with FFC SPA. These factors will be measured against the pre-implementation monitoring that serves as a baseline.

7.2.5 Monitoring of the ANS recruitment has started during the kittiwake breeding season. If consent is granted and it is determined by the Secretary of State that an AEoI cannot be ruled out, an intensive monitoring program will be completed by the Applicant, in collaboration with other projects/developers if applicable. The frequency of observations throughout this period will be decided after discussion with the involved stakeholders. It is anticipated that both FFC SPA and the ANS site will need to be monitored after implementation, and their monitoring will need to continue throughout the operation of Rampion 2.

7.2.6 Monitoring will be carried out by trained observers, and they will undertake monitoring using the methods outlined in JNCC's Seabird Monitoring Programme (Walsh *et al.*, 1995). The ANS are designed to allow entry for ornithologists to monitor the breeding kittiwakes from close quarters with minimal disturbance. The ANS will be checked for any occupancy prior to entering the structure by binoculars or telescope from a nearby vantage point.

7.2.7 Current practice and stakeholders within the OWF industry have found that, using current technologies, it is not possible to quantitatively measure natal dispersal of kittiwake (Ørsted, 2022). Many of the more advanced technologies, including satellite, radio, and archival tags, are not feasible due to their size and weight (Ørsted, 2022). However, other OWF developments have chosen to use qualitative methods, including chick ringing with identifying colours, to help determine the colony of origin of kittiwake chicks when they later choose a nesting site upon maturity (Ørsted, 2022). The benefits of the ANS in regard to colour-ringing birds is that a larger percentage of the colony can be ringed due to the easy access to the nest ledges, resulting in fuller and longer term datasets about where they disperse to.

7.2.8 In addition to the monitoring of site productivity, natal dispersal, and colony interchange, this plan may also include monitoring of adult survival rates and diet. This monitoring plan will be reviewed annually (unless otherwise agreed) in conjunction with the OOEG to reassess its accuracy and efficiency in the light of up-to-date survey methods.

7.3 Adaptive management

7.3.1 Should post-implementation monitoring reveal that the artificial nesting program is unsuccessful, or less successful than anticipated, an assessment will be undertaken to determine the reasons underlying the lack of success, and to inform the next steps. Notably, the next steps will consist of identifying potential improvements to the implemented measure, based on potential issues discovered during the assessment. The design of the ANS provides several adaptive management options, including adding nesting ledges/boxes, increasing height etc. Should the assessment determine that the measure cannot be improved or extended sufficiently, then alternatives, such as contribution to the MRF (or equivalent), will be considered in consultation with the OOEG. The project will not commit to adaptive measures if the evidence suggests that the reason for lack of success is out of the projects control e.g. climate change or reduction in prey availability.

8. Reporting timeframes

8.1.1 Following the breeding season an annual report will be produced and provided to the relevant stakeholders by the end of the year. If applicable, this may be provided in collaboration with other projects/developers. An OOEG/stakeholders meeting will be organised following each years' monitoring to present any findings and will discuss any reporting issues or any adaptive management measures that may be required.

8.1.2 The planned timelines for the annual reporting will follow the stages below:

- Monitoring data collected from the season received by the end of August;
- Findings from the data presented to the OOEG/stakeholders by end of September;
- Draft report circulated by end of October;
- Finalised report submitted to relevant stakeholders by start of December;
- Approval/final comments by January the following year; and
- Adaptive management begins where required prior to the breeding season.

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10. Glossary of terms and abbreviations

Table 10-1 Glossary of terms and abbreviations

Term	Definition
AEoI	Adverse Effect on Integrity
ANS	Artificial Nesting Structure
DBS	Dogger Bank South
DEFRA	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security & Net Zero
DCO	Development Consent Order
FFC	Flamborough and Filey Coast
HRA	Habitats Regulations Assessment
IROPI	Imperative Reasons of Overriding Public Interest
KIMP	Kittiwake Implementation and Monitoring Plan
MRF	Marine Recovery Fund
NE	Natural England
NSIP	Nationally Significant Infrastructure Project
OOEG	Offshore Ornithology Engagement Group
OWF	Offshore Wind Farm
RIAA	Report to Inform Appropriate Assessment
SMP	Seabird Monitoring Program
SPA	Special Protection Area

Rampion 2
WIND FARM