HORIZON NUCLEAR POWER

WYLFA NEWYDD

ENERGY WORKING FOR BRITAIN

Wylfa Newydd Project

Horizon's Responses to the eNGOs Post January Hearing Submission Documents

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1.1 Introduction

1.1.1 This document contains Horizon Nuclear Power Wylfa Limited's ("Horizon's") responses to the National Trust's (NT), the North Wales Wildlife Trust's (NWWT) and Royal Society for the Protection of Birds' (RSPB) (together the environmental Non-Governmental Organisations (eNGOs)) post hearing notes and presentation of oral case [REP4-038 and REP4-044].

1.1.1 The content of the NWWT's and RSPB's submissions is contained within NT's submission, however, the NT's submission also contains additional commentary on coastal processes and the draft Section 106 (s.106). As a result, Horizon has responded only once to the NT's submission, which includes responses to the points raised in duplicate by the other eNGOs.

1.1.2 Horizon's response is set out in the following sections:

- Section 2 provides a response to the points raised by the NT on coastal processes and geomorphology contained within REP4-038.
- Section 3 provides a response to comments on the draft s.106 contained within REP4-038.
- Section 4 provides a response to the post hearing notes contained within REP4-038 and REP4-044.
- Section 5 provides a response to the oral case contained within REP4-038 and REP4-044.

2 Coastal Processes and geomorphology [REP4-038]

2.1 Baseline data

2.1.1 The eNGO's position, as summarised in their Written Representation [REP2-316] and re-stated in the NT's post hearing submission at Deadline 4 (17 January 2019) [REP4-038] remains unchanged. They state "*that significant gaps exist in the baseline assessment relating to coastal processes and geomorphology undertaken to support the EIA, sHRA* [Shadow Habitats Regulation Assessment] *and Marine Licence applications".*

2.1.2 Horizon has undertaken a wide ranging, integrated approach to understanding the baseline coastal processes and coastal geomorphology. This includes:

- Implementation of a baseline coastal monitoring programme, involving the collection of extensive geophysical, hydrographic, sedimentological, topographical and oceanographic datasets.
- a qualitative geomorphological reconnaissance survey of key coastal features, including Esgair Gemlyn;
- extensive numerical modelling of the tidal processes and wave climate, separately and in-combination; and,
- a use of historic datasets and other information/data sources where available and relevant.

2.1.3 The NT advise, in paragraph 2.5 [REP4-038], that there is inadequate baseline data to support the impact assessments. NT quote supporting documents stating that no bathymetric and sediment surveys are included for the inner part of Cemlyn Bay, Esgair Gemlyn or for Cemlyn Lagoon. Furthermore, the NT suggest limited sediment and water quality data has been gathered from the Nant Cemlyn.

2.1.4 Horizon does not agree with the conclusion reached by NT concerning the adequacy of the data that has been acquired and is presented in the DCO application. The baseline monitoring programme completed over a six-year period across the marine and hydrology disciplines represents one of the most extensive baseline data collection exercises ever undertaken for a DCO application. The review of baseline data should not be performed on the basis of an isolated document (for example, only referring to a selected appendix of the Environmental Statement or a particular chapter), instead the review should be holistic across all relevant chapters, appendices and other supporting information. Consequently, Horizon refer the NT to the following documents not quoted in paragraph 2.5:

- Appendix D8-1 [APP-145] which provides
  - baseline water quality data from Cemlyn Lagoon catchment including 43 samples taken from Nant Cemlyn Catchment for total suspended solids (TSS); and

- continuous turbidity data from a logger installed on the Nant Cemlyn with a data record spanning over 2-years, from which Horizon has calculated long term TSS concentrations.

- Appendix D13-1 [APP-219] which provides
  - baseline water quality data for multiple sites in Cemlyn Bay and the wider marine area including TSS concentrations and turbidity data over a four-year period; and,
  - baseline water quality data including TSS concentrations from four sites within Cemlyn Lagoon.
- Appendix D13-2 [APP-220] which provides
  - historic survey data on sediments and biotopes (which includes data in Cemlyn Lagoon, Cemlyn Bay and the wider marine area);
  - geophysical surveys of Cemlyn Bay;
  - intertidal and subtidal sediment granulometry data;
  - intertidal and subtidal biotopes (which presents hierarchy classification of habitat descriptions such as littoral rock or littoral sediment as a level 1 classification); and,
  - drop down camera survey data covering multiple sites in Cemlyn Bay.

2.1.5 Within the documents quoted in paragraph 2.5 by the NT (e.g. [APP-132; APP-216, APP-217, APP-218]), stating that Horizon "*did not include bathymetric and sediment survey data*…." **Horizon do** present data from geophysical and sediment surveys within Cemlyn Bay. While it is acknowledged that a geophysical survey did not cover 100% of Cemlyn Bay, coverage of over 85% of the Bay is representative of the area. Furthermore, Horizon do provide in these quoted documents:

- historic sediment data;
- oceanographic long-term data including the monitoring of waves height and direction within Cemlyn Bay;
- topographical LIDAR surveys of Esgair Gemlyn;
- conceptual sediment transport regime;
- extensive modelling of waves, currents, and shear stress using industry standard and National Resources Wales (NRW) accepted modelling tools; and,
- extensive modelling of run-off into Cemlyn Lagoon

2.1.6 In their Deadline 4 (17 January 2019) response (paragraph 4.2.1), NRW indicate: *"NRW would have liked to have seen more data relating to sediment within Cemlyn Bay to help to understand what sediment is available to be mobilised under certain bed shear stress conditions. However, we have considered the supplementary information [REP2-007] on coastal processes provided to support the EIA and the Shadow HRA and we are satisfied that more data would not materially change the results of the impact assessment on smothering of the ridge*".

2.1.7 Horizon consider the baseline to be proportionate to the scale of development; consistent with the specific nature of the Wylfa Newydd Project; and in line with related industry guidance. Horizon agree with NRW that additional data collection and modelling would not improve the assessment of likely effects.

2.2 Assessment of effects on Esgair Gemlyn

2.2.1 The NT maintain in paragraph 2.3 of their post hearing note [REP4-038] that "*the risk of significant sediment movement within Cemlyn Bay, which could affect the stability of Esgair Gemlyn….has not been assessed in sufficient detail".* Furthermore, the NT state *"The NT submission at Deadline 3 (18 December 2018) [REP3-056] pointed out that Horizon's Supplementary Information Note on coastal processes submitted at Deadline 2 (4 December 2018) [REP2-007] goes only a small way towards addressing the gaps in the assessment*".

Sufficiency of detail in assessments

2.2.2 The assessment of the potential for movement of sediment within Cemlyn Bay has been undertaken using data from numerical modelling of tides and waves, separately and in combination, in conjunction with available data on sediment distribution and the particle size distribution of those sediments.

2.2.3 A hydrodynamic model to describe the tidal currents, within and in the immediate environment of Cemlyn Bay, was developed using the Delft3d model. The model is a 2D/3D depth averaged model of the currents, with a nodal resolution of 23 m within the confines of Cemlyn Bay. The model was calibrated and validated using current datasets collected concurrently at four separate locations along the coast of north Anglesey (this is a greater number of systems than is usually available for the calibration of hydrodynamic/tidal models). Bathymetry data sources for the model include survey datasets collected on behalf of Horizon (inshore), and various survey and digital charts for the offshore region from SeaZone; these data sources provide an optimal quality of inputs to the model. A roughness length for the model, necessary to compute bed stress accurately, specifically within Cemlyn Bay, was selected based on the inference from the acoustic ground discrimination system (AGDS) survey and sediment sampling. The model was assessed independently for quality and judged fit-for purpose in terms of returning values for currents which are within acceptable, industry standard limits.

2.2.4 A SWAN wave transformation model was selected and developed to summarise the wave climate. The SWAN modelling software is an industry standard programme. It is a 3rd generation wave model and is the same software as that is used for investigation of coastal wave transformations on the Welsh coast by NRW, and the English coast by the Environment Agency. The SWAN model was driven at the outer boundary using wave and wind data (a 3-hourly record) from the MetOffice WaveWatch III model calibrated to collect metocean data to generate results over a 35-year period from January 1980 to June 2015. The calibration-validation used independent datasets, and also data on 18 individual "storm" events, collected from four wave measurement devices located within the tidal excursion of the Wylfa Newydd DCO Project. One of the devices was several km to the north and west of

Cemlyn Bay, providing high quality verification data for waves approaching Cemlyn Bay, specifically.

2.2.5 Hydrodynamic SWAN modelling was undertaken to assess an average wave condition; a typical winter wave condition; and, an extreme wave event (98%) specifically from the north sector. For each of these conditions, further modelling was undertaken to present the effects of these waves during peak neap and peak spring tidal conditions. Upon consultation with NRW additional modelling work was then undertaken to represent the 99% winter wave, from a range of directions.

2.2.6 The foregoing represents a significant volume of investigative modelling work, undertaken using robust and appropriately validated modelling tools, including a validation dataset from the entrance to Cemlyn Bay to assess the risk of significant sediment movement within Cemlyn Bay. Furthermore, the 7-stage methodology devised to take the various model outputs and assess the nature of coastal processes, and impacts associated therewith, was agreed by NRW through Statement of Common Ground Meetings in advance of the assessment.

2.2.7 Information on the nature and distribution of sediments within Cemlyn Bay is available from multiple sources which indicate a fine/medium, featureless smooth sandy seabed over approximately 75% of Cemlyn Bay. Whilst Horizon accept that it would be preferable to have had a greater number of bottom sediment samples from Cemlyn Bay, Horizon do not consider this shortcoming materially affects the conclusions that have been reached regarding the nature of sediment dynamics. If there is uncertainty over the nature of the Bay sediments, then it is over a potential gravel fraction, a fraction which is generally less mobile under currents and waves.

Gaps in assessment

2.2.8 The key issue raised by the NT is that of the potential for wave reflection off the western breakwater and the consequent possible alterations to the inshore wave climate, and the ensuing consequences for overtopping and sediment transport along Esgair Gemlyn.

2.2.9 Model runs (see appendix D12-3 [APP-218] and [REP2-007]) representing the worst case (99%ile winter waves) have shown that the largest waves entering into Cemlyn Bay are derived from the N and NE direction. This is because these directions possess a large fetch, and waves from these directions are less attenuated by natural shoaling processes, nor do they greatly interact with the breakwater structures on their way into the bay. Horizon consider that it is these waves which are more likely to cause the most severe overtopping and promote/dominate landward recession/retreat of the shingle ridge, and to cause the most vigorous suspension of sediments (sands and gravels) in the nearshore sub-tidal zone.

2.2.10 It is recognised that waves from the SW, W and NW sectors also influence the site, but since these waves are susceptible to refraction around the rocky Trwyn Cemlyn headland, and because the Trwyn Cemlyn promontory provides physical shelter to waves from these directions, when they arrive at the shoreline within Cemlyn Bay they are significantly lower in height than

comparable waves from the N and NE. Their ability to effect a greater morphological change in the shingle ridge and local sediment platform cannot, in the longer term, be greater than that due to waves from N and NE directions, even if waves from the NW/W/SW may be more frequent.

2.2.11 A fraction of incident wave energy from these directions, for the worst case, is observed in the modelling studies to be reflected off the western breakwater. The model was run with a reflection coefficient of 0.45, assessed to be a suitable value for the design of the breakwater, meaning that only 45% of the incident wave energy is reflected. For the worst case situation, NW and W storms (incident Hs 4.03m 286°; Hs 3.5m 246°; respectively), the model finds increases in wave heights to the immediate west of the breakwater of 0.2 – 0.4m (these amplified sea states do not, however, extend farther west than the Cerrig Brith headland), and small (0.1 - 0.2 m) increases in wave height in the southwestern corner of inner Cemlyn Bay. It is important to note in this context that detailed analysis of the model predictions versus the S9 wave buoy located just outside Cemlyn Bay shows that the model, on average, slightly overpredicts the waves compared with the measurements.

2.2.12 The models provide information on the absolute shear stress, and changes in shear stress, associated with the amplified inshore waves. Under baseline storm conditions from the NW/W (i.e. no structures in the sea) inshore shear stress values range 2.7 – 5.7 Nm^{-2}, and these are sufficient to mobilise sand material and fine gravels (up to 8 mm), although swash velocities would be considerably more powerful. When reflected waves are included in the assessment, there would be local increases in shear stress of no more than 0.5 Nm^{-2}, or equivalently an 8-18% increase in absolute shear stress. This would be expected to mobilise slightly coarser (by perhaps 1-3 mm) gravels during a 99%ile winter wave condition, and to induce slightly more vigorous sand resuspension, in an already reasonably energetic environment. Horizon would not anticipate larger morphological changes to arise relative to the baseline situation associated with superposition of reflected waves on the basis that only a relatively minor amount of additional hydrodynamic energy has been added to the system during these rare wave events. If processes such as mobilisation of fine sand close to the toe of the ridge, or mixed sand and gravel sediments on the lower part of the ridge itself, or a lowering of the sea bed to seaward of the ridge, are of concern, then Horizon's view is that these are occurring presently and form an integral component of the dynamics of the system

2.2.13 For incident waves from the NW, the area over which enhanced wave heights (and what might be expected to be slightly amplified shear stress) is found, at its largest (ca. 50 x 50 m) in the alongshore and offshore direction, appears to be coincident with the area of coarser bed sediments in the vicinity of the ebb tidal delta and does not appear to be shore connected. For waves derived from the more westerly regions, the area affected is larger, perhaps covering some ca 200m x 400m of the Bay in the alongshore and offshore direction respectively, and is shore connected. Critically, however, it is connected only at the western end of the shingle ridge; the greater length of the ridge is unaffected. This limited spatial extent indicates that the process of reflection

would not drive any significant changes to longshore currents, which require pronounced gradients in wave height.

2.2.14 The modelling provided in support of the DCO application reveals further that amplification is most pronounced during offshore incident waves over a relatively specific and narrow range (221-271°) and that the proportion of time when the offshore conditions which give rise to increases in inshore wave height of the order of 0.1-0.2 m is only 4.9%.

2.2.15 In summary:

- the proportion of time that the offshore conditions occur when reflection could be a potential issue is low (<5%) and is limited to a restricted wave approach direction (W-NW);
- the breakwater acts to dissipate a significant fraction (over half) of the incident wave energy that could be reflected;
- significant wave reflection occurs only during already energetic periods, adding only minor additional hydrodynamic/wave energy to the inshore system;
- the changes in inshore wave height and associated shear stress are small (0.1-0.2 m) under a worst-case condition; and
- the areas over which wave height/shear stress is increased are limited (and do not extend over the greater area of the Esgair Gemlyn ridge).

2.2.16 Since the model runs relate to the worst case (99%ile winter wave), it is a matter of logic that lower energy events (even if they occur more frequently) would give rise to smaller reflected waves with lower inshore heights and lower associated shear stress.

2.2.17 As noted previously, Horizon considers that, based upon the extensive and robust assessments undertaken, any impacts to the sediment transport and/or morphological regime of the Esgair Gemlyn, will not be significant. However, to further minimise any residual risk, as a precautionary approach, Horizon will develop (with NRW) an appropriate monitoring programme and (with NRW and the eNGOs) a mitigation programme should this be required.

2.2.18 Horizon understands that upon agreement of an appropriate monitoring and mitigation plan with NRW, 'no adverse effect' on the Cemlyn Bay Special Area of Conservation (SAC) from the Wylfa Newydd Project can be concluded. That is, if the monitoring programme demonstrates adverse changes to the ridge outside of natural variability then a mitigation plan will be implemented through an adaptive management approach (so as to avoid any adverse effects).

2.2.19 In this regard Horizon would be consulting with the NT as land owners on the mitigation activities.

2.3 Re-use of dredged material

2.3.1 NT advise in paragraph 3.4 [REP4-038] that Horizon should use shingle dredged from the Wylfa Newydd Development Area to build up Esgair Gemlyn for the provision of increased resilience and ecological enhancement.

2.3.2 Regardless of the fact that a limited amount of shingle has been shown to be present within the dredging area, Horizon has undertaken an assessment of the potential for re-use of all dredged material and the findings are presented in the Waste Framework Strategy Assessment submitted to NRW as part of Horizon's Marine Licence application. This assessment of re-use has been developed in accordance with relevant plans and policy; i.e. the Draft Welsh National Marine Plan and the Marine Policy Statement.

2.3.3 Horizon will re-use material where practicable and safe (in accordance with Draft Welsh National Policy) within the Marine Works, for example as part of the core of the breakwater and causeway. This is secured in the Marine Works sub-CoCP [REP2-033] and the Construction Method Statement [APP-136]. This will reduce any environmental impact arising through the import of material, by minimising this. In addition, rock will now be used on the leeward side of the western breakwater.

2.3.4 Removing marine material for re-use on-land would require storage; additional material handling facilities; new offloading facilities; washing facilities; and, additional plant. This has not been assessed within the DCO application because it is not a requirement of the works. Consideration would also need to be given to the length of time of storage; it maybe that the material is never required and then becomes a waste. In addition, there is no certainty that the rock breaking and dredging will recover the size range of shingle required for Esgair Gemlyn and for these reasons the re-use of dredged material from the Wylfa Newydd DCO project has been discounted.

2.3.5 Furthermore, NRW (in their scoping opinion for the Wylfa Newydd DCO Project, see sections 2.1 and 2.2.2) requested that all superficial soft sediment material dredged from the outer harbour should be disposed of at sea. Horizon understands that this request is based on the desire to keep the material in the marine environment, such that it is not lost from the marine sediment budget.

2.3.6 Horizon is developing a mitigation plan for Esgair Gemlyn, and investigating the availability of the correct sized shingle from nearby quarries, should mitigation measures be required following monitoring. Therefore, as part of the coastal process mitigation Horizon will maintain the option to take resilience measures on Esgair Gemlym (should these be required), but material will need to either be imported or re-distributed from other areas of the ridge to do so.

3 Section 7 – s106 Agreement [REP4-038]

3.1.1 The draft s.106 agreement is being negotiated with relevant stakeholders including the Isle of Anglesey County Council (IACC), Welsh Government, Gwynedd Council, Betsi Cadwaladr, the North Wales Police, Welsh Ambulance Service Trust (WAST) and North Wales Fire and Rescue Service (NWFRS). Positive progress has been made following the Issue Specific Hearings (ISH) and the parties are working to achieve a final s.106 agreement which will be entered into by Horizon and IACC.

3.1.2 The s.106 agreement is used primarily as a mechanism for delivering and committing to mitigation which has a funding component, or which otherwise has been considered to sit better within the s.106 agreement rather than a control document. The mitigation package – and engagement on that package – however must be considered in the round. Extensive environmental mitigation is contained in the DCO Requirements, and in the Code of Construction Practice (CoCP), sub-CoCPs, Landscape Habitat Management Strategy (LHMS), Local Noise Mitigation Strategy (LNMS), and other control documents. There has been extensive engagement with NRW (as the environmental regulator) on these, as well as the NT, NWWT, and the RSPB. The ongoing engagement with these parties (including on matters within the s.106 agreement - even if not specified as such) has been recorded in the Statements of Common Ground (SOCGs) with those parties (see Tables 2-1 and 2-2 and para 2.2 of [REP2-054] (RSPB), Tables 2-1 and 2-2 and para 2.2 of [REP2-056] (NWWT), and Tables 2-1 and 2-2 and para 2.2 of [REP2-058] (NT)). This will be updated in the final SOCGs to be submitted at Deadline 6 (19 February 2019).

3.1.3 Overall the financial commitments under the draft s.106 agreement are over £78 million. The costs for Horizon of delivering the in-kind mitigation under the s.106 agreement exceed £43 million. This is on top of the additional £60 million cost for Horizon to deliver the road improvements on the A5025. The cost of the total draft s.106 and road package, therefore, exceeds £181 million pounds. Given this, Horizon strongly refutes any suggestions that the ambition of the Project and associated mitigation and legacy is insufficient or "disappointing".

3.1.4 Following the ISH on the DCO, where IACC made it clear that funding streams needed to be paid to or via IACC, and that allocation by an oversight body (i.e. the WNMPOP) was not agreed, Horizon has restructured the draft s.106 agreement to:

i. remove reference to the WNMPOP; and
ii. reduce the number of contingency funds; and
iii. in respect of remaining contingency funds, provide set triggers for release.

3.1.5 These changes have been positively received by IACC and Horizon considered that there is clarity on the release of all contributions.

3.1.6 The below paragraphs respond to the s.106 specific matters raised in [REP4-038], [REP4-039] and [REP4-044].

3.2 Schedule 3 (Tourism)

3.2.1 As stated in the ISH, the commitment to the Visitor Centre has been revised to deliver this earlier. The commitment is set out in Horizon's Deadline 5 (12 February 2019) Note entitled "*Securing Mechanism and Programme for Delivery of the Permanent Visitor's Centre*". This also addresses the eNGOs comments regarding construction tourism, as the Visitor Centre would be the focus for people who may want to see the construction site.

3.2.2 In respect of planning for tourism, the revised draft s.106 agreement establishes an obligation for a "Tourism Action Plan" to be prepared by IACC in consultation with stakeholders, including the Destination Anglesey Partnership. It is proposed that the NT should seek to engage with the IACC entity which (a) receives the bulk of the tourism funding and (b) is to co-ordinate the Tourism Action Plan to ensure it reflects the wider tourism goals for the island. If agreed with IACC, the NT could be a body with whom IACC must consult in preparing the Tourism Action Plan. Horizon will raise this with IACC.

3.2.3 In addition, there are multiple financial commitments included for IACC to upgrade and create public rights of way and fund and publicise the copper trail.

3.3 Schedule 10 (Construction Noise Mitigation)

3.3.1 The eNGO submission is not correct when it suggests that only two properties are covered by noise mitigation. The bulk of properties are in fact covered under the LNMS as secured in section 8.3 of the Wylfa Newydd CoCP [REP2-031], and as updated in [REP3-050] (and its associated Companion Guide [REP3-051]). However, the LNMS is limited to residential properties, guest houses, bed and breakfasts or hotels (see 8.3.7 of [REP2-031]).

3.3.2 Rather than create a narrow exception for other types of properties, the decision was made to manage noise mitigation for Cemaes Primary School and Eglwys Sant Padrig Church via the s.106 agreement.

3.4 Schedule 11 (Environment and Historic Environment)

Environmental Enhancement Fund and the Cemlyn Lagoon Resilience Fund

3.4.2 As stated in the draft s.106 agreement, it is not agreed that these two funds satisfy the CIL Regulation tests to amount to planning obligations (in that they are not necessary to make the development acceptable). These funds are offered on a purely voluntary basis. This has been Horizon's position throughout discussions with the eNGOs. It was agreed with the eNGOs that the funds would be included in the agreement to provide certainty that they would be made available; their inclusion, however, should not be misconstrued as a change in Horizon's position as to their nature.

3.4.3 The Cemlyn Lagoon Resilience Fund can be used for measures to maintain or enhance the productivity and breeding success of the tern colony (e.g.

through increasing the length of seasonal staffing and the investigation of measures to secure breeding habitat). It is also feasible that the 'capital and maintenance projects' elements of the fund could include predator control measures and access management; and that the fund could be used to plan and implement measures relating to the water level and quality in the lagoon.

3.4.4 The funds in each case were calculated on the basis of costed sums to deliver the range of schemes specified. However, the ringfencing of the funds was deliberately not done to allow for flexibility in how these could be expanded by the eNGOs, which is considered to be more desirable for the eNGOs. The eNGOs can apply for sums as they see fit – including for chough resilience – and the only "competition" would be between the eNGOs themselves, as the only parties who can apply for funding are the eNGOs.

3.4.5 As voluntary funds, there is no legal basis on which to demand or justify more funding.

Tern Warden

3.4.6 Following NWWT's representations at the ISH, the s.106 tern warden funding has been increased by 50% to £90,000. This sum is proposed to be released in full upon implementation (as defined in the s.106 agreement) and, therefore, would be with the recipient to budget for its use. However, as this is to cover additional tern wardening support for Cemlyn Bay during tern breeding seasons for the construction period (as defined in the s.106 agreement), which is anticipated at 9 years, funding of £10,000 per year should be assumed.

3.4.7 In line with the restructuring of the draft s.106 agreement, this sum is proposed to be paid to IACC, for on-payment to NWWT.

3.4.8 The funding for additional tern warden capacity is to mitigate the potential for increased visitation of Cemlyn Bay during the tern breeding season as a result of the Project (i.e. by members of the Wylfa Newydd Workforce). In particular, increasing the length of seasonal staffing to encompass March and the August Bank Holidays. (While bearing in mind that even workers billeted at the Site Campus would have over a 6 km each way walk to Cemlyn Bay.)

3.4.9 No funding is proposed during Site Preparation and Clearance (SPC) works; none was determined to be necessary under the final SPC s.106 agreement agreed between Horizon and IACC in respect of the SPC works before that permission was called in.

3.4.10 Management of other sensitive sites which are in Horizon's ownership/the Order limits (such as Wylfa Head) will be managed by Horizon, as committed to in the Wylfa Newydd CoCP [REP2-031], which provides at para 11.2.1 that:

> *"Horizon will employ suitably qualified and experienced ecologists (referred to in this document and sub-CoCPs as ecological clerk of works (ECoW)) to carry out site supervision works during activities that affect sensitive habitats and species to ensure that the procedures and controls in this Wylfa Newydd CoCP and sub-CoCPs are followed. The EcoW will be in place to identify any new ecological constraints on site arising during construction. These will be dealt with following appropriate best practice*

guidance and, where required due to legal protection and licensing requirements, liaison with NRW."

3.4.11 In addition, the LHMS requires management schemes to be developed for sensitive areas, in accordance with the principles in the LHMS and in consultation with key stakeholders which are stated to include IACC, NRW, NWWT, and RSPB [APP-425, para 7.1.1]. (See [APP-424] at para 1.3.2, 1.3.4, and [APP-425] at part 7.)

Environmental Fund Officer

3.4.12 As stated in the ISH, the draft s.106 agreement has been amended following receipt of IACC's Local Impact Report to increase funding for a full time IACC Environment Officer, and to allow the officer to take an expanded role. The role of the Officer is to monitor compliance with relevant ecological mitigation and monitoring plans committed to by Horizon and to work with the Developer's Ecological Clerk of Works.

3.4.13 Horizon will continue to work with IACC as to whether amendments are required to this role description.

3.4.14 There is no separate wetland project officer.

Cestyll Gardens Payment.

3.4.15 Horizon was in discussions with NDA to purchase Cestyll Garden; in which event it would have been in a position to deliver a conservation management plan on Cestyll Garden directly.

3.4.16 Given current circumstances it is not possible to proceed with that purchase at this stage. Horizon cannot commit to delivery of a management plan on land which is does not own. As such the obligation in the s.106 agreement which has been proposed to IACC is for a three tier cascade which would require (in summary):

- If prior to Implementation the developer owns Cestyll Garden, it will deliver a conservation management plan;
- If it does not own Cestyll Garden, it will use reasonable endeavours to work with the landowner to develop and implement a conservation management plan by the first anniversary of implementation, and will fund that up to a maximum of £750,000 (Indexed); and
- If despite using reasonable endeavours it has not been possible to achieve either of the above options then the Developer will allocate a financial contribution of £750,000 (Indexed) to the Council, for spending in consultation with Cadw, on enhancing other heritage assets in the vicinity of the Wylfa Newydd Development Area (WNDA).

3.4.17 Horizon will discuss with IACC amending the cascade above to build in at each stage a consultation with NT.

3.4.18 Horizon also proposes to add to the s.106 agreement an obligation to provide interpretation material about the Kitchen Garden. This could be as part of the visitor centre or other information boards being erected for the development.

3.4.19 In respect of Felin Gafnan, the draft s.106 provides for a £3,000 payment to IACC for interpretation board(s), and to fund/repair any structural damage to the listed properties at Felin Gafnan (also commitment to pre- and post- works surveys is included in the amended Wylfa Newydd main site sub-CoCP submitted at Deadline 5 (12 February 2019)).

Community Fund

3.4.20 The Community Fund is proposed for the purpose of mitigating any intangible and residual impacts of the Wylfa Newydd DCO Project on communities through schemes, measures and projects which promote the economic, social or environment well-being of those communities and enhances their quality of life.

3.4.21 The Community Fund is proposed to be partially ringfenced to communities close to the WNDA, as well as a portion being made available for a wider area. The Community Fund will be paid to IACC in set tranches, and IACC may then allocate funding to eligible projects.

3.4.22 There is no evidence supporting the need for a separate Community Environmental Fund nor a separate Environmental Fund as proposed in REP2-077 and neither is proposed to be offered. The offsite locations are subject to stringent design and landscape controls including via the sub-CoCPs and obligations which will be delivered on the sites themselves. Horizon's response on this was set out in REP3-004, from para 17.10.4.

3.4.23 The draft s.106 agreement would not prevent the eNGOs applying for funding for offsite landscaping, a decision on that application would be determined by IACC.

3.5 Deed of Covenant

3.5.1 The revisions made to the previous draft of the s.106 agreement reflect the IACC position stated at the ISH, that all payments must be paid to IACC. To reflect the fact that IACC will need a direct contractual relationship with third parties, the deeds of covenant will be between IACC and third parties. Accordingly, IACC will be preparing draft deeds of covenant.

3.5.2 It is proposed that the s.106 agreement will set out minimum requirements for the deeds of covenant including how monies paid to third parties must be spent. However, the detailed terms are still under discussion. The trigger for when those deeds must be entered into is also still under consideration by the parties, although it is likely that this would be prior to commencement.

4 Post Hearing Notes [REP4-038] and [REP4-044]

4.1.1 Within this section Horizon has provided responses to the other key points raised in the eNGO's post hearing notes.

4.2 Examining Authority 1: Response to post hearing note to Deadline 3 evidence from Horizon

Mound E Drainage

4.2.2 The eNGOs have requested that further details are provided on how the drainage system will work (and the associated flood risk). This is a post consent matter; however, some further details on flood risk and over-pumping will be provided in Horizon's Deadline 6 (19 February 2019) submission [WNDA Site Drainage and Flood Risk in the Afon Cafnan, Cemaes Stream and Nant Cemlyn]. The Construction Discharge Environmental Permit also includes a commitment to share the detailed drainage design before construction commences.

4.2.3 The eNGOs also requested that the location of silt management dosing plants is reconsidered. Silt management dosing plants are shown adjacent to the Mound E sedimentation pond in drawing WN0902-HZDCO-LFM-DRG-00023 in the site plans for construction drainage [REP2-018], and Figure 2-8 of ES Volume D - WNDA Development App D8-8 - Summary of preliminary design for construction surface water drainage [APP-167]). These drawings are labelled as 'illustrative' and locations of dosing plants as 'indicative'. Assuming that the diversion of water from the west of Mound E into the Afon Cafnan (and the commitment to not dose the water being discharged into the Nant Cemlyn) are approved, it is likely that it will not be necessary to locate these particular dosing plants in the vicinity of the Nant Cemlyn. Further consideration of options will be undertaken at the detailed design stage regarding locating any required dosing plants in the vicinity of the discharge to the Afon Cafnan.

4.2.4 The eNGOs suggest that no reworking of Mound E should occur once the mound is formed and restored. During the Biodiversity ISH on 10th January 2019, Mr C. Tasker explained the need for Horizon to have the potential to reuse material from Mound E if necessary. This is set out in Horizon's Post Oral Hearing Summary [REP4-005].

4.2.5 The NWWT also ask for details of the flood risk regarding the Nant Cemlyn and Afon Cafnan. In this context Horizon will continue to share information with the eNGOs where possible and appropriate.

Recreation & Tourism

4.2.6 Further to the comments made by the eNGOs regarding the visitor pressures, Horizon proposes to manage these through several mechanisms, including the Workforce Management Strategy (which will be the delivery mechanism for workforce management and wardening of retained sensitive ecological receptors within the WNDA), the s106 for works outside the sWNDA and the Visitor Centre (for which more detail is set out in Horizon's Deadline 5 (12

February 2019) Note "*Securing Mechanism and Programme for Delivery of the Permanent Visitor's Centre*".

Marine Mitigation for loss of seabed

4.2.7 Horizon provided a Technical Note on ecological enhancement mitigation for the loss of rocky reef habitat at Deadline 4 (17 January 2019) [REP-023]. This mitigation includes for the loss of conservation important habitat at the cooling water outfall.

4.3 Examining Authority 2: Post-hearing note on tern energetic budgets in response to Horizon REP3-026

4.3.1 In relation to tern energetic budgets, the eNGOs state that the "*most salient feature*" of the energy budget debate is that Horizon acknowledge in their Shadow HRA [APP-050 and APP-051] that flight deviations are likely to occur within the Project's Zone of Influence (ZOI) as a result of noise (and visual) disturbance, and that this (in turn) will result in additive energy expenditure. The eNGOs refer to paragraphs 3.74 and 3.97 of their Written Representation [REP2-348] as support for this position.

4.3.2 Paragraph 3.74 of REP2-348 does not actually refer to the Shadow HRA but, rather, to the Environmental Statement (chapter 13, The Marine Environment, [APP-132]) and concerns "*secondary seabirds that may be nesting, loafing, foraging or flying in the waters around the Wylfa Newydd Development Area, particularly within Porth-y-pistyll*". As such, this information does not directly relate to the predicted effects of construction noise and visual disturbance on the energy budgets of commuting and foraging terns from the Cemlyn Bay colony, as presented in the Shadow HRA. This is because it refers to:

i. non-tern species, which may have different sensitivities to construction-related disturbance than terns;

ii. birds that may be involved in activities other than commuting and foraging;

iii. only (or at least mainly) the immediate area around Porth-y-pistyll.

4.3.3 Paragraph 3.97 of REP2-348 refers to the conclusions of the Shadow HRA on the effect of complete avoidance of the offshore noise ZOI by the Sandwich terns from the Cemlyn Bay colony. These conclusions show that a small increase (of 1 – 2%) in the daily energy expenditure of the terns is predicted when all birds are assumed to circumvent the area defined by the 65dB(A) noise contour (which extends considerably beyond the main development area boundary). Therefore, even under highly precautionary assumptions (which are essentially unrealistic), any effect on tern energetics remains small and would not be expected to affect breeding success.

4.3.4 The eNGOs also state that Horizon's position on this matter is based upon "*the* '*suggested' energetic costs that may occur at Cemlyn extrapolated from deviations in windfarm studies*". This statement is potentially misleading because the calculated energetic costs are derived from estimates of tern daily energy expenditure, and increases in energy expenditure for additional flight distances, presented in the peer-reviewed scientific literature [see RD1]; whilst

the offshore noise ZOI is determined by the noise modelling undertaken for the Project (and not by extrapolation from windfarm studies). It is, however, the case that the visual disturbance ZOI is informed by expected responses of terns to offshore wind farms.

4.3.5 In conclusion, the eNGO post-hearing note presents no evidence or credible arguments to suggest that the conclusions of the Shadow HRA on the effects of construction noise and visual disturbance on commuting and foraging terns are invalid.

4.4 Examining Authority 3: Post-hearing update on grave concerns in relation to the amber/red warning system methodology for Anglesey Terns

4.4.1 The eNGOs state that the revised control measures (as detailed in [REP3-048]) do not represent effective risk management and are contrary to EU guidance on the Precautionary Principle.

4.4.2 With respect to the latter point, it is important to note that the mitigation has not been proposed as a result of predicted disturbance to terns, as the Shadow HRA [APP-050 and APP-051] provides a strong evidence-base for concluding that construction-related noise disturbance will not have adverse effects on the terns at the Cemlyn Bay colony. Rather, the mitigation has been proposed to ensure that noise levels at the colony from construction activities remain below those considered likely to elicit flight responses by the terns. On this basis alone, the proposed mitigation represents a highly precautionary approach to risk management and fully adheres to the Precautionary Principle.

4.4.3 The eNGOs acknowledge that the proposed noise thresholds are "*in the right area*". Therefore, if Horizon commit to maintaining noise levels at the colony (to be confirmed through real time monitoring) that are below these thresholds, it is clear that the risk can be managed (and the avoidance of an adverse effect ensured).

4.4.4 The eNGOs raise concerns over the proposed basis for controlling the blast noise (i.e. its operability). The mitigation aims to ensure that blasts are only undertaken when they are predicted to generate noise levels of less than 60dB or the ambient noise at the colony (whichever is higher). Further information on ambient noise levels at the colony was submitted at Deadline 4 (17 January 2019) [REP4-022]. The eNGOs consider that this could result in relatively high noise levels from blasting when the colony is already in a distressed/disturbed state (which could cause ambient noise levels at the colony to be high). However, tern 'fly up' responses at the Cemlyn Bay colony typically extend over a period of only 35 – 45 seconds (based upon the survey results – see [APP-050]) and so it is highly unlikely that the maximum permissible predicted blast noise will be determined by ambient noise levels which are attributable to distressed or disturbed terns. Furthermore, the reactive monitoring proposed within the mitigation will act as a fail-safe measure in this regard. That is, this will identify any instances where blasts appear to elicit a 'fly up' response, so that appropriate measures can be implemented to ensure that

no further blasts are undertaken under the circumstances associated with the recorded tern 'fly up' (as described in [REP3-048]).

4.4.5 The eNGOs also raise concerns over the definition of the four-week establishment period within the mitigation document [REP3-048]. It is important to note that it is the establishment of the tern colony itself in any year which is relevant in this regard (and not the arrival and establishment of the individual tern species as implied by the NWWT). The Sandwich terns are the first arriving and, by far, most numerous of the tern species at the Cemlyn Bay colony (accounting for c.95% of all terns at the colony in recent years – see [APP-050, Table 6-6]). Therefore, establishment of the colony will be governed by the arrival and settlement of this species. Within the parameters of this definition of colony establishment (including its four-week limit), Horizon are happy to discuss the details of how best to define the colony establishment period with the eNGOs prior to the mitigation taking effect (including the use of the data presented in Figure 1 of the eNGOs Written Representation – [REP2-348]). In this context it is noteworthy that the mitigation package proposed will be in place for the entire tern breeding season (and will maintain noise thresholds that "are in the right area"); while the four-week period under discussion represents a period during which additional precaution will be applied.

4.4.6 The responsive monitoring proposed by Horizon as part of the mitigation package is novel. However, it is appropriate to the unique circumstances presented by the Cemlyn Bay colony and the Project, and to a situation where no impact is predicted and precautionary agreed noise thresholds (below which terns do not typically respond) are to be maintained irrespective of the responsive monitoring. The eNGOs also express concern about the comment made during the ISH that the works may only need to stop for short periods. However, the commitment that has been made is that the works would be altered so as to continue to avoid any attributable disturbance reactions. This will ensure that disturbance effects do not have the opportunity to act cumulatively or synergistically over a period of time.

4.4.7 As set out in REP3-048, the Site Manager will determine when and what action needs to be undertaken based on an open line of communication with the Ecological Clerk of Works responsible for monitoring noise levels[1] and/or the professional colony observers. Relevant protocols will be established in this regard. The Site Manager will determine which machinery or activities need to be altered or stopped in order to reduce noise levels at the colony to below the response thresholds based on their expert knowledge of the site and the activities taking place (including their acoustic signatures) and taking account of Health & Safety appropriately. Significantly, the noise experienced at the colony will arise from a combination of activities. Therefore, there will always be more than one approach that can be taken to reducing noise levels. In those instances where it is unsafe to stop an activity immediately, other action will be taken to reduce the noise levels experienced at the colony and, in those

[1] Where the 'action' (amber) noise level [sufficiently below the agreed thresholds to enable mitigation action to be taken before an exceedance occurs] can be agreed with NRW in advance.

circumstances where the activity in question is particularly problematic, it will be altered or stopped as soon as it is safe to do so.

5 eNGO & NWWT presentation of Oral Case [REP4-038] and [REP4-044]

5.1.1 Within this section Horizon has provided responses to some of the key points raised in the eNGO's presentation of their oral case.

5.1.2 Horizon has no comments to make on the information presented for Day 1 and Day 3.

5.2 Day 4 – First Issue Specific Hearing on Biodiversity

Agenda item 3a – Seabird survey data

5.2.2 The eNGOs point out that differences continue to exist between the respective parties in the interpretation of the seabird survey data collected by the Project, and particularly in the extent to which these data provide evidence for concluding that the construction activities will not lead to adverse effects on the Anglesey Terns Special Protection Area (SPA).

5.2.3 Horizon consider that the survey data and their interpretation as presented in the Shadow HRA [APP-050 and APP-051] are both robust and appropriate, and that they provide a strong basis for concluding that noise and visual disturbance from the construction activities will not adversely affect the SPA terns. Furthermore, the findings from the baseline disturbance surveys undertaken at the Cemlyn Bay colony are consistent with those from the available scientific literature on the effects of noise and visual disturbance to other tern species and wintering waterbirds.

Agenda item 3b i – To explore impacts on interest features of the Anglesey Terns SPA, including blasting effects on tern (species)

5.2.4 Horizon consider that many of the points raised in the eNGO submission under this heading have already been subject to much discussion and coverage in previous submissions and during the ISHs. The following specific comments are provided in relation to the eNGO comments made under this heading:

- *Blasting noise levels and noise events recorded during the baseline tern disturbance surveys.* The eNGOs state that in relation to blast noise, Horizon's evidence is based on three events in 2017 with similar rise time profiles. As detailed in the Shadow HRA [APP-050 and APP-051], the baseline disturbance surveys recorded a large number of impulsive noise events at the Cemlyn Bay colony, with several having (relatively) high peak noise levels (e.g. of 70 dB or more). As such, the response of the terns to such events is highly relevant evidence in assessing the likely response to construction noise (including blasting). It is the case that only three of the noise events recorded in the 2017 surveys had particularly sharp rise times, but this should not be taken to mean that the other impulsive noise events do not provide evidence of relevance to the assessment.

- *Four-week establishment period and its date range:* Horizon's response to this is detailed above in relation to NWWTs Examining Authority 3 response.
- *Fly-up responses and their applicability to mitigation red/amber approach.* A response to the wider comments made by the eNGOs on the proposed mitigation document [REP3-048] is provided above for Examining Authority 3. In relation to the specific comments provided by the eNGOs under the current heading, Horizon requires clarification on what is referred to as the "*psychological responses of the birds*"? The potential for subtle stress-type responses that have been discussed previously (e.g. in the Shadow HRA [APP-050 and APP-051] and in the eNGO Written Representation [REP2-348]), operate via physiological mechanisms. Horizon are unaware of any evidence for psychological effects in birds as a result of anthropogenic disturbance.

Agenda item 3b ii – Cemlyn Bay SAC, including Mound E drainage

5.2.5 The eNGOs have residual concerns about the potential effects of sedimentation on the Cemlyn Bay SAC. As the Examining Authority is aware, Horizon's proposal is to pump the drainage from Mound E to the Afon Cafnan until such a time as it has been agreed with NRW that Mound E drainage can return to the Nant Cemlyn (which drains into the SAC). As detailed in the Main Site sub-CoCP, the monitoring programme to inform this decision is also to be agreed with NRW in advance.

Agenda item 5a iii: Air quality Cae Gwyn SSSI

5.2.6 NWWT has stated it is in agreement with NRW concerning predicted effects on Cae Gwyn SSSI from changes in air quality as a result of the Wylfa Newydd development. Horizon's position on this matter is provided within the Air Quality Mitigation Quantification Report [REP3-052] which details why Horizon considers its assessment conclusion robust.

Agenda item 5a iv: Air quality Trwyn Pencarreg (Wildlife Site)

5.2.7 Immediately after the ISH on 10th January 2019, Steven Byrne (Horizon) directed Teresa Hughes (NWWT) to the predicted nitrogen deposition at Trwyn Pencarreg Wildlife Site in the Air Quality Mitigation Quantification Report [REP3-052]. With the additional mitigation to reduce NOx emissions from construction plant and marine vessels in place, the predicted increase in nitrogen deposition is below the level at which further ecological consideration is required (see Table 2-12 of the Air Quality Mitigation Quantification Report). Consequently, the report concludes that air quality effects from predicted increases in nitrogen deposition are negligible, and not significant, at Trywn Pencarreg Wildlife Site (see paragraph 2.1.34).

5.2.8 During the discussion immediately after the ISH on 10th January 2019, Mr Byrne also noted to Ms Hughes the criteria that are applicable to the assessment of changes to nitrogen deposition at Trywn Pencarreg Wildlife

Site, and that these differ from sites with national or international designations. The assessment criteria relevant to locally designated sites are based on NRW/Environment Agency guidance for Environmental Permitting (see RD2) and these were also discussed and agreed with IACC and NRW during consultation prior to submission of the DCO application. The criteria relevant to locally designated sites is reproduced from the guidance below:

- *"If your emissions meet both of the following criteria they're insignificant and do not need to be assessed any further* :
  - *the short-term PC [Process Contribution] is less than 100% of the short-term environmental standard;*
  - *the long-term PC [Process Contribution] is less than 100% of the long-term environmental standard".*

5.2.9 In the Deadline 4 (17 January 2019) response from NWWT for agenda item 5a iv – Air Quality Trwyn Pencarreg (Wildlife Site), a critical load value of 5–8 kg/N/ha/year is quoted. However, the critical loads for all ecological receptors were agreed with both the IACC and NRW prior to submission of the DCO application (see chapter B5 [APP-070] and appendix B5-2 [APP-084] of the Environmental Statement). The critical load appropriate for Trwyn Pencarreg is 10 kgN/ha/year.

5.2.10 The NWWT post hearing note also requests that 'berth-side electric hook-ups' are installed to reduce marine vessel emissions. This type of mitigation would only apply to marine vessels which are using the Marine Off-Loading Facility once it is operational (i.e. marine vessels delivering materials to the Wylfa Newydd Development Area from year 3 of the construction onwards). The effectiveness of such mitigation to reduce nitrogen deposition at ecological receptors is extremely limited as peak NOx emissions is during the construction of the Marine Off-Loading Facility (i.e. years 1 and 2). The increase in nitrogen deposition for the year 5 scenario, which represents the effects from year 3 onwards, is minimal (0.2 kgN/ha/year) and would not lead to an adverse effect at Trwyn Pencarreg (see Table 2-17 of Air Quality Mitigation Quantification Report).

5.2.11 The comprehensive mitigation proposed for reducing NOx emissions from land-based plant and machinery (i.e. a minimum of 90% of all Non-road Mobile Machinery meeting the EU Stage IV emission standard), and the adoption of the NOx Tier III marine vessel emissions standards (as secured in the Main Power Station Site sub-CoCP [REP2-032] and Marine Works sub-CoCP [REP2-033]), are primarily focused on reducing adverse effects during the peak NOx emissions period in year 1 and year 2. In particular, the adoption of the Tier III marine vessel emission standards is considered to go beyond best practice as these are not applicable for vessels operating in the Irish Sea, and only become applicable in the North Sea, the nearest NOx emissions control area, for vessels constructed from 2021 onwards. These two measures combined demonstrate Horizon's commitment to reducing NOx emissions from construction activities to as low as possible and targets the majority of sources at the Wylfa Newydd Development Area.

Agenda item 5a v: Reptiles and bats

5.2.12 NWWT has stated it agrees with IACC's comments in relation to reptile baseline and mitigation. At the request of IACC, Horizon has submitted into Examination at Deadline 5 (12 February 2019) the baseline reptile survey reports which support the reptile technical summary report [APP-177]. Horizon will also provide additional detail regarding reptile monitoring proposals during construction and the establishment of the provisions of the Landscape and Habitat Management Strategy [REP2-039] at Deadline 6 (19 February 2019).

5.2.13 NWWT has stated that it wishes to consider any more information Horizon provides in relation to lighting and the Site Campus Multi-User Games Area (MUGA), regarding potential effects on bats using the Tyn-y-maes bat barn.

5.2.14 For reference, a project-wide lighting mitigation is specified in the Wylfa Newydd CoCP [REP2-031], as being designed to reduce light spill onto sensitive ecological receptors to below thresholds where significant effects are predicted. The lighting strategy for the Site Campus will be provided within the revised Main Power Station Site sub-CoCP [REP2-032], submitted into Examination at Deadline 5 (12 February 2019). A revised version of the Wylfa Newydd CoCP was submitted into Examination at Deadline 5 (12 February 2019).

Agenda item 5a vi: Chough mitigation

5.2.15 NWWT states "*There is a need for clear separation of contributions to secure the protection of the chough network outside the Environmental Enhancement Fund in the s.106, as the delivery of these measures are necessary as mitigation to protect this Schedule 1 and Annex 1 species, and their funding should therefore be identified as a separate costed item.*".

5.2.16 The mitigation strategy with respect to chough is detailed within chapter D9 Terrestrial and Freshwater Ecology of the Environmental Statement [APP-128], and the conclusion of the assessment for this receptor is based on that mitigation strategy. A contribution towards the security of the chough network outside the Wylfa Newydd Development Area does not form part of this mitigation strategy and is not considered as part of the assessment conclusion.

5.2.17 The measures proposed as mitigation for effects to chough which are presented in chapter D9 are secured through the provisions of the Main Power Station Site sub-CoCP [REP2-031], a revision of which will be submitted into Examination at Deadline 5 (12 February 2019), and the Landscape and Habitat Management Stragety [REP2-039], a revision of which will be submitted into Examination at Deadline 5 (12 February 2019).

5.2.18 It is, therefore, considered appropriate that this enhancement measure is secured through the Environmental Enhancement Fund as part of the s.106 agreement.

6 References

Table 6-1 Schedule of references

ID	Reference
RD1	Masden, E.A., Haydon, D.T., Fox, A.D. and Furness, R.W. 2010. Barriers to movement: Modelling energetic costs of avoiding marine wind farms amongst breeding birds. Marine Pollution Bulletin. 60, pp.1085-1091
RD2	https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit

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