

HORIZON

NUCLEAR POWER



Wylfa Newydd Project

Request for Non-Material Change no.2

Marine Vessel Movements

PINS Reference Number: EN010007

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Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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Contents

1	Introduction	1
1.1	Purpose of this report	1
1.2	Scope of this report.....	1
1.3	Non-materiality of the proposed change	2
1.4	Engagement and consultation on the proposed change.....	3
1.5	Proposed procedure after consultation	3
2	Non-Material Change: Marine Vessel Movements.....	5
2.1	Background to the proposed change	5
2.2	Description and justification of the proposed change.....	6
2.3	Summary of environmental appraisal	7
	<i>Environmental Statement</i>	7
	<i>Habitats Regulation Assessment</i>	8
	<i>Other assessments</i>	9
2.4	Topic assessments	9
	<i>Air quality</i>	9
	<i>Noise and vibration</i>	13
	<i>Marine Environment</i>	14
	<i>Shipping and navigation</i>	16
2.5	Schedule of engagements	29
2.6	Schedule of consequential amendments to application documents	31
3	References	33

List of Tables

Table 2-1	Effect of the proposed change on the effect descriptors for NO ₂ concentrations	11
Table 2-2	Identified hazard frequency in the NRA for the operational phase of the MOLF.....	17
Table 2-3	Identified additional mitigation (control) measure frequency for the NRA during the operational phase of the MOLF	18
Table 2-4	Likely new or different environmental effects	19
Table 2-5	Schedule of engagements.....	29
Table 2-6	Schedule of consequential amendments to application documents	31
Table 3-1	Schedule of references	33

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1 Introduction

1.1 Purpose of this report

- 1.1.1 This report sets out a proposed non-material change to the Wylfa Newydd DCO Project. The Project is subject to a Development Consent Order (DCO) application that was submitted by Horizon Nuclear Power Wylfa Limited (“Horizon”) and accepted for Examination by the Secretary of State for Business, Energy and Industrial Strategy on 28 June 2018. The Application is currently in its Pre-Examination Phase.
- 1.1.2 Recipients of this report are invited to provide representations on the proposed non-material change to Horizon by **Friday 28 September 2018**. Feedback will be via Horizon’s freepost address (FREEPOST WYLFA NEWYDD, no stamp required) or by emailing wylfaenquiries@horizonnuclearpower.com. If you have any questions about the consultation, please call 0800 954 9516.
- 1.1.3 This report will subsequently be revised having regard to representations received, and submitted to the Planning Inspectorate as a request for the non-material change to be considered by the Examining Authority and, Horizon proposes, taken fully into account during Examination (with the opportunity for Interested Parties to make further representations in Examination accordingly).
- 1.1.4 The non-material change proposed relates to the upper daily limit of vessel movements to and from the Marine Off-Loading Facility (MOLF). Horizon is seeking to increase the upper daily limit from four movements per day (two vessels) to 16 movements per day (eight vessels) within the total vessel movements described and assessed in the Wylfa Newydd DCO application. These changes are proposed to maximise use of the MOLF at certain times and allow for programme recovery following delays for example following bad weather. No new or different likely significant environmental effects are predicted from this change.
- 1.1.5 This document uses terms and definitions that are taken from and can be seen in the DCO General Glossary (Application Reference Number: 1.4).

1.2 Scope of this report

- 1.2.1 This report describes the proposed change being sought and sets out the environmental appraisal of this proposed change. It includes a table (Table 2-4) clearly setting out the implications of the proposed change to the environmental assessments detailed in the Wylfa Newydd DCO application, and a statement on the non-material effect (if any) of the proposed change.
- 1.2.2 This report also includes a ‘schedule of engagement’ (Table 2-5) identifying the parties expected to have an interest in this proposed change and how Horizon proposes to engage with them.
- 1.2.3 Finally, a ‘schedule of consequential amendments’ (Table 2-6) is provided, listing the original application documents (or parts thereof) which may be

amended by Horizon should the Examining Authority accept the proposed change.

- 1.2.4 Horizon's objective in compiling this report is to provide stakeholders with sufficient information to comment on the change – and, after consultation, for the Examining Authority to make a decision on whether or not the proposed change may be accepted as a non-material change and therefore included in the Examination of the Application.
- 1.2.5 However, should the stakeholders or the Examining Authority require any reasonable relevant additional information in support of this report, Horizon will endeavour to provide it as soon as possible in response to any request for such information.

1.3 Non-materiality of the proposed change

- 1.3.1 In assessing the proposed change, Horizon has had regard to the advice contained in the Planning Inspectorate's Advice Note 16: *How to request a change which may be material* (Version 2, March 2018) [RD1].
- 1.3.2 The proposed change has been reviewed and assessed, and has not been found to result in any new or different likely significant environmental effects than those reported in the Environmental Statement¹ for the Project. Horizon has reviewed its Environmental Statement and has identified the following topic chapters which could potentially be affected by the change:
- air quality (chapter D5, Application Reference Number 6.4.5)
 - noise and vibration (chapter D6, Application Reference Number: 6.4.6);
 - terrestrial and freshwater ecology (via effects to air quality) (chapter D9, Application Reference Number: 6.4.9);
 - marine environment (chapter D13, Application Reference Number: 6.4.13);
 - shipping and navigation (chapter D15, Application Reference Number: 6.4.15);
 - combined topic effects (chapter D16, Application Reference Number: 6.4.16);
 - intra-project cumulative effects (chapter I4, Application Reference Number: 6.9.4); and
 - inter-project cumulative effects (chapter I5, Application Reference Number: 6.9.5)
- 1.3.3 It is not anticipated that the proposed change to daily peak vessel movements or numbers will result in any new or different likely significant cumulative environmental effects resulting from the interaction with other projects.

¹ The Environmental Statement PINS Application Reference Number 6.1 -6.11. Hereafter the term Environmental Statement is used.

- 1.3.4 Horizon also intends to consult on a further proposed non-material change with respect to the blasting schedule. It is not anticipated that the proposed change to the daily peak of vessel movements or numbers outlined in this report will interact with the blasting schedule change to produce any new or different likely significant environmental effects resulting from the interaction of these projects either in combination or cumulatively with any other projects.
- 1.3.5 The Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) has also been considered in light of the proposed change and Horizon has concluded that the change would not result in a change to the findings and conclusions.
- 1.3.6 Taking the above factors into account, and subject to the representations received in response to this consultation, Horizon therefore believes that this should be regarded as a non-material change.

1.4 Engagement and consultation on the proposed change

- 1.4.1 For the marine aspects of the Wylfa Newydd Project, Horizon requested a screening and Scoping Opinion from Natural Resources Wales (NRW) under Regulations 11 and 13 from Schedules 2 and 4 of the Marine Works (Environmental Impact Assessment) (Amendment) Regulations 2017. The responses were received and relevant comments are detailed in table B15-4 of chapter B15 of the Environmental Statement (Application Reference Number: 6.2.15).
- 1.4.2 The principle of promoting movement of freight and bulk materials by sea is in-line with Government policy and was consulted on principally during the pre-application consultation Stage 2. Limited consultation responses on this topic focussed around engagement with Trinity House over navigation and providing an EIA and Navigational Risk Assessment within the Wylfa Newydd DCO application. The daily peak vessel movements or vessel numbers were not specifically consulted upon although within the Preliminary Environmental Information Report for Stage 2 reference is made to an average of two vessels movements per day. The design basis of the MOLF within the Wylfa Newydd DCO application has always allowed for a potential increase in daily peak movements and vessels numbers.
- 1.4.3 It is proposed that the parties expected to have an interest in the proposed change are as listed in Section 2.5. As such, Horizon is providing this document for consultation from Tuesday 14 August 2018 (the day after the Relevant Representations period closes) until Friday 28 September 2018. The consultees should provide their representations to Horizon (not to the Planning Inspectorate) as set out in paragraph 1.1.2, above. Follow-up calls and meetings will be made available as required.

1.5 Proposed procedure after consultation

- 1.5.1 As noted above, Horizon will revise this document having regard to representations received and submit it to the Planning Inspectorate as a

request for a non-material change to the DCO application. Horizon appreciates that the acceptance and appropriate procedure for the consideration and Examination of this proposed change is entirely a matter for the Examining Authority. However, Horizon does consider that the proposed changes can be considered and fully and properly examined within the Examination timetable.

- 1.5.2 Based on the consultation described in paragraph 1.4.4 above, Horizon expects to have regard to representations received and re-submit an appropriately updated version of this document to the Planning Inspectorate by the end of week commencing 1 October 2018, which is expected to be several weeks before a likely date for commencement of the Examination (given the typical 100-130 day duration of the Pre-Examination period). Subsequently, the full six-month Examination period would be available to give Interested Parties an opportunity to comment on the proposed change by making representations on a suitable Examination deadline chosen by the Examining Authority.

2 Non-Material Change: Marine Vessel Movements

2.1 Background to the proposed change

2.1.1 Since the submission of the Wylfa Newydd DCO application, ongoing contractor engagement has revealed the need to assess an increased peak daily limit of vessel movements to and from the MOLF. The total number of vessel movements does not change from that described and assessed in the Wylfa Newydd DCO application.

2.1.2 The Wylfa Newydd DCO application sets out the following total vessel movements in the Navigational Risk Assessment (Environmental Statement appendix D15-1, Application Reference Number: 6.4.99) assumed over the construction period.

Vessel type	Project phase	No. of Movements
Inshore cutter suction dredger	Construction of MOLF	56
Offshore cutter suction dredger	Construction of MOLF	32
Dredging barges	Construction of MOLF	818
Bulk material vessels	Operation of the MOLF	3,142
Barges for indivisible loads	Operation of the MOLF	660

2.1.3 In chapter D1, paragraph 1.7.38, of the Environmental Statement, (Application Reference Number 6.4.1), Horizon describes, *‘the peak number of vessels is still to be determined but would be likely to be between 103 and 122 over a three-month period, which equates to approximately 1.3 vessels per day’*.

2.1.4 The basis of assessment for the marine environment, chapter D13 of the Environmental Statement, (Application Reference Number: 6.4.13, see paragraph 13.6.285) and the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2), states *‘the peak number of vessels on-site is predicted to average approximately 15 per week over a three-month period’*. Within the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) it is further stated that *“vessel movements within the area would be expected to occur on average twice a*

day”². Both the assessment in chapter D13 of the Environmental Statement, (Application Reference Number: 6.4.13, see paragraph 13.6.285) and the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) assumed vessels travel at an average of 10 knots.

- 2.1.5 The basis of modelling and assessment for air quality, chapter D5 of the Environmental Statement (Application Reference number: 6.4.5) assumes that two vessels access the MOLF per day (resulting in four vessel movements). For each vessel, one hour is allowed for manoeuvring in (and therefore using the main engines), one hour for manoeuvring out (on main engines), and 22 hours at berth (and therefore using auxiliary engines).
- 2.1.6 The noise modelling that supports the assessment for chapter D6 of the Environmental Statement (Application Reference number: 6.4.6) considers the realistic worst case 1-hour periods in the day and at night. Both the daytime and night-time noise models assume one vessel movement in to or out of the MOLF within this time period.

2.2 Description and justification of the proposed change

- 2.2.1 Whilst an average of two vessels per day is a reasonable assumption to make over the entire construction programme, the proposed change is focussed on assessing a daily peak in vessel movements and hence vessel numbers, but within the constraints of the total vessel movements stated in the Navigational Risk Assessment (Application Reference Number: 6.4.99) for the construction programme (see paragraph 2.1.2). The primary objectives of the change are to maximise use of the MOLF at key periods and allow recovery of the programme following delays, for example from tides, weather, varying load sizes, or dockside closures. The number of daily vessel movements throughout the construction programme would be expected to fluctuate from day-to-day. Therefore, on some days it is possible that the MOLF would receive no vessel deliveries, whilst on other days the MOLF may be filled to its design capacity of 4 vessels.
- 2.2.2 In order to maximise the use of the MOLF, Horizon believes that there is a need to change the upper daily limit of vessel movements up to a peak of 16 movements per 24-hour period (eight movements per 12-hour period). A vessel movement is treated as one trip in to or out of the MOLF. This peak will be constrained by berth availability and it is assumed all three berths and the lay-by berth would be available. Such a change would allow the full benefits of the MOLF to be realised, namely:
- fully utilise the MOLF to the maximum extent possible allowing for a greater scope of deliveries by ship (hence taking deliveries off the road network);

² NB: the reference to vessel movements in the Shadow HRA is a typographical error and should be a reference to an average of two vessels and four vessel movements.

- allow for periods of increased use after an unplanned closure (for example after a storm); and
 - reduce waiting times for vessels waiting to dock.
- 2.2.3 These would reduce the risks posed to the wider project programme by ensuring the construction schedule can be reliably met throughout the course of main construction.
- 2.2.4 Therefore, this approach also aligns with wider Project ambitions to meet the urgent national need for new, low carbon electricity generation that is safe, secure and affordable, in accordance with UK Government policy set out in National Policy Statement EN-1.
- 2.2.5 The proposed change only relates to the upper daily limit of vessel movements that may use the MOLF in any given 24-hour period and does not affect the overall number of marine movements or vessels stated in the Navigational Risk Assessment (Application Reference Number: 6.4.99) or the average number of vessels stated in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) which would be using the MOLF over the whole construction programme. We recognise however that in requesting this change in daily peak the Navigational Risk Assessment requires updating to cover any additional hazards this change presents.
- 2.2.6 The proposed change in vessel movements as described above is translated into the following basis for modelling and assessing the proposed change in the Environmental Statement.
- Noise modelling for day-time and night-time periods within a 1-hour period. In these models we assume two movements within an hour to represent a worst-case.
 - Air quality modelling for eight vessels accessing the MOLF per day (16 movements per day). We further assume that there are four berths in near-constant use. For each vessel, we allow one hour for manoeuvring in (and therefore using the main engines), one hour for manoeuvring out (on main engines), and 10 hours at berth (and therefore using auxiliary engines).

2.3 Summary of environmental appraisal

- 2.3.1 The proposed change has been reviewed and assessed to identify any potential likely significant effects that would be new or different to those assessed in the Wylfa Newydd DCO application. This information is summarised in table 2-4, where relevant, further discussion is provided below.

Environmental Statement

- 2.3.2 This review identified that the proposed change could potentially have implications for the following assessments outlined in the Environmental Statement:

- air quality (chapter D5, Application Reference Number: 6.4.5) (from air quality effects during construction);
- noise and vibration (chapter D6, Application Reference Number: 6.4.6) (from noise and vibration effects during construction and the interaction with human and ecological receptors.);
- terrestrial and freshwater ecology (from effects to terrestrial flora via effects to air quality during construction) (chapter D9, Application Reference Number: 6.4.9);
- marine environment (chapter D13, Application Reference Number: 6.4.13) (from effects to marine mammals via vessel strikes and underwater noise, as well as effects to seabirds from visual disturbance during construction);
- shipping and navigation (chapter D15, Application Reference Number: 6.4.15), and the Navigational Risk Assessment (Appendix D15-1, Application reference Number: 6.4.99) (from effects to hazards);
- combined topic effects (chapter D16, Application Reference Number: 6.4.16); (from effects to air quality, noise and vibration, and terrestrial and freshwater ecology assessments);
- intra-project cumulative effects (chapter I4, Application Reference Number: 6.9.4); and
- inter-project cumulative effects (chapter I5, Application Reference Number: 6.9.5).

Habitats Regulation Assessment

- 2.3.3 Further consideration has also been given to the potential effect of the proposed change to the appropriate assessment for habitats and species (terrestrial, freshwater and coastal) of Special Areas of Conservation (SACs) and Ramsar sites detailed in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) via effects from air quality.
- 2.3.4 The effects from changes in air quality have been screened into the appropriate assessment for the Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area (SPA) on the basis of the potential for effects on the nesting habitat at the Cemlyn Bay lagoon on which the SPA Sandwich terns are dependent. However, this assessment would be unaffected by the proposed change as terns are not dependant on, or influenced by the perennial vegetation of stony banks qualifying feature. The appropriate assessment for birds (including Morwenoliaid Ynys Môn/Anglesey Terns Special Protection Area) has therefore not been considered further as this would remain as reported in the Shadow Habitats Regulations Assessment (Application Reference Number: 5.2).
- 2.3.5 Although the appropriate assessment in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) makes several references to the average peak number of vessels predicted to use the MOLF

on a weekly basis, none of the quantitative assessments presented, including those referring to effects to marine mammals (from changes to underwater noise disturbance and the risk of marine vessel strikes) and seabirds (from changes to visual stimuli) take into consideration this value. Consequently, these assessments would be unaffected by the proposed change and would remain as reported in the Shadows Habitat Regulations Assessment Report (Application Reference Number: 5.2). Despite this, the potential implications of the proposed change to these assessments on a qualitative basis is given further consideration below in relation to the corresponding assessment presented in chapter D13 of the Environmental Statement (Application Reference Number: 6.4.13).

- 2.3.6 The proposed change would not affect the overall number or type of marine vessels which would be using the MOLF and it would not affect vessel speed, pilotage or towage, therefore all the remaining assessments detailed within the Environmental Statement or Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) are not considered to be affected by the proposed change and thus, the conclusions remain as reported in the Wylfa Newydd DCO application.
- 2.3.7 Where relevant further comment is made as to the effects of the proposed change on the Shadow HRA in 2.4 below.

Other assessments

- 2.3.8 All other assessments submitted as part of the Wylfa Newydd DCO application (e.g. Welsh Language Impact Assessment, Application Reference Number: 8.21; Equality Impact Assessment, Application Reference Number: 8.22 and Water Framework Directive Compliance Assessment, Application Reference Number: 8.26) would also remain unaffected by the proposed change and have therefore not been considered further.
- 2.3.9 The effects of the proposed change to the assessments listed in paragraphs 2.3.2 and **Error! Reference source not found.** above are summarised in REF_Ref516641418 \r \h Table 2-4, with further discussion provided below where relevant.

2.4 Topic assessments

Air quality

- 2.4.2 The assessment of emissions of pollutants to air arising from the Wylfa Newydd Project is presented in chapter D5 (air quality) of the Environmental Statement (Application Reference Number: 6.4.5).
- 2.4.3 The air quality assessment uses information on baseline conditions (and predictions of future baseline conditions) to assess the impact of predicted increases in pollutant concentrations and deposition rates arising from marine vessels during construction of the Power Station. Effects were assessed at relevant sensitive human receptor locations (e.g. residential properties, footpaths and other locations to which members of the public would have

access) and sensitive ecological receptor locations (e.g. a designated site such as a Site of Special Scientific Interest (SSSI) or a SAC).

- 2.4.4 Two construction scenarios were assessed in the Environmental Statement (year 2 and year 5), representing peak activity during two distinct stages of Main Construction. The proposed change only affects the year 5 scenario which represents the operational phase of the MOLF, and the peak construction phase of the Power Station. As explained in chapter D5 of the Environmental Statement (Application Reference Number: 6.4.5), the year 5 scenario is used to represent the highest potential air quality effects during year 3 to year 9 of the construction programme.
- 2.4.5 Additional dispersion modelling work has been carried out to determine the effects of the proposed change to the air quality assessment presented in chapter D5 of the Environmental Statement (Application Reference Number: 6.4.5) for relevant sensitive human and ecological receptor locations. This information is summarised below.
- 2.4.6 The magnitude of effects (described as 'effect descriptors') from emissions of pollutants to air from combustion emissions is classified as 'large', 'medium', 'small' or 'negligible' adverse, whilst the overall significance of air quality effects is classified as 'significant' or 'not significant'. Further information about the air quality assessment criteria and the determination of significance can be found in paragraphs 5.4.121 to 5.4.150 in chapter B5 of the Environmental Statement (Application Reference Number: 6.2.5).

Human receptor locations

- 2.4.7 The proposed change would not result in any perceptible difference in the maximum predicted concentrations of carbon monoxide (CO) and particulate matter (PM₁₀ and PM_{2.5}) (i.e. no change to the magnitude of change as a percentage of the air quality objective (AQO) value). Consequently, the effect descriptors would remain as negligible adverse at all receptors (R1 to R19, R20, R22 and R25) considered in the air quality assessment for year 5.
- 2.4.8 For sulphur dioxide (SO₂), there would be some relatively small changes in the 24-hour, one-hour and 15-minute mean concentrations as a consequence of the proposed change (between 0% to 5% of the AQO value). However, the increases would not lead to any changes to the effect descriptors, which remain as negligible adverse for all receptors (R1 to R19, R20, R22 and R25) considered in the air quality assessment for year 5. Total SO₂ concentrations remain well within the relevant AQOs (i.e. a maximum of 9% of the AQO for any of the three averaging periods).
- 2.4.9 For annual mean nitrogen dioxide (NO₂) concentrations, the proposed change would result in a 1% increase in the concentration relative to the AQO predicted at one of the long-term receptor locations (i.e. R1 to R17 where exposure is considered to occur over a long period). This would alter the effect descriptor from small adverse to medium adverse at R14. However, the total NO₂ concentration of 8.7µg/m³ would remain well within the annual mean AQO of 40µg/m³. With respect to annual mean NO₂ concentrations, the proposed change would also alter the effect descriptor from negligible adverse

to small adverse at a further two receptor locations out of the 1,228 long-term human receptor locations modelled for the assessment.

- 2.4.10 As a consequence of the proposed change, the maximum total concentration of NO₂ at any of the long-term receptor locations (R1 to R17) would increase from 10.8µg/m³ to 10.9µg/m³, remaining well within the annual mean AQO of 40µg/m³. Air quality at the Site Campus would also remain at a good standard, with total concentrations also remaining well within the AQO (a maximum concentration of 21.2µg/m³).
- 2.4.11 For one-hour mean NO₂ concentrations, the proposed change would not result in any perceptible difference (i.e. no difference in the magnitude of change as a percentage of the AQO value in the maximum predicted concentration at both short-term human receptor locations (i.e. locations where exposure would be over a short period such as one hour) and long-term human receptor locations (i.e. locations where exposure would be over a long period such as one year). This result is due to other on-site sources being the main contributors to the peak one-hour mean NO₂ concentrations. The proposed change would however, result in some minor changes to the effect descriptors when considering all 1,228 modelled receptors, with seven additional receptors being classed as small adverse, instead of negligible adverse.
- 2.4.12 The effect of the proposed change on effect descriptors of for NO₂ are set out in Table 2-1. As shown, the balance of effects remains as predominately negligible with consideration of the proposed change.

Table 2-1 Effect of the proposed change on the effect descriptors for NO₂ concentrations

Effect descriptor	Number of receptors experiencing predicted effects			
	Annual mean NO ₂		1-hour mean NO ₂ (99.8 th percentile)	
	Proposed change	Difference arising from proposed change	Proposed change	Difference arising from proposed change
Large adverse	0	0	1	0
Medium adverse	3	+1	1	0
Small adverse	43	+2	67	+7
Negligible adverse	1,182	-3	1,159	-7

- 2.4.13 As the proposed change would result in relatively small changes to the predicted concentration of pollutants to human receptor locations, this would not require any new embedded, good-practice or additional mitigation measures

Ecological receptor locations

- 2.4.14 Changes to air quality due to dust and emissions of NO_x and SO₂ from plant, machinery and marine vessels could result in habitat degradation. Indirect

effects, such as the reduction in quality of habitat for other receptors reliant upon it may also occur.

- 2.4.15 The air quality assessment in the Environmental Statement (chapter D5, Application Reference Number: 6.4.5) identified three designated sites where the increase in NO_x or SO₂ concentrations and associated nitrogen or acid deposition due to the Wylfa Newydd Project was such that further consideration was required as part of the terrestrial and freshwater ecology assessment in chapter D9 of the Environmental Statement (Application Reference Number: 6.4.9) (i.e. it could not be categorised as a negligible effect as part of the air quality assessment could not be concluded. These included:
- Tre'r Gof SSSI
 - Cae Gwyn SSSI; and
 - Cemlyn Bay SSSI/SAC.
- 2.4.16 The subsequent effect of the proposed change on the assessments of air quality changes at these sites is outlined in Table 2-4. The changes to the predicted maximum concentrations and deposition rates (where applicable), are discussed below.
- 2.4.17 With regards to NO_x, SO₂ and the associated nitrogen and acid deposition, the proposed change would not require consideration of any new designated sites within the terrestrial and freshwater ecology assessment (chapter D9, Application Reference Number: 6.4.9) (i.e. the air quality effect at all other sites remains as negligible).

Tre'r Gof SSSI

- 2.4.18 With the proposed change, the predicted process contribution³ for annual mean NO_x concentrations would increase from 14.6µg/m³ to 15.0µg/m³. The total NO_x concentration of 23.9µg/m³ would remain within the critical level of 30µg/m³.
- 2.4.19 The proposed change would result in further exceedance of the 24-hour mean critical level, with NO_x concentrations increasing from 102.8µg/m³ to 103.4µg/m³.
- 2.4.20 The proposed change would not result in a perceptible increase in the total nitrogen deposition although deposition rates would remain in exceedance of critical loads. Acid deposition would also increase from 0.13keq/ha/year to 0.16keq/ha/year, equating to a 2% increase in the total acid deposition rate.

Cae Gwyn SSSI

- 2.4.21 The proposed change would result in a small increase in nitrogen and acid deposition of 0.1kgN/ha/year and 0.1keq/ha/year, respectively.

³ This is the modelled concentration from the Wylfa Newydd Project emission sources included in the assessment.

- 2.4.22 Changes to all other pollutants arising from the proposed change would remain below the criteria requiring further consideration in the terrestrial and freshwater ecology assessment (chapter D9, Application Reference Number: 6.4.9).

Cemlyn Bay SSSI/SAC

- 2.4.23 The proposed change would result in a small increase in acid deposition, with process contribution increasing from 0.03keq/ha/year to 0.06keq/ha/year.
- 2.4.24 Changes to all other pollutants arising from the proposed change would remain below the criteria for requiring further consideration in the terrestrial and freshwater ecology assessment (chapter D9, Application Reference Number: 6.4.9).

Noise and vibration

- 2.4.25 The assessment of airborne noise and vibration disturbance arising from marine vessel movements for the Wylfa Newydd Project is presented in chapter D6 of the Environmental Statement (Application Reference Number: 6.4.6). This assessment is based on noise modelling which examined the potential effect of marine vessel movements in two ways:
- as moving construction noise sources within the harbour and a contributor to total construction noise in the Wylfa Newydd Development Area. The proposed change could potentially affect this assessment and is discussed further below; and
 - as contributors to total offshore construction vessel movements (up to 1.7 nautical miles from land) which is compared to the percentage change that would be required to lead to a perceptible increase in noise from marine vessel movements. This proposed change will not increase the annual number of vessel movements to or from the MOLF, and therefore the assessment set out in section 6.5.47 of chapter D6 of the Environmental Statement (Application Reference Number: 6.4.6) remains unaltered. This assessment concluded that MOLF vessel movements would be expected to increase shipping noise by less than 3dB, and that this is considered a negligible change in magnitude.
- 2.4.26 For context, it is noted that the minimum change in noise level that a trained ear can detect in controlled listening environments is generally taken to be 1dB. For long term changes in noise levels in uncontrolled environments, most people can only distinguish differences of 3dB or greater.

Construction noise in the Wylfa Newydd Development Area

- 2.4.27 Noise modelling has shown that the proposed change would result in a mean noise level increase of less than 0.06dB $L_{Aeq,1hour}$ at 120 of the closest properties to the Wylfa Newydd Development Area. The difference in noise levels predicted due to the proposed change are small and would be undetectable to a person. The noise generated from construction plant that

will be operating within the Wylfa Newydd Development Area, will exert a controlling influence on the total noise levels at receptors.

- 2.4.28 The greatest increase at any property would be 0.8dB $L_{Aeq,1-hour}$ at Hen Blas, where night-time noise levels for months 31-33 of construction are predicted to increase from 41.9dB $L_{Aeq,1-hour}$ to 42.7dB $L_{Aeq,1-hour}$ because of the proposed change. A night-time noise level of 42.7dB $L_{Aeq,1-hour}$ is considered a small effect of minor significance. Without the proposed change, the daytime noise levels associated with months 22-24 and 31-33 of construction would also be considered a small effect of minor significance, and therefore the overall noise effect at this property will not change.
- 2.4.29 Analysis of the results at each property indicate that the small increases in noise levels will not alter the overall magnitude of effect at any property. Therefore, there will be no change to the significance of construction noise effects at any of the 120 nearest noise sensitive receptors due to the proposed change.

Marine Environment

Underwater noise from vessel movements

- 2.4.30 The predicted noise levels for vessels are low and not discernible above measured background at distances of 2.4km for medium vessels and 4.4km for large vessels. The impact ranges summarised in table D13-26 and table D13-27 (chapter D13, Application Reference Number: 6.4.13) show that Permanent Threshold Shift (known as PTS) and Temporary Threshold Shift (known as TTS) to harbour porpoise and pinnipeds in water from vessel movements is considered unlikely. With regards to behavioural effects for harbour porpoise, the assessment predicted only localised avoidance within 60m of large vessels and 10m of medium vessels. Predicted ranges show that behavioural effects for pinnipeds in water are unlikely. It has been suggested that the primary effect of vessel movements is the masking of biologically important sounds. However, most shipping generates low frequency sound below 1kHz and is therefore outside of the auditory range for most cetaceans and it is likely to be only detectable to pinnipeds. The effect to cetaceans is considered to be negligible and has not been considered further in the assessment.
- 2.4.31 With regards to underwater noise, it is the size of the vessel that is of importance rather than the frequency of vessel movements. Considering there will be no change in the size of vessels to be used it is considered that the conclusions of the assessment of no significant effect remain valid.
- 2.4.32 To further assess the potential effects of underwater noise disturbance to marine mammals the appropriate assessment, detailed in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2), uses the underwater noise modelling results to predict the number of individuals and percentage of reference populations that could exhibit behavioural disturbance as a consequence of vessel movements. This assessment does not take account of the number of marine vessel

movements or the frequency of noise disturbance effects and therefore the results presented in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) would not be affected by the proposed change. Despite this, it is recognised that the proposed change could potentially increase the frequency of underwater noise disturbance from marine vessels, resulting in an increase in the number of individuals and percentage of reference populations potentially affected. However, given the size and temporary nature of noise disturbance effects from a single vessel movement, the proposed change is not considered to alter the outcome of the appropriate assessment as overall, the number of individuals and percentage of reference populations potentially affected would remain low.

Physical injury of marine mammals from vessel strikes

- 2.4.33 Prior to construction and on completion of the Marine Works, marine plant and vessels would be required to transit to/from the Wylfa Newydd Development Area. The numbers of vessel are small in comparison to the vessel density in the wider area of up to 25 vessels per week. Once on-site, much of the marine plant would be stationary for long periods of time or travelling at relatively slow speeds. Work boats and safety boats may travel at faster speeds but movement would generally be limited to the Wylfa Newydd Development Area. Marine mammals have been recorded in low abundance here and given the likely occurrence of other disturbance effects (e.g. underwater noise), displacement of individuals from the area is probable. The risk of vessel strikes from marine plant and vessels transiting to site and once on-site is therefore considered to be negligible.
- 2.4.34 During operation of the MOLF marine traffic would be comprised of primarily large slow-moving vessels required to transport general equipment, cement and aggregate. The slow travelling speeds of these vessels means that the likelihood of marine mammal strikes is low. Therefore the magnitude of change is predicted to be negligible and the effect on marine mammals from vessel strikes is negligible.
- 2.4.35 Despite there being an increase in the daily vessel movements, the total number of vessels using the MOLF over the whole construction programme would remain the same. The assessment demonstrated that although all types of vessels may collide with marine mammals, the most lethal and serious injuries are caused by large ships (e.g. 80m or longer) and vessels travelling at speeds faster than 14 knots. Considering there will be no change in the size of vessels used or their travel speed (10 knots), and that displacement of individuals from the area is probable due to other disturbance effects during construction, it is considered that the conclusions of the assessment of no significant effect remain valid.
- 2.4.36 To further assess the potential effects of marine vessel strikes, the appropriate assessment detailed in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) used marine mammal density estimates for the Wylfa Newydd Development Area to predict the number of marine mammals that could potentially be at risk of colliding with marine vessels assuming avoidance rates of 90%, 95% and 99%. This assessment does not

take account of the number of marine vessel movements or the potential frequency of collision risks, and therefore the results presented in the Shadow Habitats Regulations Assessment Report (Application Reference Number: 5.2) would not be affected by the proposed change. Despite this, it is recognised that the proposed change could potentially increase the risk of vessel strikes, increasing the number of individuals and percentage of reference populations potentially affected by physical injuries. However, given the slow vessel speeds and the likelihood of a single vessel strike occurring, the proposed change is not considered to alter the outcome of the appropriate assessment as overall, the number of individuals and percentage of reference populations potentially affected would remain low.

Changes to visual disturbance

- 2.4.37 Seabirds (including terns as well as other species such as Manx shearwater, *Puffinus puffinus*) exhibit relatively low sensitivity to vessel traffic ([RD2], [RD3]) and consequently, the proposed change would not result in discernible increase in visual disturbance to seabirds. This disturbance is unlikely to have more than minor effects on foraging or commuting behaviour, which would be inconsequential in terms of any population-level effect. Therefore, the proposed change would not alter the magnitude of visual disturbance effects to seabirds, remaining as reported in chapter 13 of the Environmental Statement (Application Reference Number: 6.4.13) and the Shadow Habitats Regulation Assessment Report (Application Reference Number: 5.2).

Shipping and navigation

- 2.4.38 The proposed change would result in changes to the Navigation Risk Assessment (NRA) (Environmental Statement appendix D15-1, Application Reference Number: 6.4.99) for the operational phase of the MOLF, specifically with regards to the assessment of the frequency within which hazards would be likely to occur (Table 2-2).
- 2.4.39 Two additional hazards would arise due to the proposed change:
- adequate tugs may be unavailable to incoming vessels; and
 - there may be increased non-attendance of boatmen.
- 2.4.40 The frequency of these two additional hazards arising from the proposed change would be low (≤ 2 each).
- 2.4.41 With the proposed change, there may be an increased risk during the operational phase of the MOLF, in that there could be no berth available to incoming vessels and therefore a requirement for more vessels to wait offshore for a berth to become available. This risk would be controlled by good practice mitigation measures described in chapter D15 of the Environmental Statement (Application Reference Number: 6.4.15).

Table 2-2 Identified hazard frequency in the NRA for the operational phase of the MOLF

Cause	Extant frequency (4 vessel movements per day)	Proposed change (16 vessel movements per day)	Difference in frequency arising from proposed change
Human error	18	19	+1
Human error/fatigue – ship personnel	17	18	+1
Communication error – personnel	13	14	+1
Competence	9	10	+1
Human error/fatigue – port/marine personnel	5	6	+1
Language problems	4	5	+1
Failure to comply with Vessel Traffic Services/Local Port Services/Standard Operating Procedures instructions	2	3	+1
High traffic density	1	2	+1
Tugs – inadequate/unavailable	1	2	+1
Non-attendance of boatmen	0	1	+1

- 2.4.42 The proposed change would not alter any additional mitigation (control) measures outlined in table D15-3, chapter D15 of the Environmental Statement (Application Reference Number: 6.4.15), other than increasing the frequency within which some of these controls are likely to be employed. Changes to additional mitigation (control) measure frequency arising from the proposed change are outlined in Table 2-3.
- 2.4.43 The two additional hazards outlined in paragraph 2.4.39 would be further controlled by the appointed local port services (still to be confirmed) and training of port/marine operations personnel.

Table 2-3 Identified additional mitigation (control) measure frequency for the NRA during the operational phase of the MOLF

Cause	Extant frequency (4 vessel movements per day)	Proposed change (16 vessel movements per day)	Difference in frequency arising from proposed change
Local Port Services – harbour control office	20	21	+1
Marine safety management system	16	17	+1
Port Marine Safety Code compliance	16	17	+1
Contingency plan exercises	11	12	+1
Port facility emergency plan	11	12	+1
Oil spill contingency plans	10	11	+1
Local Port Services broadcast (navigation and safety information)	10	11	+1
Pilotage services	10	11	+1
Training of port/marine operations personnel	9	10	+1
Availability of pollution response equipment	7	8	+1

2.4.44 Although some risk aspects would increase in frequency with the proposed change, with two additional hazards (see paragraph 2.4.39), these changes would not require any new embedded, good-practice, or additional mitigation measures, as the existing mitigation measures have already been applied to address other hazards.

Table 2-4 Likely new or different environmental effects

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
Environmental Statement, chapter D5	6.4.5	Air quality	<p>Although some of the effects on specific receptors would change as a result of the proposed change, the magnitude of the changes would be small and the effect descriptors would remain as predominantly negligible adverse.</p> <p>Given the information presented in paragraphs 2.4.7 to 2.4.24, the proposed change would not result in new or different likely significant environmental effects in particular effects to human and ecological receptors due to:</p> <p style="padding-left: 40px;">emissions of pollutants to air; and deposition (ecological receptors only).</p> <p>Thus, there is considered to be no change to the air quality assessment, and the conclusions presented in chapter D5 of the Environmental Statement (Application Reference Number: 6.4.5) remain as reported.</p>	Non-material change

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
Environmental Statement, chapter D6	6.4.6	Noise and vibration	<p>As demonstrated in paragraphs 2.4.27 to 2.4.29, there would only be a small increase in predicted at the properties closest to the Wylfa Newydd Development Area as a consequence of the proposed change.</p> <p>Thus, there is considered to be no new or different likely significant environmental effects to the assessment of noise and vibration and the conclusions presented in chapter D6 of the Environmental Statement (Application Reference Number: 6.4.6) remain as reported.</p>	Non-material change
Environmental Statement, D9	6.4.9	Terrestrial and freshwater ecology	<p>Given the information presented in paragraphs 2.4.14 to 2.4.24, the proposed change would not significantly alter the terrestrial and freshwater ecology assessment, in particular effects to Tre'r Gof SSSI, Cae Gwyn SSSI and Cemlyn Bay SSSI/SAC due to:</p> <p>changes to air quality.</p> <p>Tre'r Gof SSSI:</p>	Non-material change

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
			<p>Small increases in the total NOx concentration predicted to occur at this site as a consequence of the proposed change are not considered to result in new or different likely significant environmental effects and therefore would not alter the outcome of the assessment in chapter D9 of the Environmental Statement (Application Reference Number: 6.4.9). Given the alkaline nature of the fen and its potential buffering capacity to acid deposition, increases in the predicted deposition as a result of the proposed change would not result in new or different likely significant environmental effects and therefore would not alter the outcome of the assessment in chapter D9 of the Environmental Statement (Application Reference Number: 6.4.9)</p> <p>Cae Gwyn SSSI: Small increases in nitrogen and acid deposition predicted to occur at this site as a consequence of the proposed change are not considered to result in new or different likely significant environmental effects and therefore would not alter the</p>	

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
			<p>outcome of the assessment in chapter D9 of the Environmental Statement (Application Reference Number: 6.4.9).</p> <p>Cemlyn Bay SSSI/SAC: Small increases in acid deposition predicted to occur at this site as a consequence of the proposed change are not considered result in new or different likely significant environmental effects and therefore would not alter the outcome of the assessment in chapter D9 of the Environmental Statement (Application Reference Number: 6.4.9), as the site is not considered to be sensitive to acid deposition.</p> <p>Thus, there is considered to be no new or different likely significant environmental effects from the change to the terrestrial and freshwater ecology assessment and the conclusions presented in chapter D9 (Application Reference Number: 6.4.9) of the Environmental Statement remain as reported.</p>	

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
Environmental Statement, D13	6.4.13	The marine environment	<p>Despite an increase in the daily vessel movements, there will be no change in the size of vessels used, their travel speed or the total number of vessels using the MOLF over the construction period.</p> <p>As the size of vessel and travel speed are considered most important in determining effects from underwater noise and vessel strikes to marine mammals, the conclusions of the assessment of no significant effect remain as reported</p> <p>As seabirds exhibit relative low sensitivity to vessel traffic, the proposed change is not considered to result in a discernible increase in visual disturbance to seabirds. The conclusions of the assessment of no significant effect therefore remains as reported.</p> <p>Thus, there are no new or different likely significant environmental effects to the marine environment.</p>	No change

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
Environmental Statement, chapter D15	6.4.15	Shipping and navigation	<p>As outlined in paragraphs 2.4.38 to 2.4.44, the proposed change would not significantly alter the shipping and navigation assessment with respect to the frequency of hazards.</p> <p>Thus, there is considered to be no change to the shipping and navigation assessment, and no new or different likely significant environmental effects for shipping and navigation and the conclusions presented in chapter D15 of the Environmental Statement (Application Reference Number: 6.4.15) remain as reported.</p>	Non-material change
Environmental Statement, chapter D16	6.4.16	Combined topic effects	<p>As outlined in paragraph 2.4.7 to 2.4.29 and this table, the proposed change would not significantly alter the assessment of air quality and noise and vibration effects to human and ecological receptors.</p> <p>Thus, the proposed change is not considered to have any cumulative or in-combination effect above that already assessed and would not result in any new or different likely significant effects.</p>	No change

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
			Therefore, the conclusions presented in chapter D16 of the Environmental Statement (Application Reference Number: 6.4.16) remain as reported.	
Environmental Statement, chapter I4	6.9.4	Intra-project cumulative effects	<p>As outlined in paragraphs 2.4.7 to 2.4.29, the proposed change would not significantly alter the assessment of air quality and noise and vibration effects to human and ecological receptors.</p> <p>Any changes to the air quality modelling results as a consequence of the proposed change, would not have any effect on the effect descriptors detailed in the intra-project cumulative assessment for those human receptors in close proximity to the Wylfa Newydd Development Area (R4-R8).</p> <p>The proposed change would result in no more than a 1% increase in the changes as a percentage of the critical level or critical load with regard to NOx concentrations or nitrogen and acid deposition at the three ecological receptors considered (Afon Wygyr Wildlife</p>	Non-material change

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
			<p>Site, ancient woodland (ID26051) and ancient woodland). This does not affect the air quality assessment outcomes and none of the ecological receptors considered in the intra-project cumulative assessment would exceed the criteria for requiring further consideration in the terrestrial and freshwater ecological assessment (chapter D9, Application Reference Number: 6.4.9).</p> <p>Any change to the noise modelling results as a consequence of the proposed change, would not have any effect on the intra-project cumulative assessment for noise receptors.</p> <p>Thus, there is considered to be no new or different likely significant environmental effects to the intra-project cumulative effects assessment and the conclusions presented in chapter I4 of the Environmental Statement (Application Reference Number: 6.9.4) remain as reported.</p>	

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
Environmental Statement chapter I5	6.9.5	Inter-project cumulative effects	<p>As outlined in paragraph 2.4.7 to 2.4.29 and this table, the proposed change would not significantly alter the assessment of air quality and noise and vibration effects to human and ecological receptors.</p> <p>Thus, the proposed change is not considered to have any new or different likely significant environmental effects on the inter-project cumulative assessment and therefore the conclusions presented in chapter I5 of the Environmental Statement (Application Reference Number: 6.9.12) remain as reported.</p>	No change
Shadow Habitats Regulations Assessment Report	5.2	Appropriate Assessment: habitats and species (terrestrial, freshwater and coastal) of SACs and Ramsar sites	<p>Changes in air quality leading to small increases in acid deposition which would be predicted to occur at Cemlyn Bay SAC as a consequence of the proposed change would not be significant, as the site is not considered to be sensitive to acid deposition.</p> <p>Thus, there is considered to be no new or different likely significant environmental effects to the appropriate assessment and therefore the conclusions presented in the</p>	Non-material change

Document name	Application Reference Number	Chapter name/section name	New or different likely significant environmental effects	Material change/non-material change/no change
			Shadow Habitats Regulations Assessment (Application Reference Number: 5.2) remain as reported.	

2.5 Schedule of engagements

Table 2-5 Schedule of engagements

Date	Event
28 June 2018	DCO application accepted for Examination
6 July to 13 August 2018	Relevant representations period
14 August 2018	<ul style="list-style-type: none"> • Horizon notification to PINS of consultation on non-material change to vessel movements • Horizon sends consultation document for non-material change to vessel movements to consultees specified below. Follow-up calls and meetings provided as required
28 September 2018	28-day consultation on non-material change to vessel movements ends (extra time allowed for August holiday period)
W/c 1 October 2018	Horizon revises consultation document and sends to PINS as a formal request for non-material change to vessel movements
Oct/Nov 2018	Likely commencement of Examination based on typical 100-130 day duration of Pre-Examination period

List of specified consultees:

- Welsh Government
- Natural Resources Wales
- Isle of Anglesey Council
- Gwynedd Council
- Conwy County Borough Council
- North Wales Wildlife Trust
- RSPB Cymru
- National Trust
- Betsi Cadwaladr University Health Board
- Public Health Wales
- Welsh Ambulance Service Trust
- North Wales Police
- North Wales Fire and Rescue Service
- National Grid
- Welsh Water

- SP Manweb plc
- Magnox
- Nuclear Decommissioning Authority
- North Anglesey Partnership
- Destination Anglesey Partnership
- North Wales Economic Ambition Board
- Joint Nature Conservation Committee
- Cyngor Tref Amlwch (Town Council)
- Cyngor Cymuned Cylch-Y-Garn (Community Council)
- Cyngor Cymuned Llanbadrig
- Cyngor Cymuned Mechell
- Cyngor Cymuned Llanelian
- Cyngor Cymuned Rhosybol
- Talybolion Local Members
- Twrcelyn Local Members
- Royal National Lifeboat Institution
- The Maritime Coastguard Agency
- The Maritime Coastguard Agency – Holyhead
- Trinity House
- The Marine Management Organisation
- The Crown Estate
- Marine Conservation Trust
- North West & North Wales Sea Fisheries Committee
- Local residents – via Horizon’s Near Neighbour Database which is used to keep local people up to date with activity on the Wylfa Newydd site. This approach is proportionate to the nature and scale of the proposed non-material changes, and is consistent with the historic approach for communications regarding onsite activity. In total, there are 898 residential addresses in the mailing area.
- Persons with an interest in land – Horizon will consult all owners/occupiers, owners, occupiers and those with an interest in land or rights over land within the Main Site area (including those properties within the identified noise buffer area). Again, this approach is proportionate to the nature and scale of the proposed non-material changes, and is consistent with historic approaches (being the same

as the PAC4 consultation carried-out in February 2018). In total, there are 188 properties identified.

2.6 Schedule of consequential amendments to application documents

Table 2-6 Schedule of consequential amendments to application documents

Application document name	Application Reference Number	Section of document	Version to be amended	Description of amendment
Environmental Statement chapter D1: Project description	6.4.1		1.0	Project description of daily peak number of vessels
Environmental Statement chapter D5: Air quality	6.4.5	5.5	1.0	Update to air quality modelling results
Environmental Statement appendix D5-2: Dispersion modelling of emissions to atmosphere arising from main site	6.4.21	2.4	1.0	Update to vessel movement details and air quality modelling results
Environmental Statement chapter D6: Noise and vibration	6.4.6	6.5	1.0	Update to noise modelling results
Environmental Statement chapter D13: Marine Environment	6.4.13	6	1.0	Update to basis of design text
Environmental Statement appendix D15-1: Navigational Risk Assessment	6.4.99	6	1.0	Update to NRA for increased daily peak vessel movements

Application document name	Application Reference Number	Section of document	Version to be amended	Description of amendment
Environmental Statement chapter I4: Intra-project cumulative effects	6.9.4	4.2	1.0	Update to air quality modelling results
Environmental Statement appendix I4-2: Project-wide and WNDA development intra-project air quality assessment	6.9.10	5	1.0	Update to air quality modelling results
Shadow Habitats Regulations Assessment Report	5.2	8 9 10	1.0	Update to basis of design text

3 References

Table 3-1 Schedule of references

ID	Reference
RD1	The Planning Inspectorate. 2018. Advice Note 16: How to request a change which may be material. [Online]. [Accessed: June 2018]. Available from: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/07/Advice-note-16.pdf
RD2	Garthe, S and Hüppop, O. 2004. Scaling possible adverse effects of marine wind farms on seabirds: Developing and applying a vulnerability index. <i>Journal of Applied Ecology</i> . 41, pp.724-734.
RD3	Furness, R.W, Wade, H.M. and Masden, E.A. 2013. Assessing vulnerability of marine bird populations to offshore wind farms. <i>Journal of Environmental Management</i> . 119, pp.56-66.

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