

# **ABLE MARINE ENERGY PARK (MATERIAL CHANGE 2 – TR030006)**

## **UPDATED ENVIRONMENTAL STATEMENT**

### **CHAPTER 16: NOISE AND VIBRATION**

**Able Marine Energy Park, Killingholme, North Lincolnshire**



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## 16.1.0 Introduction

### Development Consent Order Context

- 16.1.1 The development consent order (DCO) for the site approved a harbour development with the associated land development, to serve the renewable energy sector. The harbour comprises a quay of 1,279m frontage, of which 1,200m is solid quay and 79m is a specialist berth formed by the reclamation of intertidal and subtidal land within the Humber Estuary.
- 16.1.2 The associated development for the above proposals includes:
- Dredging and land reclamation;
  - The provision of onshore facilities for the manufacture, assembly and storage of wind turbines and related items;
  - Works to Rosper Road, the A160 and the A180; and
  - Surface water disposal arrangements.
- 16.1.3 Documents relevant to this Chapter, that were prepared in support of the DCO application include:
- Environmental Statement (ES) Chapter 16: Noise and Vibration<sup>1</sup> (the original ES);
  - ES Annexes 16.2 to 16.8.
  - ES Chapter 10: Aquatic Ecology<sup>2</sup>
  - ES Chapter 11: Terrestrial Ecology and Birds<sup>3</sup>
  - ES Annex 11.11<sup>4</sup> - Noise Contour Maps
  - ES Annex 10.3<sup>5</sup> – MEP Effects of Underwater Piling Noise on Migratory Fish; and
  - Shadow Habitat Regulations Assessment (sHRA) Annex F: Piling Impacts on birds from AMEP<sup>6</sup>.
- 16.1.4 The original ES and Shadow Habitats Regulations Assessment<sup>7</sup> (sHRA) provided an assessment of noise and vibration impacts from the proposed development upon nearby terrestrial noise sensitive receptors. In particular, the following aspects were addressed:

<sup>1</sup><https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000321-16%20-%20Noise%20and%20Vibration.pdf>

<sup>2</sup><https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000314-10%20-%20Aquatic%20Ecology.pdf>

<sup>3</sup><https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000315-11%20-%20Ecology%20and%20Nature%20Conservation.pdf>

<sup>4</sup><https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000396-11.11%20-%20Noise%20Contour%20Maps.pdf>

<sup>5</sup><https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000383-10.3%20-%20MEP%20Impact%20of%20Underwater%20Piling%20Noise%20on%20Migratory%20Fish.pdf>

<sup>6</sup>[https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000572-16%20-%20Habitat%20Regulations%20Assessment%20Report%20\(15\).pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000572-16%20-%20Habitat%20Regulations%20Assessment%20Report%20(15).pdf)

<sup>7</sup>[https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000572-16%20-%20Habitat%20Regulations%20Assessment%20Report%20\(15\).pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030001/TR030001-000572-16%20-%20Habitat%20Regulations%20Assessment%20Report%20(15).pdf)

- Potential noise and vibration impact as a result of construction of the proposed development;
- Potential noise impact as a result of operation of the proposed development; and
- Potential noise impact as a result of any traffic flow increases as a result of the construction and operation of the proposed development.

## Consideration of Material Amendment

- 16.1.5 Chapter 16 of the original ES has been reviewed in the context of the proposed material amendment to determine whether the proposed change has the potential to alter the assessment set out within the original ES. As the findings of the review have indicated that the material amendment does not have the potential to alter the assessment as set out within the original ES, additional technical assessment is not considered to be necessary.
- 16.1.6 Chapter 16 considered the potential for noise and vibration impacts upon human receptors. Reference has been made to Chapter 10: Aquatic Ecology, Chapter 11: Terrestrial Ecology and Birds, and Annex F of the sHRA, which provided an assessment of noise and vibration impacts from the development upon ecological sensitive receptors, using noise and vibration predictions, where appropriate.

## Purpose and Structure of Chapter

- 16.1.7 This chapter of the Updated Environmental Statement (UES) considers the impact of the proposed material amendment on the planning policy and context of the area.
- 16.1.8 Within this UES chapter, consideration is given to the following, within the context of the proposed material amendment:
- changes in legislation, policy and guidance relating to noise and vibration;
  - changes in baseline conditions;
  - changes in assessment of effects; and
  - changes in proposed mitigation.

## 16.2.0 Methodology

### Changes in Legislation, Guidance and Planning Policy

- 16.2.1 Where there have been subsequent changes to legislation, policy or guidance contained within Chapter 16 of the original ES, those documents and changes are detailed below. Where legislation, policy or guidance has changed, a summary of the changes and an assessment as to whether they alter the original assessment is detailed.

#### Legislation

- 16.2.2 Relevant legislation is set out within Section 16.2 of the original ES. There have been no changes in relevant legislation since the production of the original ES.

#### Policy

##### *National Planning Policy Framework*

- 16.2.3 Regarding noise pollution, the NPPF (published subsequent to the original ES) states, “Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- *“Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development, and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- *Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.” (Paragraph 180).*

- 16.2.4 As stated above, the NPPF makes reference to mitigating and reducing to a minimum potential adverse impacts resulting from noise produced by, or impacting on a new development, but does not set absolute criteria; there the most relevant National and International standards are referred to in this assessment, which provide definitive guidance on noise impact.

##### *North Lincolnshire Local Plan*

- 16.2.5 The original ES referred to the North Lincolnshire Council (NLC) Local Plan, Policy DS1- ‘General Requirements’. Policy DS1 required that, *“A high standard of design is expected in all developments in both built-up areas and the countryside and proposals for poorly designed development will be refused.”* The policy included criteria against which all proposals would be considered. With regard to noise, policy DS1 required, *“...No unacceptable loss of amenity to neighbouring land uses should result in terms of noise...”*

- 16.2.6 The NLC Local Plan has since been replaced by the North Lincolnshire Local Development Framework, which includes the Supplementary Planning Document (SPD) ‘*Planning for Health and Wellbeing*’, (November 2016). The following policy relates to noise:

- Policy 3 ‘Well Designed Places’ requires that: *“When considering the detail of development, proposals should:... Seek to reduce noise and air pollution through ensuring planning*

*applications include a Noise Impact Assessment ... in areas of concern”.*

- 16.2.7 It is considered that the implementation of Policy 3 ‘Well Designed Places’ does not alter the assessment methodology or findings of the original ES.

#### **East Riding of Yorkshire Local Plan**

- 16.2.8 The original ES referred to the East Riding of Yorkshire (ERYC) Local Plan.
- 16.2.9 The ERYC Local Plan has since been part replaced by the East Riding Local Plan (2016). The following policies relate to noise in the context of the proposed development:
- Policy EC5: ‘Supporting the energy sector’ advises that: *“Proposals for the development of the energy sector, excluding wind energy but including the other types of development listed in Table 7, will be supported where any significant adverse impacts are addressed satisfactorily and the residual harm is outweighed by the wider benefits of the proposal. Developments and their associated infrastructure should be acceptable in terms of:.. 3. The effects of development on: i. local amenity, including noise....”.*

- 16.2.10 It is considered that the implementation of Policy EC5 does not alter the assessment methodology or findings of the original ES.

#### **Guidance**

##### **Planning Policy Guidance Note PPG24: Planning and Noise**

- 16.2.11 PPG24 was withdrawn in March 2012 on the publication of the National Planning Policy Framework (NPPF). Whilst the NPPF has replaced PPG 24 many of the principles remain the same. Furthermore, PPG24 provided measurable guidelines using a decibel scale, whilst the NPPF does not provide an easily relatable measure of objectivity.
- 16.2.12 The former guidance identified four Noise Exposure Categories (NECs) which ranged from A through to D. NECs were used primarily by Local Planning Authorities when considering Planning Applications for residential development near to transport-related noise sources.
- 16.2.13 Although referenced within the original ES, the assessment of effects was not undertaken with respect to PPG24. It is therefore considered that withdrawing of PPG24 does not change the original assessment.

##### **BS 4142:1997 Method for rating industrial noise affecting mixed residential and industrial areas**

- 16.2.14 The original ES referenced BS 4142:1997 ‘Method for rating industrial noise affecting mixed residential and industrial areas’. BS 4142:1997 has since been superseded by BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’.
- 16.2.15 The general basis for the revised BS4142:2014+A1:2019 is derived from the application of previous editions. Key changes between BS4142:1997 and BS4142:2014 are as follows:
- Consideration of uncertainty;
  - Consideration of context;
  - Night-time reference period of 15-minutes (increased from 5-minutes);



- Altered procedures for applying acoustic character corrections to specific sound levels; and
- Consideration of impact.

16.2.16 Based on information and the assessment of operational effects contained within the original ES, it is considered that revisions to the methodology contained within BS 4142:2014 + A1:2019 would not lead to significant changes in the assessment methodology or findings of the original ES.

#### *Design Manual for Roads and Bridges*

16.2.17 The Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 7 'Noise and Vibration' has been withdrawn and replaced by DMRB LA111 'Noise and Vibration' (May 2020). Methods for the calculation of road traffic noise levels (CRTN 1988) remain unchanged and criteria for determining impact magnitude due to changes in road traffic also remain unchanged.

16.2.18 It is therefore considered that the methodology and findings of the road traffic assessment as contained within Chapter 16 of the original ES remain unchanged.

### Scoping Opinion

16.2.19 Table 16-1 summarises the key aspects of the scoping opinion as relevant to noise and vibration.

**Table 16-1: Scoping Opinion**

Page & Paragraph No.	Scoping Opinion	Comments	Outcome	Reference within UES
Page 6, paragraph 2.3.4	Changes to the quay would facilitate Ro-Ro operations by allowing self-propelled transporter (SPMT) units. It is not clear how or what has been assessed in relation to the use of SPMTs.	SPMT units have been included within the original ES Chapter 16. Source data used for SPMTs is located within Annex 16.4 of the original ES.	The use of SPMTs does not represent a change to the operation of the development originally proposed and assessed.	None
Page 27, paragraph 4.5.2	It remains unclear whether the alterations in piling activities would result in additional noise impacts due to changes in extent, intensity or duration.	Consideration of alterations in piling activities has confirmed that this will not result in greater noise or vibration effects than those predicted within the original ES. Proposed mitigation remains appropriate.	Potential effects remain as not significant.	Paragraphs 16.4.2 to 16.4.7
Page 35, paragraph 4.10.1	The Inspectorate is concerned that the assumption that the proposed change in quay construction methods would not significantly	Consideration of alterations to quay construction methods has confirmed that this will not result in greater noise or vibration effects	Potential effects remain as not significant.	Paragraphs 16.4.2 to 16.4.6

Page & Paragraph No.	Scoping Opinion	Comments	Outcome	Reference within UES
	alter the characteristics of the impact or the effects for sensitive receptors particularly marine ecological receptors may be incorrect.	than those predicted within the original ES. Proposed mitigation remains appropriate.		
Page 35, paragraph 4.10.2	The Inspectorate agrees that the proposed changes are unlikely to change the traffic noise impacts previously assessed as resultant from road traffic.	The Inspectorate is content that these matters be scoped out of the UES.	Scoped out	N/A

## Additional Consultation

- 16.2.20 In addition to the EIA scoping process, a PEIR chapter (chapter 16) was prepared and submitted in April 2021, to support of the application. Within the PEIR, the original ES and other relevant documents relevant to that Chapter were reviewed in the context of the proposed material amendment to determine whether the proposed changes have the potential to alter the assessment of any change as set out within the original ES.
- 16.2.21 No responses of relevance to terrestrial noise and vibration relating to this Chapter were received from consultees. Comments received relating to underwater noise have been addressed within Chapter 10 of the original ES and UES.

## Assessment Methodology

### Study Area

- 16.2.22 The study area is as defined within the original ES and does not require amendment as a result of the proposed material amendment. On this basis, the study area as utilised within the original ES is robust and has been utilised in undertaking this UES.

### Sensitivity Criteria

- 16.2.23 Sensitivity criteria for receptors are not described within Chapter 16 of the original ES. The significance of the noise effect will depend on the receptor type and its sensitivity to the noise impact. An example matrix indicating the sensitivity of the receiving environment is shown in Table 16-2.

**Table 16-2: Receptor Sensitivity**

Sensitivity	Definition
<b>Very High</b>	Residential properties (night-time), Schools and healthcare building (daytime)
<b>High</b>	Residential properties (daytime), Special Areas of Conservation, Special Protection Areas, Sites of Special Scientific Interest (or similar areas of special interest)
<b>Medium</b>	Offices and other non-noise producing employment areas
<b>Low</b>	Industrial areas

- 16.2.24 All receptors considered within Chapter 16 of the original ES are residential and therefore sensitivity would be defined as ‘very high’ during the night and ‘high’ during the day. Noise and vibration levels at terrestrial and marine ecological receptors have been included within Chapter 16 the original ES and UES, with assessments of the potential impacts upon ecological receptors being addressed within Chapters 10 and 11 of the original ES and this UES.

#### **Magnitude of Change (Impact)**

- 16.2.25 Criteria to describe magnitude of changes are as defined within Table 16.4 of the original ES.

#### **Significance of Effect**

- 16.2.26 Significance criteria for assessing noise impacts are as defined within Table 16.5 the original ES.

#### **Mitigation Hierarchy**

- 16.2.27 Mitigation measures to reduce sound from construction and operational phases have been recommended within the original ES. Whilst not defined within the original ES, the preference would always be to reduce noise at source where practicable, before the implementation of other measures (e.g. screening). The recommended mitigation measures have been proposed with reference to best practice guidance.

#### **Effects Not Requiring Further Assessment**

- 16.2.28 The proposed amendments will not affect road traffic (as referenced within paragraph 4.10.2 of the Scoping Opinion), therefore there will be no new or different impacts associated with road traffic noise. No new or different impacts associated with noise during operation will arise as a result of the proposed amendments.

## 16.3.0 Changes in Baseline Conditions

### DCO Baseline

- 16.3.1 DCO baseline conditions are set out within Section 16.5 of the original ES.

### DCO Future Baseline

- 16.3.2 DCO future baseline conditions (road traffic) have been considered within the original ES.

### Current Baseline

- 16.3.3 Chapter 16 of the original ES identified human noise sensitive receptors in the vicinity of the proposed development. The majority of receptors are located in South and North Killingholme, and to the north of the Humber; a considerable distance from the proposed development. Receptors S1 (North Killingholme Low Lighthouse and the Lookout), S2 (Station House) and S3 (Hazeldene, Marsh Lane) are within 100m of the site boundary.
- 16.3.4 With regard to terrestrial ecological sensitive receptors, North Killingholme Haven Pits, located adjacent to the northern site boundary, is the nearest and most sensitive terrestrial ecological receptor, being a designated Site of Special Scientific Interest (SSSI) and a component part of the Humber Estuary Special Protection Area (SPA) and Ramsar site.

### Changes in Baseline

- 16.3.5 Since the original ES was undertaken, Receptors S1 and S2 are no longer in residential use; they were subsequently subject to compulsory acquisition by AHPL and will not return to residential use. Receptor S3 at Marsh Lane remains occupied and in residential use.
- 16.3.6 Receptor S3 (Hazeldene, Marsh Lane) remains the nearest sensitive receptor to the proposed development. There have been no changes in the distance from Receptor S3 to the proposed development, and there are not any new noise sensitive receptors that have been introduced nearer to, or in proximity to, the proposed development.
- 16.3.7 The nearest new committed noise sensitive receptors would be residential development (Peter Ward Homes) on the north western edge of Immingham. This location is approximately 1.8km from the site boundary. As this committed development is not in proximity to the proposed development, and receptors which are nearer have been included within the original ES, it is considered that further consideration of future receptors is not required.
- 16.3.8 There are no identified changes to areas surrounding sensitive receptors that are considered to have led to significant changes in baseline conditions.

## 16.4.0 Assessment of Effects

### Additional Construction Phase Effects

- 16.4.1 The proposed amendments result in a different alignment of the quay wall. Drawing AME-002-00123 provided in Appendix UES16-1 shows that the new alignment will not result in a change in proximity of piling to sensitive receptors, including North Killingholme Haven Pits SSSI.
- 16.4.2 Regarding pile types and piling methods, predictions of vibration and noise effects in the original ES were based on the assumptions that tubular steel piling and sheet piling for the quay wall would be used. Assumptions within the calculations included two hydraulic hammer piling rigs operating simultaneously, performing 20,000-40,000 hammer strikes per day, with a hammer blow energy of up to 500kJ.
- 16.4.3 Anchor piles are now proposed as an option to flap anchors at the back of the quay wall. Anchor piles are shorter than quay piles and will only require driving into superficial deposits, rather than chalk (as with quay piles). The anchor piles would therefore require a smaller hammer and less energy per blow, compared to quay pile driving.
- 16.4.4 As per the original ES, no more than two piling rigs will be expected to operate simultaneously, performing 20,000-40,000 strikes per day.
- 16.4.5 As described above, the new alignment of the quay wall will not result in piling being undertaken any nearer to sensitive receptors than previously proposed, and no change is proposed to the driving hammer or the number of piling rigs, and the hammer strikes per day will remain unchanged from that considered within original ES.
- 16.4.6 It is therefore considered that changes to the alignment of the quay wall and types of piles to be used will not result in greater noise or vibration effects than those predicted within Chapter 16 the original ES.
- 16.4.7 With reference to Tables 16.6 to 16.9 of the original ES, the potential impact magnitude of unmitigated construction noise levels therefore remains as 'negligible' to 'minor', with a level of effect of 'not significant' (Table 16.5 of the original ES).
- 16.4.8 With regard to vibration impacts during construction, paragraph 6.5.24 of the original ES defined acceptable threshold PPV limits based on guidance contained within BS 5228-1: 2009 'Code of practice for noise and vibration control on construction and open sites'. The assessment of construction vibration found that ground vibration from pile driving was likely to be perceptible only at Receptors S1 (North Killingholme Low Lighthouse and the Lookout) and S2 (Station House). As Receptors S1 and S2 are no longer in residential use and will not return to residential use, unmitigated construction vibration levels are therefore assessed as 'negligible' with a level of effect of 'not significant'.
- 16.4.9 In summary, there are no changes in the method of construction and no material changes (in terms of noise and vibration) to the location of the material amendment that would lead to greater noise or vibration effects than those identified within the original ES. Further consideration of construction phase effects is not required.

## Additional Operational Phase Effects

- 16.4.10 Whilst craneage associated with the revised quay layout will be located in closer proximity to the North Killingholme Haven Pits SSSI, this minor locational change in operational machinery is considered de minimis and will not result in a change to the assessment of the overall noise impact upon this sensitive receptor as contained within the original ES.
- 16.4.11 On this basis, there are no changes to the proposed operation that would result in changes to predicted operational sound levels and therefore the original assessment of effects. Further consideration of operational phase effects is not required.
- 16.4.12 There are no changes to the proposed operation that would result in changes to predicted operational sound levels and therefore the original assessment of effects. Further consideration of operational phase effects is not required.

## Additional Cumulative Effects

- 16.4.13 A review of committed developments (additional to those considered within the original ES) indicates that noise emissions will be unlikely to lead to a perceptible increase in sound levels at receptor locations, due to distance and existing ambient and background sound levels. Further consideration of cumulative effects is not required.

## Consideration of DCO

- 16.4.14 There are no identified changes in baseline conditions or the assessment of effects that will result in new or significant effects.

## 16.5.0 Requirement for Additional Mitigation

### DCO Mitigation

- 16.5.1 Appropriate mitigation has been identified in Chapter 16, Section 16.7 of the original ES and secured through the DCO itself (Schedule 8 paragraphs 37-43 and Schedule 11 paragraph 37) and the amended quay will be constructed in accordance with this mitigation. It is considered that proposed mitigation remains appropriate.
- 16.5.2 Suitable mitigation measures to ensure that potential noise and vibration effects are managed and controlled to acceptable levels where practicable will be implemented are described within the original ES.
- 16.5.3 The original ES identifies a number of mitigation measures to be utilised as part of the DCO, including (but not limited to):
- Piling shrouds and soft starts.
  - Implementation of Best Available Technology Economically Achievable (BATEA) and Best Management Practice (BMP) by all contractors.
  - Proper use and maintenance of plant.
  - All vehicles and mechanical plant should be fitted with exhaust silencers.
  - Selection of inherently quiet plant where appropriate.
  - Plant in intermittent use to be shut down or throttled to minimum when not in use.
  - All ancillary plant should be positioned to minimise noise disturbance. If necessary, acoustic enclosures/screening should be provided.
  - Construction contractors would be obliged to adhere to the codes of practice construction working and piling, given in BS5228.

### Alternate or Additional Mitigation

- 16.5.4 The mitigation measures identified within the original ES and to be implemented as part of the DCO are considered entirely appropriate. No alternate or additional mitigation measures beyond that contained within the original ES are required.

## 16.6.0 Residual Effects

### Construction Phase

- 16.6.1 Following consideration of mitigation, residual effects relating to noise and vibration during the construction phase are identified within the original ES.
- 16.6.2 Given that the proposed material amendment will not alter the findings of the original ES, the residual noise impacts for the construction phase remain as 'minor' to 'negligible', with a level of effect of 'not significant' (Table 16.15 to Table 16.8 of the original ES).
- 16.6.3 As Receptors S1 and S2 are no longer in residential use and will not return to residential use, construction vibration levels are assessed as 'negligible' with a level of effect of 'not significant'.

### Operational Phase

- 16.6.4 Following consideration of mitigation, residual effects relating to noise during the operational phase are identified within the original ES.
- 16.6.5 Given that the proposed material amendment will not alter the findings of the original ES, the predicted noise levels typical operations will remain below the threshold values, and therefore no residual effects for the operational phase are predicted (paragraph 16.8.3 of the original ES).

### Consideration of DCO

- 16.6.6 Following this review, it is considered that there are not any changes to the assessment of residual effects identified within the original ES. On this basis, the findings of the original ES are considered to be appropriate and robust when considering the proposed material amendment.



## 16.7.0 Other Environmental Issues

16.7.1 This Section seeks to detail any considerations and environmental effects which have been identified with regard to the range of topics which have been introduced into EIA requirements through the EIA Regulations 2017. Where there are no such considerations or environmental effects, this is also specified below for clarity.

16.7.2 Refer to Chapter 25 for a summary of the 'Other Environmental Issues' identified across all of the technical assessments undertaken and the Chapters prepared as part of the ES.

### Other Environmental Issues of Relevance

#### Infrastructure

16.7.3 None identified.

#### Waste

16.7.4 None identified.

#### Population and Human Health

16.7.5 The scope of any noise and vibration assessment inherently considers the population and human health, given the known impacts of noise and vibration on human health, as assessment criteria contained within the relevant guidance documents are based on human response to noise and vibration.

16.7.6 Potential impacts on human health have therefore been assessed for both the construction and operational phases. As potential noise and vibration impacts upon sensitive receptors have been assessed as 'negligible' to 'minor' at worst, significance of effects upon population and human health are concluded to be 'not significant'.

#### Climate and Carbon Balance

16.7.7 None identified.

#### Risks of Major Accidents and/or Disasters

16.7.8 The risks of major accidents and/or disasters is not considered of relevance to the noise and vibration Chapter.

### Summary

16.7.9 With the exception of population and human health, which is concluded as being 'not significant', no other environmental issues of relevance have been identified.

## 16.8.0 Summary of Effects

- 16.8.1 Chapter 16 of the original ES has been reviewed in the context of the proposed material amendment, to determine whether the proposals, and subsequent changes in policy, guidance and baseline conditions have the potential to lead to changes in the findings as described within the original ES.
- 16.8.2 Following this review, no changes have been identified that would alter the assessment of effects as described within the original ES.

## 16.9.0 Conclusions

- 16.9.1 This review has identified that the proposed material amendment, and changes in policy, guidance and baseline conditions that have occurred since the original DCO application, will not alter the findings presented within the original ES. On this basis, it is not necessary to undertake further technical assessments in support of the proposed material amendment.
- 16.9.2 It is therefore concluded that Chapter 16: Noise and Vibration of the original ES remains valid and that the proposed material amendment is entirely appropriate in the context of the extant DCO.

## REFERENCES

- Department for Communities and Local Government, (1994). Planning Policy Guidance Note PPG24: Planning and Noise
- British Standard BS 4142:1997 Method for rating industrial noise affecting mixed residential and industrial areas. BSI Standards Ltd
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