

# MONA OFFSHORE WIND PROJECT

## Environmental Statement

### Volume 3, Chapter 11: Inter-related effects (onshore)

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Image of an offshore wind farm

MONA OFFSHORE WIND PROJECT

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### Glossary

Term	Meaning
Inter-related effects	Multiple effects upon the same receptor arising from the Mona Offshore Wind Project. These occur either where a single effect acts upon a receptor over time to produce a potential additive effect or where a number of separate effects, such as underwater sound and collision risk, affect a single receptor.
Project lifetime effects	Assessment of the scope for effects that occur throughout more than one phase of the Mona Offshore Wind Project, (construction, operations and maintenance and decommissioning) to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three key project stages.
Receptor-led effects	Assessment of the scope for multiple effects to interact to create inter-related effects on a receptor. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

### Acronyms

Acronym	Description
CoCP	Code of Construction Practice
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EWGs	Expert Working Groups
GVA	Gross Value Added
IEFs	Important Ecological Features
INNS	Invasive and Non-native Species
NCR	National Cycle Route
NPS	National Policy Statement
NPS EN-1	Overarching NPS for Energy
NPS EN-3	NPS for Renewable Energy Infrastructure
NPS EN-5	NPS for Electricity Networks Infrastructure
NSIP	Nationally Significant Infrastructure Project
PRoW	Public Right of Way
SoCC	Statement of Community Consultation

### Units

Unit	Description
ha	Hectares

## 11 Inter-related effects (onshore)

### 11.1 Introduction

#### 11.1.1 Overview

11.1.1.1 This chapter of the Environmental Statement presents the assessment of inter-related onshore effects of the Mona Offshore Wind Project during the construction, operations and maintenance, and decommissioning phases. The offshore inter-related effects of the Mona Offshore Wind Project are addressed in Volume 2, Chapter 11: Inter-related effects (offshore) of the Environmental Statement.

11.1.1.2 The following assessments in Volume 3 and 4 of the Environmental Statement have informed the assessment of onshore inter-related effects:

- Volume 3, Chapter 1: Geology, hydrogeology, and ground conditions of the Environmental Statement
- Volume 3, Chapter 2: Hydrology and flood risk of the Environmental Statement
- Volume 3, Chapter 3: Onshore ecology of the Environmental Statement
- Volume 3, Chapter 4: Onshore and intertidal ornithology of the Environmental Statement
- Volume 3, Chapter 5: Historic environment of the Environmental Statement
- Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement
- Volume 3, Chapter 7: Land use and recreation of the Environmental Statement
- Volume 3, Chapter 8: Traffic and transport of the Environmental Statement
- Volume 3, Chapter 9: Noise and vibration of the Environmental Statement
- Volume 3, Chapter 10: Air quality of the Environmental Statement
- Volume 4, Chapter 3: Socio-economics of the Environmental Statement.

11.1.1.3 Onshore inter-related effects associated with climate change and health are addressed within Volume 4, Chapters 2 and 4 of the Environmental Statement respectively and are not considered in this chapter. In addition, given the nature of potential impacts identified in Volume 4 Chapter 1: Aviation and Radar of the Environmental Statement, it is considered that there is no potential for onshore inter-related effects with respect to aviation and radar.

#### 11.1.2 Purpose of chapter

11.1.2.1 The primary purpose of the Environmental Statement is outlined in Volume 1, Chapter 1: Introduction of the Environmental Statement. In summary, the primary purpose of an Environmental Statement is to support the Development Consent Order (DCO) application for Mona Offshore Wind Project under the Planning Act 2008 (the 2008 Act). It is a Nationally Significant Infrastructure Project (NSIP) as defined by Section 15(3) of the Planning Act 2008 (as amended) (the 2008 Act). As such, there is a requirement to submit an application for a DCO to the Planning Inspectorate to be decided by the Secretary of State for the Department for Energy Security and Net Zero.

11.1.2.2 The purpose of this chapter is to identify the potential onshore inter-related effects.

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- 11.1.2.3 The EIA Regulations require an assessment of the interaction between factors as stated in Regulation 5 (2):
- “(2) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors-
- (a) population and human health;
  - (b) biodiversity with particular attention to species and habitats protected under Directive 92/43/EEC(1) and Directive 2009/147/EC(2);
  - (c) land, soil, water, air and climate;
  - (d) material assets, cultural heritage and the landscape;
  - (e) the interaction between the factors referred to in sub-paragraphs (a) to (d).”
- 11.1.2.4 An assessment of inter-related effects has been undertaken using the methodology identified in section 11.5 and this Environmental Statement chapter sets out:
- The receptor groups identified for the purposes of the inter-related assessment (onshore)
  - The potential for effects on receptor groups across the three key project phases (construction, operations and maintenance and decommissioning)
  - The potential for multiple effects on a receptor group, as presented within the topic-specific chapters, to interact to create inter-related effects.

### 11.1.3 Study area

- 11.1.3.1 Due to the differing spatial extent of effects experienced by different onshore receptors, the study area for potential onshore inter-related effects varies according to topic and receptor. The potential onshore inter-related effects considered in this chapter are, therefore, also limited to the study areas defined in each of the topic-specific chapters.

## 11.2 Policy context

### 11.2.1 National Policy Statements

- 11.2.1.1 Planning policy on renewable energy infrastructure is presented in Volume 1, Chapter 2: Policy and legislative context of the Environmental Statement. Planning policy on offshore renewable energy NSIPs, specifically in relation to inter-related effects (onshore):
- Overarching National Policy Statement (NPS) for Energy (NPS EN-1) which sets out the UK Government’s policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero, 2023a)
  - NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero, 2023b)
  - NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero, 2023c).
- 11.2.1.2 NPS EN-1 includes guidance on what matters are to be considered in the assessment. These are summarised in Table 11.1.
- 11.2.1.3 NPS-3 and NPS-5 do not include any guidance relevant to inter-related effects.



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**Table 11.1: Summary of the NPS EN-1 provisions relevant to inter-related effects (onshore).**

Summary of NPS EN-1 provision	How and where considered in the Environmental Statement
The Secretary of State should consider how the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place (NPS EN-1, paragraph 4.3.19).	Project lifetime effects and receptor-led effects are assessed throughout this chapter of the Environmental Statement.

## 11.3 Consultation

- 11.3.1.1 Comprehensive consultation and engagement with stakeholders have formed an integral part of the development of the Mona Offshore Wind Project. The key stages of the consultation and engagement activities that have been undertaken as part of the Mona Offshore Wind Project are set out below. More details on all public consultations can be found in the Consultation report (Document Reference E3).
- EIA Scoping May – June 2022: The EIA Scoping Report outlined details of the proposed approach to EIA and was submitted to the Planning Inspectorate in May 2022
  - Non-statutory Public Consultation 7 June to 3 August 2022: The Applicant carried out the first phase of non-statutory public consultation in the summer of 2022
  - Non-statutory targeted Public Consultation 26 September to 7 November 2022: A second stage of targeted non-statutory consultation was held in autumn 2022 seeking views on potential sub-station locations
  - Statement of Community Consultation 7 October to 4 November 2022 and 9 March to 6 April 2023: The Applicant prepared an initial Statement of Community Consultation (SoCC) in autumn 2022. This set out how local communities would be consulted on the Mona Offshore Wind Project. A second round of consultation was undertaken on an updated draft SoCC to reflect some minor changes to the programme
  - Additional Statutory Consultation Autumn/Winter 2023/2024: Throughout the development process through continued diligent inquiry, additional landowners and interests have been identified
  - Expert Working Groups (EWGs) have been established to discuss topic-specific issues with relevant stakeholders. EWG meetings have been held at key stages in the EIA process or when new information has become available for each topic, to provide the opportunity for stakeholders to provide feedback and advice to inform the proposals at an early stage.
- 11.3.1.2 None of the issues raised during consultation activities for the Environmental Statement have been specific or applicable to inter-related effects (onshore).

## 11.4 Data sources

- 11.4.1.1 The baseline environments for the receptor groups considered in this chapter are specific to each receptor group and set out in the relevant topic-specific chapters of

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the Environmental Statement. The chapters used for the assessment in this chapter are outlined in section 11.1.1.

### 11.5 Assessment methodology

- 11.5.1.1 The assessment methodology has taken into account Planning Inspectorate Advice Note 9 (Planning Inspectorate, 2018). Paragraph 4.13 states: “*ensure that interactions (interactions between aspect assessments includes where a number of separate impacts, e.g. noise and air quality, affect a single receptor such as fauna) between aspect (the Planning Inspectorate refers to ‘aspects’ as meaning the relevant descriptions of the environment identified in accordance with the EIA Regulations) assessments are taken into account relevant to the worst case scenario(s) established and that careful consideration is given to how these are assessed.*”
- 11.5.1.2 The approach also serves to accommodate Planning Inspectorate Advice Note 9 regarding the need to consider the assessment as a whole and not as a series of unconnected specialist reports.
- 11.5.1.1 The approach to assessing inter-related effects within this chapter has followed a four stage process, as summarised in Table 11.2 and outlined below.

**Table 11.2: Summary of staged approach to the inter-related effects assessment (onshore) for the Mona Offshore Wind Project.**

Stage	Description
1	Assessment of effects undertaken for individual EIA topic areas within the Environmental Statement.
2	Review of topic assessments to identify likely receptor groups requiring assessment for onshore inter-related effects.
3	Identification of potential inter-related (onshore) effects on identified receptor groups, through a review of the topic-specific assessments within the Environmental Statement.
4	Assessment undertaken on how individual effects identified in topic specific assessments may combine to create inter-related effects on each receptor group for: <ul style="list-style-type: none"> <li>• ‘Project lifetime effects’ (i.e. during construction, operations and maintenance and decommissioning phases)</li> <li>• ‘Receptor-led effects’ (i.e. multiple effects on a single receptor).</li> </ul>

#### Stage 1: Topic-specific assessments

- 11.5.1.2 The first stage of the assessment of onshore inter-related effects is presented in each of the individual onshore Environmental Statement topic chapters (see section 11.1.1) and comprises the individual assessments of effects on receptors across the construction, operations and maintenance and decommissioning phases of the Mona Offshore Wind Project.

#### Stage 2: Identification of receptor groups

- 11.5.1.3 Stage 2 involved a review of the assessments undertaken in the topic-specific chapters to identify ‘receptor groups’ requiring assessment within the inter-related effects assessment.



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- 11.5.1.4 The term 'receptor group' is used to highlight that the approach taken for the inter-related effects assessment will not assess every individual receptor assessed at the EIA stage, but rather potentially sensitive groups of receptors.
- 11.5.1.5 The receptor groups assessed can be broadly categorised as follows:
- Geological designated sites
  - Land/soil (contamination)
  - Groundwater, including aquifers
  - Surface water bodies (quality and flow)
  - Habitats and species
  - Landscape designations
  - Landscape character
  - Buried archaeology
  - Historic assets and their setting
  - Agricultural land and farm holdings
  - Socio-economic factors, including tourism and the renewable energy sector
  - Humans, including residents, users of schools/hospitals, community facilities, places of work, users of the local road/rail network and Public Right of Way (PRoW).
- 11.5.1.1 Volume 4, Chapter 4: Human health of the Environmental Statement considers inter-related effects, including those associated with air and noise emissions. Therefore, to avoid unnecessary duplication of text, this has not been repeated in this chapter.
- 11.5.1.2 Volume 4, Chapter 2: Climate change also addresses inter-related effects within the chapter, including those associated with shipping and navigation. Also relevant topic chapters have considered the effects of climate change for those topics as part of the future baseline.
- 11.5.1.3 Given the nature of receptors identified in Volume 4 Chapter 1: Aviation and Radar of the Environmental Statement, it is considered that there is no potential for onshore inter-related effects with respect to aviation and radar.

### **Stage 3: Identification of potential inter-related effects on receptor groups**

- 11.5.1.4 Following the identification of receptor groups, the potential inter-related effects on these receptor groups were identified through a review of the impact assessment sections for each topic chapter of the Environmental Statement together with professional judgement. Further detail regarding the expertise of those undertaking the EIA, including the assessment of onshore interrelated effects is provided in Appendix A: Statement of expertise, Volume 1, Chapter 1: Introduction of the Environmental Statement.
- 11.5.1.5 Individual effects on each of the key receptors were identified across the three project phases (i.e. project lifetime effects) as well as the interaction of multiple effects on a receptor (i.e. receptor-led effects), as defined in Table 11.3 below.

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**Table 11.3: Definitions of project lifetime and receptor-led inter-related effects.**

Effect type	Definition
Project lifetime effects	Assessment of the scope for effects that occur throughout more than one phase of the Mona Offshore Wind Project (construction, operations and maintenance and decommissioning) to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three key project stages.
Receptor-led effects	Assessment of the scope for multiple effects (including between topics) to interact to create inter-related effects on a receptor. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

11.5.1.6 Table 11.4 below identifies the potential for project lifetime effects to occur for each receptor group and demonstrates how/where potential project lifetime effects have been addressed within the existing chapters of the Environmental Statement.

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**Table 11.4: Potential project lifetime effects**

Receptor group	Relevant chapter(s)	Potential effects			Potential for project lifetime effects
		C	O	D	
Geological designated sites	<ul style="list-style-type: none"> <li>Volume 3, Chapter 1: Geology, hydrogeology, and ground conditions of the Environmental Statement.</li> </ul>	✓	✗	✗	The relevant Environmental Statement chapter concludes that geological designated sites would only be impacted during the construction phase. It does not identify potential effects on geological designated sites during the operations and maintenance and decommissioning phase. Therefore, it is considered that there is no potential for project lifetime effects to occur on this receptor group.
Land/soil (contamination)		✓	✗	✗	The relevant Environmental Statement chapter concludes that existing contaminated land would only be impacted during the construction phase. It does not identify potential effects on contaminated land during the operations and maintenance and decommissioning phase. Therefore, it is considered that there is no potential for project lifetime effects to occur on this receptor group.
Groundwater, including aquifers		✓	✓	✓	The relevant Environmental Statement chapter identifies potential effects on aquifers, groundwater quality and flow during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Surface water bodies (quality and flow)	<ul style="list-style-type: none"> <li>Volume 3, Chapter 2: Hydrology and flood risk of the Environmental Statement.</li> </ul>	✓	✗	✓	The relevant Environmental Statement chapter identifies potential effects on surface waterbodies during the construction and decommissioning phases. It does not identify potential effects on surface waterbodies during the operations and maintenance phase. Given the extended period of time that will have elapsed between the construction and decommissioning phases, it is considered that there is no potential for project lifetime effects to occur on this receptor group.
Habitats and species	<ul style="list-style-type: none"> <li>Volume 3, Chapter 3: Onshore ecology of the Environmental Statement.</li> <li>Volume 3, Chapter 4: Onshore and intertidal ornithology of the Environmental Statement.</li> </ul>	✓	✓	✓	The relevant Environmental Statement chapters identify potential effects on habitats and species during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Landscape designations		✓	✓	✓	The relevant Environmental Statement chapter identifies potential effects on landscape designations during the construction, operations and maintenance and decommissioning

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Receptor group	Relevant chapter(s)	Potential effects			Potential for project lifetime effects
		C	O	D	
	<ul style="list-style-type: none"> <li>Volume 3, Chapter 6: Landscape and Visual Resources of the Environmental Statement</li> </ul>				phase. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Landscape character		✓	✓	✓	The relevant Environmental Statement chapter identifies potential effects on landscape character during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Buried archaeology	<ul style="list-style-type: none"> <li>Volume 3, Chapter 5: Historic environment of the Environmental Statement</li> </ul>	✓	✗	✗	The relevant Environmental Statement chapter identifies potential effects on buried archaeology during the construction phase of the Mona Offshore Wind Project. However, effects during the operations and maintenance and decommissioning phases of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they were unlikely to occur. Therefore, it is considered that there is no potential for project lifetime effects to occur on this receptor group.
Historic assets and their setting		✓	✓	✓	The relevant Environmental Statement chapter identifies potential direct physical impacts on above ground historic assets; potential non-physical impacts on above ground historic assets as a result of change within their setting; and potential impacts on the character of the historic landscape during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Agricultural land and farm holdings	<ul style="list-style-type: none"> <li>Volume 3, Chapter 7: Land use and recreation of the Environmental Statement</li> </ul>	✓	✓	✓	The relevant Environmental Statement chapter identifies potential effects on agricultural land and farm holdings during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Recreational resources, including Coastal Areas, Wales Coast Path and National Cycle Route (NCR) 5		✓	✗	✗	The relevant Environmental Statement chapter identifies potential effects on recreational resources, including Coastal Areas, Wales Coast Path and NCR 5 during the construction phase. It does not identify potential effects on recreational resources during the operations and maintenance and decommissioning phase of the Mona Offshore Wind Project. Therefore, it is considered that there is no potential for project lifetime effects to occur on this receptor group.
The potential impact on economic receptors including employment and GVA and the potential impact on	<ul style="list-style-type: none"> <li>Volume 4, Chapter 3: Socio-economics of the Environmental Statement</li> </ul>	✓	✗	✗	The relevant Environmental Statement chapter identifies potential effects on employment, Gross Value Added (GVA) and also population, housing and accommodation for the construction phase. It does not identify potential effects during the operations and

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Receptor group	Relevant chapter(s)	Potential effects			Potential for project lifetime effects
		C	O	D	
population, housing and accommodation					maintenance and decommissioning phases. Therefore, it is considered that there is no potential for project lifetime effects to occur on this receptor group.
Tourism.	<ul style="list-style-type: none"> <li>Volume 4, Chapter 3: Socio-economics of the Environmental Statement</li> </ul>	✓	✓	✓	The relevant Environmental Statement chapter identifies potential effects on tourism during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.
Humans including residents, users of schools/hospitals, community facilities, places of work users of the local road/rail network and PRow	<ul style="list-style-type: none"> <li>Volume 3, Chapter 6: Landscape and Visual Resources of the Environmental Statement</li> <li>Volume 3, Chapter 7: Land use and recreation of the Environmental Statement</li> <li>Volume 3, Chapter 8: Traffic and transport of the Environmental Statement of the Environmental Statement</li> <li>Volume 3, Chapter 9: Noise and vibration of the Environmental Statement</li> <li>Volume 3, Chapter 10: Air quality of the Environmental Statement</li> <li>Volume 4, Chapter 4: Human health assessment of the Environmental Statement.</li> </ul>	✓	✓	✓	The relevant Environmental Statement chapters identify potential effects on humans, including residents, users of schools/hospitals, community facilities, places of work and users of the local road/rail network and PRow during the construction, operations and maintenance and decommissioning phases. Therefore, it is considered that there is potential for project lifetime effects to occur on this receptor group.

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- 11.5.1.7 The following receptor groups may experience project lifetime effects and have been considered within the assessment of inter-related effects (onshore):
- Groundwater, including aquifers
  - Habitats and species
  - Landscape designations
  - Landscape character
  - Historic assets and their setting and the character of the historic landscape
  - Agricultural land and farm holdings
  - Tourism
  - Humans, including residents, users of schools/hospitals, community facilities, places of work, users of the local road/rail network and recreation including PRow.
- 11.5.1.8 Table 11.5 below identifies the potential for receptor-led effects to occur for each receptor group identified and demonstrates how/where potential receptor-led effects have been addressed within the existing chapters of the Environmental Statement.



Table 11.5: Potential receptor-led effects.

Receptor group	Potential interaction between topic area and receptor group										
	Geology, hydrogeology, and ground conditions	Hydrology and flood risk	Onshore ecology	Historic environment	Land use and recreation	Traffic and transport	Noise and vibration	Air quality	Onshore and intertidal ornithology	Landscape and visual resources	Socio-economics
Geological designated sites	Yes	No	No	No	No	No	No	No	No	No	No
Land/soil (contamination)	Yes	No	No	No	Yes	No	No	No	No	No	No
Groundwater, including aquifers	Yes	Yes	No	No	No	No	No	No	No	No	No
Surface water bodies (quality and flow)	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No
Habitats and species	No	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	No
Landscape designations	No	No	No	No	No	No	Yes	No	No	Yes	No
Landscape character	No	No	Yes	No	No	No	Yes	No	No	Yes	No

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Receptor group	Potential interaction between topic area and receptor group										
	Geology, hydrogeology, and ground conditions	Hydrology and flood risk	Onshore ecology	Historic environment	Land use and recreation	Traffic and transport	Noise and vibration	Air quality	Onshore and intertidal ornithology	Landscape and visual resources	Socio-economics
Buried archaeology	No	No	No	Yes	No	No	No	No	No	No	No
Historic assets and their setting	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Agricultural land and farm holdings	Yes	No	No	No	Yes	Yes	No	No	No	No	No
Socio-economic factors, including tourism	No	No	No	No	Yes	No	No	No	No	Yes	Yes
Humans, including residents, users of schools/hospitals, community facilities and places of work, users of the local road/rail network and recreation including PRow	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

#### **Stage 4: Assessment of inter-related effects on each receptor group**

- 11.5.1.9 The significance of the individual effects is presented in the summary of impacts, mitigation measures and monitoring tables for each receptor group within Table 11.6. All conclusions for significance of effect assume the successful implementation of mitigation measures where required (i.e. the residual effect).
- 11.5.1.10 A descriptive assessment of the scope for these individual effects to interact to create a different or greater effect is then undertaken. This assessment incorporates qualitative and, where possible, quantitative assessments. The assignment of significance of effect to any such inter-related effect is not undertaken, rather, any inter-related effects that may be of greater significance than the individual effects acting in isolation on a given receptor are identified and discussed within this chapter of the Environmental Statement.
- 11.5.1.11 The inter-related effects assessment presents and utilises the maximum significant adverse effects for the Mona Offshore Wind Project (i.e. the Maximum Design Scenarios, including successful implementation of the primary and tertiary measures adopted as part of the Mona Offshore Wind Project where appropriate), noting that individual effects may not be significant at the topic-specific level but could become significant when their inter-related effect is assessed.
- 11.5.1.12 Effects of negligible significance or greater (e.g. minor, moderate, major) may occur during one phase of the project life cycle. For example, effects may occur during the construction phase but not the operations and maintenance or decommissioning phases. Where this is the case, it has been made clear that there will be no inter-related effects across the project phases. Effects of negligible significance identified in the individual topic assessments have been included, since there is the potential for inter-related effects to increase the level of effect when considered in conjunction with other sources.

### **11.6 Assessment of inter-related effects**

- 11.6.1.1 For each of the receptor groups listed in section 11.5.3.5 above, the scope for impacts to these receptors to create project lifetime effects over all the project phases and/or receptor-led effects through interacting together on the receptor group in question has been explored and discussed in the following sections.
- 11.6.1.2 sets out the project lifetime effects that are predicted to arise during the construction, operations and maintenance, and decommissioning phases of the Mona Offshore Wind Project.

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**Table 11.6: Geology, hydrogeology and ground conditions project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impacts due the alteration or deterioration of aquifer and ground water quality	Up to Minor adverse	Up to Minor adverse	Up to Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. minor adverse). Therefore, it is considered that the project lifetime effects of the Mona Offshore Wind Project on groundwater, including aquifers and ground water will not be different to those identified in the Environmental Statement chapter for the separate phases.	No change

### Receptor led effects

Geological designated sites: Direct impacts on such sites have been considered in the topic chapter of the Environmental Statement.

Land/soil (contamination): Construction or decommissioning activities do have the potential to cause soil / land contamination principally through accidental emissions or can mobilise pre-existing areas of soil / land contamination through direct disturbance or the creation of new pathways. In the event of the latter, other receptor groups could be potentially affected. These effects have been evaluated in the topic chapter of the Environmental Statement.

Groundwater including aquifers: Construction, operation and decommissioning does have the potential to affect groundwater quality and quantity. These effects have been evaluated in the topic chapter of the Environmental Statement.

Surface water bodies (quality and flow): An impact on groundwater quality or quantity (in terms of levels and flow) does have potential to affect surface water bodies. However, on the basis of the geological setting for the onshore proposals it has been shown that either:

- In catchments underlain by glacial till the groundwater contribution to surface water bodies (i.e. baseflow) is of little quantitative importance;
- In catchments underlain by more important Secondary A or Principal aquifer units, impact on level and flow are very small and hence the indirect impact on surface water bodies are smaller.

Through the Tertiary measures adopted with Mona Offshore Wind Project the risks associated with the mobilisation of contaminated land or groundwater can be controlled and the risk to surface water bodies managed.

Humans, including residents, users of schools/hospitals, community facilities and places of work): There is a theoretical risk associated with the construction or decommissioning phase, specifically associated with disturbance of contaminated land and/or dust generation. However, evidence of significant contaminated land has not been found along the construction corridor and through the Tertiary measures adopted with Mona Offshore Wind Project the risks associated with the mobilisation of contaminated land or groundwater can be controlled.

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**Table 11.7: Hydrology and flood risk project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
None identified	N/A	N/A	N/A	N/A	N/A

### Receptor led effects

There is a potential for receptor led effects between hydrology and flood risk and surface water bodies (quality and flow). Contaminated surface water runoff associated with construction and decommissioning activities has the potential to enter and contaminate surface water bodies and reduce water quality downstream of contamination. The proposed diversion of an ordinary watercourse associated with construction activities has the potential to slightly impede flows downstream of the diversion and increase flood risk upstream if inappropriately designed. Due to primary measures included as part of the project design and tertiary measures required to meet legislative requirements, it is unlikely that receptors would experience an increase in significance of inter-related effects that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from the inter-related assessment.

There is a potential for receptor led effects between hydrology and flood risk and groundwater, including aquifers. Contaminated surface water runoff associated with construction and decommissioning activities has the potential to enter and contaminate groundwater, including aquifers downstream of contamination. Due to primary measures included as part of the project design and tertiary measures required to meet legislative requirements, it is unlikely that receptors would experience an increase in significance of inter-related effects that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from the inter-related assessment.

There is a potential for receptor led effects between surface water and habitat and species. Contaminated surface water runoff associated with construction and decommissioning activities has the potential to enter and contaminate habitats downstream of contamination and detrimentally effect species. Due to primary measures included as part of the project design and tertiary measures required to meet legislative requirements, it is unlikely that receptors would experience an increase in significance of inter-related effects that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from the inter-related assessment.

There is potential for receptor led effects between hydrology and flood risk and humans. Contaminated surface water runoff associated with construction and decommissioning activities has the potential to enter and contaminate surface water that can potentially be used as potable water sources downstream of contamination. Due to primary measures included as part of the project design and tertiary measures required to meet legislative requirements, it is unlikely that receptors would experience an increase in significance of inter-related effects that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from the inter-related assessment.

**Table 11.8: Onshore ecology project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impacts of habitat loss, disturbance, fragmentation, isolation,	Up to Minor adverse	Minor adverse to Minor beneficial	Up to Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project and further	No change

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
contamination (e.g. site runoff) and Invasive and Non-native Species (INNS)				mitigation, project lifetime effects would be no greater than those experienced during the construction phase (i.e. minor adverse). Therefore, it is considered that the project lifetime effects of the Mona Offshore Wind Project on habitats and species will be minor adverse, which is not significant in EIA terms. It is anticipated that the minor beneficial habitat creation during operation will continue into the decommissioning phase and beyond. However, the decommissioning impacts such as disturbance is likely to be no greater than those during construction.	
The impact of an increase in suspended particulate matter on ecological receptors arising from dust emissions generated by onsite construction and decommissioning activities.	Negligible	N/A	Negligible	Volume 3, Chapter 8: Air quality of the Environmental Statement states that potential impacts of suspended particulate matter on ecology during the operations and maintenance phase of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they were unlikely to be significant. Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. negligible). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on ecology will be negligible, which is not significant in EIA terms.	No change

### Receptor led effects



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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
<p>There is potential for receptor led effects associated with onshore ecology. These are assessed within Volume 3, Chapter 3: Onshore Ecology of the Environmental Statement. There is also potential for receptor led effects associated with the noise, air, hydrology, and ornithology.</p> <p>Tertiary mitigation is proposed to ensure suitable management of noise emissions, and control of air pollution such that the significant impacts to the habitats and species do not occur.</p> <p>Both primary and tertiary measures such as trenchless techniques and appropriate management of any culvert or pipe flume installation would not result in hydrological impacts, such as fragmentation of ordinary watercourses which, in turn, could impact habitats of principal importance and protected species.</p> <p>Both temporary and permanent habitat loss and disturbance can impact both ornithological and onshore ecology receptors. The primary and tertiary embedded measures incorporated into the project commitments will ensure that these impacts are fully mitigated, and mitigation is complementary to both receptors.</p> <p>With regard to habitat effects, associated effects are addressed in Volume 3 chapter 3: Onshore ecology of the Environmental Statement.</p> <p>For the receptor led effects, overall, it is unlikely that receptors would experience increased significance of inter-related effects than that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from the inter-related assessment.</p>					

**Table 11.9: Onshore and intertidal ornithology project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impacts of habitat loss, disturbance, fragmentation, isolation, contamination (e.g. site runoff) and Invasive and Non-native Species (INNS).	Up to Minor adverse	Minor adverse to Minor beneficial	Up to Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project and further mitigation, project lifetime effects would be no greater than those experienced during the construction phase (i.e. minor adverse). Therefore, it is considered that the project lifetime effects of the Mona Offshore Wind Project on habitats and species will be minor adverse, which is not significant in EIA terms. It is anticipated that the minor beneficial habitat creation during operation will continue into the decommissioning phase and beyond. However, the decommissioning impacts	No change

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
				such as disturbance is likely to be no greater than those during construction.	
The impact of an increase in suspended particulate matter on ecological receptors arising from dust emissions generated by onsite construction and decommissioning activities.	Negligible	N/A	Negligible	Volume 3, Chapter 8: Air quality of the Environmental Statement states that potential impacts of suspended particulate matter on ecology during the operations and maintenance phase of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they were unlikely to be significant. Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. negligible). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on ecology will be negligible, which is not significant in EIA terms	No change

### Receptor led effects

There is a potential for receptor led effects between surface water and habitats and species. Contaminated runoff associated with construction and decommissioning activities has the potential to enter and contaminate surface water receptors that may provide habitat and foraging opportunities for Important Ecological Features (IEFs). Due to primary measures included as part of the project design and tertiary measures required to meet legislative requirements, it is unlikely that receptors would experience increase significance of inter-related effects that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change result from the inter-related assessment.

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**Table 11.10: Historic environment project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential loss of, or harm to, above ground historic assets	Up to Moderate adverse	N/A	Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. up to moderate adverse).	No change
Potential impacts on above ground historic assets as a result of change within their setting	Moderate adverse	Moderate adverse	Moderate adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. moderate adverse).	No change
Potential impacts on the character of the historic landscape	Up to Minor adverse	Up to Minor adverse	Up to Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. up to minor adverse). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on the character of the historic landscape will be up to minor adverse, which is not significant in EIA terms.	No change

### Receptor led effects

There are potential receptor led effects associated with the potential visual impacts and changes in setting of above ground heritage assets. These are assessed within Volume 3, Chapter 5: Historic environment of the Environmental Statement, including the use of the Zone of Theoretical Visibility determined as part of Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement to inform the historic environment study area. There are also potential receptor led effects associated with the noise emission and changes in setting of above ground heritage assets. Tertiary mitigation is proposed to ensure suitable management of noise emissions, during construction and operation, such that significant impacts to the built heritage assets do not occur.

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
For the receptor led effects, overall, it is unlikely that receptors would experience increased significance of inter-related effects than that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from the inter-related assessment.					

**Table 11.11: Landscape and visual project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impact of the Mona Onshore Infrastructure, including Onshore Substation on landscape designations	Up to Minor adverse	Up to Minor adverse	Up to Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. minor adverse). Therefore, it is considered that the project lifetime effects of the Mona Offshore Wind Project on the Clwydian Range and Dee Valley National Landscape will be minor adverse, at most, which, for the purposes of the Volume 3, Chapter 6: Landscape and visual resources, of the Environmental Statement, is not significant.	No change
Potential impact of the Mona Onshore Infrastructure (excluding Onshore Substation) on landscape character	Up to Minor adverse	Up to Minor adverse	Up to Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. minor adverse). Therefore, it is considered that the project lifetime effects of the Mona Offshore Wind Project on landscape character will be minor adverse, which for the purpose of the Volume 3, Chapter 6: Landscape and	No change

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
				visual resources of the environmental statement, is not significant.	
Potential impact of the Mona Onshore Infrastructure (excluding Onshore Substation) on views and visual amenity	Up to Moderate adverse	N/A	N/A	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. moderate adverse). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on people's views and visual amenity will be moderate adverse, which, for the purposes of the Volume 3, Chapter 6: Landscape and visual resources , is not significant.	No change
Potential impact of the Onshore Substation on views and visual amenity	Up to Moderate to Major adverse	Up to Moderate to Major adverse	Up to Moderate to Major adverse	Volume 3, Chapter 6: Landscape and visual resources concludes that, following the implementation of measures adopted as part of the Mona Offshore Wind Project, the construction and operations and maintenance phase would result in up to moderate to major adverse effects on views and visual amenity, which are not significant to significant. However, once landscape mitigation planting has become established, it is considered that project lifetime effects on people's views and visual amenity will be moderate adverse, which, for the purposes of the Volume 3, Chapter 6: Landscape and visual resources, is not significant.	No change

### Receptor led effects

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
<p>There is the potential for spatial and temporal interactions between the potential impacts identified on landscape and visual resources receptors. The greatest potential for inter-related effects is through the interaction of impacts on the known visual receptors within the landscape and visual resources study area. Combined effects on visual receptors will vary temporally and spatially across the study area according to the project activities that are being undertaken. The mobile nature of many of the visual receptors (e.g., walkers, equestrians and cyclists) means that impacts will only occur when those receptors are in the vicinity of the Mona Onshore Development Area.</p> <p>The significance therefore varies depending on the receptor's distance to the Mona Onshore Development Area with those closest to the Onshore Substation experiencing high impacts which then diminish with distance. The likely effects of construction activities will be temporary and will give way to operation and maintenance phase effects which will be fully reversible when the Mona Onshore Development Area are decommissioned. Therefore, the significance of these combined effects on visual receptors will not be of any greater significance than the effects when assessed in isolation.</p> <p>There are also inter-relationships with receptors for the historic environment, ecology and also for recreational assets, specifically for the visual amenity of those using PRoW and the beach.</p> <p>Whilst the assessment of effects on character includes land that contains heritage assets, effects on heritage assets and their context and settings are considered within Volume 3, Chapter 5: Historic environment of the Environmental Statement. The landfall and onshore cable laying activities will be located within LANDMAP Visual and Sensory Aspect Layers CNWVS052 Llandudno to Kimmel Bay intertidal; CNWVS062 Llandulas urban coast; CNWVS070 Abergele coastal plain; CNWVS021 Cefn yr Ogof and environs; CNWVS023 Dulas lowlands; DNBGHVS037 Limestone Valley-Cefn; and DNBGHVS033 Cefn Estate and the Onshore Substation and 400 kV Grid Connection Corridor will be located within LANDMAP Visual and Sensory Aspect Area DNBGHVS033 Cefn Estate, which is associated with a Listed Building resulting in temporary or long term significant adverse effects on landscape character.</p> <p>The assessment of effects on character includes land that contains ecological effects on flora and fauna within habitats and is considered within Volume 3, Chapter 3: Onshore ecology of the Environmental Statement. The construction and operation of the Onshore Substation will change the existing farmland of LANDMAP Visual and Sensory Aspect Area DNBGHVS033 Cefn Estate resulting in some temporary and some long term loss of features such as hedgerows, ditches, trees and ponds which have ecological value. The impacts will result in some localised major adverse effects on landscape character, which is significant. Therefore, the significance of these combined effects on visual receptors will not be of any greater significance than the effects when assessed in isolation.</p> <p>Whilst the assessment of effects on visual receptors includes people using recreational assets, effects on public open space and public rights of way are considered within Volume 3, Chapter 7: Land use and recreation of the Environmental Statement. Equestrians using bridleways near Onshore Substation, people using the beach and PRoW coinciding with or in close proximity to onshore cable/landfall will gain open views of the construction activities and the Onshore Substation. Therefore, the significance of these combined effects on visual receptors will not be of any greater significance than the effects when assessed in isolation.</p>					

**Table 11.12: Land use and recreation project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impacts due to the loss of agricultural land	Up to Moderate adverse	Up to Moderate adverse	Up to Moderate adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater	No change



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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
				than those experienced during the construction phase (i.e. moderate adverse). Volume 3, Chapter 7: Land use and recreation states that 1.6ha (ha) of Subgrade 3a Agricultural Land Classification land would be permanently lost following construction of the Onshore Substation. This the loss of agricultural land falls below the 20ha threshold for significance provided in Technical Advice Note 6: planning for sustainable rural communities (Welsh Government, 2010) and is not significant in EIA terms. Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on agricultural land quality will be up to moderate adverse, which is not significant in EIA terms.	
Potential impacts due to disruption of farm holdings	Minor adverse	Minor adverse	Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. minor adverse). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on agricultural land and farm holdings will be minor adverse, which is not significant in EIA terms.	No change

### Receptor led effects

There is the potential for the visual amenity of receptors located on PRow and the beach assessed within Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement to be impacted during the construction of the Mona Offshore Wind Farm. Tertiary mitigation is proposed to ensure the appropriate management of PRow during the construction period to ensure that these PRow can continue to be used during the phase.

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
<p>Volume 3, Chapter 1: Geology, hydrology and ground conditions identifies that construction or decommissioning activities do have the potential to cause soil / land contamination principally through accidental emissions or can mobilise pre-existing areas of soil / land contamination through direct disturbance or the creation of new pathways. Potential inter rated receptor impacts on agricultural soils could occur as a result of such contamination, but the tertiary measures adopted with Mona Offshore Wind Project the risks associated with the mobilisation of contaminated land or groundwater can be controlled and the risk to surface water bodies managed.</p> <p>Volume 4, Chapter 3: Socio-economics of the Environmental Statement identifies the potential socio-economic impacts of the Mona Offshore Wind Farm on tourist and recreational resources. Tertiary mitigation measures adopted for the Mona Offshore Wind Project, including the management of PRow during the construction period would enable access to recreation/tourist based resources can continue during this period.</p> <p>For the receptor led effects, overall, it is unlikely that receptors would experience increased significance of inter-related effects than that which has already been reported in the individual chapters for the identified receptors. Therefore, there is no change resulting from the inter-related assessment.</p>					

**Table 11.13: Traffic and transport project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impact on traffic and transport on receptors, including driver delay, severance, pedestrian (incorporating non-motorised users) delay, non-motorised user amenity and fear and intimidation, accidents and road safety, and abnormal indivisible loads	Up to Minor adverse	N/A	N/A	Volume 3, Chapter 8: Traffic and transport of the Environmental Statement states that potential impacts on traffic and transport during the operations and maintenance and decommissioning phase of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they were unlikely to be significant. Therefore, it is considered that there is no potential for project lifetime effects of the Mona Offshore Wind Project to occur on humans as result of driver delay, severance, pedestrian (incorporating non-motorised users) delay, non-motorised user amenity and fear and intimidation, accidents and road safety and abnormal indivisible loads.	No change.

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
<b>Receptor led effects</b>					
<p>There are potential receptor led effects with the traffic and transport impacts and changes in the setting of climate change, socio-economics, land use and recreation, noise and vibration, and air quality. The assessments relating to traffic and transport and these disciplines are found in the following:</p> <ul style="list-style-type: none"> <li>• The impacts of traffic and transport on climate change are set out in Volume 4, Chapter 2: Climate change of the Environmental Statement</li> <li>• The impacts of traffic and transport on land use and recreation is set out in Volume 3, Chapter 7: Land use and recreation of the Environmental Statement</li> <li>• The impacts of traffic and transport on noise and vibration is set out in Volume 3, Chapter 9: Noise and vibration of the Environmental Statement</li> <li>• The impacts of traffic and transport on air quality is set out in Volume 3, Chapter 10: Air quality of the Environmental Statement.</li> </ul> <p>There are no tertiary mitigation measures proposed due to the impact of traffic and transport on climate change, socio-economics, land use and recreation, noise and vibration, and air quality. For the receptor led effects, overall, it is unlikely that receptors would experience increased significance of inter-related effects than that which has already been reported in the individual chapters for the identified receptors. Therefore there is no change resulting from inter-related assessment.</p>					

**Table 11.14: Noise and vibration project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impact of noise on receptors associated with offshore piling, Mona Landfall, Mona Onshore Cable Corridor and 400kV Grid Connection Cable Corridor	Minor adverse	N/A	Minor adverse	Volume 3, Chapter 9: Noise and vibration states that potential impacts on noise and vibration during the operations and maintenance phase of the Mona Offshore Wind Project (excluding the Onshore Substation) were scoped out of the assessment on the basis that they were unlikely to be significant. Given the extended period of time that will have elapsed between the construction and decommissioning phase of the Mona Offshore Wind Project and following the implementation of measures adopted as part of the project, it is considered that project lifetime effects of the Mona Offshore Wind	No change.

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
				Project on humans will be minor adverse, which is not significant in EIA terms.	
Potential impact of noise on receptors associated with the Onshore Substation	Minor adverse	Minor adverse	Minor adverse	Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction, operational and maintenance, and decommissioning phases (i.e. minor adverse). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on humans will be minor adverse, which is not significant in EIA terms.	No change

### Receptor led effects

Receptor led effects associated with landscape designations may arise since noise and vibration can affect the qualities of designated landscapes. However, the Mona Onshore Development Area is not located in a designated landscape and, as such, no significant inter-related effects are likely to occur.

Traffic generation during construction has been taken into account in the noise assessment.

Noise information has been used in the assessment for historic environment.

There is potential for receptor led effects associated with habitats and species since noise emissions generated during the construction, operation and maintenance, and decommissioning phases of the Mona Offshore Wind Project may impact sites designated for nature conservation and protected habitats and species within the noise and vibration study area. Noise and vibration impacts on ecological receptors are assessed in Volume 3, Chapter 3: Onshore ecology and Volume 3, Chapter 4: Onshore and intertidal ornithology of the Environmental Statement. There may also be potential for receptor led effects associated with human health arising during the construction, operation and maintenance, and decommissioning phases of the Mona Offshore Wind Project.

An assessment of the noise and vibration impacts on human health is presented in Volume 4, Chapter 4: Human health assessment of the Environmental Statement. Caravan parks have been identified within the noise and vibration study area near the Mona Landfall and along the Mona Onshore Cable Corridor. As such, there is potential for receptor led effects associated with recreation. An assessment of the effects on recreation is presented in Volume 3, Chapter 7: Land use and recreation of the Environmental Statement.

A Construction Noise and Vibration Management Plan (document reference J26.3) will be included as part of the Outline Code of Construction Practice (CoCP) (document reference J26) which will be secured as a requirement of the DCO. The Construction Noise and Vibration Management Plan will outline the noise and vibration control measures which may be adopted to minimise impacts at nearby human, ecological, and ornithological receptors. Moreover, the assessment of noise and vibration impacts has accounted for the potential impacts on the caravan sites within the Mona Onshore Development Area. Additionally, operational noise limits will be derived at the nearest and most-exposed noise-sensitive receptors to the Onshore Substation. These noise limits will be agreed with Denbighshire County Council and secured as a requirement

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
of the DCO. Based on the above, it is unlikely that the significance of the inter-related effects would be greater than what is assessed in the relevant chapters for the identified receptors. As such, there is no change resulting from the assessment of inter-related effects.					

**Table 11.15: Air quality project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
The impact of dust soiling (annoyance) on property arising from dust emissions generated by onsite construction and decommissioning activities.	Negligible	N/A	Negligible	Volume 3, Chapter 8: Air quality of the Environmental Statement states that potential impacts of dust soiling during the operations and maintenance phase of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they were unlikely to be significant. Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. negligible). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on humans will be negligible, which is not significant in EIA terms.	No change
The impact of an increase in suspended particulate matter on people arising from dust emissions generated by onsite construction and decommissioning activities.	Negligible	N/A	Negligible	Volume 3, Chapter 8: Air quality of the Environmental Statement states that potential impacts of suspended particulate matter on people during the operations and maintenance phase of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they	No change

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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
				were unlikely to be significant. Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. negligible). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project on humans will be negligible, which is not significant in EIA terms	
The impact of an increase NO <sub>2</sub> , PM <sub>10</sub> and PM <sub>2.5</sub> on people arising from dust emissions generated by onsite construction and decommissioning activities	Negligible	N/A	Negligible	Volume 3, Chapter 8: Air quality states that potential impacts of increases in traffic-related pollutants during the operations and maintenance phase of the Mona Offshore Wind Project were scoped out of the assessment on the basis that they were unlikely to be significant. Following the implementation of measures adopted as part of the Mona Offshore Wind Project, project lifetime effects would be no greater than those experienced during the construction phase (i.e. negligible). Therefore, it is considered that project lifetime effects of the Mona Offshore Wind Project from traffic-related emissions will be negligible, which is not significant in EIA terms.	No change
<b>Receptor led effects</b>					



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Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
<p>Traffic generated during the construction phase will also increase noise levels at similar receptors to those modelled in the air quality chapter. Therefore for those receptors close to roads with large changes in traffic there is the potential for inter-related effects. However, the predicted air quality impacts for modelled receptors is negligible and temporary. On that basis, whilst there will also be an inter-related effect with noise, the overall effects are not considered to be significant.</p> <p>Dust generated during the construction phase will also affect human receptors that are also likely to experience increased noise and traffic levels. Ecological receptors will also be affected by dust and there is the potential for inter-related effects with ecology, noise, hydrology and ornithology. Mitigation measures to reduce the dust impact to a level that it not significant will be implemented as documented in the Outline CoCP (document reference J26). Noise and traffic will also be managed through the CoCP so the inter-related effects are considered to remain not significant.</p>					

**Table 11.16: Socio-economic project lifetime and receptor led effects.**

Project lifetime effects	Construction	Operation	Decommissioning	Assessment	Inter-related effect
Potential impact on tourism.	North Wales: Minor Adverse	North Wales: Minor Adverse	North Wales: Minor Adverse	Potential impacts of the construction, operations and maintenance, and decommissioning of the Mona Offshore Wind Project on tourism are indirect in nature.	No change

### Receptor led effects

There is potential for receptors associated with recreation and visual amenity to impact the socio-economic receptor of tourism. Tourism impacts of the Mona Offshore Wind Project have been assessed in Volume 4, Chapter 3 Socio-economics of the Environmental Statement, based on the indirect effect of potential visual impacts on tourism, using assessments made in Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement and the direct or indirect effect of potential impacts on recreation, assessed in Volume 3, Chapter 7: Land use and recreation of the Environmental Statement. As the assessment of tourism impacts has been directly determined by the receptors of visual impact and recreation, these receptors are not likely to interact in a manner that multiplies effects.

## 11.7 Summary

- 11.7.1.1 Table 11.6 to Table 11.15 provide the assessment of onshore inter related effects for project lifetime effects and receptor led effects respectively. The assessment has been informed by the topic assessments of the Environmental Statement. The identification of potential inter-related effects has been based on a largely qualitative assessment using expert judgement and noting that inter-related effects have already been accounted for, in many instances, within the assessments in the topic-specific chapters.

## 11.8 Conclusion

- 11.8.1.1 Project lifetime and receptor-led effects have been defined to differentiate between two types of inter-related effect that may arise during the construction, operations and maintenance and decommissioning phase of the Mona Offshore Wind Project.
- 11.8.1.2 For all the receptor groups identified, following the implementation of measures adopted as part of the project and further mitigation (if required), lifetime effects (onshore) during the construction, operations and maintenance and decommissioning phase of the Mona Offshore Wind Project would not change from the assessment for each phase in isolation.
- 11.8.1.3 Receptor led inter-related effects (onshore) arising from the Mona Offshore Wind Project are unlikely to result in different or greater effects than the individual effects in isolation identified in the relevant topic chapters of this Environmental Statement.

## **11.9       References**

Department for Energy Security & Net Zero (2023a) Overarching National Policy Statement for Energy (NPS EN-1).

Department for Energy Security & Net Zero (2023b) National Policy Statement for Renewable Energy Infrastructure (NPS EN-3).

Department for Energy Security & Net Zero (2023c) National Policy Statements for Electricity Networks Infrastructure (NPS EN-5).

The Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope.

Welsh Government (2010) Technical Advice Note (TAN) 6: planning for sustainable rural communities.