

A photograph of an offshore wind farm at sunset. The sky is a mix of orange, yellow, and light blue, with soft clouds. Several wind turbines are visible, their silhouettes dark against the bright sky. In the foreground, dark, choppy waves are breaking, with white foam and spray catching the low light. The overall mood is serene yet powerful.

# **Salamander Offshore Wind Farm**

## **Onshore EIA Report**

### **Volume ER.B.3, Chapter 19: Inter-related Effects**



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Simply Blue Group

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## Glossary

Term	Definition
Applicant	Salamander Wind Project Company Limited (formerly called Simply Blue Energy (Scotland) Limited), a joint venture between Ørsted, Simply Blue Group and Subsea7.
Design Envelope	A description of the range of possible elements that make up the Salamander Project design options under consideration, as set out in detail in the Project Description. This envelope presents a series of maximum parameters and is used to define the Salamander Project for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known.
Energy Balancing Infrastructure (EBI)	Energy Balancing Infrastructure which will provide services to the electrical grid, such as storing energy to meet periods of peak demand and improving overall reliability, as well as additional services such as system monitoring and computing. EBI will be housed within buildings and / or containers which will be co-located with the Onshore Substation.
Environmental Impact Assessment (EIA)	A statutory process by which the likely significant effects of certain projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Regulations, including the publication of an Environmental Impact Assessment Report (EIAR).
EIA Regulations	The regulations that apply to the Onshore Development are the Electricity Works (EIA) (Scotland) Regulations 2017 and the Town and Country Planning (EIA) (Scotland) Regulations 2017.
Environmental Impact Assessment Report (EIAR)	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations.
Inter-related effects	The likely effects of multiple impacts from the proposed development on one receptor. For example, noise and air quality together could have a greater effect on a residential receptor than each impact considered separately.
Landfall	The generic term applied to the entire landfall corridor between Mean Low Water Spring (MLWS) tide and the Transition Joint Bay (TJB) inclusive of all construction works, including the offshore export cable corridor, and landfall compound, where the offshore cables come ashore north of Peterhead.
Offshore Development	The entire Offshore Development, including all offshore components of the Project (WTGs, Inter-array and Offshore Export Cable(s), floating substructures, mooring lines and anchors, and all other associated offshore infrastructure)

	required across all Project phases from development to decommissioning, for which the Applicant is seeking consent.
Offshore Export Cable Corridor	The area that will contain the Offshore Export Cable(s) between the boundary of the Offshore Array Area and Mean High Water Springs (MHWS).
Onshore Development	The entire Onshore Development, including Construction Compounds at the Landfall, temporary working areas, Onshore Export Cables, Transition Joint Bay, Joint Bays, Onshore Substation and Energy Balancing Infrastructure, Construction Compounds, any associated landscaping (if required) and access (and all other associated infrastructure) across all Project phases of the Onshore Development from construction to decommissioning, for which the Applicant is seeking consent.
Onshore Development Area	The total area comprising the Landfall, Onshore Export Cable Corridor, and Onshore Substation, EBI and associated infrastructure.
Onshore Export Cable Corridor	The area within which the Onshore Export Cables will be located, as well as temporary Construction Compounds which includes cable trenches, haul road, excavated material and storage areas.
Onshore Substation	The electrical components for transforming the power supplied from the Salamander Project to 132 kilovolt (kV) and to adjust the power quality and power factor, as required to meet the UK Grid Code for supply to the National Grid.
Project lifetime effects	Project lifetime effects are considered to be effects that occur throughout more than one phase of the Salamander Project (construction, operation and maintenance, and decommissioning) to interact to potentially create a more significant effect on a receptor, than if just assessed in isolation in the three key project phases (e.g. construction, operation and decommissioning).
Receptor-led effects	Receptor-led effects involve spatially or temporal interaction of effects, to create inter-related effects on a receptor or receptor group. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.
Salamander Project	The proposed Salamander Offshore Wind Farm. The term covers all elements of both the offshore and onshore aspects of the project.

## Acronyms

<b>Term</b>	<b>Definition</b>
EBI	Energy Balancing Infrastructure
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
IEF	Important Ecological Feature
JV	Joint Venture
km	Kilometre
kV	Kilovolt
LNCS	Local Nature Conservation Site
MD-IOT	Marine Directorate – Licensing Operations Team
MW	Megawatt
O&M	Operation and Maintenance
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWPC	Salamander Wind Project Company Limited (formerly called SBES)

## 19 Inter-related Effects

### 19.1 Introduction

- 19.1.1.1 The Applicant, Salamander Wind Project Company Ltd. (SWPC), a joint venture (JV) partnership between Ørsted, Simply Blue Group and Subsea7, is proposing the development of the Salamander Offshore Wind Farm (hereafter ‘Salamander Project’). The Salamander Project will consist of the installation of a floating offshore wind farm (up to 100 megawatts (MW) capacity) approximately 35 kilometres (km) east of Peterhead. It will consist of both offshore and onshore infrastructure, including an offshore generating station (wind farm), export cables to landfall, energy balancing infrastructure (EBI) and connection to the electricity transmission network (please see **Volume ER.B.2, Chapter 4: Project Description** of the Onshore Environmental Impact Assessment Report (EIAR) for details on the Salamander Project Design).
- 19.1.1.2 This chapter of the Onshore EIAR presents the results of the EIA of potential inter-related effects of the Onshore Development of the Salamander Project. This chapter has been authored by Environmental Resources Management (ERM) Ltd. Further competency details of the authors of this chapter are outlined in **Volume ER.B.4, Annex 1.1: Details of the Project Team**.

### 19.2 Purpose

- 19.2.1.1 The primary purpose of this EIAR is for the application for the Onshore Development of the Salamander Project satisfying the requirements of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 and The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.
- 19.2.1.2 The EIAR has been finalised following the completion of the pre-application consultation (**Volume RP.B.3, Report 1: Pre Application Consultation (PAC) Report**) and the Salamander EIA Scoping Report (SBES, 2023) and takes account of the relevant advice set out within the Scoping Opinions from Marine Directorate - Licensing Operations Team (MD-LOT, 2023) and Aberdeenshire Council (Aberdeenshire Council, 2023) relevant to the Onshore Development.
- 19.2.1.3 Chapters within **Volume ER.B.3** of this EIAR assess the effects of the Salamander Project on topic-specific receptors, encompassing onshore elements. These assessments are structured on an impact-centric basis, wherein impacts on receptors are categorised by impact type and assessed within the temporal context of the construction, operation and maintenance (O&M), or decommissioning phase. In contrast, this chapter on inter-related effects centres on the receptor itself; it identifies impacts that may stem from multiple environmental topics or effects that may manifest across multiple Project phases.
- 19.2.1.4 This EIAR chapter:
- Outlines the receptor groups evaluated in the onshore EIA process;
  - Synthesises the likelihood of effects on these receptor groups, drawing from the outcomes of topic-specific chapters, spanning the construction, O&M, and decommissioning phases; and
  - Highlights the potential for interaction and emergence of ‘inter-related’ effects resulting from multiple impacts on any of the identified receptor groups.
- 19.2.1.5 The potential inter-related effects have been evaluated by employing realistic worst-case scenarios for the project. The Project Design Envelope for the Onshore Development can be found in **Volume ER.B.2, Chapter 4: Project Description**.

19.2.1.6 This chapter exclusively evaluates inter-related effects among topic chapters related to onshore receptors. Cumulative effects, which involve impacts stemming from the combined influence of the Salamander Project and other plans or projects, are examined within the individual topic chapters of this EIAR.

### **19.3 Study Area**

19.3.1.1 Each assessment chapter within the onshore EIAR outlines a topic-specific Study Area, relevant to the respective receptor group. The spatial extent of these Study Areas varies between topic chapters and the determinations within these chapters are used to inform this inter-related effects assessment.

## **19.4 Onshore Assessment Methodology and Significance Criteria**

### **19.4.1 Desk Study**

19.4.1.1 The baseline environments for each of the receptor groups considered in the inter-related effects assessment vary in accordance with the specific topic area. As such, these are defined within the relevant chapters:

- **Volume ER.B.3, Chapter 7: Geology, Hydrology and Hydrogeology;**
- **Volume ER.B.3, Chapter 8: Terrestrial Ornithology;**
- **Volume ER.B.3, Chapter 9: Terrestrial Ecology and Nature Conservation;**
- **Volume ER.B.3, Chapter 10: Onshore Archaeology and Cultural Heritage;**
- **Volume ER.B.3, Chapter 11: Terrestrial Air Quality;**
- **Volume ER.B.3, Chapter 12: Landscape and Visual Amenity;**
- **Volume ER.B.3, Chapter 13: Traffic and Transport;**
- **Volume ER.B.3, Chapter 14: Onshore Noise and Vibration;**
- **Volume ER.B.3, Chapter 15: Land Use and Other Users; and**
- **Volume ER.B.3, Chapter 16: Socio-economics, Tourism and Recreation.**

### **19.4.2 Assessment Methodology**

19.4.2.1 The approach to assessing inter-related effects within this chapter has followed a four stage process, as summarised in **Table 19-1** and outlined in the following paragraphs.



**Table 19-1 Summary of staged approach to the onshore inter-related effects assessment for the Salamander Project**

Stage	Description
1	Assessments undertaken for individual EIA topic areas within <b>Volume ER.B.3</b> of this EIAR.
2	Review of the assessments set out within individual topic chapters to identify any receptor groups that may be affected by more than one topic area.
3	Identification of potential inter-related (onshore) effects on these receptor groups, including consideration of the extent to which potential inter-related effects are already considered within this EIAR.
4	Assessment of how individual effects 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, O&amp;M, and decommissioning phases); and</li> <li>• ‘Receptor-led effects’ (i.e. multiple effects on a single receptor).</li> </ul>

### 19.4.3 Stage 1: Topic-specific Assessments

19.4.3.1 The initial phase of evaluating inter-related effects in the onshore context is detailed in each dedicated onshore topic chapter. This stage involves individual assessments of the impacts on receptors throughout the construction, O&M, and decommissioning phases of the onshore components of the Salamander Project.

19.4.3.2 The results of these assessments are outlined in **Volume ER.B.3** of this EIAR.

### 19.4.4 Stage 2: Identification of Receptor Groups

19.4.4.1 The second stage entails a comprehensive examination of the assessments conducted in the topic-specific chapters to pinpoint ‘receptor groups’ necessitating evaluation in the inter-related effects assessment. The term ‘receptor group’ is employed to underscore that the methodology for the inter-related effects assessment does not scrutinise every single receptor appraised during the EIAR stage. Instead, the focus is on potentially sensitive groups of receptors. The assessed receptor groups can be broadly classified as follows:

- Geology, Hydrology and Hydrogeology;
- Terrestrial Ecology and Nature Conservation;
- Terrestrial Ornithology;
- Onshore Archaeology and Cultural Heritage;
- Terrestrial Air Quality;
- Landscape and Visual Amenity;
- Traffic and Transport;
- Onshore Noise and Vibration;
- Land Use and Other Users; and
- Socio-economics, Tourism and Recreation.

19.4.4.2 The potential for inter-related effects is considered in further detail at Stage 3.

### 19.4.5 Stage 3: Identification of Potential Inter-related Effects on Receptor Groups

19.4.5.1 Consideration is given to the potential for inter-related effects to arise for each of the identified receptor groups 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 19-2**.

**Table 19-2 Definitions of Project lifetime and receptor-led inter-related effects**

Effect Type	Definition
<i>Project Lifetime Effects</i>	Project lifetime effects are considered to be effects that occur throughout more than one phase of the Onshore Development (construction, O&M, and decommissioning), and which interact to potentially create a more significant effect on a receptor, than if just assessed in isolation. For example, habitat disturbance during the O&M phase may occur in areas that have not yet fully recovered from construction phase activities.
<i>Receptor-led Effects</i>	Receptor-led effects involve interaction between multiple effects on a specific receptor or receptor group. Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects. For example, noise and vibration and visual impacts may combine to cause a greater effect on landscape character.

### 19.4.6 Stage 4: Assessment of Inter-related Effects on Each Receptor Group

19.4.6.1 It is important to emphasise that the inter-related effects assessment solely addresses the impacts stemming from the onshore components of the Salamander Project and not those from other projects, which are covered in the cumulative effects assessment within each topic-specific EIAR chapter.

19.4.6.2 The importance of individual effects, as outlined in the topic-specific chapters, is outlined in the assessment tables for each receptor group. All determinations regarding the significance of effects assume the successful implementation of appropriate mitigation measures, meaning only the residual effect has been considered.

19.4.6.3 Subsequently, a descriptive assessment of project lifetime and receptor-led inter-related effects has then been undertaken. This assessment incorporates qualitative and, where reasonably possible, quantitative assessments.

## 19.5 Assessment of Inter-related Effects

### 19.5.1 Geology, Hydrology and Hydrogeology

#### Project Lifetime Effects

19.5.1.1 The effects relating to Geology, Hydrology and Hydrogeology are primarily associated with activities during the construction phase, with activities during the O&M and decommissioning phases similar or of lower magnitude as those identified within the construction phase. As such the potential for project-lifetime inter-related effects is limited to the effects associated with the construction phase, with effects during other phases not leading to an increase in magnitude of impact or significance of effect. Therefore, the residual significance of effect for project lifetime inter-related effects is **Negligible** and **Not Significant** in EIA terms.

#### Receptor-led Effects

19.5.1.2 Regarding receptor-led inter-related effects, increased magnitude of Geology, Hydrology and Hydrogeology impacts has potential to have effects on Terrestrial Ecology (presented in **Volume ER.B.3, Chapter 9**:

**Terrestrial Ecology and Nature Conservation**) and Terrestrial Ornithology (presented in **Volume ER.B.3, Chapter 8: Terrestrial Ornithology**). However, with embedded mitigation measures applied, the contribution of Geology, Hydrology and Hydrogeology impacts to overall effects of Terrestrial Ecology and Nature Conservation and Terrestrial Ornithology receptors will be minimal and would not be sufficient to increase the significance of any individual effect significances, therefore they are determined to be **Not Significant** in EIA terms.

## 19.5.2 Terrestrial Ornithology

### Project Lifetime Effects

19.5.2.1 Due to the **Not Significant** nature of the predicted effects, project lifetime inter-related effects across all project phases are not predicted to be any greater than the individual effects caused during the individual project phases for the Loch of Strathbeg Special Protection Area (SPA) / Ramsar Site / Site of Special Scientific Interest (SSSI); Ythan Estuary, Sands of Forvie and Meikle Loch SPA, Ythan Estuary and Meikle Loch Ramsar, Meikle Loch and Kippit Hills SSSI and Sands of Forvie and Ythan Estuary SSSI; and Rattray Head to Peterhead LNCS.

### Receptor-Led Effects

#### Loch of Strathbeg Special Protection Area / Ramsar Site / Site of Special Scientific Interest

##### *Construction*

19.5.2.2 The Loch of Strathbeg SPA / Ramsar Site / SSSI is approximately 7.8 km to the north of the Onshore Development Area and no direct impacts will occur. Construction activities could result in:

- Permanent or temporary habitat loss affecting wintering and migratory waterfowl features of the Loch of Strathbeg SPA / Ramsar Site / SSSI; and
- Disturbance to wintering and migratory waterfowl features of the Loch of Strathbeg SPA / Ramsar Site / SSSI in the vicinity of the Onshore Development Area (taking into account disturbance from noise and vibration (presented in **ER.B.3, Chapter 14: Onshore Noise and Vibration**) and visual disturbance (presented in **ER.B.3, Chapter 12: Landscape and Visual Amenity**).

19.5.2.3 During baseline surveys, pink-footed geese and graylag geese were the only qualifying interest feature species of the Loch of Strathbeg SPA / Ramsar Site / SSSI recorded from the Onshore Development Area plus 500 m buffer. Low numbers of these species were recorded, and construction phase impacts assessed above predicted no significant impacts from either habitat loss or disturbance. As a result, receptor-led inter-related impacts predicted on the Loch of Strathbeg SPA / Ramsar Site / SSSI will be **Not Significant** in EIA terms. A Report to Inform Appropriate Assessment (RIAA) which assesses impacts on all SPAs, Special Areas of Conservation (SACs) and Ramsar sites (where these coincide with SPAs / SACs) is presented in **Volume RP.B.2, Report 1: Report to Inform Appropriate Assessment (RIAA)**.

##### *Operation and Maintenance*

19.5.2.4 The only qualifying interest feature species from the Loch of Strathbeg SPA / Ramsar Site / SSSI recorded during baseline surveys in the area that will be subject to disturbance during operation was a flock of 50 pink-footed geese. Any birds displaced from these fields have abundant alternative suitable foraging habitat in the surrounding area. As a result, receptor-led inter-related impacts are predicted to be **Negligible** and **Not Significant** in EIA terms.

### *Decommissioning*

- 19.5.2.5 Activities potentially affecting qualifying interest feature birds from Loch of Strathbeg SPA / Ramsar Site / SSSI during decommissioning will be reduced compared to construction activities. As a result, receptor-led inter-related impacts from both habitat loss and disturbance are predicted to be **Negligible and Not Significant** in EIA terms.

### Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area, Ythan Estuary and Meikle Loch Ramsar, Meikle Loch and Kippit Hills Site of Special Scientific Interest and Sands of Forvie and Ythan Estuary Site of Special Scientific Interest

### *Construction*

- 19.5.2.6 The closest designated site which comprises a part of the Ythan Estuary, Sands of Forvie and Meikle Loch SPA, Ythan Estuary and Meikle Loch Ramsar, Meikle Loch & Kippit Hills SSSI or Sands of Forvie and Ythan Estuary SSSI is approximately 4.8 km from the Onshore Development Area, and no direct impacts are predicted. Construction activities could result in the following impacts to the suite of protected areas comprising the Ythan Estuary, Sands of Forvie and Meikle Loch SPA, Ythan Estuary and Meikle Loch Ramsar, Meikle Loch & Kippit Hills SSSI and Sands of Forvie and Ythan Estuary SSSI:

- Permanent or temporary habitat loss affecting wintering and migratory waterfowl features of the designated sites; and
- Disturbance to wintering and migratory waterfowl features of the designated sites in the vicinity of the Onshore Development Area (taking into account disturbance from noise and vibration (presented in **ER.B.3, Chapter 14: Onshore Noise and Vibration**) and visual disturbance (presented in **ER.B.3, Chapter 12: Landscape and Visual Amenity**).

- 19.5.2.7 During baseline surveys, graylag geese was the only qualifying interest feature species of the designated sites recorded from the Onshore Development Area plus 500m buffer. Low numbers of graylag geese were recorded, and construction phase impacts assessed above predicted no significant impacts on this species. As a result, receptor-led inter-related impacts on the Ythan Estuary, Sands of Forvie and Meikle Loch SPA, Ythan Estuary and Meikle Loch Ramsar, Meikle Loch & Kippit Hills SSSI and Sands of Forvie and Ythan Estuary SSSI from either habitat loss or disturbance will be **Not Significant** in EIA terms. A RIAA which assesses impacts on all SPAs, SACs and Ramsar sites (where these coincide with SPAs / SACs) is presented in **Volume RP.B.2, Report 2: Report to Inform Appropriate Assessment (RIAA)**.

### *Operation and Maintenance*

- 19.5.2.8 No qualifying interest feature species of the Ythan Estuary, Sands of Forvie and Meikle Loch SPA, Ythan Estuary and Meikle Loch Ramsar or constituent SSSIs were recorded during baseline surveys in the area that will be subject to disturbance during operation. As a result, receptor-led inter-related impacts are predicted to be **Negligible and Not Significant** in EIA terms.

### *Decommissioning*

- 19.5.2.9 Activities potentially affecting qualifying interest feature birds from Ythan Estuary, Sands of Forvie and Meikle Loch SPA, Ythan Estuary and Meikle Loch Ramsar or constituent SSSIs during decommissioning will be reduced compared to construction activities. As a result, receptor-led inter-related impacts from both habitat loss and disturbance are predicted to be **Negligible and Not Significant** in EIA terms.

## Ratray Head to Peterhead Local Nature Conservation Site

### *Construction*

19.5.2.10 Ratray Head to Peterhead Local Nature Conservation Site (LNCS) is designated for coastal habitats which are important for roosting and feeding geese, waders and wildfowl. The Onshore Development Area overlaps with the LNCS. Construction could result in:

- Permanent or temporary habitat loss within and adjacent to the LNCS affecting wintering and migratory waterfowl features of the designated sites; and
- Disturbance to wintering and migratory waterfowl features of the LNCS in the vicinity of the Onshore Development Area (taking into account disturbance from noise and vibration (presented in **ER.B.3, Chapter 14: Onshore Noise and Vibration**) and visual disturbance (presented in **ER.B.3, Chapter 12: Landscape and Visual Amenity**).

19.5.2.11 Construction would not result in any permanent loss of habitat within the LNCS result in the temporary loss of 5.4 ha of habitat within the LNCS, equating to <1.5% of the onshore habitat. Impacts would result in a temporary Low magnitude impact on a receptor of low sensitivity, and therefore **Not Significant** in EIA terms.

19.5.2.12 Construction would result in some disturbance and displacement to wintering and migratory wildfowl which the LNCS is important for.

19.5.2.13 Disturbance and displacement would affect relatively low numbers of wintering and migratory species, as set out above. Due to the proximity of the temporary Landfall Compound to a regularly used high tide roost within the LNCS, construction activity would result in a **Minor** significant impact. Receptor-led inter-related effects during construction are not predicted to result in more than **Minor** significant impacts across construction, and therefore **Not Significant** in EIA terms.

### *Operation and Maintenance*

19.5.2.14 The Ratray Head to Peterhead LNCS will be shielded from disturbing activities during operation and maintenance of onshore infrastructure by an area of plantation forestry. As a result, receptor-led inter-related impacts are predicted to be **Negligible** and **Not Significant** in EIA terms.

### *Decommissioning*

19.5.2.15 The Ratray Head to Peterhead LNCS will be shielded from the majority of disturbing activities during decommissioning by an area of plantation forestry. Limited disturbance and temporary habitat loss may be associated with cable pulls. Decommissioning impacts will be less than those experienced during construction and are predicted to be **Negligible** and **Not Significant** in EIA terms.

## **19.5.3 Terrestrial Ecology and Nature Conservation**

### **Project Lifetime Effects**

19.5.3.1 Construction, operation and decommissioning of the Onshore Development could lead to permanent temporary loss of sand dune habitats, including those for which the Ratray Head to Peterhead LNCS is designated; as well as mortality, disturbance, and displacement of bats, otter, and badger. However, due to the **Not Significant** nature of predicted effects upon these Important Ecological Features (IEFs), project lifetime effects are not predicted to be greater than the individual effects caused during individual project phases, and as such inter-related impacts are predicted to be **Negligible** and **Not Significant** in EIA terms.

### Receptor-led Effects

19.5.3.2 Potential inter-relationships exist between Terrestrial Ecology and Nature Conservation receptors and Geology, Hydrology and Hydrogeology, Air Quality and Onshore Noise and Vibration impacts. Assessments of these impact pathways are presented as follows:

- Geology, Hydrology and Hydrogeology – assessment of hydrological impacts on ecological receptors are assessed within **Volume ER.B.3, Chapter 7: Geology, Hydrology and Hydrogeology**;
- Air Quality – assessment of air quality impacts on ecological receptors are assessed within **Volume ER.B.3, Chapter 11: Terrestrial Air Quality**; and
- Onshore Noise and Vibration – noise impacts on ecological receptors has been undertaken within **Volume ER.B.3, Chapter 9: Terrestrial Ecology and Nature Conservation** in consideration of disturbance of protected species.

19.5.3.3 The assessment of disturbance to protected sites and species, detailed within **Volume ER.B.3, Chapter 9: Terrestrial Ecology and Nature Conservation**, takes into account these inter-related impact pathways, and as such receptor-led inter-related impacts are predicted to be **Minor** and **Not Significant** in EIA terms.

### 19.5.4 Onshore Archaeology and Cultural Heritage

#### Project Lifetime Effects

19.5.4.1 The footprint of the Onshore Development Area during operation will not increase from the construction footprint during its operational lifetime, and ongoing maintenance activities will be less frequent (and intrusive) than those undertaken during the construction phase, therefore, no additional direct physical impacts would be anticipated to occur during the Operation and Maintenance phase of the Onshore Development and no project lifetime inter-related effects are predicted.

19.5.4.2 Setting impacts are limited to the Operation and Maintenance Phase of the Onshore Development and therefore there are no project lifetime effects when considering setting impacts across the Construction and Decommissioning phases of the Onshore Development. Effects on views and on perceived character are inter-linked and do not interact to produce a different, or greater, effect on a receptor than when effects are considered in isolation, therefore they are determined to be **Not Significant** in EIA terms.

#### Receptor-led Effects

19.5.4.3 Regarding receptor-led inter-related effects, increased magnitude of Onshore Archaeology and Cultural Heritage impacts has potential to have effects on Landscape and Visual Amenity (presented in **ER.B.3, Chapter 12: Landscape and Visual Amenity**). However, with embedded mitigation measures applied, the contribution of Onshore Archaeology and Cultural Heritage impacts to overall effects of Landscape and Visual Amenity receptors will be minimal and would not be sufficient to increase the significance of any individual effect significances, therefore they are determined to be **Not Significant** in EIA terms.

### 19.5.5 Terrestrial Air Quality

#### Project Lifetime Effects

19.5.5.1 The effects relating to Air Quality are primarily associated with activities during the construction phase, with activities during the decommissioning phase likely to be similar or of lower magnitude as those identified within the construction phase. As such the potential for project lifetime inter-related effects is limited to the effects associated with the construction phase, with effects during other phases not leading to an increase

in significance of effect or magnitude of impact. The Onshore Development will not result in any air quality changes during the O&M phase therefore no project lifetime effects influenced by air quality are anticipated.

#### **Receptor-led Effects**

- 19.5.5.2 Regarding receptor-led inter-related effects, increased magnitude of Air Quality impacts has potential to have effects on receptors in combination with Onshore Noise and Vibration (presented in **Volume ER.B.3, Chapter 14: Onshore Noise and Vibration**) and Traffic and Transport (presented in **Volume ER.B.3, Chapter 13: Traffic and Transport**). However, with embedded mitigation measures applied, the contribution of Air Quality impacts to overall effects of Onshore Noise and Vibration and Traffic and Transport receptors will be minimal and would not be sufficient to increase the significance of any individual effect significances, therefore they are determined to be **Not Significant** in EIA terms.

### **19.5.6 Landscape and Visual Amenity**

#### **Project Lifetime Effects**

- 19.5.6.1 The effects relating to Landscape and Visual Amenity are associated with activities during the construction, O&M, and decommissioning phases of the Onshore Development. The effects are of no greater magnitude than individually assessed impacts. The potential for project lifetime inter-related effects is limited, due to the receptors only perceiving an effect visually at one point in time, and not during construction, O&M, and decommissioning phases simultaneously.

#### **Receptor-led Effects**

- 19.5.6.2 Regarding receptor-led inter-related effects, there is potential for some effects to result in greater impacts than individually assessed. Receptors considered in **Volume ER.B.3, Chapter 12: Landscape and Visual Amenity** may perceive changes to the landscape character across multiple pathways as the effects of the Onshore Development will be simultaneously visual and audible, although other effects may only be perceived in one way (visually) at one point in time. The outcomes would be no different in terms of significance to the findings of the primary assessment in respect of significant landscape and visual effects.

### **19.5.7 Traffic and Transport**

#### **Project Lifetime Effects**

- 19.5.7.1 The effects relating to Traffic and Transport are associated with activities during the construction phase only with O&M and decommissioning impacts scoped out of the Traffic and Transport assessment. O&M is scoped out as HGV movements will only be required in event of equipment failure where large component needs replaced. As such there is no potential of a significant impact to occur. Decommissioning is scoped out as it is not possible to accurately forecast baseline traffic flow levels 35 years into the future. Therefore, a traffic assessment should be undertaken, and appropriate traffic management procedures agreed with Transport Scotland and Aberdeenshire Council at the time of decommissioning. An Onshore Decommissioning Plan will also be developed and adhered to for the decommissioning phase of the Onshore Development, however the plan will be further developed and updated to reflect best practice at the time of decommissioning. As such, no assessment of the O&M and decommissioning phase is included in **Volume ER.B.3, Chapter 13: Traffic and Transport** and there is no potential for inter-related effects across the lifetime of the Onshore Development.

#### **Receptor-led Effects**

- 19.5.7.2 Regarding receptor-led inter-related effects, the Onshore Development has potential to increase the magnitude of effects on Traffic and Transport receptors through effects interacting with noise and vibration

(presented in **ER.B.3, Chapter 14: Onshore Noise and Vibration**) and air quality (presented in **ER.B.3, Chapter 11: Terrestrial Air Quality**). However, no significant effects have been identified for construction for either noise and vibration or air quality and therefore there is no potential to increase the significance of any individual effect significances.

## 19.5.8 Onshore Noise and Vibration

### Project Lifetime Effects

19.5.8.1 The effects relating to Onshore Noise and Vibration are associated with activities during the construction, operation and maintenance and decommissioning phases however as no significant effects have been identified, it is not expected that these would lead to an increase in significance of effect or magnitude of impact. Therefore, the residual significance of effect for project lifetime inter-related effects is **Minor to Negligible and Not Significant** in EIA terms.

### Receptor-led Effects

19.5.8.2 Regarding receptor-led inter-related effects, increased magnitude of Onshore Noise and Vibration impacts has potential to have effects on Terrestrial Ecology (presented in **ER.B.3, Chapter 9: Terrestrial Ecology and Nature Conservation**), Terrestrial Ornithology (presented in **ER.B.3, Chapter 8: Terrestrial Ornithology**) and Socio-economics, Recreation and Tourism (presented in **ER.B.3, Chapter 16: Socio-economics, Tourism and Recreation**). However, with embedded mitigation measures applied, the contribution of Onshore Noise and Vibration impacts to overall effects of Terrestrial Ecology and Nature Conservation, Terrestrial Ornithology and Socio-economics, Tourism and Recreation receptors will be minimal and would not be sufficient to increase the significance of any individual effect significances, therefore they are determined to be **Not Significant** in EIA terms.

## 19.5.9 Land Use and Other Users

### Project Lifetime Effects

19.5.9.1 The effects relating to Land Use and Other Users are primarily associated with activities during the construction phase, with activities during the O&M and decommissioning phases similar or of lower magnitude as those identified within the construction phase. As such the potential for project lifetime inter-related effects is limited to the effects associated with the construction phase, with effects during other phases not leading to an increase in significance of effect or magnitude of impact. Therefore, the residual significance of effect for project lifetime inter-related effects is **Minor and Not Significant** in EIA terms.

### Receptor-led Effects

19.5.9.2 Regarding receptor-led inter-related effects, increased magnitude of Land Use and Other Users impacts has potential to have effects on Geology, Hydrology and Hydrogeology (presented in **ER.B.3, Chapter 7: Geology, Hydrology and Hydrogeology**) and Socio-economics, Tourism and Recreation Tourism (presented in **ER.B.3, Chapter 16: Socio-economics, Tourism and Recreation**), Forestry and Terrestrial Ecology (presented in **ER.B.3, Chapter 9: Terrestrial Ecology and Nature Conservation**). However, with embedded mitigation measures applied, the contribution of Land Use impacts to overall effects of Geology, Hydrology and Hydrogeology, Socio-economics, Tourism and Recreation, Forestry and Terrestrial Ecology and Nature Conservation receptors will be minimal and would not be sufficient to increase the significance of any individual effects, therefore they are determined to be **Not Significant** in EIA terms.



### **19.5.10 Socio-economics, Tourism and Recreation**

**19.5.10.1** Inter-related effects can occur when effects arise and accumulate 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). The assessment in **Section 16.11 of Volume ER.B.3, Chapter 16: Socio-economics, Tourism and Recreation** provides a complete and robust assessment of all potential impacts relevant to Socio-economics, Tourism and Recreation. Therefore, no additional inter-related impacts have been identified.

## **19.6 Conclusion and Summary**

**19.6.1.1** The assessment presented within this chapter considers the potential for inter-related effects to arise from onshore elements of the Salamander Project. The content of this chapter has been based on expert judgement and led by assessments of individual effects presented in topic-specific EIAR chapters. No inter-related effects were found to exceed the significance levels determined for Project effects alone, and therefore they are determined to be **Not Significant** in EIA terms.

## **19.7 References**

Aberdeenshire Council, 2023. EIA Screening/Scoping Opinion for Onshore Aspect of Salamander Offshore Wind Farm Project.

MD-LOT (Marine Directorate - Licensing Operations Team), (2023). Scoping Opinion for Salamander Offshore Wind Farm.

Simply Blue Energy (Scotland) Ltd. (2023). Salamander Offshore Wind Farm, Environmental Impact Assessment Scoping Report. Available online at:

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