

# MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

## Environmental Statement

Volume 4, Annex 5.5: Offshore ornithology apportioning technical report

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Image of an offshore wind farm

**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

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## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

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### Glossary

Term	Meaning
Apportioning	A method that assigns unknown entities to known entities based on weighing factors. In this report, it refers to birds of unknown origin within the study area that are assigned to colonies based on distance to colony and colony size.
Biologically Defined Minimum Population Scale	Minimum regional population size of a particular bird species at a certain time of year, defined for a range of species in Furness (2015).
Ornithology	Ornithology is a branch of zoology that relates to the study of birds.
Seabird Monitoring Programme	The SMP is an ongoing annual monitoring programme, established in 1986, of 25 species of seabird that breed regularly in Britain and Ireland.
Special Protection Area	A designation under the European Union Directive on the Conservation of Wild Birds, under which countries have a duty to safeguard the habitats of migratory birds and certain particularly threatened birds.

### Acronyms

Term	Meaning
BDMPS	Biologically Defined Minimum Population Scale
BTO	British Trust for Ornithology
EIA	Environmental Impact Assessment
HRA	Habitats Regulations Assessment
ISAA	Information to Support Appropriate Assessment
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
SMP	Seabird Monitoring Programme
SPA	Special Protection Area

### Units

Unit	Description
km	Kilometres
m	Metres
nm	Nautical miles

# **1 Offshore ornithology apportioning technical report**

## **1.1 Introduction**

### **1.1.1 Background**

1.1.1.1 When assessing the impact of a proposed offshore wind farm, it is crucial to determine the potential impacts that such development will have on breeding seabird populations. Seabirds nest in colonies of variable sizes around the UK coastline (Mitchell *et al.*, 2004) and most species have large foraging ranges at sea (Woodward *et al.*, 2019). Establishing the connectivity between marine renewable sites and colonies, which are often protected as Special Protected Areas (SPAs), is a key element of the assessment of impact. A theoretical approach has been developed by NatureScot (NatureScot, 2018) to determine the proportion of birds from SPA sites which use proposed development areas in the breeding season. In non-breeding period the standard approach to apportioning utilises the information presented in Furness (2015). These approaches allow the user to ‘apportion’ the impact of a marine renewable site to multiple SPAs.

1.1.1.2 This technical report presents the apportioning method and apportions the potential impacts of the Morgan Offshore Wind Project Generation Assets (hereafter referred to as the Morgan Generation Assets) on SPAs that support qualifying species for which connectivity has been identified as part of the Morgan Generation Assets Habitats Regulations Assessment (HRA) Stage 1 Screening Report (Document Reference E1.4) (Figure 1.1). The approach also incorporates non-SPA breeding colonies and these results will be incorporated, where necessary in to Volume 2, Chapter 15: Offshore ornithology of the Environmental Statement. The resulting apportioning values are presented for each site and will be used in the Information to Support Appropriate Assessment part 3 – SPA assessments (Document Reference E.1.3) to identify if an adverse effect may occur.

### **1.1.2 Aim of report**

1.1.2.1 The purpose of this technical report is to calculate seasonal apportion values for seabird species at breeding colonies including those that are qualifying features at designated sites (i.e. SPAs, SSSIs and MNRs) and those that breed at non-designated sites. These values have been used to inform the assessments presented in the Morgan Generation Assets HRA Stage 1 Screening Report (Document Reference E1.4), ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3) and, where necessary, Volume 2, Chapter 15: Offshore ornithology of the Environmental Statement.

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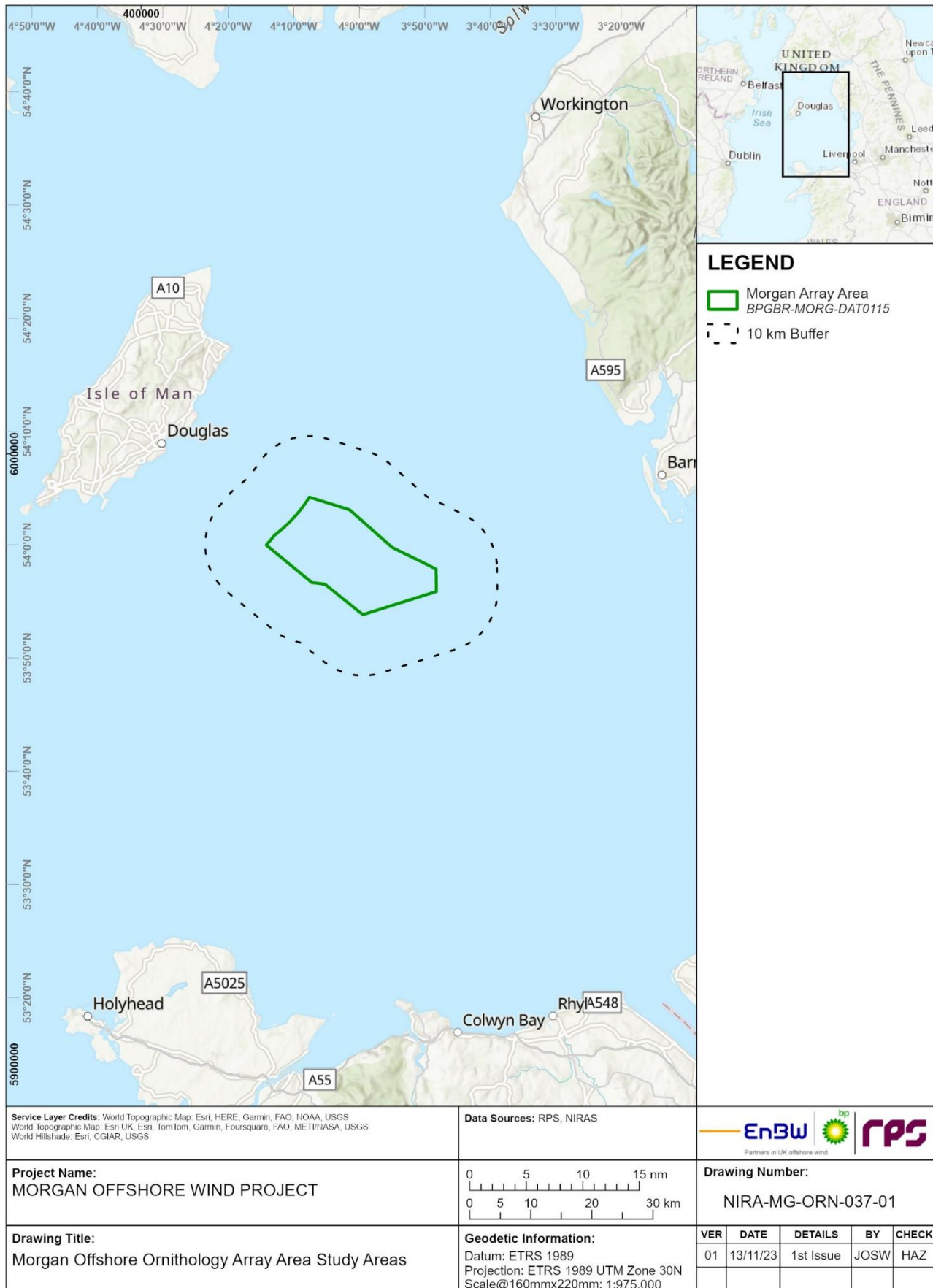
**Figure 1.1: Designated sites for which apportioning is required in relation to potential impacts associated with the Morgan Generation Assets.**

### **1.1.3 Morgan offshore ornithology study area**

The apportioning approach has been carried out incorporating the Morgan Array Area only (Figure 1.2). The Morgan Array Area is located in the east Irish Sea, approximately 22.22 km (12 nm) from the Isle of Man and 37.13 km (20.1 nm) from the northwest coast of England. The Morgan Array Area is 280 km<sup>2</sup> in size. Where required, distances have been measured from the Morgan Array Area. This technical report also utilises age class data from the Morgan offshore ornithology survey area (also defined in Volume 4, Annex 5.1: Offshore ornithology baseline characterisation technical report of the Environmental Statement) These areas are illustrated in Figure 1.2.



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**Figure 1.2: Morgan offshore ornithology study area used for apportioning analyses alongside other areas mentioned in this appendix.**

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### 1.1.4 Consultation

1.1.4.1 A summary of the key issues raised during consultation activities undertaken to date specific to offshore ornithology is presented in Table 1.1 below, together with how these issues have been considered in the production of this technical report.

### 1.1.5 Evidence Plan process

1.1.5.1 The purpose of the Evidence Plan process is to agree the information the Morgan Generation Assets needs to supply to the Secretary of State, as part of a DCO application for the Morgan Generation Assets. The Evidence Plan seeks to ensure compliance with HRA. The development and monitoring of the Evidence Plan and its subsequent progress is being undertaken by the Steering Group. The Steering Group will comprise of the Planning Inspectorate, the Applicant, NRW, Natural England, JNCC and the MMO as the key regulatory and SNCBs. To inform the EIA and HRA process during the pre-application stage of the Morgan Generation Assets, Expert Working Groups (EWGs) were also set up to discuss and agree topic specific issues with the relevant stakeholders. Consultation was undertaken via the Offshore Ornithology EWG, with meetings held in February 2022, July 2022, November 2022, February 2023, June 2023, October 2023 and December 2023.

1.1.5.2 The responses provided and changes suggested by the stakeholders through the EWG are summarized in Table 1.1, together with changes implemented in this technical report.

### 1.1.6 Section 42 consultation

1.1.6.1 A number of comments were received during the S42 consultation following submission of the PEIR chapter. All the responses provided, and changes suggested by the stakeholders are presented in the consultation report (Document Reference E.3) together with changes implemented in the technical reports underpinning the Environmental Statement.

1.1.6.2 A summary of the key responses with changes implemented in this technical report of the Environmental Statement are presented in Table 1.1.

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**Table 1.1: Consultation responses relevant to the Technical Appendix**

Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this technical report
June 2023	Isle of Man Department of Infrastructure	<p>Volume 4, Annex 10.5: Offshore ornithology apportioning assessment – It is noted that apportionment of effects on seabirds, to sites has been made with respect to SPAs specifically, but it is pointed out that the Isle of Man does not have a system of SPAs and there has, as yet, been no assessment for sites of European interest (Emerald Sites) under the Bern Convention. The Isle of Man holds, nevertheless, the closest breeding seabird colonies to the development site. Our interest lies in seeking assurance that Isle of Man populations are not placed at risk, but an assessment based on SPAs only, takes no account of Manx sites, whether nationally designated ASSIs, such as Maughold Coast and Brooghs ASSI, or other protected areas that do not hold a Wildlife Act designation currently, such as the Manx National Heritage protected sites at the Sugarloaf, Spanish Head and Calf of Man which hold important seabird colonies for the Island, including common guillemot, razorbill and kittiwake, and colonies of herring gull and great black-backed gull, which are more widely scattered. All of these species were apportioned to SPAs, but interaction with Manx breeding populations is very likely and is not reported (though apportionment to non-SPA sites has been taken into account in the assessment of SPA effects). An assessment of whether the Manx populations of these assessed species, could be affected would provide assurance of their consideration.</p>	<p>Where necessary consideration is given to non-SPA designated sites in Volume 2, Chapter 15: Offshore ornithology of the Environmental Statement. This includes consideration of the impacts of the Morgan Generation Assets on the great black-backed gull population on the Isle of Man. In this annex apportioning values for non-SPA sites are provided in Appendix A.</p>

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Date	Consultee and type of response	Comment	Response to comment raised and/or where considered in this technical report
	Natural Resources Wales	NRW (A) does not agree with the use of stable age structures for age-class apportioning or the removal of sabbaticals from impacts.	Stable age structures have been removed from the apportioning approach. Consideration of immature birds is now undertaken using data from project-specific baseline surveys in this report or from other suitable sources within the assessments presented in the Information to Support Appropriate Assessment (ISAA) part 3 – SPA assessments (Document Reference E1.3) and Volume 2, Chapter 15: Offshore ornithology of the Environmental Statement
		NRW (A) does not agree with updating the colony figures from those in Furness (2015) in apportioning impacts to designated sites outside the breeding season and the approach used does not follow the advice provided previously during the EWG.	Colony count figures from Furness (2015) have not been updated within this report
		NRW (A) currently advise that sabbaticals are not included/taken into consideration, so sabbaticals should not be removed from impact assessments.	Sabbaticals are an integral part of breeding seabird populations and thus have been considered in Volume 4, Annex 5.5: Offshore Ornithology Apportioning Technical Report of the Environmental Statement. Available information on sabbatical rates in species of relevant to the Morgan Generation Assets has been reviewed in section 1.2.3. Sabbatical birds will therefore be considered where appropriate in the Information to Support Appropriate Assessment (ISAA) part 3 – SPA assessments (Document Reference E1.3) and Volume 2, Chapter 15: Offshore ornithology of the Environmental Statement.

## 1.2 Methodology

### 1.2.1 Overview

1.2.1.1 Apportioning undertaken for the Morgan Generation Assets in the breeding season is based on the NatureScot ‘theoretical approach’ method for the breeding season (NatureScot, 2018). This approach is supplemented by advice provided by NatureScot and Marine Scotland Science to projects in Scottish waters which advises the use of a second step for apportioning incorporating updated counts for SPA colonies (Marine Scotland 2017a; 2017b). Apportioning during the non-breeding season (i.e. autumn and spring migration seasons and in winter) utilises the Biologically Defined Minimum Population Scales (BDMPS) approach developed by Furness (2015).

1.2.1.2 For apportioning impacts that may occur in the breeding season to seabird species from SPAs within foraging range of the Morgan Generation Assets, a two-step approach outlined in the NatureScot method is used as follows:

1. To apportion impacts between SPA and non-SPA breeding colonies within foraging range of the wind farm using Seabird 2000 data (Joint Nature Conservation Committee (JNCC), 2013). Apportioning is calculated on the basis of distance between count sector and project, available sea area from each sector within foraging range and the numbers of breeding seabirds (see section 1.2.3)
2. The potential impacts assigned to the SPA component are further apportioned between the individual SPAs within foraging range. This is done by using the most recent count at each SPA.

1.2.1.3 Between 2015 and the end of the 2022 breeding season, survey work was undertaken for the fourth UK breeding seabird census, “Seabirds Count” (JNCC, 2022). At the time of writing, data from this census, equivalent to that produced for the Seabird 2000 census, has not yet been made available and therefore to provide a concurrent temporal period for Step 1 of the breeding season approach, data from Seabird 2000 has been used. As SPA colonies are generally surveyed more often, the second step is applied to provide a more accurate apportioning value for SPA colonies.

### 1.2.2 Identification of species

1.2.2.1 Table 1.2 identifies the designated sites and associated features for which connectivity has been identified and therefore where apportioning values are required to potential apportion impacts from the Morgan Generation Assets to each relevant designated site. Although this table focusses on SPA populations, consideration has been given to all breeding colonies within the relevant foraging range of a species. Apportioning values for non-SPA colonies (including Marine Nature Reserves, Sites of Special Scientific Interest) is provided in Appendix A.

**Table 1.2: SPAs and associated qualifying features for which apportioning is required.**

SPA	Qualifying feature	Season of relevance
Ailsa Craig	Gannet	All seasons
	Kittiwake	All seasons
	Lesser black-backed gull	All seasons
Bowland Fells	Lesser black-backed gull	All seasons

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SPA	Qualifying feature	Season of relevance
Buchan Ness to Collieston Coast	Kittiwake	Non-breeding season only
Cape Wrath	Fulmar	All seasons
	Kittiwake	Non-breeding season only
	Guillemot	Non-breeding season only
Copeland Islands	Manx shearwater	All seasons
East Caithness Cliffs	Kittiwake	Non-breeding season only
Fair Isle	Fulmar	Non-breeding season only
Flamborough and Filey Coast	Gannet	Non-breeding season only
	Kittiwake	Non-breeding season only
Flannan Isles	Fulmar	All seasons
	Guillemot	Non-breeding season only
Forth Islands	Gannet	Non-breeding seasons only
Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island	Manx shearwater	All seasons
Grassholm	Gannet	All seasons
Handa	Fulmar	All seasons
	Guillemot	Non-breeding season only
	Razorbill	Non-breeding season only
Hermaness, Saxa Vord and Valla Field	Gannet	Non-breeding season only
Horn Head to Fanad Head	Fulmar	All seasons
Howth Head Coast	Kittiwake	All seasons
Ireland's Eye	Kittiwake	All seasons
Isles of Scilly	Fulmar	All seasons
	Manx shearwater	All seasons
	Lesser black-backed gull	Non-breeding season only
	Great black-backed gull	Non-breeding season only
Lambay Island	Lesser black-backed gull	All seasons
	Herring gull	Non-breeding season only
	Kittiwake	All seasons
	Guillemot	Non-breeding season only
	Razorbill	Non-breeding season only
	Fulmar	All seasons
Mingulay and Berneray	Fulmar	All seasons
	Guillemot	Non-breeding season only

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SPA	Qualifying feature	Season of relevance
	Razorbill	Non-breeding season only
Morecambe Bay and Duddon Estuary	Herring gull	All seasons
	Lesser black-backed gull	All seasons
North Colonsay and Western Cliffs	Kittiwake	All seasons
	Guillemot	Non-breeding season only
North Rona and Sula Sgeir	Fulmar	All seasons
	Gannet	Non-breeding season only
Rathlin Island	Kittiwake	All seasons
	Fulmar	All seasons
	Lesser black-backed gull	All seasons
	Guillemot	Non-breeding season only
	Razorbill	Non-breeding season only
Ribble and Alt Estuaries	Lesser black-backed gull	All seasons
Rum	Manx shearwater	All seasons
Saltee Islands	Gannet	All seasons
	Kittiwake	All seasons
	Guillemot	Non-breeding season only
	Razorbill	Non-breeding season only
	Fulmar	All seasons
Skomer, Skokholm and the seas off Pembrokeshire/ Sgomer, Sgogwm a moroedd Benfro	Manx shearwater	All seasons
	Kittiwake	All seasons
	Lesser black-backed gull	Non-breeding season only
	Guillemot	Non-breeding season only
	Razorbill	Non-breeding season only
St Kilda	Guillemot	Non-breeding season only
	Fulmar	All seasons
	Manx shearwater	All seasons
	Gannet	Non-breeding season only
Sule Skerry and Sule Stack	Guillemot	Non-breeding season only
	Gannet	Non-breeding season only
The Shiant Isles	Fulmar	All seasons
	Razorbill	Non-breeding season only
Troup, Pennan and Lion's Heads	Kittiwake	Non-breeding season only
West Westray	Kittiwake	Non-breeding season only

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SPA	Qualifying feature	Season of relevance
Wicklow Head	Kittiwake	All seasons

**1.2.3 Apportioning of potential impacts during the breeding period**

1.2.3.1 In the breeding season, a population of birds in a given sea area is likely to comprise breeding adult birds from breeding colonies, immature birds (i.e. birds that have not yet reached breeding age) and non-breeding birds (i.e. birds that have reached breeding age but have not yet started breeding or are skipping a breeding season (sabbatical birds)). The proportion of each component must be estimated to allow the proportion of breeding birds to be extracted, as it is this component that is relevant for HRA. The apportioning values calculated here will be used within the ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3) to inform the assessments presented. In addition, consideration will be given to available site-specific information and information on the distribution and population structure of birds present in relevant sea areas.

**Breeding adults birds**

**Step 1: Apportioning impacts between Protected Site and non-Protected Site breeding colonies within foraging range of each array**

1.2.3.2 Following NatureScot guidance (NatureScot, 2018), potential impacts were apportioned between SPA and non-SPA breeding colonies within each species’ mean-maximum (Woodward *et al.*, 2019) foraging range and the development site using the ‘theoretical approach’. The method makes use the weighting factors described in Table 1.3.

**Table 1.3: Colony-specific weighting factors used for Step 1 of the apportioning approach.**

Weighting factor	Methodology
Colony size (with consistent count unit used between colonies for a species e.g. individuals, breeding pairs or apparently occupied sites)	Large colonies will contribute more individuals to the number of seabirds found in a given sea area, all other factors being equal. To account for this, a weighting factor based on colony size has been derived. For all colonies considered, colony size has been calculated from Seabird 2000 data with this providing a common reference point as all count data is contemporaneous. Seabird 2000 data is comprised of separate count sections with long stretches of coastline (e.g. Flamborough and Filey Cliffs SPA), made up of several count sections. For the purposes of this analysis each count section has been treated as a separate colony. If a single designated site is made up of several count sections the combined designated site impact has been reconstructed after the weighting for each count section has been completed.
Distance of colony from the development site (using the geometric centre of both)	Weighting by distance from the colony has been calculated using the measured sea-route distance between the geometric centre of the Morgan Generation Assets to the geometric centre of the colony. The sea-route distance represents the distance between a colony and the project based on the movement of birds across the sea only, excluding any significant movements over land. For the purposes of this apportioning approach it is assumed that as birds radiate out from a colony density will decrease by a factor proportional to $1/\text{distance}^2$ as area increases proportionally by $\pi \cdot r^2$ . For the purposes of this assessment, a weighting factor based on $1/\text{distance}^2$ has therefore been used as advised by NatureScot (2018).



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Weighting factor	Methodology
Sea area (the areal extent of the open sea within the foraging range of the relevant species).	The available sea area for foraging has been measured by plotting a circle defined by the species-specific foraging range around the colony in ArcGIS and calculating the area of sea available to each seabird species. The fraction of the disc centred on the colony that is occupied by sea surface is then expressed as a decimal. As the density of birds will increase as the area of available foraging area decreases, this is used in the formula as 1/estimated area.

1.2.3.3 Step 1 uses the Seabird 2000 colony counts (Mitchell *et al.*, 2004) as advised by NatureScot (2018). Seabird 2000 is the most recent concurrent reference point for all colonies in the UK. The Seabirds Count census has recently been undertaken however, a dataset equivalent to that produced when the results of Seabird 2000 were published is not yet available.

1.2.3.4 Using the centroid for the Morgan Generation Assets, a buffer zone was created which equated to the species' mean-maximum foraging range plus one standard deviation. For Manx shearwater and fulmar it was not possible to use the mean-maximum plus 1 standard deviation foraging range due to limitations of the apportioning tool and therefore the mean-maximum foraging range was used. The NatureScot (2018) guidance recommends that the mean-maximum foraging range is used however, more recent guidance provided as part of project-specific consultation by UK Statutory Nature Conservation Bodies recommends that the mean-maximum plus one standard deviation is used. Further discussion on this is provided in section 1.4.

1.2.3.5 The distance between the Morgan Generation Assets centroid and each SPA and non-SPA colony within each species' foraging range at sea was then calculated assuming an at-sea route.

1.2.3.6 The equation used for apportioning in Step 1 is:

$$\text{Colony Weight} = \frac{\text{Colony Population}}{\text{Sum of Populations}} \times \frac{\text{Sum of Distance}^2}{\text{Colony Distance}^2} \times \frac{1/\text{Colony Sea Proportion}}{\text{Sum of } (1/\text{Colony Sea Proportions})}$$

### Step 2: Apportioning impacts between Protected Site and non-Protected Site breeding colonies within foraging range of each array

1.2.3.7 Step 1 is repeated but (1) only for the SPAs and (2) using the most recent count data for each SPA as provided in JNCC/BTO's Seabird Monitoring Programme (SMP) database (JNCC/BTO 2023).

1.2.3.8 The apportioning values for the SPAs derived from Step 2 are then applied to the summated contributions of the SPAs calculated from the apportionment in Step 1, i.e. re-distribution of the birds originally apportioned to the project from the SPAs in Step 1 to the proportion calculated in Step 2. The proportion of birds that are apportioned to non-SPA component remains as calculated in Step 1, irrespective of any changes in their colony sizes since Seabird 2000.

### Immature birds

1.2.3.9 A major part of any seabird population comprises immature birds. This is especially relevant for many of the species considered in this report with some species not breeding until they reach nine years of age. A proportion of immature birds return to

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natal waters during the breeding season, with the proportion of each immature age class increasing as individuals get closer to breeding age.

1.2.3.10 To determine the proportion of immature birds present within the Morgan Generation Assets Survey Area (as defined in Volume 4, Annex 5.1: Offshore ornithology baseline characterisation technical report of the Environmental Statement), data from the site-specific digital aerial surveys have been analysed (Table 1.4). This approach can only be used for gannet, kittiwake and large gull species as it is not possible from aerial surveys to identify the age class of birds of other species. Only those birds assigned to an age class have been included in the calculation in Table 1.4 however, the number of birds for which an age class was not assigned is also provided.

**Table 1.4: Number of birds assigned to different age class categories during site-specific surveys of the Morgan Generation Assets Survey Area.**

Species	Breeding season extent	Birds for which age was not identified	Number of adult-type birds	Number of immature birds	Proportion of immature birds (%)
Kittiwake	April to August	230	381	72	15.89
Gannet	March to September	51	450	24	5.06
Herring gull	March to August	81	19	42	68.85
Great black-backed gull	March to August	14	28	4	12.5
Lesser black-backed gull	April to August	7	30	12	28.57

1.2.3.11 The identification of kittiwake age classes at sea is difficult and, in most cases, impossible (with the exception of first summer of younger birds). Whilst one year old kittiwakes can be easily identified due to differences in plumage, second and third year old birds, which have not yet reached the age of first breeding, cannot (Coulson, 2011; Olsen and Larsson, 2003). Therefore data on age class collected during surveys will potentially represent a considerable overestimate of the proportion of breeding adults present at the Morgan Generation Assets.

1.2.3.12 It is certain that an unknown proportion of the cohort of unaged ‘adult type’ kittiwakes at the Morgan Generation Assets will include two and three year old birds. However, Coulson (2011) provides evidence that shows that immature kittiwake visit natal waters with increasing numbers of older immatures visiting breeding colonies. This is concurrent with mortality reducing the absolute number of birds from each successive year class of kittiwake in the species wider population. To therefore calculate an apportioning value for the breeding season in respect to the number of two and three year old kittiwakes at the Morgan Generation Assets, the analysis uses survival rates for immature kittiwake from Horswill and Robinson (2015) (Table 1.5). The apportioned values will likely remain an under-estimate for the second and third year immatures as proportionately those cohorts show a much greater affinity for natal waters than first year birds.

1.2.3.13 An approach was developed during the examination for Hornsea Offshore Wind Farm Project Two (SMart Wind, 2015) and has been applied in several other offshore wind farm assessments. The approach makes use of age-specific survival rates from Horswill and Robinson (2015) to calculate the proportion of different age classes likely to be present: 0.790 for juveniles, 0.854 for one year olds and 0.854 for two year olds.

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1.2.3.14 These survival rates along with the proportion of adult and immature kittiwake recorded during DAS are presented in Table 1.5.

**Table 1.5: Estimated breeding season contribution of immatures birds predicted to be present at the Morgan Generation Assets using immature proportions as calculated from survival rates and numbers of one year old birds recorded on baseline survey transects covering the Morgan Generation Assets.**

Analysis step	Formula (using the parameters identified as part of each analysis step)	Value
(a) Survival rate of juvenile birds		0.79
(b) Survival rate of other immature age classes		0.854
(c) % of kittiwake at the Morgan Generation Assets assigned to one year old birds		15.89%
% of kittiwake at the Morgan Generation Assets assigned to other immature age classes		
(d) Two year old birds	$d = \frac{(a \times b)}{a} \times c$	13.57%
(e) Three year old birds	$e = \frac{(a \times b \times b)}{a} \times c$	11.59%
(f) % of kittiwakes at the Morgan Generation Assets assigned to adults	$f = 100\% - (d + e + c)$	58.95%

**Sabbaticals**

1.2.3.15 Every breeding season a proportion of adults skip breeding and take a ‘sabbatical’. To include any impacts occurring on any sabbatical birds within that apportioned to those individuals of the species breeding at a colony, would likely overestimate the effects to these species/populations (Marine Scotland 2017a, b). This is because breeding colony population size estimates, which are used within the Environmental Impact Assessment and ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3) to inform the derivation of the significance of impacts, do not include these sabbatical birds.

1.2.3.16 It is not possible to separate non-breeding adult birds from those that are breeding in a given sea area and therefore published estimates of sabbatical behaviour have been obtained (Table 1.6). Consideration will be given in relevant assessments to the sabbatical values presented in Table 1.6 for each species.

**Table 1.6: Proportion of sabbatical birds to be considered in the ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3).**

Species	Incidence of missed breeding			Marine Scotland (2017a, b)
	Horswill and Robinson (2015)			
	Value (%)	Data quality	Data representation	
Kittiwake	18.0-20.8	Intermediate	Poor	
Gannet	N/A	-	-	10
Herring gull	35.0	Intermediate	Good	35

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Species	Incidence of missed breeding			
	Horswill and Robinson (2015)			Marine Scotland (2017a, b)
	Value (%)	Data quality	Data representation	
Great black-backed gull	N/A	-	-	N/A
Lesser black-backed gull	33.7	Intermediate	Poor	N/A
Manx shearwater	15.7	Poor	Good	N/A
Guillemot	7.9	Good	Good	7
Razorbill	3.0	Intermediate	Good	7
Puffin	7.8	Intermediate	Good	7
Fulmar	N/A	-	-	N/A

**1.2.4 Apportioning of impacts during the non-breeding period**

- 1.2.4.1 The calculation of apportioning values for non-breeding seasons (post-breeding, non-breeding and pre-breeding) has followed the approach used previously in the application and examination documentation for multiple offshore wind farms (e.g. East Anglia THREE Ltd., 2015, Forewind, 2013, SMart Wind, 2015) and is advised for use by Natural England (Natural England, 2021). For apportionment, the contribution of adult birds from an individual designated site, as estimated by Furness (2015), to the relevant BDMPS population for each species/season combination is divided by the total BDMPS population. The calculated value is the proportion of the BDMPS population represented by adult birds from the designated site under consideration. It should be noted that no updates have been made to the population data presented in Furness (2015) as any updates will not be contemporaneous with those data not updated. For any designated site not named in Furness (2015), the proportion of birds present in the relevant BDMPS areas in each season has been taken from the nearest named designated site.
- 1.2.4.2 Not all sites are explicitly included in Furness (2015) with those located outside of UK waters grouped into national populations (e.g. Ireland, France, etc.). Connectivity has been identified for a number of non-UK designated sites and in order to calculate apportioning values for use in the non-breeding seasons, the same calculation process as described has been followed albeit with either the population from Seabird 2000 or the designated population for the site of interest used.
- 1.2.4.3 Furness (2015) provides population estimates for UK SPAs, and although for some species the populations presented also incorporate birds from Irish colonies these are combined to provide a total Ireland population. Consideration has therefore been given to features of Irish SPAs, specifically those on the east coast of Ireland, by dividing the population for a relevant feature at a given SPA by the relevant BDMPS population. The population for each species has been taken from the Seabird 2000 census to ensure population estimates are commensurate with the data used in Furness (2015). If counts for a colony are unavailable from Seabird 2000, information on the population from the SPA citation has been used. Where the Irish population has not been included in the BDMPS population any SPA populations of relevance have been added to the BDMPS population presented in Furness (2015).

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### 1.3 Results

#### 1.3.1 Overview

1.3.1.1 Based upon calculations undertaken by the approach described above, the apportioning values for each SPA feature with connectivity to the Morgan Generation Assets are presented below.

#### 1.3.2 Guillemot

##### SPA weighted proportions

1.3.2.1 The Morgan Generation Assets are not within the foraging range of guillemot from any SPA colonies. Apportioning values for non-SPA colonies are presented in Appendix A. Calculation of apportioning values for the non-breeding season are presented in Table 1.7.

**Table 1.7: Calculation of non-breeding season apportioning values for guillemot.**

SPA	Apportioning values		
	Non-breeding season (August to February)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Cape Wrath	UK western waters = 1,139,220	51,982	4.56
Flannan Isles		18,633	1.64
Handa		72,187	6.34
Lambay Island		77,340	5.85
Mingulay and Berneray		25,701	2.26
North Colonsay and Western Cliffs		27,000	2.37
Rathlin Island		174,796	15.34
Saltee Islands		27,288	2.06
Skomer, Skokholm and the seas off Pembrokeshire/Sgomer, Sgogwm a moroedd Benfro		29,340	2.58
St Kilda		29,830	2.62
Sule Skerry and Sule Stack		14,503	1.27

#### 1.3.3 Razorbill

1.3.3.1 The Morgan Generation Assets are not within the foraging range of razorbill from any SPA colonies. Apportioning values for non-SPA colonies are presented in Appendix A. Calculation of apportioning values for the non-breeding season are presented in Table 1.7.

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**Table 1.8: Calculation of non-breeding season apportioning values for razorbill.**

<b>Apportioning values</b>									
<b>SPA</b>	<b>Autumn migration (August to October)</b>			<b>Winter (November and December)</b>			<b>Spring migration (January to March)</b>		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Handa	UK western waters = 606,914	10,123	1.67	UK western waters = 341,422	4,132	1.21	UK western waters = 606,914	10,123	1.67
Lambay Island		5,813	0.96		5,812	1.70		5,813	0.96
Mingulay & Berneray		19,818	3.27		8,089	2.37		19,818	3.27
Rathlin Island		30,170	4.97		12,314	3.61		30,170	4.97
Saltee Islands		5,011	0.83		5,011	1.47		5,011	0.83
Skomer, Skokholm and Seas off Pembrokeshire		11,762	1.94		3,601	1.05		11,762	1.94
The Shiant Isles		8,326	1.37		3,398	1.00		8,326	1.37

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### 1.3.4 Gannet

#### SPA weighted proportions

1.3.4.1 The calculation of apportioning values in the breeding season for all colonies from which the foraging range of gannet shows potential connectivity with the Morgan Generation Assets is presented in Table 1.9. A breakdown of apportioning values for non-SPA colonies is presented in Appendix A. Calculation of apportioning values for use in the non-breeding seasons are presented in Table 1.10.

**Table 1.9: Calculation of apportioning values for gannet in the breeding season for SPAs within foraging range.**

1 Colonies that make up the non-SPA total are presented in Appendix A.

2 Where a colony consists of multiple subsites average values are provided for distance to the Morgan Array Area and proportion of foraging range as sea.

SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Ailsa Craig	66,452	2014	184.7	0.657	0.720	0.568
Grassholm	72,022	2015	292.1	0.626	0.327	0.258
Saltee Islands	9,444	2013	290.8	0.665	0.041	0.032
Non-SPA Total <sup>1</sup>	-	-	-	-	0.126	0.131

**Table 1.10: Calculation of non-breeding season apportioning values for gannet.**

SPA	Apportioning value					
	Autumn (September to November)			Spring (December to March)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Ailsa Craig	UK western waters = 545,954	54,260	9.94	UK western waters = 661,888	54,260	8.20
Flamborough and Filey Coast		0	0.00		6,637	1.00
Forth Islands		0	0.00		33,289	5.03
Grassholm		78,584	14.39		78,584	11.87
Hermaness, Saxa Vord and Valla Field		9,741	1.78		14,612	2.21
North Rona and Sula Sgeir		16,605	3.04		18,450	2.79
Saltee Islands		978	0.18		1,468	0.22
St Kilda		107,320	19.66		119,244	18.02

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SPA	Apportioning value					
	Autumn (September to November)			Spring (December to March)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Sule Skerry and Sule Stack		8,415	1.54		9,350	1.41

**1.3.5 Kittiwake**

**SPA weighted proportions**

The calculation of apportioning values in the breeding season for all colonies from which the foraging range of kittiwake shows potential connectivity with the Morgan Generation Assets is presented in Table 1.11. A breakdown of apportioning values for non-SPA colonies is presented in Appendix A. Calculation of apportioning values for use in the post-breeding and pre-breeding seasons are presented in

1.3.5.1 Table 1.12.

1.3.5.2 As the apportioning approach utilises a distance calculated using a route across the sea only, North Colonsay and Western Cliffs SPA was therefore outside of the foraging range of kittiwake and a 0% apportioning value is concluded for this SPA in the breeding season.

**Table 1.11: Calculation of apportioning values for kittiwake in the breeding season for SPAs within foraging range.**

1 Colonies that make up the non-SPA total are presented in Appendix A.

2 Where a colony consists of multiple subsites average values are provided for distance to the Morgan Array Area and proportion of foraging range as sea.

SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Ailsa Craig	980	2021	189.1	0.476	0.018	0.004
Howth Head Coast	6,162	2015	139.6	0.465	0.208	0.045
Ireland's Eye	4,230	2010-2015	139.1	0.466	0.144	0.031
Lambay Island	6,640	2015	131.5	0.458	0.257	0.056
North Colonsay and Western Cliffs	-	-	-	-	-	0
Rathlin Island	27,534	2021	230.5	0.514	0.309	0.067
Saltee Islands	1,690	2013	293.9	0.579	0.010	0.002
Skomer, Skokholm and the Seas off Pembrokeshire	3,088	2022	297.2	0.566	0.019	0.004



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SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Wicklow Head	1,414	2022	166.1	0.465	0.034	0.007
Non-SPA Total <sup>1</sup>	-	-	-	-	2.687	0.782

**Table 1.12: Calculation of non-breeding season apportioning values for kittiwake.**

SPA	Apportioning value					
	Autumn migration (August to December)			Spring migration (January to April)		
	BDMPs population (no. of individuals)	Number of breeding adults in BDMPs population from SPA	Apportioning value (%)	BDMPs population (no. of individuals)	Number of breeding adults in BDMPs population from SPA	Apportioning value (%)
Ailsa Craig	UK western waters and Channel = 911,586	587	0.06	UK western waters and Channel = 691,526	782	0.11
Buchan Ness to Collieston Coast		5,017	0.55		7,525	1.09
Cape Wrath		12,413	1.36		16,550	2.39
East Caithness Cliffs		16,164	1.77		24,246	3.51
Flamborough and Filey Coast		15,047	1.65		22,570	3.26
Howth Head Coast		1,397	0.15		1,397	0.20
Ireland's Eye		565	0.06		565	0.08
Lambay Island		2,455	0.27		2,455	0.35
North Colonsay and Western Cliffs		6,676	0.73		8,901	1.29
Rathlin Island		9,506	1.04		12,675	1.83
Saltee Islands		1,275	0.14		1,275	0.18
Skomer, Skokholm and the Seas off Pembrokeshire		1,254	0.14		1,672	0.24
Troup, Pennan and Lion's Heads		5,958	0.65		8,938	1.29
West Westray		4,822	0.53		7,233	1.05
Wicklow Head	574	0.06	574	0.08		

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**1.3.6 Herring gull**

**SPA weighted proportions**

1.3.6.1 The calculation of apportioning values in the breeding season for all colonies from which the foraging range of herring gull shows potential connectivity with the Morgan Generation Assets is presented in Table 1.13. A breakdown of apportioning values for non-SPA colonies is presented in Appendix A. Calculation of apportioning values for use in the non-breeding season are presented in Table 1.14.

**Table 1.13: Calculation of apportioning values for herring gull in the breeding season for SPAs within foraging range.**

1 Colonies that make up the non-SPA total are presented in Appendix A.

2 Where a colony consists of multiple subsites average values are provided for distance to the Morgan Array Area and proportion of foraging range as sea.

SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Morecambe Bay and Duddon Estuary	1,552	2018-2023	40.8	0.490	1	0.509
Non-SPA Total <sup>1</sup>	-	-	-	-	1.264	0.491

**Table 1.14: Calculation of non-breeding season apportioning values for herring gull.**

SPA	Apportioning value		
	Non-breeding season (September to February)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Lambay Island	UK western waters = 173,299	2,890	1.67
Morecambe Bay and Duddon Estuary		2,774	1.60

**1.3.7 Lesser black-backed gull**

**SPA weighted proportions**

1.3.7.1 The calculation of apportioning values in the breeding season for all colonies from which the foraging range of lesser black-backed gull shows potential connectivity with the Morgan Generation Assets is presented in Table 1.15. A breakdown of apportioning values for non-SPA colonies is presented in Appendix A. Calculation of apportioning values for use in the non-breeding season are presented in Table 1.16.

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**Table 1.15: Calculation of apportioning values for lesser black-backed gull in the breeding season for SPAs within foraging range.**

1 Colonies that make up the non-SPA total are presented in Appendix A.

2 Where a colony consists of multiple subsites average values are provided for distance to the Morgan Array Area and proportion of foraging range as sea.

SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Ailsa Craig	378	2019	146.1	0.445	0.002	0.002
Bowland Fells	29,254	2018	79.1	0.417	0.546	0.501
Lambay Island	952	2010	131.8	0.427	0.001	0.001
Morecambe Bay and Duddon Estuary	1,768	2023	39.8	0.382	0.142	0.130
Ribble and Alt Estuaries	8,978	2021	62.2	0.367	0.301	0.276
Rathlin Island	1,038	2021	193.1	0.519	0.003	0.003
Non-SPA Total					0.745	0.084

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**Table 1.16: Calculation of non-breeding season apportioning values for lesser black-backed gull.**

SPA	Apportioning value								
	Autumn migration (August to October)			Winter (November to February)			Spring migration (March to April)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Ailsa Craig	UK western waters = 163,304	183	0.11	UK western waters = 41,159	73	0.18	UK western waters = 163,305	183	0.11
Bowland Fells		4,575	2.80		1,830	4.45		4,575	2.80
Isles of Scilly		13,496	8.26		3,856	9.37		13,496	8.26
Lambay Island		309	0.19		124	0.30		309	0.19
Morecambe Bay and Duddon Estuary		4,987	3.05		1,995	4.85		4,987	3.05
Rathlin Island		6,120	3.75		1,360	3.30		6,120	3.75
Ribble and Alt Estuaries		8,267	5.06		3,307	8.03		8,267	5.06
Skomer, Skokholm and Seas off Pembrokeshire		4,987	3.05		1,995	4.85		4,987	3.05

### 1.3.8 Great black-backed gull

#### SPA weighted proportions

1.3.8.1 The Morgan Generation Assets are not within the foraging range of great black-backed gull from any SPA colonies. Apportioning values for non-SPA colonies are presented in Appendix A. Calculation of apportioning values for the non-breeding season are presented in Table 1.17.

**Table 1.17: Calculation of non-breeding season apportioning values for great black-backed gull.**

SPA	Apportioning value		
	Non-breeding season (September to March)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Isles of Scilly	UK southwest & Channel waters = 17,742	1,622	9.14

### 1.3.9 Manx shearwater

#### SPA weighted proportions

1.3.9.1 The calculation of apportioning values in the breeding season for all colonies from which the foraging range of Manx shearwater shows potential connectivity with the Morgan Generation Assets is presented in Table 1.18. A breakdown of apportioning values for non-SPA colonies is presented in Appendix A. Calculation of apportioning values for use in the post-breeding and pre-breeding seasons are presented in Table 1.19.

**Table 1.18: Calculation of apportioning values for Manx shearwater in the breeding season for SPAs within foraging range.**

1 Colonies that make up the non-SPA total are presented in Appendix A.

2 Where a colony consists of multiple subsites average values are provided for distance to the Morgan Array Area and proportion of foraging range as sea.

SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Copeland Islands	9,700	2007	136.4	0.710	0.036	0.035
Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island	32,366	2001	164.3	0.664	0.089	0.085
Rum	240,000	2001	415.4	0.749	0.091	0.088
Isles of Scilly	538	2022	524.8	0.673	<0.001	<0.001
Skomer, Skokholm and the seas off Pembrokeshire/Sgomer, Sgogwm a moroedd Benfro	910,312	2018	293.5	0.666	0.782	0.752

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SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
St Kilda	9,606	1999	546.4	0.805	0.002	0.002
Non-SPA Total <sup>1</sup>					0.039	0.016

**Table 1.19: Calculation of post-breeding and pre-breeding season apportioning values for Manx shearwater.**

SPA	Apportioning value					
	Autumn migration season (August to early October)			Spring migration season (late March to May)		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Copeland Islands	UK western waters & Channel = 1,580,895	9,600	0.61	UK western waters & Channel = 1,580,895	9,600	0.61
Glannau Aberdaron ac Ynys Enlli/Aberdaron Coast and Bardsey Island		32,366	2.05		32,366	2.05
Rum		240,000	15.2		240,000	15.2
Isles of Scilly		1,020	0.06		1,020	0.06
Skomer, Skokholm and the seas off Pembrokeshire/Sgomer, Sgogwm a moroedd Benfro		700,000	44.28		700,000	44.28
St Kilda		9,604	0.61		9,604	0.61

**1.3.10 Fulmar**

**SPA weighted proportions**

- 1.3.10.1 The calculation of apportioning values in the breeding season for all colonies from which the foraging range of fulmar shows potential connectivity with the Morgan Generation Assets is presented in Table 1.20. A breakdown of apportioning values for non-SPA colonies is available on request due to the number of colonies included in the apportioning approach. Calculation of apportioning values for use in the post-breeding, non-breeding and pre-breeding seasons are presented in Table 1.21.
- 1.3.10.2 Due to the limitations of the apportioning tool and the application of the mean-maximum foraging range for fulmar, this excluded the Cape Wrath SPA, Handa SPA, Flannan Isles SPA, North Rona and Sula Sgeir SPA and St Kilda SPA. Apportioning values for these SPAs have therefore been estimated based on the apportioning values calculated for other colonies at the limit of the mean-maximum foraging range

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that support comparable populations (either individually or combined). Colonies for which this approach has been applied are italicised in Table 1.21.

**Table 1.20: Calculation of apportioning values for fulmar in the breeding season for SPAs within foraging range.**

1 Colonies that make up the non-SPA total are presented in Appendix A.

2 Where a colony consists of multiple subsites average values are provided for distance to the Morgan Array Area and proportion of foraging range as sea.

SPA name	Population (no. of breeding adults)	Year of count	Distance to Morgan Array Area (km)	Proportion of foraging range as sea	Resulting weight for colony	Proportional weight of colony
Cape Wrath	276	2017	-	-	-	<i>0.001</i>
Flannan Isles	6,132	2021	-	-	-	<i>0.003</i>
Handa	1,382	2019-2022	-	-	-	<i>0.001</i>
Horn Head to Fanad Head	1,080	2015	330.3	0.734	0.060	0.003
Isles of Scilly	432	2015-2022	518.9	0.709	0.010	0.001
Lambay Island	750	2015	131.6	0.667	0.288	0.015
Mingulay and Berneray	7,786	2021-2022	412.4	0.784	0.256	0.013
North Rona and Sula Sgeir	2,210	2021	-	-	-	<i>0.002</i>
Rathlin Island	2,076	2021	212.5	0.703	0.293	0.015
Saltee Islands	450	2013	283.5	0.680	0.036	0.002
St Kilda	58,372	2015-2016	-	-	-	<i>0.010</i>
The Shiant Isles	3,012	2015	528.7	0.830	0.057	0.003
Non-SPA Total	-	-	-	-		

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**Table 1.21: Calculation of non-breeding season apportioning values for fulmar.**

<b>Apportioning values</b>									
<b>SPA</b>	<b>Autumn migration (September to October)</b>			<b>Winter (November)</b>			<b>Spring migration (December to March)</b>		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
Cape Wrath	UK western waters, Channel and Ireland = 867,104	4,230	0.49	UK western waters, Channel and Ireland = 583,604	2,961	0.51	UK western waters, Channel and Ireland = 867,104	4,230	0.49
Fair Isle		5,930	0.68		5,930	1.02		5,930	0.68
Flannan Isles		14,656	1.69		10,259	1.76		14,656	1.69
Handa		3,740	0.43		2,618	0.45		3,740	0.43
Horn Head to Fanad Head		3,948	0.46		2,764	0.47		3,948	0.46
Isles of Scilly		478	0.06		335	0.06		478	0.06
Lambay Island		1,270	0.15		889	0.15		1,270	0.15
Mingulay and Berneray		18,092	2.09		12,664	2.17		18,092	2.09
North Rona and Sula Sgeir		10,000	1.15		7,000	1.20		10,000	1.15
Rathlin Island		3,036	0.35		2,125	0.36		3,036	0.35
Saltee Islands	1,050	0.12	735	0.13	1,050	0.12			



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<b>Apportioning values</b>									
<b>SPA</b>	<b>Autumn migration (September to October)</b>			<b>Winter (November)</b>			<b>Spring migration (December to March)</b>		
	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)	BDMPS population (no. of individuals)	Number of breeding adults in BDMPS population from SPA	Apportioning value (%)
St Kilda		132,110	15.24		92,477	15.85		132,110	15.24
The Shiant Isles		8,774	1.01		6,142	1.05		8,774	1.01

## 1.4 Discussion

### 1.4.1 Overview

1.4.1.1 The approaches used in this report to calculate apportioning values follow best practice methodologies (NatureScot, 2018; Natural England, 2021) and have been used to inform multiple previous offshore wind farm assessments. However, as with any methodology, it is important to identify where the approach applied result in certain assumptions that may lead to under or over-estimates of the proportion of breeding adult birds present in a given area. These include:

- Breeding adult birds
  - That birds are evenly distributed at sea, with this being extremely unlikely due to the known patchy distribution of prey species and information gained from tracking studies
  - That seabird colonies are independent of one another
  - Larger foraging ranges at larger breeding colonies due to competition and prey depletion closer to the colony (Storer-Ashmole's Halo; Elliot *et al.*, 2009)
  - The use of mean-maximum plus one standard deviation foraging ranges
- Immature birds
  - Limited information is available on the proportion of immature birds that return to natal waters and the distribution of immature birds within natal waters.

1.4.1.2 Consideration has been given in the ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3) to these assumptions, including where available site-specific tracking studies, and what effect they may have on the overall magnitude of any potential impacts. Further information on some of the assumptions identified above is provided below.

### 1.4.2 Foraging range

1.4.2.1 NatureScot (2018) recommends the use of the mean-maximum foraging range of each species however, recent project-specific guidance (e.g. NatureScot, 2021) in relation to LSE screening from all SNCBs recommends the use of the mean-maximum foraging range plus one standard deviation and as a consequence for apportioning. Whichever guidance is followed, there is no difference in the output from apportioning in respect to the Morgan Generation Assets. This a consequence of the spatial distribution of those seabird breeding colonies within mean-maximum foraging range plus one standard deviation of the Project. The apportioning approach in this report has therefore used the mean-maximum foraging range plus one standard deviation.

1.4.2.2 The use of the mean-maximum foraging range plus one standard deviation is recommended by SNCBs as it is considered to be precautionary. However, whilst it ensures a greater number of SPAs are included, it dilutes the total apportioned impact between more colonies, reducing the apportioned impact to colonies closer to the project. For example, the Morgan Generation Assets are within the mean-maximum foraging range of only three SPAs (compared to nine when applying the mean-maximum foraging range plus one standard deviation). The effect this has on the breeding season apportioning values for each SPA is presented in Table 1.22.

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**Table 1.22: Breeding season apportioning values for kittiwake calculated when incorporating different foraging range metrics.**

SPA name	Apportioning values calculated using:	
	Mean-maximum plus one standard deviation	Mean-maximum
Lambay Island	0.056	0.070
Ireland's Eye	0.031	0.040
Howth Head Coast	0.045	0.057

1.4.2.3 The use of a mean-maximum foraging range plus one standard deviation represents a highly precautionary approach regardless of its application as, although it ensures, from a HRA screening perspective, that no SPAs are erroneously omitted from the ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3) the likelihood of an LSE occurring on any project beyond mean-maximum foraging range is highly unlikely. A mean-maximum foraging range already represents the average of the maximum foraging ranges exhibited by birds across multiple studies. A standard deviation of a mean value represents the amount by which individual values differ from the mean value. It is an expression of confidence in the mean value and should not be applied as an absolute value as in the application of foraging ranges for screening. This is particularly so when the average value is already an average of maximum values from multiple studies which may not reflect the true foraging behaviour of all individuals from a colony.

1.4.2.4 However, despite the limitations of the application of a mean-maximum foraging range plus one standard deviation for apportioning purposes, its application is necessary to ensure that potential impacts can be apportioned to all SPAs for which connectivity has been identified. The use of a mean-maximum foraging range would result in a 0% apportioning value being applied to all colonies between the mean-maximum foraging range and mean-maximum foraging range plus one standard deviation. However, given the precaution involved in identifying connectivity, the application of a 0% apportioning value is unlikely to be incorrect.

1.4.2.5 The apportioning approach presented in this report applies the mean-maximum foraging range plus 1 SD.

**1.4.3 Immature proportions**

1.4.3.1 Although any population of breeding seabirds has an immature component associated with it, the spatial distribution of that component is often very different to the breeding adult component, especially in the breeding season. For many seabird species, immature birds gradually begin to return to natal waters in the breeding season as they get nearer to breeding age. The proportion of older immature age classes in natal waters is therefore higher than the proportion of younger immature age classes. In addition, the distribution of immature birds in natal waters may be dictated by proximity to breeding colonies either because birds are prospecting for breeding sites or due to competition with breeding adult birds. Where all immature classes of a species can be reliably identified during baseline surveys this is less of an issue however, for species for which only some age classes can be identified during baseline surveys resulting immature proportions represent an under-estimate.

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- 1.4.3.2 In the context of this apportioning appendix this is relevant to kittiwake. Whilst one year old kittiwakes can be easily identified due to differences in plumage, second and third year old birds, which have not yet reached the age of first breeding, cannot (Coulson, 2011; Olsen and Larsson, 2003). Therefore data on age class collected during surveys will potentially represent a considerable overestimate of the proportion of breeding adults present in a given sea area.
- 1.4.3.3 It is certain that an unknown proportion of the cohort of unaged ‘adult type’ kittiwakes at the Morgan Generation Assets will include two and three year old birds. Coulson (2011) provides evidence that shows that immature kittiwake visit natal waters with increasing numbers of older immatures visiting breeding colonies. This therefore supports the conclusion that the approach proposed to calculate an apportioning value for the breeding season will under-estimate the proportion of second and third year immatures which will show a much greater affinity for natal waters than first year birds.
- 1.4.3.4 As detailed in section 1.2.3, an approach has been applied aims to address the underestimation. Whilst maintaining the proportion represented of each year class of immatures at the Morgan Generation Assets, mortality reduces the absolute number of birds present from each successive year class of kittiwake. In calculating the number of two and three year old kittiwakes at the Morgan Generation Assets, the analysis uses survival rates of each immature age class of kittiwake that follows rate provided in Horswill and Robinson (2015). This approach is considered precautionary for the following reasons:
- It is known that older immature age classes that are not identifiable during baseline surveys will be present at the Morgan Generation Assets
  - A smaller proportion of one year old birds are likely to be present in natal waters with a much greater proportion of older age classes of immature birds showing affinity with natal waters and therefore the proportions of older age classes is likely underestimated when applying the approach.
- 1.4.3.5 The identification of immature age classes of large gulls and gannets during baseline surveys is far easier than for kittiwakes and the immature proportions calculated for these species are therefore considered to be more representative. The identification of immature age classes of auk species is not possible from baseline surveys (with the exception of juvenile birds in the post-breeding season) and, where necessary, other sources will be relied upon within the ISAA part 3 – SPA and Ramsar site assessments (Document Reference E1.3).

## 1.5 References

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## Appendix A: Breeding season apportioning values for non-SPA colonies

### A.1. Guillemot

Table A. 1: Apportioning values for guillemot at non-SPA colonies.

Master site in SMP	Subsite	Count	Apportioning value
St Bee's Head	St Bees Head/SB2	6,200	0.40
St Bee's Head	St Bees Head/SB3	250	0.02
Isle of Man	Bradda - Fleshwick	57	0.00
Isle of Man	Calf of Man	416	0.03
Isle of Man	Glen Maye - Peel	1,515	0.03
Isle of Man	Port - St Mary - Sound	2,139	0.17
Isle of Man	Ramsey - Port Mooar	409	0.06
Isle of Man	Sound - Port Erin	30	0.00
Balcary Point	Balcary Point 1	85	0.00
Meikle Ross & Little Ross	Meikle Ross	250	0.01
Great Orme and Little Orme	Great Orme	622	0.02
Great Orme and Little Orme	Little Orme	444	0.02
Porth Llanlleiana to Porth Eilian	Middle Mouse	2,464	0.08
Puffin Island - Anglesey	Puffin Island	2,799	0.09
South Stack	Abraham's Bosom	165	0.00
South Stack	Gogarth	196	0.00
South Stack	South stack and Penlas	3,528	0.06

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**A.2. Razorbill**

**Table A. 2: Apportioning values for razorbill at non-SPA colonies.**

Master site in SMP	Subsite	Count	Apportioning value
St Bee's Head	St Bees Head/SB2	284	0.09
St Bee's Head	St Bees Head/SB3	28	0.01
Isle of Man	Bradda - Fleshwick	44	0.01
Isle of Man	Calf of Man	362	0.15
Isle of Man	Doughlas - Port Soderick	17	0.02
Isle of Man	Fleshwick - Stroin Voigh	14	0.00
Isle of Man	Glen Maye - Peel	271	0.03
Isle of Man	Port - St Mary - Sound	424	0.20
Isle of Man	Port Soderick - Port Grenaugh	108	0.11
Isle of Man	Ramsey - Port Moor	206	0.17
Isle of Man	Sound - Port Erin	73	0.01
Isle of Man	Stroin Voigh - Niarbyl	5	0.00
Balcary Point	Balcary Point 1	11	0.00
Meikle Ross & Little Ross	Meikle Ross	100	0.02
Monrieth Cliffs + Scar Rocks	Big Scar	39	0.00
Mull of Galloway	Mull of Galloway B	18	0.00
Mull of Galloway	Mull of Galloway C	85	0.01
Mull of Galloway	Mull of Galloway D	17	0.00
Mull of Galloway	Mull of Galloway E	34	0.00
Mull of Galloway	Mull of Galloway F	16	0.00

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Master site in SMP	Subsite	Count	Apportioning value
Mull of Galloway	Mull of Galloway RSPB Reserve	158	0.01
Port Mona, Devil's Bridge, Laggantulloch Head	Laggantulloch Head	30	0.00
Port Mona, Devil's Bridge, Laggantulloch Head	Port Mona	23	0.00
Rigg Bay + Cruggleton	Cruggleton Cliff	1	0.00
Carmel Head South	Pant yr Eglwys	28	0.00
Great Orme and Little Orme	Great Orme	196	0.04
Great Orme and Little Orme	Little Orme	47	0.01
Point Lynas to Trwyn Du	Bwrdd Arthur to Fedw Fawr	5	0.00
Porth Llanlleiana to Porth Eilian	Middle Mouse	90	0.01
Puffin Island - Anglesey	Puffin Island	151	0.03
South Stack	Abraham's Bosom	59	0.01
South Stack	Gogarth	43	0.00
South Stack	South stack and Penlas	704	0.06

### A.3. Gannet

Table A. 3: Apportioning values for gannet at non-SPA colonies

Master site in SMP	Subsite	Count	Apportioning value
Lambay Island	Lambay Coastal 1	1,456	0.03
Monrieth Cliffs + Scar Rocks	Big Scar	3,340	0.11



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**A.4. Kittiwake**

**Table A. 4: Apportioning values for kittiwake at non-SPA colonies**

Master site in SMP	Subsite	Count	Apportioning value
Inishtrahull Island SPA	Inishtrahull	86	0.00
Inishtrahull Island SPA	Inishtrahull	30	0.00
Loughshinny to Killiney	Rockabill 2	222	0.00
Bray Head	Bray Head North	1,562	0.01
Bray Head	Bray Head North	190	0.00
St Bee's Head	St Bees Head/SB2	2,528	0.14
St Bee's Head	St Bees Head/SB3	10	0.00
Isle of Man	Calf of Man	262	0.03
Isle of Man	Glen Maye - Peel	258	0.01
Isle of Man	Port - St Mary - Sound	1,160	0.17
Isle of Man	Ramsey - Port Mooar	410	0.09
Morecambe Central Gas Platform	Morecambe Gas Platform	44	0.01
Causeway Coast	Carrick-a-rede	1,136	0.00
Giants Causeway Coast	Dunluce 1	26	0.00
Gobbins	Gobbins 4	230	0.00
Gobbins	Gobbins 5	1,352	0.01
Muck Island	Muck 1	600	0.00
North Antrim coast	Portrush 1	256	0.00
Sheep Island, Causeway Coast	Sheep Island	632	0.00
Skerry Islands	Little Skerries	152	0.00

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Master site in SMP	Subsite	Count	Apportioning value
Gun's Island - Northern Island	Gun's Island	340	0.00
Maggy's Leap	Maggy's Leap 1	318	0.00
Strangford Lough	Gun's Island and Sandy's Island	248	0.00
Downhill	Castlerock	700	0.00
North Antrim coast	Portrush 2	296	0.00
Islay - East (Port Askaig to Bowmore)	Islay 21	142	0.00
Islay - West (Port Askaig to Bruichladdich)	Islay 34	266	0.00
Islay - West (Port Askaig to Bruichladdich)	Islay 35	68	0.00
Islay - East (Port Askaig to Bowmore)	Islay 53	768	0.00
Islay - East (Port Askaig to Bowmore)	Islay 54	306	0.00
Sanda Island, Sheep Island and Glunimore Island	Glunimore Island	4	0.00
Meikle Ross & Little Ross	Meikle Ross	14	0.00
Monrieth Cliffs + Scar Rocks	Big Scar	8	0.00
Mull of Galloway	Mull of Galloway C	138	0.00
Mull of Galloway	Mull of Galloway D	116	0.00
Mull of Galloway	Mull of Galloway E	124	0.00
Mull of Galloway	Mull of Galloway F	50	0.00
Mull of Galloway	Mull of Galloway RSPB Reserve	252	0.00
Port Mona, Devil's Bridge, Laggantulloch Head	Port Mona	60	0.00
Grassholm, Bishop & Clerks, and Ramsey	Cantwr-Midland	194	0.00
Grassholm, Bishop & Clerks, and Ramsey	Grassholm	14	0.00
Grassholm, Bishop & Clerks, and Ramsey	Ramsey SE	6	0.00
Grassholm, Bishop & Clerks, and Ramsey	Ramsey W	586	0.00

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Master site in SMP	Subsite	Count	Apportioning value
New Quay to Lochtyn	New Quay 3	750	0.00
Bardsey Island & Ynysoedd Gwylan	Bardsey (Ynys Enlli)	576	0.00
Coastal Gwynedd	Carreg y Llam	1,736	0.02
Coastal Gwynedd	St Tudwal East	564	0.00
Coastal Gwynedd	Trwyn Cilan West	398	0.00
Great Orme and Little Orme	Great Orme	1,304	0.07
Great Orme and Little Orme	Little Orme	1,322	0.06
Point Lynas to Trwyn Du	Freshwater Bay	494	0.03
Point Lynas to Trwyn Du	Ynys Moelfre	120	0.01
Porth Llanlleiana to Porth Eilian	Middle Mouse	104	0.01
Puffin Island - Anglesey	Puffin Island	1,142	0.06

## A.5. Herring gull

Table A. 5: Apportioning values for herring gull at non-SPA colonies

Master site in SMP	Subsite	Count	Apportioning value
Barrow-in-Furness	BAESystems (ground)	20	0.00
Barrow-in-Furness	BAESystems (roof)	130	0.00
Barrow-in-Furness	BAESystems (roof)	160	0.00
Barrow-in-Furness	Brady's Warehouse	8	0.00
Barrow-in-Furness	Brady's Warehouse	4	0.00
Barrow-in-Furness	MFI Superstore	8	0.00

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Master site in SMP	Subsite	Count	Apportioning value
Greenside Quarry, Kendal	Greenside Quarry or Kendal Fell Quarry	6	0.00
Haverigg	Haverigg Prison	592	0.01
Rowrah Quarry	Rowrah Quarry 1	6	0.00
Salterhall Quarry	Quarry	20	0.00
St Bee's Head	St Bees Head/SB1	50	0.00
St Bee's Head	St Bees Head/SB2	594	0.01
St Bee's Head	St Bees Head/SB3	560	0.01
Whitehaven (Buildings)	Bleach Green	16	0.00
Whitehaven (Buildings)	Bransty	150	0.00
Whitehaven (Buildings)	Corcickle	70	0.00
Whitehaven (Buildings)	Hensingham	80	0.00
Whitehaven (Buildings)	Hill Crest/High Meadows	60	0.00
Whitehaven (Buildings)	Kells/Woodhouse	100	0.00
Whitehaven (Buildings)	Marchon Chemical Works	24	0.00
Whitehaven (Buildings)	Mirehouse	50	0.00
Whitehaven (Buildings)	Town Centre	240	0.00
Isle of Man	Bradda - Fleshwick	306	0.00
Isle of Man	Calf of Man	1,340	0.02
Isle of Man	Castletown	12	0.00
Isle of Man	Clay Head - Douglas	1,694	0.07
Isle of Man	Dhoon - Laxey Bay	590	0.02
Isle of Man	Doughlas - Port Soderick	1,582	0.06

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Master site in SMP	Subsite	Count	Apportioning value
Isle of Man	Fleshwick - Stroin Voigh	152	0.00
Isle of Man	Glen Maye - Peel	1,914	0.03
Isle of Man	Kitterland	86	0.00
Isle of Man	Langness	240	0.01
Isle of Man	Niarbyl - Glen Maye	256	0.00
Isle of Man	Peel - Glen Mooar	1,414	0.02
Isle of Man	Phurt - Ramsey	44	0.00
Isle of Man	Point of Ayre gravel pit	232	0.00
Isle of Man	Port - St Mary - Sound	692	0.01
Isle of Man	Port Grenaugh - Derbyhaven	286	0.01
Isle of Man	Port Mooar - Dhoon	900	0.03
Isle of Man	Port Soderick - Port Grenaugh	398	0.01
Isle of Man	Ramsey - Port Mooar	1,258	0.04
Isle of Man	Sart Fell	288	0.01
Isle of Man	Sliean Freoaghane	14	0.00
Isle of Man	Sound - Port Erin	344	0.01
Isle of Man	Stroin Voigh - Niarbyl	210	0.00
Blackpool	Layton Industrial Estate	50	0.00
Blackpool	Victoria Hospital	30	0.00
Carnforth Marsh and Leighton Moss	Carnforth Marsh	4	0.00
Fleetwood	Fleetwood Town	208	0.00
Fleetwood	Fleetwood Town	20	0.00
Heysham Power Station	Heysham Power Station 1	60	0.00

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Master site in SMP	Subsite	Count	Apportioning value
Morecambe	Morecambe Town	2	0.00
Morecambe Central Gas Platform	Morecambe Gas Platform	2	0.00
Ribble Estuary NNR	Hesketh and Banks Marshes	1,500	0.02
Ribble Estuary NNR	Warton Marsh	4	0.00
Tarnbrook Fell	Tarnbrook Fell 1	950	0.01
Netherton	Netherton Factory Roofs	70	0.00
Seaforth Nature Reserve and Liverpool City	Liverpool 1	28	0.00
Seaforth Nature Reserve and Liverpool City	Liverpool 2	18	0.00
Seaforth Nature Reserve and Liverpool City	Liverpool 3	2	0.00
Balcary Point	Balcary Point 1	100	0.00
Meikle Ross & Little Ross	Meikle Ross	102	0.00
Burrowhead	Burrowhead 1	20	0.00
Burrowhead	Burrowhead 1	12	0.00
Burrowhead	Burrowhead 2	84	0.00
Monrieth Cliffs + Scar Rocks	Big Scar	6	0.00
Monrieth Cliffs + Scar Rocks	Monrieth Cliffs	62	0.00
Mull of Galloway	Mull of Galloway B	12	0.00
Mull of Galloway	Mull of Galloway C	2	0.00
Mull of Galloway	Mull of Galloway D	4	0.00
Mull of Galloway	Mull of Galloway E	2	0.00
Mull of Galloway	Mull of Galloway RSPB Reserve	16	0.00
Port Mona, Devil's Bridge, Laggantulloch Head	Port Mona	40	0.00
Rigg Bay + Cruggleton	Cruggleton Cliff	42	0.00

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Master site in SMP	Subsite	Count	Apportioning value
BHP Terminal/Llawndy Farm Area	Llawndy	14	0.00
Colwyn Bay	Colwyn Bay Town	38	0.00
Kinmel Bay	Kinmel B	10	0.00
Llanddulas Quarries	East Quarry	42	0.00
Llanddulas Quarries	West Quarry	58	0.00
Llanddulas Quarries	West Quarry	10	0.00
Prestatyn	Prestat	122	0.00
Rhyl	Rhy	102	0.00
Inland Gwynedd	Conwy Mountain	4	0.00
Inland Gwynedd	Conwy Town	54	0.00
Inland Gwynedd	Conwy Town	12	0.00
Inland Gwynedd	Conwy Town	24	0.00
Inland Gwynedd	Conwy Town	62	0.00
Inland Gwynedd	Deganwy Town	38	0.00
Inland Gwynedd	Llandudno town	2	0.00
Inland Gwynedd	Llandudno town	4	0.00
Inland Gwynedd	Llandudno town	14	0.00
Inland Gwynedd	Llandudno town	4	0.00
Inland Gwynedd	Llandudno town	8	0.00
Inland Gwynedd	Llandudno town	34	0.00
Inland Gwynedd	Llandudno town	20	0.00
Inland Gwynedd	Llandudno town	6	0.00
Inland Gwynedd	Llandudno town	16	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Inland Gwynedd	Llandudno town	12	0.00
Inland Gwynedd	Llandudno town	4	0.00
Inland Gwynedd	Llandudno town	6	0.00
Inland Gwynedd	Llandudno town	14	0.00
Inland Gwynedd	Llandudno town	4	0.00
Bangor and Caernarfon	Bangor buildings	12	0.00
Bangor and Caernarfon	Bangor buildings	16	0.00
Bangor and Caernarfon	Bangor buildings	2	0.00
Bangor and Caernarfon	Bangor buildings	6	0.00
Bangor and Caernarfon	Bangor buildings	4	0.00
Bangor and Caernarfon	Bangor buildings	26	0.00
Bangor and Caernarfon	Bangor buildings	30	0.00
Bangor and Caernarfon	Bangor buildings	8	0.00
Bangor and Caernarfon	Bangor buildings	16	0.00
Bangor and Caernarfon	Bangor buildings	4	0.00
Bangor and Caernarfon	Bangor buildings	14	0.00
Bangor and Caernarfon	Bangor buildings	2	0.00
Bangor and Caernarfon	Bangor buildings	2	0.00
Beaumaris	Beau	18	0.00
Carmel Head South	Pant yr Eglwys	46	0.00
Carmel Head South	Porth y Bribys	46	0.00
Carmel Head South	West Mouse	46	0.00
Carmel Head South	Ynys y Fydlyn	4	0.00



## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Point Lynas to Trwyn Du	Bryntirion	2	0.00
Point Lynas to Trwyn Du	Bwrdd Arthur to Fedw Fawr	30	0.00
Point Lynas to Trwyn Du	Bychan to Bellech	28	0.00
Point Lynas to Trwyn Du	Dulas Estate	8	0.00
Point Lynas to Trwyn Du	Fedw Fawr to Trwyn Du	6	0.00
Point Lynas to Trwyn Du	Freshwater Bay	38	0.00
Point Lynas to Trwyn Du	Lynas to Freshwater Bay	18	0.00
Point Lynas to Trwyn Du	Moelfre Cliffs	2	0.00
Point Lynas to Trwyn Du	Point Lynas Bay	32	0.00
Point Lynas to Trwyn Du	St Davids	54	0.00
Point Lynas to Trwyn Du	Ynys Dulas	80	0.00
Point Lynas to Trwyn Du	Ynys Moelfre	274	0.00
Porth Llanlleiana to Porth Eilian	Bull Bay	6	0.00
Porth Llanlleiana to Porth Eilian	East Mouse	108	0.00
Porth Llanlleiana to Porth Eilian	Middle Mouse	178	0.00
Porth Llanlleiana to Porth Eilian	Porth Wren	16	0.00
Porth Llanlleiana to Porth Eilian	Trwynbychan to Porthllechog	8	0.00
Puffin Island - Anglesey	Puffin Island	800	0.01
Rhoscolyn to Trearddur	Maen Y Sais	2	0.00
Rhoscolyn to Trearddur	Porth Diana	34	0.00
Rhoscolyn to Trearddur	Rhoscolyn 1	38	0.00
Rhoscolyn to Trearddur	Rhoscolyn 2	26	0.00
Rhoscolyn to Trearddur	Rhoscolyn 3	24	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Rhoscolyn to Trearddur	Rhoscolyn 4	12	0.00
Rhoscolyn to Trearddur	Rhoscolyn 5	4	0.00
Rhoscolyn to Trearddur	Ynys Traws	248	0.00
South Stack	South stack and Penlas	484	0.00
South Stack	The Range	110	0.00
The Skerries	The Skerries 1	1,680	0.01

### A.6. Lesser black-backed gull

Table A. 6: Apportioning values for lesser black-backed gull at non-SPA colonies

Master site in SMP	Subsite	Count	Apportioning value
Dublin City Centre, Skerries and Balbriggan	Dublin City North	10	0.00
Dublin City Centre, Skerries and Balbriggan	Dublin City South	22	0.00
Dublin City Centre, Skerries and Balbriggan	Dublin City South	10	0.00
Ireland's Eye	Ireland's Eye 4	2	0.00
Loughshinny to Killiney	Dalkey 2 - Lamb Island	2	0.00
Skerries Islands	St Patricks Island	2	0.00
Monaghan Lakes	Lough Egish	12	0.00
Hartlepool	Docks	6	0.00
Hartlepool	Town	74	0.00
Middlesbrough	Middlesbrough Town Centre	2	0.00
Stockton	Stockton Town Centre	4	0.00
Terra Factory, Billingham Beck	Terra Roof	94	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Barrow-in-Furness	BAESystems (ground)	170	0.00
Barrow-in-Furness	BAESystems (roof)	70	0.00
Barrow-in-Furness	BAESystems (roof)	10	0.00
Barrow-in-Furness	MFI Superstore	38	0.00
Carlisle City	Carlisle City 1	4	0.00
Derwent Water	Lingholme Islands	2	0.00
Derwent Water	Scarfe Rocks	6	0.00
Greenside Quarry, Kendal	Greenside Quarry or Kendal Fell Quarry	2	0.00
Haverigg	Haverigg Prison	860	0.02
Hodbarrow Lagoon	Hodbarrow 1	16	0.00
Salterhall Quarry	Quarry	2	0.00
South Solway	RAF Carlisle (closed)	600	0.00
South Solway	Rockcliffe Marsh	4,800	0.01
St Bee's Head	St Bees Head/SB1	2	0.00
Whitehaven (Buildings)	Marchon Chemical Works	2	0.00
Windermere	Costrells Rocks	2	0.00
Wood Howe, Haweswater	Wooded Island	250	0.00
Tyburn/Bromford	Tyburn to Bromford	60	0.00
Hereford City	Bulmers Cider Factory, North	40	0.00
Hereford City	Inco Alloys	20	0.00
Hereford City	Post Office Sorting Office	20	0.00
Hereford City, Maylord Orchards	Maylord Orchards, Hereford City	2	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Kidderminster	Kidderminster 1	4	0.00
Stourport	Stourport 1	2	0.00
Worcester City Centre	Worcester City Centre	50	0.00
Worcester City Centre	Worcester City Centre	16	0.00
Flamborough Head South	Flamborough 8	2	0.00
Isle of Man	Calf of Man	56	0.00
Isle of Man	Clay Head - Douglas	10	0.00
Isle of Man	Dhoon - Laxey Bay	6	0.00
Isle of Man	Doughlas - Port Soderick	6	0.00
Isle of Man	Fleshwick - Stroin Voigh	4	0.00
Isle of Man	Peel - Glen Mooar	2	0.00
Isle of Man	Phurt - Ramsey	2	0.00
Isle of Man	Point of Ayre gravel pit	76	0.00
Isle of Man	Port - St Mary - Sound	2	0.00
Isle of Man	Port Grenaugh - Derbyhaven	6	0.00
Isle of Man	Port Mooar - Dhoon	18	0.00
Isle of Man	Port Soderick - Port Grenaugh	2	0.00
Isle of Man	Ramsey - Port Mooar	38	0.00
Blackpool	Layton Industrial Estate	10	0.00
Carnforth Marsh and Leighton Moss	Carnforth Marsh	6	0.00
Fleetwood	Fleetwood Town	30	0.00
Heysham Power Station	Heysham Power Station 1	70	0.00
Morecambe	Morecambe Town	2	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Netherton	Netherton Factory Roofs	30	0.00
Seaforth Nature Reserve and Liverpool City	Liverpool 1	40	0.00
Seaforth Nature Reserve and Liverpool City	Liverpool 2	26	0.00
Seaforth Nature Reserve and Liverpool City	Liverpool 3	6	0.00
Cayton Bay to Filey	Filey Town	2	0.00
Berwick to Scottish Border	Berwick 7	2	0.00
Berwick upon Tweed	Walled Area	12	0.00
Coquet Island	Coquet Island 1	356	0.00
Farne Islands - Inner Group	East Wideopen	182	0.00
Farne Islands - Inner Group	Inner Farne	14	0.00
Farne Islands - Inner Group	Knoxes Reef	4	0.00
Farne Islands - Inner Group	West Wideopen	306	0.00
Farne Islands - Outer Group	Big Harcar	166	0.00
Farne Islands - Outer Group	Brownsman	28	0.00
Farne Islands - Outer Group	North Wamses	314	0.00
Farne Islands - Outer Group	South Wamses	228	0.00
Farne Islands - Outer Group	Staple	88	0.00
Northumberland inland gull colonies	Plenmeller Common	2	0.00
Whitfield Lough	Whitfield Lough 1	8	0.00
Willyshaw Rigg	Willyshaw Rigg 1	6	0.00
Newcastle Upon Tyne	City Centre	8	0.00
Northumberland inland gull colonies	Scotswood	14	0.00
Birmingham	Birmingham City Centre	80	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Belfast	Belfast City Centre	86	0.00
Belfast	Belfast Harbour	40	0.00
Causeway Coast	Ballintoy	8	0.00
Larne Lough	Blue Circle Island	2	0.00
Lough Neagh - Antrim sites	Cormorant Rock/Skady Tower	120	0.00
Lough Neagh - Antrim sites	Tolan's flat	180	0.00
Lough Neagh - Armagh sites	Padian	24	0.00
Muck Island	Muck 1	22	0.00
Sheep Island, Causeway Coast	Sheep Island	6	0.00
Skerry Islands	Large Skerries	522	0.00
Skerry Islands	Little Skerries	16	0.00
The Maidens	The Maidens 1	14	0.00
Lough Neagh - Armagh sites	Coney Island Flat	60	0.00
Lough Neagh - Armagh sites	Croaghan Island	90	0.00
Lough Neagh - Armagh sites	Derrywarragh Flat	4	0.00
Lough Neagh - Armagh sites	Phil Roe's Flat	20	0.00
Lough Neagh - Armagh sites	Phil Roe's Flat	20	0.00
Lough Neagh - Armagh sites	Shallow Flat	134	0.00
Copeland Island, Light House Island and Mew Islands	Big Copeland Island	360	0.00
Copeland Island, Light House Island and Mew Islands	Lighthouse island	380	0.00
Copeland Island, Light House Island and Mew Islands	Mew Island	100	0.00
Strangford Lough	Boretree Island	98	0.00
Strangford Lough	Drummond	20	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Strangford Lough	Dunnyneill	2	0.00
Strangford Lough	Gabcock Island	46	0.00
Strangford Lough	Lesser Minnis's Island	28	0.00
Strangford Lough	West Boretree	62	0.00
Lower Lough Erne	Gull Rock	60	0.00
Lower Lough Erne	Rabbit Island	18	0.00
Lower Lough Erne	Trahanacarrick	2	0.00
Lough Neagh - Antrim sites	Gawley's Bay 1	84	0.00
Lough Neagh - Tyrone sites	Scaddy Island	214	0.00
Lough Neagh - Tyrone sites	Taylor's Rock	36	0.00
Burnt Islands - Kyles of Bute	Burnt Islands	100	0.00
Bute	Scoutag Moor	600	0.00
Bute	St Ninians Bay	300	0.00
East Jura	East Jura 22	2	0.00
East Jura	Eilean nan Coinean	48	0.00
Gigha	Cara 2	12	0.00
Gigha	Cara 3	8	0.00
Gigha	Cara 4	8	0.00
Gigha	Eilean Garbh (Inland)	400	0.00
Gigha	Eilean Liath	2	0.00
Inchmarnock Island, Bute	Inchmarnock (West)	400	0.00
Islay - East (Port Askaig to Bowmore)	Islay 11	8	0.00
Islay - East (Port Askaig to Bowmore)	Islay 15	2	0.00

**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

Master site in SMP	Subsite	Count	Apportioning value
Islay - East (Port Askaig to Bowmore)	Islay-Texa	38	0.00
Islay - East (Port Askaig to Bowmore)	Eilean Mhiccoinnich	20	0.00
Islay - East (Port Askaig to Bowmore)	Islay 65	4	0.00
Islay - East (Port Askaig to Bowmore)	Orsay	2	0.00
Jura	Jura Feolin 1	44	0.00
Jura (West)	Jura West 1	8	0.00
Jura (West)	Jura West 1	6	0.00
Loch Ciaran, North Kintyre	Loch Ciaran	10	0.00
Sound of Jura	Corr Eilean	40	0.00
Sound of Jura	Eilean Gamhna	2	0.00
Sound of Jura	Eilean Mor	2	0.00
Loch Fyne	Eilean a' Bhuic	2	0.00
Loch Fyne	Glas Eilean	80	0.00
Sanda Island, Sheep Island and Glunimore Island	Sanda Island	82	0.00
Sanda Island, Sheep Island and Glunimore Island	Sheep Island	36	0.00
West Loch Tarbert	Eilean Eoghainn	2	0.00
Bearsden	St Andrews Primary School	2	0.00
Milngavie	Cloberfield Industrial Estate	174	0.00
Milngavie	Garvies (Soft Drinks)	60	0.00
Inchmickery, Inchgarvie, Forth Rail Bridge	Inchgarvie	162	0.00
Inchmickery, Inchgarvie, Forth Rail Bridge	Inchmickery	484	0.00
Clydebank	Scotstoun (Bae Systems)	80	0.00
Glasgow	Drumchapel Industrial Estate	134	0.00



## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Glasgow	Finnieston	40	0.00
Glasgow	Hamiltonhill Industrial Estate	160	0.00
Glasgow	Hogganfield	34	0.00
Glasgow	Lambhill	34	0.00
Glasgow	Merchant City	160	0.00
Glasgow	Possil Cross	366	0.00
Glasgow	Possil Park Industrial Estate	174	0.00
Glasgow	Queenzlie Industrial Estate	10	0.00
Glasgow	South Street, Partick	4	0.00
Glasgow	Springburn	16	0.00
Glasgow	Springburn (Cape Boards)	8	0.00
Glasgow	St Rollox Works	60	0.00
ATOP Factory Buildings - Clackmannan	Menstrie Factory	56	0.00
ATOP Factory Buildings - Clackmannan	Tullibody Warehouses	10	0.00
Menstrie Warehouses	Warehouses	110	0.00
Burncrooks Reservoir	Burncrooks Reservoir 1	2	0.00
Clydebank	Mountblow Bonded Warehouse	60	0.00
Carstairs Junction	Carstairs Junction State Hospital	80	0.00
Cumbernauld	Blairlinn Industrial Estate	134	0.00
Cumbernauld	Carbrain Industrial Estate	18	0.00
Cumbernauld	Lenziemill Industrial Estate North	44	0.00
Cumbernauld	Lenziemill Industrial Estate South	134	0.00
Cumbernauld	Wardpark Industrial Estate North	106	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Cumbernauld	Wardpark Industrial Estate South	420	0.00
Queenzieburn	Queenzieburn Industrial Estate	42	0.00
Cumnock/Gasswater	Boghead Lane	8	0.00
Arran	Pladda	240	0.00
Holy Island, Strathclyde	Holy Island 1	10	0.00
Holy Island, Strathclyde	Holy Island 2	126	0.00
Holy Island, Strathclyde	Holy Island 2	24	0.00
Holy Island, Strathclyde	Holy Island 3	30	0.00
Holy Island, Strathclyde	Holy Island 3	68	0.00
Holy Island, Strathclyde	Holy Island 3	42	0.00
Holy Island, Strathclyde	Holy Island 4	14	0.00
Holy Island, Strathclyde	Holy Island 5	4	0.00
Holy Island, Strathclyde	Holy Island 6	4	0.00
Holy Island, Strathclyde	Holy Island 7	666	0.00
Horse Island	Horse Is.	5,354	0.00
Irvine	Irvine (Shop/Centre)	100	0.00
Irvine	Irvine (Volvo)	94	0.00
Little Cumbrae	Little Cumbrae 1	2,400	0.00
Dumbarton	Ballantine Banded Warehouse	260	0.00
Dumbarton	Broadmeadow Industrial Estate	6	0.00
Helensburgh	Hermitage Primary School	2	0.00
Ministry of Defence, Coulport	M.O.D. Coulport	18	0.00
Dalgety Bay	Inverkeithing	76	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Forth Islands - Bass Rock to Haystack	Car Craig	6	0.00
Forth Islands - Bass Rock to Haystack	Inchcolm	2,442	0.00
Elderslie	Phoenix Road Industrial Estate	500	0.00
Balgray Reservoir Island	Balgray Reservoir Island 1	2	0.00
Eaglesham Trs	Eaglesham Trs 1	4	0.00
Glasgow	Thornliebank	74	0.00
Grangemouth to Gardrum Moss	Bonnybridge	2	0.00
Grangemouth to Gardrum Moss	Denny	2	0.00
Grangemouth to Gardrum Moss	Denny Loanhead	40	0.00
Grangemouth to Gardrum Moss	Falkirk	88	0.00
Grangemouth to Gardrum Moss	Grangemouth	226	0.00
Greenock	Bridgend	2	0.00
Greenock	Cappielaw Industrial Estate	6	0.00
Greenock	Cartsdyke (Engineering Works)	12	0.00
Greenock	Cartsdyke Industrial Estate	34	0.00
Greenock	Central	6	0.00
Greenock	Gibshill Industrial Estate	36	0.00
Greenock	Great Harbour	6	0.00
Greenock	Ingleston Street	10	0.00
Greenock	James Watt Duck	86	0.00
Greenock	Kingston Industrial Estate (Anaplast)	6	0.00
Greenock	Lyndedock Street Industrial Estate	24	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Greenock	Ocean Terminal	2	0.00
Greenock	Pottery Street	122	0.00
Greenock	West End	18	0.00
Loch Thom Island	Loch Thom Island 1	2	0.00
Port Glasgow	Lithgows (Former Shipyard)	8	0.00
Kilmarnock	Blackwood Bros./Jenson	10	0.00
Kilmarnock	Kilmarnock College	4	0.00
Kilmarnock	King Street/Towncentre	14	0.00
Kilmarnock	King Street/Towncentre	132	0.00
Kilmarnock	Moorfield Distribution	68	0.00
Kilmarnock	Park Street/J. Walkers	36	0.00
Kilmarnock	Park Street/J. Walkers	4	0.00
Forth Islands - Bass Rock to Haystack	Inchkeith	6,552	0.00
Kirkcaldy Town Centre	East Fergus Place	12	0.00
Ayr Town Centre to Newton on Ayr	Ayr 1	24	0.00
Ayr Town Centre to Newton on Ayr	Ayr 2	162	0.00
Ayr Town Centre to Newton on Ayr	Ayr 3	70	0.00
Barassie	Barassie Primary School	18	0.00
Heathfield Sawmills	Heathfield Sawmills 1	252	0.00
Lady Isle	Lady Isle 1	2,000	0.00
McCalls Avenue, Ayr	McCalls Avenue	64	0.00
Prestwick Town	Prestwick Buildings	32	0.00
Starling Knowe to Downan Point	Burn Foot - Currarie Port	4	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Starling Knowe to Downan Point	Currarie Port - Downan Point	4	0.00
Starling Knowe to Downan Point	Dyke Foot - March Burn	10	0.00
Starling Knowe to Downan Point	March Burn - Burn Foot	2	0.00
North Esk Reservoir	North Esk	2	0.00
Bellshill	Bellshill Industrial Estate	50	0.00
Newhouse	Newhouse Industrial Estate	12	0.00
Uddingston	Tannochside	6	0.00
Kirkconnell Merse	K.Merse	4	0.00
Inchinnan	Inchinnan Business Park	126	0.00
Linwood	Burnbrae Road Industrial Estate	126	0.00
Linwood	River Park Industrial Estate	70	0.00
Paisley	Airlink Industrial Estate	6	0.00
Paisley	Glasgow Airport	2	0.00
Paisley	Greenhill Road	4	0.00
Paisley	Murray Business Area	154	0.00
Paisley	Renfrew Road	26	0.00
Paisley	Stanley Castle	2	0.00
Renfrew	Blythswood Industrial Estate	62	0.00
Renfrew	Braehead	142	0.00
Renfrew	Hillington Industrial Estate	316	0.00
Almorness Point	Almorness	2,046	0.01
Rough Firth Merse	Rough Firth Merse 1	4	0.00
Bishopbriggs	Westerhill Road	420	0.00

**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

Master site in SMP	Subsite	Count	Apportioning value
Kirkintilloch	Broomhill Industrial Estate	4	0.00
Kirkintilloch	Old Mill Park Industrial Estate	180	0.00
Kirkintilloch	Woodilee Industrial Estate	54	0.00
Loch Ryan, Mochram Lochs, Gennoch Rocks	Mochrum Lochs 1	10	0.00
Maberry, Dornal and Ochiltree lochs	Loch Ochiltree	2	0.00
Portpatrick	Portpatrick North	4	0.00
Wigtown Bay Merse	Wigtown Bay Merse 1	6	0.00
Llanddulas Quarries	East Quarry	2	0.00
Llanddulas Quarries	West Quarry	4	0.00
Prestatyn	Prestat	36	0.00
Rhyl	Rhy	12	0.00
Aber Bach - Ynys Barry	Cerrig Gwylan	54	0.00
Aber Bach - Ynys Barry	Pencastell Cch	6	0.00
Aber Bach - Ynys Barry	Trwyn Llwynog	8	0.00
Aberystwyth - Borth	Aberystwyth 1	2	0.00
Cardigan Island and Mwnt to Carreg Lydan	Cardigan Island 1	3,296	0.00
Cardigan Island and Mwnt to Carreg Lydan	Carreglydan 2	2	0.00
Llangrannog to Penpeles (includes Tresaith SSSI and Aberporth)	Aberporth 4	12	0.00
Llangrannog to Penpeles (includes Tresaith SSSI and Aberporth)	Llangrannog 1	32	0.00
Llangrannog to Penpeles (includes Tresaith SSSI and Aberporth)	Penpeles 1	2	0.00
Llangrannog to Penpeles (includes Tresaith SSSI and Aberporth)	Penpeles 2	2	0.00
Llangrannog to Penpeles (includes Tresaith SSSI and Aberporth)	Tresaith 2	2	0.00
New Quay to Lochtyn	New Quay 3	2	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
New Quay to Lochtyn	Penmoelciliau 1	2	0.00
New Quay to Lochtyn	Penmoelciliau 3	2	0.00
Newport to Poppit	Caemes Head/Poppit	10	0.00
Newport to Poppit	Carreg Bica	2	0.00
Pembrey	Pembrey Buildings	68	0.00
Strumble Head - Aberbach	Carreg Dandy	2	0.00
Strumble Head - Aberbach	Pen Brush	38	0.00
Strumble Head - Aberbach	Ynys Ddu	68	0.00
Strumble Head - Aberbach	Ynys Melyn	4	0.00
Strumble Head - Aberbach	Ynys Onnen	22	0.00
Strumble Head - Aberbach	Ynys y Dinas	16	0.00
Strumble Head to Fishguard to Newport	Dinas Head	4	0.00
Strumble Head to Fishguard to Newport	Needle Rock	2	0.00
Strumble Head to Fishguard to Newport	to Newport	4	0.00
Inland Gwynedd	Aberdovey Quarry	4	0.00
Inland Gwynedd	Conwy Town	8	0.00
Inland Gwynedd	Conwy Town	8	0.00
Inland Gwynedd	Deganwy Town	2	0.00
Inland Gwynedd	Llandudno town	4	0.00
Inland Gwynedd	Llandudno town	2	0.00
Inland Gwynedd	Llandudno town	4	0.00
Inland Gwynedd	Llyn Conwy	2	0.00
Inland Gwynedd	Llyn Elsi	18	0.00

**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

Master site in SMP	Subsite	Count	Apportioning value
Bangor and Caernarfon	Bangor buildings	2	0.00
Bangor and Caernarfon	Bangor buildings	8	0.00
Bangor and Caernarfon	Bangor buildings	8	0.00
Bangor and Caernarfon	Caernafon	20	0.00
Bangor and Caernarfon	Caernafon	2	0.00
Bardsey Island & Ynysoedd Gwylan	Bardsey (Ynys Enlli)	1,268	0.00
Bardsey Island & Ynysoedd Gwylan	Ynys Gwylan Fawr	20	0.00
Carmel Head South	porth y Bribys	2	0.00
Carmel Head South	West Mouse	2	0.00
Coastal Gwynedd	Carreg Chwislen	2	0.00
Coastal Gwynedd	Ebolion	8	0.00
Coastal Gwynedd	Pen y Cil	4	0.00
Coastal Gwynedd	Trwyn Penrhyn	10	0.00
Coastal Gwynedd	Ynys Piod	12	0.00
Penllyn to Gogarth (River Dovey mouth)	Aberdyfi 1	2	0.00
Point Lynas to Trwyn Du	Freshwater Bay	6	0.00
Point Lynas to Trwyn Du	Ynys Dulas	2	0.00
Point Lynas to Trwyn Du	Ynys Moelfre	40	0.00
Porth Llanlleiana to Porth Eilian	Middle Mouse	8	0.00
Puffin Island - Anglesey	Puffin Island	200	0.00
Rhoscolyn to Trearddur	Rhoscolyn Beacon	10	0.00
Rhoscolyn to Trearddur	Ynys Traws	128	0.00
South Stack	South stack and Penlas	158	0.00



## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
South Stack	The Range	10	0.00
The Skerries	The Skerries 1	1,148	0.01
Brechfa Pool	Brechfa Pool 1	2	0.00

### A.7. Great black-backed gull

Table A. 7: Apportioning values for great black-backed gull at non-SPA colonies.

Master site in SMP	Subsite	Count	Apportioning value
Barrow-in-Furness	BAESystems (roof)	6	0.01
Hodbarrow Lagoon	Hodbarrow 1	2	0.00
St Bee's Head	St Bees Head/SB3	2	0.00
St Bee's Head	St Bees Head/SB4	12	0.01
Isle of Man	Bradda - Fleshwick	24	0.02
Isle of Man	Calf of Man	292	0.24
Isle of Man	Clay Head - Douglas	42	0.10
Isle of Man	Dhoon - Laxey Bay	28	0.06
Isle of Man	Doughlas - Port Soderick	24	0.05
Isle of Man	Dreembeary	4	0.00
Isle of Man	Fleshwick - Stroin Voigh	12	0.01
Isle of Man	Glen Maye - Peel	44	0.04
Isle of Man	Kitterland	68	0.06
Isle of Man	Langness	4	0.01
Isle of Man	Niarbyl - Glen Maye	10	0.01

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Isle of Man	Peel - Glen Mooar	62	0.05
Isle of Man	Point of Ayre gravel pit	6	0.01
Isle of Man	Port - St Mary - Sound	24	0.02
Isle of Man	Port Grenaugh - Derbyhaven	6	0.01
Isle of Man	Port Mooar - Dhoon	36	0.07
Isle of Man	Port Soderick - Port Grenaugh	20	0.04
Isle of Man	Ramsey - Port Mooar	66	0.10
Isle of Man	Sound - Port Erin	22	0.02
Isle of Man	Stroin Voigh - Niarbyl	16	0.01
Carnforth Marsh and Leighton Moss	Carnforth Marsh	2	0.00
Fleetwood	Fleetwood Town	2	0.00
Ribble Estuary NNR	Hesketh and Banks Marshes	12	0.01
Ribble Estuary NNR	Warton Marsh	2	0.00
Burrowhead	Burrowhead 2	2	0.00
Point Lynas to Trwyn Du	Ynys Dulas	2	0.00
Point Lynas to Trwyn Du	Ynys Moelfre	14	0.01
Puffin Island - Anglesey	Puffin Island	20	0.01
The Skerries	The Skerries 1	34	0.01

**MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS**

**A.8. Manx shearwater**

**Table A. 8: Apportioning values for Manx shearwater at non-SPA colonies.**

Master site in SMP	Subsite	Count	Apportioning value
Lambay Island	Lambay Inland B	50	0.00
Connemara Islands	Cruagh	6,572	0.00
High Island - Galway	Hish Island Whole	44	0.00
Inishshark Island	Inishshark - shearwaters	102	0.00
Blaskets	Inishnabro - shearwaters	11,222	0.00
Blaskets	Inishtooskert Whole Island	19,392	0.01
Deenish Island	Deenish	702	0.00
Great Blasket Island	Great Blasket - shearwaters	7,168	0.00
Great Skellig	Great Skellig Whole Island	1,476	0.00
Inishvickillane	Inishvickillane Whole Island	1,286	0.00
Puffin Island - Kerry	Puffin Island Whole	12,658	0.00
Scariff Island	Scariff - shearwaters	3,920	0.00
Great Saltee	Great Saltee Island	300	0.00
Little Saltee - Wexford	Little Saltee	200	0.00
Channel Islands	Jethou	10	0.00
Channel Islands	Sark	10	0.00
Lundy	Lundy A	16	0.00
Lundy	Lundy B	16	0.00
Lundy	Lundy C	112	0.00
Lundy	Lundy D	60	0.00

## MORGAN OFFSHORE WIND PROJECT: GENERATION ASSETS

Master site in SMP	Subsite	Count	Apportioning value
Lundy	Lundy F	34	0.00
Lundy	Lundy G1	8	0.00
Lundy	Lundy H	20	0.00
Lundy	Lundy I	12	0.00
Lundy	Lundy K1	2	0.00
Lundy	Lundy K2	52	0.00
Isle of Man	Calf of Man - shearwaters	68	0.01
Inchmarnock Island, Bute	Inchmarnock (West)	2	0.00
Sanda Island, Sheep Island and Glunimore Island	Sanda Island	400	0.00
Treshnish Isles	Lunga - Manx shearwater count	406	0.00
Treshnish Isles	Lunga - Manx shearwater count	702	0.00
Treshnish Isles	Lunga - Manx shearwater count	762	0.00
Treshnish Isles	Lunga - Manx shearwater count	270	0.00
Treshnish Isles	Lunga - Manx shearwater count	426	0.00
Ailsa Craig	Ailsa Craig (whole island)	3	0.00
Canna & Sanday	Canna - petrels	4	0.00
Isle of Eigg	Eigg - shearwaters	500	0.00
Fetlar - Shetland	Lamb Hoga - shearwaters	14	0.00

### A.9. Fulmar

Data for fulmar will be provided on request