

MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Environmental Statement

Volume 2, Figures – Part 1 of 5

December 2024
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F01	For issue: Application	AS	September 2024	IM	September 2024
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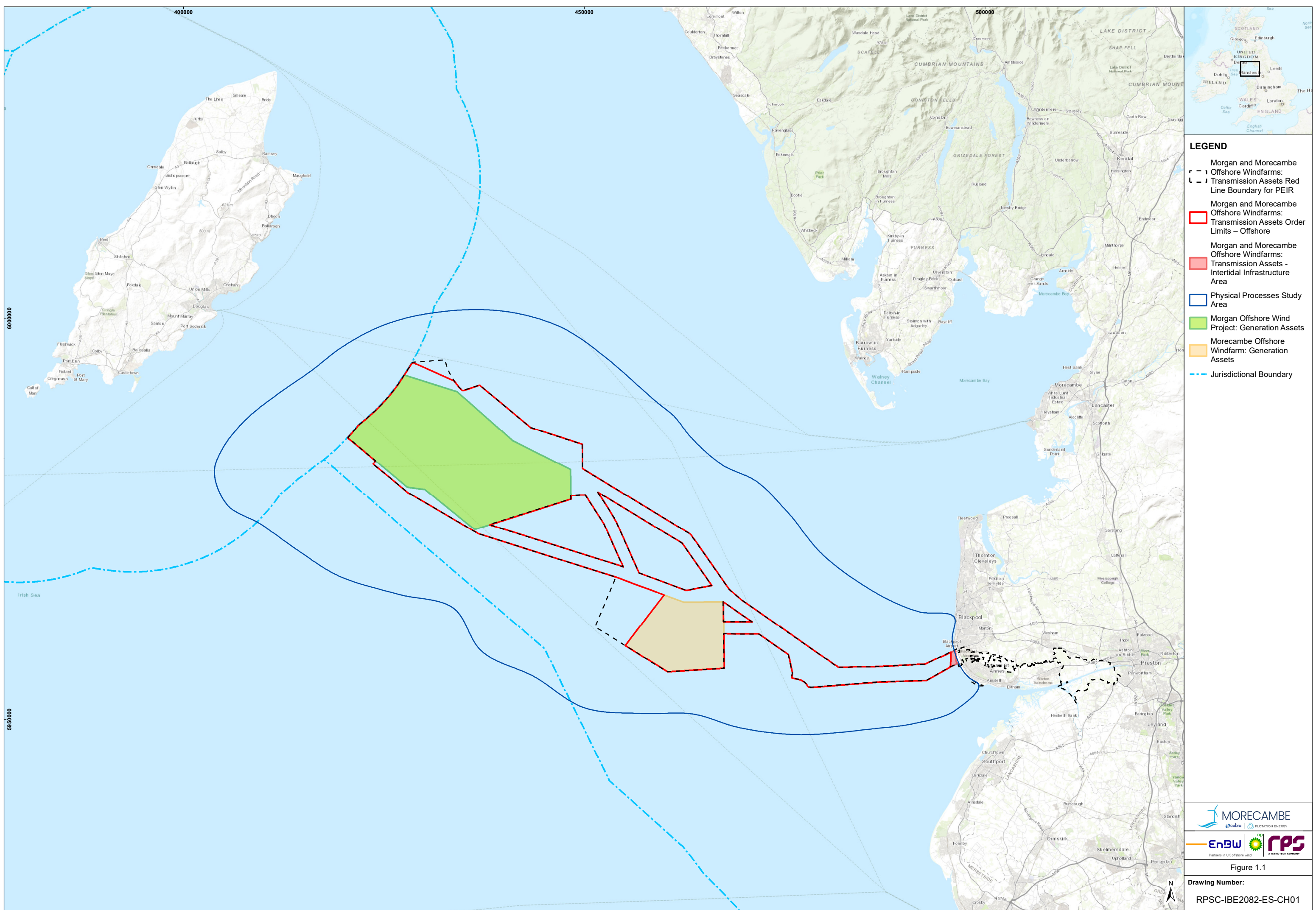
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Prepared by:

RPS

Prepared for:

**Morgan Offshore Wind Limited,
Morecambe Offshore Windfarm Ltd**



- LEGEND**
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Red Line Boundary for PEIR
 - Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore
 - Morgan and Morecambe Offshore Windfarms: Transmission Assets - Intertidal Infrastructure Area
 - Physical Processes Study Area
 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - Jurisdictional Boundary

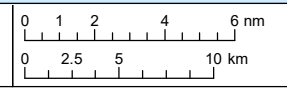


Figure 1.1

Drawing Number:
RPSC-IBE2082-ES-CH01

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
PHYSICAL PROCESSES STUDY AREA

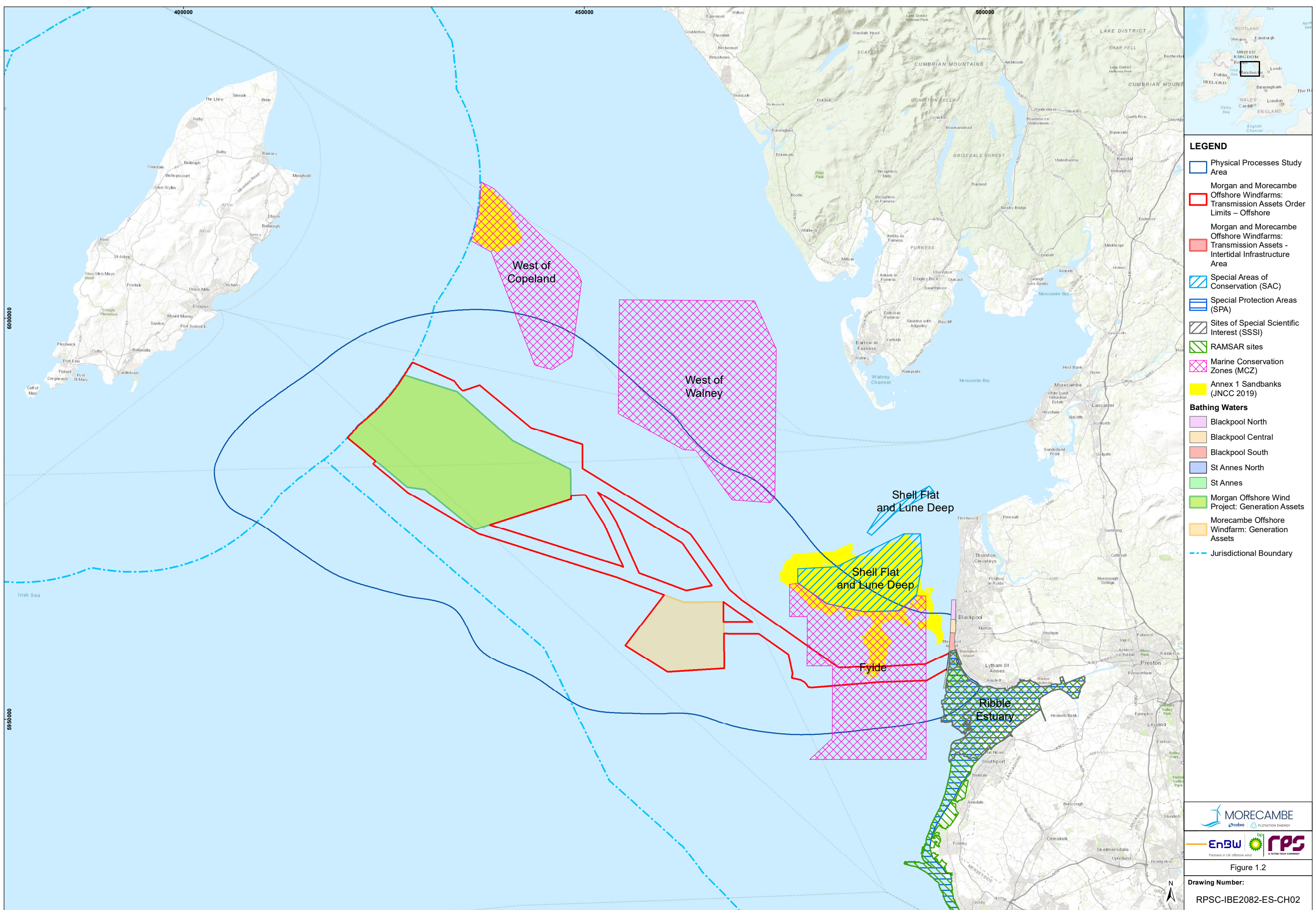


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Data Sources: Client

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

VER	DATE	DETAILS	BY	CHECK
02	03/07/24	Draft Final	RMCC	NRS
03	27/08/24	Final ES	NRS	RMCC



- LEGEND**
- Physical Processes Study Area
 - Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore
 - Morgan and Morecambe Offshore Windfarms: Transmission Assets - Intertidal Infrastructure Area
 - Special Areas of Conservation (SAC)
 - Special Protection Areas (SPA)
 - Sites of Special Scientific Interest (SSSI)
 - RAMSAR sites
 - Marine Conservation Zones (MCZ)
 - Annex 1 Sandbanks (JNCC 2019)
 - Bathing Waters
 - Blackpool Central
 - Blackpool South
 - St Annes North
 - St Annes
 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - Jurisdictional Boundary

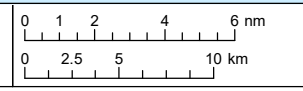


Figure 1.2

Drawing Number:
RPSC-IBE2082-ES-CH02

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
PHYSICAL PROCESSES DESIGNATED AREAS

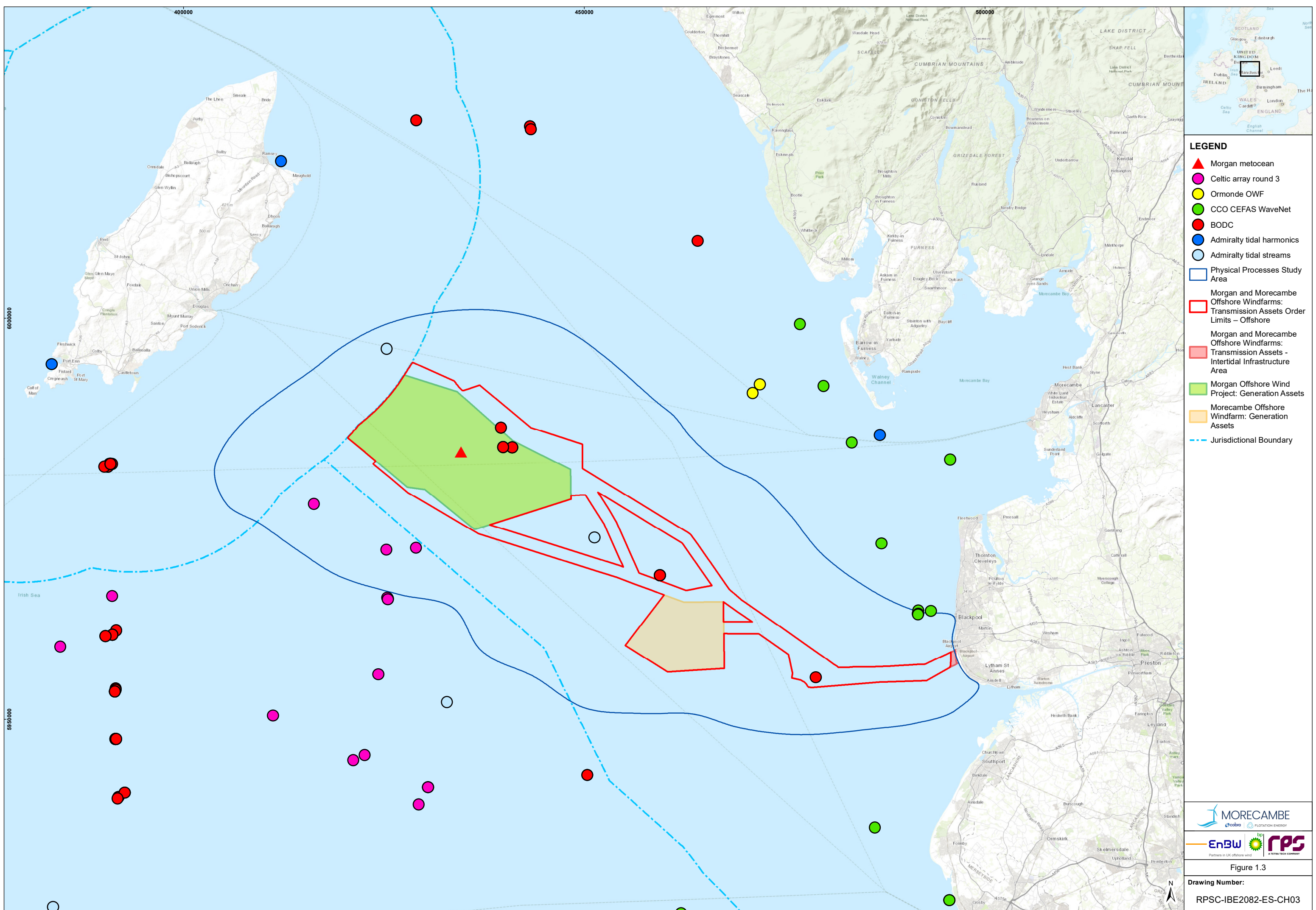


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Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org, JNCC Mapper

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03	03/07/24	Final Draft	RMCC	NRS
04	27/08/24	Final ES	NRS	RMCC



LEGEND

- ▲ Morgan metocean
- Celtic array round 3
- Ormonde OWF
- CCO CEFAS WaveNet
- BODC
- Admiralty tidal harmonics
- Admiralty tidal streams
- Physical Processes Study Area
- Transmission Assets Order Limits - Offshore
- Morgan and Morecambe Offshore Windfarms:
 - Transmission Assets - Intertidal Infrastructure Area
 - Generation Assets
- Morecambe Offshore Windfarm: Generation Assets
- Jurisdictional Boundary

MORECAMBE
coastal bp FLOTATION ENERGY

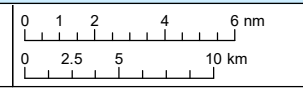
EnBW **RPS**
Partners in UK offshore wind A TRITON TECH COMPANY

Figure 1.3

Drawing Number:
 RPSC-IBE2082-ES-CH03

Project Name:
 MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
 LOCATIONS OF SITE SPECIFIC AND HISTORIC METOCEAN DATA

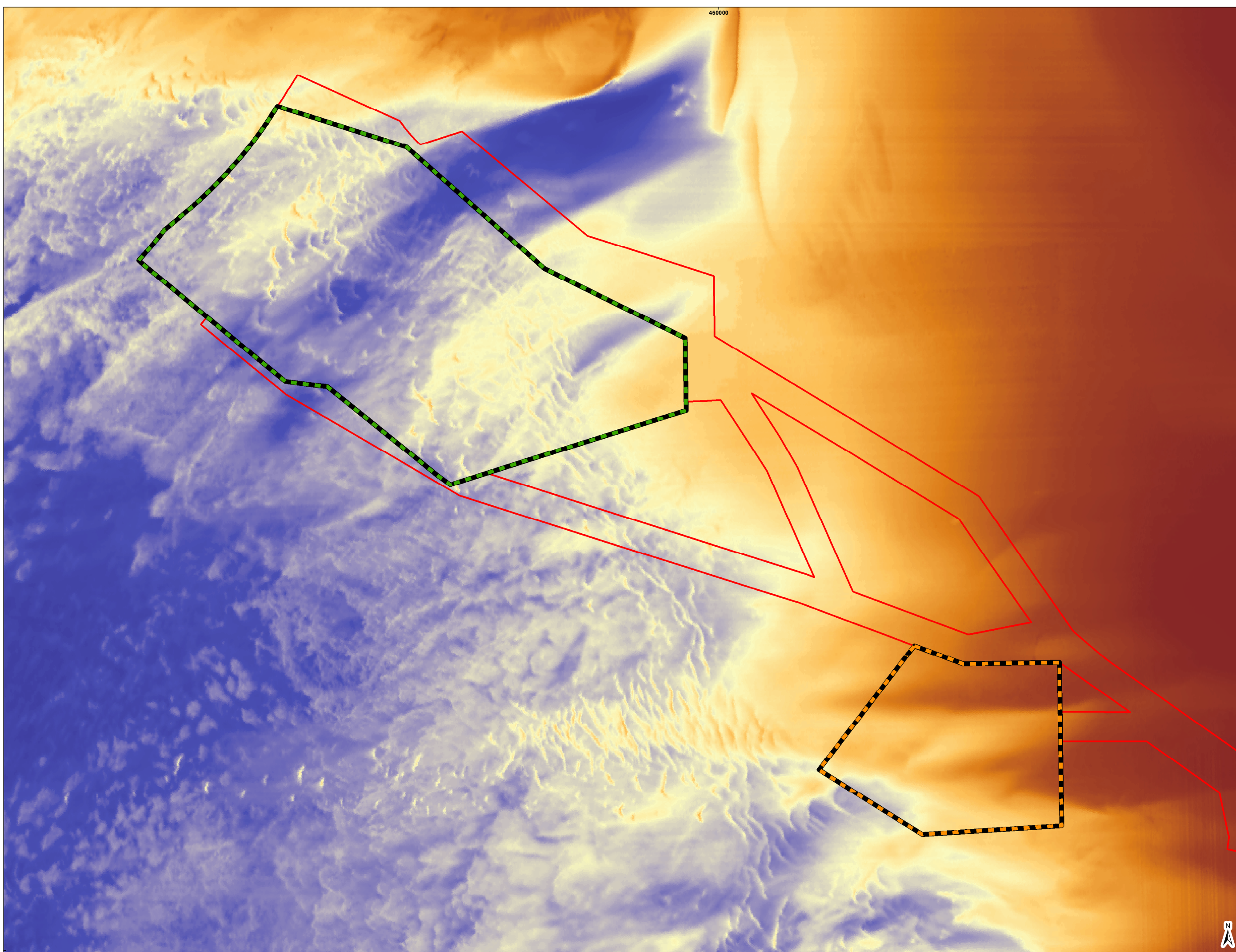


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Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org, JNCC Mapper, EMODnet

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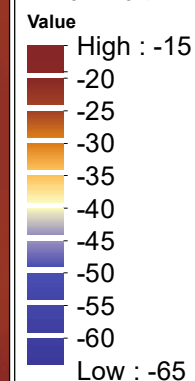
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03	03/07/24	Draft Final	RMCC	NRS
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LEGEND

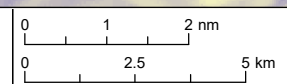
- Morgan and Morecambe Offshore Windfarms:
- Transmission Assets Order Limits - Offshore
- Morgan Offshore Wind Project: Generation Assets
- Morecambe Offshore Windfarm: Generation Assets

Bathymetry (m MSL)



Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
BATHYMETRIC DATA ILLUSTRATING SANDWAVE FEATURES



Geodetic Information:
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Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:170,904

Data Sources: EMODnet, MEDIN, CCO, Marine Data Exchange

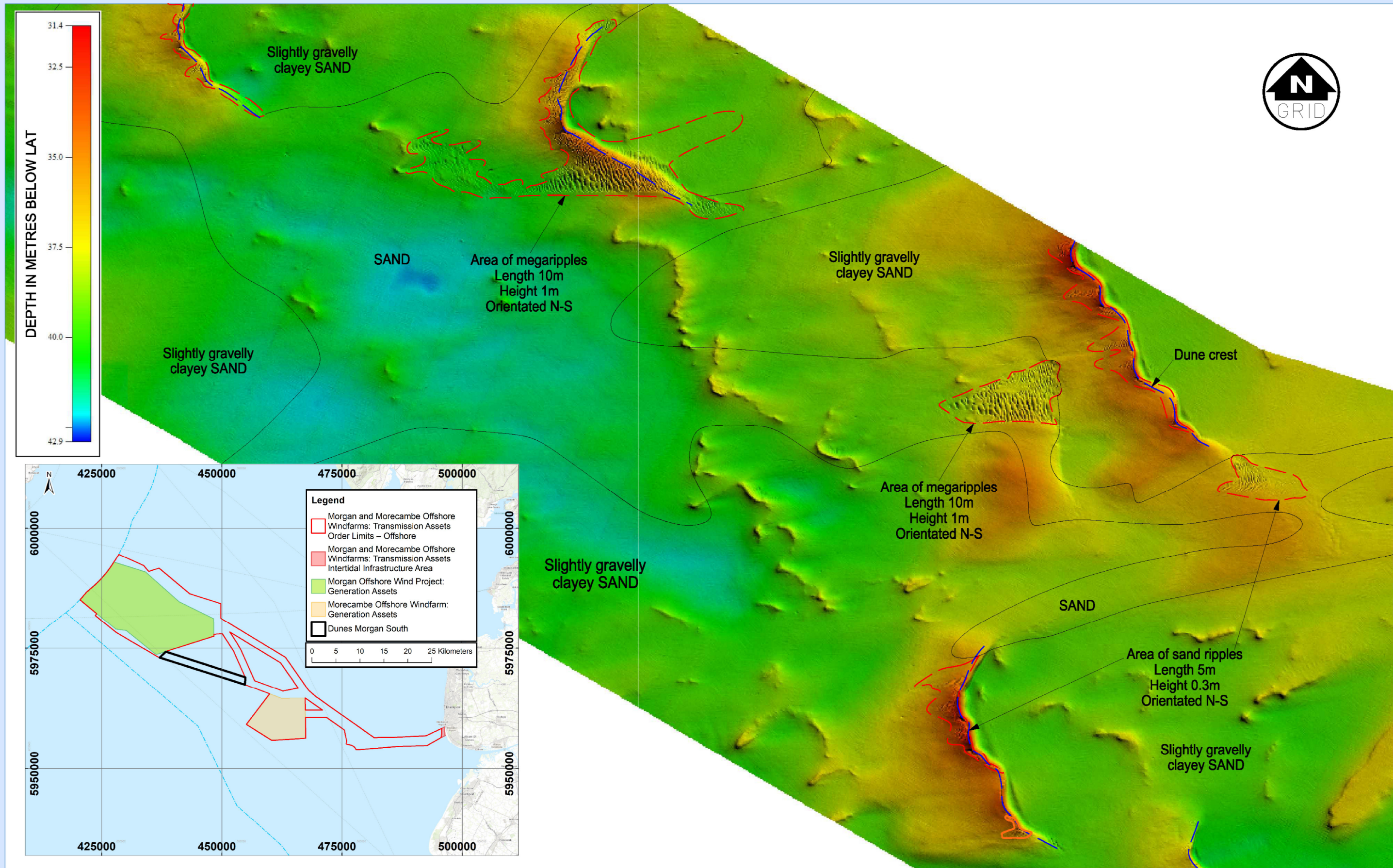
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Figure 1.4

Drawing Number:
RPSC_IBE2082_ES_CH08

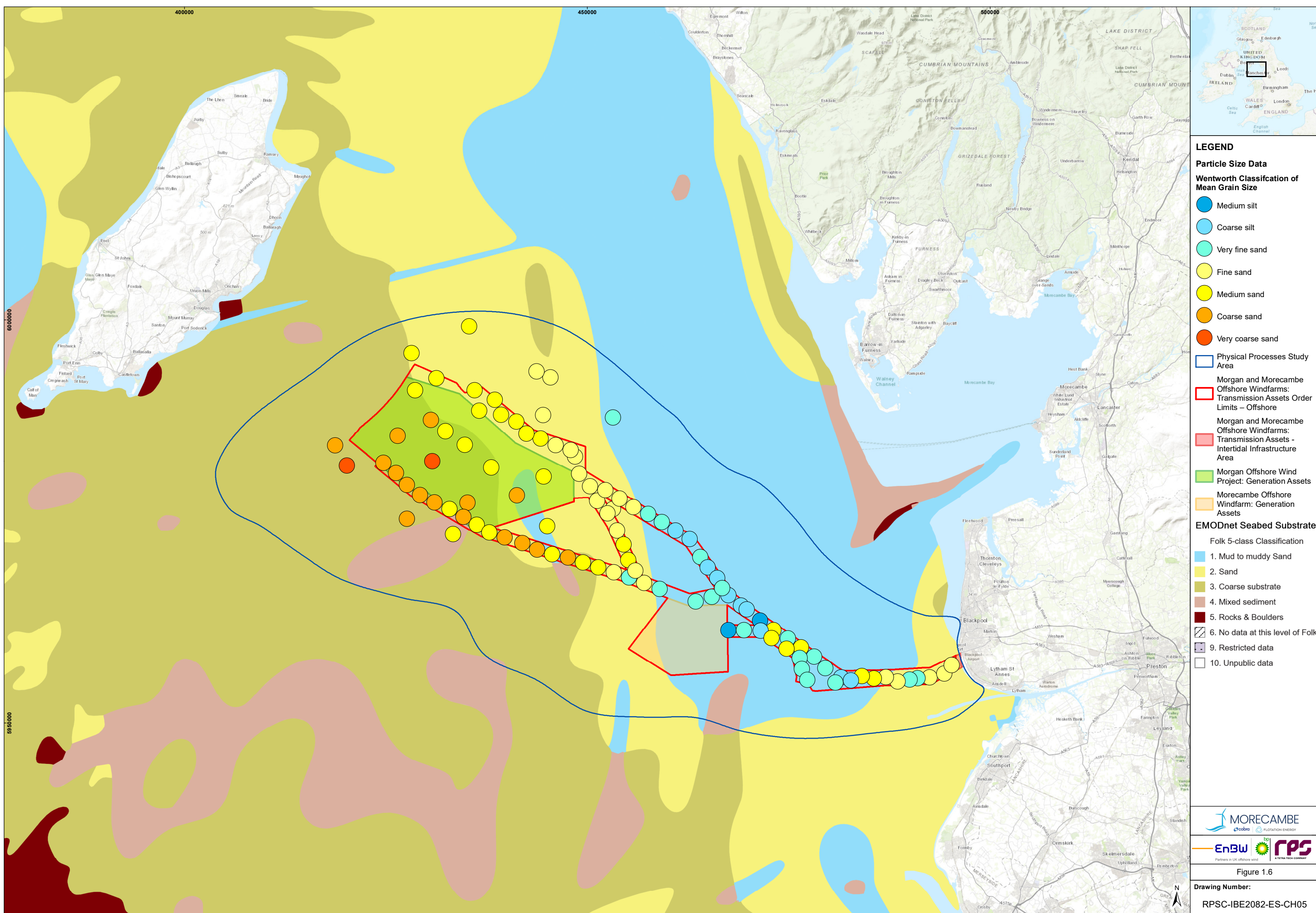
VER	DATE	DETAILS	BY	CHECK
03	27/08/24	Final	RMcC	NRS
04	02/12/24	S51 update	NRS	RMcC



Scale 1 : 12 500
 ETRS89/UTM Zone 30N (3°W)

MBES
 Illustrating dunes on Morgan South

Figure 1.5



LEGEND

Particle Size Data

Wentworth Classification of Mean Grain Size

- Medium silt
- Coarse silt
- Very fine sand
- Fine sand
- Medium sand
- Coarse sand
- Very coarse sand

Physical Processes Study Area

Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore

Morgan and Morecambe Offshore Windfarms: Transmission Assets - Intertidal Infrastructure Area

Morgan Offshore Wind Project: Generation Assets

Morecambe Offshore Windfarm: Generation Assets

EMODnet Seabed Substrate

Folk 5-class Classification

- 1. Mud to muddy Sand
- 2. Sand
- 3. Coarse substrate
- 4. Mixed sediment
- 5. Rocks & Boulders
- 6. No data at this level of Folk
- 9. Restricted data
- 10. Unpublic data



Partners in UK offshore wind

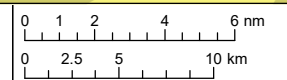
Figure 1.6

Drawing Number:

RPSC-IBE2082-ES-CH05

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
EMODNET AND GARDLINE SEABED SUBSTRATE

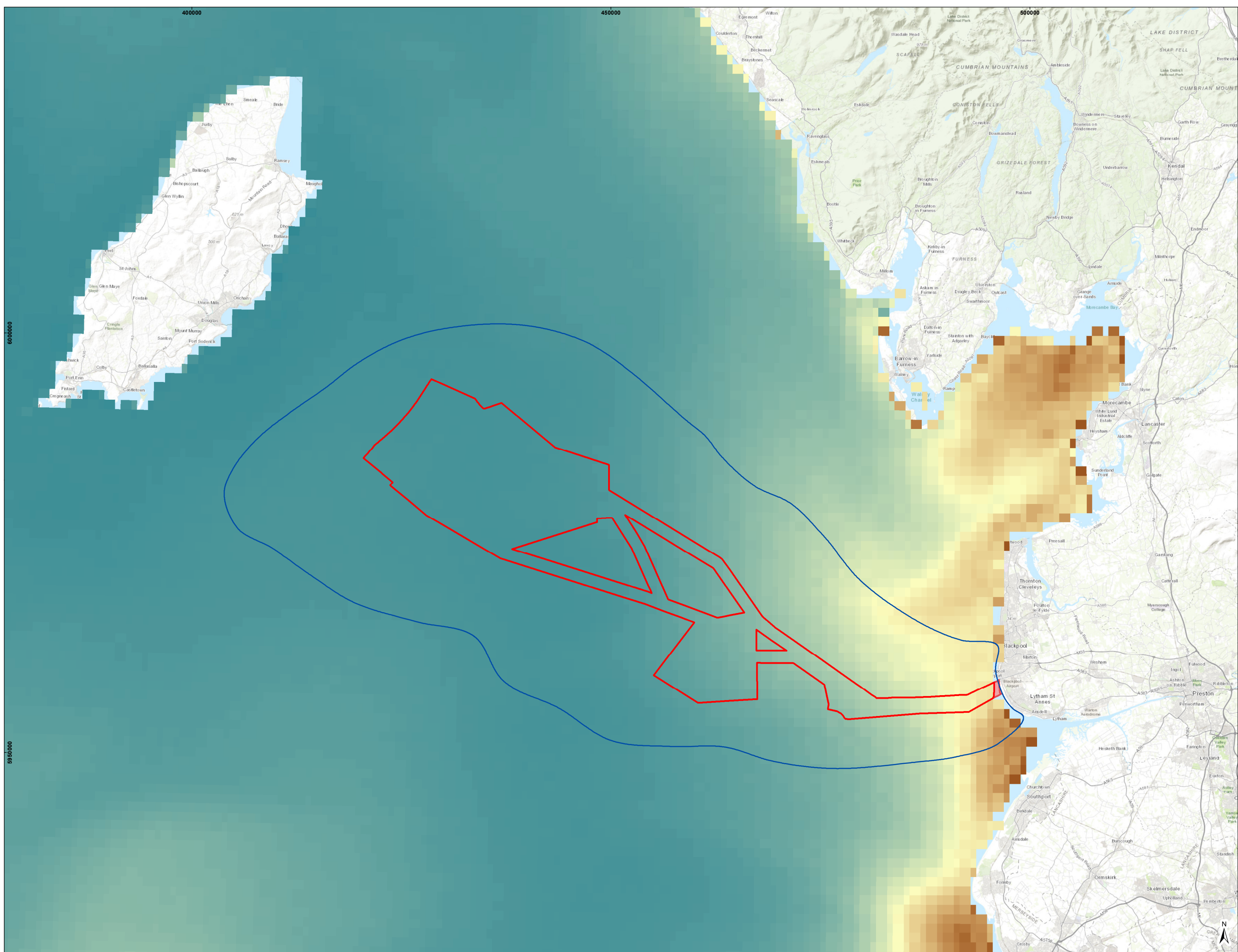


Geodetic Information:
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Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:400,000

Data Sources: Client, Gardline, EMODnet

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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02	03/07/24	Final Draft	RMcC	NRS
03	27/08/24	Final ES	NRS	RMcC



LEGEND

- Physical Processes Study Area
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits - Offshore
- Morgan and Morecambe Offshore Windfarms: Transmission Assets - Intertidal Infrastructure Area

Mean annual SPM mg/l

High : 30

25

20

15

10

5

Low : 0

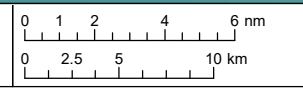


Figure 1.7

Drawing Number:
RPSC-IBE2082-ES-CH06

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
PHYSICAL PROCESSES DISTRIBUTION OF AVERAGE NON-ALGAL SPM - CEFAS

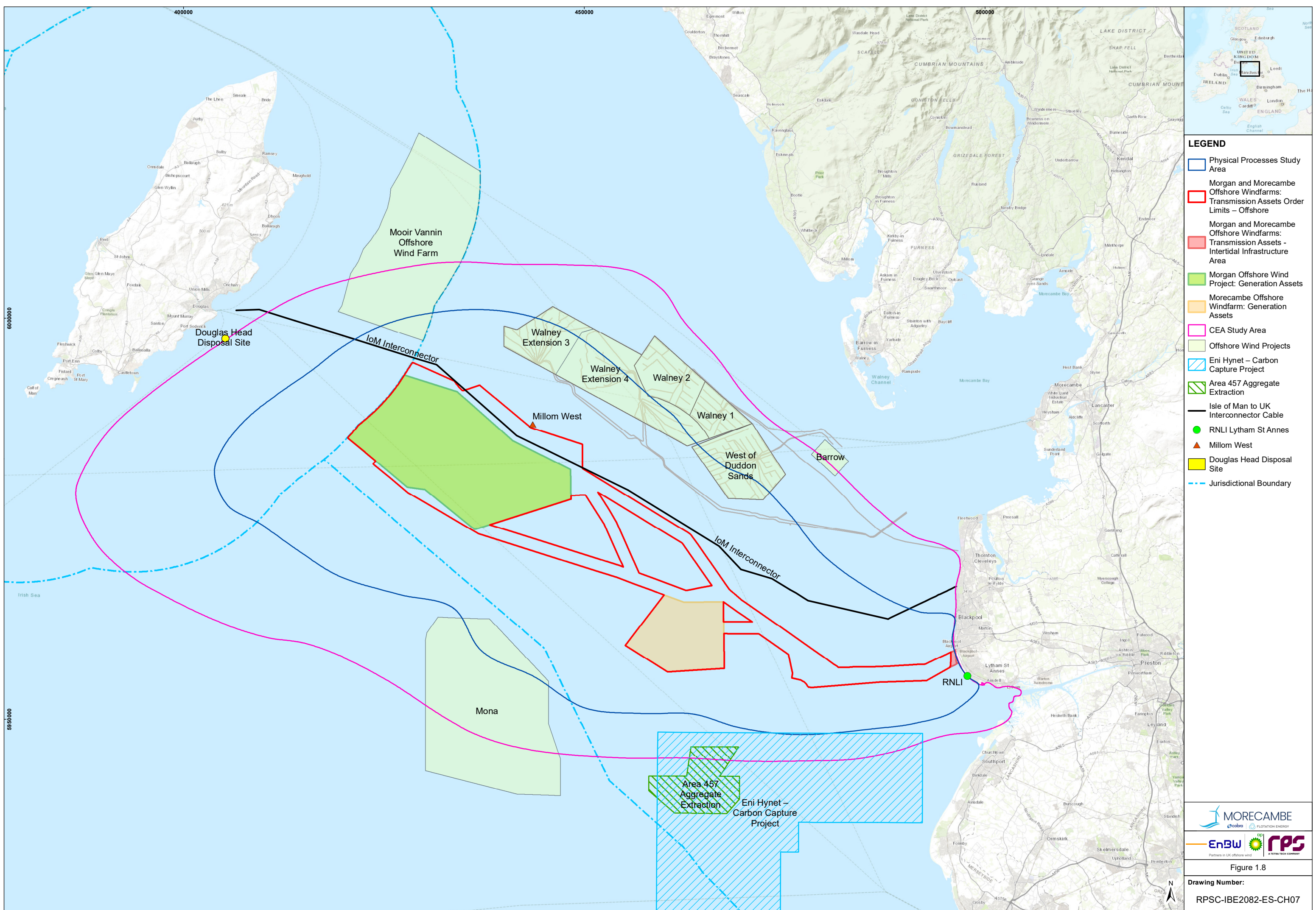


Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:400,000

Data Sources: Client, CEFAS

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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02	03/07/24	Draft Final	RMCC	NRS
03	27/08/24	Final ES	NRS	RMCC



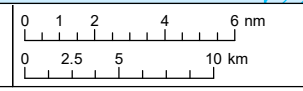
- LEGEND**
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 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - CEA Study Area
 - Offshore Wind Projects
 - Eni Hynet – Carbon Capture Project
 - Area 457 Aggregate Extraction
 - Isle of Man to UK Interconnector Cable
 - RNLI Lytham St Annes
 - ▲ Millom West
 - Douglas Head Disposal Site
 - Jurisdictional Boundary



Figure 1.8
 Drawing Number:
 RPSC-IBE2082-ES-CH07

Project Name:
 MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
 PHYSICAL PROCESSES CUMULATIVE EFFECT ASSESSMENT - RELEVANT PROJECTS

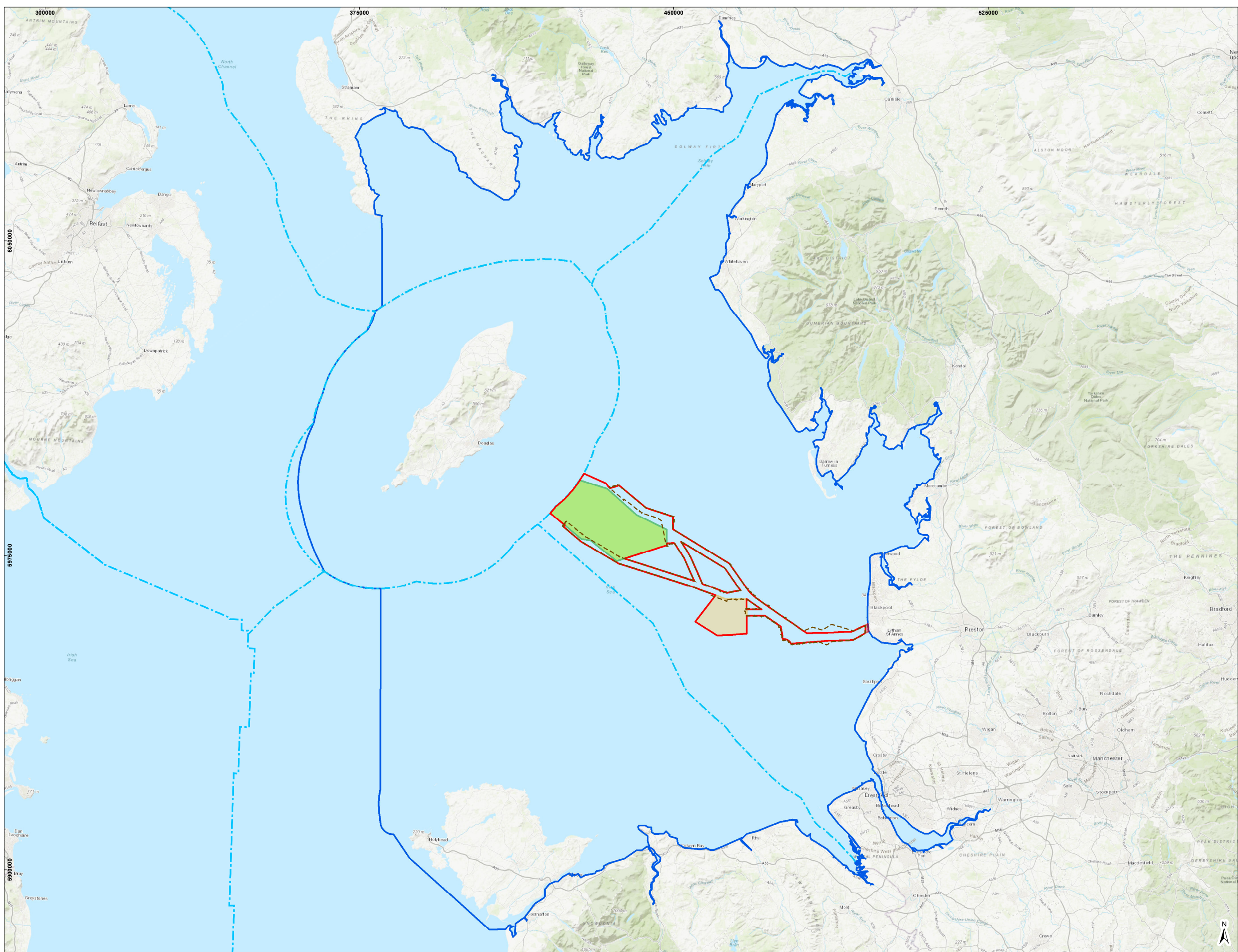


Geodetic Information:
 Datum: ETRS 1989
 Projection: ETRS 1989 UTM Zone 30N
 Scale@379mmx231mm: 1:400,000

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org, JNCC Mapper, DEFRA, KIS-ORCA

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
 Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

VER	DATE	DETAILS	BY	CHECK
03	03/07/24	Draft Final	RMCC	NRS
04	27/08/24	Final ES	NRS	RMCC



- LEGEND**
- Morgan and Morecambe Offshore Windfarms: Transmission Assets Order Limits – Offshore
 - Morgan and Morecambe Offshore Wind Farms: Transmission Assets - Intertidal Infrastructure Area
 - Morgan Offshore Wind Project: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - Jurisdictional Boundary
 - Benthic Survey Area
 - Transmission Assets benthic subtidal and intertidal ecology study area

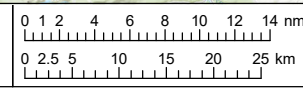


Figure 2.1

Drawing Number:
EOR0823-ES-BEN-E001-05

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
TRANSMISSION ASSETS BENTHIC SUBTIDAL AND INTERTIDAL ECOLOGY STUDY AREA

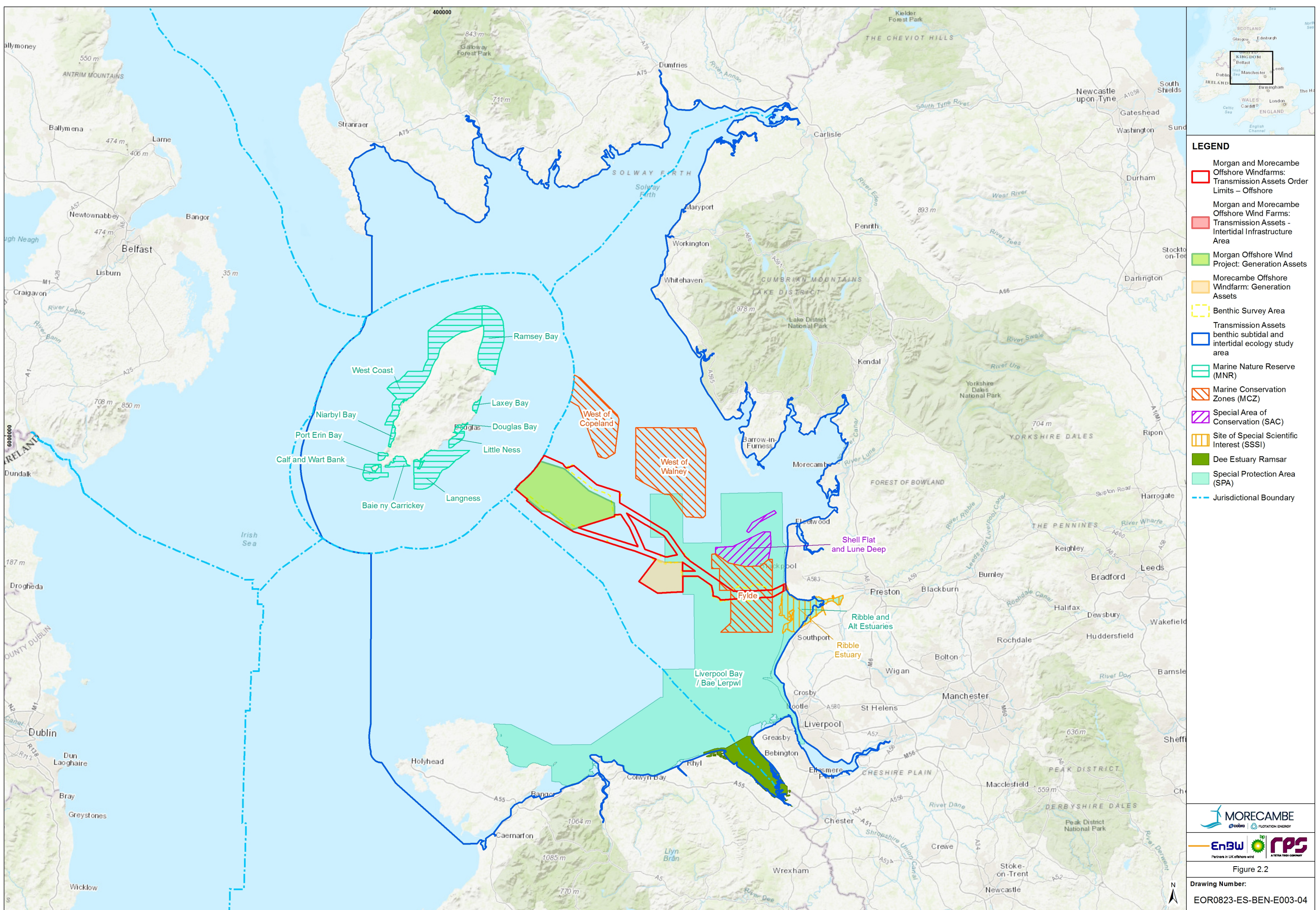


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Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:800,000

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, Increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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00	11/03/24	Initial Issue	MJ	HM
05	02/12/24	S51 update	NG	BM



- LEGEND**
- Morgan and Morecambe Offshore Wind Farms: Transmission Assets Order Limits – Offshore
 - Morgan and Morecambe Offshore Wind Farms: Generation Assets
 - Morecambe Offshore Windfarm: Generation Assets
 - Benthic Survey Area
 - Transmission Assets benthic subtidal and intertidal ecology study area
 - Marine Nature Reserve (MNR)
 - Marine Conservation Zones (MCZ)
 - Special Area of Conservation (SAC)
 - Site of Special Scientific Interest (SSSI)
 - Dee Estuary Ramsar
 - Special Protection Area (SPA)
 - Jurisdictional Boundary

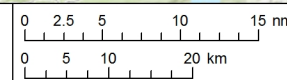


Figure 2.2

Drawing Number:
EOR0823-ES-BEN-E003-04

Project Name:
MORGAN AND MORECAMBE OFFSHORE WIND FARMS: TRANSMISSION ASSETS

Drawing Title:
DESIGNATED SITES WITH BENTHIC ECOLOGY FEATURES WITHIN THE STUDY AREA



Geodetic Information:
Datum: ETRS 1989
Projection: ETRS 1989 UTM Zone 30N
Scale@379mmx231mm: 1:900,000

Data Sources: Client, The Crown Estate, MMO, NRW, ScotGov, MarineRegions.org

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00	11/03/24	Initial Issue	M.J	HM
04	17/09/24	Final	M.J	BM