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## Description

The 90 MW Barrow Offshore Wind Farm, developed by DONG Energy and Centrica, is located in the East Irish Sea approximately 7km south west of Walney Island, near Barrow-in-Furness. The wind farm consists of 30 Vestas 3MW turbines covering an area of approximately 10km<sup>2</sup>.

Annual production is around 305 GW/h, enough to meet the demand of around 60,000 British households. Electricity generated by the wind farm is delivered to the National Grid at a substation in Heysham, Lancashire via 27km of buried subsea transmission and onshore cables.

## Reducing the Risks whilst Fishing

To reduce the risks of fishing near offshore structures, it is essential to be up to date with KIS-ORCA information. KIS-ORCA information is easy to install on your vessel's fishing plotter and ensures skippers are able to make informed decisions for their safety.

The closer to the surface a subsea cable is lifted when fouled by fishing gear, the more danger there is to the fishing vessel. In the interests of fishing safety and to prevent damage to subsea structures, fishermen are advised to exercise caution when fishing in the vicinity of subsea cables and renewable energy structures. Loss of gear, fishing time and catch can result if a trawler snags a subsea structure and there is serious risk of loss of life.

## Emergency Procedures

1. If you suspect you have snagged a subsea cable, **DO NOT** endanger your vessel and crew by attempting to recover your gear.
2. Carefully plot your vessel's position as accurately as possible.
3. Advise the Coastguard of your situation, and call the 24 hour Emergency Number and state that an incident is occurring concerning a subsea cable.

## Advisory Safety Zones

An Advisory Safety Zone of 50m around each turbine and substation structure is requested. An 200m anchorage exclusion zone around the export cable is requested. All vessels are asked to respect the Advisory Safety Zones, which as well as reducing the risk of collision damage, will provide protection to vessels, the export cable, and wind turbine structures.

If any major maintenance works are planned, Notices to Mariners will be promulgated in advance as required. During such works a Mandatory Safety Zone of 500m is likely to apply to certain turbines and/or vessels.

## Contact Details

EMERGENCY CONTACT NUMBER:  
08455 441037

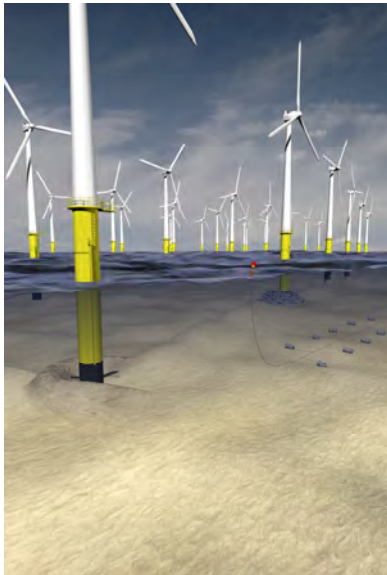
## Dangers of Renewable Energy Structures & Cables to Fishing

Renewable Energy Structures and Subsea Cables are a hazard and fishing over them should be avoided at all times. Heavily armoured cables used within the subsea cable and renewable energy industry are very strong and have high breaking strains, sometimes over 70 tonnes and can do extensive damage before they give way. Most modern subsea cables carry high voltages which could prove lethal if attempts are made to cut them.

Fibre Optic cable consists of an inner optical core encased within a copper clad high tensile steel wire rope insulated with polythene. In water less than 1500 meters deep, protection is added against fishing and anchor damage in the form of external steel wire armour. Due to the severe environmental demands placed on submarine cables, a lead-alloy sheath is often specified because of its compressibility, flexibility and resistance to moisture and corrosion. The sheath is usually covered by a number of outer layers, comprising a PE or PVC jacket and metal wire armouring.

## Wind Turbines and Foundations

As wind turbines get larger and are deployed in deeper waters, a range of different foundation types may be encountered such as monopole, jacket, gravity base and suction bucket. In some cases multiple foundation types may be used within a single site. In all cases it is likely that scour holes will form around the foundation base, the depth and extent being dependent upon a range of factors including seabed type and current strength and direction. Scour protection in the form of rock dumping or cable mattresses is often used around the base of the foundations which may present a snagging risk. During the operational phase of a wind farm, an operator may request a 50m advisory safety zone around each structure.



## The KIS-ORCA Project

The Kingfisher Information Service - Offshore Renewable & Cable Awareness project (KIS-ORCA) is a joint initiative between Subsea Cables UK and RenewableUK and is being managed by the Kingfisher Information Service of Seafish.

Offshore wind farms, renewable energy structures and subsea cables are increasing in number around the shores of the UK. The potential risks these structures may cause to fishermen is significant and the KIS-ORCA project aims to ensure these are managed in a responsible way.

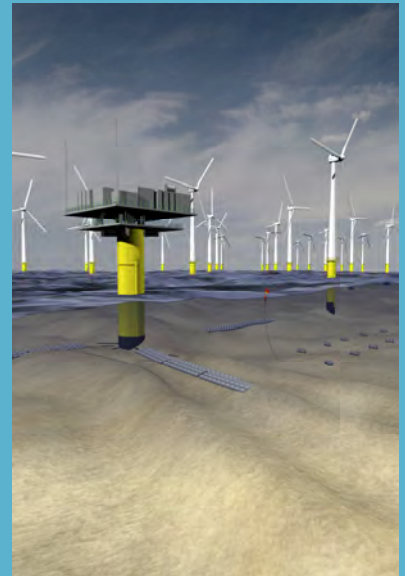
It is against the law to wilfully damage a subsea cable. To enable fishermen to continue to work safely in the

vicinity of subsea cables and renewable energy structures, KIS-ORCA provides fishermen with information and accurate positions of all these offshore structures.

KIS-ORCA information is made available as fishing plotter files and awareness charts for use on vessels and on [www.kis-orca.eu](http://www.kis-orca.eu), where information may be viewed and downloaded.

## Inter Array Wind Farm Cabling

The inter array cables interconnect the turbines typically in radial strings going to the offshore substation platform. The issues associated with these are largely the same as per cable burial. Each turbine will usually have up to two cables entering the foundation structure at the seabed through a protective tube. Typically the tube end has a bellmouth at the seabed to aid alignment and pulling in of the cables. Whilst the cables may have been jetted in or ploughed as close as practical to the foundation, cables may not be fully buried and may also become exposed by scour holes forming. In these circumstances scour protection in the form of rock dumping or cable mattresses may be used. Cables, albeit close to the foundation, may present a snagging risk to anchors and/or trawled gear.



## Reducing the Risks whilst Fishing

To reduce the risks of fishing near offshore structures, it is essential to be up to date with KIS-ORCA information. KIS-ORCA information is easy to install on your vessel's fishing plotter and ensures skippers are able to make informed decisions for their safety.

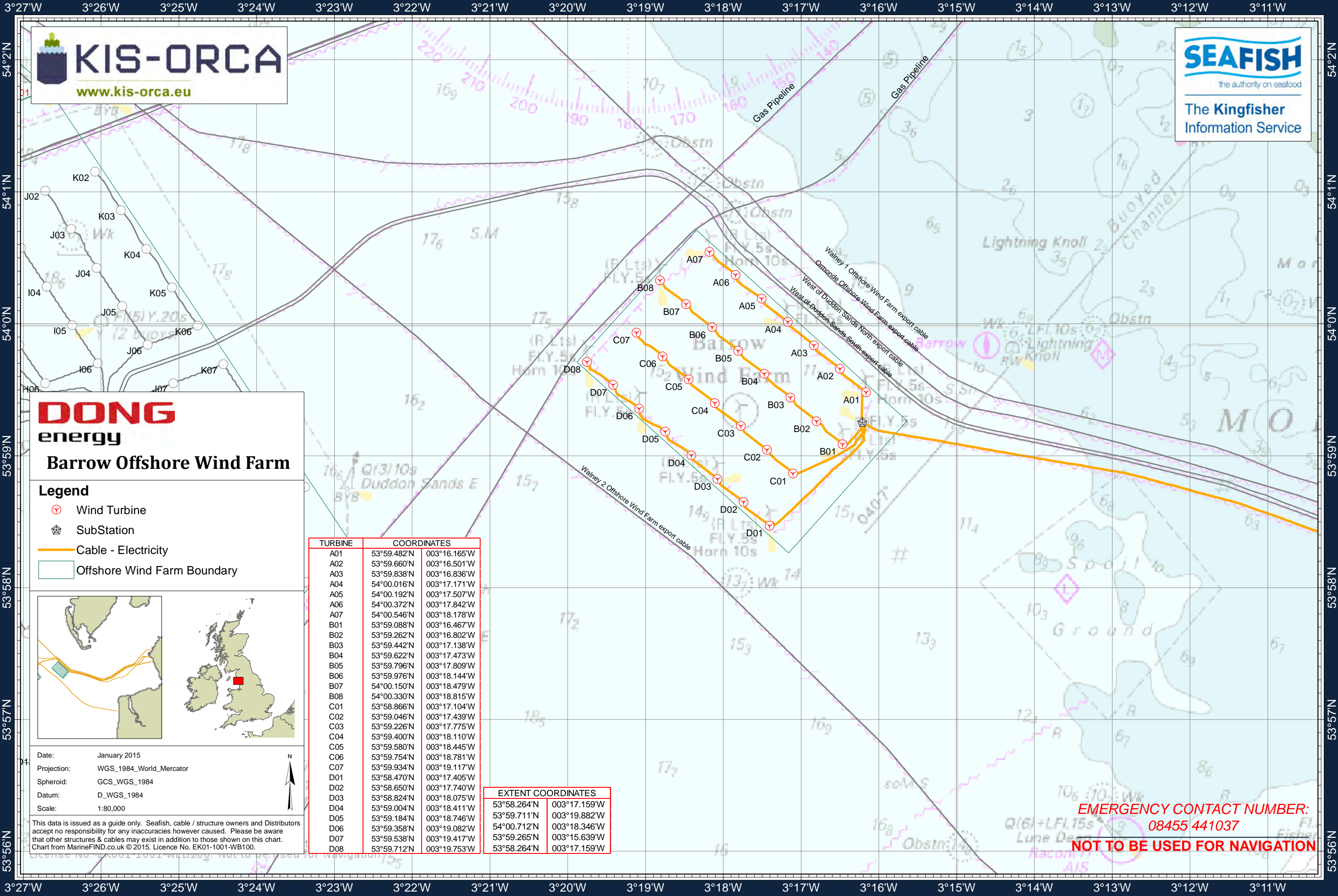
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If it is thought prudent to slip, or cut your fishing gear in an attempt to clear a subsea structure, always lower the gear to the seabed first. Never attempt to slip anything bearing excessive weight.

Claims for loss of gear should be made to the appropriate authority within 24 hours of arrival in port. Full particulars of the incident should be given and full details recorded in the vessel's official log, date and exact time, the vessel's position (VMS if suitable), depth of water and a description of the cable if sighted.

**Claims for loss will only be considered if current KIS-ORCA data is installed on your vessel's fishing plotter.**

# Kingfisher Awareness Chart



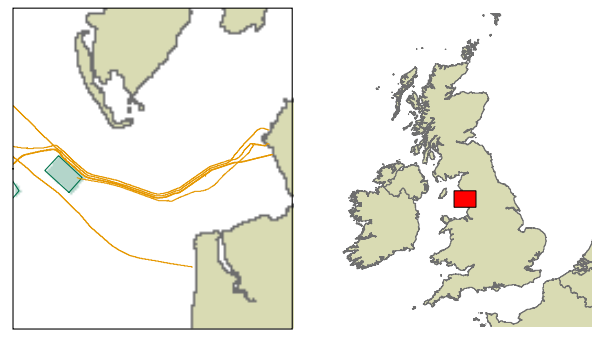
**KIS-ORCA**  
www.kis-orca.eu

**SEAFISH**  
the authority on seafood  
**The Kingfisher Information Service**

**DONG energy**  
**Barrow Offshore Wind Farm**

**Legend**

- Wind Turbine
- SubStation
- Cable - Electricity
- Offshore Wind Farm Boundary



Date: January 2015  
 Projection: WGS\_1984\_World\_Mercator  
 Spheroid: GCS\_WGS\_1984  
 Datum: D\_WGS\_1984  
 Scale: 1:80,000

This data is issued as a guide only. Seafish, cable / structure owners and Distributors accept no responsibility for any inaccuracies however caused. Please be aware that other structures & cables may exist in addition to those shown on this chart. Chart from MarineFIND.co.uk © 2015. Licence No. EK01-1001-WB100.

TURBINE	COORDINATES	
A01	53°59.482'N	003°16.165'W
A02	53°59.660'N	003°16.501'W
A03	53°59.838'N	003°16.836'W
A04	54°00.016'N	003°17.171'W
A05	54°00.192'N	003°17.507'W
A06	54°00.372'N	003°17.842'W
A07	54°00.546'N	003°18.178'W
B01	53°59.088'N	003°16.467'W
B02	53°59.262'N	003°16.802'W
B03	53°59.442'N	003°17.138'W
B04	53°59.622'N	003°17.473'W
B05	53°59.796'N	003°17.809'W
B06	53°59.976'N	003°18.144'W
B07	54°00.150'N	003°18.479'W
B08	54°00.330'N	003°18.815'W
C01	53°58.866'N	003°17.104'W
C02	53°59.046'N	003°17.439'W
C03	53°59.226'N	003°17.775'W
C04	53°59.400'N	003°18.110'W
C05	53°59.580'N	003°18.445'W
C06	53°59.754'N	003°18.781'W
C07	53°59.934'N	003°19.117'W
D01	53°58.470'N	003°17.405'W
D02	53°58.650'N	003°17.740'W
D03	53°58.824'N	003°18.075'W
D04	53°59.004'N	003°18.411'W
D05	53°59.184'N	003°18.746'W
D06	53°59.358'N	003°19.082'W
D07	53°59.538'N	003°19.417'W
D08	53°59.712'N	003°19.753'W

EXTENT COORDINATES	
53°58.264'N	003°17.159'W
53°59.711'N	003°19.882'W
54°00.712'N	003°18.346'W
53°59.265'N	003°15.639'W
53°58.264'N	003°17.159'W

**EMERGENCY CONTACT NUMBER:**  
08455 441037  
**NOT TO BE USED FOR NAVIGATION**