



OSPAR database on offshore wind-farms
Data 2010/2011 (Updated in 2011)



OSPAR Convention

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the “OSPAR Convention”) was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Union and Spain.

Convention OSPAR

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par l'Union européenne et l'Espagne.

OSPAR Database on Offshore Wind-farms – Data 2010/2011 (Updated in 2011)

The use of any renewable energy source makes a significant contribution towards climate protection and towards placing our energy supply on a sustainable ecological footing, thereby helping to conserve the natural balance. Nevertheless, the utilisation of renewable sources of energy can also have an adverse impact on the environment and our natural resources. Since 2001, OSPAR and its Biodiversity Committee (BDC) have been noting that the offshore wind energy sector has been rapidly expanding in the OSPAR maritime area.

In order to better understand the situation and to help authorities to manage potential conflicting objectives and the expanding use of these offshore installations in an ecologically sustainable way, OSPAR agreed on a programme of work on the environmental impact of offshore wind-farms.

As part of this programme of work on wind-farms, OSPAR has produced the OSPAR Database on Offshore Wind-farms, which constitutes an inventory of all planned (under application), authorised, refused, operational, out of service and decommissioned wind-farms installations under the jurisdiction of the OSPAR Contracting Parties.

The OSPAR Database on Offshore Wind-farms provides to the public information, for each offshore installation, regarding (1) its name, (2) location, (3) distance from the coast, (4) number of wind turbines, (5) current status, (6) capacity in MW, (7) foundations type, (8) water depth, (9) height, (10) environmental impact information and (11) additional remarks. In order to better understand the terminology used, the Explanatory Notes at Annex 1 describe the terms used and the way in which Contracting Parties should report their data by adhering to this terminology.

The database is completed with the maps of locations of wind-farms in the OSPAR Maritime Area kindly produced by Germany. The maps also reflect wind-farms at the application stage in order to ensure the transparency of current authorisation processes in Contracting Parties. The maps are at Annex 2.

Finally, the database is annually updated by the OSPAR Working Group on the Environmental Impact of Human Activities (EIHA), adopted by the Biodiversity Committee and published on the OSPAR website (www.ospar.org).

Annex 1: Explanatory Notes to the Reporting Format for the OSPAR Database on Offshore Wind-farms

When filling in the reporting format, Contracting Parties are kindly requested to adhere to the following terminology:

1. The column “**Name**” should reflect the name (or other identifier) of an offshore wind farm or a wind turbine in case of a single installation under the jurisdiction of the Contracting Party concerned, as used by the competent national authority. In case a name changes, the old name should also be given (in brackets) for easy reference.

Note: The term “wind turbine” is used to describe each separate structure that carries rotors or equivalent equipment to capture wind energy. It includes the whole structure from the foundation to the top of the rotor or equivalent equipment. The term “wind farm” is used for a group of individual wind turbines, the area of which is treated as a single unit for regulatory purposes.

2. The column “**Location**” should be completed by providing in a clockwise order separately the decimal degrees of longitude and latitude of each corner point describing the polygon that defines the area of the wind farm. Longitude and latitude should be provided as decimal degrees such as 55.25667°. If the information on longitude and latitude are available in a different format such as 55°15'24" N or 55°15.4' N, they can be converted to the required format as follows:

Original format:	Conversion			Required format:
	Degrees unchanged	Minutes divided by 60 and rounded to 5 decimals	Seconds divided by 3600 and rounded to 5 decimals	rounded to 5 decimals
55°15'24" N		15/60= 0.25	24/3600= 0.00667	55.25667° N
	55 +	0.25	+	0.00667 = 55.25667° N
55°15.4' N		15.4/60= 0.25667		= 55.25667° N
	55 +	0.25667		= 55.25667° N

Contracting Parties should make use of the World Geodetic System 1984 (WGS84). The WGS84 coordinates should be given without any projection (e.g. without projection UTM).

Note: This information enables the creation of GIS maps which reflect the total area covered by the wind farm(s) reported. The maps will allow an easy assessment whether the location(s) of a wind farm(s) may be in conflict with other local issues such as bird migration routes, spawning grounds – provided the information on such issues is also available in form of GIS descriptions.

3. The column “**Distance to coast**” should give the shortest distance in km between the nearest coast and the wind turbine (or a point of the area polygon of a wind farm) closest to the coast.

Note: This information may be important for assessing the impact on landscape and bird migration.

4. The column “**No of wind turbines**” refers to the number of windturbines in the wind-farm.

5. In completing the column “**Current status**”, the terms used should be limited to the following regulatory phases:

“*application*” – cases where development rights or a formal application for permission to construct or operate has been filed but a decision is still pending;

“*authorised*” – cases where permission to construct or operate has been given, but operations have not started;

“*refused*” – cases where a formal application for permission to construct or operate has been dismissed.

“*operational*” – cases where at least one windturbine in the windfarm is operating; “operating” (and related words) should be understood to be a level of activity where some energy is supplied from the wind-farm to land;

“*out of service*” – cases where operation of all the windturbines in the wind-farm has temporarily ceased;

“*decommissioned*” – cases where all operations in the windfarm have permanently ceased.

Any associated detail should be provided in the column “**Remarks**” e.g. dates of expected authorisation, dates of expected operation, reasons for not being in service, planned reuse or future removal of the wind farm.

6. The column “**Capacity**” refers to the maximum possible operational output of the wind-farm or the wind turbine (if it is regulated on its own) in MW when working at full capacity.

Note: There may be a case in future to create a further heading for the actual annual average output in MWh, in order to estimate the scale of the actual activity, and to allow estimating the potential impact on marine biodiversity (e.g. vibration, noise).

7. In the column “**Foundation type**”, the descriptions should be limited to:

monopile,

tripod/tripile,

jacket

gravity-based,

pre-existing structure (this includes any re-used oil and gas installations),

other (this includes floating structures)

Any further details should be given in the column “**Remarks**”.

8. In the column “**Water depth**”, the depth of the water at the site should be described broadly in one of the following five ranges:

less than 10 m,

10 to 25 m,

25 to 50 m,

50 to 100 m

over 100 m.

9. In the column “**Height**”, the highest point reached by a rotor blade during its rotation should be indicated in metres above mean sea level. If any other part of the structure is higher, its height should then

be the one given. If it is not possible to indicate the exact height, e.g. if the state of the approval procedure does not yet allow for it, a range reflecting possible heights should be given.

10. In the column “**EIA**”, Contracting Parties should answer “yes” or “no” as to whether an Environmental Impact Assessment has been carried out.

In addition to the above terminology requirements, Contracting Parties filling in the Reporting Format are requested to highlight any amendments or new entries to the database that have been made since their last annual report (e.g. by marking them yellow). This would, in particular, make it easier to handle the large number of co-ordinates required to prepare the wind farm maps

ID No	Country	Name	Location	Distance from coast (kn)	Operator	No of wind turbines	Current Status	Capacity in MW	Foundation type	Water depth (m)	Height (m)	EIA	Remarks
Be01	Belgium	C-power II	(Block A) 2.883603; 51.5468 2.908361; 51.5581 2.962078; 51.53428 2.937664; 51.52309 2.927972; 51.52018 (Block B) 3.003369; 51.58185 3.011267; 51.57743 3.004458; 51.57128 3.017853; 51.56379 3.005033; 51.55993 2.995967; 51.55509 2.987558; 51.54976 2.978536; 51.54401 2.952222; 51.55887 2.961525; 51.56449 2.969542; 51.57003 2.978675; 51.57507 2.990372; 51.57915 2.996558; 51.57569	27	C-power	54	authorised	300	gravity-based (first 6), tripode (rest)	10 - 25	130	yes	Project layout in 2 blocks, Six 5 MW turbines operational since 2008, Foundations for phase 2 (24 x 6.15 MW) to be installed in 2011
Be02	Belgium	Eldepasco	2.872406; 51.59558 2.904308; 51.60846 2.906422; 51.60719 2.923025; 51.6139 2.930356; 51.61757 2.94461; 51.62589 2.926872; 51.63656 2.912725; 51.6283 2.905525; 51.62469 2.888622; 51.61788 2.892; 51.61585 2.860097; 51.60298	37	Electrawinds-Depret-Aspiravi-Colruyt	36 to 72	authorised	216	monopile/tripode/other	15 - 20	130	yes	Foundation and turbine type not decided yet. Area concession granted in June 2006.
Be03	Belgium	Belwind	2.800711; 51.712290 2.867403; 51.672295 2.801326; 51.620236 2.791981; 51.636446 2.763609; 51.649857	46	Belwind nv, Ecocem	110 (3 MW)	authorised	330	monopile	25 - 50	126	yes	Area concession granted in June 2007. Permit granted in February 2008. 55 turbines installed in 2010. Operational from end 2010.
Be04	Belgium	Rentel	Area A 2.889652778; 51.59195 2.902605556; 51.59718333 2.904719444; 51.59591944 2.931388889; 51.60669722 2.939722222; 51.61086389 2.950602778; 51.61723056 3.001991667; 51.58813611 2.965288889; 51.58293611 2.963950000; 51.57867222 2.956927778; 51.57397500 2.950250000; 51.56927778 2.941975000; 51.56446389 2.920633333; 51.57444167 2.918033333; 51.57591389 2.912286111; 51.57916389	31	Rent-a-port, Electrawinds	48	authorised	288	monopile/tripode/other	22 - 28	130	no	Foundation type not decided yet. Area concession granted in June 2009.
Be05	Belgium	Norther	3.040022; 51.512003 2.977050; 51.490767 2.939136; 51.513539 2.945072; 51.515289 2.972989; 51.528058 2.978828; 51.533981 2.986978; 51.534128 2.991183; 51.536450 2.999061; 51.541058 3.005617; 51.545692 3.011325; 51.549503 3.016994; 51.552200 3.025164; 51.554864 3.030897; 51.557711 3.033311; 51.562542 3.029300; 51.575811 3.083536; 51.544539	22,5	Air Energy Enenco Tractebel Grontmij	max. 84	authorised	420-630	yet to be decided	13 - 22	yet to be decided	in prepa	Foundation type not decided yet. Area concession granted in October 2009, concession area likely to be adapted.

Be06	Belgium	Seastar	Area A 2.878252778; 51.66620833 2.894108333; 51.65669444 2.879216667; 51.64627500 2.876036111; 51.64193056 2.867702778; 51.63508611 2.830869444; 51.60787500 2.813527778; 51.61496111 2.818288889; 51.62000556 2.827302778; 51.62749167 2.839286111; 51.63707500 2.857016667; 51.65082778 Area B 2.899319444; 51.65356944 2.906902778; 51.64900833 2.893875000; 51.63861944 2.863861111; 51.61521111 2.843697222; 51.60707500 2.840747222; 51.60827778 2.873330556; 51.63227778 2.882283333; 51.63960833 2.885352778; 51.64379167	41	Power@Sea Electrawinds	41 (6 MW)	authorised	246	yet to be decided	20-25	yet to be decided	no	Foundation type not decided yet. Area concession granted in March 2010.
Dk01	Denmark	Samsøe	55,73533389 10,58473183 55,73263788 10,58473407 55,72993289 10,58473595 55,72723688 10,5847382 55,7245321 10,58472417 55,72183609 10,58472643 55,71914008 10,58472869 55,71643508 10,58473059 55,71373906 10,58473285 55,71103407 10,58473476	3,8-6,5	Samsøe Havvind A/S	10	operational	23	monopile	less than 10	103,5	yes	Wind mills on a line
Dk02	Denmark	Horns Rev	55,50319539 7,796368081 55,46831377 7,804992419 55,50395344 7,876142783 55,46906592 7,884696914	14	Vattenfall + Dong Energy	80	operational	160	monopile	less than 15	110	yes	
Dk03	Denmark	Frederikshavn	57,44753483 10,56029419 57,44567959 10,56355628 57,44381978 10,56681783	1	Dong Energy	3	operational	7,6	monopile	0-less than 5	123	yes	Wind mills on a line
Dk04	Denmark	Roeland	56,67038174 8,216179969 56,66792641 8,217506281 56,66546619 8,218815714 56,66300969 8,220146436 56,66054427 8,221477003 56,65807442 8,222790031 56,655622 8,224118839 56,65316728 8,225443278	1	Vindenergi Aps	8	operational	17	monopile	less than 5	120	yes	Wind mills on a line
Dk05	Denmark	Horns Rev 2	55,60480173 7,554118544 55,59668975 7,603997333 55,59691491 7,550599603 55,59064695 7,601292106 55,58892212 7,548006286 55,58451325 7,599289025 55,58084997 7,546305342 55,57832461 7,5979865 55,57272601 7,545542794 55,57209903 7,597383564 55,56459518 7,545716406 55,56586382 7,597510628 55,55648404 7,546792906 55,55964556 7,598334689 55,64141851 7,584658906 55,62475851 7,627442228 55,64796895 7,593194753 55,62977408 7,633985861 55,62746243 7,569929939 55,61406351 7,616145767 55,63457092 7,576899192 55,61951546 7,621479914 55,612546 7,558517356 55,60262329 7,607373925 55,62010273 7,56379815 55,60842073 7,611438975	30	Dong Energy	91	operational	209	monopile	9-17	up to 132 m	yes	Wind mills in curved polygon

Dk06	Denmark	Middelgrunden	55,70515627 12,66690066 55,70353414 12,66738013 55,70190979 12,66780472 55,70028084 12,66817568 55,69864793 12,66849528 55,69701209 12,66875949 55,69537457 12,66897195 55,6937344 12,66913145 55,69209158 12,66924118 55,69044973 12,66929145 55,68880773 12,66929284 55,68716452 12,66923825 55,68552347 12,66913262 55,6838831 12,66897422 55,68224513 12,66875972 55,68060924 12,66849642 55,6789758 12,66817847 55,67734634 12,66780554 55,67572076 12,66738432 55,67410024 12,66690792	1,4-3,5	Dong Energy	20	operational	40	gravity based	2-6	111	yes	Windmills on a line
Dk07	Denmark	Tunoe Knob	55,9656198 10,35200731 55,97280675 10,35216184 55,96494736 10,35840831 55,97213447 10,35854801	3 - 6	Dong Energy	10	operational	5	gravity based	less than 5	65	yes	
Dk08	Denmark	Vindeby	54,97326981 11,12216715 54,96493943 11,13405651 54,97602591 11,12431188 54,96560857 11,13919448	1,5-3	Dong Energy	11	operational	5	NA	NA	55	yes	
Dk09	Denmark	Nysted	54,57132451 11,66864533 54,53670315 11,66863608 54,56188686 11,76105071 54,52726443 11,76104924	10 - 11	Dong Energy + E.ON Sweden	72	operational	165	gravity based	6 - 9,5	110	yes	
Dk10	Denmark	Roedsand II	54,5831554 11,48552594 54,58057703 11,4937417 54,57844091 11,50141096 54,57616803 11,51044829 54,5743778 11,51829196 54,57250718 11,52651683 54,57072967 11,53456107 54,5693045 11,54206956 54,56803103 11,5500357 54,56665828 11,55799514 54,56587895 11,56507855 54,56489391 11,57293776 54,56412441 11,58036158 54,56349744 11,58782511 54,56305654 11,59497537 54,56263683 11,60237436 54,56230977 11,60962444 54,56228619 11,61695574 54,57116945 11,4579353 54,56699663 11,46596124 54,56314306 11,47417508 54,55929579 11,48292917 54,55586372 11,49113468 54,55243022 11,50025124 54,54910411 11,50935743 54,54609543 11,51829616 54,54329959 11,52777248	1,7 - 13	E.ON Sweden	90	operational	207	gravity based	6 - 12	126,3	yes	Wind mills in curved polygon
Dk11	Denmark	Avedoere Holme	55,60223327 12,4610829 55,60173163 12,46832833	0,001 - 0,1	Dong Energy	2	operational	7,2	gravity based	2 - 5	150	yes	Two turbines are currently connected to the grid, and a third turbine will probably be connected in 2010. Wind mills on a line
Dk12	Denmark	Sprogø	55,34633312 10,98110101 55,34545168 10,97419924 55,34457465 10,96727927 55,34370173 10,96035884 55,34281939 10,95344023 55,34194143 10,9465054 55,34105838 10,93958246	0,5 - 2	Sund & Bælt	7	operational	21	gravity based	6 - 16	135 m	yes	Wind mills on a line

Dk13	Denmark	Frederikshavn Test Site	57.44146397 10.618895 57.44744122 10.62251106 57.45341156 10.62616718 57.45939581 10.62974712 57.46594057 10.63562373 57.47310229 10.63896363	4	Dong Energy	6	approved	18-36	not yet decided	11 - 21	max 200 m	yes	The final coordinates for the wind turbines will be confirmed later. Wind mills on a line
De01	Germany	alpha ventus (old name: Borkum West)	6.590000, 54.000000 6.588333, 54.026667 6.621667, 54.026667 6.623333, 54.000000	45	Stiftung Offshore Windenergie	12	operational	60	monopile / tripod / gravity-based / other	25 - 50	118 to 150	yes	
De02	Germany	DanTysk	7.166390, 55.228060 7.170000, 55.235000 7.201110, 55.230560 7.208890, 55.222780 7.246940, 55.074170 7.240830, 55.066940 7.177780, 55.063330 7.170830, 55.071110 7.168060, 55.159720 7.184170, 55.161110	50	Vattenfall Europe Windkraft GmbH (Hamburg)	80	authorised	max. 400	tripod	10 - 25 / 25 - 50	130	yes	
De03	Germany	Borkum Riffgrund West	6.179030, 54.072150 6.287530, 54.060330 6.289370, 54.022500 6.180870, 54.034480	40	Energiekontor AG	80	authorised	max. 280	monopile / tripod / other	25 - 50	120	yes	
De04	Germany	Borkum Riffgrund	6.491110, 53.994440 6.560000, 53.994440 6.616940, 53.960830 6.616940, 53.940280 6.548330, 53.940280 6.491390, 53.973890	34	PNE2 Riff I GmbH	77	authorised	max. 230	tripod / other	10 - 25 / 25 - 50	115	yes	
De05	Germany	Amrumbank West	7.641017, 54.538833 7.778319, 54.538833 7.778319, 54.506383 7.641017, 54.506383	35	Amrumbank West GmbH	80	authorised	max. 400	other	10 - 25	130	yes	
De06	Germany	Nordsee Ost (old name: Amrumbank)	7.640560, 54.470830 7.739170, 54.471940 7.739720, 54.461110 7.726390, 54.434170 7.640280, 54.400830	30	RWE Innogy Windpower Hannover GmbH	80	authorised	400	monopile / tripod	10 - 25	140	yes	
De07	Germany	Meerwind Ost	7.705000, 54.370517 7.696150, 54.393330 7.693330, 54.410766 7.752617, 54.433833 7.762017, 54.425000 7.766670, 54.385900 7.716667, 54.374883	22	Wind MW GmbH	40	authorised	max. 200	monopile / tripod	10 - 25 / 25 - 50	110	yes	
De08	Germany	Butendiek	7.800000, 54.966670 7.784350, 54.966670 7.737500, 55.010540 7.737510, 55.041240 7.784460, 55.067620 7.800000, 55.067620	34	Butendiek Offshore Windpark GmbH & Co. KG	80	authorised	240	monopile	10 - 25	130	yes	
De09	Germany	GlobalTech I	6.388670, 54.453920 6.318130, 54.499000 6.318170, 54.540870 6.415820, 54.540830	100	Wetfeet Offshore Windenergy GmbH	80	authorised	360	tripod	25 - 50	150	yes	
De10	Germany	OWP Delta Nordsee 1 (old name: ENOVA Offshore North Sea Windpower)	6.747670, 54.069170 6.784170, 54.069200 6.784170, 54.006170 6.747670, 54.006170	40	OWP Delta Nordsee GmbH	48	authorised	max. 240	monopile / tripod / other	25 - 50	130	yes	
De11	Germany	EnBW Hohe See (old name: Hochsee Windpark Nordsee)	6.259150, 54.459920 6.309330, 54.489430 6.385400, 54.441780 6.368520, 54.389220	90	EnBW Nordsee Offshore GmbH	80	authorised	360	tripod	25 - 50	110	yes	
De12	Germany	Sandbank 24	6.800390, 55.279830 6.812940, 55.290530 6.843860, 55.294140 6.909530, 55.118420 6.878610, 55.114250 6.859750, 55.121330	100	Sandbank Power GmbH & Co. KG	80	authorised	max. 420	tripod / monopile	25 - 50	100	yes	

De13	Germany	Gode Wind	6.941670, 54.051670 6.941670, 54.070830 7.022780, 54.070830 7.046940, 54.056670 7.046940, 53.999440 7.030830, 53.999440	45	PNE Wind AG	80	authorised	320	monopile / tripod	25 - 50	125	yes	
De14	Germany	Ventotec Nord 1	6.008315, 54.621127 5.907451, 54.684054 5.957931, 54.707081 5.998291, 54.681914 6.008867, 54.683314 6.063506, 54.649162	130	GICON GmbH	80	application	150	tripod	25 - 50	80	no	
De15	Germany	Ventotec Nord 2	6.095136, 54.565673 6.021232, 54.612897 6.089043, 54.649117 6.162309, 54.602171	112	GICON GmbH	80	application	150	tripod	25 - 50	80	no	
De16	Germany	Nördlicher Grund	8.141389, 53.852500 8.149167, 53.856944 8.182778, 53.843333 8.182778, 53.816389 8.176389, 53.816389	84	Nördlicher Grund GmbH	80	authorised	360	monopile / tripod	10 - 25 / 25 - 50	100	yes	
De17	Germany	EnBW He Dreih (old name: Hochsee Windpark He dreiht)	6.133333, 54.377780 6.222222, 54.377780 6.291666, 54.329166 6.133333, 54.329170	85	EnBW Nordsee Offshore GmbH	80	authorised	360	tripod	25 - 50	110	yes	
De18	Germany	Nordergründe	8.183610, 53.839170 8.183610, 53.827220 8.180278, 53.823610 8.168060, 53.821940 8.149170, 53.841390	11	Energiekontor GmbH	max. 25	authorised	max. 125	monopile / tripod	less than 10 / 10 - 25	150	yes	
De19	Germany	Riffgat	6.436667, 53.692500 6.510000, 53.702833 6.514333, 53.692333 6.440833, 53.682000	14,5	ENOVA Offshore Projektentwicklungs-GmbH & Co.KG	30	authorised	max. 220	monopile / tripod	Oct-25	140 to 180	yes	
De20	Germany	H2-20	4.078060, 55.798060 4.193890, 55.778890 4.193610, 55.617780 4.078060, 55.660000	200	GEO	800	application	400	tripod	25 - 50	150	no	Hydrogen production. Planned start of construction in 2020
De21	Germany	BARD Offshore 1	6.019170, 54.423330 6.018890, 54.306390 5.938330, 54.302220 5.938610, 54.387500	87	Bard Engineering GmbH	80	operational	max. 400	other	25 - 50	110	yes	
De22	Germany	Deutsche Bucht	5.827497, 54.274753 5.810000, 54.274728 5.742553, 54.304111 5.828694, 54.341686 5.827497, 54.274753	87	Eolic Power GmbH	42	authorised	210	gravity-based	25 - 50	110	yes	
De23	Germany	Austerngrund	5.637133, 54.349786 5.799272, 54.518267 5.799775, 54.414658	87	BARD Holding GmbH	80	application	400	gravity-based	25 - 50	110	no	
De24	Germany	MEG Offshore I	6.504750, 54.000017 6.503167, 54.029967 6.540433, 54.073767 6.539533, 54.089067 6.559733, 54.089350 6.618817, 54.043500 6.618750, 54.029217 6.579850, 54.028500 6.581583, 54.000167	45	Nordsee Offshore MEG I GmbH	80	authorised	400	tripod	25 - 50	150	yes	
De25	Germany	Borkum West II	6.415600, 54.087560 6.524560, 54.088920 6.525580, 54.071320 6.512800, 54.053550 6.487820, 54.031420 6.489570, 54.000030 6.420660, 54.000030	40	Trianel Windkraftwerk Borkum GmbH & Co. KG	80	authorised	400	tripod	10 - 25 / 25 - 50	150	yes	

De26	Germany	Innogy Nordsee 1 (old name: Enova 3, NorthSea Windpower III)	6.747670, 54.092500 6.934000, 54.092500 6.934000, 53.979330 6.747670, 53.952330 6.747670, 53.999830 6.794170, 53.999830 6.794330, 54.077670 6.747670, 54.077670	40	RWE Innogy GmbH	163	application	815	monopile / tripod	25 - 50	150	yes	
De27	Germany	OWP Delta Nordsee 2 (old name: Enova 2)	6.747670, 54.077670 6.794330, 54.077770 6.794170, 53.999830 6.747670, 53.999830 6.747670, 54.006170 6.784170, 54.006170 6.784170, 54.069170 6.747670, 54.069170	40	OWP Delta Nordsee GmbH	32	authorised	192	monopile / tripod	25 - 50	160	yes	
De28	Germany	Borkum Riffgrund II	Area 1 6.422619, 53.991128 6.424790, 53.991689 6.426742, 53.992746 6.427869, 53.993976 6.479788, 53.994038 6.479844, 53.974092 6.548475, 53.933706 6.605575, 53.933714 6.514242, 53.920208 6.485120, 53.920187 6.422724, 53.967280 Area 2 6.571278, 53.994361 6.617025, 53.994364 6.617014, 53.967408	26	PNE2 Riff II GmbH	96	application	480	monopile / tripod	25 - 50	150	yes	
De29	Germany	OWP West	6.102600, 54.022670 6.154350, 54.057700 6.179670, 54.058600 6.180870, 54.034480 6.297850, 54.021230 6.298170, 54.016450 6.106930, 54.016650	58	Norderland Projekt / Nothern Energy Unternehmensgruppe	42	application	240 to 480	monopile / tripod	25 - 50	120 to 150	yes	
De30	Germany	Borkum Riffgrund West 2	6.071400, 54.069200 6.294600, 54.086750 6.295633, 54.059533 6.179033, 54.072150 6.179667, 54.058600 6.154350, 54.057700 6.102600, 54.022667	52	Energiekontor AG	43	application	163	tripod / other	25 - 50	160	yes	
De31	Germany	Hochsee Testfeld Helgoland	7.640555, 54.492778 7.753055, 54.492778 7.753055, 54.486666 7.640555, 54.486666	35	Hochsee Testfeld Helgoland GmbH	19	application	95	monopile / tripod	Oct-25	130	no	
De32	Germany	Gode Wind II	Area 1 6.946819, 54.036119 7.015917, 53.992403 6.997903, 53.989028 6.941903, 53.980328 6.941792, 54.024833 Area 2 6.941622, 54.092292 7.070067, 54.093119 7.104647, 54.076086 7.115239, 54.069853 7.115164, 54.032492 7.062261, 54.001372 7.059592, 54.061908 7.005192, 54.079878 6.941653, 54.079839 6.941622, 54.092292	34	PNE Wind AG	80	authorised	400	monopile / tripod	25 - 50	150	yes	

De33	Germany	Sandbank extension	Area 1 6.788830, 55.269140 6.800390, 55.279830 6.859750, 55.121330 6.878610, 55.114250 6.863170, 55.112580 6.844780, 55.119360 Area 2 6.843860, 55.294140 6.859330, 55.296080 6.918670, 55.137860 6.909530, 55.118420	90	Sandbank Power Extension GmbH	40	application	200	monopile / tripod	25 - 50	100	yes	
De34	Germany	Veja Mate	5.828695, 54.341686 5.909614, 54.376864 5.910367, 54.274845 5.827497, 54.274753	89	BARD Holding GmbH	80	authorised	400	other	25 - 50	110	yes	
De35	Germany	Kaskasi	7.777383, 54.425622 7.758875, 54.439967 7.755072, 54.472108 7.788336, 54.472533 7.798831, 54.390736 7.781825, 54.388164	23	RWE Innogy Windpower Hannover GmbH (Winkra Offshore Nordsee Planungs- und Betriebsges. mbH)	40	application	max. 320	monopile / tripod / gravity-based / other	Oct-25	160	no	
De36	Germany	Meerwind Süd	7.693330, 54.410766 7.696150, 54.393333 7.705000, 54.370517 7.641250, 54.346617 7.641250, 54.392300 7.655133, 54.395900	22	Wind MW GmbH	40	authorised	max. 200	monopile / tripod	10 - 25 / 25 - 50	110	yes	
De37	Germany	Albatros	6.253056, 54.461389 6.184722, 54.506111 6.368333, 54.580000 6.416667, 54.543611 6.309722, 54.543611 6.309722, 54.494722	105	Norderland Projekt / Nothorn Energy Unternehmensgruppe (LCO Nature GmbH)	80	application	400	tripod / other	25 - 50	165	yes	
De38	Germany	Kaikas	6.120083, 54.658970 6.275416, 54.606346 6.137305, 54.552218 6.119832, 54.563389	88	Eos Offshore Kaikas GmbH	88	application	528	other	25 - 50	153	yes	
De39	Germany	Notos	6.196758, 54.500278 6.287269, 54.538908 6.288808, 54.500961 6.240025, 54.472383	88	EOS Offshore Notos GmbH	50	application	300	other	25 - 50	153	yes	
De40	Germany	Aiolos	6.190183, 54.714708 6.270394, 54.735897 6.275883, 54.685381 6.190183, 54.714708 6.281881, 54.773322 6.495097, 54.772847 6.471314, 54.690989 6.373264, 54.651933 6.292011, 54.679850 6.285517, 54.739883	88	Eos Offshore Aiolos GmbH	310	application	1550	other	25 - 50	153	no	
De41	Germany	Sea Wind I	6.318167, 54.540867 6.318167, 54.558834 6.346000, 54.574970 6.449848, 54.548362 6.414961, 54.436991 6.388667, 54.453917 6.415817, 54.540833	90	Northern Energy SeaWind I GmbH	44	application	400	tripod / other	25 - 50	150	no	
De42	Germany	Sea Wind II	6.310250, 54.554303 6.310323, 54.496499 6.253696, 54.463165 6.205775, 54.493778	90	Northern Energy SeaWind II GmbH	60	application	300	tripod / other	25 - 50	150	no	
De43	Germany	Sea Storm I	5.875722, 54.595069 5.933681, 54.653218 6.032264, 54.590564 5.942536, 54.561245	110	Northern Energy SeaStorm I GmbH & Co.KG	80	application	400	tripod / other	25 - 50	150	no	

De44	Germany	He dreiht II	6.133400, 54.328970 6.291800, 54.329010 6.304650, 54.320750 6.133340, 54.312310	110	EOS Offshore AG	28	application	168	other	25 - 50	153	no	
De45	Germany	Diamant	5.181306, 54.684753 5.356606, 54.685742 5.206742, 54.535689 5.183944, 54.545550	113	BARD Holding GmbH	160	application	800	monopile / tripod / gravity-based / other	25 - 50	151	no	
De46	Germany	Bernstein	5.806492, 54.504858 6.007419, 54.505014 5.807108, 54.424303	108	BARD Holding GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	151	no	
De47	Germany	Citrin	5.806483, 54.509350 5.806439, 54.515767 5.873294, 54.584406 6.016867, 54.509500	111	BARD Holding GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	151	no	
De48	Germany	Aquamarin	5.820128, 54.270261 5.918106, 54.270358 5.917892, 54.296578 6.018867, 54.302017 6.019033, 54.227972 5.928531, 54.222800	83	BARD Holding GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	151	no	
De49	Germany	SeaWind IV	5.994771, 54.627748 5.945547, 54.659000 5.947007, 54.666560 5.991326, 54.710879 6.108232, 54.671408 6.073893, 54.656582	110	Northern Energy SeaWind IV GmbH i. Grdg.	78	application	400	gravity-based	25 - 50	150	no	
De50	Germany	GAIA II	6.120808, 54.839558 6.154581, 54.873036 6.204603, 54.823072 6.245336, 54.805592 6.234414, 54.799817	100	Northern Energy GAIA II GmbH	80	application	400	tripod / other	25 - 50	150	no	
De51	Germany	GAIA III	6.222261, 54.793344 6.121244, 54.737847 6.044694, 54.763942 6.113108, 54.831719	90	Northern Energy GAIA III GmbH i. Grdg.	80	application	400	tripod / other	25 - 50	150	no	
De52	Germany	GAIA IV	6.135214, 54.733492 6.253589, 54.797656 6.264947, 54.794792 6.270286, 54.745261 6.174536, 54.720078	90	Northern Energy GAIA IV GmbH i. Grdg.	68	application	400	tripod / other	25 - 50	150	no	
De53	Germany	Skua	6.526147, 54.521454 6.680879, 54.469395 6.492490, 54.408427	85	OWP Skua GmbH	80	application	400	tripod	25 - 50	165	no	
De54	Germany	Horizont II (old name: Horizont Ost)	6.260847, 54.973017 6.416450, 54.842739 6.275947, 54.839550	125	Germany Mainstream Renewable Power Developments GmbH	76	application	380	monopile / tripod / gravity-based / other	25 - 50	165	yes	
De55	Germany	Nordpassage	7.160556, 55.063056 7.037222, 55.260556 7.170000, 55.235000 7.166389, 55.228056 7.184167, 55.161111 7.168056, 55.159722 7.170833, 55.071111 7.177778, 55.063333	75	Vattenfall Europe New Energy GmbH	80	application	480	monopile / tripod / gravity-based / other	10 - 25 / 25 - 50	160	no	
De56	Germany	Horizont III (old name: Horizont Ost)	6.276106, 54.830564 6.426583, 54.833972 6.493611, 54.782678 6.281158, 54.783136	121	Germany Mainstream Renewable Power Developments GmbH	71	application	355	monopile / tripod / gravity-based / other	25 - 50	165	yes	
De57	Germany	Horizont I (old name: Horizont)	6.163739, 54.883256 6.247419, 54.965769 6.263636, 54.807144 6.216072, 54.830692	131	Germany Mainstream Renewable Power Developments GmbH	65	application	325	monopile / tripod / gravity-based / other	25 - 50	165	yes	

De58	Germany	GlobalTech II	6.133091, 54.260075 6.133358, 54.285735 6.181559, 54.305714 6.257049, 54.309433 6.261424, 54.269189 6.133091, 54.260075	70	Northern Energy GlobalTech II GmbH i. Grdg.	76	application	380	gravity-based	25 - 50	150	no	
De59	Germany	GlobalTech III	6.276630, 54.270156 6.272301, 54.310180 6.316592, 54.312335 6.320715, 54.273225	70	Northern Energy GlobalTech III GmbH i. Grdg.	21	application	105	gravity-based	25 - 50	150	no	
De60	Germany	OWP GAIA I Nord (old name: GAIA I)	6.266875, 54.983833 6.331183, 55.046914 6.376281, 55.014783 6.367339, 55.008942 6.402192, 54.984067 6.310622, 54.947339	145	Northern Energy GAIA I GmbH	80	application	400	tripod / other	25 - 50	150	no	
De61	Germany	SeaStorm II	5.953981, 54.555241 6.042649, 54.583940 6.103466, 54.545119 6.031400, 54.515950	110	Northern Energy SeaStorm II GmbH	38	application	190	tripod / other	25 - 50	150	no	
De62	Germany	SeaWind III	6.005413, 54.621020 6.105352, 54.658979 6.105121, 54.557430	110	Northern Energy SeaWind III GmbH	57	application	400	tripod / other	25 - 50	150	no	
De63	Germany	Bight Power I	6.115589, 54.306219 6.219189, 54.308961 6.224319, 54.232750 6.120519, 54.230519	74	SSE Renewables Germany GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	163	no	
De64	Germany	Bight Power II	6.224419, 54.308969 6.330900, 54.310619 6.346239, 54.301039 6.350361, 54.241800 6.229100, 54.239261	74	SSE Renewables Germany GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	163	no	
De65	Germany	AreaC I	6.484362, 54.382974 6.632365, 54.285643 6.640260, 54.275199 6.544502, 54.273727 6.473137, 54.320278 6.468545, 54.328510	66	SSE Renewables Germany GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	163	no	
De66	Germany	AreaC II	6.635439, 54.305911 6.755419, 54.308200 6.754931, 54.317289 6.808911, 54.318461 6.813900, 54.252089 6.670939, 54.249239 6.636339, 54.295281	66	SSE Renewables Germany GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	163	no	
De67	Germany	AreaC III	6.820700, 54.318519 6.874439, 54.319811 6.874950, 54.310000 6.955500, 54.309900 6.957219, 54.275311 7.029719, 54.275511 7.030800, 54.252900 6.841661, 54.249989 6.823519, 54.259819	66	SSE Renewables Germany GmbH	80	application	400	monopile / tripod / gravity-based / other	25 - 50	163	no	
De68	Germany	Euklas	5.005356, 54.684236 5.173364, 54.685544 5.176144, 54.548922 5.005719, 54.622356	143	BARD Holding GmbH	160	application	1040	monopile / tripod / gravity-based / other	25 - 50	151	no	
De69	Germany	Witte Bank	6.422161, 55.072169 6.426500, 55.080536 6.390197, 55.104597 6.461739, 55.174267 6.532728, 55.056786 6.551678, 55.044164 6.496786, 55.021864	120	Projekt Ökovest GmbH	118	application	590	other	25 - 50	163	no	

De70	Germany	ENOVA Offshore NSWP 4	4.974500, 55.311330 5.146500, 55.244830 5.190670, 55.244830 5.090670, 55.191133 4.974500, 55.262170	205	ENOVA Energieanlagen GmbH	81	application	486	monopile / tripod / gravity-based / other	25 - 50	163	no	
De71	Germany	ENOVA Offshore NSWP 5	5.213830, 55.244830 5.226670, 55.244830 5.297830, 55.201330 5.178500, 55.137670 5.101330, 55.184830	158	ENOVA Energieanlagen GmbH	85	application	486	monopile / tripod / gravity-based / other	25 - 50	163	no	
De72	Germany	ENOVA Offshore NSWP 6	5.323500, 55.202670 5.390830, 55.161170 5.256500, 55.089670 5.189170, 55.131000	190	ENOVA Energieanlagen GmbH	84	application	504	monopile / tripod / gravity-based / other	25 - 50	163	no	
De73	Germany	ENOVA Offshore NSWP 7	4.974500, 55.249000 5.245000, 55.083500 5.200170, 55.059500 4.974500, 55.202500	190	ENOVA Energieanlagen GmbH	95	application	570	monopile / tripod / gravity-based / other	25 - 50	163	no	
De74	Germany	Gode Wind III	7.073719, 54.096489 7.110125, 54.096764 7.137514, 54.007900 7.068086, 53.998581 7.118531, 54.028247 7.118611, 54.064506 7.115253, 54.075789	34	PNE Wind AG (Plambeck Neue Energien AG)	15	application	75	monopile / tripod	25 - 50	150	no	
De75	Germany	He dreht	6.133333, 54.377778 6.133333, 54.436944 6.222222, 54.377778	85	EnBW Nordsee Offshore GmbH	39	authorised	195	tripod	25 - 50	110	yes	
De76	Germany	Nemo (old name: Jules Verne I)	5.396044, 55.157919 5.477503, 55.107178 5.461725, 55.091664 5.440272, 55.088383 5.353756, 55.002994 5.222500, 55.046175 5.205800, 55.056797	190	PNE Wind AG	98	application	490	monopile / tripod / gravity-based / other	25 - 50	158	no	
De77	Germany	Jules Verne (old name: Jules Verne II)	5.572511, 55.075822 5.674000, 55.042003 5.563428, 54.933522 5.448536, 54.971667 5.487881, 55.010456 5.509297, 55.013725	170	PNE Wind AG	96	application	480	monopile / tripod / gravity-based / other	25 - 50	158	no	
De78	Germany	Gannet	6.488279, 54.394244 6.489123, 54.397093 6.646215, 54.447899 6.614596, 54.341583 6.570258, 54.340420	80	OWP GANNET GmbH i.G.	80	application	400	other / monopile	25 - 50	165	no	
De79	Germany	Seagull	6.691642, 54.343550 6.724871, 54.454531 6.780650, 54.435646 6.798417, 54.346206	80	OWP SEAGULL GmbH i.G.	80	application	400	other / monopile	25 - 50	165	no	
De80	Germany	Petrel	6.952174, 54.377301 6.953533, 54.349897 6.813825, 54.346583 6.797287, 54.430004	80	OWP PETREL GmbH i.G.	80	application	400	other / monopile	25 - 50	165	no	
De81	Germany	Heron	6.614592, 54.341575 6.646215, 54.447891 6.696418, 54.464148 6.724871, 54.454531 6.691642, 54.343550	80	OWP HERON GmbH i.G.	80	application	400	other / monopile	25 - 50	165	no	
De82	Germany	Nautilus	5.477503, 55.107178 5.572511, 55.075822 5.509297, 55.013725 5.487881, 55.010456 5.448536, 54.971667 5.353756, 55.002994 5.440272, 55.088383 5.461725, 55.091664	170	PNE WIND AG	94	application	470	monopile / tripod / gravity-based / other	25 - 50	158	no	

De83	Germany	OWP GAIA V Nord	6.387697, 55.008686 6.400375, 55.011983 6.339097, 55.054661 6.382261, 55.096853 6.410297, 55.078022 6.402439, 55.071653 6.483994, 55.016761 6.414967, 54.989178	160	Northern Energy GAIA V GmbH	80	application	400	tripod/other	25 - 50	160	no	
FR01	France	Cote d'Albatre	0.58133, 49.91275 0.54714, 49.94981 0.62622, 49.91322 0.59206, 49.95031	7	Enertrag	21	authorised, but court case in process	105	tripod	25	160	yes	
IE01	Ireland	Arklow Bank	-5.9975,52.78269 -5.96417,52.67472 -5.8975,52.91445 -5.93417,52.91805	10	Arklow Energy subleased from Sure Partners	200	operational	520	monopile	5-30	125	yes	Currently 7 x 3.6 MW turbines are in place. It is intended that the final output will be 520MW with all turbines with the area specified.
IE02	Ireland	Codling Bank	-5.82917,53.07167 -5.71667,53.07167 -5.71667,53.10883 -5.78333,53.14333 -5.84350,53.14333	13	Codling Wind Park Ltd	220	authorised	1100	Not yet determined. Monopile or tripod proposed.	5-20	160 (max)	yes	Phased development over the period 2009 to 2016.Foreshore Lease granted (copy available at http://www.dcmnr.gov.ie/NR/rdonlyres/665CD3AA-C74D-4FBE-9329-70186FC44F3F/0/MS538LForeshor
IE03	Ireland	Oriel Wind Farm	-6.09230,53.94789 -6.04121,53.94664 -6.02737,53.92036 -6.04839,53.88695 -6.09030,53.88798 -6.10840,53.92226	7	Oriel Wind Farm Ltd	55	application	max 330	Not yet determined. Concrete Caisson gravity foundation proposed	15-30	160 (max)	yes	Formal application submitted with EIS
IE04	Ireland	Sceirde Rocks	-9.96766,53.29433 -10.03150,53.26617 -10.02000,53.25000 -9.95000, 53.23333 -9.91833,53.26833	5	Fuinneamh Sceirde Teoranta	20	application	100	Not yet determined. Monopile proposed.	5-35	140 (max)	yes	Formal application submitted with EIS
NL01	Netherlands	Prinses Amaliapark (new name; was Q7 WP)	4.24033, 52.60778 4.19544, 52.60536 4.18436, 52.57669 4.24814, 52.56897 4.26447, 52.58514	23	Eneco (new operator)	60	operational	120	monopile	10-25	97	yes	coordinates in WGS 84
NL02	Netherlands	Offshore Windpark Egmond aan Zee (new name; was Near Shore Windpark (demonstration park))	4.49472, 52.60461 4.48756, 52.57381 4.43097, 52.57411 4.35183, 52.63117 4.37986, 52.63514 4.39453, 52.62575 4.41819, 52.63944	11	Noordzeewind	36	operational	108	monopile	10-25	112	yes	coordinates in WGS 84.
NL04	Netherlands	Beaufort (new name; was Katwijk)	3.94290,52.24997 3.97587,52.24998 3.99473,52.31075 3.98288,52.31023 3.97645,52.31150 3.96235,52.30830 3.95070,52.30982 4.00623,52.34767 3.99713,52.34647 3.95555,52.34677 3.96077,52.38650 4.01887,52.38812	24	NUON (was WEOM)	100	authorised	300	monopile	20-28	115	yes	coordinates in WGS 84
NL07	Netherlands	Scheveningen Buiten	3.70638,52.19427 3.71780,52.20632 3.85905,52.20740 3.85927,52.20055 3.74393,52.17750 3.70638,52.19427	30	Scheveningen Buiten BV	89	authorised	320	monopile	19-30	137 to 165	yes	coordinates in WGS 84.
NL08	Netherlands	Q4-WP	4.25427,52.64785 4.23800,52.65657 4.23542,52.65883 4.24295,52.66692 4.24095,52.71680 4.26968,52.67880 4.28607,52.64965	24	Q4 BV	40	authorised	120	monopile	±25	109	yes	coordinates in WGS 84.

NL10	Netherlands	West Rijn	3.63703,52.32000 3.68537,52.31168 3.67762,52.30542 3.69815,52.30010 3.62375,52.21683 3.58458,52.23398	40	West Rijn Wind Farm BV	72	authorised	260	monopile	19 -p 21	130	yes	coordinates in WGS 84
NL13	Netherlands	Breeveertien II	3.51617,52.54848 3.56745,52.58857 3.60608,52.61867 3.60712,52.61932 3.62725,52.60532 3.63395,52.60065 3.64067,52.59597 3.65818,52.58357 3.66592,52.57627 3.67048,52.56443 3.65210,52.54880 3.64135,52.54208 3.54115,52.54718	65	Breeveertien II Wind Farm BV	79	authorised	285	monopile	19-25	130	yes	coordinates in WGS 84.
NL18	Netherlands	Brown Ridge Oost	3.43795,52.75877 3.43673,52.66168 3.44598,52.66487 3.46468,52.68420 3.47395,52.68738 3.49268,52.70672 3.50195,52.70990 3.51132,52.71957 3.52060,52.72275 3.52078,52.73570 3.48402,52.74883 3.46553,52.74892 3.43795,52.75877	74	Brown Ridge Oost BV	94	authorised	282	monopile	30	142	yes	coordinates in WGS 84
NL20	Netherlands	Den Helder I	3.60188,52.90002 3.65790,52.93892 3.74602,52.90107 3.68715,52.85975 3.67095,52.86100 3.61182,52.88512	63	Den Helder Windfarm BV	78	authorised	468	monopile	23	160	yes	Coordinates in WGS 84.
NL22	Netherlands	Buitengaats (was: BARD Offshore)	6.05458,54.07498 5.98863,54.07013 6.09532,54.00383 6.02677,54.00420	56	Buitengaats (was: Bard Engineering GmbH)	60	authorised	300	tripile	29-33	150	yes	coordinates in WGS 84
NL23	Netherlands	Clearcamp (was: EP Offshore NL)	5.98103,54.06953 5.91532,54.06417 6.01870,54.00425 5.95015,54.00455	56	Clearcamp (was: Eolic Power GmbH)	55	authorised	275	tripile	29-33	150	yes	coordinates in WGS 84
NL24	Netherlands	ZeeEnergie (was: GWS Offshore I)	5.90777,54.06402 5.81385,54.05625 5.94208,54.00458 5.87755,54.00485	56	ZeeEnergie (was: Global Wind Support GmbH)	60	authorised	300	tripile	29-33	150	yes	coordinates in WGS 84
NL25	Netherlands	Tromp Binnen	3.60797,52.80467 3.61278,52.80307 3.61827,52.80282 3.62343,52.80393 3.62738,52.80625 3.63980,52.80117 3.61368,52.78040 3.49928,52.82705 3.42825,52.85587 3.42663,52.87767 3.42722,52.87813 3.51837,52.84115	75	RWE	59	authorised	295	gravity-based	20-33	152	yes	coordinates in WGS 84.
NL26	Netherlands	Q10-WP	4.0728461,52.2326722 4.0846649,52.2457884 4.0846078,52.2518022 4.1218619,52.2552123 4.1220704,52.2545110 4.1209456,52.2534544 4.1145198,52.2508799 4.1126402,52.2447077 4.1111014,52.2427909 4.1103232,52.2417953 4.1048004,52.2356614 4.1035486,52.2337577 4.1023100,52.2317406 4.0958622,52.2241851 4.0954929,52.2236158	24	Eneco WP Q10	51	authorised		monopile	±25	109	yes	coordinates in WGS 84.

NO1	Norway	Karmøy	5.01786, 59.08406		StatOilHydro ASA	1	authorised	3	floating prototype			yes	
NO2	Norway	Havsul I	6.22179, 62.78594 6.23994, 62.77237 6.20353, 62.78659 6.26712, 62.82155 6.38935, 62.85867 6.47046, 62.83154 6.45481, 62.82605 6.43562, 62.82874 6.38096, 62.81429 6.38320, 62.78919 6.35700, 62.77721 6.27331, 62.79956 6.22179, 62.78594	6	Havgul AS	78	authorised	350	Other	5 - 35	160	yes	The turbine's specific information is based upon the most likely turbines to be used
NO3	Norway	Havsul II	5.95625, 62.67455 6.08520, 62.62281 6.05914, 62.61214 6.04730, 62.61189 6.03228, 62.60729 6.03850, 62.60695 5.91653, 62.55916 5.89581, 62.57011 5.88834, 62.64148 5.95625, 62.67455 6.08520, 62.62281 5.95610, 62.67461 5.98920, 62.69023 6.03297, 62.71042 6.07096, 62.70713 6.14195, 62.69041 6.12738, 62.65740 6.08520, 62.62281	2	Havgul AS	178	refused	800	other	5 - 35	160	yes	The turbine's specific information is based upon the most likely turbines to be used
NO4	Norway	Havsul IV	7.16936, 63.12408 7.25626, 63.12408 7.30304, 63.11913 7.30410, 63.09548 7.26448, 63.07001 7.23404, 63.07001 7.16884, 63.10164 7.16936, 63.12408 7.32153, 63.07872 7.32112, 63.08726 7.36300, 63.09253 7.36336, 63.08414 7.32153, 63.07872 7.33012, 63.05623 7.32313, 63.05628 7.32281, 63.06337 7.36818, 63.07930 7.38051, 63.07934 7.38074, 63.07386 7.33012, 63.05623	3	Havsul IV AS	78	refused	350	other	5 - 35	160	yes	The turbine's specific information is based upon the most likely turbines to be used
NO13	Norway	Siragrunnen	6.225, 58.272 6.340, 58.282 6.288, 58.238 6.406, 58.248	1	Siragrunnen AS	40	application	200	gravitation (concrete)	15 - 40	150	yes	
SE1	Sweden	Stora Middelgrund	12.03532, 56.65295 12.06134, 56.65899 12.08176, 56.65979 12.08910, 56.66148 12.11229, 56.63124 12.12933, 56.62739 12.14440, 56.60751 12.16143, 56.60366 12.18202, 56.57647 12.17501, 56.56708 12.18003, 56.56045 12.16554, 56.54098 12.14155, 56.53544 12.13546, 56.52624 12.13797, 56.52292 12.13499, 56.52223	35	Universal Wind	110	planned	800	not decided	0-30	200	yes	Near the Danish border
SE2	Sweden	Risholmen - Arendal	11.81423, 57.68374 11.82048, 57.68547 11.80816, 57.70327	0 - 1	Göteborg Energi	3	planned	9	concrete	0-12	150	yes	

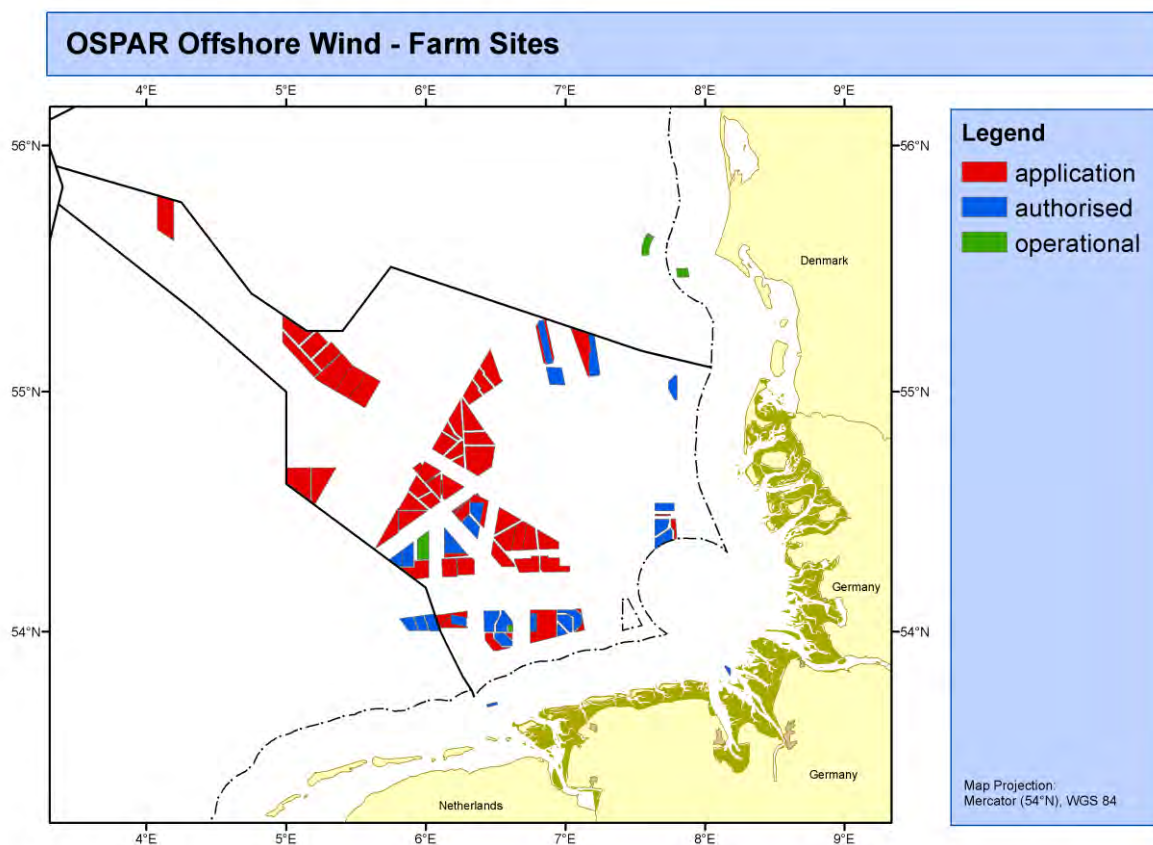
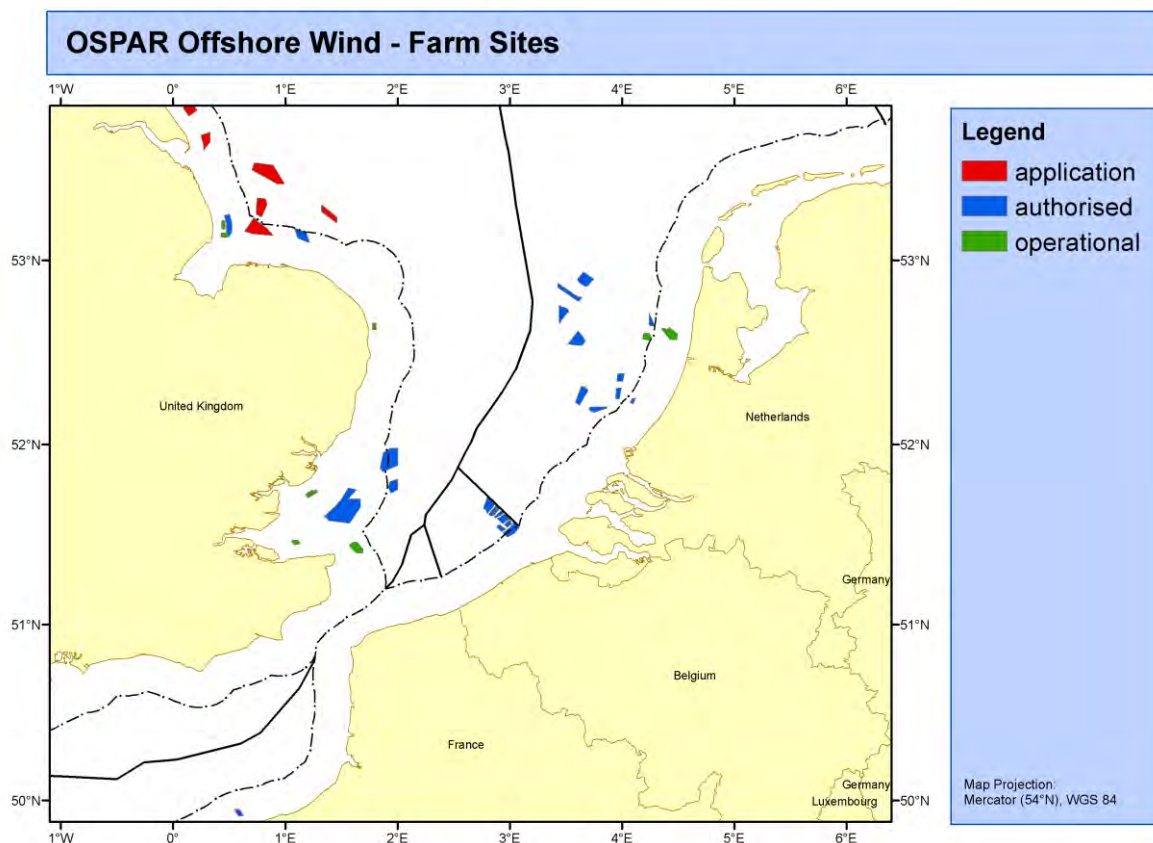
SE3	Sweden	Lövstaviken	12.46977, 56.88748	0,04	Falkenberg Energi	6	authorised	10	both monopile and gravity	0-10	100	yes	Wind-farm consisting of 6 wind turbines of which 5 are located on land
UK01	UK	Scroby Sands	1.77340, 52.62715 1.77378, 52.66197 1.80750, 52.66172 1.80711, 52.62692	2	E.on UK Renewables	30	operational	60	monopile	less than 10	100	yes	operational since 2004.
UK02	UK	North Hoyle	-3.47420, 53.40333 -3.41518, 53.41029 -3.42208, 53.43121 -3.48134, 53.42491	8	RWE Npower Renewables	30	operational	60	monopile	less than 10	130	yes	operational since 2003
UK03	UK	Rhyl Flats	-3.65395, 53.39262 -3.60799, 53.38226 -3.61995, 53.36333 -3.69251, 53.37971 -3.68711, 53.39030 -3.65937, 53.38404	8	RWE Npower Renewables	30	Operational	100	monopile	less than 10	130	yes	
UK04	UK	Barrow	-3.33136, 53.99518 -3.30577, 54.01186 -3.26065, 53.98774 -3.28598, 53.97107	10	DONG/Centrica	30	operational	90	monopile	10-25	125	yes	operational since 2006.
UK05	UK	Robin Rigg	-3.7025, 54.73433; -3.742, 54.73533; -3.7565, 54.7535; -3.73983, 54.76283, -3.67933, 54.785; 3.6675, 54.77717; 3.6775, 54.75217;	9,5	E.on UK Renewables	60	Operational	180	monopile	less than 10	130	yes	
UK06	UK	Kentish Flats	1.05383, 51.46850 1.10700, 51.47383 1.13400, 51.45233 1.08083, 51.44700	8,5	Vattenfall	30	operational	90	monopile	less than 10	140	yes	operational since 2005.
UK07	UK	Burbo Bank	-3.22000, 53.50283 -3.18665, 53.50319 -3.14751, 53.48185 -3.17905, 53.47023 -3.22399, 53.49471	6,4	Dong Energy	25	operational	90	monopile	less than 10	130	yes	under construction
UK08	UK	Lynn	0.42914, 53.14750 0.48896, 53.14747 0.48766, 53.12503 0.42787, 53.12505	5,2	Centrica	27	operational	97	monopile	less than 10	150	yes	under construction
UK09	UK	Inner Dowsing	0.43320, 53.21332 0.46313, 53.21334 0.46319, 53.16841 0.43329, 53.16840	5	Centrica	27	operational	97	monopile	less than 10	145	yes	under construction
UK11	UK	Gunfleet Sands	1.18153, 51.72783 1.24281, 51.75173 1.25820, 51.73651 1.19693, 51.71261	6	Dong Energy	30	operational	108	monopile	less than 10	150	yes	
UK13	UK	Scarweather Sands	-3.88839, 51.48594 -3.86649, 51.49613 -3.83030, 51.49819 -3.82410, 51.48448 -3.81685, 51.47589 -3.83136, 51.47449 -3.85691, 51.47411 -3.88371, 51.47569	9,5	E.on	30	application	108	monopile/gravity based	less than 10	130	yes	Withdrawn after submission
UK14	UK	Blyth	-1.48965,55.13503 -1.49083,55.13725	1	Blyth Offshore Wind Ltd	2	operational	4	drilled monopile	less than 10	91	yes	Operational since 2000
UK15	UK	Teesside	-1.08900,54.63100 -1.05200,54.64000 -1.11100,54.66800 -1.13300,54.65200	1,5	EDF	27	authorised	62	drilled monopile	10-25	130	yes	
UK16	UK	Ormonde	-3.40000,54.08333 -3.42667,54.06833 -3.47167,54.09167 -3.44333,54.10833	10	Vattenfall	30	authorised	150	monopile	10-25	130	yes	combined wind farm/gas field

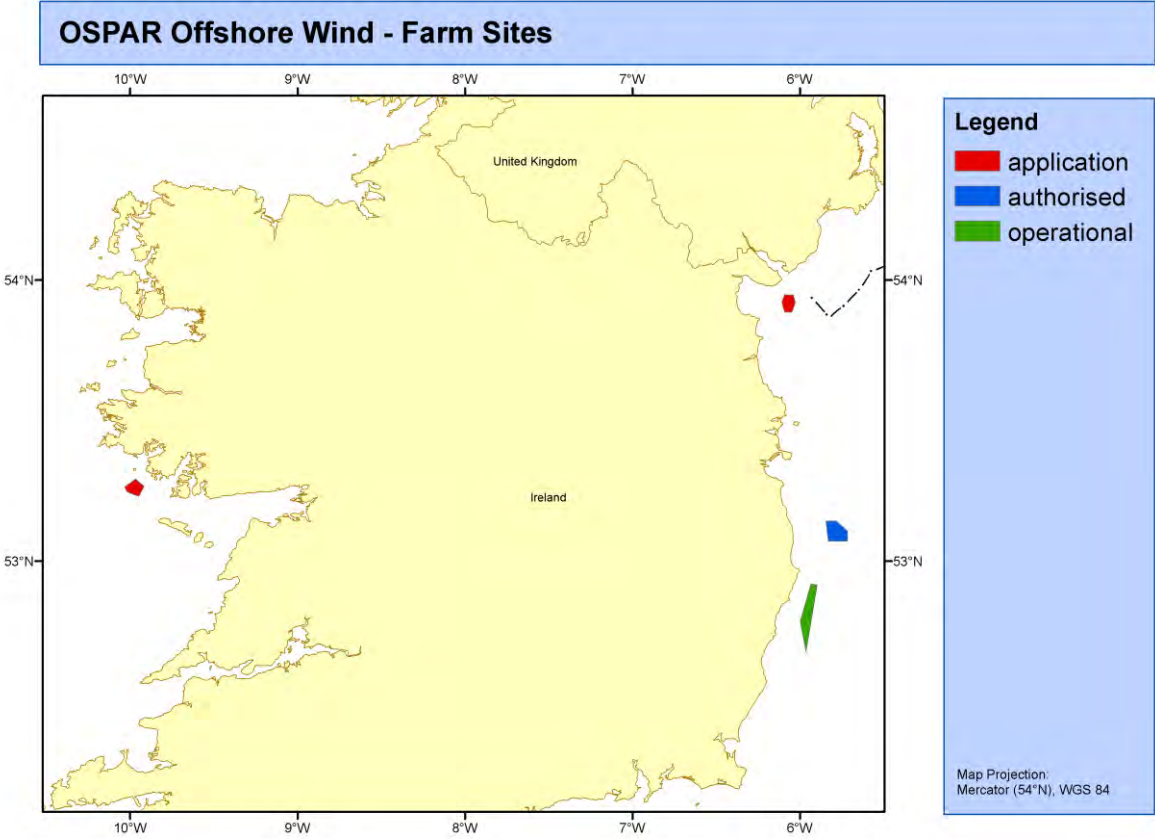
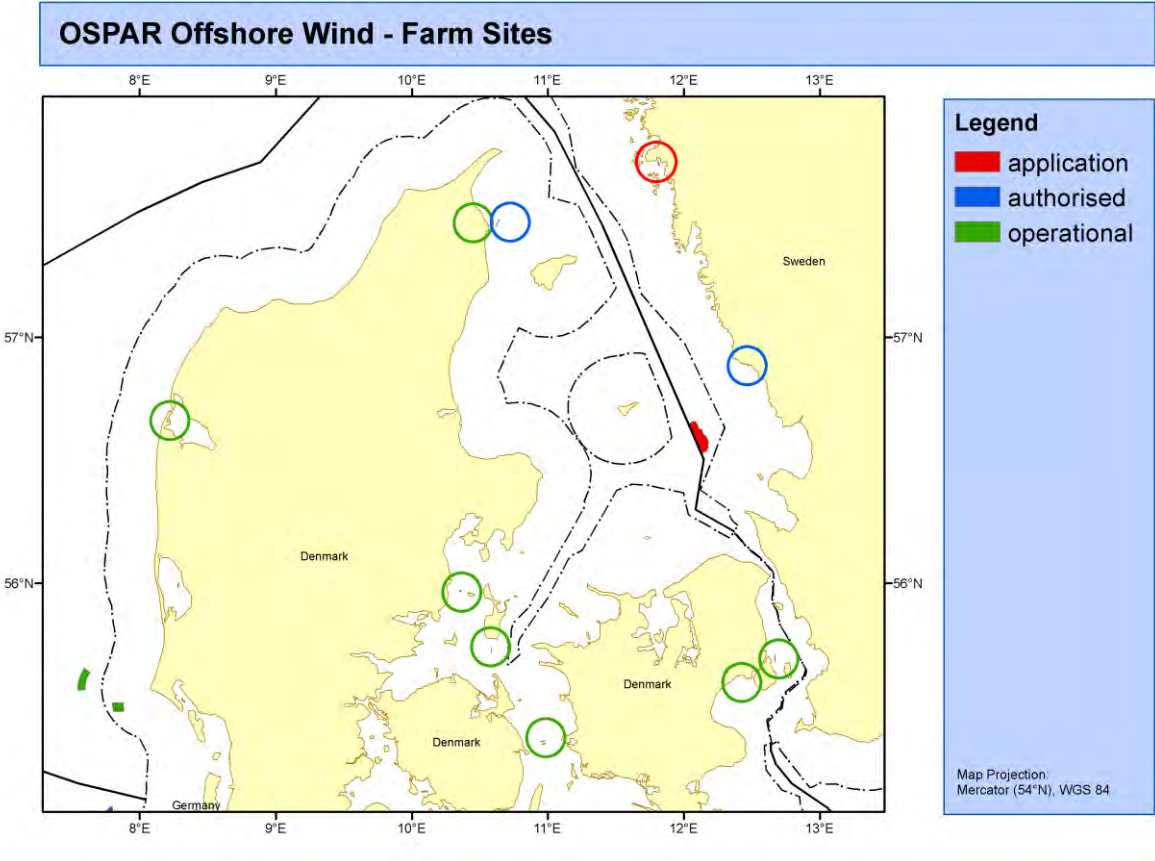
UK17	UK	London Array	1.34924, 51.60440 1.44748, 51.66220 1.50193, 51.70240 1.56083, 51.76010 1.63268, 51.75040 1.55491, 51.70046 1.66583, 51.70030 1.66583, 51.65520 1.57156, 51.56820 1.38756, 51.58130	21	DONG Energy / E.On Renewables / Masdar	341	authorised	1000	monopile/gravity based	0-25	140	yes	
UK18	UK	Greater Gabbard	Inner Gabbard 1.93400, 51.97850 2.00000, 51.97850 2.00000, 51.88750 1.86950, 51.85130 1.84460, 51.87180 1.87280, 51.95580 1.88750, 51.96120 1.89350, 51.95910 1.89680, 51.96470 The Galloper 2.00000, 51.81100 2.00000, 51.75400 1.93850, 51.73300 1.91640, 51.76600 1.93400, 51.79600	23	Scottish & Southern	140	authorised	504	monopile/gravity based	20-50	170	yes	
UK19	UK	Thanet	1.56957, 51.44295 1.60120, 51.46080 1.63535, 51.46078 1.68790, 51.42435 1.68779, 51.40085 1.62770, 51.40269	11	Vattenfall	100	Operational	300	monopile/gravity based	0-30	150	yes	
UK20	UK	Gwynt y Mor	-3.767098,53.495198 -3.692035,53.501690 -3.544143,53.501813 -3.456768,53.451828 -3.458598,53.451475 -3.481888,53.447800 -3.500255,53.445453 -3.515118,53.444418 -3.532743,53.441228 -3.548947,53.438053 -3.560877,53.434508 -3.569970,53.431002 -3.580478,53.427473 -3.593065,53.422647 -3.605617,53.416972 -3.616683,53.409620 -3.628345,53.417933 -3.642153,53.426642 -3.650775,53.429488 -3.663107,53.436518 -3.674602,53.440170 -3.681102,53.443045 -3.692582,53.446272 -3.707662,53.450717 -3.716968,53.452702 -3.735548,53.455822 -3.759840,53.459703	13	RWE Npower Renewables	160	authorised	576	monopile/multi- pile/ gravity based/ suction caisson	13	165	yes	
UK21	UK	Walney	-3.63156, 54.12671 -3.44433, 54.02959 -3.52591, 54.01227 -3.53295, 54.01900 -3.54755, 54.02967 -3.56460, 54.03899 -3.58468, 54.04670 -3.60174, 54.05214 -3.62464, 54.05734 -3.64297, 54.05952 -3.65569, 54.07402 -3.66950, 54.09328	14	DONG Energy & SSE Renewables	102	authorised	367	monopile/tripod/gravity base	18-30	157	yes	
UK22	UK	West of Duddon	-3.55859, 54.00255 -3.44334, 54.02872 -3.37940, 53.97193 -3.42159, 53.94403 -3.42025, 53.94385	13	Scottish Power/DONG Energy	160	authorised	500	monopile/tropod/gravity base/suction caisson	18-23	183	yes	

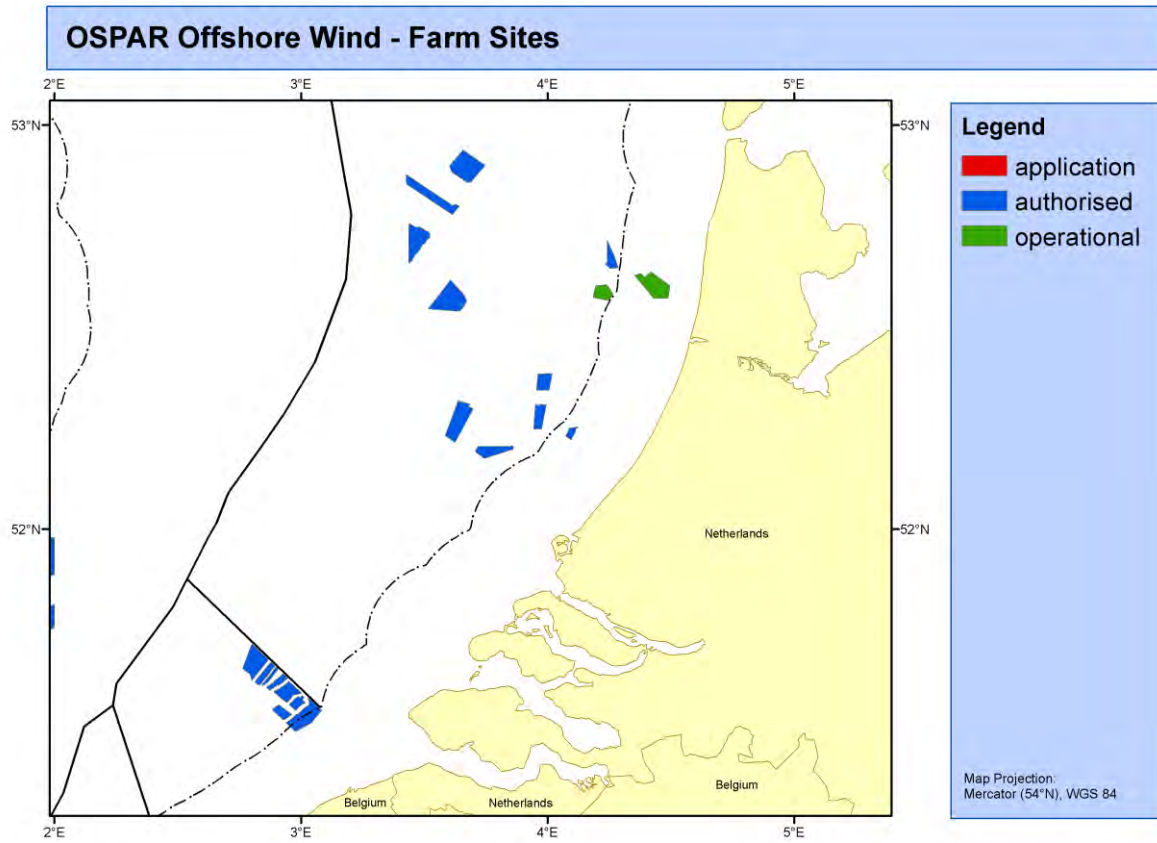
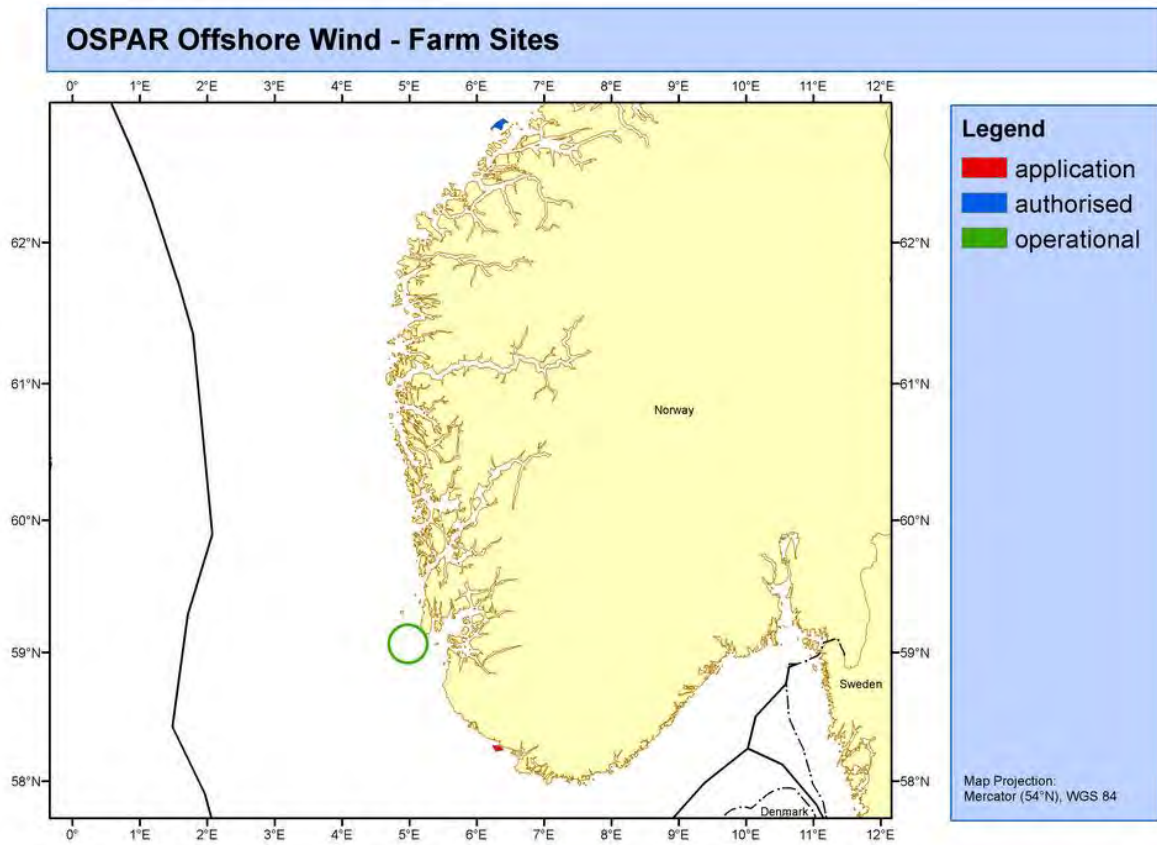
UK23	UK	Sherringham Shoal	1.07777, 53.17464 1.18243, 53.14968 1.21717, 53.09644 1.11248, 53.12152	17	Scira Offshore Energy	88	authorised	317	monopile/tripod/gravity base/suction caisson	15-22	172	yes	
UK24	UK	Shell Flat 2	-3.33898, 53.86579 -3.27128, 53.86499 -3.27084, 53.87049 -3.24391, 53.87019 -3.24243, 53.87649 -3.16148, 53.87559 -3.16339, 53.86229 -3.33894, 53.86429	7, 1	CeltPower Ltd	30	application	324	monopile/gravity based	less than 10/10-25	160	yes	Application on hold - new application submitted in revised location. See Cirrus Shell Flat Array
UK25	UK	Shell Flat 3	-3.33963, 53.84309 -3.16417, 53.84129 -3.16289, 53.82789 -3.23038, 53.82869 -3.23132, 53.83509 -3.28544, 53.83559 -3.28560, 53.84109 -3.33958, 53.84169	7, 1	Elsam A/S	30	application	324	monopile/gravity based	less than 10/10-25	160	yes	Application on hold - new application submitted in revised location. See Cirrus Shell Flat Array
UK26	UK	Gunfleet Sands 2	1.19777, 51.7129 1.27995, 51.754 1.28568, 51.73933 1.20350, 51.70723	8, 5	DONG Energy	18	Operational	64,8	monopile/gravity based	7-24	135	yes	
UK27	UK	Lincs	0.45769, 53.24188 0.50127, 53.24845 0.51897, 53.20635 0.51896, 53.15115 0.48786, 53.12513 0.48920, 53.14771 0.47315, 53.14776 0.47560, 53.19937	8	Centrica	75	authorised	270	monopile/gravity based	8-20	170	yes	
UK28	UK	Cirrus Shell Flat Array	-3.16139, 53.9214 -3.15641, 53.9162 -3.12553, 53.9265 -3.12516, 53.9088 -3.25500, 53.8654 -3.27935, 53.8640 -3.29408, 53.8660 -3.30207, 53.8743	5	CeltPower Ltd/Shell Wind Energy/Dong Energy	90	application	284	gravity/pile/tripod/bucket/jac ket	2-21	177	yes	Withdrawn after submission
UK29	UK	Docking Shoal	0.721000, 53.230000 0.765000, 53.204000 0.785000, 53.198000 0.831000, 53.175000 0.891000, 53.134000 0.742000, 53.142000 0.719000, 53.143000 0.639000, 53.157000	14	Centrica Renewable Energy Limited	100	application	540		3-14	180	yes	
UK30	UK	Dudgeon East	1.324068, 53.298047 1.459595, 53.235157 1.456812, 53.201668 1.321383, 53.264553	32	Warwick Energy	168	application	560				yes	
UK31	UK	Humber Gateway	0.246866, 53.668410 0.331365, 53.683891 0.331409, 53.633651 0.281592, 53.597121 0.270673, 53.587944 0.271334, 53.613033	8	E-on	83	application	300	monopile/jack-up vessel			yes	
UK32	UK	Triton Knoll	0.724000, 53.523000 0.893000, 53.509000 0.994000, 53.409000 0.933000, 53.409000 0.700000, 53.484000		Npower Renewables	83	application	1200					
UK33	UK	Westernmost Rough	0.087247, 53.812037 0.160250, 53.842923 0.212387, 53.799705 0.139417, 53.768852	9	Dong Energy	80	application	240					
UK34	UK	Race Bank	0.74229, 53.29927; 0.74898, 53.33464; 0.82344, 53.33089; 0.83722, 53.29969; 0.7868, 53.23316; 0.74085, 53.24962; 0.74085, 53.24973	27	Centrica Renewable Energy Limited	88	application	620					
UK35	UK	Beatrice	-3.08063, 58.10104; - 3.07162, 58.09628	10	Scottish and Southern	2	Operational	10					

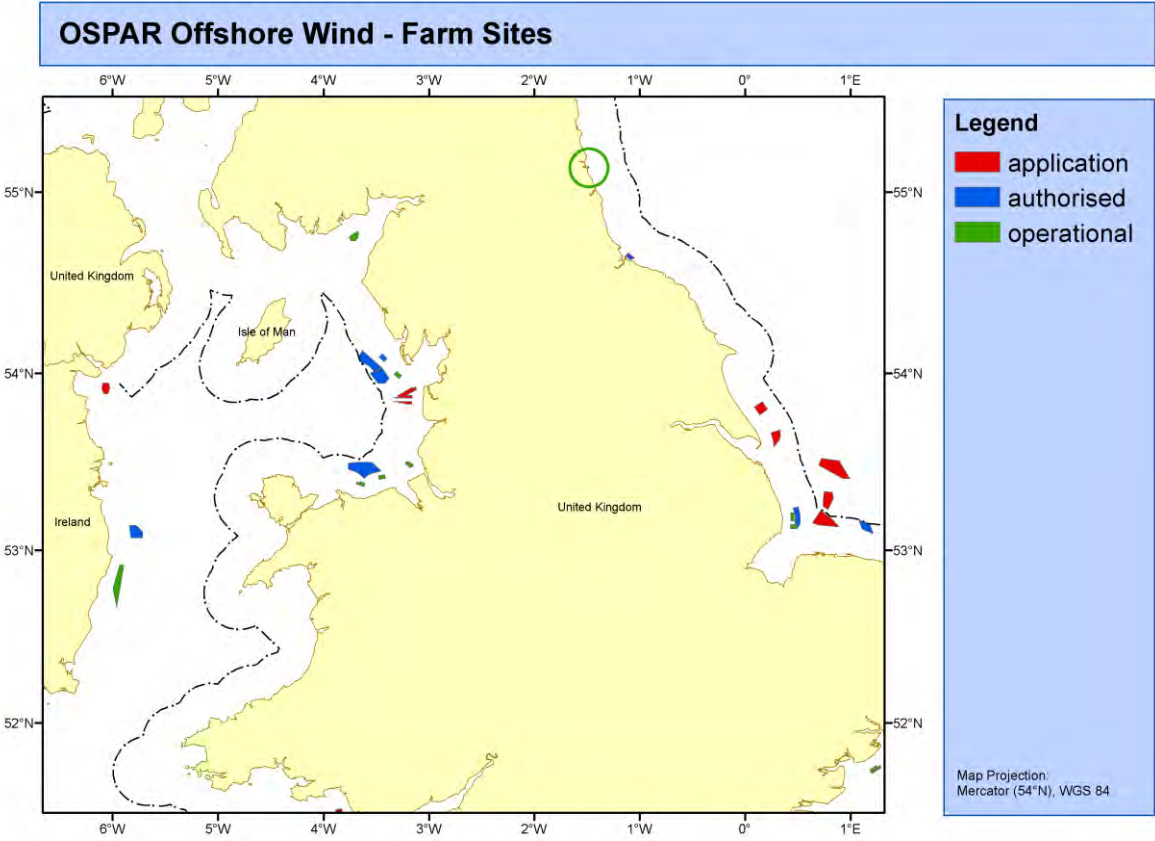
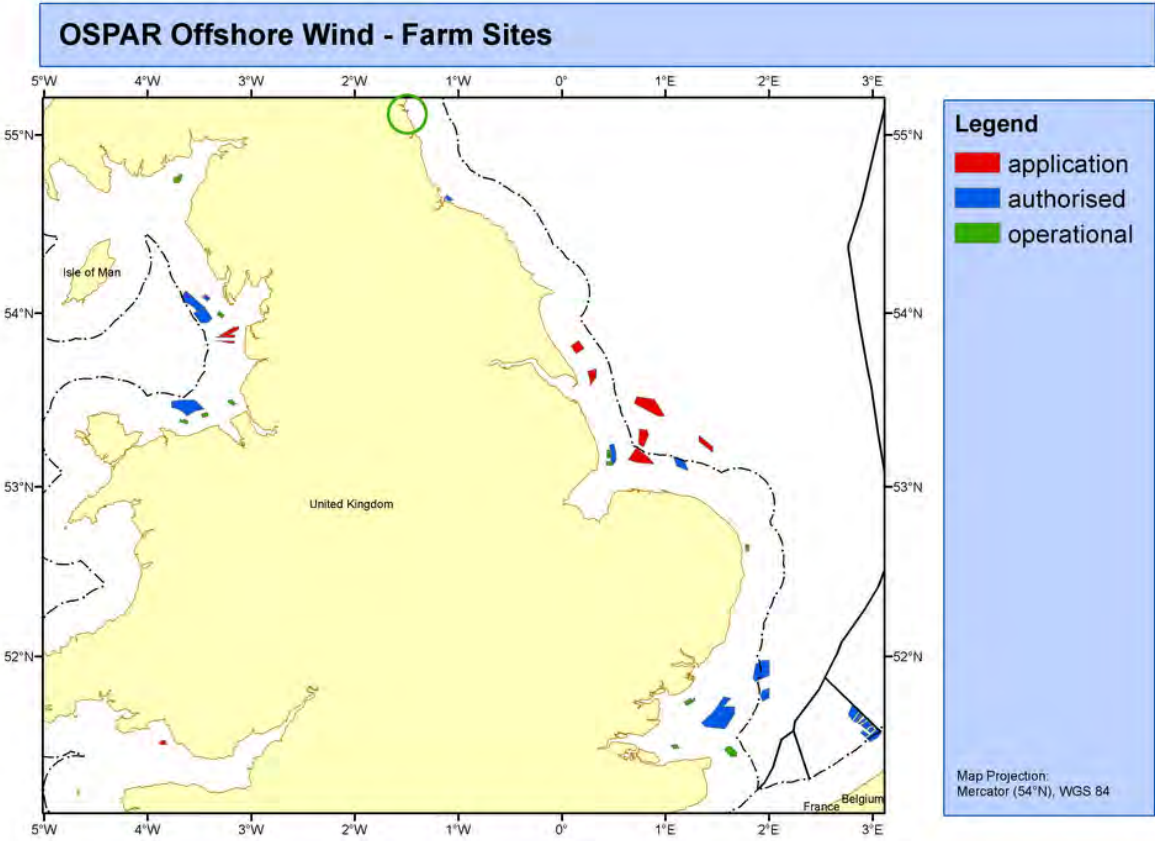
UK36	UK	LID6	0.456833, 53.241833; 0.501167, 53.248333; 0.518833, 53.206333; 0.518833, 53.151000; 0.487833, 53.125000; 0.489167, 53.147667; 0.489667, 53.147667; 0.475500, 53.199333		Centrica Renewable Energy Limited	6	authorised	22	Monopile				Part of Lincs.
------	----	------	---	--	-----------------------------------	---	------------	----	----------	--	--	--	----------------

Annex 2: Maps

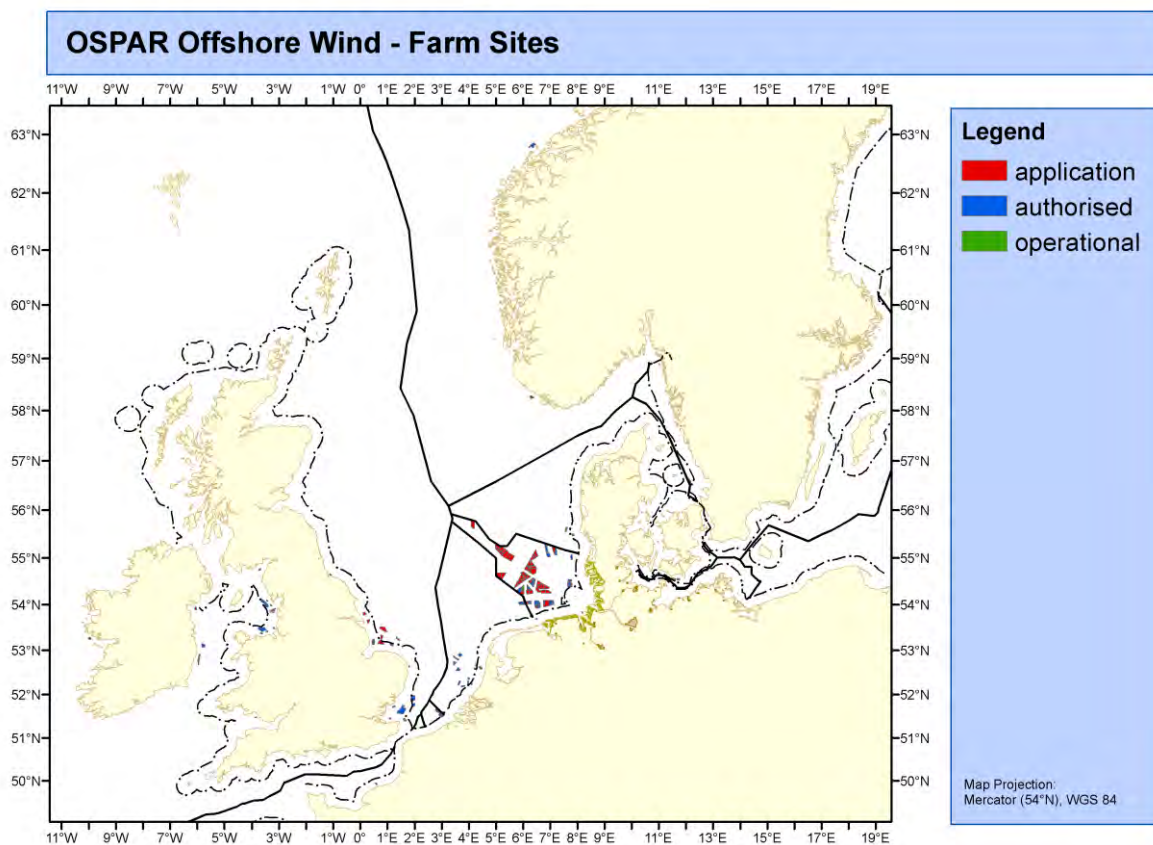








OVERVIEW MAP





New Court
48 Carey Street
London WC2A 2JQ
United Kingdom

t: +44 (0)20 7430 5200
f: +44 (0)20 7430 5225
e: secretariat@ospar.org
www.ospar.org

OSPAR's vision is of a healthy and diverse North-East Atlantic ecosystem

ISBN 978-1-907390-88-3
Publication Number: 547/2011

© OSPAR Commission, 2011. Permission may be granted by the publishers for the report to be wholly or partly reproduced in publications provided that the source of the extract is clearly indicated.

© Commission OSPAR, 2011. La reproduction de tout ou partie de ce rapport dans une publication peut être autorisée par l'Editeur, sous réserve que l'origine de l'extrait soit clairement mentionnée.