

**NORTHERN IRELAND RENEWABLE
ENERGY PORTS PROSPECTUS**



Project part financed by the European Regional development Fund under the European Sustainable Competitiveness Programme for Northern Ireland

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REVISION HISTORY

Issue	Issue date	Summary
A	31.03.10	Original issue (electronic version only)
B	03.06.10	Revised, incorporating Client's comments – sent to ports for comment.
C	08.06.10	Final incorporating ports' comments

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1 INTRODUCTION

A large proportion of the renewable energy resources identified in the European Union are in or off the coast of the UK and Ireland. The ambitious targets being set for Europe and for the UK in decarbonising energy production will demand sustained exploitation of these resources over the coming decades. Much of this exploitable potential is located within the catchment of the ports of Northern Ireland.

Northern Ireland ports are well-placed to support this emerging market in the Irish Sea, West of Scotland, throughout Ireland and beyond.

Within this prospectus are details of the ports of Northern Ireland, and what they can offer those looking to build their renewable energy projects or to serve the needs of renewable energy projects.

Excellent port facilities

Northern Irish ports offer excellent facilities to serve a range all needs of the renewable energy industry – with good seaward access, good port facilities and excellent development potential.

Experienced

Already Harland and Wolff, located within the Port of Belfast have been the construction base port for the Robin Rigg (180 MW) and Barrow (90 MW) offshore wind farms in the Irish Sea, and as the assembly facility for the 400MW sub-station for the Bard Offshore 1 wind farm in the German Bight development area.

Well-connected

The major ports highlighted in this prospectus are well connected to all areas of Northern Ireland and the Republic of Ireland by a good road and rail network.

Tradition and skills base in engineering, maritime and construction

There is a history of heavy industry in shipbuilding and structural steelwork stretching back to the Titanic and beyond. There is a similar pedigree in the aeronautical sector commencing with Short Brothers' first contract with the Wright Brothers. Both Harland and Wolff and Bombardier-Shorts are still located in the same place with access to the facilities maintained over more than a century.

There are numerous construction companies, and cement production facilities co-located with deep-water ports, having large areas of designated development land, suitable for the production of concrete gravity bases.

Well-educated low cost staff

Labour costs in Northern Ireland are the lowest in the UK – 10% below the UK national average. The education system in Northern Ireland produces results which consistently place it at the top of the UK national charts. Those working in and through Northern Irish ports have access to a young well-educated population at low staff costs.

Government support

There is strong and consistent support for economic development in Northern Ireland from the European Union, National Government, and the Local Assembly with its agencies (Invest NI and DETI) championing the development of the renewable energy industry and industry in general within NI. Generous support packages are in place for inward investments.

How this Port Prospectus is structured

[Section 1](#) is an introduction to Northern Irish ports and their key advantages for renewable energy developers.

[Section 2](#) contains a view on which roles each port may be best suited to support.

[Section 3](#) is a map showing the locations of the major renewable energy resources around Northern Ireland, and a matrix, each summarising how each port may best serve each planned or potential generation site.

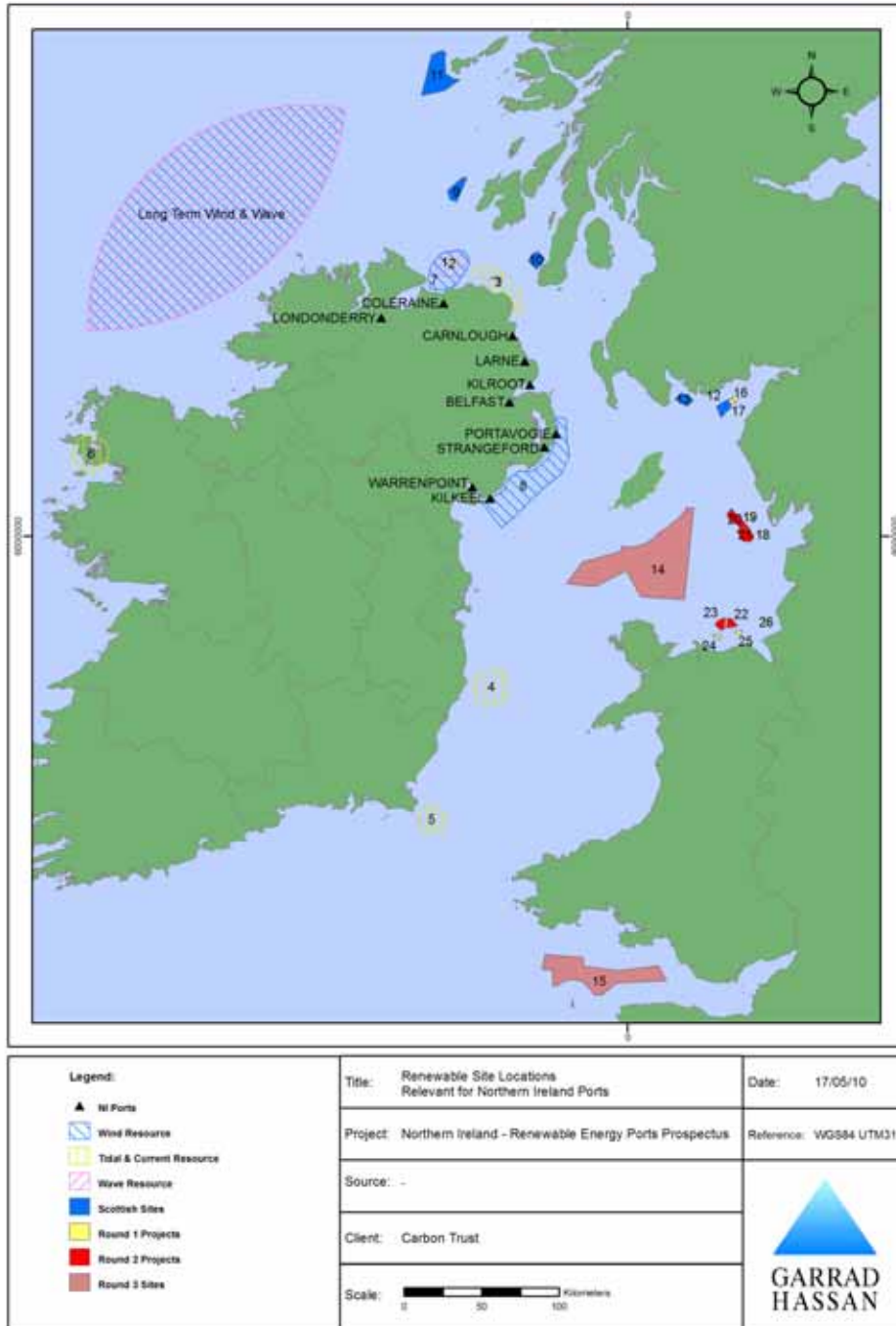
[Section 4](#) gives a summary of the facilities available at each port and key contact details.

2 BUSINESS OPPORTUNITIES IN WIND WAVE AND TIDAL ENERGIES FOR NI PORTS

PORT	Port size	Offshore Wind – Construction port	Offshore Wind – O&M port	Wave – Construction port	Wave – O&M port	Tidal – Construction port	Tidal – O&M port	Biomass – Thermal power station	Biomass – Liquid bio-fuel import
Londonderry	Large	G	G	G	G	G	G	G	S
Larne	Large	S	S	S	G	S	G	S	S
Kilroot	Medium	S	S	P	P	P	P	G	G
Belfast	Large	G	G	G	G	G	G	G	G
Warrenpoint	Large	G	G	G	G	G	G	G	S
Coleraine	Small	P	G	P	G	P	G	P	P
Carnlough	Small	P	S	P	P	P	S	P	P
Portavogie	Small	P	G	P	S	P	S	P	P
Strangford	Small	P	G	P	P	P	P	P	P
Kilkeel	Small	P	G	P	P	P	P	P	P
<u>KEY TO COLOUR CODE</u>									
Good Prospects	G								
Some Prospects	S								
Poor Prospects	P								

3 MARKETS SERVED

3.1 Market and port locations



3.2 Ports positioned for market

Market location ¹	1. NI SEA Tidal & Current 1			2. NI SEA Wave 1			3. NI SEA Tidal 2			4. SEAI Tidal & Current 6			5. SEAI Tidal & Current 7			6. SEAI Tidal & Current 11			7. NI SEA Wind 1			8. NI SEA Wind 2		
	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [m]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility
Londonderry	37	G	G	31	G	G	45	G	S	194	P	P	241	P	P	188	S	S	25	G	G	120	P	P
Larne	67	S	S	48	S	S	31	S	G	124	P	P	171	P	P	218	P	P	51	S	S	50	S	S
Kilroot	81	S	S	63	S	S	45	S	S	116	P	P	163	P	P	232	P	P	65	S	S	42	S	P
Belfast	92	G	S	73	G	S	55	G	S	127	S	P	174	S	P	242	P	P	76	G	S	53	G	S
Warrenpoint	145	P	P	126	P	P	108	P	P	77	G	S	122	G	S	295	P	P	129	P	P	30	G	G
Coleraine	23	P	G	12	P	G	22	P	G	172	P	P	220	P	P	174	P	P	6	P	G	98	P	P
Portavogie	100	P	P	81	P	P	63	P	P	89	P	P	136	P	P	250	P	P	84	P	P	15	P	G
Strangford	114	P	P	96	P	P	78	P	P	85	P	P	132	P	P	265	P	P	98	P	P	11	P	G
Kilkeel	134	P	P	116	P	P	98	P	P	66	P	S	112	P	S	285	P	P	118	P	P	19	P	G

¹ Locations are shown in Section 3.1 - NI SEA & SEAI refer to published strategic siting zones, otherwise known offshore wind project plans

² Colour coding as per Section 2

Market location ¹	9. Islay			10. Kintyre			11. Argyll Array			12. Solway Firth			13. Wigtown Bay			14. Irish Sea			15. Bristol Channel			16. Robin Rigg A			17. Robin Rigg B		
	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility
Londonderry	56	G	G	59	G	G	95	G	S	147	P	P	133	P	P	157	P	P	311	P	P	150	P	P	150	P	P
Larne	66	S	P	36	S	P	106	S	P	78	S	P	65	S	P	87	S	P	241	P	P	82	S	P	82	S	P
Kilroot	80	S	P	50	S	P	120	S	P	71	S	P	58	S	P	80	S	P	233	S	P	75	S	P	75	S	P
Belfast	90	G	S	60	G	S	130	G	S	81	G	P	68	G	P	91	G	P	244	S	P	85	G	P	85	G	P
Warrenpoint	143	P	P	114	P	P	184	P	P	100	P	P	86	P	P	72	G	P	192	S	P	104	S	P	104	S	P
Coleraine	36	P	G	40	P	G	76	P	S	124	P	P	111	P	P	135	P	P	290	P	P	128	P	P	128	P	P
Portavogie	98	P	P	69	P	P	139	P	P	59	P	P	45	P	P	55	P	S	206	P	P	62	P	P	62	P	P
Strangford	113	P	P	83	P	P	153	P	P	71	P	P	58	P	P	54	P	S	202	P	P	75	P	P	75	P	P
Kilkeel	133	P	P	103	P	P	173	P	P	89	P	P	76	P	P	62	P	G	182	P	P	93	P	P	93	P	P

¹ Locations are shown in Section 3.1 - NI SEA & SEAI refer to published strategic siting zones, otherwise known offshore wind project plans

² Colour coding as per Section 2

Market location ¹	18. Barrow			19. Ormonde			20. Walney			21. West of Duddon Sands			22. Gwynt y Môr 1			23. Gwynt y Môr 2			24. Rhyl Flats			25. North Hoyle			26. Burbo Bank		
	Type of Opportunity	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port	O&M facility	Distance from port [nm]	Mobilisation port
Londonderry	50	P	P	44	P	P	40	P	P	45	P	P	191	P	P	194	P	P	191	P	P	197	P	P	203	P	P
Larne	70	P	P	64	P	P	59	P	P	65	P	P	120	P	P	123	P	P	120	P	P	126	P	P	132	P	P
Kilroot	63	P	P	58	P	P	53	P	P	59	P	P	113	S	P	117	S	P	113	P	P	120	P	P	126	P	P
Belfast	74	G	S	68	G	P	63	G	P	69	G	P	124	G	P	127	G	P	124	S	P	130	S	P	136	S	P
Warrenpoint	61	P	P	55	S	P	50	S	P	56	S	P	106	G	P	109	G	P	106	P	P	112	P	P	118	P	P
Coleraine	28	P	P	22	P	P	17	P	P	23	P	P	168	P	P	171	P	P	168	P	P	175	P	P	180	P	P
Portavogie	39	P	P	33	P	P	28	P	P	34	P	P	89	P	P	92	P	P	89	P	P	95	P	P	101	P	P
Strangford	43	P	P	37	P	P	32	P	P	38	P	P	88	P	P	91	P	P	88	P	P	94	P	P	100	P	P
Kilkeel	51	P	P	45	P	P	40	P	P	46	P	P	95	P	S	98	P	S	95	P	P	102	P	P	108	P	P

1 Locations are shown in Section 3.1 - NI SEA & SEAI refer to published strategic siting zones, otherwise known offshore wind project plans

2 Colour coding as per Section 2

4 PORT SUMMARIES

4.1 Port of Belfast

Port owner's name :	The Belfast Harbour Commissioners	Postal address :	
Port contact's name :	Mr Michael Robinson	Port of Belfast, Harbour Office,	
Port website address :	www.belfast-harbour.co.uk	Corporation Square,	
Port contact's eMail :	m.robinson@belfast-harbour.co.uk	Belfast, Northern Ireland. BT1 3AL	
Port contact phone number :	+44 (0)28 9055 4422	Location :	54° 37' 30" N 5° 53' 30" W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	✓	Covered storage areas (1,000+ m ²) adjacent to quayside	✓
Quayside(s) of sufficient length for large installation vessels	✓	Vessel access unlimited - by width	✓
Water depth for large installation vessels alongside at <u>any</u> state of the tide	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Water depth for large installation vessels alongside at <u>some</u> states of tide	✓	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	✓	Number of RoRo berths	4
Reinforced quayside areas for heavy lifts	✓	Dry dock & ship repair capabilities [Medium / Large]	Large*
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	✓	Bunkering of large vessels available	✓

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT			
Operation and maintenance port	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓	Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	✓	Slipway	✓*
Covered storage area for warehousing / repairs adjacent to berth	✓	Grillage for inspection and minor repairs	✓*
Vessel access unlimited - by width restrictions	✓	Small dry dock & workboat repair capabilities	✓

OTHER FACILITIES AND SERVICES			
Port areas fenced and has 24hr port security	✓	Availability of potable water	✓
Secure areas have fixed flood-lighting	✓	Availability of electrical connection in covered areas	✓

OTHER INFORMATION			
No restrictions on working hours/ noise	✓	Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓		
Additional Note 1	Detailed information about services and facilities available on interactive site map on website - www.belfast-harbour.co.uk		
Additional Note 2	*Harland and Wolff shipbuilders are located on Belfast Harbour Commissioner's premises - www.harland-wolff.com		
Additional Note 3	Large areas available and zoned for port and industrial development		

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.2 Harland & Wolff

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Harland and Wolff Heavy Industries Ltd Mr David McVeigh, Sales and Marketing Manager www.harland-wolff.com davidmc@harland-wolff.com +44 (0)28 9045 8456	Postal address : Queen's Island, Belfast. BT3 9DU
		Location : 54° 36' 30" N 5° 54' W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	✓	Covered storage areas (1,000+ m ²) adjacent to quayside	✓
Quayside(s) of sufficient length for large installation vessels	✓	Vessel access unlimited - by width	✓
Water depth for large installation vessels alongside at <u>any</u> state of the tide	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Water depth for large installation vessels alongside at <u>some</u> states of tide	✓	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	✓	Number of RoRo berths	~
Reinforced quayside areas for heavy lifts	✓	Dry dock & ship repair capabilities [Medium / Large]	Large
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	✓	Bunkering of large vessels available	~

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT			
Operation and maintenance port	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓	Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	✓	Slipway	✓
Covered storage area for warehousing / repairs adjacent to berth	✓	Grillage for inspection and minor repairs	✓
Vessel access unlimited - by width restrictions	✓	Small dry dock & workboat repair capabilities	✓

OTHER FACILITIES AND SERVICES			
Port areas fenced and has 24hr port security	✓	Availability of potable water	✓
Secure areas have fixed flood-lighting	✓	Availability of electrical connection in covered areas	✓

OTHER INFORMATION			
No restrictions on working hours/ noise	✓	Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓		
Additional Note 1	Detailed information about services and facilities available adjacent to Harland and Wolff on interactive map - www.belfast-harbour.co.uk		
Additional Note 2	Wide-range of design, construction and manufacturing facilities (including substations platforms, foundations and prototypes).		
Additional Note 3	Permanent facilities include two gantry cranes capable of lifting up to 840t each		

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.3 Port of Larne

Port owner's name :	P & O Ferries Ltd	Postal address :	
Port contact's name :	Capt. Trevor Wright		9 Olderfleet Road,
Port website address :	www.portoflarne.co.uk		Larne, N. Ireland
Port contact's eMail :	twright@portoflarne.co.uk		BT40 1AS
Port contact phone number :	+44 (0) 28 2887 2100	Location :	54° 50' 53" N 5° 47 ' 0" W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	✓	Covered storage areas (1,000+ m ²) adjacent to quayside	~
Quayside(s) of sufficient length for large installation vessels	✓	Vessel access unlimited - by width	✓
Water depth for large installation vessels alongside at <u>any</u> state of the tide	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Water depth for large installation vessels alongside at <u>some</u> states of tide	✓	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	✓	Number of RoRo berths	4
Reinforced quayside areas for heavy lifts	~	Dry dock & ship repair capabilities [Medium / Large]	~
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	✓	Bunkering of large vessels available	✓

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT				
Operation and maintenance port	✓		Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓		Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	✓		Slipway	~
Covered storage area for warehousing / repairs adjacent to berth	~		Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	✓		Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES				
Port areas fenced and has 24hr port security	✓		Availability of potable water	✓
Secure areas have fixed flood-lighting	✓		Availability of electrical connection in covered areas	✓

OTHER INFORMATION				
No restrictions on working hours/ noise	✓		Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓			
Additional Note 1				
Additional Note 2				
Additional Note 3				

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.4 Port of Londonderry

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Port of Londonderry Trust Mr Brian McGrath www.londonderryport.com brian@londonderry-port.co.uk +044 (0)28 7186 0555	Postal address : Londonderry Port & Harbour Commissioners, Port Road, Lisahally, Londonderry., Northern Ireland. BT47 6FL	
		Location :	55° 02' 30" N 7° 15' 46" W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	✓	Covered storage areas (1,000+ m ²) adjacent to quayside	✓
Quayside(s) of sufficient length for large installation vessels	✓	Vessel access unlimited - by width	✓
Water depth for large installation vessels alongside at <u>any</u> state of the tide	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Water depth for large installation vessels alongside at <u>some</u> states of tide	✓	Vessel access unlimited - by overhead restrictions	~*
Quayside deck strength sufficient for foundations and turbines	✓	Number of RoRo berths	~
Reinforced quayside areas for heavy lifts	✓	Dry dock & ship repair capabilities [Medium / Large]	~
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	✓	Bunkering of large vessels available	~

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT			
Operation and maintenance port	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓	Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	✓	Slipway	~
Covered storage area for warehousing / repairs adjacent to berth	✓	Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	✓	Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES			
Port areas fenced and has 24hr port security	✓	Availability of potable water	✓
Secure areas have fixed flood-lighting	✓	Availability of electrical connection in covered areas	✓

OTHER INFORMATION			
No restrictions on working hours/ noise	✓	Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓		
Additional Note 1	* Overhead HV power lines between Coolkeeragh power station and the Republic of Ireland pass low over approach channel. Could be buried.		
Additional Note 2			
Additional Note 3			

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.5 Port of Warrenpoint

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Warrenpoint Harbour Authority	Postal address : Warrenpoint Harbour Authority, The Docks, Warrenpoint,, Co. Down, Northern Ireland. BT34 3JR
	Peter Conway, Chief Executive	
	www.warrenpointharbour.co.uk pconway@warrenpointharbour.co.uk +44 (0)28 41 773381	Location : 54° 05'N 06° 11'W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	✓	Covered storage areas (1,000+ m ²) adjacent to quayside	✓
Quayside(s) of sufficient length for large installation vessels	✓	Vessel access unlimited - by width	✓
Water depth for large installation vessels alongside at <u>any</u> state of the tide	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Water depth for large installation vessels alongside at <u>some</u> states of tide	✓	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	✓	Number of RoRo berths	1
Reinforced quayside areas for heavy lifts	✓	Dry dock & ship repair capabilities [Medium / Large]	~
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	✓	Bunkering of large vessels available	✓

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT			
Operation and maintenance port	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓	Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	✓	Slipway	~
Covered storage area for warehousing / repairs adjacent to berth	✓	Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	✓	Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES			
Port areas fenced and has 24hr port security	✓	Availability of potable water	✓
Secure areas have fixed flood-lighting	✓	Availability of electrical connection in covered areas	✓

OTHER INFORMATION			
No restrictions on working hours/ noise	✓	Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓		
Additional Note 1			
Additional Note 2			
Additional Note 3			

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.6 Kilroot

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	The AES Corporation Mr Davy Elliot www.aes.com/kilroot/index?page=home davy.elliott@aes.com +44 (0) 28 4277 1470	Postal address :	
		AES Kilroot, Kilroot Power Station, Larne Road, Carrickfergus, Northern Ireland. BT38 7LX	
		Location :	54° 43' 0' N 5° 45' 0' W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	~	Covered storage areas (1,000+ m ²) adjacent to quayside	~
Quayside(s) of sufficient length for large installation vessels	~	Vessel access unlimited - by width	✓
Water depth for large installation vessels alongside at <u>any</u> state of the tide	N	Vessel access unlimited - by tidal access (e.g. shallow channel)	~
Water depth for large installation vessels alongside at <u>some</u> states of tide	N	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	N	Number of RoRo berths	~
Reinforced quayside areas for heavy lifts	N	Dry dock & ship repair capabilities [Medium / Large]	~
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	~	Bunkering of large vessels available	~

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT				
Operation and maintenance port	✓		Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓		Bunkering of small vessels available	~
Berth(s) can be accessed at any state of the tide	✓		Slipway	~
Covered storage area for warehousing / repairs adjacent to berth	~		Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	✓		Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES				
Port areas fenced and has 24hr port security	✓		Availability of potable water	✓
Secure areas have fixed flood-lighting	✓		Availability of electrical connection in covered areas	✓

OTHER INFORMATION				
No restrictions on working hours/ noise	✓		Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓			
Additional Note 1				
Additional Note 2				
Additional Note 3				

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.7 Port of Kilkeel

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Northern Ireland Fishery Harbour Authority Michael Young, Harbour Master www.nifha.fsnet.co.uk chris.warnock@nifha.co.uk +44 (0)28 4176 2287	Postal address :	
		3 St Patricks Avenue, Downpatrick, County Down BT30 6DW United Kingdom	
		Location :	54° 43' 0" N 5° 45' 0" W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	N	Covered storage areas (1,000+ m ²) adjacent to quayside	~
Quayside(s) of sufficient length for large installation vessels	N	Vessel access unlimited - by width	N
Water depth for large installation vessels alongside at <u>any</u> state of the tide	N	Vessel access unlimited - by tidal access (e.g. shallow channel)	N
Water depth for large installation vessels alongside at <u>some</u> states of tide	~	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	N	Number of RoRo berths	N
Reinforced quayside areas for heavy lifts	N	Dry dock & ship repair capabilities [Medium / Large]	N
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	N	Bunkering of large vessels available	N

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT				
Operation and maintenance port	✓		Vessel access unlimited - by tidal access (e.g. shallow channel)	~
Quayside(s) or floating berths suitable for O&M vessels	✓		Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	~		Slipway	✓
Covered storage area for warehousing / repairs adjacent to berth	✓		Grillage for inspection and minor repairs	✓
Vessel access unlimited - by width restrictions	N*		Small dry dock & workboat repair capabilities	✓

OTHER FACILITIES AND SERVICES				
Port areas fenced and has 24hr port security	✓		Availability of potable water	✓
Secure areas have fixed flood-lighting	✓		Availability of electrical connection in covered areas	✓

OTHER INFORMATION				
No restrictions on working hours/ noise	✓		Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓			
Additional Note 1	*Narrow harbour mouth, and narrow, sharp turn into inner harbour.			
Additional Note 2	"Entry or exit to Kilkeel Harbour is hazardous during winds force 5 and above from 105 °N to 225 °N - i.e. in wind directions from approximately E to SW"			
Additional Note 3				

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.8 Port of Carnlough

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Larne Borough Council Tourism Officer http://www.larne.gov.uk larnetourism@btconnect.com +44 (0) 28 2826 0088	Postal address :	
		Tourism Officer, Larne Borough Council, Smiley Buildings, Victoria Road, Larne, Co. Antrim. BT40 1RU	
		Location :	54° 59'N 05° 59'W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	N	Covered storage areas (1,000+ m ²) adjacent to quayside	N
Quayside(s) of sufficient length for large installation vessels	N	Vessel access unlimited - by width	N
Water depth for large installation vessels alongside at <u>any</u> state of the tide	N	Vessel access unlimited - by tidal access (e.g. shallow channel)	N
Water depth for large installation vessels alongside at <u>some</u> states of tide	N	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	N	Number of RoRo berths	0
Reinforced quayside areas for heavy lifts	N	Dry dock & ship repair capabilities [Medium / Large]	N
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	N	Bunkering of large vessels available	N

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT				
Operation and maintenance port	N		Vessel access unlimited - by tidal access (e.g. shallow channel)	~
Quayside(s) or floating berths suitable for O&M vessels	✓		Bunkering of small vessels available	~
Berth(s) can be accessed at any state of the tide	~		Slipway	✓
Covered storage area for warehousing / repairs adjacent to berth	~		Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	~		Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES				
Port areas fenced and has 24hr port security	~		Availability of potable water	✓
Secure areas have fixed flood-lighting	~		Availability of electrical connection in covered areas	~

OTHER INFORMATION				
No restrictions on working hours/ noise			Channels are dredged	
Port has no exclusive labour agreements for loading/offloading				
Additional Note 1				
Additional Note 2				
Additional Note 3				

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.9 Port of Coleraine

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Coleraine Harbour Commissioners Capt. Pat McKeegan, Harbour Master N/A coleraineharbour@aol.com +44 (0)28 7034 2012	Postal address :	
		Harbour Office, 4 Riversdale Road, Coleraine BT52 1XA	
		Location :	55° 07'N 6° 46' 0' W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	N	Covered storage areas (1,000+ m ²) adjacent to quayside	~
Quayside(s) of sufficient length for large installation vessels	✓	Vessel access unlimited - by width	~
Water depth for large installation vessels alongside at <u>any</u> state of the tide	N	Vessel access unlimited - by tidal access (e.g. shallow channel)	N
Water depth for large installation vessels alongside at <u>some</u> states of tide	✓	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	N	Number of RoRo berths	~
Reinforced quayside areas for heavy lifts	~	Dry dock & ship repair capabilities [Medium / Large]	~
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	~	Bunkering of large vessels available	~

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT			
Operation and maintenance port	✓	Vessel access unlimited - by tidal access (e.g. shallow channel)	~
Quayside(s) or floating berths suitable for O&M vessels	✓	Bunkering of small vessels available	~
Berth(s) can be accessed at any state of the tide	✓	Slipway	✓
Covered storage area for warehousing / repairs adjacent to berth	✓	Grillage for inspection and minor repairs	
Vessel access unlimited - by width restrictions	~	Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES			
Port areas fenced and has 24hr port security	N	Availability of potable water	✓
Secure areas have fixed flood-lighting	✓	Availability of electrical connection in covered areas	

OTHER INFORMATION			
No restrictions on working hours/ noise	N	Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓		
Additional Note 1	Vessel access to Barmouth and channel to the harbour 4 1/2 miles up the River Bann can be problematic in heavy swell.		
Additional Note 2			
Additional Note 3			

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.10 Portavogie

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Northern Ireland Fishery Harbour Authority (NIFHA) Warnock Edmund www.nifha.fsnet.co.uk warnock.edmund@nifha.co.uk +44 (0) 28 4277 1470	Postal address :	
		3 St Patricks Avenue Downpatrick, County Down BT30 6DW United Kingdom	
		Location :	54° 27'N 5° 25' 59' W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	N	Covered storage areas (1,000+ m ²) adjacent to quayside	~
Quayside(s) of sufficient length for large installation vessels	N	Vessel access unlimited - by width	N
Water depth for large installation vessels alongside at <u>any</u> state of the tide	N	Vessel access unlimited - by tidal access (e.g. shallow channel)	N
Water depth for large installation vessels alongside at <u>some</u> states of tide	N	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	N	Number of RoRo berths	0
Reinforced quayside areas for heavy lifts	~	Dry dock & ship repair capabilities [Medium / Large]	~
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	~	Bunkering of large vessels available	~

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT				
Operation and maintenance port	✓		Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓		Bunkering of small vessels available	✓
Berth(s) can be accessed at any state of the tide	✓		Slipway	✓
Covered storage area for warehousing / repairs adjacent to berth	~		Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	~		Small dry dock & workboat repair capabilities	✓

OTHER FACILITIES AND SERVICES				
Port areas fenced and has 24hr port security	✓		Availability of potable water	✓
Secure areas have fixed flood-lighting	✓		Availability of electrical connection in covered areas	~

OTHER INFORMATION				
No restrictions on working hours/ noise	✓		Channels are dredged	~
Port has no exclusive labour agreements for loading/offloading	✓			
Additional Note 1	Harbour Entrance - Approach with caution in onshore winds force 5 and above			
Additional Note 2				
Additional Note 3				

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations

4.11 Strangford

Port owner's name : Port contact's name : Port website address : Port contact's eMail : Port contact phone number :	Department for Regional Development	Postal address :	
	Mr Derek Pedlow, Ferry Manager	The Ferry Terminal, Central Way, Co Down, Northern Ireland. BT30 7NE	
	www.roadsni.gov.uk/index/strangfordferry.htm	Location :	
derek.pedlow@drdni.gov.uk	+44 (0) 28 44 881637	54° 22'N	5° 33' W



SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY MOBILISATION			
Offshore renewable energy mobilisation port	N	Covered storage areas (1,000+ m ²) adjacent to quayside	N
Quayside(s) of sufficient length for large installation vessels	N	Vessel access unlimited - by width	N
Water depth for large installation vessels alongside at <u>any</u> state of the tide	N	Vessel access unlimited - by tidal access (e.g. shallow channel)	N
Water depth for large installation vessels alongside at <u>some</u> states of tide	N	Vessel access unlimited - by overhead restrictions	✓
Quayside deck strength sufficient for foundations and turbines	N	Number of RoRo berths	1
Reinforced quayside areas for heavy lifts	N	Dry dock & ship repair capabilities [Medium / Large]	N
Concrete decked/hardcore storage areas (10,000+ m ²) near quayside	N	Bunkering of large vessels available	N

SUMMARY OF PORT SUITABILITY – OFFSHORE RENEWABLE ENERGY OPERATIONS AND MAINTENANCE PORT				
Operation and maintenance port	✓		Vessel access unlimited - by tidal access (e.g. shallow channel)	✓
Quayside(s) or floating berths suitable for O&M vessels	✓		Bunkering of small vessels available	~
Berth(s) can be accessed at any state of the tide	✓		Slipway	✓
Covered storage area for warehousing / repairs adjacent to berth	~		Grillage for inspection and minor repairs	~
Vessel access unlimited - by width restrictions	✓		Small dry dock & workboat repair capabilities	~

OTHER FACILITIES AND SERVICES				
Port areas fenced and has 24hr port security	~		Availability of potable water	✓
Secure areas have fixed flood-lighting	✓		Availability of electrical connection in covered areas	~

OTHER INFORMATION				
No restrictions on working hours/ noise	✓		Channels are dredged	✓
Port has no exclusive labour agreements for loading/offloading	✓			
Additional Note 1				
Additional Note 2				
Additional Note 3				

KEY TO COLOUR CODE	
✓	Has capability or service
~	Lacks capability - but can be addressed or is non-critical
N	Lacks capability, critical to operations



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