



Notice to Mariners

Blyth Met Mast LiDAR Buoy Validation

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For issue

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Document Control

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Project Team

Initials	Name	Role
MC	Mark Crawshaw	Project Manager
AB	Arve Berg	Project Manager
LF	Lars Fogelin	Project Manager
RJL	Richard Liptrot	Project Delivery Manager

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1. Introduction

bp International Alternative Energy Investments Limited has contracted Fugro GM Marine Limited (Fugro) to carry out deployment of two floating LiDAR buoys at the NOAH mast offshore Blyth.

The deployment of the equipment is estimated to occur no earlier than the week commencing 11 October and equipment will remain on site for an estimated duration of 30 days. Deployment operations are expected to take one day.

Operations will be conducted with the Tees Guardian and will involve towing the equipment from the Port of Blyth to the deployment site.

In addition to the deployment of two new buoys, operations will include the recovery and removal of a LiDAR buoy that is presently deployed at the same site.

2. Area of Operations

The equipment will be located at the Blyth NOAA offshore Met Mast validation site and the coordinates of the buoy to be recovered, and the planned positions of the new buoys are shown in Table 1 and Table 2 respectively.

NOTE: The operations will involve deployment of one buoy at a new location, and deployment of the second buoy utilising the existing mooring hardware of the buoy that will be recovered.

Table 1: Coordinates of LiDAR Buoy to be Recovered

Location / Buoy	WGS 84 Lat DDMM	WGS 84 Long DDMM	Water Depth (Below LAT)
WS 155 (Project Elizabeth Spare)	55° 8.802' N	1° 25.380' W	Nominal 40m

Table 2: Coordinates of LiDAR Buoys to be Deployed

Location / Buoy	WGS 84 Lat DDMM	WGS 84 Long DDMM	Water Depth (Below LAT)
WS 187 (on WS 155 mooring)	55° 8.802' N	1° 25.380' W	Nominal 40m
WS 188	55° 8.864' N	1° 25.278' W	Nominal 40m

An updated NtM will be issued in due course with the as deployed positions of the buoys.

The proposed location of the buoys is shown in Figure 1.

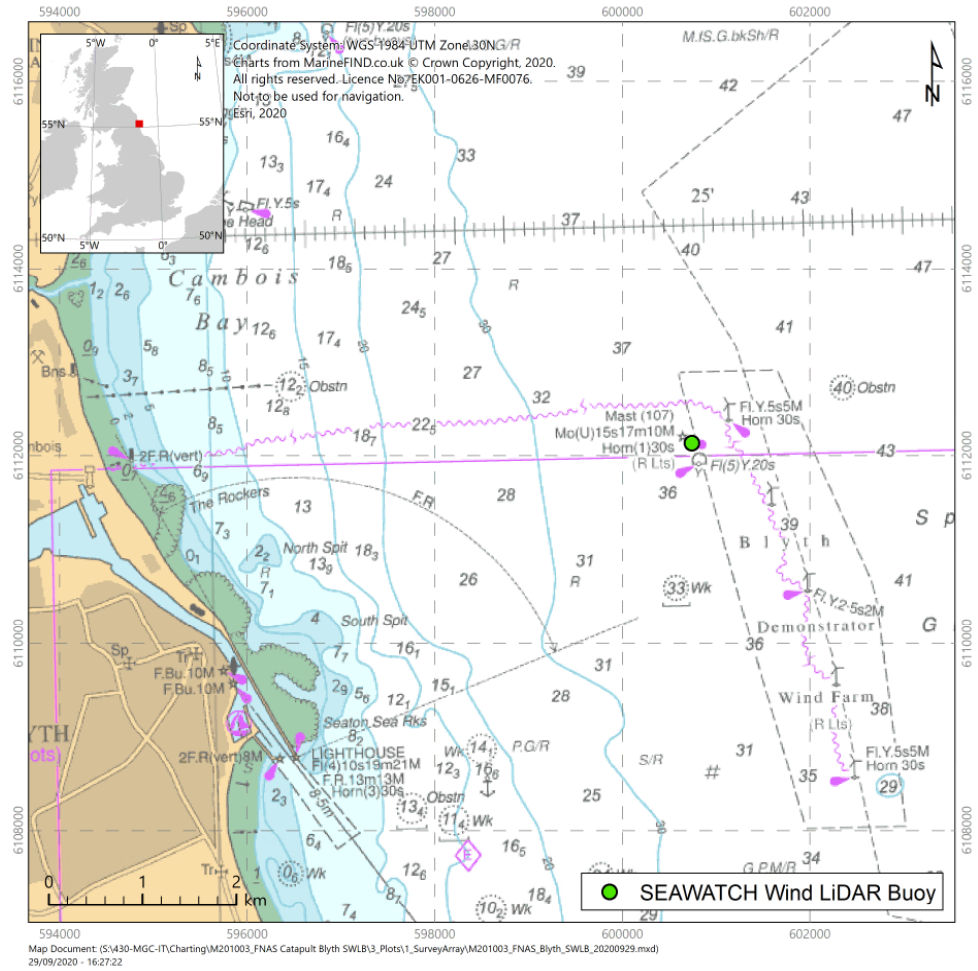


Figure 1: Planned Positions of LiDAR Buoys at Blyth NOAH Site

3. Offshore Measurements

3.1 Equipment

The equipment is an integrated Seawatch Wavescan buoy and ZX 300M LiDAR; the purpose of the equipment is to collect oceanographic and meteorological data using a single platform. The equipment is supplied and charged by an onboard power system which uses methanol fuel cells and solar panels to recharge onboard lead acid batteries.

The equipment is equipped with a F1 (5) Y 20 s light with 4-5 nautical mile range; the light is mounted at the top of one of the masts, approximately 4 m above sea level. The flash sequence for this light is detailed in Table 3.

Table 3: LiDAR Buoy Flash Sequence

Flash Code	On	Off	On	Off	On	Off	On	Off	On	Off
FL (5) 20 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	0.8	11.2

The equipment dimensions and example image are shown in Figure 2.

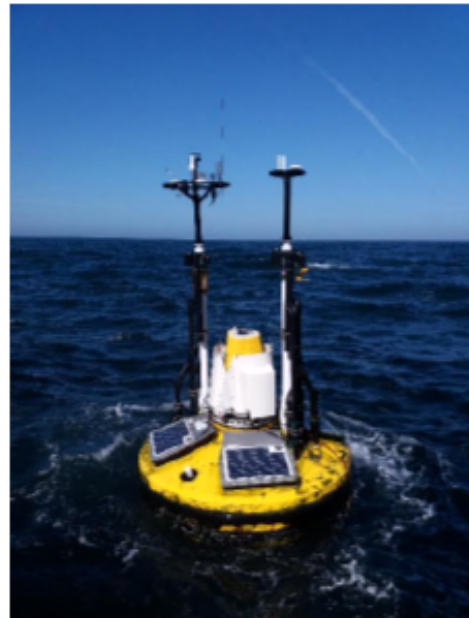
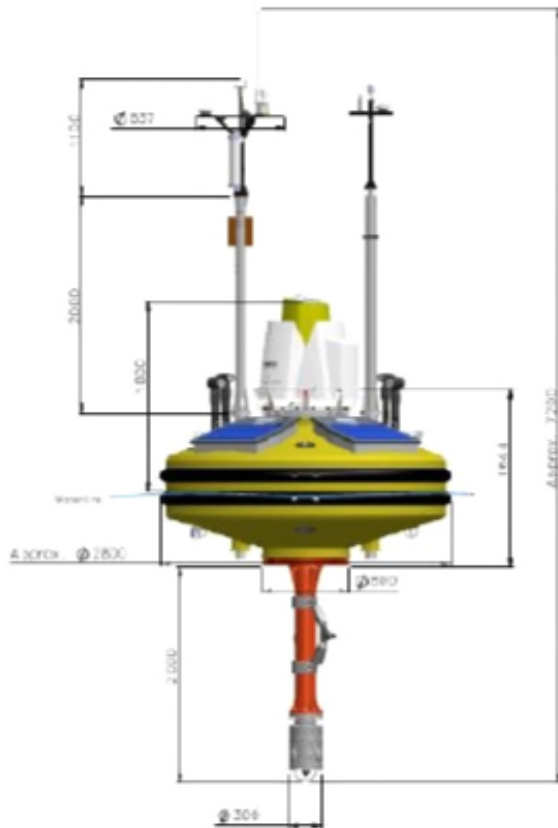


Figure 2: LiDAR Buoy Dimensions and Appearance

Additional risk reduction measures include the use of passive radar reflectors to make the buoy more visible on vessel radars, Automatic Information Systems (AIS) to broadcast the buoy position to marine AIS platforms, Global Positioning Systems (GPS) position monitoring of the buoy at 30-minute intervals and an independent GPS tracker used for backup position monitoring of the equipment in the event of primary GPS failure.

The equipment is moored using a single point mooring. The mooring design allows for free movement of the buoy over a radius that is approximately equal to the water depth. The anchor weight used to moor the equipment is approximately 2250 kg weight and comprised of large diameter scrap chain.

It should be noted that some elements of the mooring float just below the sea surface. To avoid the risk of entanglement, vessels should allow a minimum 200 m clearance from the surface buoy.

3.2 Safety

It is requested that anybody having knowledge of any potential objects submerged or moored on the seabed close to the deployment zone, that could be damaged or form a hazard to the vessel and its equipment advises the persons listed in the Immediate Contacts Table of their position and nature.

4. Immediate Contacts

Enquiries regarding the contents of this Notice to Mariners or any other matters should be directed to the persons outlined in Table 4.

Table 4: Contact Persons


Role	Name	Contact Details
Fugro Project Manager	Mark Crawshaw	+44 7734 537 750 m.crawshaw@fugro.com
Fugro Project Manager	Lars Fogelin	+47 924 10 056 l.fogelin@fugro.com
Offshore Renewable Energy Catapult Contact	Stephen Robertson	+44 7872 836 180 stephen.robertson@ore.catapult.org.uk
Offshore Renewable Energy Catapult Contact	Jonathan Hughes	+44 7872 502 246 jonathan.hughes@ore.catapult.org.uk

5. Vessel – Tees Guardian

Operations will be undertaken by the Tees Guardian.

Tees Guardian vessel details are shown in Table 5.

Table 5: Vessel – Tees Guardian Details

 <p>© Peter Ward MarineTraffic.com</p>	General Information	
	Name	Tees Guardian
	Flag	UK
	Call Sign	2IJH2
	Class	BV
	Dimensions	
	Length	23.80m
	Beam	9.60m
	Draught (loaded)	2.25m
	Gross Tonnage	143T
	Communication	
	Vessel Phone	+ 44 7834 740123
	Email:	Tees.Guardian@pdports.co.uk

6. Distribution List

This Notice to Mariners has been distributed to the authorities, companies, and individuals shown in Table 6.

Table 6: Distribution List

	E-mail
	kingfisher@seafish.co.uk
	nmoccontroller@hmcg.gov.uk
	marine.consents@marinemanagement.org.uk
	northshields@marinemanagement.org.uk
	jonathan.hughes@ore.catapult.org.uk
	marine@portofblyth.co.uk
	nifca@nifca.gov.uk
	navwarnings@ukho.gov.uk
	mark.calverley@bp.com
	lucy.harper@uk.bp.com
	miriam.parish@bp.com
	renewables@hmcg.gov.uk