Simon Mitchell <simon.mitchell@ofcom.org.uk></simon.mitchell@ofcom.org.uk>
13 October 2015 14:23
Allen, Simon
Evans, Paul
RE: Beaw Windfarm

Simon, see results below.

1024624/1

1024626/1

Linko	Company	Contact	Tolonhono	Email		
0488702/2	Airwave Solutions Limited	Angela Cooper	rerephone	wind.farms@airwavesolutions.co.uk		
	Search Radius m a	nt Centre NGR HU5128182596. Search	includes an additional 500m of reque	ested radius.		
Links	Company	Contact	Telephone	Email		
0488702/2 0975899/1	Airwave Solutions Limited Shetland Islands Council	Angela Cooper Gerry Firmin		wind.farms@airwavesolutions.co.uk gerry.firmin@shetland.gov.uk		
0950912/1	Vodafone Limited	Lisa Stevenson	07822 805 687	radioplanning2@vodafone.com		
Links	Search Radius m a	t Centre NGR HU5159181751. Search Contact	includes an additional 500m of reque	ested radius. Email		
Links	Search Radius m a Company Vodafone Limited	t Centre NGR HU5159181751. Search Contact Lisa Stevenson	includes an additional 500m of reque Telephone	ested radius. Email radioplanning2@vodafone.com		
Links 0950912/1 0975899/1	Search Radius m a Company Vodafone Limited Shetland Islands Council	nt Centre NGR HU5159181751. Search Contact Lisa Stevenson Gerry Firmin	includes an additional 500m of reque Telephone	es ted radius. Email radioplanning2@vodafone.com gerry.firmin@shetland.gov.uk		
Links 0950912/1 0975899/1 0432257/1	Search Radius m a Company Vodafone Limited Shetland Islands Council Bt	t Centre NGR HU5159181751. Search Contact Lisa Stevenson Gerry Firmin Dale Aitkenhead	includes an additional 500m of reque	ested radius. Email radioplanning2@vodafone.com gerry.firmin@shetland.gov.uk radionetworkprotection@bt.com		
Links 0950912/1 0975899/1 0432257/1 0432258/1	Search Radius m a Company Vodafone Limited Shetland Islands Council Bt Bt	t Centre NGR HU5159181751. Search Contact Lisa Stevenson Gerry Firmin Dale Aitkenhead Dale Aitkenhead	includes an additional 500m of reque Telephone 1912696372 1912696372	ested radius. Email radioplanning2@vodafone.com gerry.firmin@shetland.gov.uk radionetworkprotection@bt.com radionetworkprotection@bt.com		
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Links 0950912/1 0975899/1 0432257/1 0432258/1 0432259/1 0490575/1 0490576/1	Search Radius m a Company Vodafone Limited Shetland Islands Council Bt Bt Bt Bt Bt Bt Bt	t Centre NGR HU5159181751. Search Contact Lisa Stevenson Gerry Firmin Dale Aitkenhead Dale Aitkenhead Dale Aitkenhead Dale Aitkenhead Dale Aitkenhead Dale Aitkenhead	includes an additional 500m of requests Telephone 1912696372 1912696372 1912696372 1912696372 1912696372 1912696372 1912696372	Ested radius. Email radioplanning2@vodafone.com gerry.firmin@shetland.gov.uk radionetworkprotection@bt.com radionetworkprotection@bt.com radionetworkprotection@bt.com radionetworkprotection@bt.com		

1912696372

1912696372

radionetworkprotection@bt.com radionetworkprotection@bt.com

Dale Aitkenhead

Dale Aitkenhead

1

Bt

Bt

Search Radius m at Centre NGR HU5200982169. Search includes an additional 500m of requested radius.

Links	Company	Contact	Telephone	Email
0432257/1	Bt	Dale Aitkenhead		radionetworkprotection@bt.com
0432258/1	Bt	Dale Aitkenhead		radionetworkprotection@bt.com
0432259/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0490575/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0490576/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0491376/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
1024624/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
1024626/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0950912/1	Vodafone Limited	Lisa Stevenson	07822 805 687	radioplanning2@vodafone.com
0975899/1	Shetland Islands Council	Gerry Firmin	1806244211	gerry.firmin@shetland.gov.uk

Search Radius m at Centre NGR HU5222681413. Search includes an additional 500m of requested radius.

Links	Company	Contact	Telephone	Email
0432257/1	Bt	Dale Aitkenhead		radionetworkprotection@bt.com
0432258/1	Bt	Dale Aitkenhead		radionetworkprotection@bt.com
0432259/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0490575/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0490576/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
0491376/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
1024624/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com
1024626/1	Bt	Dale Aitkenhead	1912696372	radionetworkprotection@bt.com

2

Simon Mitchell Ofcom Licensing Centre Riverside House LONDON SE1 9HA

From: Allen, Simon [mailto:sallen@wardell-armstrong.com] Sent: 12 October 2015 17:32 To: Simon Mitchell

From:	JRC Windfarm Coordinations <windfarms@jrc.co.uk></windfarms@jrc.co.uk>
Sent:	14 October 2015 10:59
То:	Allen, Simon
Subject:	Beaw Field Windfarm, Yell, Shetlands [WF501036]

Dear Simon,

A Windfarms Team member has replied to your coordination request, reference **WF501036** with the following response:

Dear Simon,

Site Name:

Beaw Field Windfarm, Yell, Shetlands

Turbine at NGR:

Hub Height: 90m Rotor Radius: 55m

This proposal ***cleared*** with respect to radio link infrastructure operated by:

The local electricity utility

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal. Please note that due to the large number of adjacent radio links in this vicinity, which have been taken into account, clearance is given specifically for a location within the declared grid reference (quoted above).

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek recoordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.

JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.

Regards

Wind Farm Team

The Joint Radio Company Limited Dean Bradley House, 52 Horseferry Road, LONDON SW1P 2AF United Kingdom

TEL: +44 20 7706 5199

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We hope this response has sufficiently answered your query.

If not, please **do not send another email** as you will go back to the end of the mail queue, which is not what you or we need. Instead, **reply to this email keeping the subject line intact or login to your account** for access to your coordination requests and responses.

http://breeze.jrc.co.uk/tickets/view.php?auth=o1x0aaqaacicaaaaWqcwx7jWFx2EYA%3D%3D

From: Sent:	Windfarms <windfarms@atkinsglobal.com></windfarms@atkinsglobal.com>
To:	Allen, Simon
Cc: Subject:	WF 31179 - Beaw Field Windfarm, Yell, Shetlands - T1 - T17 - HU 50454 83369

Dear Sirs,

I am responding to an email of 12-10-2015, regarding the above named proposed development.

The above application has now been examined in relation to UHF Radio Scanning Telemetry communications used by our Client in that region and we are happy to inform you that we have **NO OBJECTION** to your proposal.

Please note that this is not in relation to any Microwave Links operated by Scottish Water

Atkins Limited is responsible for providing Wind Farm/Turbine support services to TAUWI.

Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry. Web: www.tauwi.co.uk Windfarm Support ATKINS The official engineering design services provider

for the London 2012 Olympic and Paralympic Games Web: www.atkinsglobal.com/communications

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From:	dale.aitkenhead@openreach.co.uk on behalf of radionetworkprotection@bt.com
Sent: To:	15 October 2015 11:08 Allen, Simon
Subject:	RE: War

Hi Simon

The absolute minimum clearance we would allow is a buffer of 25m from the blade tip to the outer limit of the 2nd Fresnel zone. Hopefully it's possible to relocate this turbine to gain the necessary clearance.

BT's Fresnel calculator estimates that the 2nd Fresnel zone at 6.41km is 21.97m.

Please let me have the new coordinates once you have a new position and I will re-evaluate this for you.

Thanks

Regards Dale Aitkenhead Radio Frequency Allocation & Network Protection Tel 0191 2696372 mobile : 07540 897558 dale.aitkenhead@bt.com Web: http://operate.intra.bt.com/operate

From: Allen, Simon [mailto:sallen@wardell-armstrong.com] Sent: 15 October 2015 10:05 To: radionetworkprotection G Cc: Evans, Paul Subject: RE: War

Hi Dale,

Thanks for confirming this. I have now looked at the link in a little more detail and in particular calculated the Fresnel zones around the link centreline at the point where T13 is currently positioned.

I have calculated T13 to be 6.41km south of the Mid Yell BT RS receiver along the link centreline.

From:	>Radio Planning, Vodafone <radioplanning2@vodafone.com></radioplanning2@vodafone.com>
Sent:	20 October 2015 07:37
То:	Allen, Simon
Cc:	Evans, Paul
Subject:	RE: Beaw Field Windfarm EMI Consultation
Attachments:	Beaw WT_Positions_J.KML; MOD 20131119_consultation_pro-forma.doc;
	TurbLocs BEAW NT12001.pdf

Morning Simon,

We have no objections on the attached coordinates.

We have 2 links in the area, the below is the one which is closest to the turbines. We require 100m clearance from the links and all these coordinates are over this.

windfarm1									
Licence No	Band	Polarisation	Path Length (km)	(A) Location of Station	(A) Antenna Height (m)	(A) Antenna Azimuth (degrees)	(B) Location of Station	(B) Antenna Height (m)	(B) Antenna Azimuth (degrees)
0950912/1	15	V	23.91	HU	10	39.1958823576666	нυ	10	219.43630898798
	GHz			44000			58900		
				72700			91400		

Kind regards, Lisa



Lisa Stevenson

Fixed Networks Co-ordinator Fibre Networks Governance UK Technology Vodafone Limited Mobile: +44 7822 805 687 Email: <u>radioplanning2@vodafone.com</u>

Vodafone, Berkeley Square, 99 Berkeley St. Glasgow, G3 7HR

Registered in England No 1471587

vodafone.co.uk

From: Allen, Simon [mailto:sallen@wardell-armstrong.com]
Sent: 13 October 2015 16:31
To: wind.farms@airwavesolutions.co.uk; gerry.firmin@shetland.gov.uk; >Radio Planning, Vodafone; radionetworkprotection@bt.com
Cc: Evans, Paul
Subject: Beaw Field Windfarm EMI Consultation

Good afternoon,

james.phillips@shetland.gov.uk
20 October 2015 12:05
Allen, Simon; steven.maclean@shetland.gov.uk
andrew.inkster@shetland.gov.uk; Evans, Paul
RE: Beaw Windfarm and telecomms links

Hi Simon,

Thanks for the information you have provided for the proposed windfarm near Burravoe.

We do have a couple of microwave links but they are in the harbour area of Sullom Voe so are well clear of your proposed locations.

There is an anchorage to the South of Fetlar in Colgrave Sound which can be used by vessels sheltering while waiting to enter the harbour. We have to communicate with these vessels over marine VHF radio. The direct line between our VHF site (60° 27' 55"N, 1° 17' 37"W) and the anchorage (60° 35'N, 0° 58'W) passes close past the North extremity of your proposed site. Would you be able to confirm that our communication on VHF channels 16 (156.8 MHz) and 14 (156.7MHz) will not be affected.

The link you refer to 0975899/1 is a link that is operated by the ICT department, we have had issues with Ofcom assigning links to the wrong department in the council in the past, hence Gerry Firmin's contact email whom I replaced. This link is a 19GHz link between a mast on Swinister Hill (60° 26' 08"N, 1° 12' 07"W) and Gallow Hill on Fetlar (60° 35' 05"N, 0° 55' 35"W)Direct line between those sites passes through the middle of the proposed windfarm locations. I have therefore copied Steven back in this reply in case he want to investigate and comment.

If you have any further questions please get back in touch and likewise if you have any information you feel relevant to our operations at Sullom Voe please pass on.

Kind regards, James Phillips

From: Allen, Simon [mailto:sallen@wardell-armstrong.com]
Sent: 19 October 2015 14:46
To: MacLean Steven@ICT; Phillips James@Harbour Master & Port Operations
Cc: Inkster Andrew@Harbour Master & Port Operations; Evans, Paul
Subject: RE: Beaw Windfarm and telecomms links

Hi Steven,

Many thanks for your assistance in this matter.

James,

Do you have sufficient information on the scheme to provide comment? I have attached the original consultation attachments in case you have not seen these. If you require any further detail regarding the scheme please do let me know.

Kind regards,

Simon

From:	Susan.Msalila@shetland.gov.uk
То:	Allen. Simon
Cc:	steven.maclean@shetland.gov.uk; BBarry@peel.co.uk; Brignall, Dave; Evans, Paul; john.holden@shetland.gov.uk; Tony.Lavelle@shetland.gov.uk
Subject:	RE: Beaw Field Windfarm and telecomms links

Hi, Simon

I have discussed this matter with John Holden this morning. While we are satisfied that, on paper, the positioning of the windfarm will not adversely affect our wireless link (details of which have already been provided to you), we would expect that a condition be included to cover any actual interferance on our link once the turbines are operational.

I hope this gives you the information you require, if not please get back in touch,

Regards

Susan

Susan Msalila Executive Manager, ICT

01595744763 07766421060

susan.msalila@shetland.gov.uk



From: Allen, Simon [mailto:sallen@wardell-armstrong.com]
Sent: 22 December 2015 09:23
To: Msalila Susan@ICT <Susan.Msalila@shetland.gov.uk>
Cc: MacLean Steven@ICT <steven.maclean@shetland.gov.uk>; Bernadette Barry (BBarry@peel.co.uk)
<BBarry@peel.co.uk>; Brignall, Dave <dbrignall@wardell-armstrong.com>; Evans, Paul <pevans@wardell-armstrong.com>; Holden John@Development Management <john.holden@shetland.gov.uk>
Subject: RE: Beaw Field Windfarm and telecomms links

Morning Susan,

I know it is the wrong time of year to be following this up but are you able to provide any update on the progress at this stage?

Many thanks,

Simon



Simon Allen | Principal Renewable Energy Consultant Wardell Armstrong LLP Baldhu House, Wheal Jane Earth Science Park, Baldhu, Truro, TR3 6EH t: 01872 560738

From:	David Buchanan <david.buchanan@scottishwater.co.uk> on behalf of Windfarms-Radiotelemetry <windfarms- Radiotelemetry@SCOTTISHWATER.CO.UK></windfarms- </david.buchanan@scottishwater.co.uk>
Sent:	12 November 2015 14:35
То:	Allen, Simon
Subject:	RE: WF 31179 - Beaw Field Windfarm, Yell, Shetlands - T1 - T17 - HU 50454 83369

Hi Simon

I can confirm that this development will not interfere with any Microwave links that Scottish Water use. The notice that you received from Atkins was to tell you that it wouldn't interfere with our UHF radio. Anyway, SW have no objections on the grounds of radio interference in the area.

Regards

David Buchanan TI & BC Service Integration 07443 876 458

From: Allen, Simon [mailto:sallen@wardell-armstrong.com]
Sent: 14 October 2015 12:05
To: Windfarms-Radiotelemetry
Cc: Evans, Paul
Subject: FW: WF 31179 - Beaw Field Windfarm, Yell, Shetlands - T1 - T17 - HU 50454 83369

Dear Sir/Madam,

Further to Atkins response below, I note that this does not include consideration of any Scottish Water links operating in the area. I am not sure if Atkin's have already forwarded on details of the proposed Windfarm under separate cover, but if not please find attached details of said proposals.

The proposed turbines will have up to a 90m hub and up to a 110m rotor. Their tip height will therefore not exceed 145m.

I have attached a plan showing the location of the turbines. No candidate turbine has currently been selected.

For your convenience I have also included a kml file showing the location of the turbine and an MOD pro-forma sheet giving further details.

The BNG co-ordinates are reproduced below (please note the northing contains 7 digits – this is not a mistake but is due to the northerly location of the Shetlands within BNG – the 100km version of the grid ref is provided alongside to ensure there are no uncertainties).

WT	Easting	Northing	OS 100km Grid Ref
T1	450454	1183369	HU 50454 83369
Т2	450654	1183105	HU 50654 83105
Т3	451094	1183089	HU 51094 83089
T4	450670	1182757	HU 50670 82757
T5	451343	1182860	HU 51343 82860

From: Sent:	Mark McDonald <mark.mcdonald@airwavesolutions.co.uk> 26 November 2015 11:49</mark.mcdonald@airwavesolutions.co.uk>	
To:	Allen, Simon	
Cc:	'BBarry@peel.co.uk'; Evans, Paul; Brignall, Dave; Jason Lloyd; Brian Johnson	
Subject:	RE: Beaw Field Windfarm	

Hi Simon,

Firstly thanks for our chat, greatly appreciated.

As discussed to move this piece of work forward, some notes I scribbled down.

- Planning application (section 36), to be submitted asap (to be confirmed exactly what this means); however there are a number of other factors being looked at present, by your client regarding environmental issues.
- The red area on the briefing map is the boundary of the site and there are several restrictions on moving the structures to the SW, including the nearby runway approach.
- There is a BT link that passes through the site; however there is enough of a gap to allow this to stay in place. BT have confirmed the required distances and you have allowed for this in the positioning of the structures
- Brian is still in the process of completing the initial report, he still needs to double check with our radio planning team regarding the coverage provided by the mast near the wind farm end of the link, to ensure there's no adverse effect to the emergency services radio system
- I'll provide a price for Airwave to carry out the design of a solution to divert the existing Airwave link away from the proposed structures, by the 11th Dec. If you require it sooner, it will be more of a best guess as discussed, so likely to be higher, but we would still only charge for time incurred.
 - Once we have PO cover if place the design work will be scheduled in as soon possible.
 - Regarding the design of the new link, Airwave would prefer not to go via anymore islands, as it has a direct effect on our ability to respond to faults and meet our existing contractual agreements.
 - We will look at the possibility of installing a new structure within the boundary to see if that assists in the design.
- Regarding our discussion on the build element, obviously this would depend on timing of the wind farm construction (possible 5-6 years from now) and on a successful planning application, which will need to have caveats to protect Airwave. Mainly around your client paying the full cost of any redevelopment involved in Airwave altering the existing link, which may include (but not limited to) new microwave equipment, site construction costs, new power supplies, planning & acquisition costs, rental and legal agreements.

If I've missed anything please let me know

Regards, Mark McDonald Snr Project Manager

AIRWAVE

Charter Court, 50 Windsor Road, Slough, Berkshire SL1 2EJ M +44(0) 7730057210 mark.mcdonald@airwavesolutions.co.uk www.airwavesolutions.co.uk

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