wind & renewable energy services



PINCHBECK COMMUNITY WIND TURBINE

H14-0831-12

Planning Conditions Discharge - Submission A

PREPARED ON BEHALF OF

BERNARD MATTHEWS
WIND ENERGY CO-OPERATIVE LTD

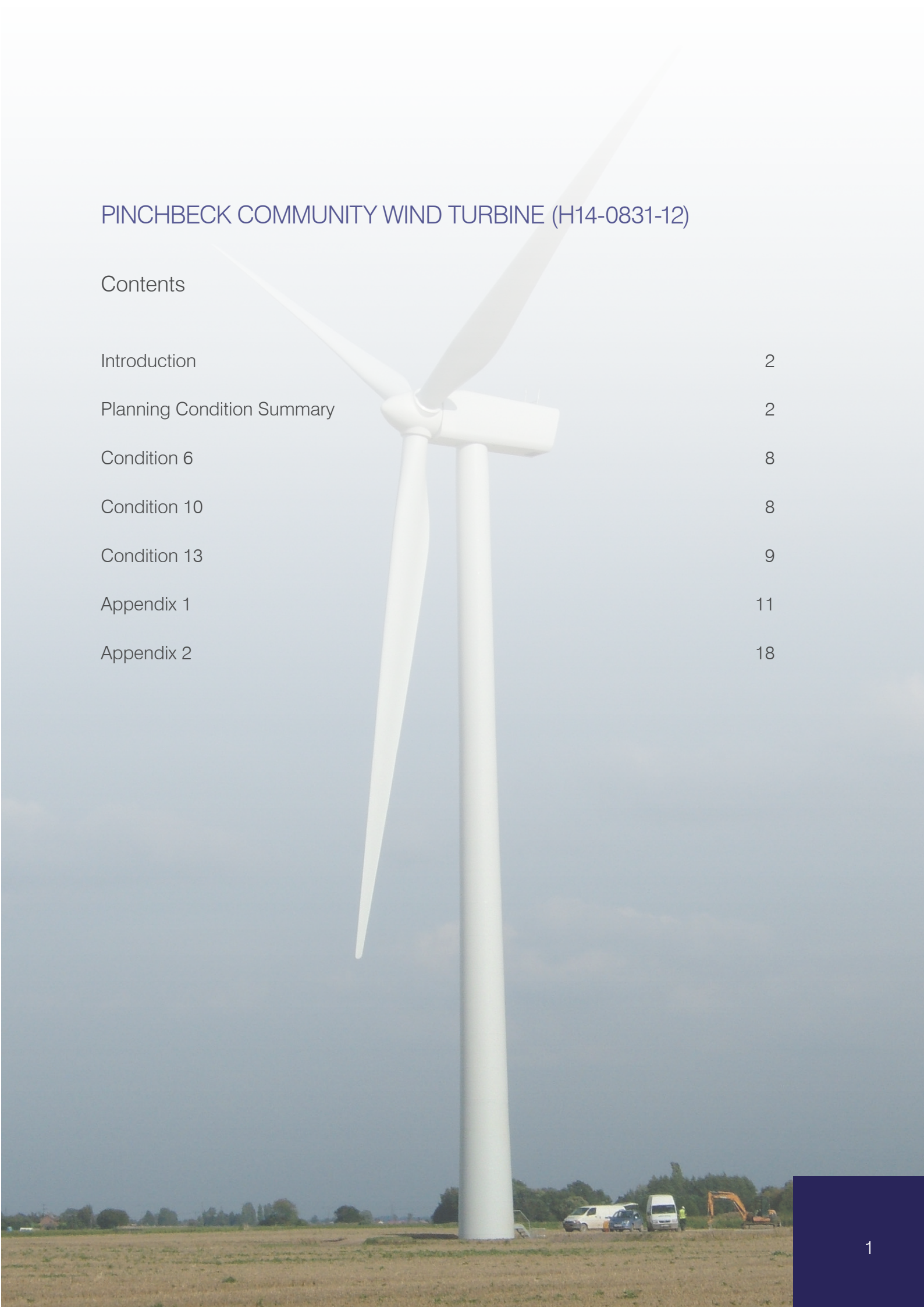
farmwind

OCTOBER 2014

PINCHBECK COMMUNITY WIND TURBINE (H14-0831-12)

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INTRODUCTION

1.1 The Pinchbeck Community Wind Turbine (Application Reference H14-0831-12) was consented by South Holland District Council on 5 February 2014.

1.2 The proposal was for a single wind turbine (up to 78m tip height), new access track, hardstanding, substation and associated works.

1.3 The planning consent was subject to satisfaction of a series of planning conditions. There are 15 conditions, some of which require discharge prior to construction commencing; prior to wind farm operation; are applicable throughout the operation of the site; or relate to decommissioning.

1.4 This **Submission A** document summarises the planning conditions, and also provides the required information to allow South Holland District Council to discharge the following turbine conditions:

- Condition 6;
- Condition 10; and
- Condition 13.

PLANNING CONDITION SUMMARY

2.1 **Table 2.1** summarises the planning conditions associated with this proposal, highlighting whether the condition is required or applicable prior to construction commencing, prior to wind farm operation, during wind farm operation, or relate to decommissioning.

2.2 For ease of reference, those conditions requiring additional information and discharge prior to construction commencing or turbine operation have been highlighted in grey shading. Those for which an application to discharge is made through this submission (6, 10 and 13) are highlighted in bold.

CONDITION NUMBER	CONDITION	TIMING
1	The development must be begun not later than the expiration of three years beginning with the date of this permission.	-

CONDITION NUMBER	CONDITION	TIMING
2	The development hereby permitted shall be carried out in accordance with the following approved plans: 1 :5000 Planning Application Plan, Application and Environmental Documentation, including A3 Figures Booklet (dated October 2012), SLR Flood Risk Assessment ref: 405.02350.0007 (dated August 2012), Wild Frontier Ecology Ecological Report (dated June 2012), Hayes McKenzie Environmental Noise Impact Assessment ref: HM: 2596/R1 (dated 22 June 2012) all received 18 October 2012	Prior to commencement of construction (in the case of any variations)
3	This planning permission shall expire no later than 25 years from the date when electricity is first exported from the wind turbine to the electricity distribution grid (the First Export Date). The applicant shall notify the Local Planning Authority in writing of the First Export Date within 14 days thereafter. At the expiration of 25 years from the First Export Date the turbine and ancillary site infrastructure shall be decommissioned and removed from the site and the land returned to its former condition within 12 months thereafter, in accordance with a written scheme which shall first have been submitted to and approved in writing by the Local Planning Authority.	14 days after exporting to the grid / 25 years thereafter
4	If the wind turbine hereby permitted fails to operate for a continuous period of 12 (twelve) months the site operator shall notify the Local Planning Authority of that fact in writing within one month thereafter, including with that notification a written scheme providing for the decommissioning and removal of the wind turbine and ancillary site infrastructure and returning the land to its former condition. The scheme shall be implemented within 12 (twelve) months of the date on which it is approved in writing by the Local Planning Authority.	Operation

CONDITION NUMBER	CONDITION	TIMING
5	Noise from the wind turbine shall not exceed 35dB(A)(LA90, 10min) when measured at a height of 1.5m (at wind speeds of up to 10 metres per second measured at a height of 10m) at any residential boundary not within the applicant's ownership. Note: For the purposes of this condition 'residential boundary' means the amenity (garden) area attached to any residential property.	Operation
6	**No development shall commence unless and until an Air Traffic Control Radar Mitigation Scheme to address the impact of the wind turbine upon air safety has been submitted to and approved in writing by the Local Planning Authority. The Air Traffic Control Radar Mitigation Scheme is a scheme designed to mitigate the impact of the development upon the operation of the Primary Surveillance Radar at RAF Coningsby, RAF Cranwell and RAF Waddington ("the Radars") and the air traffic control operations of the Ministry of Defence (MOD) which is reliant upon the Radars. The Air Traffic Control Radar Mitigation Scheme shall set out the appropriate measures to be implemented to mitigate the impact of the development on the Radars and shall be in place for the operational life of the development provided the Radars remain in operation.**	**Prior to commencement of construction**
7	The turbine shall not become operational unless and until the applicant has provided written confirmation to the Local Planning Authority that all those measures required by the Air Traffic Control Radar Mitigation Scheme (required in connection with Condition 6 above) to be implemented prior to the operation of the turbines have been implemented, and the Local Planning Authority thereafter confirms in writing that operation of the turbine may be commenced. The development shall thereafter be operated fully in accordance with the approved Air Traffic Control Radar Mitigation Scheme.	Prior to commencement of construction

CONDITION NUMBER	CONDITION	TIMING
8	The developer shall install MOD-accredited infra-red warning lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point on the turbine. The turbine will be erected with this lighting installed and the lighting will remain operational throughout the duration of this consent.	Operation
9	The development shall be carried out in accordance with the mitigation measures in the submitted Flood Risk Assessment (FRA) SLR ref. 405.02350.00007, dated August 2012. Specifically, critical infrastructure shall be sited at 600mm above existing ground levels.	Construction
10	**Before the commencement of the development hereby permitted, the applicant shall submit to and have approved in writing by the Local Planning Authority details of the final colour of the wind turbine blades, hub and tower, and of any logos to be applied to the structure other than those required to address the requirements of separate safety legislation. The development shall be carried out in accordance with the details so approved and thereafter maintained.**	**Prior to commencement of construction**
11	The mitigation, habitat enhancement and management measures specified at Section 6 of the Wild Frontier Ecology Ecological Report (dated June 2012) shall be implemented in full before the First Export Date and thereafter adhered to for the duration of this planning permission.	Construction
12	The height of wind turbine hereby permitted shall not exceed 78m to the tip of the blade when the blade is in an upright position. The hub height shall not exceed between 40-50m in height.	-

CONDITION NUMBER	CONDITION	TIMING
13	**No development shall take place until a scheme detailing the protocol for the assessment of any complaints of shadow flicker resulting from the development, including remedial measures, has been submitted to and approved in writing by the Local Planning Authority. Operation of the turbines shall take place in accordance with the agreed protocol.**	**Prior to commencement of construction**
14	No development shall commence until a scheme to secure the investigation and alleviation of any electro-magnetic interference to TV and radio reception caused by the operation of the turbines has been submitted to and approved in writing by the Local Planning Authority. The scheme shall provide for a pre-construction baseline survey and for the investigation by a qualified independent television/radio engineer of any complaint of interference with television or radio reception at a dwelling (defined for the purposes of this condition as a building within Use Class C3 of the Use Classes Order) located within 5km of the application site and which lawfully exists or had planning permission at the date of this permission where such a complaint is notified to the developer by the Local Planning Authority within 12 months of the First Export Date. Where the impairment is determined by the qualified independent television/radio engineer to be attributable to the wind farm, details of the mitigation works shall be submitted to and approved in writing by the Local Planning Authority and shall thereafter be implemented in accordance with the approved scheme.	Prior to turbine operation
15	No development shall commence until a Construction Traffic Management Plan has been submitted to and approved in writing by the Local Planning Authority, and the development shall thereafter only be carried out in accordance with the approved Management Plan. The Construction Traffic Management Plan shall include details relating to:	Prior to turbine operation

CONDITION NUMBER	CONDITION	TIMING
15 (continued)	a) Construction vehicle routing; b) A condition survey of the public highway along the construction vehicle route; c) The management of junctions and crossings of the public highway; d) The timing of abnormal load deliveries and details of escorts; e) Temporary warning signing; f) Where the access track crosses existing public rights of way, appropriate warning signs, details of which shall first be submitted to and approved in writing by the Local Planning Authority, shall be erected close to those crossing points and retained for the duration of construction works; g) Traffic management on the existing highway network; h) A method for crossing bridges, culverts and structures for the entire construction route; i) A written specification for identifying damage to the highway caused by traffic associated with construction of the turbine and providing for repairs to be carried out within a specified timescale (that timescale depending on the extent and location of the damage).	Operation

CONDITION 6

2.3 **Condition 6:** *No development shall commence unless and until an Air Traffic Control Radar Mitigation Scheme to address the impact of the wind turbine upon air safety has been submitted to and approved in writing by the Local Planning Authority. The Air Traffic Control Radar Mitigation Scheme is a scheme designed to mitigate the impact of the development upon the operation of the Primary Surveillance Radar at RAF Coningsby, RAF Cranwell and RAF Waddington ("the Radars") and the air traffic control operations of the Ministry of Defence (MOD) which is reliant upon the Radars. The Air Traffic Control Radar Mitigation Scheme shall set out the appropriate measures to be implemented to mitigate the impact of the development on the Radars and shall be in place for the operational life of the development provided the Radars remain in operation.*

2.4 The Air Traffic Control Radar Mitigation Scheme, as agreed by the MoD on the 28th October, 2013 is provided separately and commercial in confidence for South Holland District Council's attention. Enclosed as **Appendix 1**, is the informative correspondence between Bernard Matthews Wind Energy Co-operative's appointed aviation consultant; Wind Farm Aviation Consultants and Defence Infrastructure Organisation.

CONDITION 10

2.5 **Condition 10:** *Before the commencement of the development hereby permitted, the applicant shall submit to and have approved in writing by the Local Planning Authority details of the final colour of the wind turbine blades, hub and tower, and of any logos to be applied to the structure other than those required to address the requirements of separate safety legislation. The development shall be carried out in accordance with the details so approved and thereafter maintained.*

2.6 It is intended to install an EWT DW54 500kW wind turbine, the EWT DW54 wind turbine is coloured 'Light Grey - RAL7035' with a semi-matte finish. A colour sample is enclosed with the hard copy of this submission. No logos are required.

Light Grey - RAL7035 sample attached here

CONDITION 13

2.7 **Condition 13:** *No development shall take place until a scheme detailing the protocol for the assessment of any complaints of shadow flicker resulting from the development, including remedial measures, has been submitted to and approved in writing by the Local Planning Authority. Operation of the turbines shall take place in accordance with the agreed protocol.*

2.8 Should a complaint regarding shadow flicker be received by South Holland District Council, and the building window associated with the complaint be within ten rotor diameters of the turbine (540m), then at the request of South Holland District Council, the Shadow Flicker Control System of the turbine (details provided within Condition 13 Appendix) will be programmed to pause turbine operation during the times of the year when a shadow may be cast on the windows of the identified property within the 540m zone and when the sun is shining (as detected by the System). Once the time during which shadow may be cast, or atmospheric conditions change, then the turbine will restart.

Appendices:

- Appendix 1 - Wind Farm Aviation Consultants and Defence Infrastructure Organisation correspondence (The Air Traffic Control Radar Mitigation Scheme, as agreed by the MoD on the 28th October, 2013 is provided separately and commercial in confidence).
- Appendix 2 - Shadow Flicker Control System

APPENDIX 1

WFAC
Wind Farm Aviation Consultants Ltd
Bodrean, Hillcrest, Helston, Cornwall TR13 8UW

Expert Aviation Advisors to the Wind Energy Industry

Engena Energy Ltd
(fao J Rankin)
The Old Stables,
Bosmere Hall,
Creeting St Mary,

Our Ref.: WFAC/ENGENA/PINCH/0.1/0.11/13
Date: 23 October 2013

Dear Jonny,

Re: Ministry of Defence objection to Planning Application H14-0831-12 erection of 78m high wind turbine at Cowards Lane, Pinchbeck

Further to our recent correspondence and telephone conversations on the above site WFAC is pleased to provide advice on the options available to Engena.

The Ministry of Defence (MOD) responded to the application dated 27th November 2012. In the letter they stated that the MOD objects to the proposal as:

> *'the turbine will be 29.8 km from, detectable by, and will cause unacceptable interference to the ATC radar at RAF Cranwell. It will also cause interference to RAF Coningsby at 29.9km and RAF Waddington at 43.4km.'*

Following this initial response by the MOD we have had a protracted correspondence with the MOD, on your behalf, in an attempt to explore the viability and applicability of mitigation that could be implemented in order allow the MOD to remove is objection dating back to February of this year.

The MOD have been forwarded a fully detailed Technical Specification of a mitigation solution which we consider will address any interference they might expect. The last occasion that the specification was forwarded to the MOD was as a combined mitigation form another of your sites and on 6th August 2013. Due to earlier iterations going astray it was forwarded to both the Head of Safeguarding and to his Deputy. The MOD require that they need 9 weeks to assess any mitigation proposals; my most recent indication from the MOD, on Friday 18th October 2013, is that their work on Pinchbeck is still not complete.

WFAC has been asked to provide a view on the position the MOD has taken in light of the current national planning guidance, found in ' Circular 11/95: Use of Conditions in Planning Permission' as amended by the letter of 25 November 2002 sent by the Deputy Prime Minister to Chief Planning Officers in England . Circular 11/95:

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Expert Aviation Advisors to the Wind Energy Industry

> *'40. It is the policy of the Secretaries of State that such a condition should only be imposed on a planning permission if there are at least reasonable prospects of the action in question being performed within the time-limit imposed by the permission.'*

The letter recorded that the advice in paragraph 40 of the Circular should be amended to read:

'It is the policy of the Secretary of State that such a condition may be imposed on a planning permission. However, when there are no prospects at all of the action in question being performed within the time-limit imposed by the permission, negative conditions should not be imposed. In other words, when the interested third party has said that they have no intention of carrying out the action or allowing it to be carried out, conditions prohibiting development until this specified action has been taken by the third party should not be imposed.'

In particular we have been asked to provide an expert opinion on whether there is greater than, no prospect at all, or at least reasonable prospects, of mitigation being implemented within the three years of a planning permission to allow a turbine at Pinchbeck to be installed without causing unacceptable interference to the ATC radars in question.

You will be aware that the MOD are in the process of determining the results from their Technical Demonstration (TD) of available technical mitigation solutions on wind turbine interference which was conducted throughout the summer of this year. All potential solutions assessed were Technology Readiness Level (TRL) 7[1] or above, met specified safety standards, were compliant with UK health and safety regulations and should have been licensed for transmitting in the UK. The aim of the TD was to determine the best solution or mitigation which can integrate with the existing military ATC system across their network. Technical and operational criteria was assessed including the probability of aircraft detection, i.e. the capability of the system to detect and retain detection of aircraft; displayed effects, i.e. the capability of the system to mitigate unwanted radar returns generated from wind turbines that may be displayed on the operator's display. In addition to technical feasibility the assessment also considered financial viability. That Technical Demonstration will determine the mitigation solution that is to be adopted by the MOD in the short to medium term and there are several potential bidders that meet the entry level requirements; those results are due by the end of this year and, it is understood, for installation in 2014/15.

Given that TD and the expected results we have approached what, in our opinion, is the most effective solution that might be applied at Pinchbeck; that of the Thruput Midas system. As the MOD insist on a full technical specification for any proposed solution we have used that mitigation as the basis for Planning Conditions agreed with the MOD in the past and have no reason to believe that it would not be just as applicable and suitable here.

[1] TR17 - Technology prototype demonstration in an operational environment. "Technology Readiness Levels (TRLs) in the Project Lifecycle", *Ministry of Defence website*, www.aof.mod.uk/aofcontent/tactical/techman/content/trl_applying.htm.

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Expert Aviation Advisors to the Wind Energy Industry

We are not Planning lawyers and you might wish to seek specific advice on this matter but we consider that, in demanding that technical specification the MOD are looking for the developer to prove that mitigation can be provided rather than they having to prove that there is no reasonable prospect of mitigation within the lifetime of any planning consent; this MOD policy would seem to be in contravention of the requirements of Circular 11/95. A recent email to Durham County Council from the MOD dated 9 April 2013 states:

'The MOD has, as you point out, in the past agreed to remove planning objections to wind energy developments on the basis of suspensive planning conditions. These conditions have been agreed where developers have presented site specific mitigation solutions and where MoD subject Matter Experts have assessed that these solutions have a reasonable chance of success. It has been our policy for some time that we will not agree to planning conditions where feasible mitigation proposals have not been presented and assessed.'

I stress again that we are not Planning lawyers but it could be argued that the MOD policy does not comply with Circular 11/95 and, to a layman, there might be a precedent against this MOD stance from the Nutsgrove and Wryde Croft Planning Inquiry where the MOD, themselves, would appear to have conceded this point.

It might be that you could discuss the attached Condition with the LPA; ordinarily it would need the agreement of the MOD before acceptance but given the time constraints it is very unlikely that the MOD will have time to consider any proposal by the 1 November timeline. This wording has been successful with the MOD in the past and, in my view, given their own aspirational fitment timelines for mitigation they would find it difficult to either argue that mitigations are not available or that Pinchbeck should not proceed due to their internal MOD constraints when this wording can be agreed and the solution then determined after they publish their TD results.

In summary, given that the MOD requirement for detailed mitigation specification would appear to be against the stipulation of Circular 11/95 *et al*, and given the lack of progress by the MOD in assessing our proposal within their own stated timelines we consider that there might be a case of the granting of the Condition by the LPA in advance of MOD agreement. A number of reports have been produced for wind turbines and farms and it is believed that in almost every case the MOD have accepted that the reports demonstrated that mitigation was possible. this led to the MOD proposing/accepting the wording of a suspensive condition establishing the acceptability of the proposed mitigation to the MOD and supporting the view that there must be a reasonable prospect of success of radar mitigation within the lifetime of a planning consent (Hallburn in Cumbria and New Downie in Fife have been agreed with the MOD against the same radar and with the same wording).

The MOD position could be regarded as inappropriate and unreasonable in demanding a mitigation specification and which they then cannot assess or conduct an internal assessment which might meet with the timelines for either the reduction in FIT or the announcement of the results of their own Technical Demonstration.

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Expert Aviation Advisors to the Wind Energy Industry

If we can be of any further assistance please do not hesitate to call.

Regards,



Shane Savage BSc,
Managing Director
Wind Farm Aviation Consultants Ltd
www.wfac-ltd.co.uk

Enclosure:

1. DRAFT Planning Condition Wording

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Expert Aviation Advisors to the Wind Energy Industry

Enclosure 1 to
WFAC/ENGENA/PINCH/0.1/0.11/13

Proposed Ministry of Defence Aviation Conditions for Pinchbeck Wind Turbine

1) No development shall commence unless and until a Radar Mitigation Scheme has been submitted to and approved in writing by the Local Planning Authority to address the impact of the wind farm upon air safety.

In this condition "Radar Mitigation Scheme" means a scheme designed to mitigate the impact of the development upon the operation of the Watchman Primary Surveillance Radars at RAF Coningsby, Cranwell and Waddington ("the Radars") and the air traffic control operations of the MOD which are reliant upon the Radars. The Radar Mitigation Scheme will set out the appropriate measures to be implemented to mitigate the impact of the development on the Radars and shall be in place for the operational life of the development provided the Radars remain in operation.

2) No turbines shall become operational unless and until all measures required by the approved Radar Mitigation Scheme to be implemented prior to the operation of the turbines have been implemented and the Local Planning Authority has confirmed this in writing. The development shall thereafter be operated fully in accordance with the approved Radar Mitigation Scheme.

Defence Infrastructure Organisation

Debi Parker
Safeguarding Assistant
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Safeguarding – Wind Energy
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Your Reference: H14-0831-12

Our Reference: DIO/SUT/43/10/1/ 4841

South Holland District Council
Council Offices
Priory Road
Spalding PE11 2XE

27th November 2012

Dear Mr/Mrs Crew

Please quote in any correspondence: 4841

Site Name: Bernard Matthews Food Ltd

Planning Application Number: H14-0831-12

Site Address: Cowards Lane, Pinchbeck

Thank you for consulting the Ministry of Defence (MOD) about the above planning application in your communication dated 7th November 2012.

I am writing to inform you that the MOD objects to the proposal. Our assessment has been carried out on the basis that there will be **1** turbine, 78.00 metres in height from ground level to blade tip and located at the grid reference(s) below as stated in the planning application or provided by the developer:

Turbine	100km Square letter	Easting	Northing
1	TF	21770	27380

Air Traffic Control (ATC) Radar

The turbine will be 29.8 km from, detectable by, and will cause unacceptable interference to the ATC radar at RAF Cranwell**.** It will also affect and cause interference to RAF Coningsby at 29.9 km and RAF Waddington at 43.4 km.

Wind turbines have been shown to have detrimental effects on the performance of MOD ATC and Range Control radars. These effects include the desensitisation of radar in the vicinity of the turbines, and the creation of "false" aircraft returns which air traffic controllers must treat as real. The desensitisation of radar could result in aircraft not being detected by the radar and therefore not presented to air traffic controllers. Controllers use the radar to separate and sequence both military and civilian aircraft, and in busy uncontrolled airspace radar is the only sure way to do this safely. Maintaining situational awareness of all aircraft movements within the airspace is crucial to achieving a safe and efficient air traffic service, and the integrity of radar data is central to this process. The creation of "false" aircraft displayed on the radar leads to increased workload for both controllers and aircrews, and may have a significant operational impact. Furthermore, real aircraft returns can be obscured by the turbine's radar returns, making the tracking of conflicting unknown aircraft (the controllers' own traffic) much more difficult.

.

If the developer is able to overcome the issues stated above, the MOD will request that all turbines be fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.

MOD Safeguarding wishes to be consulted and notified about the progress of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

I hope this adequately explains our position on the matter. Further information about the effects of wind turbines on MOD interests can be obtained from the following website:

***MOD*:** http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm

Yours sincerely

Debi Parker
Safeguarding Assistant – Wind Energy
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

APPENDIX 2

EWT	Emergya Wind Technologies BV
	Sales

Category:	Specification	Page 1 / 4
Doc code:	Shadow Flicker Sales Description	

Created by:	RH	Creation Date:	2014-03-27
Checked by:	RH	Checked Date:	2014-03-27
Approved by:	RH	Approved Date:	2014-03-27

Specification

Shadow Flicker Sales Description

Revision	Date	Author	Approved	Description of changes
00	2014-03-27	RH	RH	
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

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EWT	Category:	Specification	Revision: 00
	Title:	Shadow Flicker	Page 2 / 4
	Doc code:	Shadow Flicker Sales Description.docx	

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1 Introduction

This document gives an explanation of EWT wind turbine shadow flicker system and presents the shadow flicker hardware and software which allows to reliably prevent shadow flicker.

2 Background

Shadow flicker occurs under a special set of conditions when the sun passes behind the rotor of a wind turbine and casts a shadow over neighbouring properties. When the blades rotate, shadows pass over the same point causing an effect called shadow flicker. This phenomenon can occur within approximately less than 10 rotor diameters distance in the shadow of the wind turbine. To prevent or reduce this flickering nuisance, the shadow flicker shut-off system shuts down the wind turbine between specified times, and when the sunlight is above a certain brightness level.

3 Hardware specifications

3.1 Materials

To measure the sunlight luminance, we use a direction-independent brightness transmitter that is adapted to the sensitivity of the human eye. The output signal of the sensor -which is delivered as light-proportional voltage- is connected to the nacelle PLC analogue input.

3.2 Mode of operation

The sensor converts the daylight brightness level into a proportional output voltage. The sensor achieves a direction-independent sensibility in the elevation angle (height of 0° up to 90°), and in the azimuth of 0° up to 360°. The sensor is equipped with a heating system to avoid condensation.

3.3 Mounting

The brightness transmitter is mounted on a horizontal outside surface on top of the nacelle.

3.4 Sensor specifications

Measuring range	: 0-100,000 lux
Accuracy	: ± 2% of calibration norm
Spectral range	: 350 – 820nm
Acquisition angle	: 0 …90° (elevation) resp. 0 …360° (azimuth)
Operating temperature	: -30°C to +70°C
Protection	: IP65
Heating	: 24 V AC/DC, 300mA, internal thermostat-controlled

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4 Software Description

4.1 Brightness industrial standards

The shadow flicker brightness threshold is 120W/m^2 (or 76,560 lux for sunlight) according to the *German Federal States Immission Control Committee.*

4.2 Shadow Flicker timetable

The shadow flicker turbine shut down times are programmed with a table in the turbine control system and a parameter is set to be displayed on the screen of the DMS (Directwind Management System).

The table below illustrates the information that must be supplied by the customer for recording the seasonal shadow flicker.

From date **dd/mm**	**To date** **dd/mm**	**From** Turbine STOPS **HH:mm**	**To** Turbine STARTS **HH:mm**

Max. 16 entries possible

Table 1: Shadow flicker timetable (to be completed by customer)

The shadow flicker shut off system is an automatic system that reacts to sunlight conditions. If the sun brightness is above the daylight threshold during a period corresponding to the shut off time frame, the turbine is shut down automatically via "Safety Alarm" and will stay in this condition until the time frame is expired; unless the light conditions are such that shadow flicker is no longer possible for a specified period of time (parameter), the turbine will be automatically switch on.

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