

Application Ref: 13/00933/FUL

Proposal: Construction of four additional wind turbines to a maximum height of 100 metres (to vertical blade tip) with ancillary infrastructure including temporary construction compound, access tracks and crane hardstandings

Site: French Farm, French Drove, Thorney, Peterborough
Applicant: REG Windpower Limited
Agent: Mr Antony Harding, Turley Associates

Referred by: **Councillor D Sanders and Thorney Parish Council**
Reason: Object to the proposal on a number of grounds
Site visit: Various dates, most recent 16.01.2014

Case officer: Miss L C Lovegrove
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Recommendation: **GRANT** subject to the signing of a **LEGAL AGREEMENT** and relevant conditions

1 Description of the site and surroundings and Summary of the proposal

Site and Surroundings

- 1.1 The application site is located to the northern most extent of the Peterborough City Council authority boundary area, on the northern side of French Drove. The site is situated on land comprising several flat arable fields which are interspersed with drainage ditches and farm tracks. Within the application site there is currently a 16 metre high meteorological mast with supporting guy-wires and associated instruments. This has been in situ since 2010 and was granted permission to be in place to 2nd March 2014.
- 1.2 To the south of the application site are residential properties and farms which front on to French Drove. The rear gardens and yards to these properties face on to the application site with interspersed vegetation comprising mature trees, shrubbery and hedgerows. Other residential properties in close proximity to the application site are located at Dowsdale, to the north-east, Empsons Farm to the north-west and Granger Farm to the south-east.
- 1.3 Beyond the application site, larger drains are located to the south (New South Eau drain) and east (Dowsdale Arm/Portland Drain). The surrounding area is characterised by the Fen landscape – large expanses of flat arable land divided by field margins of hedgerow and drains, with some small pockets of tree belts.

Proposal

- 1.4 The application seeks planning permission for the construction of four additional wind turbines along with associated ancillary development of: a temporary construction compound; access tracks; underground cabling and crane hardstandings.
- 1.5 The proposed wind turbines would stand at a maximum height of 100 metres to vertical blade tip, and be of three bladed, horizontal access design with solid tubular tower. The turbines would have a hub height of no more than 60 metres from ground level and blades extending up to 40 metres in length.

- 1.6 The proposed crane hardstandings, access tracks and construction compound would be constructed of crushed stone/aggregate. The access tracks would be approximately 5 metres in width whilst the temporary construction compound would extend to an area of 60 metres x 40 metres.
- 1.7 Included within the proposal is an allowance for micro siting of the wind turbines and associated crane pads by 40 metres and the access tracks, hardstanding and temporary construction compound by 5 metres.
- 1.8 Two wind turbines (up to 100 metres in height to vertical blade tip) along with an electricity substation, construction compound, vehicular access, access tracks and crane hardstandings were granted planning permission at appeal on 7th September 2010 following refusal of planning application reference 08/01365/FUL.
- 1.9 This planning permission has been lawfully commenced following discharge of all relevant pre-commencement conditions and construction of the vehicular access and some internal tracks. The wind turbines themselves have not been constructed yet.

2 Planning History

Reference	Proposal	Decision	Date
93/P0457	Construction of two wind turbines	Application Permitted	28/09/1993
98/00904/FUL	Renewal of planning permission 93/P0457 for two wind turbines	Application Permitted	24/02/1999
07/01756/FUL	Two wind turbines with control building and ancillary works	Application Withdrawn	24/04/2008
08/01365/FUL	Two wind turbines with control building and ancillary works	Application Refused	10/07/2009
09/01492/FUL	Temporary installation for 3 years of a 16m high wind monitoring mast supported by guy-wires and complete with instruments	Application Permitted	16/03/2010
11/00005/SCOP	Scoping opinion for an EIA for a proposed extension to wind farm (2 turbines allowed on appeal - planning ref 08/01365/FUL)	Comments	14/10/2011
11/00006/SCOP	Scoping opinion for an EIA for a proposed extension to wind farm (2 turbines allowed on appeal - planning ref 08/01365/FUL) - Revision	Comments	21/11/2011
13/00277/WCPP	Variation of C1 (Mast removal date) of Planning Permission 09/01492/FUL - Temporary installation for 3 years of a 16m high wind monitoring mast supported by guy-wires and complete with instruments	Application Permitted	30/04/2013

3 Planning Policy

Decisions must be taken in accordance with the development plan policies below, unless material considerations indicate otherwise.

EUROPEAN AND NATIONAL POLICY CONSIDERATIONS

Kyoto Protocol (2005)

Directive 2009/28/EC of the European Parliament and of the Council

ETSU-R-97: The Assessment and Rating of Noise from Wind Farms

Climate Change Act 2008

Energy Act 2013

Renewable Energy Roadmap Update 2012

HM Treasury: The Plan for Growth (2011)

Habitats Directive (*European Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna*)

The Conservation of Habitats and Species Regulations 2010 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended)

Ramsar Convention 1971 (as amended)

Natural Environment and Rural Communities (NERC) Act 2006

Hedgerow Regulations 1997

Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds

Bern Convention 1979 (The Convention on the Conservation of European Wildlife and Natural Habitats)

Overarching National Policy Statement for Energy (EN-) 2011

Paragraph 1.2.1: '...In England and Wales this NPS is likely to be a material consideration in decision making on applications that fall under the Town and Country Planning Act 1990 (as amended). Whether, and to what extent, this NPS is a material consideration will be judged on a case by case basis.'

National Policy Statement for Renewable Energy Infrastructure (EN-3)

National Planning Policy Framework (2012)

Section 4 - Assessment of Transport Implications

Development which generates a significant amount of traffic should be supported by a Transport Statement/Transport Assessment. It should be located to minimise the need to travel/to maximise the opportunities for sustainable travel and be supported by a Travel Plan. Large scale developments should include a mix of uses. A safe and suitable access should be provided and the transport network improved to mitigate the impact of the development.

Section 7 - Good Design

Development should add to the overall quality of the area; establish a strong sense of place; optimise the site potential; create and sustain an appropriate mix of uses; support local facilities and transport networks; respond to local character and history while not discouraging appropriate innovation; create safe and accessible environments which are visually attractive as a result of good architecture and appropriate landscaping. Planning permission should be refused for development of poor design.

Section 10 - Renewable Energy Development

Applications for energy development should not be required to demonstrate the overall need for renewable or low carbon energy. Applications should be approved (unless material considerations indicate otherwise) if the impacts are or can be made acceptable.

Section 10 - Development and Flood Risk

New development should be planned to avoid increased vulnerability to the impacts of climate change. Inappropriate development in areas of flood risk should be avoided by directing it away from areas at higher risk. Where development is necessary it shall be made safe without increasing flood risk elsewhere. Applications should be supported as appropriate by a site-specific Flood Risk Assessment, a Sequential Test and, if required, the Exception Test.

Section 10 - Adapting and Mitigating Climate Change

Energy efficiency improvements to existing buildings should be supported. New development should comply with local policies for decentralised energy supply unless it can be demonstrated that this is not feasible or viable. Account should be taken of the landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Section 11 - Natural and Local Environment

Should be enhanced through the protection and enhancement of valued landscapes, geological conservation interests and soils; recognising the wider benefits of ecosystem services; minimising impacts on biodiversity and providing net gains in biodiversity. New and existing development should not contribute to or be put at unacceptable risk by unacceptable levels of soil, air, water or noise pollution and land instability.

Section 11 - Development on Agricultural Land

Where deemed necessary areas of poorer quality land should be used in preference to that of a higher quality.

Section 11 - Biodiversity

Development resulting in significant harm to biodiversity or in the loss of/deterioration of irreplaceable habitats should be refused if the impact cannot be adequately mitigated, or compensated. Proposals to conserve or enhance biodiversity should be permitted and opportunities to incorporate biodiversity into new development encouraged.

Development within or outside a Site of Special Scientific Interest or other specified sites should not normally be permitted where an adverse effect on the site's notified special interest features is likely. An exception should only be made where the benefits clearly outweigh the impacts.

The presumption in favour of sustainable development does not apply where development requiring Appropriate Assessment under the Birds or Habitats Directives is being considered or determined.

Section 11 - Noise

New development giving rise to unacceptable adverse noise impacts should be resisted; development should mitigate and reduce to a minimum other adverse impacts on health and quality of life arising. Development often creates some noise and existing businesses wanting to expand should not be unreasonably restricted because of changes in nearby land uses.

Section 12 - Conservation of Heritage Assets

Account should be taken of the desirability of sustaining/enhancing heritage assets; the positive contribution that they can make to sustainable communities including economic viability; and the desirability of new development making a positive contribution to local character and distinctiveness. When considering the impact of a new development great weight should be given to the asset's conservation.

Planning permission should be refused for development which would lead to substantial harm to or total loss of significance unless this is necessary to achieve public benefits that outweigh the harm/loss. In such cases all reasonable steps should be taken to ensure the new development will proceed after the harm/ loss has occurred.

Section 12 - Development Effecting Non-Designated Heritage Assets

A balanced judgement will be required having regard to the scale of any harm and the significance of the heritage asset. Where the asset is demonstrably of equivalent significance to a Scheduled Monuments it should be subject to the policies for designated heritage assets.

Section 13 - Unacceptable Adverse Impacts

Should be avoided on the natural and historic environment, human health and aviation safety. The cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality must be taken into account.

Planning Practice Guidance for Renewable and Low Carbon Energy (2013)

Technical Guidance to the National Planning Policy Framework (2012)

LOCAL POLICY CONSIDERATIONS

Peterborough Core Strategy DPD (2011)

CS10 – Environment Capital

Development should make a clear contribution towards the Council's aspiration to become Environment Capital of the UK.

CS11 – Renewable Energy

Opportunities to deliver on site or decentralised renewable or low carbon energy systems will be supported on appropriate sites where there are no unacceptable impacts.

CS14 – Transport

Promotes a reduction in the need to travel, sustainable transport, the Council's UK Environment Capital aspirations and development which would improve the quality of environments for residents.

CS16 – Urban Design and the Public Realm

Design should be of high quality, appropriate to the site and area, improve the public realm, address vulnerability to crime, be accessible to all users and not result in any unacceptable impact upon the amenities of neighbouring residents.

CS17 – The Historic Environment

Development should protect, conserve and enhance the historic environment including non-scheduled nationally important features and buildings of local importance.

CS20 – Landscape Character

New development should be sensitive to the open countryside. Within the Landscape Character Areas development will only be permitted where specified criteria are met.

CS21 – Biodiversity and Geological Conservation

Development should conserve and enhance biodiversity/ geological interests unless no alternative sites are available and there are demonstrable reasons for the development.

CS22 – Flood Risk

Development in Flood Zones 2 and 3 will only be permitted if specific criteria are met. Sustainable drainage systems should be used where appropriate.

Peterborough Planning Policies DPD (2012)

PP01 – Presumption in Favour of Sustainable Development

Applications which accord with policies in the Local Plan and other Development Plan Documents

will be approved unless material considerations indicate otherwise. Where there are no relevant policies, the Council will grant permission unless material considerations indicate otherwise.

PP02 – Design Quality

Permission will only be granted for development which makes a positive contribution to the built and natural environment; does not have a detrimental effect on the character of the area; is sufficiently robust to withstand/adapt to climate change; and is designed for longevity.

PP03 – Impacts of New Development

Permission will not be granted for development which would result in an unacceptable loss of privacy, public and/or private green space or natural daylight; be overbearing or cause noise or other disturbance, odour or other pollution; fail to minimise opportunities for crime and disorder.

PP12 – The Transport Implications of Development

Permission will only be granted if appropriate provision has been made for safe access by all user groups and there would not be any unacceptable impact on the transportation network including highway safety.

PP16 – The Landscaping and Biodiversity Implications of Development

Permission will only be granted for development which makes provision for the retention of trees and natural features which contribute significantly to the local landscape or biodiversity.

PP17 – Heritage Assets

Development which would affect a heritage asset will be required to preserve and enhance the significance of the asset or its setting. Development which would have detrimental impact will be refused unless there are overriding public benefits.

PP19 – Habitats and Species of Principal Importance

Permission will not be granted for development which would cause demonstrable harm to a habitat or species unless the need for, and benefits of it, outweigh the harm. Development likely to have an impact should include measures to maintain and, if possible, enhance the status of the habitat or species.

OTHER POLICY CONSIDERATIONS/GUIDANCE DOCUMENTS

Institute of Acoustics – A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (2013)

English Heritage – Wind Energy and the Historic Environment (2005)

English Heritage – The Setting of Heritage Assets (2011)

Natural England Technical Information Note TIN051: Bats and onshore wind turbines interim guidance (Second Edition) (2012)

Natural England Technical Information Note TIN069: Assessing the effects of onshore wind farms on birds (2010)

Natural England – Making space for renewable energy: assessing on-shore wind energy development (2010)

Peterborough Landscape Strategy: Landscape Character Assessment for Peterborough City Council (2007)

Scottish Natural Heritage – Assessing the Cumulative Impact of Onshore Wind Energy Developments (2012)

Scottish Natural Heritage – Siting and Designing Windfarms in the Landscape (Version 1) (2009)

Scottish Natural Heritage – Visual Representation of Windfarms Good Practice Guidance (2006)

Scottish Natural Heritage – Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms (2013)

Best Practice Guidance to Planning Policy Statement 18 ‘Renewable Energy’, Northern Ireland

Department to the Environment (2009)

Community Infrastructure Levy (CIL) Regulations 2010

Paragraphs 203-205 of the National Planning Policy Framework: Planning Conditions and Obligations:

Requests for planning obligations whether CIL is in place or not, are only lawful where they meet the following tests:-

- (a) necessary to make the development acceptable in planning terms;
- (b) directly related to the development; and
- (c) fairly and reasonably related in scale and kind to the development.

In addition obligations should be:

- (i) relevant to planning;
- (ii) reasonable in all other respects.

Planning permissions may not be bought or sold. Unacceptable development cannot be permitted because of benefits/inducements offered by a developer which are not necessary to make the development acceptable in planning terms. Neither can obligations be used purely as a means of securing for the local community a share in the profits of development.

4 Consultations/Representations

Landscape and Visual Impact

PCC Landscape Architect

No objections – The submitted Landscape Character and Visual Assessment (Chapter 4 of the ES) sets out an extensive and thorough methodology which has been well developed, accords with best practice and accordingly it is considered that the conclusions of the report are sound. The Chapter is however light on overall summaries and Table 4.48 best sets out the principal conclusions. The main conclusion (which is agreed with) is that whilst the effect of the additional 4 turbines will be significant up to 1km from the site, in overall terms the impact will be quite limited.

PCC Landscape Officer (Trees)

No objections – The only trees on site are at the entrance to French Farm and the implications of the proposed access have already been considered as a result of the two turbines under construction. The hedges within the site have been assessed within the Ecology section of the ES and are found to be of poor quality and not species rich, a conclusion which is agreed. Most of the direct conflict will be where the access tracks cross existing drains however some of these have already been granted permission under the original consent.

Cultural Heritage

English Heritage

Objection – The proposal would cause further harm to designated heritage assets within the vicinity i.e. the setting of the Scheduled and Grade I listed Crowland Abbey, Grade I listed church of St Mary and St Botolph, the Grade I listed house known as Thorney Abbey, and the setting of Crowland Conservation Area). The application should be refused unless it can be demonstrated that the public benefits of the proposal outweigh the harm caused to the setting of important heritage assets, in accordance with paragraph 134 of the National Planning Policy Framework (2012). However satisfied with the level of archaeological assessment that has been undertaken and raise no objection in terms of the development's archaeological impact.

PCC Conservation Officer

No objection – The nearest Conservation Area is Thorney to the south/south-west which is situated on a gravel island with the Fens seeping openly up from the south and east. At present the setting of Thorney is quite unspoilt. The development is unlikely to have an adverse impact on the setting

of the Conservation Area or key listed buildings. The nearest listed building is Thorney Lodge (Grade II). Whilst the development would be visible from this property and there would be a degree of harm, it is considered that this would be less than substantial.

PCC Archaeology Services

No objection – The desk top assessment and findings from the auger borehole surveys have not indicated that significant finds are reasonably likely and it is considered that no further archaeological evaluation is required pre-determination. Request a condition to secure detailed investigation during all groundworks through a watching brief.

Ecology and ornithology

Natural England

No objections – The proposal, if undertaken in strict accordance with the submitted details, is not likely to have a significant effect on the interest features for which the Nene Washes has been classified. Furthermore, an Appropriate Assessment is not required to be undertaken. An appropriate ecological monitoring scheme, equivalent to the existing two turbine scheme, is advised. The proposal is also unlikely to affect any statutorily protected sites or landscapes, or bats.

PCC Wildlife Officer

No objections – I am satisfied that the proposal will not have any significant impact upon important ecology species (badger, bats, amphibians, otter, water voles and reptiles). The Further Environmental Information Statement (October 2013) has considered the nearby solar farm applications within the cumulative assessment. Whilst detailed analysis of availability of alternative farmland habitat (with regards to displacement) in the area has not been carried out by the Applicant, I am nevertheless satisfied with the findings and conclusions provided. With regards to the information contained within the Further Environmental Information Statement (December 2013), I defer to the RSPB as to the adequacy of the surveys undertaken. Request that a Biodiversity Management Plan be secured by condition to include precautionary mitigation measures to prevent impacts on raptors.

Royal Society for the Protection of Birds

No objections – Whilst the figures appended to the ornithology note in the revised Appendix B to the Further Environmental Information Statement (December 2013) are useful, it unfortunately does not resolve our concerns over the reliability of the survey information and assessment. However, in the case of the current proposal, we consider it heightens the need for precautionary mitigation and appropriate monitoring. The commitment to this by the Applicant is therefore welcomed.

Drainage and Flood Risk

Environment Agency

No objection – In accordance with the NPPF, the proposed development is appropriate providing that the site meets with the requirements of the Exception Test. Whilst the EA comment upon the safety considerations of this test, the LPA must decide whether or not the proposals satisfy the other part (that the development provides wider sustainability benefits to the community that outweigh flood risk).

North Level Internal Drainage Board

No objection – Consent has been granted to culvert two watercourses to allow the construction of the access road. With regard to surface water, would like to see details of any impervious areas to be created to ensure that surface water run-off is not being increased from the current rate.

PCC Drainage Engineer

No objections – Recommend condition relating to surface water drainage scheme as there is currently limited detail for us to comment on for this application.

Anglian Water

No objections – There is no concern from a groundwater perspective.

Noise

PCC Pollution Control

No objection – ETSU-R-97 specifies that any lower fixed noise limit from wind turbines should fall between 35 and 40dB, and the decision on a specific limit relevant to each application should be based upon: the number of properties affected; the effect of the limit on energy generation; and the duration/frequency of exposure. It is noted that there is a comparable development (Nuts Grove/Wrydecroft) within the PCC administrative area that has received permission through the Planning Inspectorate. The Inspector specified a limit of 37.5dB following consideration and with this in mind, a limit of 37.5dB or 5dB above background level would be an acceptable noise limit. The suggested condition by the Developer is accepted and accords with guidance.

Transport and Traffic

Local Highway Authority

No objections – The LHA has no reason to doubt the methodology used, or dispute the figures arrived at concerning the associated traffic volumes that shall be generated as a result of the proposals. Consider that the additional traffic will not cause detriment to the local highway network in terms of capacity or safety. Request conditions requiring pre-construction assessment of the access route from Fall's Bridge to the site, detailed drawings in respect of the scheme of highways works to be undertaken, post-construction surveys of the highway network and arrangement of lighting away from the highway.

Highways Agency

No objection – The application scheme will not adversely affect the A47 Trunk Road in this location.

Aviation Safety / Telecommunications

MOD Safeguarding

Objection – The turbines will be detectable by, and cause unacceptable interference to the Air Traffic Control (ATC) radars at RAF Waddington (62.24km), RAF Coningsby (48km), RAF Wittering (27.7km) and the Precision Approach Radar (PAR) at RAF Wittering. The proposed £200,000 bond towards mitigation measures would effectively cap the contribution and any remaining cost would be left to the MOD which is unacceptable.

Civil Aviation Authority

No comments to make.

National Air Traffic Services Safeguarding

No objections – The proposed development has been examined from a technical safeguarding aspect and does not conflict with safeguarding criteria.

Joint Radio Company

No objection – The JRC does not foresee any potential problems based on known interference scenarios.

Other Matters

National Grid

No objections.

Police Architectural Liaison Officer

No objections, recommendations or further observations.

Neighbouring Authorities

Lincolnshire County Council

No comments received.

Cambridgeshire County Council

No objections.

South Holland District Council

No comments received.

Fenland District Council

No comments to make.

Parish Councils

Thorney Parish Council

Objection – The proposed turbines will harm the setting of Thorney and we are alarmed at how visible they will be from parts of the Parish. The Developer has taken advantage of summertime settings and the photomontages are not accurate in depicting the true height of the turbines. The area is not an appropriate location for wind farms as it is an outstanding area of fenland countryside which should not be blighted by industrial development. The turbines are totally out of proportion with the natural surroundings and there is no way the visual impact can be screened. Consider that the development leads to substantial harm to heritage assets and this is not outweighed by any benefit. The submitted Environmental Statement can only at best be predictive and require reassurance that this will be reviewed by a team of experts, rather than just regular planning officers. There is concern amongst Parishioners about noise and light flicker and the impact to highway safety from the removal of street signs. The application must be determined against cumulative impact with other proposals and there is genuine concern that the Parish may become surrounded by turbines. Believe that the planned growth at Eye would be jeopardised by the wind turbines and it is well known that they devalue property prices. The consultations by the Developer prior to the planning application were welcomed but endorse the objections submitted by Parishioners. Note that there are still low flying planes in the area and assume the objections of the MOD will remain unless a mitigation solution is proposed.

Eye Parish Council

No comments to make.

Newborough Parish Council

No comments received.

Crowland Parish Council

No comments received.

Gedney Hill Parish Council

No comments received.

Councillors / Members of Parliament

Councillor D Sanders

Objection – Consider that the turbines are not in keeping with the immediate area of flat fen countryside or the nearby heritage of Thorney Abbey. In addition, endorse the objection made with regards to ecology within the Dr Tim Reed Report. Also concerned regarding the impact upon MOD radar and consider that the bond proposed will nowhere near fulfil the financial requirements to address the costings of PAR mitigation.

Councillor D McKean

No comments received.

Councillor N Sandford

Support – The planning application should be judged by application of Policy CS11 of the Peterborough Core Strategy DPD (2011). Peterborough is aspiring to be the UK Environment Capital and has set ambitious targets for the reduction in carbon emissions. The development proposed will contribute to these targets. The site already has permission, granted by an Inspector, so its suitability for renewable energy generation has clearly been established. The nearest houses are some distance away and the erection of four extra turbines will not, in my opinion, cause unacceptable impacts. Any minor impacts that may result would be outweighed by the wider environmental benefits in generating clean power. I am also impressed by the extensive consultation which has been carried out by the Developer.

Mr Stewart Jackson MP

Objection – The application is contrary to the Council's own policies and the recently published Planning Practice Guide for Renewable and Low Carbon Energy (2013). The City Council needs to weigh in their consideration, the cumulative impact of a number of wind energy applications and approvals (38 turbines) in the immediate vicinity of the Thorney area. I believe the application, if granted, will have a negative impact upon residential amenity and quality of life for residents and will irrevocably alter the unique Fenland landscape. The noise, shadowing, bulk, height and massing of the turbines proposed will not just affect residents, but also local wildlife, ecology and biodiversity as comprehensively outlined by the submitted Dr Timothy Reed report. Further, the transportation of these huge materials will cause serious issues of congestion, damage to the road network and pose major safety hazards. The negative aspects of the application are not outweighed by the City Council's commitment to support renewable energy.

Mr John Hayes MP

Objection – The proposed site would affect the properties situated on Dowsdale Bank and surrounding area, obscuring their views across the Fenland landscape. There are already wind turbines at French Farm and a further application would have damaging cumulative impact which directly contradicts the intention of new planning guidance. This guidance places greater emphasis on the protection of landscape, heritage and local amenity. The guidance clearly sets out that:

- arguments for renewable energy do not override environmental and planning concerns;
- decisions should take into account the cumulative impact of turbines and properly reflect the increasing impact on the landscape and local amenity;
- local topography should be a factor in assessing whether turbines have a damaging impact; and
- great care should be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including impact on views important to their setting.

The application contradicts this guidance directly and wind turbines are clearly not compatible with the topography of the area concerned.

Local Residents/Interested Parties

Initial consultations: 419

Total number of responses: 586

Total number of objections: 390

Total number in support: 194

Throughout the determination of the planning application, there have been a number of consultation periods:

	Dates of consultation	Reason
☞ ☐	2 July – 14 August 2013	Original submission

	2 August – 10 September 2013	Revised consultation on the original submission owing to an error with the Site Notices
	22 August – 12 September 2013	Revised ES Volume 1 Chapter 10, ES Volume 2 Appendix 10 and ES Non-Technical Summary
Round 2	10 October – 12 November 2013	Further Environmental Information Statement (October 2013)
Round 3	13 December 2013 – 10 January 2014	Further Environmental Information Statement (December 2013)
	7 January – 30 January 2014	Revised Further Environmental Information Statement (December 2013) Appendix B

For ease of presentation of the comments received, these consultation periods have been divided in to three according to comments received in respect of: the original submission; the Further Environmental Information Statement (October 2013); and the Further Environmental Information Statement (December 2013).

Round 1 Responses

384 objections were received from members of the public during the initial round of consultation. Of these, 316 were standardised representations (a copy of which is provided for information at Appendix 1) and 65 were individual letters.

Amenity

- They will block my view.
- At night I may stay awake because the turbines will be big and noisy.
- Construction noise impacting on children doing homework.
- Consideration should have been made in light of potential disturbance to the local environment and the light deprivation, flicker, noise and health hazards upon local residents.
- The documentation does not consider the impact that the proposal will have on my property which could be as close as 684m from the nearest turbine – specifically visual and shadow flicker.
- Developer says that properties over 800m will be unaffected by flicker but if we have an unobstructed view of the turbines how can this be the case. Our plot sits due west of the proposed site therefore the sun will set directly behind the turbines for a large part of the year making obtrusive flicker inevitable.
- Will be too close to existing resident's houses and will adversely affect the local residences; there will be a resultant loss of tranquillity in the immediate area both during construction and also in the long-term placement of these turbines.
- I would like an impact assessment carried out by structural engineers prior to the commencement of piling to ensure there are no disturbances to any properties in the immediate area, foremost my own property due to its age and archaeological/cultural significance.
- Moved here to get away from the town and to have an uninterrupted view of the countryside.
- Concern about shadow flicker.
- The flickering effect of the blades is a major trigger for epilepsy.
- The ES states the turbines may be visible from my property. This is incorrect they will be visible from windows of my property and in my garden.
- The turbines would be located too close to residential properties, and would adversely impact upon the amenities and quality of life of occupiers due to their overbearing impact and visual intrusion.
- Use of the roads safely for running and horse riding will be affected because of distraction to road users. Enjoyment of views will be lost.
- People derive enjoyment from the lovely and peaceful rural environment, landscape is an integral part of our lives and sense of wellbeing.
- Landscape is a stress relief, would have to face these turbines every time we go out.

- Sense of depression and worry at degradation of local environment.
- What increase in psychological, depression and suicide is predicted for Thorny residents.
- Proposal has already caused stress and anxiety.
- Hours of work should be 7.30-19.00 weekdays but when they were laying the track construction lorries were passing my house at 7.00 am.
- Health issues associated with subsonic vibration which can be felt up to 10 miles away.
- Local residents may suffer from headaches, nausea, depression and other related conditions.
- I have a dyspraxic child who is sensitive to noise and vibration.
- This area of the fens has hardly any industry and what little there is in small low buildings, usually at fars.
- What little industry there is only works during normal hours, unlike the noise blight that these turbines will have.
- Turbines are industrial blight on a huge scale.
- The ES states that 30 hours is an acceptable level for shadow flicker however there is no published guidance in England on the maximum hours that are acceptable. It seems the Developer is picking and choosing rules to fit.
- The ES Volume 1 refers to the shadow flicker assessment undertaken in 2007 for the consented two turbines with the only reference made to the proposed turbines being a revised figure in Volume 3. No methodology or commentary has been provided to explain or support this.
- Examples provided of other wind turbine appeals throughout the Country in relation to the harm identified to neighbouring dwellings at various distances. Based upon these precedents, the closest properties in this case fall within the range whereby turbines have previously been found to be dominant and intrusive, harmful to living conditions.

Wildlife

- Will frighten away the animals and they will not come back.
- This area is well known for its wildlife. It is close to many Country Wildlife Sites and with numerous hedgerows and drains in the area there are significant threats to protected species such as birds, reptiles and insects. Whilst mitigation can take place the huge number of applications in the area will make relocation of these species a significant challenge for the application.
- We have serious concerns that rare species and flora will be destroyed and that bio-diversity will be destroyed.
- Turbines harm wildlife.
- This project could also adversely affect the safety of the local community, as horse have been shown to be fearful of wind turbines and numerous local residents ride horses in the area.
- The development will also destroy and disrupt an area which is rich in biodiversity and contains precious wildlife. It is an area in which migratory birds flock in large numbers. The small piece of woodland at the end of the field, where the turbines are proposed, is the only area of woodland for a considerable distance, hence it is prime habitat for nesting and migratory birds and other wildlife. Numerous other animals such as bats, birds of prey, deer and badgers all inhabit this area and they will certainly experience either significant disruption or destruction of their habitat and this will endanger their wellbeing.
- Spinney is home to variety of wildlife, turbines would have a negative impact on the wildlife. Many or all of the birds could vacate, potentially leaving the Spinney dead.
- There are a number of protected and rare species of wildlife in this area including pipistrelle bats, owls, and marsh harriers which could be wiped out by these huge structures. There are also a large population of grass snakes, which could be greatly affected and distressed by the vibrations of the turbines.
- Whittlesey Wash is an internationally important site for migrating birds, the EIA makes no mention of this.
- Wildlife surveys are incomplete.
- The wildlife studies were mostly completed in 2011, with some in 2012. The turbines have moved position since these studies, so these studies should be updated.
- Full and proper bat surveys have not been carried out. The land at Falls Farm was not surveyed. The danger to bats is at blade height, no surveys were carried out at this height.

- No surveys into bat hibernacula (local hibernation and/or swarming sites) have been carried out. Natural England technical guidance recommends that this is done.
- We have bats either roosting in our house or garage, with this the other wind and solar farm sites where is the wildlife supposed to go?
- An independent report by Dr Timothy Reed to challenge the ecology and ornithology chapters has been submitted. This concludes that the data and interpretation by the developer in respect of these issues is flawed.
 - No data has been provided to back up the conclusions drawn in respect of water voles which is contrary to the best practice standard set out in the Water Vole Conservation Handbook 3rd Edition (Strachan et al, 2011).
 - Incorrect breeding bird surveys were undertaken
 - A proper Common Bird Census (CBC) was not undertaken as the number of visits falls below TIN069¹ guidance and the reasoning behind this has not been provided within the ES no explanation of the implications for estimates deduced. This will result in underestimates of actual species present, imprecise estimates for breeding populations and therefore risks underestimating the potential impacts from the development.
 - No telescoped breeding season was used – April to March was undertaken whereas guidance states March to July – and no explanation for this provided.
 - No raptor surveys were undertaken which is contrary to TIN069 and SNH guidance².
 - Data presentation is incomplete and unclear
 - TIN069 and SNH guidance states that data should be fully presented in a clear and transparent manner – this has not been adhered to within the ES.
 - The submission does not show where walk lines were undertaken, nor are details provided for individual visits which informed the CBC.
 - The 2008 CBC data use is unsuitable for purpose.
 - No evidence has been provided that autumn/winter passage recording has been undertaken in accordance with TIN069.
 - Vantage Point (VP) surveys were not undertaken in accordance with TIN069 guidance
 - The further of the proposed turbine locations was 1.35km from the VP which is in excess of the NE limit. The distance data is unreliable and no test was done to show how many birds were not seen.
 - Some VP surveys were undertaken for too-long a period i.e. exceeding the 3 hour limit advised in SNH guidance and 2 hour limit in TIN069 which unacceptably increases potential for error and results in fundamental acuity problems and therefore undermines collision risk calculations.
 - The VP did not allow for the entire proposal to be covered within the prescribed distance limits and this is likely to result in under-recording of bird numbers.
 - Insufficient VP surveys were undertaken throughout the various seasons leading to unreliable data.
 - Collision risk data has been poorly presented and is not transparent
 - Only year-round data summary has been provided, not seasonal and no locational data has been presented which is contrary to TIN069
 - Mortality for raptors has not been presented by sex or age in individual seasons which is important to differentiate mortality thereby allowing long-term survival and population recruitment affects to be assessed.
 - In light of the validity issues regarding the ornithological data, its analysis and impact evaluations are all unsound and not fit for determining a planning application.
 - No Before-After-Control Impact (BACI) site has been provided which allows to comparison of pre-construction baseline values and post-construction data.
- Barn owls and bats on our property less than one mile from the proposed turbines.
- It is know that there are barn owl nesting in the area, yet no barn owl survey was carried out.

¹ Natural England Technical Information Note TIN069: Assessing the effects of onshore wind farms on birds (2010)

² Scottish Natural Heritage: Recommended bird survey methods to inform impact assessment of onshore wind farms (2013)

- Relocation of affected wildlife would be difficult for applicant.

Landscape/Visual

- Significant impact on the landscape and the character of the unique Fenland.
- As Rt Hon Eric Pickles Minister for Communities and Local Government states “the need for renewable energy does not automatically override environmental protection and the planning concerns of local communities and that local topography should be a factor in assessing whether wind turbines have a damaging impact on the landscape.
- Onshore wind turbines are an eyesore.
- The turbines will be enormous and will appear as alien structures in an otherwise beautiful, rural landscape.
- Concerned that we are being inundated with inappropriate development that is out of character with the region.
- These turbines will be seen for a distance of at least 10 miles in any direction and will dramatically change the character of the landscape forever in both the immediate locality and from important vantage points such as historic Thorney and impeding views of Crowland’s historic abbey.
- Any more turbines risk the village [Thorney] being ringed with gigantic man-made structures out of keeping with flat rural nature of our surrounding countryside.
- The developers Landscape and Visual Assessment is flawed and biased. The viewpoint photos are taken in positions which show the turbines have minimal impact. The photos show the turbines just above the trees, when in reality they will be much higher. The photos have been taken when leaves are on the trees, this will not show the tree impact in winter.
- Viewpoints for photomontages have been chosen to provide the most obscured views of the site.
- Photomontages do not give any true impression of the human visual experience. The human eye cannot edit out sections or peripheral vision like a camera.
- Much of my time is spent in my fields on paddock maintenance and caring to horses, views will now be directly to wind turbines. The flatness of the landscape exacerbates this problem.
- [Table in ES] states that there will be a negligible visual effect on Portsands Farm however the view included clearly shows all of the turbines will be visible so this can’t be negligible.
- The developer states that all the properties in Dowsdale Bank have established gardens and are set lower to the road, this is not the case for my house where we would have a direct outlook onto the proposed development.
- What the naked eye can see from a viewpoint and what appears in a photograph are different, therefore photomontages are unable to give a realistic impression of the actual impact of turbines.
- The developer should fly a blimp to show residents just how high the proposed turbines will be.
- Peterborough City Council refused planning permission at Green Drove, close to French Drove in 2004 due to the harmful impact on the Fen Landscape, and the cumulative impact.
- We will live in the middle of a turbine cluster should this application be accepted.
- From our house we can see turbines at Turves and Whitemoor, 13 turbines are to be built at Nutsgrove and Wrydecroft, two have permission at French Farm. In addition we have Gores Farm and Willow Hall. Will this only stop when every last field is full of the things?
- What was a fenland farming landscape is being turned into an industrial landscape.
- Original site is not large enough for 6 turbines so they are being extended into the adjacent Falls Farm which puts the turbines considerably closer to the hamlet of Nene Terrace.
- Will be the largest turbines ever to be constructed in the UK and it is reported that they will need this height to catch the wind as it is not the most suitable place for them to be installed
- MoD has recommended aviation lights, which will be alien to this very rural area.
- The ES states that [some views] will be from roads at relatively high speeds – lorries and farm vehicles are speed limited – what does relatively high speed mean?
- National Planning Policy Framework (NPPF) states that development should conserve and enhance the natural environment, and that great weight should be given to conserving landscape and scenic beauty.
- The Zone of Theoretical Visibility does not take into account the approve but not yet commenced turbines at Hundreds Farm, Poultry Farm, Wryde Croft, Nutsgrove, Treading,

- Foundry Way, Glass Moor Extension, Greenvale, Boardinghouse and Ramsey Extension.
- The open fenland landscape will be transported in to a wind farm landscape.

Loss of agricultural Land

- The Loss of Grade 1 arable land is not mentioned. This land will be lost to crop cultivation even when decommissioned, we cannot afford to lose anymore Grade 1 arable land in this agricultural area.

Cultural heritage

- The cumulative impact of wind turbines needs to be considered – with over 140 wind turbines being planned in this area there is a real and serious threat to destroying the historic landscape and archaeology which predates the Bronze Age.
- A recent letter from Cambridge University to Peterborough City Council demonstrated the need for extensive archaeological work being carried out before any development can begin in this area.
- Thorney Lodge is not mentioned, even although it is the nearest listed building.
- The dominant features of the landscape Thorney Abbey and Crowland Abbey, will no longer be dominant features as the turbines are three times higher than them. The scale of turbines will overpower the setting and views of the historic conservation area of Thorney.
- No attempt has been made to physically define the extent of the settings of the principal heritage assets (e.g. Crowland and Thorney Abbeys). Without more specific demonstration of the importance of setting to each identified asset, there is insufficient information to determine whether heritage assets will be adversely affected.
- The submitted ES lacks information regarding the balancing of impacts against benefits. There is demonstrable harm to setting and no evidence of overriding benefits that outweigh this.
- The City Council's Conservation Officer has restricted his comments only to those assets within Peterborough and not those outside the Authority boundary. Therefore due consideration has not been given to all heritage assets.

Noise

- Some of the supporting documents are deliberately misleading. Specifically noise reports have been carried out at unrepresentative locations, for example noise monitors located in wooded areas so that noise from trees was included in the base levels – More representative testing should take place to make sure that the impact of all the turbines will not pose a real risk to health in the area.
- The noise associated with such developments can have a detrimental effect on wildlife and local residents.
- The noise in the vicinity of our property would appear to be at the edge of exceed the upper amenity hours noise criterion. We are clearly unhappy about this and fear that this will have a significant impact on our home.
- The noise level is also going to amplify vastly whilst the construction of these turbines takes place.
- The UK Noise Association recommends that wind turbines are not sited within 1 mile (1.6 km) of any residence. I would like to ask why this recommendation from a reputable source seems to have been disregarded with such ease.
- According to the documents presented by the company proposing these turbine the decibels level is going to increase from 32 decibels to 40 decibels. This is a massive increase of 25% which I find unacceptable as any increase is affecting the local resident population.
- Concern about proposed noise levels. A newspaper article detailed a couple who lived 1,050m away from a wind farm in Deeping St Nicholas, had to move out of their property as they found the noise from the wind farm unbearable. My property is between 600-700m away from the proposed site, so I am very concerned. It would be negligent of the LPA to ignore this in new applications.
- Company is proposing to run these turbines on the maximum level of noise permitted, when it is possible to have turbines that produce half that level of noise.
- Noise has been likened to a washing machine running in the background.

- In Scotland wind turbines are not allowed to be built within a mile of any human habitation
- No assessment of amplitude modulation noise (AM) has been included, this is the swish/thump wind turbine noise. This affects health and sleep of nearby residents, see Dr Chris Hannings report. Inspectors in other wind farm cases have imposed conditions in respect of AM noise.
- Research concludes that AM noise is a real problem and current measurement is not adequate for protecting residents.
- Noise from AM has a greater effect on horses.
- The base line noise levels were taken from only two points 1. French Farm, a working farm and 2. Downwind of a densely wooded area at Spinney Lodge. Both these locations are noisier than base line levels at surrounding residential properties, as these houses are not in the middle of a wooded area or are working farms. The ETSU-R-97 document states that noise from the wind farm should be limited to 5dB(A) above background for both day and night time remembering that the background level for each period may be different. Therefore if the base line noise levels are not correct for the existing residential properties the noise impacts will be greater than the data suggests, and contrary to this ETSU document.
- Noise tests were carried out in November 2011, a noisy time of year. Had the tests been carried out at my property I am sure baseline figures would have been lower, and also at a time of year without autumn winds and rainfall.
- Testing sites and time of year have skewed the data to be within limits.
- Tests should be carried out at other properties where there is no barrier and at other times of year.
- Noise will affect my horses who graze and use the local roads to ride out. Noise and shadows will cause the horses to panic.
- The noise predictions say they will meet the Upper Amenity Hours Noise Criterion suggested by ETSU-R-97 surely they should be meeting the Lower Amenity Hours Noise Criterion.
- Information says that cumulative noise may exceed in some wind directions on some properties the upper amenity hours noise criterion.
- Prevailing wind is westerly therefore enhancing noise for the majority of the time due to the wind carrying it in our direction.
- We are in such a tranquil location any additional will adversely affect all the local residents.
- During construction noise levels will also increase.
- The cumulative noise from the turbines and Battlefield Live will mean we have to stay indoors.
- Noise during piling could rise to 205dB.
- Sound carries much further in the open fen landscape that it does in areas with more trees and a rolling landscape.

Highways

- The proposal will interfere with the amenity of the public footpath along Dowsdale Bank.
- The public footpath which runs along the edge of the field where the turbines are to be constructed will also be affected, preventing people from enjoying the beautiful countryside and the rural area for which the public footpath was originally intended.
- The transport plans by the developer have a proposed route traversing a Grade II listed narrow bridge along French Drove
- The cumulative impact damage to road already unsuitable for heavy vehicles would make these roads dangerous to other road users.
- Developers have estimated 96 HGV movements per day at peak times as well as possible 40 car movements which is an increase of 816 journeys along the rural roads a week
- Developer states "moderate adverse residual effects in drive delay, pedestrian amenity, fear and intimidation" are likely which is unacceptable for local residents who drive, walk and cycle along these quiet routes.
- The transportation route has been changed during the course of the planning application process – we find this unacceptable particularly as our road which is a single track road will be blocked/shut for significant period of time and neighbour have not had time to comment on this change.
- Falls Drove is unsuitable for construction traffic, it is too narrow with no passing places and with dykes on each side.

- There is a weak bridge [on Falls Drove] which is crumbling into the drain.
- The other bridge I understand the parapets will have to be removed.
- These long vehicles swing out at the back so how can they manage the bends without damage to trees and telegraph poles.
- Roads not safe for two-way traffic if there are large vehicles and Falls Drove in particular is too narrow.
- I understand that this will be the route for all construction traffic and the cement lorries travel in convoy. They say the road will be closed sometimes. Does this mean I will not be allowed free access to my house?
- The road needs a weight limit as it is not up to the amount of heavy traffic it already gets let alone giving permission for more.
- Signs indicate many of the roads are not suitable for HGVs but they are ignored because they are not policed.
- Large volume of heavy construction traffic will cause damage. Will this be adequately repaired?
- Exact route for the grid connection should be published. Which roads are going to be closed and for how long while the cable is laid?
- Components for [originally approved] 50m turbines could have been moved by road but the local road system is not suitable for loads of the dimensions required for these enormous turbines.
- Impact on public footpath along Dowsdale Bank.
- Turbines will be a danger to road users due to their eye-catching nature. Distraction will lead to more accidents.
- The traffic count data used to assess the potential impact within Chapter 10 of the ES is inappropriate as the majority of construction traffic will be on the road during normal working hours. The data used is distorted and makes ridiculous assumptions, therefore it is not a true or fair reflection of the likely changes.
- The average vehicle rates used from 2010 do not take in to account the recent increase in vehicles using Falls Drove and French Drove and are therefore not an accurate indicator.
- The ES states that the exact haulage routes will be determined according to the source of construction plant and materials. This information is surely an important factor in assessing the proposal?
- The assessment of impact in relation to minor roads in the vicinity of the site is opinion only and not one held by many local residents.
- The impact on minor roads in the locality will be significant.
- A visual route inspection has only been carried out and no assessment of embankment stability provided.
- How can the Developer be certain that no other wind farm developments will be under construction at the same time? The cumulative impacts if other neighbouring developments at Nutsgrove, Wrydecroft, Gores Farm and Morris Fen would be phenomenal.
- The required road widening and removal of street furniture will take place in a number of locations and be in situ for a considerable period of time adding to the danger.
- It would be useful if the structural stability geotechnical assessment carried out on French Drove was made available to the public.
- The submitted Transport Assessment confirms that a test drive with a 39m blade trailer is recommended. As this has not been carried out, surely this should be done before the weather becomes an issue?

Renewable energy

- There is no consideration for alternative energy such as solar power or bio-mass which would not have the same impact upon the environment and landscape.
- Turbines are relatively ineffective
- Less carbon efficient than other forms of energy
- Wind turbines generate very little power and have little or no effect on climate change
- If the original 50m wind turbines were vital why have they not been built in 20 years?
- To apply for two turbines then a further 4 incrementally is a blatant attempt to extend the site by stealth

- Look at McCains to notice the lack of times when they are actually rotating
- Policy statements do not include recent statements by Government which switch the emphasis from a need for on-shore renewable energy in favour of much greater consideration of the views and opinions of local residents. Therefore the Environmental Statement is out of date

Cumulative impact

- Fear that if this application is successful there will be further applications for additional turbines on this French Farm site.
- The cumulative effect of other developments has not been considered by this application: Nutsgrove wind farm, Wrydecroft wind farm, Gores farm wind farm, Willow Hall wind farm, Morris Fen solar park, farms of Newborough solar park, America Farm solar farm, Hundreds Farm, and Poultry farm. There are 114 operational or under construction wind turbines within 25km. There has been no evidence to back up the assumption that there would be no cumulative impact.
- This and similar applications are destroying the natural environment of the low lying fenlands
- In this flat landscape, other wind farms a considerable distance away are still visible. Therefore the cumulative impact of wind farms in this area is key, and there is a very high magnitude of change.
- Currently 42 wind turbines approved and/or developed within a 5km radius of Thorney, this should represent saturation level.
- Over 140 wind turbines being planned in this area, threat to destroying the historic landscape
- Can clearly see the McCains turbines [from B1040 at Nene Terrace] to have more turbines would spoil the views of the open countryside even more.
- East side of Peterborough is being turned into a wasteland with little sympathy for wildlife and agricultural land being taken away from growing crops.

Drainage and Flood Risk

- The site is located in Flood Zone 3. The Environment Agency say the proposal is appropriate provided it meets the Exception Test. There is not enough evidence to demonstrate that the Exception Test has been met.
- Natural drainage could be affected by tons of concrete being pumped into the ground.

Aviation safety

- Risk to aircraft from turbulence from wind turbines
- Concerned that the MoD are not a consideration – in the past month we have seen several aircraft that are well below the Minimum Separation Distance (250ft) over the area.
- Danger of aircraft collisions will increase as number of turbines increases.
- Hot air balloons also take off from nearby fields and have been known to land locally.

Accuracy of the Environmental Statement

- The Environmental Statement submitted is full of errors, omissions and incomplete information. The transport chapter 10 has had to be resubmitted because of errors. The turbines nearby approved at appeal had the construction hours restricted to 07:30 to 19:00 Mondays to Fridays, this proposal proposed 07:00 to 19:00 why are there increased hours for this site?
- Given the number of errors identified, how can we have confidence in the rest of the information?
- Chapter 4 of the ES is lacking in a number of respects: the zone of visual influence should be identified for each individual wind farm; and the cumulative impact assessment should consider 'journey scenarios'.
- The Cultural Heritage chapter of the ES fails to take in to account two significant pieces of guidance – English Heritage: Wind Energy and the Historic Environment and English Heritage: The Setting of Heritage Assets.

Public Consultation

- Lack of consultation. The consultation document states all houses within 1km of site got a leaflet. I live within this zone and never got a leaflet.

- Power company made a show of consulting with local people but do not accept it when local people say no.

Health and safety

- The applicant has failed to assess the risks to the public from blade failure, turbine collapse, ice throw, fire and lightning.
- There is a body of evidence that suggests that epilepsy sufferer may be at risk of a seizure if light flickers at a frequency of more than three times per second. Whilst this is a higher speed than most turbines rotate at, there is a view that where turbines are aligned in a way that their blades overlap, this could occur.

Other matters

- We believe it is appropriate for a development that has such a potential detrimental effect on residents in Lincolnshire to be considered in conjunction with the Lincolnshire planning authority.
- Would not have chosen to live here with wind turbines like the ones proposed nearby
- Company has offered mitigation, so there is some admission of negative impact, but this will go to the village of Thorney, not those of us who will be more affected but live on the edge of the parish.
- I feel that the site has been chosen due to the minimal number of dwellings in the area therefore complaint from local residents could not be high, however we are residents who choose to live in a quiet rural area and should have a right to a certain quality of life
- Proportion of local community objecting must be very high - what figure is high enough to stop this?
- Government ministers have recently said we should only have wind turbines where local communities are happy and local communities should be given a greater say in where they are built. As a member of the local community I hope my opinions will be taken into account
- What assurance do we have that the turbines will be removed when decommissioned? What will happen to the huge concrete foundations?
- Wind farms should be off-shore.
- Wind turbines should not be in places of natural beauty where people have chosen to live.
- Wind power is not essential to future energy guarantees.
- More local people are against these than are in favour; Eric Pickles said that the need for renewable energy does not automatically override local concerns so they should be refused planning permission.
- Necessary policy preliminaries were not followed in respect of the National Renewable Energy Plan (NREAP).
- Sourcing of energy from wind is compromising the UK's ability to have a reliable consistent supply of electricity as there has been no public participation in the development of NREAP
- Parish Council has voted against this proposal. PCC should listen to the voice of the local community.
- Majority of local people do not agree with the imposition of these massive wind turbines.
- Lots of horse owners in the area, concerned about the impact/danger of turbines when hacking out.
- Horses will not ride quietly past these moving monsters, we will have to avoid all areas near any development.
- Prince Charles has recently come out against wind turbines.
- It is always the same people who are at the receiving end of the grot, how would Mr Cereste like some of these turbines next to his house?
- No suggestions as to how local residences are going to be monitored and no structural engineers reports as to how this will affect the local buildings.
- Our property is regarded as a building with archaeological interest how is this going to be safeguarded for future community interest?
- The United Nations Economic Commissions Europe Convention recently called in to question the legal validity of further planning consents for wind farm developments based on current policy.
- Whilst two wind turbines have been granted planning permission on the site at appeal, this

does not set a principle that further development is acceptable or desirable. There has been a material change in planning circumstances following this decision and as such, little weight should be given to it.

- The applicant has not taken into account the new guidance published by the Government in respect of renewable energy. This new guidance fundamentally appears to change the emphasis and weight given to environmental impact and public opinion. The applicant should be required to show that the scheme has been reassessed in light of this.
- The submitted Design and Access Statement proposed micro-siting of up to 40 metres for the turbines however the red line of the application site boundary in respect of T1 does not allow for this.

Non-material planning considerations

The following objections were received which do not relate to material planning considerations and therefore cannot be considered as part of the determination of this planning application: the need for wind energy; the efficiency of wind turbines; shale gas reserves; other fossil fuel reserves; questioning global warming; budgeting; insurance; population increase; capitalism; additional costs on energy bills; differing sea levels in ancient times; repayment of capital costs of turbines; money the developer gives to good causes; references to Planning Policy Statement 7; devaluation of property prices/compensation for loss of property value; the profit to be made by the Developer.

In addition, 37 registrations of support were received, comprising a petition of 36 signatories and 1 individual letter. The comments submitted are as follows:

- The site seems well chosen, being away from centres of population.
- The concentration of wind turbines avoids having numbers of wind farms across the countryside. With the wind turbines grouped, it allows spaces between the wind farms.
- The grouping of the turbines reduces its angular spread from many directions, reducing the visual intrusion for dwellings nearby which is already small due to the large landscape.

Round 2 responses

6 further objections were received from members of the public during this consultation period, all of whom had previously written in. The further comments made were as follows:

- As a resident I was not consulted about making the area the 'Environment Capital of Europe'.
- No regard has been given to rural communities that are being exploited. Objection numbers are small because of a small population and therefore we are vulnerable.
- Not only do we have to pay Council Tax but now we will individually pay for this initiative.
- Request compensation.
- How can the planning process be fair when Peterborough City Council have a conflict of interest, with plans to erect turbines of their own?
- Feel completely let down and exploited.
- Heavy birds (e.g. swans and geese) may be struck, causing a hazard to traffic and human occupants by dead birds and pieces of damaged blade falling. Also implies large costs for damage to turbines and local infrastructure, with crack inspections needed. This would result in a decrease of operating life and profit. Will blades be taken off site or spares stored on site?
- The Further Environmental Information Statement (October 2013) does not address the inadequacies set out in the report produced by Dr Timothy Reed.
- If wintering bird surveys were not undertaken at Morris Fen, how can the cumulative assessment and conclusions drawn be accurate/sound?
- The development clearly struggles to meet the upper ETSU-R-97 limit, which suggests they are trying to squeeze on too many turbines.
- It is unusual to see wind turbine noise predicted according to wind directions.
- The request for additional information regarding the percentage of time that noise levels are exceeded is also worrying, as ETSU is a pass or fail standard.

In addition, two further registrations of support were received on the following grounds:

- Green power is essential to save the fens from inundation as sea levels rise.
- We all need alternative power sources.

Round 3 responses

11 additional objections have been received from members of the public, 9 of whom had previously written in. The following additional objections have been raised:

- The recommended distance that wind turbines should be erected from homes by the European Human Rights is 2.01km or 1.25 miles, whilst Dowsdale will be under 1km away.
- Dowsdale has a high water table and vibrations from these turbines must travel more in wet land and damp air conditions which could seriously affect properties.
- The Spinney at Dowsdale is mostly formed by Ash trees, some of which are showing signs of 'die back'. Many have been damaged by recent winds or deliberately damaged, leaving large gaps and will not hide the turbines.
- Loss of beautiful sunsets from interruption by wind turbines.
- Feel that we are being bullied in to submission.

165 registrations of support have been received comprising a petition of 90 signatories; 71 standardised letters (a copy of which can be found at Appendix 2); and 1 individual letter. The further comments include:

- The proposal could produce enough annual electricity for 6,000 households which would cover Thorney, Crowland and Newborough.

5 Assessment of the planning issues

The main considerations are:

- Community involvement/consultation
- Landscape character and visual impact
- Cultural Heritage
- Non-avian ecology
- Ornithology
- Water environment and geology
- Noise
- Transport and traffic
- Shadow flicker
- Aviation safety
- Health and safety
- Telecommunications and television reception

a) Introduction

- 5.1 The proposed development has been accompanied by an Environmental Statement (ES) as the scheme falls within the thresholds of Schedule Two, as set out in the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended). In 2011, the Developer submitted a Scoping Opinion Request to the Local Planning Authority and it is considered that the submitted ES accords with the Scoping Opinion issued.
- 5.2 The ES must be based upon baseline conditions at the application site, and this forms the basis of all assessment undertaken. In this instance, the baseline takes into account the two wind turbines which have been granted planning permission on the site. The Developer has lawfully implemented this planning permission through the construction of the access track (as well as complying with all pre-commencement conditions). Whilst the turbines themselves are not physically erected or operational, the baseline is sound and represents an acceptable basis for the assessment undertaken.

5.3 In terms of the assessment of likely significant environmental impacts, each material consideration has been assessed on its own criteria of magnitude and significance. It is therefore not possible for Officers to detail a summary of this. However, each section has been concluded with an assessment as to whether the impacts resulting from the development are significant in EIA terms. Significance is determined having regard to: the extent of the impact (geographical area and size of affected population); the transfrontier nature of the impact (whether it crosses other considerations); the magnitude and complexity of the impact; its probability; and its duration, frequency and reversibility.

b) Community Involvement/Consultation

5.4 The applicant has undertaken a pre-application public consultation exercise incorporating a variety of techniques including public exhibitions/drop in sessions, a dedicated proposal website, press releases, letters and email responses, council meetings open to the public and meetings with stakeholders and local groups. Events were advertised through the local media and direct mailings. Full details of pre-application consultation have been provided in a statement of community involvement which has been submitted in support of the application. The details include a chronology of the events held and letters issued, including responses received.

5.5 A number of representations received during consultation on the current planning application have referred to the pre-application community consultation undertaken by the applicant and have raised concerns regarding shortcomings in respect of insufficient letters sent to locally affected properties. This is noted however the review of exhibitions held by the applicant demonstrates good attendance and it is considered that the pre-application consultation undertaken by the Applicant was sufficient to accord with the recently adopted guidance issued by the Secretary of State.

5.6 The Local Planning Authority (LPA), as part of its own consultation on the planning application, held three public exhibitions: two at Bedford Hall, Thorney on Tuesday 23rd July and Tuesday 20th August; and one at the Parish Rooms, Crowland on Thursday 18th July. The application material was made available for public viewing at these exhibitions and the Planning Officers in attendance provided help with any queries raised. Where it was not possible to respond to queries on the day, Planning Officers have endeavoured to find answers and respond to the queries raised at a later date.

5.7 As part of the planning application process, the Local Planning Authority has undertaken a comprehensive consultation exercise sending out 419 notification letters to properties within a 3 kilometre radius of the site. This area covers properties outside of Peterborough City Council's authority boundary and the Planning Department was provided property addresses by South Holland District Council. Copies of the application documents have been made available at the Central Library and Bayard Place and full copies of the application were sent out to the relevant Parish Councils. In addition, site notices were put up around the site and in neighbouring settlements, the application was listed in the local press, and full details of the application were and continue to be available on the City Council's website. On the basis of the above, the Local Planning Authority has fully complied with and exceeded its statutory obligation to carry out full consultation.

c) Renewable energy contribution

5.8 The Annual Energy Statement 2012 advises that approximately 87% of the UK's energy needs are currently met by oil, gas and coal (fossil fuels) whilst the UK's reserves of oil and gas are declining. As such, the UK is a net importer of fuel. As the UK becomes increasingly dependent on imported fuels, the Statement highlights the need for transition to a low carbon economy. According to research the UK's energy demand of circa 65GW will start outstripping the supply in 2015 creating an 'energy gap'. A key part of the

Government's strategy is therefore to reduce carbon dioxide emissions, and in part move away from the use of fossil fuels to a higher reliance on renewable and low carbon energy.

- 5.9 In addition, the UK is committed to reducing greenhouse gas emissions by 80% from 1990 levels by 2050, and at least 34% by 2020 as set out in the Climate Change Act (2008).
- 5.10 As detailed above, the proposal seeks an increase in the number of already consented and implemented wind turbines on the site. The proposed turbines are anticipated to provide an installed capacity of up to 2MW per turbine. As such, the overall capacity of the wind farm (both consented and proposed) would be up to 12MW (the already consented/implemented scheme was for up to 4MW).
- 5.11 The development would play a significant role in both contributing to the UK renewable energy targets and reducing carbon emissions. On this basis, the proposal is therefore in accordance with paragraph 98 of the National Planning Policy Framework (2012), the Overarching National Policy Statement for Energy (EN-1) (2011) and Policies CS11 and CS10 of the Peterborough Core Strategy DPD (2011).

d) Landscape Character and Visual Impact

Methodology

- 5.12 Chapter 4 of the submitted Environmental Statement (ES) details the likely significant effects of the proposed development upon the landscape and visual receptors within an identified study area of 25km. Established guidance generally sets a radius for study areas of 35km however this is identified on a case-by-case basis and accordingly at Scoping Opinion stage, the LPA agreed a lesser study area owing to the intrinsic flat nature of the Fenland landscape within which the proposal would be sited.
- 5.13 The assessment undertaken within the ES follows accepted best practice set out in a number of documents (as referred to in Section 3 above). In addition, it takes into account supplementary planning guidance adopted by Fenland District Council, South Holland District Council and Kings Lynn and West Norfolk Borough Council. Whilst these documents do not form part of the adopted Local Plan for Peterborough, they are of relevance given the landscape context of the Fens extends across these authority areas.
- 5.14 The applicant has undertaken field surveys, computer modelling, zones of theoretical visibility and visualisations comprising wireframes and photomontages of 16 viewpoints. These viewpoints have previously been agreed by the LPA at Scoping Opinion stage. It is noted that some representations have raised concern regarding the accuracy of the assessment undertaken, in particular the photomontages generated (i.e. carefully positioned photographs with turbines shielded by vegetation, inaccuracies in height representation, and photographs taken during the summer when trees are in leaf). In addition, the ES has fully considered the cumulative impact of the proposed development with other consented and operational wind turbine developments within the 25km study area. Wind turbines of less than 50 metres to vertical blade tip height have only been considered within a 5km radius of the site. This distance was agreed as beyond this, the turbine are considered to have little impact in terms of landscape character or visual amenity. A list of all developments included within the cumulative assessment can be found at Appendix 3 of this report.
- 5.15 The City Council's Landscape Architect has reviewed the submitted ES and concluded that the methodology undertaken is robust and has accorded with established best practice. As such, it is considered that this chapter of the ES has adequately assessed the likely significant environmental impacts in relation to landscape character and visual impact.

Impact upon Landscape Character

- 5.16 The application site is located within the National Character Area 46: The Fens and the Regional landscape character type the Planned Silt Fen. The local landscape character description is the Peterborough Fens.
- 5.17 Some of the key characteristics of the Peterborough and wider Fen landscape are as follows: expansive, flat and low lying with a strong rectilinear pattern of straight roads and field boundaries. The Fen landscape is artificially created by the drainage of former marshland and often seen horizon to horizon beneath a large sky. The nearby settlements of Thorney and Crowland lie on slight raised islands within the flat landscape. Shelter belts of trees are interspersed in the landscape on field boundaries and surrounding some residences.
- 5.18 The landscape character areas within which the site is located (from national through to local level) are all considered by the applicant to have a low sensitivity to wind farm development whilst neighbouring character areas, such as Thorney Island are considered to have a medium sensitivity. This position is accepted and is further reinforced by the Fenland District Council Wind Turbine Development Policy Guidance (2009) which indicates that the Drained Fenland landscape has a low sensitivity to small-medium scale wind farms (6-11 turbines) and high capacity to accommodate such scale of development.
- 5.19 It is inevitable that the proposed turbines would have an impact upon the landscape character of the immediate locality, owing to their tall and industrial nature which is in contrast to the wide, flat, open, arable character of the Fens. However, a certain level of impact already results from the two consented and implemented turbines on the site and a view must be taken as to whether the additional turbines (either in their own right or in combination with other approved/planned turbines) will result in an unacceptable impact.
- 5.20 The additional turbines will extend the direct effects of the development across a wider area of arable farmland running from east to west. However, it is considered that this would not materially alter the character of the baseline situation which has already been found acceptable (2 wind turbines) nor would the development impact upon wider views of the surrounding landscape as the predominant landscape character of the area would be of open countryside rather than one which is significantly made up of the proposed turbines and other existing/planned turbines in the locality. The further the turbines would be visible from the site, the more they diminish against the flat character set beneath an expansive sky and accordingly, the lesser an impact they would have upon landscape character.
- 5.21 Accordingly, the proposed turbines will have a moderately harmful impact upon the character of the application site and its immediate surrounds (up to 1 kilometre from the site) however, owing to the scale of the local Fen landscape, the overall impact upon the character areas would be negligible.

Cumulative Impact upon Landscape Character

- 5.22 It is noted that there are a number of consented, operational and proposed wind farm developments within the 25km study area of the application proposal and that there is considerable public concern regarding the potential for such developments to entirely surround communities in the locality.
- 5.23 As detailed above, the cumulative impact has considered those wind turbine developments either at planning application/appeal stage, consented, in construction or operational within the 25km study area. Many of the objections from local residents have expressed concern regarding the number of turbines in the locality, with varying turbine numbers discussed. Within 10km of the application site, there are 17 wind turbines either consented or operational. Two of these turbines are within the application site, whilst the largest

concentration is formed by the consented Nutsgrove/Wrydecroft wind farms. In addition, a further 8 wind turbines are currently subject to consideration at planning application stage at Gores Farm (7.1km to the South).

- 5.24 The Scottish Natural Heritage (SNH) document 'Assessing the Cumulative Impact of Onshore Wind Energy Developments' (2012) identifies that cumulative effects on landscape character arise when two or more developments introduce new features into the landscape and accordingly, can change the landscape character to such an extent that they create a different landscape character type. In addition, wind farms may also have a cumulative impact on the character of landscapes which are recognised to be of special value (recognised as being rare, unusual, highly distinctive or the best representative example of that area).
- 5.25 Turning first to the implications upon landscapes of special character, it is not considered that the landscape of the application site falls within this description. Whilst it is an example of the Fen landscape, it has not been designated as an Area of Outstanding Natural Beauty nor is it considered to be rare, or the best representative example of the Fens.
- 5.26 With regards to the creation of a new landscape character type, the application site is located approximately 4.9km from the consented Wrydecroft/Nutsgrove Farms and 7.1km from the proposed Gores Farm – the wind turbine developments in closest proximity. It is acknowledged that the number of turbines proposed (taking in to consideration French Farm and Gores Farm) would represent an increase from the current position whereby only those turbines at McCains Foods and Deeping St Nicholas are visible and Nutsgrove/Wrydecroft has been consented.
- 5.27 As detailed above, the most significant impact upon landscape character will occur within the immediate locality of the application site (up to 1 kilometre) and the magnitude of this impact would be moderate. Beyond this, owing to the natural interspersed tree belts, there is limited opportunity for combined views of the proposed turbines with other wind turbines given the separation distances involved and the interspersed development/shelter belts which shield views within the locality.
- 5.28 It must be acknowledged that the surrounding wind farm developments result in their own local areas of impact (as with the current proposal). However, it is considered that the application site is situated a sufficient distance from these developments so as to not represent saturation of the landscape character i.e. a point whereby the landscape character completely changes to one dominated by wind turbines. It is accepted that the turbines, within their immediate setting would have an impact upon the character of the landscape (as detailed above) and that owing to the number of developments in the locality, there would be a change to the local landscape of several areas to the north of Thorney. However, between these local areas of impact, the intrinsic character of the Fens would be retained, with large areas of the flat, open countryside unimpeded by turbines.
- 5.29 On this basis, it is considered that the proposed development, in conjunction with other wind farm developments in the locality, would result in an impact upon, not a complete change of, the landscape character of the Fens.

Visual Impact

- 5.30 Visual impacts resulting from wind farm development can be wide ranging and have potential for significant amenity impact upon: residential properties, recreational users, rights of way, workers, travellers and visitors. The submitted assessment contained within the ES has considered the impact upon all groups.

Zone of Theoretical Visibility

- 5.31 In terms of theoretical visibility, the submitted Zone of Theoretical Visibility indicates that, owing to the flat open landscape of the area, the entirety of the study area has theoretical visibility of at least one wind farm (taking account of the application proposal and those which are at planning application stage, consented or operational). However, it must be noted that this is *theoretical* only [my emphasis] and does not paint a true representation of the actual visibility owing to which is affected by landscape or manmade features which can block views.

Visual impact on residential properties

- 5.32 The proposal has been assessed in terms of those residential properties which immediately surround the application site – all properties within a 1km radius and a number of others which lie just outside of this radius but which have views towards the proposal (up to a distance of 1.3km). In total, 38 residential properties have been considered – a list of these properties is provided at Appendix 4 with the locations shown on plan form at Appendix 5. It should be noted that in most cases, the proposal will be seen in the context of the other consented and implemented turbines at the site and the impact should be considered against this, not a landscape containing no turbines.
- 5.33 The recently published 'Planning practice guidance for renewable and low carbon energy' highlights that '*protecting local amenity is an important consideration which should be given proper weight in planning decisions*'. However it goes on to identify that the imposition of inflexible buffer zones (e.g. set distances from residential dwellings) is inappropriate and decisions must be taken based upon local context, on a case-by-basis. The key question in considering the proposal is whether it would have such a significantly detrimental effect on the locality more generally and on amenities of neighbouring residents that ought to, in the public interest, be protected. In relation to visual amenity, traditionally there is a principle that there is 'no right to a view' i.e. that it is not possible to protect the views of occupants that would be adversely affected by development. However, turbines can (owing to number, size and proximity) present such an overwhelming presence to main views from properties, so as to render them unattractive and thus unsatisfactory places in which to live thereby resulting in a coincidence of public and private interests. This position has recently been set out in the Appeal decision relating to Treading Farm on the South Holland/Fenland border (Appeal Reference Nos: APP/D0515/A/12/2181777 and APP/A2525/A/12/2184954).
- 5.34 There are three main groups of dwellings that would be affected: to the south of the proposal along French Drove; to the north-east in Dowsdale; and to the north-west. At present, many of these properties enjoy views (albeit some glimpsed through existing vegetation) of views across open arable fields. However, owing to the consented/implemented turbines on the site, a certain degree of harm already results. The following assessment does not detail each and every individual property and it should not be taken that those not mentioned have not been assessed. Officers have instead chosen selected dwellings which are representative of positions, thereby allowing for consideration of neighbouring properties.
- 5.35 To the south of the site along French Drove, French Farm Bungalow would be sited in closest proximity to the proposed and consented/implemented turbines at a distance of only 443 metres. However, there is a significant level of screening vegetation to the north and accordingly, little opportunity for views. The greatest impact in this locality would be seen at Third House Farm/Cottage, sited only 601 metres from the nearest proposed turbine (this is closest to the proposed turbines and whilst other dwellings along French Drove would have slightly different views, this property has been chosen as being representative of the worst-case-scenario along French Drove). Again, there are existing trees and vegetation to the north of these dwellings which would partially obscure views of the proposed turbines however they would be readily visible from upper storey windows. The proposal would

introduce turbines into a greater portion of view from the dwelling whereas the consented turbines would only be visible to the north-east. Accordingly, it is acknowledged that the turbines would be a conspicuous and dominant feature when viewed from the upper windows to the rear of these dwellings. However, in light of the existing screening vegetation it is not considered that the turbines would prevent the enjoyment of main ground floor living or outside areas of these dwellings, nor would the effect render the properties wholly unattractive.

- 5.36 To the north-east lies a cluster of 9 dwellings within Dowsdale and 4 further dwellings beyond. Within the submitted assessment, the two most affected properties within this cluster would be Red Roofs and Spinney Lodge, sited 861 metres and 788 metres from the nearest turbine respectively. The impact upon these properties has been considered as moderate to substantial, thereby representing the greatest magnitude of impact. In terms of Red Roofs, there would be no direct views from the north-east facing elevation however opportunity for direct-line views would exist to the south-western facing elevation. This view would be partially obscured by existing vegetation however not wholly. With regards to Spinney Lodge, owing to existing screening there is no potential for direct views of the turbines from the ground floor primary habitable rooms of the dwelling of the rear garden area. However, views from first floor windows to the front of the dwelling would be possible directly out towards the application site. Whilst views will again be partially screened by existing vegetation/trees, this would not wholly obscure the turbines. It is acknowledged that, as a result of the views possible to the proposed turbines, that some level of harm will result to the outlook of occupants and, that to occupants, this may impact upon the enjoyment of their dwellings. However, it is not considered that the level of harm that would result is so substantial as to render the properties wholly unattractive and cause public harm.
- 5.37 With regards to properties to the south-west, these are located a further distance to the turbines than those discussed above. Blue Bell Cottage would be sited 1228 metres from the nearest turbine and at present, there are clear and unobstructed views across the arable fields of the application site particularly from first floor windows. The baseline conditions are such that the two consented/implemented turbines are partially visible at an oblique angle from the back of the dwelling. The proposal would result in turbines which extend in to this existing uninterrupted view, visible from the back of the property and its gardens. Whilst this undoubtedly would be to the detriment of the outlook for occupants, given the level of separation to the turbines, they would not represent an unacceptably dominant or overpowering element.
- 5.38 Finally, in terms of properties to the north-west, the property most significantly affected would be Hollies Farm (located 1273 metres from the nearest turbine). At present, views towards the application site from the gardens and ground level are filtered by deciduous hedgerows which form the southern boundary, however the two consented/implemented turbines would be visible on the skyline from upper floor windows and the garden to the eastern elevation. The proposal would extend development in to more of the field of vision from these locations, only partially filtered by the hedgerows. As such, a moderate impact will result to occupants' visual amenity. However, by virtue of the separation distance that would exist, it is not considered that the proposal would appear unduly obtrusive or dominant to occupants' views from the property and as such, it would not unacceptably harm the enjoyment of the dwelling for residents.
- 5.39 In summary, it is accepted that those properties located within the immediate locale of the application site (up to 2km in distance) which at present, have views of an uninterrupted arable landscape, will experience a significant impact to their views. Most properties will already experience some impact by virtue of the consented/implemented turbines on the site however the proposal will extend the impact owing to the further spread of turbines proposed. Where existing screening by way of trees and shrubbery exists, views to the turbines from some dwellings will be partially obscured albeit not to such a degree that

views would not be possible at all. Notwithstanding this, the turbines would be readily visible to some occupants. However, Officers do not consider that the proposal would result in such significant harm as to render properties unsuitable for occupation, nor would the harm that results not be outweighed by the benefit created.

Visual impact on viewpoints

- 5.40 As detailed above, the submitted ES has considered the visual impact of the proposal upon 16 viewpoints located within the area surrounding the application site. Of these viewpoints, 3 are assessed as being subject to a substantial, long-term albeit reversible effect, i.e. upon decommissioning of the turbines, (French Farm (VP1), Dowsdale Bank (VP3), Fall's Bridge (VP4)) and two are assessed as being subject to a moderate, long-term effect (Portsand and Grange Farms (VP2), Peartree Cottages (VP7)).
- 5.41 Turning first to those views which will be subject to substantial change, these are the closest viewpoints to the application site. These VPs are representative of the impacts to residential amenity as detailed in the preceding section. French Farm is positioned in closest proximity to the nearest proposed turbine (T4 at 0.7km). From here, all proposed turbines will be visible in views to the north and the proposal will extend the impact of the turbines upon views to occupying approximately 80° of the view available clockwise from north to north-east. The proposal will not introduce new features in to the view, as the consented/implemented turbines are also visible however the additional turbines will increase the presence of vertical features. It is accepted that the additional turbines will create a focus within the viewpoint however the existing views of wide, arable landscape and open skies will still remain.
- 5.42 Dowsdale Bank, to the north-east of the application site will be subject to a similar impact. At present, the view will be subject to some impact from the consented/implemented turbines and the proposal will extend the view of vertical features in to more of the view towards the south-west. Whilst the turbines would be spread across almost the entirety of the view from this location, with the exception of the two consented/implemented turbines which overlap, the application proposal is spread widely. Views beyond to the flat landscape, tree belts and open skies will be maintained albeit interspersed with the turbines acting as focal points to the front of view.
- 5.43 With regards to Fall's Bridge, which lies to the west of the application site, the existing consented/implemented turbines will be clearly visible, forming large vertical features within the flat, horizontal view. All turbines proposed will be visible from this location, with the fourth turbine overlapping the consented scheme and turbines 2 and 3 clustered in close proximity to the other consented turbine. The proposal will result in a greater proportion of the view impacted by wind turbines however large expanses are still maintained to permit views beyond to the horizon.
- 5.44 Turning to those viewpoints that will be subject to a moderate effect, Portsand and Grange Farms will have clear and uninterrupted views of the proposed and consented/implemented turbines. However, the turbines are clustered centrally within the view and therefore only result in impact to a limited degree of the horizontal field.
- 5.45 In terms of wider views, these are representative of the wider visual impact. Peartree Cottages is located to the north-east of the application site, some 2.7km away from the nearest turbine. At present, the view to the south-west across the application site is uninterrupted albeit the consented/implemented turbines will be readily visible. The application proposal will spread this impact across a wider area however the turbines will not dominate the entirety of the view. They will appear focal points centrally within the view however their scale is less dominant when compared to the existing tree belts within the view.

- 5.46 The other wider views are impacted to a lesser degree than that above, classified as either slight or negligible. From these wider views, the turbines are still visible albeit views are partially obscured by existing landscape features and manmade structures. Further, their scale is diminished against the horizon, with vast expanses of open skies dominating the view as opposed to the turbines.
- 5.47 The above viewpoints are those in closest proximity to the application site and as such, will be subject to the greatest impact. Whilst undoubtedly the turbines will, in the opinion of some, appear unduly dominant features within the views of the surrounding landscape, and without question will appear focal points, it is considered that the turbine layout has been designed so as to minimise the proportion of views affected by the development.

Visual impact on settlements

- 5.48 Owing to the topography of the landscape, with vast flat swathes of arable fields interspersed by hedgerow and tree belts, the views from surrounding settlements (Crowland, Thorney, Shepeau Stow and Gedney Hill) will be partially restricted and within each individual settlement, the views will differ. It is noted that the sensitivity of neighbouring settlement is considered to be high however, as detailed within the submitted ES and agreed by the City Council's Landscape Officer, none will suffer any significant level of effect.

Visual impact on routes

- 5.49 Those routes immediately surrounding the application site (i.e. within 1km) will be subject to the greatest impact. However, it must be remembered that there are already two consented/implemented turbines within the site which impact upon views from these routes. The proposal would extend the impact upon a greater area however, this would not significantly impact upon a greater proportion of routes. When travelling along, the turbines would be visible, this is unavoidable, however the predominant views would still be of the vast openness of the fen landscape and accordingly, the impact would be less than significant in environmental impact terms.

Visual impact on recreation activity

- 5.50 Some concern has been expressed from local residents with regards to the impact of the proposed turbines upon the enjoyment of the locality by horse riders (including the turbines 'spooking' the horses). The impact upon recreation activities is a material consideration and requires careful consideration.
- 5.51 There are no designated public rights of way/bridleways within the application site however there are two public footpaths immediately to the north (running along the Old South Eau drainage ditch) and one to the east (known as Thorney 1 Footpath). The turbines will clearly be visible from these rights of way and will have some impact upon the visual amenity of these routes. However, the turbines would not dominate the entirety of either route and an adequate proportion of the routes will still benefit from open views out towards the Fen landscape without wind turbines.
- 5.52 With regards to the enjoyment of the locality by horse riders, the only impact would result to users of the highways immediately surrounding the turbines. Glimpsed views would be possible through the existing trees and screening along these routes and the turbines would introduce moving features within the landscape. However, it is considered that the turbines are set a sufficient distance away from the routes so as to not result in any undue effect by 'spooking' the horses. With regards to construction traffic, it is accepted that during the period of construction there would be an increase in heavy goods vehicles using the minor roads surrounding the site which may result in some conflict to horse riders. However (as detailed below), the construction processes are to be controlled by way of condition and will

only take place for a relatively short period of time. Therefore, it is not considered that any long-term impact will result to horse riders within the locality and any impact would be less than significant.

Conclusion

- 5.53 It is accepted that to some residential properties, the turbines would appear prominent features within the views currently enjoyed. Further, whilst the two consented/implemented turbines have some impact to these same views, the proposed wind farm extension would extend the area of impact. However, it is considered that the impact to neighbouring residential properties is not such that it would result in the dwellings becoming unsuitable for occupation. In addition, it is accepted that the proposed turbines, whilst visible from nearby routes and settlements, would not result in such s impact so as to represent significant environmental harm.
- 5.54 With regards to landscape character, it is accepted that the turbines would appear incongruous elements within the immediate landscape character of the site. However, given the vastness of the fens, dominated by a flat horizon interspersed with tree pockets, and an open sky, this landscape character area has sufficient capacity to accommodate the proposal without it representing a change. The turbines proposed would impact upon the landscape, not result in a new 'wind farm landscape'.
- 5.55 On this basis, it is considered that the proposal is in accordance with paragraph 109 of the National Planning Policy Framework (2012), the Planning Practice Guidance for Renewable and Low Carbon Energy (2013), Policies CS11 and CS20 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012).

e) Cultural Heritage

Methodology

- 5.56 The assessment requirements in respect of the submitted ES were agreed at Scoping Opinion stage by the Local Planning Authority, the City Council's Conservation Officer, Archaeology Services and English Heritage.
- 5.57 Assessment of all identified heritage assets e.g. Listed Buildings, Conservation Areas, Scheduled Monuments, has been undertaken within a 5km radius of the application site. In terms of this assessment, the following steps were undertaken to inform consideration of the likely significant environment effects:
1. Assessment of the heritage-significance of an asset
 2. Assessment of the contribution that setting makes to that heritage-significance
 3. Identification of the setting elements potentially at risk from the proposed development
 4. Assessment of the contribution that those setting elements have upon the heritage-significance contribution
 5. Assessment of the likely magnitude of effects upon that contribution
 6. Assessment of the EIA-significance of assessed effects
- 5.58 With regards to buried archaeological remains, initially the submitted ES was based upon a detailed desk-based analysis, with no pre-determination evaluation on site undertaken. Initially, objections were received from English Heritage (EH) and the City Council's Archaeology Services, as they did not consider that the DBA was a sufficient or robust enough tool from which to draw conclusions. They therefore requested pre-determination evaluation on site by means of trial trenching and auger bore holing, the results of which would either confirm or challenge the conclusions drawn. Discussions took place between EH, PCC Archaeology Services, the LPA and Developer to discuss a way forward in this respect. As a result of these discussions, it was accepted that only auger bore holing was

required pre-determination, based upon the historic geological context of the site and the results of the DBA. This evaluation was undertaken, in accordance with a scheme submitted to and approved by the EH and PCC Archaeology, and the results submitted within the Further Environmental Information Statement (December 2013) (FEIS2).

- 5.59 It is considered that the survey work undertaken in respect of all cultural heritage assets is sufficient to allow for robust assessment of all likely significant environmental effects in this respect.
- 5.60 Some objections from local residents have raised concern regarding the assessment undertaken by the City Council's Conservation Officer of the application proposal. They raise concern that his assessment has not considered the heritage assets outside of the PCC authority boundary. This is noted, however the LPA consulted both South Holland District Council, Lincolnshire County Council and neither raised objections. Further, the assessment undertaken by Officers has considered the impact on all heritage assets within the study area and as such, it is considered that this objection holds little weight.

Impact upon setting of heritage assets

- 5.61 Within 5km of the application site, there are eight Scheduled Monuments, seven higher grade Listed Buildings (Grade I and II*) and 5 lower grade Listed Buildings (Grade II). In addition, there are two identified Conservation Areas within this radius – Thorney (Peterborough City) and Crowland (South Holland District) – and nine non-designated heritage assets.
- 5.62 In assessing the impact upon heritage assets, it is necessary to refer to sections 16(2) and 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 which requires Local Planning Authorities to have special regard to the desirability of preserving a building or its setting, or any feature of special architectural or historic interest which it possesses. Section 72(1) of the same Act states that special attention should be paid to the desirability of preserving or enhancing the character and appearance of Conservation Areas.
- 5.63 The setting of heritage assets is perhaps best defined within the Glossary to the NPPF which states that setting refers to: 'The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.'

Grade I and II* Listed Buildings

- 5.64 The most sensitive asset within the immediate locality of the application site is Crowland Abbey which is located 4.5km to the north-west. This was at the time one of the Country's most important pilgrimage centres as the site of the hermitage and relics of the Anglo-Saxon saint St Guthlac. The Abbey lies partially ruined with the remains of the Benedictine abbey visible above ground on the edge of the settlement with its principal façade still visible upon the approach to Crowland. English Heritage considers that the setting of the Abbey is key to the significance of the asset, most notably views across the Fenland landscape when approaching Crowland from the north-west e.g. from Crowland Common and Deeping Fen which demonstrates the high status of the building within the locality.
- 5.65 In addition, the Grade I Listed Buildings of the Church of St Mary and St Botolph, Thorney Abbey and Abbey House are located approximately 4.5km to the south of the site. The church, originally built as the Abbey Church between 1085 and 1108 is deemed to be the only surviving structure from the Benedictine Monastery at Thorney. The church is noted for its western frontage with Norman Turrets and is highly prominent within the Thorney Conservation Area and surrounding countryside. The significance of these buildings is

enhanced by their setting, located on a prominent gravel 'island' overlooking the surrounding Fen landscape.

- 5.66 English Heritage (EH) considers that the proposed additional wind turbines would be clearly visible within the setting of both Crowland Abbey and St Mary and St Botolph's Church/Thorney Abbey. They also consider that the turbines would be conspicuous by virtue of their height, appearance and movement of the blades. They consider that the turbines would be visible in relatively close proximity to Crowland Abbey and particularly in views approaching from the north-west. EH considers that the introduction of further discordant modern elements within such important historic views would result in harm to the setting and significance of these heritage assets. It is their position that the turbines would compete with the heritage assets within the views and as such, in their opinion, diminish their prominence.
- 5.67 The opinion of EH is accepted and it is acknowledged that the turbines would be present within the setting of these heritage assets. The National Planning Policy Framework (2012) requires careful consideration be given to the impact of development proposals upon the significance of heritage assets and provides guidance in respect of substantial and less than substantial harm. English Heritage considers that the impact of the proposed turbines upon heritage assets (and their settings) is less than substantial. Officers consider that the turbines would not wholly degrade the setting of the highly graded and important buildings but would instead, be visible within their approaches.
- 5.68 With regards to Holy Trinity Bridge, this is an unusual three-way footbridge located within the heart of Crowland. It is screened in all directions by the built form of Crowland and as such, the turbines will have no material impact upon its setting.
- 5.69 In terms of The Manor House, a Grade II* Listed Building in Crowland, this is set within the existing built form of the settlement and therefore screened from the proposal. The heritage-significance is formed by its setting however this relates to the immediate environs of the building and as such, little if no impact will result from the proposal.

Scheduled Monuments

- 5.70 The Scheduled Monuments (SMs) of Crowland Abbey and Holy Trinity Bridge are discussed in the preceding section and it is not considered that the impact upon the SMs materially differs.
- 5.71 Within the locality of the site, the most prominent Scheduled Monument is Fleet, a settlement site near Lambert Drain comprising small enclosures connected by tracks, ring ditches representing the remains of earlier prehistoric burial mounds and the earthworks of a C17 farmstead. Excavation of this site has not been undertaken and there is no public access to the site itself, albeit a minor road runs to the south. It is considered that the SM has little presence within the wider landscape and accordingly, views do not make a significant contribution to the overall setting.
- 5.72 Similarly, the loose group of barrows to the south-west of the site, have been heavily damaged by intensive ploughing and the gravel crowns and ring ditches are no longer readily visible from ground level, particularly at times when the fields are under crop. With regards to Roman Drove, an enclosure and building platform at Chestnut Farm, the remains include upstanding earthworks, associated rectangular ditch enclosures and at least one building platform. However, it is noted that the surroundings of the SM have considerably changed over time and it is considered that there is little heritage contribution made by the visible environment.
- 5.73 In light of the consideration that the physical surroundings/environment of the assets make little contribution to the overall significance of the SMs, the position of the Applicant that the

proposal will result in a slight to negligible impact is accepted. This view has not been challenged by either English Heritage or the City Council's Archaeology Officer within their submitted comments.

Conservation Areas

- 5.74 Crowland Conservation Area (CA) lies approximately 4.5km to the north-west of the application site. The CA comprises a simple two-street 'crucifix' form and the majority of this is screened from the proposed development by modern development. The Abbey is considered to be the only tall prominent structure within the CA and beyond this, there are no inward views of any heritage significance to consider. The above assessment details the likely impact upon the Abbey and beyond this, it is not considered that the proposal will have any unacceptably significant impact upon the setting of the Crowland CA.
- 5.75 With regards to the Thorney Conservation Area, this lies approximately 5km to the south of the application site. The 'island' of Thorney lies on a gravel rise which permits views out across the open Fen landscape. The setting of this CA is relatively unspoilt with views of the Tank Yard (discussed below) and Thorney Abbey (discussed above) most prominent on the approach to the settlement. It is considered that, by virtue of the distance of the proposal to the village and the interspersed landscape features e.g. trees and shelter belts, shared views of the Conservation Area and turbines will be minimal and mostly involve glimpses of the turbine blades. Furthermore, these will be the only permitted views from the historic core of the CA. Accordingly, as agreed by the City Council's Conservation Officer, it is considered that the proposal will have only a slight negative impact upon the setting of the Thorney Conservation Area.

Grade II Listed Buildings

- 5.76 Within the 5km study area considered within the ES, there are four Grade II Listed Buildings (two located within Thorney, one to the south-west of the site and one within Shepeau Stow). The windmills located on Stow Lane and The Causeway, Thorney are located approximately 4km and 4.9km (respectively) from the proposed turbines and are tower mills dating from the late C18. The Applicant pertains that, owing to the traditional nature of such windmills, the proposed turbines have thematic congruence and as such, do not pose any unacceptable harm to their setting. This is noted however Officers disagree – the proposed turbines are not similar in scale, height or form and accordingly, fail to respect the traditional appearance of such mills. Notwithstanding this, the mills are not prominent features within the landscape of the area until viewed in relatively close proximity and as such, owing to the distance of the proposed turbines, little impact will result upon their setting.
- 5.77 The principal Tank Yard Building, now known as Bedford Hall, occupies a prominent position in views towards Thorney and acts as a focal point. The impact of the proposal upon this Listed Building is similar to that of the wider Thorney Conservation Area (detailed above).
- 5.78 It is noted that the assessment has not considered Lodge Farm, located 2.7km to the south-west of the nearest turbines. This was agreed at Scoping Stage by the City Council's Conservation Officer and, whilst it falls within the 5km radius of assessment, it is below the agreed assessment area for Grade II Listed Buildings. Notwithstanding this, there is no significant public view from Black Drove and the main frontage of the building looks towards the south-east (away from the development), with adequate screening so as to shield the turbines. Accordingly, it is accepted that the development has little effect upon the setting of this asset.

Non-designated assets

- 5.79 In accordance with the National Planning Policy Framework (2012), consideration must be given to those assets of heritage importance which are not designated i.e. Buildings of Local Importance. Those buildings within Thorney are subject to the same assessment as that of the Conservation Area (set out above). With regards to those within the open countryside, there are four of note that have been considered within the submitted ES: Canary Cottage, 'Paddy Kipps'; the Pill box on Bukehorn Road; and the former Wesleyan Methodist Chapel and Sunday School on Dowsdale Bank. For the reasons given below, only the former Chapel on Dowsdale Bank is considered.
- 5.80 The building is located approximately 700 metres to the north-east of the proposed turbines and dates from between 1897 and 1938. It is currently being renovated for conversion to a residential dwelling (planning permission granted prior to the determination of this application). The impact upon occupant visual amenity is discussed in Section (d) above however in terms of heritage setting, owing to the large tree block which screens the property from wider views, it is considered that this relates mainly to the immediate surroundings. As such, the proposal will have little impact upon the appreciation of the property and therefore, will not substantially impact its significance.

Heritage assets within the wider surroundings

- 5.81 The submitted ES has also considered those heritage assets within the wider surroundings of the application site i.e. between 5km and 10km in distance. These assets are not discussed within this report in detail as it is considered that, owing to the vast and flat topography of the area, the impact of the turbines on the contribution made by the settings of listed buildings to their heritage significance would be limited. This is a view taken by the Inspector in determining the appeal at Treading Farm which lies within the same character area.

Impact upon buried archaeology

- 5.82 As detailed above, at the request of EH and PCC Archaeology, the Developer has undertaken assessment of the site by way of auger bore holing. The boreholes were taken at the centre point of each turbine base and the four cardinal points surrounding (therefore 5 survey positions per turbine base). The fine detail of the results of this survey is not presented within this report however, it is accepted that no artefacts, archaeological features or other direct/indirect evidence of past human activity was found within the auger results. Accordingly, it is accepted that the site is unlikely to contain any significant undiscovered buried heritage assets and as such, there are no significant environmental effects in this respect. This position is accepted by both EH and PCC Archaeology who have raised no objections in respect of buried archaeology.
- 5.83 Notwithstanding this, it is acknowledged that the Fens are rich in archaeological potential and therefore, to ensure that no harm results to buried remains which may still lay uncovered, a scheme of archaeological evaluation by watching brief is still requested during the excavation of turbine foundations. This will ensure that no unacceptable harm results.

Conclusion

- 5.84 On the basis of the above, it is considered that whilst the proposal will result in some harm to the setting of Crowland Abbey (Grade I) and other local heritage assets, this harm is less than significant/substantial (a view shared by EH). As such, and in accordance with paragraph 134 of the National Planning Policy Framework (2012), it is for the LPA to determine whether the public benefit arising from the turbines outweighs the harm caused.

5.85 As detailed in paragraph 98 of the NPPF, LPA's must recognise that any project for renewable/low carbon energy makes a valuable contribution to cutting greenhouse gas emissions. Whilst some harm would result to heritage assets, Officers do not consider that this harm is substantially above that which results from the two consented/implemented turbines. English Heritage has considered that the harm resulting is less than substantial and whilst this does not automatically mean that the proposal is acceptable, it highlights that the harm is not of a significant level. Accordingly, Officers consider that the benefit arising from the renewable energy generation from the application proposal, outweighs the level of harm caused. On this basis, the proposal is in accordance with paragraph 134 of the National Planning Policy Framework (2012).

f) Non-avian Ecology

Methodology

5.86 Chapter 6 of the submitted ES relates to the likely significant effects of the proposed additional turbines upon non-avian ecology within and surrounding the site. To inform the assessment undertaken, the Applicant has undertaken a number of surveys and assessments which include:

- An 'extended' Phase 1 Habitat Survey undertaken at French Farm in April 2011 (updated in June 2012) and Fall's Farm in February 2013;
- A Badger Survey undertaken at French Farm in April 2011 (updated in June 2012) and Fall's Farm in February 2013;
- Great Crested Newt surveys of a small isolated pond at French Farm in 2011);
- A Riparian Mammal Survey (otters and water voles) in 2012; and
- Bat surveys including bat roost assessment of trees and buildings, bat transect surveys between April and September 2011, and static detector surveys at ground level between June and September 2012.

5.87 The assessment undertaken by the Applicant has been fully reviewed by the City Council's Wildlife Officer, Natural England (NE) and the Royal Society for the Protection of Birds (RSPB). In addition, the following bodies were consulted on the proposal however none commented: The Wildlife Trust; Cambridgeshire Bat Group; and Lincolnshire Bat Group.

5.88 Included within the objections of Councillor Sanders and a number of neighbouring residents, is a report produced by Dr Timothy Reed which reviews and evaluates Chapters 6 and 7 of the submitted ES. This report supposes that the methodology and therefore conclusions drawn within the ES have been subject to a number of errors and therefore, is flawed.

5.89 Following submission of Dr Reed's report, the City Council's Wildlife Officer, Natural England and the RSPB were asked to respond to ensure that the contents of the objection were fully considered. NE have not responded to this request however the City Council's Wildlife Officer and RSPB have. The RSPB raised concerns that the surveys undertaken and that important information about the approach to surveys had not been presented. Accordingly, the Developer submitted further ecological information within the Further Environmental Information Statement (December 2013) (referred to as FEIS2) which was then revised in January 2014 following errors within the submitted figures of associated Appendix B.

5.90 In response to consultation on this FEIS2, the RSPB has again highlighted that the further information does not fully resolve their original concerns over the reliability of the survey information/assessment. However, they do not raise formal objection and accordingly, the LPA must consider whether the information submitted is sufficient.

5.91 The following table presents Dr Reed's concerns and the response of Officers:

Concerns	Officer response
<p>No data has been provided to back up the conclusions drawn in respect of water voles which is contrary to the best practice standard set out in the Water Vole Conservation Handbook 3rd Edition (Strachan et al, 2011).</p>	<p>It is acknowledged that the submitted report does not specify the actual survey dates (two are recommended). However, given that no suitable water features are to be affected by the development, it is not considered necessary to request further details to be provided.</p>
<p>Incorrect breeding bird surveys were undertaken</p> <ul style="list-style-type: none"> – A proper Common Bird Census (CBC) was not undertaken as the number of visits falls below TIN069³ guidance and the reasoning behind this has not been provided within the ES no explanation of the implications for estimates deduced. This will result in underestimates of actual species present, imprecise estimates for breeding populations and therefore risks underestimating the potential impacts from the development. – No telescoped breeding season was used – April to March was undertaken whereas guidance states March to July – and no explanation for this provided. 	<p>Firstly it should be noted that the application site lies within the RSPB’s ‘green zone’ i.e. outside any areas which the RSPB considers should be turbine free owing to bird-related sensitive. In terms of the surveys undertaken, it is acknowledged that a small area of the breeding bird survey area was not covered. This resulted from an update to the layout of the proposed turbines from the initial Scoping Opinion stage, resulting from survey outcomes and is not an unusual occurrence in development of this type.</p> <p>However, Officers are satisfied that adequate allowances have been made for this by assuming that densities were the same over the un-surveyed areas as compared to those surveyed. Furthermore, with regards to the Common Bird Census breeding bird survey, it is noted that this has been modified from best practice guidance (6 visits rather than 10). However, Officers are satisfied that the ‘modified’ survey effort provides an adequate level of data and is commonly used in similar applications. This view is shared by the City Council’s Wildlife Officer.</p>
<p>No raptor surveys were undertaken which is contrary to TIN069 and SNH guidance⁴.</p>	<p>With regards to the survey undertaken in respect of bats, whilst it is noted that this did not include the additional Fall’s Farm land ownership area, Officers are satisfied that the surveys provide a representative picture of bat activity and potential within the wider locale. A robust baseline was provided by surveying of respective open field and habitat boundaries.</p>
<p>Data presentation is incomplete and unclear</p> <ul style="list-style-type: none"> – TIN069 and SNH guidance states that data should be fully presented in a clear and transparent manner – this has not been adhered to within the ES. – The submission does not show where walk lines were undertaken, nor are details provided for individual visits which informed the CBC. – The 2008 CBC data use is unsuitable for purpose. – No evidence has been provided that autumn/winter passage recording has been undertaken in accordance with TIN069 	<p>With regards to the survey undertaken in respect of bats, whilst it is noted that this did not include the additional Fall’s Farm land ownership area, Officers are satisfied that the surveys provide a representative picture of bat activity and potential within the wider locale. A robust baseline was provided by surveying of respective open field and habitat boundaries.</p>
<p>Vantage Point (VP) surveys were not undertaken in accordance with TIN069 guidance</p> <ul style="list-style-type: none"> – The further of the proposed turbine locations was 1.35km from the VP which is in excess of the NE limit. The distance data is unreliable and no test was done to show how many birds were not seen. – Some VP surveys were undertaken for too-long a period i.e. exceeding the 3 hour limit advised in SNH guidance and 2 hour limit in 	

³ Natural England Technical Information Note TIN069: Assessing the effects of onshore wind farms on birds (2010)

⁴ Scottish Natural Heritage: Recommended bird survey methods to inform impact assessment of onshore wind farms (2013)

<p>TIN069 which unacceptably increases potential for error and results in fundamental acuity problems and therefore undermines collision risk calculations.</p> <ul style="list-style-type: none"> – The VP did not allow for the entire proposal to be covered within the prescribed distance limits and this is likely to result in under-recording of bird numbers. – Insufficient VP surveys were undertaken throughout the various seasons leading to unreliable data. 	
<p>Collision risk data has been poorly presented and is not transparent</p> <ul style="list-style-type: none"> – Only year-round data summary has been provided, not seasonal and no locational data has been presented which is contrary to TIN069 – Mortality for raptors has not been presented by sex or age in individual seasons which is important to differentiate mortality thereby allowing long-term survival and population recruitment affects to be assessed 	<p>In light of the low numbers of species recorded within and over-flying the site, it is considered that there is little collision-risk. Whilst it is accepted that the RSPB still do not consider that the Further Environmental Information Statement (December 2013) covers all issues raised in respect of data presentation and collision-risk modelling, they accept that the risk is low and can be adequately addressed through ecological mitigation, habitat enhancement and monitoring.</p>
<p>No Before-After-Control Impact (BACI) site has been provided which allows to comparison of pre-construction baseline values and post-construction data.</p>	

5.92 As such, notwithstanding Dr Reed’s professional opinion, Officers consider that the methodology undertaken to inform the baseline and therefore the conclusions as to the likely effects of the proposal upon ecology and ornithology, are sound.

Impact upon non-avian ecology

5.93 There are no statutory or non-statutory designated wildlife sites either within the site itself or its 2km surrounds. In terms of habitat, the application has considered those habitats which are listed within the UK and Cambridgeshire & Peterborough Biodiversity Action Plans (BAP). These comprise:

- Arable field margins (which are present within 2km of the application site);
- Hedgerows (which are located within 250m of the site boundary);
- Arable (which is present within the application site); and
- Ponds (one of which is sited within 250m of the site boundary).

Bats

5.94 The baseline position for the assessment has been informed by a desk-based assessment, bat roost surveys, transect surveys and activity (anabat) surveys undertaken in 2011 and 2012. Historic records show that six species of bats have been recorded within the survey area: common pipistrelle, soprano pipistrelle, other pipistrelle species, Daubenton’s Myotis, Natterer’s Myotis, other Myotid species, Brown long-eared and noctule.

5.95 In terms of bat roost potential, there are three buildings within the survey area which were identified as having roosting potential. At French Farm, one dilapidated building was deemed to be of high potential (this has now collapsed) and the farm house of medium potential. At Fall’s Farm, one dilapidated brick building and the farm house were deemed to be of high potential. A thorough site inspection was undertaken at all buildings within the survey area and no evidence of roosts was found.

- 5.96 Turning to field activity, the transect and activity surveys undertaken highlighted that bat activity within the survey area was generally low, with most activity taking place along the far northern and far southern extents of the area (adjacent to field boundaries and hedgerow). The transect surveys recorded only common pipistrelle and soprano pipistrelle whilst the activity surveys found these and noctule, *Nyctalus* species, *Myotis* species, *Nathusius pipistrelle* and *Nyctalus/Eptesicus* species. It is noted that in 2012, the activity survey recorded an increase in 'big bat' levels however this is considered to have resulted from the repositioning of two receptors closer to boundary habitats owing to in-field survey restrictions. The City Council's Wildlife Officer has reviewed these surveys and concludes with the findings in terms of the baseline, namely that the numbers of bats present within the site are low and their presence mostly relates to the field boundaries for foraging.
- 5.97 During operation, there is potential for bat death by both direct collision with moving turbine blades and barotrauma⁵. The likely level of harm caused to bats is difficult to accurately predict however the Applicant has applied a precautionary approach as set out in Natural England guidance TIN051⁶. This guidance categorises risk to bats and bat populations according to species as set out in Tables 5.1 and 5.2 below.
- 5.98 In terms of low risk groups (common/soprano pipistrelles and *Myotis* species present within the survey area), it is considered that the likely effect to these bat groups would be minor and less than significant. This conclusion has been drawn on the basis of their known foraging activity (e.g. flying lower than the blade height), low risk status and low recorded mortality rates from European research.

Table 5.1: Bats likely to be at risk from wind turbines

Low risk	Medium risk	High risk
Myotis species Long-eared bats Horseshoe bats	Common pipistrelle Serotine Soprano pipistrelle Barbastelle	Noctule Leisler's Nathusius' pipistrelle

Table 5.2: Populations likely to be threatened due to impacts from wind turbines

Low risk	Medium risk	High risk
Long-eared bats Myotis species Horseshoe bats Soprano pipistrelle Common pipistrelle	Serotine Barbastelle	Nathusius' pipistrelle Leisler's Noctule

- 5.99 With regards to medium risk groups, whilst none have specifically been recorded, the presence of the rare Serotine species within the survey area cannot be discounted. However, there are no recorded species from historic data and known populations are mostly located within northern Cambridgeshire. As such, it is unlikely that this species would be affected by the proposal.
- 5.100 Finally, in terms of high risk groups (noctule and *Nyctalus* species present within the study area), it is considered that the likely effect to this bat group would be minor. Whilst noctules and *Nyctalus* have been recorded within the locality, their numbers are relatively low both in terms of activity and desk-based assessment and the results show no evidence of regular or systematic activity. Furthermore, whilst the presence of Leisler's and *Nathusius's* pipistrelle cannot be discounted, historic records do not show and significant numbers within the surrounds of the application site and it is unlikely that these species would be affected by the proposal.

5.101 In order to further reduce the potential impact upon foraging and/or commuting bats, the

⁵ Barotrauma – the damage to body tissues resulting from a change in the ambient air pressure.

⁶ Natural England Technical information Note TIN051: Bats and onshore wind turbines interim guidance (2012)

Applicant proposes to adhere to the Natural England TIN051 guidance and maintain a 50 metre precautionary stand-off buffer between the turbines' blade tip and the nearest habitat feature. This may be secured by condition. This approach is accepted by the City Council's Wildlife Officer and Natural England who have raised no objections to the proposal. Whilst some harm will result, it is considered that this will be minimal.

Water Vole and Otter

- 5.102 Historic data from the desk-based assessment shows that there are two otter recordings which are sited 900 metres to the east of the survey area. In terms of water voles, there are no known recordings within a 2km radius. The site surveys carried out have found no presence of either species and whilst it is acknowledged that the narrow, dry/damp ditches are unsuitable habitat, they may be used by the species for passage and feeding.
- 5.103 In order to reduce the potential impact, the Applicant proposes that any deep excavations during the period of construction which would be left, be fenced or on one side gently sloped to allow the mammals from becoming trapped.

Badger

- 5.104 The surveys undertaken have found two active badger setts within the survey area, sited 100 metres and 350 metres from the nearest turbines. Owing to the sensitive nature of such information, this has been held confidentially on the planning file and as such, is not available within the public domain (standard practice). Whilst it is considered that the existing setts are positioned a sufficient distance from construction and operational works, new setts or extension of the existing setts could take place within a relatively short timescale and as such, the Applicant proposes to undertake a further detailed survey within 6 months of the beginning of works. If any new sett is found within an unacceptable distance, the requisite license will need to be obtained to close this. Furthermore, during the period of construction, any open excavations will be constructed to allow an escape route for the mammals. This may again be secured by condition. It is considered that subject to this mitigation, the impact upon badgers within and surrounding the site will be of low magnitude.

Great Crested Newts

- 5.105 The pond located within 250 metres of the application site was surveyed for GCN presence and none were recorded, nor was the pond deemed suitable habitat. As such, the development is unlikely to have any impact upon the species.

Reptiles

- 5.106 It is noted that no specific reptile surveys have been undertaken within the study area however it is accepted that this is owing to the relative lack of suitable habitat and as such, no objection is raised. Notwithstanding this low potential, the Applicant proposes to further reduce any potential impact by way of mowing the grass within/adjacent to the ditches and drains to a height of 5cm and maintain it at this height during the period of construction. Furthermore, during reptile season (late March to end October), all exposed excavations will be checked on a daily basis and any reptiles found, moved to suitable habitat. This in combination with the location of rubble piles away from suitable habitat will ensure that no unacceptable impact will result.
- 5.107 The above mitigation measures will be secured by condition requiring the submission of a Construction Environmental Management Plan. In addition, during operation, mitigation and biodiversity gain is proposed by the Developer by way of a Habitat Management Plan to preserve and enhance the habitat within and surrounding the site. This Management Plan would be subject to approval not only by the City Council's Wildlife Officer, but also

Natural England and the RSPB.

Conclusion

- 5.108 Whilst it is accepted that some surveys undertaken have not accorded with established best practice, no objections have been received from relevant consultees (City Council's Wildlife Officer, Natural England or the RSPB). The application site is not significantly sensitive in terms of ecology and ornithology and it is not considered that the surveys undertaken have led to a significant under calculation with regards to bird populations. Accordingly, Officers accept that these surveys are a sufficient basis from which to consider the likely significant environmental impacts of the proposed development. The proposal would not pose any unacceptable risk to important ecology within/surrounding the site and the turbines would not result in any significant environmental impact. Notwithstanding this, conditions may reasonably be sought to require environmental management during construction/decommissioning and habitat management to overcome any concerns.
- 5.109 On this basis, it is considered that the proposed development will not result in any significant environmental impacts, to the detriment of non-avian ecology populations. The proposal is therefore in accordance with paragraph 118 of the National Planning Policy Framework (2012), Policies CS11 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

g) Ornithology

Methodology

- 5.110 Chapter 7 of the submitted ES details the likely significant environmental effects upon bird populations in the locality. The baseline for the assessment has been undertaken using the following surveys:
- Desk-based survey;
 - Breeding bird field surveys (carried out during the 2011 season) comprising a walk-over survey mapping of all bird encountered and recording their behaviour and location;
 - Review of a previous 2008 breeding bird field survey (albeit the main data set used is from 2011); and
 - Wintering bird field surveys (carried out during December 2010-April 2011 and August-November 2011) comprising a field survey based on counting and mapping bird numbers within a defined study area and vantage point surveys to quantify movement rates across the study area.
- 5.111 In terms of the effect upon bird populations, the effects can be defined as both direct (loss of habitat and collision risk) and indirect (displacement – during construction and operation – and barrier effects).
- 5.112 To calculate the likely significant environmental effects in terms of disturbance, the Developer has first assessed the bird numbers at risk of disturbance (both breeding and wintering). For the breeding bird populations, the peak populations of each species were used within 300 and 500 metres of the turbines, and classified according to the importance of that species (i.e. local, regional or national). With regards to wintering birds, again the peak populations observed for each species were used, albeit within 600 metres of the turbines. Again, these species were then classified according to their importance. Further, the Developer has considered the sensitivity of the bird species and classified these as either nil, low, medium, high or very high.
- 5.113 With regards to collision risk, the assessment includes both breeding and wintering species but has been targeted to only those of highest conservation concern. The Collision Risk Modelling (CRM) was then undertaken for all species of medium sensitivity or higher, where

non-negligible populations were recorded flying over the collision risk zone and at rotor blade height – in this case Marsh Harrier, Golden Plover, Lapwing, Herring Gull and Lesser Black-backed Gull. The assessment followed two stages:

1. Collision risk was calculated on the assumption that flight patterns were not affected by the presence of turbines. The calculation resulted from the probability of a bird flying through the rotor swept area and the probability of that bird colliding with the blades as it does so. The result was then multiplied by the estimated number of bird movements through the rotor swept area at blade height.
2. This incorporates the probability that birds will actually take some avoiding action as a result of turbine presence. Scottish Natural Heritage guidance recommends precautionary values for avoidance rates of 98% for waders and 99% for harriers, whilst other published guidance advises on an avoidance rate of 99.5% for gulls. These precautionary rates have been applied within this assessment.

5.114 Included within the objections of Councillor Sanders and a number of neighbouring residents, is a report produced by Dr Timothy Reed which reviews and evaluates Chapters 6 and 7 of the submitted ES. This is summarised in Section (d) above and for the reasons provided above, it is considered that the assessment undertaken has been sufficiently robust so as to produce an acceptable baseline and therefore reliable conclusions. It is considered that the submitted ES has adequately assessed the likely significant environment effects of the proposal and is sound.

5.115 In addition, during the initial round of consultation on the proposal, the City Council's Wildlife Officer raised concern that the submitted ES had not included cumulative assessment in terms of ornithology, taking into account the nearby large-scale ground mounter solar photovoltaic schemes (the nearest of which is Morris Fen, approximately 1.7km to the South of the site). Subsequently, the Developer submitted assessment within a Further Environmental Information Statement (October 2013). This document addresses the issue of cumulative impact and the Wildlife Officer is content this adequately addresses his concerns.

Impact upon ornithology

5.116 Within 5km of the application site there are no statutory protected nature conservation sites however within 20km lies the Nene Washes (8.6km to the south of the nearest turbine) which is a designated Special Protection Area (SPA), Ramsar site and Site of Special Scientific Interest (SSSI). Whilst the application site lies within the RSPB's 'green zone' e.g. it is not within the 'buffer' zone of most concern in respect of qualifying birds (those birds for which the Nene Washes has been designated), it is nevertheless important to ensure that the proposed turbines do not result in any significantly unacceptable impact to bird populations.

Very high sensitivity species

5.117 Only Lapwing were recorded in number sufficient to require assessment through Collision Risk Modelling (CRM). This identified a risk of collision of only 0.55 birds per year and therefore, this risk is considered negligible. With regards to displacement, only low numbers of birds were recorded within the 600m buffer zone of the turbines (at peak count) and therefore, only low numbers are predicted to be displaced, again representing a negligible effect. In terms of other 'very high sensitivity' species (those for which the Nene Washes is qualified) such as Bewick's Swan, Gadwall, Teal and Ruff, these were only recorded in very small numbers, insufficient to require assessment by CRM. Owing to these small numbers present within the site, it is concluded that the risk of both collision and displacement would be negligible.

High sensitivity species

- 5.118 A single pair of Barn Owls were found breeding within the study area, approximately 280m from the nearest proposed turbine. All observed sightings were below rotor blade height and, from studies undertaken of the species elsewhere in the country, the birds are known to fly below this height. Accordingly, the collision risk for this species is negligible. However, as the species is designated under Schedule One, mitigation must be adopted to ensure that no disturbance results during breeding season. Such mitigation is detailed below and would be informed through further pre-commencement surveys. On this basis, it is considered that the development is unlikely to result in significant harm by disturbance.
- 5.119 With regards to Kingfisher, a single pair were found to be breeding approximately 290m from the nearest proposed turbine in 2008, but none were found in 2011. If future re-occupation were to take place, adequate habitat is maintained away from the turbines within the study area, therefore displacement is likely to be of negligible impact. Further, as no flights were observed in 2008 at rotor height, collision risk is also likely to be negligible.
- 5.120 Turning next to Marsh Harriers, no evidence was found during the surveys of the species breeding within 2km of the application site however, recordings were made of over-flying and foraging. Accordingly, it is anticipated that some small-scale levels of displacement could result up to 200m from the turbines (as evidences from the monitoring of the species elsewhere in the region). This level of displacement would not be to a significant level however as an adequate level of arable farmland would be maintained within the site (this is also proposed to be subject to enhancement through mitigation, as discussed below). With regards to collision risk, the CRM predicts that only 0.04 birds per year would likely be struck. This is a considerably low level and therefore, the impact upon this species is predicted as negligible.
- 5.121 Relatively higher numbers of Golden Plover were recorded within the study area however these are still considered to be generally low. The CRM predicts a strike rate of only 0.68 birds per year, of low significance, further backed up by post-construction surveys undertaken at wind farms within the UK. In addition, given the relatively low numbers recorded, any displacement effect is likely to be negligible.
- 5.122 With regards to other 'high sensitivity' species (e.g. Little Egret, Red Kite, Merlin, Hobby, Peregrine, Common Tern and Arctic Tern), all were only seen in low numbers within the study area. This low activity identifies that the site is not important in terms of breeding or non-breeding rangeland and therefore, displacement and collision impacts are unlikely to be significant. Given that the site does however afford appropriate habitat for these species, birds could take up occupation and as such, the Developer proposes to undertake further pre-construction surveys with mitigation where possible to ensure no unacceptable risk remains.

Medium sensitivity species

- 5.123 Very low numbers of over-flying/roosting Curlew were observed within the study area, with only one bird recorded flying through the collision risk zone. The low numbers were such that collision risk modelling was not undertaken as it is anticipated that the risk of collision, and displacement, would be negligible.
- 5.124 Turning to Herring Gull and Lesser Black-backed Gull, these were seen more regularly and in greater numbers than other species within the study area throughout the year. The CRM undertaken predicts higher risk of collision for these species of 7.8 and 7.6 birds per year respectively. Notwithstanding this, following the results of other post-construction monitoring undertaken elsewhere in the UK, it is anticipated that this 'strike rate' would

actually be much lower and therefore, less than significant. Further, given the low use of ecological resources of the site by these species, displacement is likely to be negligible.

Low sensitivity species

- 5.125 By the low sensitivity-nature of these species, a high magnitude of impact would need to result in order to represent a significant environmental effect. As the species within this category have been observed in relatively low densities within the site, a significant effect is unlikely to result.

Designated sites

- 5.126 As detailed above, the Nene Washes lies approximately 8.6km to the South of the nearest turbine. Of its qualifying species, only Bewick's Swan and Ruff were observed within the study area however there were only single records of each. With regards to wintering wildfowl, three species of note were observed (Gadwall, Teal and Lapwing). Gadwall and Teal were only seen infrequently whilst consideration has been given to Lapwing above. In addition, it is considered that the proposal would not give rise to any significant loss of feeding ground used by qualifying species.
- 5.127 Given the negligible impacts predicted for all qualifying species, it is considered that the proposed extension to French Farm is unlikely to result in any significant environmental impact upon the SPA/SSSI/Ramsar site. This view has been confirmed by Natural England who have raised no objections to the application scheme.

Proposed mitigation

- 5.128 Whilst the assessment concludes that it is unlikely for any significant environmental effects to result upon bird populations within and adjacent to the application site, the Developer proposes to undertake a comprehensive scheme of mitigation which is requested by both the City Council's Wildlife Officer and the RSPB. The mitigation measures have been split between the construction, operational and decommissioning phases.
- 5.129 During construction, it is proposed for a Construction Environmental Management Plan to be secured by condition which will take in to account special protection measures for those most sensitive of birds (e.g. Schedule One species). This would be informed by further pre-construction surveys to identify any breeding locations for the species and where necessary, exclusion zones for construction activities to protect breeding birds. This same scheme is proposed during the decommissioning phase of the development.
- 5.130 With regards to operational mitigation, it is proposed to secure (again by condition) a Habitat Management Plan to preserve and enhance the habitat within and surrounding the site. This is also hoped to result in overall biodiversity gain. This Management Plan would be subject to approval not only by the City Council's Wildlife Officer, but also Natural England and the RSPB. In addition, as with all wind farm developments, the Developer will be required to undertake a scheme of post-construction ornithological monitoring. A scheme has already approved (in conjunction with relevant bodies) for the two consented/implemented turbines on the site and a similar approach would be taken for the current proposal.

Conclusion

- 5.131 Whilst it is accepted that the bird surveys undertaken have not accorded with established best practice, no objections have been received from any relevant consultees (City Council's Wildlife Officer, Natural England or the RSPB) and consequently, it is accepted that these surveys are sufficient from which to consider the likely significant environmental impacts upon bird populations. Within the study area, a relatively low number of birds were recorded and, following assessment of the likely disturbance and collision impacts, the

overall risk to these bird species (including important Schedule One species) is considered to be negligible. Notwithstanding this, conditions may reasonably be sought to require environmental management during construction/decommissioning, habitat management and post-construction monitoring to overcome any concerns regarding impact to bird populations and secure some biodiversity gain. On this basis, it is considered that the proposed development will not result in any significant environmental impacts, to the detriment of bird populations. The proposal is therefore in accordance with paragraph 118 of the National Planning Policy Framework (2012), Policies CS11 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

h) Water environment and geology

Methodology

- 5.132 Chapter 8 of the submitted ES relates to the likely significant environmental impacts of the development in relation to the water environment and geology. The majority of the site lies within identified Flood Zone 3 and the proposed development, in accordance with the flood risk vulnerability classification contained within the Technical Guidance to the National Planning Policy Framework (2012), the application scheme is deemed as 'essential infrastructure'. Accordingly, the application was required to be accompanied by a Flood Risk Assessment.
- 5.133 A detailed site-specific FRA has been submitted at Appendix 8 of the ES which considers the likely flood risk implications of the development. The Environment Agency has raised no objections in respect of this FRA and accordingly, it is considered that this is sound and accords with the requirements of the National Planning Policy Framework (2012) (NPPF). Given that the chapter of the ES is wholly based upon this FRA, it is considered that its conclusions with regards to likely significant environmental impacts are sufficiently robust.

Flood risk

- 5.134 Given that the application site is predominantly located within Flood Zone 3, except a small area to the south-eastern corner which lies within Flood Zone 1, the application must demonstrate compliance with the relevant flood risk guidance contained within the NPPF – Sequential and Exception Tests.
- 5.135 Turning first to the Sequential Test, as the proposed development is classified as 'Essential Infrastructure', in accordance with the provisions set out in the technical guidance to the NPPF⁷, there is no requirement for a Sequential Test to be undertaken.
- 5.136 With regards to the Exception Test, this is for the Local Planning Authority to determine compliance. This test requires the proposal to demonstrate that both:
- the development provides wider sustainability benefits to the community that outweigh the flood risk; and
 - through the use of a site-specific FRA, that the development will be safe for its lifetime taking account of vulnerability of users, without increasing flood risk elsewhere and where possible, reducing overall flood risk.
- 5.137 The proposed wind farm extension alone would generate up to 8MW of renewable electricity, thereby contributing to the UK's overall target of producing up to 25% of its electricity through renewable sources by 2025. The NPPF clearly highlights that any contribution, big or small, is of benefit and central to the key considerations of what defines

⁷ Technical Guidance to the National Planning Policy Framework, Department for Communities and Local Government (March 2012)

'sustainable development'. When taken in this context alone (notwithstanding other material considerations set out within this report), it is considered that the proposal does provide a wider sustainability benefit to the community, outweighing the flood risks and is therefore in accordance with the first requirement.

- 5.138 Turning next to the safety of the development throughout its lifetime, this is dealt with within the submitted FRA. The ground levels upon which the turbines would be sited, range between 1-2 metres above Ordnance Datum (AOD) and the site falls within the catchment of the North Level District Internal Drainage Board (NLIDB) Tydd Pumping Station which is designed for a water level of -1.65m AOD whilst closer to the site the design water level is 0.94m AOD (at Morris Fen). The NLIDB has advised that the site is subject to flood protection measures against flooding of greater than 1 in 50 years and that there has been no history of flooding within this area.
- 5.139 Whilst this is likely to provide robust protection to the sensitive equipment associated with the development, the Developer has proposed to house all sensitive electrical equipment e.g. switchgear above a height of a 1 in 1000 year flood event. In accordance with the Environment Agency's flood maps, this would stand at a height of 2.5 metres ODN (taking in to account future climate change and failure of the NLIDB pumping station). In housing the sensitive equipment at this level, it would ensure that the development still operates during periods of flooding and therefore is safe for its lifetime.
- 5.140 With regards to increased flood risk elsewhere, it is considered that the submitted FRA adequately demonstrates that the development would not result in increased surface water run-off or increased flood risk off-site. The proposed turbines would have negligible impact in terms of increased run-off and the tracks, crane pads and construction compound are all proposed to be constructed of porous materials. To ensure that surface water drainage is adequately managed, the City Council's Drainage Engineer and NLIDB has requested that details of surface water drainage (detailed design) be submitted prior to commencement of development. This may be reasonably secured by condition as no objections have been raised in principle.
- 5.141 On this basis, it is considered that the proposal accords with the provisions of the NPPF in terms of flood risk. The proposed development itself would not be at unacceptable risk from flooding and will ensure safety throughout its lifetime, with its wider sustainability benefits outweighing any harm caused. In addition, it would not result in increased flood risk elsewhere. The proposal would not give rise to any significant environmental impacts by virtue of flood risk and is therefore in accordance with paragraphs 102 and 103 of the National Planning Policy Framework (2012), Policy CS22 of the Peterborough Core Strategy DPD (2011) and the Peterborough Flood and Water Management SPD (2012).

i) Noise

Methodology

- 5.142 Chapter 9 of the submitted ES details the methodology undertaken to calculate both the background noise levels surrounding the site and the predicted noise levels generated by the proposed turbines in conjunction with those consented/implemented. Objections from local residents neighbouring the site have raised concern with regards to the background studies undertaken and these are noted.
- 5.143 The methodology undertaken by the Developer has sought to follow the guidance set out in both The Assessment and Rating of Noise from Windfarms (ETSU-R-97) document and the Volume 34 of the Acoustics Bulletin (2009). This Bulletin was superseded in May 2013 by a new guidance document produced by the Institute of Acoustics entitled 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'. Whilst it is acknowledged that the submitted ES does not refer to accordance or

otherwise with this document, this has been used to assess the planning application. Further, the application should not be dismissed solely on the lack of reference to the guidance contained within this document.

- 5.144 Two noise monitoring locations were used to calculate the background noise levels at the application site and those immediately surrounding residential properties: French Farm and Spinney Lodge. These noise survey locations have been chosen to be representative of those residential properties which will be most affected by the noise impacts of the development. Whilst it is noted that the position at Spinney Lodge is not the closest (there is a closer dwelling to the north-west of the site), the prevailing wind is from a south-westerly direction and as such, Spinney Lodge is representative of those dwellings which will be most affected. These locations were agreed by the City Council's Pollution Control Team at Scoping Opinion stage and Officers visited the two monitoring locations to observe set up of the noise monitoring equipment.
- 5.145 The noise surveys were undertaken in November 2011 and the Technical Appendix to the ES provides photographic evidence of the monitoring equipment. Wind speeds and noise measurements were undertaken simultaneously at the monitoring locations and at 10 minute intervals, as accords with established best practice. The average wind speeds were measured at 40 and 80 metres in height, with the upper measurements used to calculate the wind speeds at the proposed hub height of 60 metres. Within the resultant data set, the Developer has discounted those periods whereby elevated noise due to intermittent or random/unknown sources were captured and any periods of rainfall (determined by a rain gauge installed).
- 5.146 This methodology accords with the guidance set out to the Developer in the Scoping Opinion issued by the Local Planning Authority in 2011. At the time of this Opinion, the proposed turbine locations were not finalised and accordingly, the current proposal differs from that which was submitted at this time. Some local residents consider that the alteration of the turbine positions from the original Scoping stage result in the background noise survey positions and results being inaccurate and not fit for purpose. However, this is not an unusual occurrence as often, turbine positions are moved in response to survey outcomes. Notwithstanding this, the City Council's Pollution Control Officer has advised that these positions remain the most appropriate locations from which to undertake background surveys. Further, the results produced accord with other representative examples of background noise surveys within the locality.
- 5.147 In addition, objections have been received with regards to the lack of amplitude modulation (AM) noise assessment within the submitted ES. All guidance documents identify that proposals should assess wind turbine proposals in accordance with ETSU-R-97, as has been undertaken.
- 5.148 On this basis, it is considered that the methodology undertaken and the background noise levels captured are appropriate and form a sufficiently robust baseline from which to predict the likely noise impact of the proposal.

Background noise levels

- 5.149 At French Farm, the lowest daytime recorded background noise level was 22dB $L_{A90, 10 \text{ mins}}$ with a range of between 22-43 dB $L_{A90, 10 \text{ mins}}$ at low wind speeds (between 3-5 m.s^{-1}). At the higher wind speed of 11 m.s^{-1} , the range of noise levels was between 45-53 dB $L_{A90, 10 \text{ mins}}$. With regards to night-time background levels, the lowest recorded was again 22 dB L_{A90} , with a range of between 22 and 56 dB $L_{A90, 10 \text{ mins}}$ at low wind speeds. During periods of high wind speed (12 m.s^{-1}), the recorded noise level was 52 dB $L_{A90, 10 \text{ mins}}$.

- 5.150 At Spinney Lodge, the lowest daytime recorded background noise level was 18 dB $L_{A90, 10 \text{ mins}}$, with a range of between 18-38 dB $L_{A90, 10 \text{ mins}}$ at low wind speeds. At the higher wind speed, the noise level ranged between 46 and 54 dB $L_{A90, 10 \text{ mins}}$. During the night-time, the lowest background recorded noise level was 19 dB $L_{A90, 10 \text{ mins}}$ at low wind speeds, with a range of between 19-32 dB $L_{A90, 10 \text{ mins}}$. At the higher wind speed, the recorded noise level was 50 dB $L_{A90, 10 \text{ mins}}$.
- 5.151 Accordingly, it is noted that at periods of low wind speed, the surrounding area generally benefits from a very low level of background noise.

Noise impact to residential amenity during construction

- 5.152 With regards to construction hours, it has been highlighted by some objectors and is noted that there is a discrepancy within the submitted ES and the conditions which were imposed upon the two consented/implemented turbines on site. Whilst this discrepancy is noted, the limitation upon construction hours is to be secured by way of condition upon any planning permission issued. Accordingly, for the avoidance of doubt and confusion, in this case it is proposed to maintain the initial limits set out already on the site - not outside the hours of 07.30 – 19.00 Monday to Friday and 07.00 – 14.00 on Saturdays.
- 5.153 In addition, a Construction Method Statement will be secured by condition which requires the Developer to provide to the Local Planning Authority, measures to reduce the effects of noise during the period of construction. This will ensure that the construction activities take place within 'reasonable' hours and by using best practice methods. Accordingly, it is considered that the construction practices will not result in any unacceptable levels of impact to neighbouring residents, in accordance with paragraph 123 of the National Planning Policy Framework (2012), Policy CS16 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012).

Noise impact to residential amenity during operation

- 5.154 The recently published 'Planning practice guide for renewable and low carbon energy' (2013), clearly states that in respect of considering the noise impacts of wind turbines, 'The Assessment and Rating of Noise from Wind Farms (ETSU-R-97) report should be used by Local Planning Authorities. It also goes on to state that good practice guidance has been prepared by the Institute of Acoustics however it does not clearly state that this guidance must be strictly followed.
- 5.155 It is noted that the ETSU report has been much criticised and it is acknowledged that the document is now comparatively elderly in the context of improving technical knowledge of the layout and operation of wind turbines. However, the Government guidance clearly states that this should still be used in the determination of planning applications and there are no grounds upon which to disagree with this position.
- 5.156 ETSU-R-97 sets out criteria against which the noise impacts of wind farms should be assessed and particularly takes in to account different periods of the day and week. The document defines quiet day-time periods (often referred to as 'amenity periods') as between: 1800 and 2300 Monday-Friday; 1300 and 1800 on Saturdays; and all day on Sundays (0700 to 1800). The night-time period in this document is defined as between 2300 and 0700. Furthermore, it provides indicative noise levels that wind farm developments should adhere to in order to offer a reasonable degree of protection to neighbours without placing unreasonable restrictions on wind farm development. In summary, these noise limits are 5dB $L_{A90, 10 \text{ mins}}$ above the mean background noise level, or 43dB $L_{A90, 10 \text{ mins}}$ at night and between 35 to 40dB $L_{A90, 10 \text{ mins}}$ during the day-time (known as the day-time lower fixed limit), whichever is greater.

- 5.157 The ETSU document goes on to detail that the actual chosen value for the day-time lower fixed should depend upon a number of factors:
1. The number of dwellings potentially affected by noise within the locality of the turbines;
 2. The effect of noise limits on the energy production of the turbines; and
 3. The duration and level of exposure of neighbouring dwellings.
- 5.158 Whilst some explanation of these criteria is provided, the ETSU document does not go on to stipulate exact recommendations and instead, this is left to the professional judgement of the Local Planning Authority. It is noted that this is continued in the recent Institute of Acoustics guidance document 'A Good Practice Guide to the Application Of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (2013).
- 5.159 Within Chapter 9 of the submitted ES, the assessment identifies that the proposal would accord with the limitations set out in ETSU subject to mitigation through restricted operation however, in some instances this would be to the maximum upper limit of 40dB. In light of the relatively low background noise levels recorded at Spinney Lodge and French Farm, the Local Planning Authority raised concerns with regards to this as it was considered that the impact of such a limit may be unacceptable.
- 5.160 Following a request from the City Council's Environment and Pollution Control Officer, the Developer provided additional noise information within a Further Environmental Information Statement (October 2013) (referred to as FEIS1). This FEIS1 provided data regarding the direction and duration of wind directions at the site (which remains a confidential non-publicly viewable document owing to commercial sensitivities), the percentage of time that each of the potential lower fixed day-time limits (between 35 and 40dB) would be exceeded and the percentage of time that the turbines would be operating a reduced capacity/stopped to accord with the imposition of each of those noise levels.
- 5.161 This additional information affords the LPA the opportunity to review the proposal in line with the three criteria (above) for considering the appropriate lower fixed day-time limit. From the information provided, it is clear that the prevailing wind at the site is from a south-westerly direction and as such, those properties located to the north-east will experience the majority of noise impacts from the proposed turbines. Further, the existing situation affords relatively low background noise levels and as such, the proposed turbines will clearly be audible to neighbouring occupants. Whilst it would be most desirable to seek to impose the lowest of noise limits (35dB) upon the turbines, consideration must be given to the impact this would have upon energy generation and the precedent set in relation to other nearby wind turbine developments.
- 5.162 The approved scheme at Wrydecroft to the south-east of the application site is comparable development by virtue of background noise levels, the number of turbines, its geographic location, the number of properties affected and the orientation/spread of properties relative to the turbines. At appeal, the Inspector concluded that a modest relaxation of the lower 35dB limit could be accepted thereby imposing a restriction of 37.5dB or 5dB above background levels (whichever is greater) at surrounding properties.
- 5.163 In terms of the current application scheme, the Developer proposes that the imposition of a 37dB limit would result in a 13% loss in overall energy output productivity, falling to 8% subject to a 38dB limit. Whilst this is noted, it is considered that, on balance, the imposition of a 37.5dB limit would strike an acceptable balance between protecting the amenity of neighbouring occupants whilst not reducing the energy output of the development so as to render it unviable. It is accepted that this limit at certain wind speeds (4-6m.s-1) would still result in turbine noise being noticeable to neighbouring residents as it would frequently exceed the prevailing background noise level by a substantial margin. However, it is considered that this limit would not result in an unacceptable or significant environment impact.

5.164 To ensure that the development accords with the proposed noise limits, it is considered necessary to impose a condition which limits the noise emissions from the turbines. The Applicant has submitted a draft list of noise limits at various nearby receptors which follows the layout suggested within Annex B of 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (2013). This has been accepted by the City Council's Pollution Control Officer.

j) Transport and traffic

Methodology

5.165 Chapter 10 of the submitted ES details the methodology undertaken to calculate the background traffic counts and accident levels on the roads immediately surrounding the application site which are proposed to be used as construction routes for the development. The initially submitted Chapter and its associated Appendix (10) were found to incorrectly state that the already approved, and preferred construction route was Route B. This was amended and revised documents submitted which were fully consulted upon.

5.166 As detailed in Section A above, the baseline for the assessment includes the existing situation taking in to account the impacts resulting from the two consented and implemented turbines of on the site. The existing traffic counts used to calculate the traffic baseline were based upon two different data sets. In respect of the A16 Crowland Bypass, data was provided by Peterborough City Council from two automated traffic counts at the junction with the A45 in June 2012. With regards to the minor roads surrounding the site, the counts were extracted from the Department for Transport (DfT) Matrix website for 2010 with an average day TEMPRO (Trip End Model Presentation Programme) growth factor added to establish 2012 flows. It is noted that some residents have raised objections in relation to this as they do not consider that 2010 traffic data is sufficient to calculate the impacts, owing to the construction and opening of the Crowland Bypass in the intervening period. The use of the 2010 data with a TEMPRO growth factor accords with government standards and the Local Highway Authority has confirmed that they agree with this approach.

5.167 With regards to accident data, this has been provided by Peterborough City Council and there are no concerns raised with regards to this.

5.168 On the basis of the above, Officers consider that the Applicant has applied a robust and appropriate methodology with regards to determining the likely significant environmental impacts of the development.

Traffic impacts

5.169 The main impacts arising from the proposed development will result during the periods of construction and decommissioning and most notably from the associated heavy goods vehicle movements and Abnormal Indivisible Loads (AILs).

5.170 Turning first to AILs, the preferred route for access to the application site is identified within the ES as Route A – that is, along the A47, A16 Crowland Bypass, B1166, Falls Drove and French Drove. As detailed above, this route has already been approved as the agreed route of access by the Local Planning Authority and Local Highway Authority in respect of the two consented/implemented turbines on the application site. This approval was granted by way of an application to discharge the submission element of the condition upon the approval for these turbines and the submission included a Visual Route Inspection (also provided within this submission at Appendix 10 of the ES Volume 2).

5.171 Each turbine would generate a total of seven AIL movements, allowing transportation of the nacelle, blades and tower. In addition, the mobile crane which would be used to erect the

turbines would generate a further AIL movement. Accordingly, the proposed development would generate a total of 29 AIL movements. Taking in to account the consented/implemented turbines on the site, the cumulative AIL movements would total 43 and it is predicted for these to occur over a total period of 3 months. The longest of these AILs would carry the blades and result in a vehicle extending to a total of 43 metres in length. The heaviest, would carry the nacelle with a gross vehicle weight of 125 tonnes. In terms of the return journey, the AILs can be reduced in size and therefore, only 4 AIL movements will result.

- 5.172 With regards to heavy goods vehicles (HGVs), the number of vehicle movements to/from the site will vary at different times of the construction period. HGV movements will result from: plant deliveries; concrete deliveries for the foundations; aggregate/material deliveries for the compound, access tracks and crane pads; and other ancillary deliveries such as cabling. The worst impact from HGV movements would result during the period of aggregate import. In this time, it is predicted that the development would generate 48 HGVs for aggregates and 48 for excavated material (a total of 98 movements) taking place over a 4-5 week period. Similarly, high levels of HGV movements would result during the period of concrete pouring. This would generate a total of 34 HGV movements per day, with each turbine requiring a concrete pour lasting 2 days.
- 5.173 It is accepted that at present, the minor roads and junctions/roundabouts along the route in some instances are incapable of accommodating the size and weight of these vehicles. However, this is not an unusual occurrence for development of this type. The submitted Transport Assessment contained within Appendix 10 of Volume 2 of the ES details those areas of the public highway which will require widening, strengthening and the removal of street furniture.
- 5.174 The objections from local residents are noted, with concerns regarding conflict with other road users, horse riders and the physical damage which may result to the carriageway causing a danger to highway safety during the period of construction. With regards to management of vehicular access during the period of construction, a condition requiring the submission of a Construction Method Statement (including Traffic Management Plan) will be secured to ensure that the Local Planning Authority only approves construction methods which do not cause significant disruption. However, some disruption and a large increase in the number of heavy goods vehicle movements on generally quiet roads are unavoidable as a result of approving the proposed wind turbines and it is accepted that in some instances the impact would be of quite large magnitude. However, the impact is for a limited duration and the most intense traffic will result over relatively short periods of weeks, rather than months. Accordingly, the impact upon the highway network is reversible and short-term and, in terms of environmental impact, less than significant.
- 5.175 To ensure that no long-term danger to the highway network results, there will be a condition imposed which require the Developer to assess the public highway both before and after construction, with any repairs required (directly relating from the development) met at the full cost of the Developer. Such assessment would be undertaken in conjunction with the Local Highway Authority.
- 5.176 With regards to the development of other wind farms within the locality, it is noted that the Developer assumed within the submitted ES that it is unlikely that other wind farms will be in construction at the time of French Farm. Whilst clearly the Developer cannot be sure of this, it is not considered that the cumulative development of the proposal with (particularly Nuts Grove/Wrydecroft) would result in considerable harm. Only Route B and the major 'A' routes up to the site would be shared with other wind farm developments. Route B is not the preferred haulage route and accordingly, only light traffic associated with French Farm would use this. With regards to the major A routes, these are all capable of accommodating the traffic volumes associated with the developments and as such, no unacceptable harm would result.

5.177 On the basis of the above, whilst it is accepted that some disruption will occur to the highway network, it is considered that this will not be to unacceptable levels, in accordance with Policy CS14 of the Peterborough Core Strategy DPD (2011) and Policy PP12 of the Peterborough Planning Policies DPD (2012).

k) Shadow flicker

Methodology

5.178 Chapter 11 of the submitted ES considers the likely significant environmental impacts resulting from shadow flicker. The methodology for the assessment considers the impacts of shadow flicker within an identified study area – up to 10 rotor blade diameters from the turbines and at an angle of 130 degrees either side of north (this represents the path of the sun during high summer within the UK and is provided within the guidance document issued by the Department for Energy and Climate Change⁸ (DECC) and the recently published Planning Practice Guidance). Based upon the proposed rotor blade length of 40 metres, the rotor blade diameter for the proposal would stand at 80 metres and therefore, the potential impact area extends up to 800 metres from the turbines.

5.179 The assessment undertaken within the ES has considered: the time of day that shadow flicker is predicted to occur; how many hours per day the impact will result; and the total amount of time within a year that any single window facing the turbines would experience shadow flicker effects. The baseline (as detailed in Section (a) above) is calculated upon the effect that results from the two consented/implemented turbines at the site. The assessment for these turbines, undertaken in 2007 and forming part of that application submission, concluded that shadow flicker would not adversely affect any properties within the study area. Notwithstanding this, the current assessment considers the likely impacts upon neighbouring properties within the study area of both the proposed and consented/implemented turbines.

5.180 The Developer has undertaken initial assessment using software which bases the calculations upon a number of assumptions, calculating the maximum shadow flicker that would result i.e. a worst-case scenario whereby the turbines would always be facing directly towards a receptor, with sun shining throughout the day (dawn to dusk) with sufficient intensity to cast shadow and with no intervening screening or obstacles between the turbines and receptors. Following this initial 'worst-case scenario' modelling, those properties identified were then visited on site to review intervening screening/obstacles and the window size, position and orientation.

5.181 Whilst the document 'Planning for Renewable Energy – A Companion Guide to PPS22' (2004) has been superseded, the updated guidance document published by the Department for Communities and Local Government does not provide such robust guidance with regards to considering and calculating the impact of shadow flicker. The assessment methodology detailed above accords with the superseded guidance and accordingly, it is considered that the ES has adequately considered all likely significant environmental impacts resulting from shadow flicker.

Shadow flicker impacts

5.182 Within the UK planning policy context, there is no established guidance setting an acceptable limit at which properties receive the effects of shadow flicker. The DECC guidance document provides a summary of guidance within Northern Ireland⁹ which

⁸ Update of UK Shadow Flicker Evidence Base, Department of Energy and Climate Change (March 2011)

⁹ Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy', Northern Ireland Department to the Environment (2009)

recommends that shadow flicker at neighbouring offices and dwellings within 500 metres should not exceed 30 hours per year, or 30 minutes per day. Whilst this does not form part of the adopted development plan, it is a recommendation which is widely used throughout the UK.

- 5.183 The submitted assessment concludes that within the potential impact area, two properties would potentially be affected by shadow flicker – a property at Empsons Farm, Falls Drove and Pumping Station House, Green Drove. At Pumping Station House, the maximum level of shadow flicker predicted (i.e. not taking in to account turbine position according to wind direction, weather and cloud cover) is 18.5 hours per year, which falls below the annual 30 hour threshold. Whilst the property at Empsons Farm is predicted to experience up to 33 hours of shadow flicker per year (above the 30 hour threshold of acceptability). Notwithstanding this, it is the north-eastern elevation of the property which faces the turbines (thereby experiencing the effects of shadow flicker). There are no windows within this facing elevation and as such, shadow flicker would not impact residents' amenity in this instance.
- 5.184 Whilst it is acknowledged that shadow flicker will occur at Pumping Station House, it is considered that the levels fall below generally accepted levels. To ensure that no detriment results to the amenities of occupants of this dwelling, it is considered necessary to impose a condition which, in the event of reasonable complaint being received by the Local Planning Authority, requires the Developer to submit and implement a scheme of mitigation within a specified time limit of one month from the request by the Local Planning Authority. Such mitigation may take the form of repositioning or turning off the turbines during those periods at which shadow flicker occurs. On this basis, it is considered that the proposal will not result in any unacceptable impact to the amenities of neighbouring occupants by virtue of shadow flicker, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Technology (2013), Policy CS11 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012).

Shadow flicker and health effects

- 5.185 It is noted that within the objection received from the occupants of The Grange, Cox's Drove, concern has been raised with regards to the impacts of shadow flicker upon the health of nearby residents, particularly in relation to epilepsy (including photo-sensitive epilepsy). Whilst the health and safety considerations of the proposal are discussed below, given that these concerns relate directly to shadow flicker it is considered prudent to be discussed here.
- 5.186 Again, whilst the Companion Guide to PPS22 has been superseded and no longer forms part of the policy context against which the proposal is assessed, its replacement affords little by way of guidance in respect of health impacts resulting from shadow flicker. As such, for the purposes of this assessment, the guidance contained therein has been used. Within the UK, approximately 0.5% of the population is epileptic and of these, 5% are photo-sensitive. Of these, approximately 5% are sensitive to the lowest frequencies (2.5-3 Hz). The frequency of wind turbines results from the frequency of blades passing and, even with the fastest moving turbines, this level falls below 2 Hz, indeed most 'new generation' turbines operate at a frequency of less than 1 Hz. Accordingly, turbines are not known to result in any adverse effects to those with photo-sensitive epilepsy. Notwithstanding this, The Grange is sited outside of a distance of 10 rotor blade diameters and accordingly, the impact of shadow flicker will not result to its occupants.

I) Aviation safety

- 5.187 The issues of impact upon aviation safety have not been considered within the submitted ES. Instead, a separate document was submitted which assesses the impact of the proposed development upon military and civil aviation. Whilst the LPA initially requested

that this be dealt with within the ES (as set out in the Scoping Opinion), it was later agreed that this was not an environmental impact. Accordingly, its omission does not make the ES submitted unsound.

Background

- 5.188 There is an established position at the application site with respect of wind turbines, resulting from the two consented/implemented turbines. At the time of the determination of the planning application in respect of these turbines, the Ministry of Defence, Defence Infrastructure Organisation Safeguarding team (MOD) raised an objection due to the potential impact that the turbines could have upon the Watchman Primary Surveillance Radar (PSR) (also referred to as the Air Traffic Control (ATC) Radar) at RAF Cottesmore and the Precision Approach Radar (PAR) at RAF Wittering. At appeal, the Inspector concluded that the two earlier consented turbines on the site which were smaller in height (98/00904/FUL), were a material consideration and represented a 'fall back' position. The MOD had not raised any objection to these earlier turbines and they were approved without mitigation. The Inspector concluded that the earlier turbines would in their own right have resulted in impact to MOD radar and accordingly, approved the appeal scheme subject to a condition in relation to radar mitigation. This condition allows for the construction and operation of the two turbines on the site either: after four years has elapsed from the date of the permission; or until a scheme of radar mitigation is submitted, approved and implemented, whichever is sooner. No mitigation is proposed by the Developer and as such, the construction and operation of these turbines is delayed until 7th September 2014.
- 5.189 It should be noted that there is no longer a PSR and associated safeguarding of RAF Cottesmore.

Impact upon civil aviation

- 5.190 Both the Civil Aviation Authority (CAA) and National Air Traffic Services En Route Ltd (NERL) have been consulted upon the proposed turbines. Neither has raised objection as the turbines will not impact upon the safeguarding of their operations or radar. Accordingly, the proposal will not result in any harmful impact to civil aviation.

Impact upon military radar and aviation

- 5.191 The MOD initially raised objection to the proposed wind farm extension on the grounds of unacceptable impact to the operation of the ATC radar at RAF bases at Wittering (27.2km from the site), Coningsby (48km) and Waddington (62.24km), and the PAR at RAF Wittering. The two radar types shall be discussed in turn.

Air Traffic Control Radar (ATC)

- 5.192 The MOD objection in respect of ATC relates to the known detrimental effects that result from wind turbines in terms of desensitisation of the radar in the vicinity of turbines, and the creation of 'false' aircraft returns which controllers must treat as real. The MOD considers that desensitisation could result in failure to detect aircraft within busy uncontrolled airspace, leading to a failure to maintain awareness of all aircraft movements (both civilian and military) which is crucial for a safe and efficient air traffic service.
- 5.193 In response to this, the Developer has submitted a proposed to secure mitigation for this impact by way of the following conditions:
- a) *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 Primary Surveillance Radars at RAF Wittering, RAF Coningsby and RAF 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.

- b) 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.*
- c) MOD-accredited 25 candela omni-directional aviation lighting OR infra-red aviation lighting shall be installed on the nacelles of all turbines. The turbines will be erected with this lighting installed and the lighting shall remain operational until such times as the wind turbines are decommissioned and removed from service.*

5.194 Whilst such conditions have previously been agreed by the MOD at appeals for various wind farms, their current position is such that agreement to the imposition of a condition will only be reached upon the submission of a technically acceptable scheme. In light of this, the Developer has submitted technical specifications for mitigation for all three RAF radar (at Wittering, Coningsby and Waddington). Owing to the defence and commercial sensitivities of this information, the schemes have been restricted from the public file and held as confidential documents – the public has not had opportunity to comment upon this. This has not affected the public’s opportunity to comment upon this element of the proposal as the initial assessment was a public document.

5.195 The MOD has however been consulted on this documentation. Comments have not been received within the requisite statutory consultation period and any response (which has been requested prior to the Committee Meeting) will be provided to Members within the Update Report. Irrespective of the response due from the MOD, as detailed above, they have previously agreed that mitigation can be achieved (other schemes in the UK have been successfully implemented) and accepted that mitigation can be secured by condition. Therefore, Officers consider that it would be unreasonable to refuse the current application on this basis, given that a condition would make the development acceptable.

Precision Approach Radar (PAR)

5.196 The position regarding PAR is more complex. The radar is used by controllers during periods of cloud cover or inclement weather to talk pilots safely to ground by providing information on the aircraft’s position relative to the runway and glide slope. The MOD objection relates to the potential for both radar processor overload and ‘track seduction’ whereby the radar are ‘seduced’ off the aircraft and on to the turbines. It is noted that there is much debate as to whether these impacts do actually arise, as around the UK there are wind farms of varying size operating within the arc of PAR without effect. However, as Inspectors have previously accepted this impact and position of the MOD, the matter must be considered.

5.197 Before setting out the consideration of the current application scheme, it is necessary to set out the history of the nearby Nutsgrove and Wrydecroft wind farms. At the time of determining these applications, the MOD raised the same objection in respect of PAR. During the subsequent appeals, the MOD confirmed that PAR mitigation could be secured and accordingly the appeals were allowed and planning permission granted, subject to conditions securing radar mitigation. For two years following the granting of permission at Nutsgrove/Wrydecroft, the relevant Developers attempted on several occasions to enter in to discussions with the MOD to construct a scheme of mitigations. These attempts were

unsuccessful and following this, LPA Officers met with all relevant parties to try and find a way forward. Again, unfortunately no resolution was reached. The issue of securing PAR mitigation is complicated by virtue that the technical aspects are covered by international arms traffic regulations. This means that only the MOD may approach the radar manufacturer to secure a mitigation scheme. Should they choose not to do this, mitigation cannot be progressed.

- 5.198 Owing to the refusal of the MOD to enter in to discussions regarding PAR mitigation, or instruct the manufacturer of the radar to work on a mitigation scheme, the LPA (contrary to an objection from the MOD) approved applications to remove and vary the radar conditions imposed upon Nuts Grove and Wrydecroft. The final revised condition allows for the construction and operation of the wind turbines but allows for their shut down for a 24 hour period (at the request of the MOD) to allow for recalibration of the PAR at RAF Wittering. As part of this, the Developers entered into a legal agreement which provides for a sum of £200,000 per development to be used by the MOD for mitigation measures.
- 5.199 To date, the LPA has secured a total of £400,000 secured through legal agreements to be used by the MOD for PAR mitigation works. The MOD has not made any request for release of these monies and no progress has been made by the MOD on beginning works towards mitigation despite the number of turbines that will be erected within the radar arc (a total of 15).
- 5.200 During the appeal relating to the two existing turbines on the French Farm application site, the Developer provided the Inspector with a quote from the radar manufacturer for the scoping of mitigation works. Whilst it is acknowledged that this quote dates from 2010, even taking into account current prices it is considered that the LPA holds sufficient monies for the scoping of mitigation to be undertaken at no cost to the MOD. Officers have sought an explanation from the MOD as to why they have not used the monies available, however to date no response has been received.
- 5.201 In light of the position detailed above, and the previous acceptance by the MOD that PAR mitigation can be undertaken, Officers proposed to follow the same approach as that taken at Nuts Grove and Wrydecroft wind farms. Therefore, it is proposed to secure a 24 hour shut down period to allow for recalibration of the PAR at RAF Wittering by condition, along with a bond of £200,000 to be used by the MOD. The Developer accepts this position and a legal agreement has been prepared to this effect. Whilst it is accepted that the MOD objects to this approach, Officers consider that it adequately addresses their concerns and secures mitigation against any potential harm to aviation safety.
- 5.202 On the basis of the above, the proposed wind farm extension accords with the Planning Practice Guidance for Renewable and Low Carbon Technology (2013) and Policy CS11 of the Peterborough Core Strategy DPD (2011).

m) Health and safety

- 5.203 There are a number of health and safety concerns that have been expressed by local residents within their objections to the proposed turbines. Each is discussed in turn.

Turbine collapse and ice throw

- 5.204 The recently published guidance document on renewable energy proposals (2013) states that topple distance from buildings is often calculated at turbine height (to vertical blade tip) plus 10% but that this is often less than the distance desired to buildings in terms of noise. In the case of the proposed turbines, this indicates a set-back distance of 110 metres. Alternatively, guidance issued by the Highways Agency¹⁰ advises upon a greater set back

¹⁰ Highways Agency Spatial planning Note SP12/09: Planning Applications for Wind Turbines Sited Near to

of turbines, albeit in respect of trunk roads (motorways and A-roads). This guidance advises that turbines should be set back by a distance of turbine height (to blade tip) plus 50% - in this instance, 150 metres set-back. Whilst this is guidance in respect of trunk roads, it affords a useful benchmark for Officers and it is considered most appropriate to use this higher set-back threshold for all properties, roads (not just trunk roads) and footways/bridleways. The proposed turbines would be set back by at least the distance required and therefore, it is considered that the turbines would not result in any unacceptable danger from collapse or ice throw.

Turbine fires

- 5.205 Errors within the turbines hub (which houses all the relevant turbine components) occur very rarely however considerable concern has been expressed from local residents. As detailed above, the proposed turbines are located a sufficient distance from properties so as to prevent any damage from subsequent collapse. Therefore, only the issue of access from emergency services need be considered. The access to the site and tracks within which serve each turbine are adequate to allow for movement of construction vehicles and the emergency service vehicles requiring access would be no larger. Therefore, it is considered that safe access for the emergency services is provided.

Dazzle to highway users

- 5.206 The above referred to Highways Agency advice also refers to the need to prevent dazzle to users of the local highway network which can pose an unacceptable highway risk. Whilst the finished colour and style of the turbine is to be secured by condition (standard practice), it would only be permitted to be light grey with a low reflective finish to prevent any dazzle from occurring.

Driver distraction

- 5.207 Concern is often raised with regards to the potential highway safety danger resulting from drivers becoming distracted from the highway as a result of viewing the turbines. The Highways Agency guidance advises that distraction should be minimised, not by screening, but by a clear continuous view of the wind farm that develops over the maximum possible length of a carriageway. The proposed development would come in to view from the highway approximately 5km from the site, albeit at a diminished scale. This would prevent sudden distraction from the turbines coming in to view, in accordance with the guidance, thereby reducing the potential safety danger.

Major high pressure gas line

- 5.208 A major high pressure gas pipeline, operated by National Grid, runs through the application site. The operator has raised no objections to the application proposal as the turbines are sited a sufficient distance so as to represent a danger. However, the construction phase will require their consent to ensure that no harm results to the structural integrity of the pipe from vibrations caused by plant and machinery. Whilst revised consultation has been undertaken with National Grid in respect of the FEIS2 and no response has yet been received, given that the revised documentation does not in any way alter the position of the proposal, it is anticipated that no objection will be received.

Conclusion

- 5.209 On the basis of the above, it is considered that the layout and design of the proposed development adequately takes in to account the health and safety issues which could arise. Consequently, the proposal will not pose any unacceptable danger to nearby residents or

users of the public highway, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Technology (2013), Policies CS11 and CS14 of the Peterborough Core Strategy DPD (2011) and Policies PP3 and PP12 of the Peterborough Planning Policies DPD (2012).

n) Telecommunications and television reception

- 5.210 It is accepted that wind turbines can have an impact upon the effective operation of telecommunications and result in disruption to television reception. It is not considered that the proposal would result in any unacceptable interference to telecommunications within the locality. The Joint Radio Company has raised no objections in respect of their operations.
- 5.211 With regards to television interference, it is not considered that this is likely to result from the proposed wind turbines. However, should any interference result, it is proposed to secure by condition, a requirement for the Developer to provide mitigation in accordance with a scheme to be submitted, specifying a time period for resolution.
- 5.212 On the basis of the above, it is considered that the proposed wind turbines will not result in any unacceptable impact upon either telecommunications or television reception, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Energy (2013) and Policy CS11 of the Peterborough Core Strategy DPD (2011).

o) Other matters

- 5.213 The following objections have been received from local residents which are not discussed within the above assessment:
- 5.214 **Impact of piling for foundations upon structural stability of neighbouring properties** – The application scheme proposes to pile the turbine base foundations owing to the geology of the application site and its surroundings. It is not considered that this will result in any undue impact to the structural stability of neighbouring properties. Accordingly, the LPA does not require the submission of a land stability report, nor a report into the structural stability of neighbouring properties.
- 5.215 **There are examples of other wind turbine appeals in the UK which should be referred to / other wind farm developments nearby have previously been refused** – As with any planning application, wind turbine proposals must be considered on a case-by-case basis and the context within which they are situated. The application must be determined based upon its own merits and therefore, little weight can be given to other appeal decisions elsewhere in the UK.
- 5.216 **Request that the Developer fly at blimp at the turbine heights to allow for better consideration** – The submitted information which accompanied by the planning application allows for adequate assessment of the likely significant environmental impacts. This request is not necessary and therefore would be unreasonable.
- 5.217 **Loss of Grade I agricultural land** – Whilst it is accepted that the proposal would, for a temporary period of time, result in the loss of agricultural land, the proportion is insignificant. Only those areas occupied by the turbines, crane pads, substation and access tracks will be lost during the lifetime of the development with the remaining arable fields maintained for crop growing. Following decommissioning of the wind farm, the land would be restored to its former state (secured by condition) with part of the turbine bases removed albeit not completely. This would still allow for farming of the land.
- 5.218 **Grid connection** – The Developer has provided the indicative route for the grid connection within the submitted ES and its likely environmental impacts have been considered. Whilst the exact route has yet to be fully determined, this is not unusual given the complexities

associated with grid connection following the granting of planning permission. It is not considered that the lack of exact routing represents a failing of the assessment undertaken.

- 5.219 **Wind turbines are inefficient and the proposal will offer little contribution to the UK's energy production target** – Paragraph 98 of the National Planning Policy Framework (2012) clearly states that when determining planning applications, local authorities should not require applicants to demonstrate the overall need for renewable/low carbon energy and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions.
- 5.220 **Concern that granting planning permission would set a precedent** – As detailed above, all applications must be considered on their own merits and the granting of this scheme would not automatically result in permissions being granted for other nearby schemes.
- 5.221 **The development would have an impact upon residents in Lincolnshire and the decision should be made in conjunction with the Lincolnshire Planning Authority** – The application site is located entirely within the authority boundary of Peterborough City Council and therefore the statutory duty to consider it lies with this authority. However, given the close proximity to the boundary with South Holland District Council/Lincolnshire County Council, both authorities were consulted and have raised no objections.
- 5.222 **Monies from the development will go to the village of Thorney, not those residents affected** – The pool of money offered by the Developer, in line with recent Government guidance, does not constitute a material planning consideration.
- 5.223 **The UN recently ruled that the UK had failed to adequately consult on the National Renewable Energy Plan and therefore any applications for renewable energy are invalid** – This ruling in no way alters the determination of planning applications for renewable energy within the UK. The assessment undertaken must accord with the Town and Country Planning Act 1990 and Environmental Impact Assessment Regulations (2011 as amended).
- 5.224 **The Applicant has not taken into account the recently published revised guidance from the Secretary of State** – The application was prepared before the publication of this document, however the Agent has provided Officers with a letter detailing their assessment. Notwithstanding this, it is for the LPA to determine the application in accordance with the adopted development plan.
- 5.225 **The application details micro siting would be permitted up to 40 metres but this is not the case for T1** – Micro siting of the turbines can only be carried out providing that it does not result in harm to other material considerations e.g. buffers to habitat. This is the case for T1 which does not allow for micro siting to the extent applied elsewhere within the site.

6 Conclusions

Subject to the imposition of the attached conditions, the proposal is acceptable having been assessed in the light of all material considerations, including weighing against relevant policies of the development plan and specifically:

- whilst the proposal would result in a degree of harm to the immediate vicinity of the site, it would not result in any significant impact to the landscape character of the area or unacceptable impact upon visual amenity, in accordance with paragraph 109 of the National Planning Policy Framework (2012), the Planning Practice Guidance for Renewable and Low Carbon Energy (2013), Policies CS11 and CS20 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012);
- whilst the proposal will result in some harm to the setting of Crowland Abbey (Grade I) and

other local heritage assets, this harm is less than significant/substantial. It is considered that this harm is not substantially greater than the impact resulting from the two consented/implemented turbines at the site and that the benefit arising from the renewable energy generation of the development outweighs the harm that would result, in accordance with paragraph 134 of the National Planning Policy Framework (2012);

- the proposed development will not result in any significant environmental impacts, to the detriment of both avian or non-avian ecology populations, in accordance with paragraph 118 of the National Planning Policy Framework (2012), Policies CS11 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP16 and PP19 of the Peterborough Planning Policies DPD (2012);
- the proposed development itself would not be at unacceptable risk from flooding and will ensure safety throughout its lifetime, with its wider sustainability benefits outweighing any harm caused. The proposal is therefore in accordance with paragraphs 102 and 103 of the National Planning Policy Framework (2012), Policy CS22 of the Peterborough Core Strategy DPD (2011) and the Peterborough Flood and Water Management SPD (2012);
- the proposed development would accord with the relevant noise limitations (as set out in ETSU-R-97) and whilst some noise impact would result, it would be within acceptable limits so as to not result in significant harm to the amenities of neighbouring occupants, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Energy (2013), Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012);
- whilst it is accepted that some disruption will occur to the highway network, it is considered that this will not be to unacceptable levels, in accordance with Policy CS14 of the Peterborough Core Strategy DPD (2011) and Policy PP12 of the Peterborough Planning Policies DPD (2012);
- the proposal will not result in any unacceptable impact to the amenities of neighbouring occupants by virtue of shadow flicker, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Energy (2013), Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012);
- the proposed development adequately addresses the concerns with regards to Ministry of Defence radar and would not result in any unacceptable danger to aviation safety, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Technology (2013) and Policy CS11 of the Peterborough Core Strategy DPD (2011);
- The proposed development, by virtue of its design and layout, adequately addresses any concerns with regards to health and safety, in accordance with the Planning Practice Guidance for Renewable and Low Carbon Technology (2013), Policies CS11 and CS14 of the Peterborough Core Strategy DPD (2011) and Policies PP3 and PP12 of the Peterborough Planning Policies DPD (2012); and
- On balance, it is considered that the benefits arising from the proposed development through the contribution of energy production through renewable sources outweighs any of the harm that would result, in accordance with paragraph 98 of the National Planning Policy Framework (2012).

7 Recommendation

The Director of Growth and Regeneration recommends that planning permission is **GRANTED** subject to the signing of a **LEGAL AGREEMENT** and the following conditions:

- C 1 The development hereby permitted shall be begun before the expiration of five years from the date of this permission.

Reason: In accordance with Section 91 of the Town and Country Planning Act 1990 (as amended).

- C 2 The planning permission is for a period not exceeding 25 years from the date when electricity is first exported to the electricity grid network from any of the wind turbines within the development hereby permitted (“first Export Date”). Written confirmation of the First Export Date shall be provided to the Local Planning Authority within 28 days of the First Export Date.

Reason: To preserve the amenities of neighbouring residents and the surrounding area, in accordance with Policies CS11, CS16, CS20 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP3, PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

- C 3 No later than 24 months before the expiry date of this permission, a Decommissioning and Site Restoration Scheme shall be submitted to and approved in writing by the Local Planning Authority. The Scheme shall include:
- a) The removal of all surface elements and turbine bases, to a depth to be agreed below the ground level of the development;
 - b) Confirmation of the management and timing of works so as to achieve completion within 18 months of the expiry date of this permission;
 - c) A traffic management plan to fully address highway and public rights of way issues during the period of the decommissioning works;
 - d) An environmental management plan to cover the decommissioning process providing details of the means of avoidance and mitigation of any impacts on biodiversity recorded within the development site and pollution prevention measures;
 - e) Any works of restoration and aftercare necessary.

The Scheme shall be fully implemented as approved.

Reason: In order to preserve and protect the visual amenity of the surrounding area and ecology, in accordance with Policies CS11 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP3, PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

- C 4 If any turbine hereby permitted ceases to produce electricity to the grid for a continuous period of 12 months (unless such a cessation is due to the turbine being under repair or like for like replacement of parts), it shall be dismantled and removed from the site in accordance with a scheme to be submitted to and approved in writing by the Local Planning Authority within 60 days of the cessation of the 12 month period provided for in this condition. The Scheme shall include:
- a) The removal of all surface elements, plus turbine bases to a depth to be agreed below the ground level of the wind farm;
 - b) Confirmation of the management and timing of works so as to achieve completion within 18 months of the date of approval of the Scheme by the Local Planning Authority;
 - c) A traffic management plan to fully address highway and public rights of way issues during the period of the decommissioning works;
 - d) An environmental management plan to cover the decommissioning process providing details of the means of avoidance and mitigation of any impacts on biodiversity recorded within the development site and pollution prevention measures;
 - e) Any works of restoration and aftercare necessary.

The Scheme shall be fully implemented as approved.

Reason: To preserve the amenities of neighbouring residents and the surrounding area, in accordance with Policies CS11, CS16, CS20 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP3, PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

C 5 The development hereby permitted shall not exceed 100 metres to vertical blade tip height and, subject to the provisions of conditions C6, C7 and C8, shall be carried out in accordance with the following approved drawings:

- Proposed red line drawing (drawing number 130524_1103_BlockPlan_xyz_1.00)
- Proposed layout (drawing number 130524_1103_SiteLayout_O_xyz_1.00)
- Proposed context plan (drawing number 130524_1103_ContextPlan_xyz_1.00)
- Proposed turbine elevations (drawing number 130524_1103_PlanElevations_T_xyz_1.00)
- Proposed restoration plan (drawing number 130524_1103_Restoration_xyz_1.00)
- Site Location Plan (drawing number 130524_1103_LocationPlan_XYZ_1.00)
- Site Layout Plan – Detail, Sheet 1 (drawing number 130524_SiteLayout_D_1_xyz_1.00)
- Site Layout Plan – Detail, Sheet 1 (drawing number 130524_SiteLayout_D_2_xyz_1.00)
- Site Layout Plan – Detail, Sheet 1 (drawing number 130524_SiteLayout_D_3_xyz_1.00)
- Site Layout Plan – Detail, Sheet 1 (drawing number 130524_SiteLayout_D_4_xyz_1.00)
- Site Layout Plan – Detail, Sheet 1 (drawing number 130524_SiteLayout_D_5_xyz_1.00)

Reason: For the avoidance of doubt and in the interests of the visual amenity of the area, in accordance with Policy CS11 of the Peterborough Core Strategy DPD (2011).

C 6 Prior to the commencement of development, details of the external appearance of the wind turbines (finish and colour) shall be submitted to and approved in writing by the Local Planning Authority. The development shall be carried out in accordance with the approved details and retained as such thereafter.

Reason: In the interests of the visual amenity of the locality, in accordance with Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011) and Policy PP2 of the Peterborough Planning Policies DPD (2012).

C 7 No wind turbine shall be externally lit except for the purposes of aviation safety, as set out in condition C18.

Reason: In the interests of the visual amenity of the locality, in accordance with Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011) and Policy PP2 of the Peterborough Planning Policies DPD (2012).

C 8 The wind turbines and their associated crane hardstandings shall be situated within 40 metres of the positions shown on the approved drawings and the access tracks, hardstanding and construction compound shall be situated within 5 metres of the positions shown on the approved drawings, or within the micro siting allowances shown on drawing number 130524_1103_BlockPlan_xyz_1.00, whichever is less.

Reason: In the interests of the amenity of neighbouring residents and protecting the ecology of the surrounding site, in accordance with Policies CS11, CS16 and CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP3, PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

C 9 Prior to the commencement of development, a Construction Method Statement shall be submitted to and approved in writing by the Local Planning Authority. The Construction Method Statement shall include measures to secure:

- a) A Traffic Management Plan;
- b) Formation of the construction compound, access tracks and any areas of hardstanding;
- c) Dust management;
- d) Cleaning of site entrances adjacent to the public highway;
- e) Vehicle cleaning equipment and use;
- f) Pollution control of: water courses, subsoil, bunding of fuel storage areas and sewage disposal;
- g) Temporary site illumination (which shall be arranged so that no danger or inconvenience is caused to users of the adjoining public highway);
- h) Details of the methods to be adopted to reduce the effects of noise occurring during the construction period to the lowest practicable level and in accordance with BS5228;
- i) Disposal of surplus materials;
- j) The construction of the access into the site and the creation of and retention of associated visibility splays;
- k) Construction crane pads;
- l) Carrying out of foundation works;
- m) Sheeting of all HGVs taking spoil or other loose materials to/from the site to prevent spillage or deposits on the public highway;
- n) Soils storage and handling;
- o) An environmental management plan to cover the decommissioning process providing details of the means of avoidance and mitigation of any impacts on biodiversity recorded within the development site and pollution prevention measures; and
- p) Post-construction restoration and reinstatement of the working areas.

Development shall be carried out in accordance with the approved Construction Method Statement.

Reason: In order to prevent any harm occurring to neighbouring residents or the safety of the public highway during the construction, restoration and reinstatement period, in accordance with Policies CS11, CS14 and CS16 of the Peterborough Core Strategy DPD (2011) and Policies PP3 and PP12 of the Peterborough Planning Policies DPD (2012).

- C10 Prior to the commencement of development, a scheme shall be submitted to and approved in writing by the Local Planning Authority detailing works required within the public highway to enable the construction of the development. The scheme shall include:

- Details of pre- and post-construction condition surveys of all relevant roads;
- Detailed geometric and construction plans for all works to relevant roads;
- Track plots showing how all vehicles shall manoeuvre within the public highway;
- Provision of any new kerbs, edging, drainage, signs and lining required;
- Details of any strengthening required to existing embankments; and
- Details of the removal and reinstatement of any highways structures and signs.

The scheme shall be implemented as approved.

Reason: In order to prevent any harm to the safety of the public highway, in accordance with Policy CS14 of the Peterborough Core Strategy DPD (2011) and Policy PP12 of the Peterborough Planning Policies DPD (2012).

- C11 Hours of work during construction and any associated traffic movements to or from the site shall be limited to 07.30 to 19.00 Mondays to Fridays and to 07.00 to 14.00 on Saturdays. No work shall take place outside these hours (including Bank or other Public Holidays) except works to erect turbines, dust suppression, emergency work, commissioning or testing of wind turbines where such work has previously been agreed in writing by the Local Planning Authority.

Reason: In order to protect the amenities of neighbouring residents in accordance with Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011).

- C12 No development shall take place until a written scheme of archaeological work has been submitted to and approved in writing by the Local Planning Authority. No development shall take place unless in accordance with the approved scheme which shall be implemented, including any post-development requirements e.g. archiving and submission of final reports.

Reason: To secure the obligation on the planning applicant or developer to mitigate the impact of their scheme on the historic environment when preservation in situ is not possible, in accordance with paragraphs 128 and 141 of the National Planning Policy Framework (2012), Policy CS17 of the Peterborough Core Strategy DPD (2011) and Policy PP17 of the Peterborough Planning Policies DPD (2012).

- C13 Prior to the commencement of development, a scheme for the provision and implementation of surface water drainage shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include:
- Details of the proposed drainage systems for the development, including detailed specifications of any drainage elements;
 - Written confirmation from the North Level District Internal Drainage Board of their agreement should a positive discharge point be required from the site; and
 - Details of ownership/maintenance for the lifetime of the development.

The works/scheme shall be carried out in accordance with the approved plans/specification and at such time(s) as may be specified in the approved scheme.

Reason: In order to prevent any unacceptable flood risk from arising elsewhere, in accordance with paragraph 103 of the National Planning Policy Framework (2012) and Policy CS22 of the Peterborough Core Strategy DPD (2012).

- C14 Prior to the commencement of development, a scheme for post-construction bird monitoring (including the period of time in which the monitoring shall take place) shall be submitted to and approved in writing by the Local Planning Authority. The monitoring shall be implemented as approved.

Reason: In order to preserve and protect bird species within and surrounding the site, in accordance with Policy CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

- C15 Prior to the commencement of development, a scheme for the management of habitats within the wider survey area (as shown on Environmental Statement Volume 3 Figure 6.1 (drawing number 130513_1103_PH1_1.00)) throughout the lifetime of the development shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved.

Reason: In order to preserve and protect important habitats and species within and surrounding the site, in accordance with Policy CS21 of the Peterborough Core Strategy DPD (2011) and Policies PP16 and PP19 of the Peterborough Planning Policies DPD (2012).

- C16 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 development 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 Primary Surveillance Radars at RAF

Wittering, RAF Coningsby and RAF Waddington ('the Radars') and the air traffic control operations of the Ministry of Defence which are reliant upon the Radars. The Radar Mitigation Scheme shall set out the appropriate measures to be implemented to mitigate the impact of the development on the Radars.

No turbines shall become operational unless and until all measures required by the approved Radar Mitigation Scheme 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.

Reason: In order to ensure safe and efficient flying for the military and commercial flights, in accordance with Policy CS11 of the Peterborough Core Strategy DPD (2011).

- C17 The turbine blades will be shut down for a maximum period of 24 hours in any calendar year following a request by the Ministry of Defence in order to allow for calibration of the Precision Approach Radar system at RAF Wittering in accordance with MOD FCI 3 (Flight Checking Instrument No. 3). Any requests for shutdown shall be made in writing by the Local Planning Authority at least seven days in advance.

Reason: In order to ensure safe and efficient flying for the military and commercial flights, in accordance with Policy CS11 of the Peterborough Core Strategy DPD (2011).

- C18 Ministry of Defence-accredited 25 candela omni-directional aviation lighting or infra-red aviation lighting shall be installed on the nacelles of all turbines. The turbines shall be erected with this lighting installed and the lighting shall remain operational until such time(s) as the wind turbines are decommissioned and removed from service.

Reason: In order to ensure safe and efficient flying for the military and commercial flights, in accordance with Policy CS11 of the Peterborough Core Strategy DPD (2011).

- C19 Prior to the commencement of development, a scheme to secure the investigation and alleviation of any electro-magnetic interference to terrestrial television caused by the operation of the wind turbines hereby approved has been submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented as approved.

Reason: In the interests of the amenities of neighbouring residents, in accordance with Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011).

- C20 Prior to the commencement of development, a scheme shall be submitted to and approved in writing by the Local Planning Authority setting out a protocol for the assessment of shadow flicker in the event of any complaint from the owner/occupier of a residential dwelling (defined as a building within Use Class C3 of C4 of the Town and Country Planning (Use Classes) Order (as amended)) which lawfully exists or had planning permission at the date of this permission. The scheme shall include remedial measures and operation of the turbines shall be in accordance with the approved measures.

Reason: In order to preserve the amenities of neighbouring residents, in accordance with Policies CS11 and CS16 of the Peterborough Core Strategy DPD (2011) and Policy PP3 of the Peterborough Planning Policies DPD (2012).

- C21 The rating level of noise immissions from the combined effects of the wind turbines (including the application of any tonal penalty) when determined in accordance with the attached Guidance Notes (to this condition), shall not exceed the values for the relevant integer wind speed set out in, or derived from, the table attached to this condition at any dwelling which is lawfully existing or has planning permission at the date of this permission and:

- a) The wind farm operator shall continuously log power production, wind speed and wind direction, all in accordance with Guidance Note 1(d). These data shall be retained for a period of not less than 24 months. The wind farm operator shall provide this information in the format set out in the attached Guidance Note 1(e) to the Local Planning Authority on its request, within 14 days of receipt in writing of such a request.
- b) No electricity shall be exported until the wind farm operator has submitted to the Local Planning Authority for written approval, a list of proposed independent consultants who may undertake compliance measurements in accordance with this condition. Amendments to the list of approved consultants shall be made only with the prior written approval of the Local Planning Authority.
- c) Within 21 days from receipt of a written request from the Local Planning Authority following a complaint made by an owner/occupier of any residential dwelling (defined as a building within Use Class C3 of C4 of the Town and Country Planning (Use Classes) Order (as amended)) which lawfully exists or had planning permission at the date of this permission, the wind farm operator shall, at its expense, employ a consultant approved by the Local Planning Authority to assess the level of noise immissions from the wind farm at the complainant's property and in accordance with the procedures described in the attached Guidance Notes. The written request from the Local Planning Authority shall set out the date, time and location that the complaint relates to and any identified atmospheric conditions (including wind direction) and include a statement as to whether, in the opinion of the Local Planning Authority, the noise giving rise to the complaint contains or is likely to contain a tonal component.
- d) The assessment of the rating level of noise immissions shall be undertaken in accordance with an assessment protocol that has been submitted to and approved in writing by the Local Planning Authority, prior to the commencement of development. The protocol shall include the proposed measurement location identified in accordance with the attached Guidance Notes where measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, and also the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immissions. The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request of the Local Planning Authority under paragraph (c), and such others as the independent consultant considers likely to result in a breach of the noise limits.
- e) Where a dwelling to which a complaint is related is not listed in the tables attached to this condition, the wind farm operator shall submit to the Local Planning Authority for written approval, proposed noise limits selected from those listed in the Tables to be adopted at the complainant's dwelling for compliance checking purposes. The proposed noise limits shall be those limits selected from Table 1 and 2, having regard to Table 3, and specified for a listed location which the independent consultant considers as being likely to experience the most similar background noise environment to that experienced at the complainant's dwelling. The rating level of noise immissions resulting from the combined effects of the wind turbines when determined in accordance with the attached Guidance Notes shall not exceed the noise limits approved in writing by the Local Planning Authority for the complainant's dwelling.
- f) The wind farm operator shall provide to the Local Planning Authority the independent consultant's assessment of the rating level of noise immissions undertaken in accordance with the attached Guidance Notes within 2 months of the date of the written request of the Local Planning Authority for compliance measurements to be made under paragraph (c). The assessment shall include all data collected for the

purposes of undertaking the compliance measurements, such data to be provided in the format set out in Guidance Note 1(e) of the attached Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with the attached Guidance Note 1(a) and certificates of calibration shall be submitted to the Local Planning Authority with the independent consultant's assessment of the rating level of noise immissions.

- g) Where a further assessment of the rating level of noise immissions from the wind farm is required pursuant to the attached Guidance Note 4(c), the wind farm operator shall submit a copy of the further assessment within 21 days of submission of the independent consultant's assessment pursuant to paragraph (d) above.#

Table 1 – Daytime (07:00 – 23:00) Noise limits expressed in dB L_{A90,10 minute} as a function of the standardised wind speed (m/s) at 10 metre height as determined within the site averaged over 10 minute periods

Table 1: Daytime Noise Limit: dB L_{A90}										
Location	Standardised wind speed at 10 metre height (m/s) within the site averaged over 10-minute periods									
	3	4	5	6	7	8	9	10	11	12
French Farm	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
Spinney Lodge	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H1	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H2	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H3	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H4	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H5	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H6	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H7	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H8	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H9	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H10	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H11	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H12	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H13	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H14	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H15	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H16	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H17	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H18	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H19	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H20	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H21	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H22	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H23	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H24	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H25	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H26	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H27	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H28	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H29	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H30	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H31	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H32	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7

Table 1: Daytime Noise Limit: dB L_{A90}

Location	Standardised wind speed at 10 metre height (m/s) within the site averaged over 10-minute periods									
	3	4	5	6	7	8	9	10	11	12
H33	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H34	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H35	37.5	37.5	37.5	37.5	39.7	43.8	48.1	51.8	53.7	53.7
H36	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H37	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H38	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H39	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H40	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H41	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H42	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0
H43	37.5	37.5	37.5	37.5	37.5	40.3	43.8	46.6	48.0	48.0

Table 2 – Night-time (23:00 – 07:00) Noise limits expressed in dB L_{A90,10 minute} as a function of the standardised wind speed (m/s) at 10 metre height as determined within the site averaged over 10 minute periods

Table 2: Night-time Noise Limit: dB L_{A90}

Location	Standardised wind speed at 10 metre height (m/s) within the site averaged over 10-minute periods									
	3	4	5	6	7	8	9	10	11	12
French Farm	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
Spinney Lodge	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H1	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H2	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H3	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H4	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H5	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H6	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H7	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H8	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H9	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H10	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H11	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H12	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H13	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H14	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H15	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H16	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H17	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H18	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H19	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H20	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H21	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H22	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H23	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H24	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H25	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H26	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H27	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8

Table 2: Night-time Noise Limit: dB L_{A90}

Location	Standardised wind speed at 10 metre height (m/s) within the site averaged over 10-minute periods									
	3	4	5	6	7	8	9	10	11	12
H28	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H29	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H30	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H31	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H32	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H33	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H34	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H35	43.0	43.0	43.0	43.0	43.0	43.0	46.5	50.7	54.3	56.8
H36	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H37	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H38	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H39	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H40	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H41	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H42	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1
H43	43.0	43.0	43.0	43.0	43.0	43.0	44.5	49.0	52.8	55.1

Table 3: Coordinate locations of the properties listed in Table 1 and 2

Receptor Location	Easting	Northing	Receptor Location	Easting	Northing
French Farm	528589	308454	H22	529861	308467
Spinney Lodge	528647	309787	H23	529697	308347
H1	528624	309795	H24	529599	308282
H2	528610	309808	H25	529574	308411
H3	528599	309822	H26	528640	308389
H4	528589	309865	H27	528445	308356
H5	528542	309892	H28	528424	308354
H6	528517	309912	H29	528148	308316
H7	528472	309954	H30	527933	308314
H8	528429	309972	H31	527604	308184
H9	528566	309947	H32	527635	307985
H10	528708	310349	H33	528504	307623
H11	528764	310380	H34	527267	308129
H12	528857	310531	H35	527172	307905
H13	528899	310607	H36	527212	309006
H14	528935	310732	H37	527103	308891
H15	529011	310766	H38	526682	309421
H16	528879	310167	H39	527115	309845
H17	529103	310098	H40	526862	310241
H18	529420	310003	H41	527520	310472
H19	529743	309880	H42	527533	310568
H20	530438	308693	H43	527572	310588
H21	529801	308551			

Note to Table 3: The geographical coordinate references are provided for the purpose of identifying the general location of dwellings to which a given set of noise limits applies.

Note:

For the purposes of this condition, a “dwelling” is a building within Use Class C3 & C4 of the Town and Country Planning (Use Classes) Order 1987 which lawfully exists or had planning permission at the date of this consent.

Guidance Notes for Noise Conditions

These notes are to be read with and form part of the noise condition. They further explain the condition and specify the methods to be employed in the assessment of complaints about noise immissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Guidance Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Guidance Note 3. Reference to ETSU-R-97 refers to the publication entitled “The Assessment and Rating of Noise from Wind Farms” (1997) published by the Energy Technology Support Unit (ETSU) for the Department of Trade and Industry (DTI).

Guidance Note 1

- (a) Values of the $L_{A90,10 \text{ minute}}$ noise statistic should be measured at the complainant's property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK adopted standard in force at the time of the measurements). Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.
- (b) The microphone should be mounted at 1.2 – 1.5 metres above ground level, fitted with a two-layer windshield or suitable equivalent approved in writing by the Local Planning Authority, and placed outside the complainant's dwelling. Measurements should be made in “free field” conditions. To achieve this, the microphone should be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground at the approved measurement location. In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, The Company shall submit for the written approval of the Local Planning Authority details of the proposed alternative representative measurement location prior to the commencement of measurements and the measurements shall be undertaken at the approved alternative representative measurement location.
- (c) The $L_{A90,10 \text{ minute}}$ measurements should be synchronised with measurements of the 10-minute arithmetic mean wind and operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.
- (d) To enable compliance with the conditions to be evaluated, The Company shall continuously log arithmetic mean wind speed in metres per second and wind direction in degrees from north at hub height for each turbine and arithmetic mean power generated by each turbine, all in successive 10-minute periods. Unless an alternative procedure is previously agreed in writing with the Planning Authority, this hub height wind speed, averaged across all operating wind turbines, shall be used as the basis for the analysis. All 10 minute arithmetic average mean wind speed data measured at hub height shall be ‘standardised’ to a reference height of 10 metres as described in ETSU-R-97 at page 120 using a reference roughness length of 0.05 metres . It is this standardised 10 metre height wind speed data, which is correlated with the noise measurements determined as valid in accordance with Guidance Note 2, such correlation to be undertaken in the manner described in Guidance Note 2. All 10-minute periods shall commence on the hour and in 10- minute increments thereafter.
- (e) Data provided to the Local Planning Authority in accordance with the noise condition shall be provided in comma separated values in electronic format.
- (f) A data logging rain gauge shall be installed in the course of the assessment of the levels of noise immissions. The gauge shall record over successive 10-minute periods synchronised with the periods of data recorded in accordance with Note 1(d).

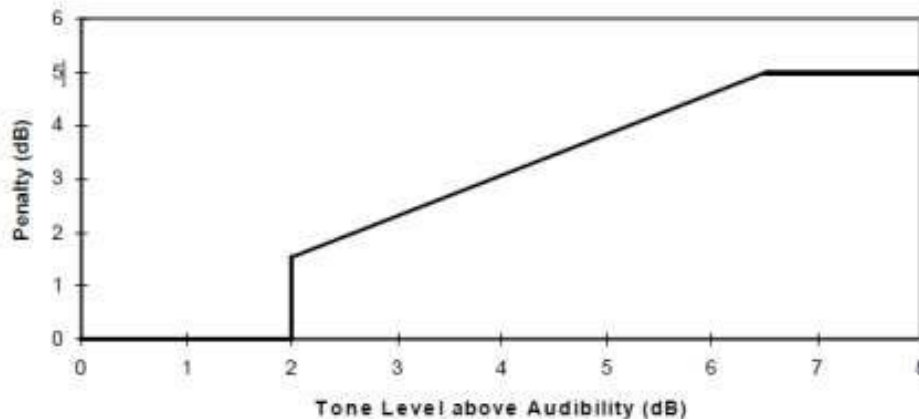
Guidance Note 2

- (a) The noise measurements shall be made so as to provide not less than 20 valid data points as defined in Guidance Note 2 (b).
- (b) Valid data points are those measured in the conditions specified in the agreed written protocol under paragraph (d) of the noise condition, but excluding any periods of rainfall measured in the vicinity of the sound level meter. Rainfall shall be assessed by use of a rain gauge that shall log the occurrence of rainfall in each 10 minute period concurrent with the measurement periods set out in Guidance Note 1.

- (c) For those data points considered valid in accordance with Guidance Note 2(b), values of the $L_{A90,10 \text{ minute}}$ noise measurements and corresponding values of the 10- minute wind speed, as derived from the standardised ten metre height wind speed averaged across all operating wind turbines using the procedure specified in Guidance Note 1(d), shall be plotted on an XY chart with noise level on the Y-axis and the standardised mean wind speed on the X-axis. A least squares, “best fit” curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

Guidance Note 3

- (a) Where, in accordance with the approved assessment protocol under paragraph (d) of the noise condition, noise immissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component, a tonal penalty is to be calculated and applied using the following rating procedure.
- (b) For each 10 minute interval for which $L_{A90,10 \text{ minute}}$ data have been determined as valid in accordance with Guidance Note 2 a tonal assessment shall be performed on noise immissions during 2 minutes of each 10 minute period. The 2 minute periods should be spaced at 10 minute intervals provided that uninterrupted uncorrupted data are available (“the standard procedure”). Where uncorrupted data are not available, the first available uninterrupted clean 2 minute period out of the affected overall 10 minute period shall be selected. Any such deviations from the standard procedure, as described in Section 2.1 on pages 104-109 of ETSU-R-97, shall be reported.
- (c) For each of the 2 minute samples the tone level above or below audibility shall be calculated by comparison with the audibility criterion given in Section 2.1 on pages 104-109 of ETSU-R-97.
- (d) The tone level above audibility shall be plotted against wind speed for each of the 2 minute samples. Samples for which the tones were below the audibility criterion or no tone was identified, a value of zero audibility shall be used.
- (e) A least squares “best fit” linear regression line shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the “best fit” line at each integer wind speed. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Guidance Note 2.
- (f) The tonal penalty is derived from the margin above audibility of the tone according to the figure below.



Guidance Note 4

- (a) If a tonal penalty is to be applied in accordance with Guidance Note 3 the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Guidance Note 2 and the penalty for tonal noise as derived in accordance with Guidance Note 3 at each integer wind speed within the range specified by the Local Planning Authority in its written protocol under paragraph (d) of the noise condition.
- (b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Guidance Note 2.
- (c) In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant’s dwelling approved in accordance with paragraph (e) of the noise condition, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise immission only.
- (d) The Company shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment

shall be undertaken in accordance with the following steps:

- (e) Repeating the steps in Guidance Note 2, with the wind farm switched off, and determining the background noise (L_3) at each integer wind speed within the range requested by the Local Planning Authority in its written request under paragraph (c) and the approved protocol under paragraph (d) of the noise condition.
- (f) The wind farm noise (L_1) at this speed shall then be calculated as follows where L_2 is the measured level with turbines running but without the addition of any tonal penalty:

$$L_1 = 10 \log \left[10^{L_2/10} - 10^{L_3/10} \right]$$

- (g) The rating level shall be re-calculated by adding arithmetically the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise L_1 at that integer wind speed.
- (h) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note 3 above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Local Planning Authority for a complainant's dwelling in accordance with paragraph (e) of the noise condition then no further action is necessary. If the rating level at any integer wind speed exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Local Planning Authority for a complainant's dwelling in accordance with paragraph (e) of the noise condition then the development fails to comply with the conditions.