

KEEP Kirdford and Wisborough 'Green'

KKWG STATEMENT OF CASE UNDER RULE 6

LPA Application No: Ref WSCC/083/13/KD

PINS Ref: APP/P3800/A/14/2227410

**SITE: Oil and Gas exploration application by
Celtique Energie on land to the south of Boxal
Bridge, Kirdford and Wisborough Green, West
Sussex**

January 2015

Statement of Case

1 Introduction

1.1 This statement sets out the case of the Keep Kirdford and Wisborough 'Green' Group, KKWG (the Group) in respect of the appeal submitted by Celtique Energie. The appeal is made by the company against the unanimous decision taken by West Sussex County Council (WSSCC) Planning Committee on July 22nd to refuse planning permission for an Oil/Gas Exploratory well.

1.2 The outline planning application (Ref WSSCC/083/13/KD) dated September 8th, 2013 is for:

"... the installation of a well and associated infrastructure, including access road and soil bunds, for the drilling of a vertical borehole and contingent horizontal borehole from the same well for the exploration, testing and evaluation of hydrocarbons for a temporary period of three years". (updated information April 2014 and Appellant SoC 2014).

2 The Keep Kirdford and Wisborough Green Group

2.1 Keep Kirdford and Wisborough Green (KKWG) is a local voluntary group of residents. It is a constituted community group based in the villages of Kirdford and Wisborough Green. By its Constitution,

"The principal aim of the Group shall be to engage with planning applications, public inquiries and any other statutory processes to protect the parishes of Kirdford and Wisborough Green and surrounding areas against any exploration of Oil and Gas... and to provide independent peer-reviewed evidence."

The group has been running for two years and is committed to ensuring that development in and around the village is sustainable and appropriate.

2.2 KKWG welcomed the unanimous decision made by the West Sussex County Council (WSSCC) Minerals Planning Committee on July 22nd, 2014 to turn down the application. This followed unanimous objections by both Parish Councils, by the Sussex Wildlife Trust, by the local MP, The Rt. Hon. Nick Herbert, and comments by Chichester District Council. When the matter was put out to public consultation 2,471 members of the public opposed the proposal. Only 18 comments supported the application.

3 The proposal

3.1 Inadequate information was originally provided by the Appellant within its Environmental Statement (ES) as commented on in a number of the objections. WSCC wrote a 4 sided A4 letter December 4th, 2013 and a second letter dated December 20th requesting further information. However, so far as we are aware, only some of this was provided by the company. Information still awaited includes:

- noise impact on neighbouring land, including Northup Copse
- flood mitigation at Boxal Bridge to enable the passage of site traffic
- the effect of development on air quality, particularly from the flare and site vehicles.

The impact of the scheme on residents therefore remains incompletely understood.

4 Local context of the application site

4.1 The appeal site comprises an agricultural field, part of a larger area linked to ancient woodland by hedges, shaws (strips of woodland) and by the Boxal Brook to the River Arun, to the Upper Arun Site of Special Scientific Interest (SSSI) and thence to its Special Area of Conservation (SAC). It is 70m from Northup Copse Nature Reserve and 460m from the South Downs National Park (SDNP) and The Mens SAC. This locality is a relatively undisturbed part of England supporting internationally important wildlife species and habitats. Such areas are becoming rare in England and which national and local policies are committed to protecting.

4.2 The application site is situated within the setting of the SDNP and in an area with some of the least disturbed ancient woodland in England. Wisborough Green is a designated Conservation Area with many Listed Buildings covering the central section of the village, its green, the school and a variety of assets. Access to the proposed site is through this Conservation Area. Kirdford and Wisborough Green lie in the North East Parishes section of Chichester District, recognised by Chichester District Council for its outstanding rural qualities (CDC 1999; SDNP 2013).

5 Transport

- 5.1** We will bring evidence to complement that to be presented by WSCC. We will demonstrate that there are numerous significant deficiencies in the transport aspects of the proposal.
- 5.2** Our evidence will argue that the Kirdford Road access to and from the appeal site is inadequate to accommodate the entrance and exit of Heavy Goods Vehicles at the same time. This is likely to cause vehicles attempting to enter the site to remain on the carriageway, causing a hazard for other traffic as noted in the Road Safety Audit submitted with the application. The Appellant has recognised that two-way access is required with attempts to widen the access as well as creating a passing place on the access track. However, our evidence will show that the appellant's proposals will not resolve the problem reliably. This important issue should not be left for agreement between the appellant and the Highway Authority at a later date by condition because it is fundamental to the safe operation of the site.
- 5.3** It will be demonstrated that the local highway network between the A272 and the site is not conducive to the safe passage of the anticipated volume of HGVs (as outlined by the Appellant in the application documents). By assessment of the swept paths of tipper trucks as well as articulated vehicles along Kirdford Road it will be argued that the impact of the proposed level of HGVs would generate a risk to highway safety, including vulnerable road users, due to insufficient available forward visibility and road widths.
- 5.4** This is a problem that should not be accepted simply as an increased risk associated with the development, particularly in view of the accident history of this stretch of road. The appellant has proposed no remedy other than a small amount of foliage removal and signage in advance to Boxal Bridge. Our evidence will show that measures that might be taken to improve visibility are likely to encourage vehicles to travel faster than at present, negating the safety improvements. Measures to improve visibility would also be likely to damage the environment and character of the road, possibly permanently, contrary to local objectives.
- 5.5** The traffic associated with the development will add to the transport difficulties at Boxal Bridge on Kirdford Road. First, because there can only be single file traffic across the bridge, the extra vehicles of all types associated with the proposed development will cause increased queuing of vehicles on either side of the bridge. The vertical alignment and significant bends in Kirdford Road a short distance either side of the bridge all affect the intervisibility along this stretch of road. Extra queuing vehicles waiting to cross the bridge would increase the risk of rear end

shunts as other vehicles approach the bridge around bends from either direction and adequate safe stopping distances cannot be achieved. The additional risk will clearly be particularly acute at peak times of traffic movements. Second, HGVs must align themselves some distance back from the bridge so that they can cross the bridge in a straight line, avoiding the risk of clipping a balustrade with the rear of the HGV. This will increase the danger on Kirdford Road from HGVs associated with the proposed development. Physical intervention on Boxal Bridge itself to tackle these matters would destroy the acknowledged contribution of the bridge to local character, and should be avoided.

- 5.6** Our evidence will argue that, unless means can be found which are acceptable in both highways safety and amenity terms to resolve the increased risks identified on Kirdford Road, permission for the proposed development should be refused.
- 5.7** Our evidence will show that the junction of Kirdford Road with Durbans Road in Wisborough Green is inadequate for the HGVs accessing the appeal site. An articulated HGV making the turn in either direction requires the full extent of the opposite carriageway with which to complete its manoeuvre. This can be expected to be inconvenient for other road users and to raise the accident risk at the junction particularly at peak times. This junction was the site of a fatal crash in recent years requiring the attendance of 3 air ambulances.
- 5.8** Our evidence will show that the junction of Durbans Road with the A272 in Wisborough Green is inadequate for the HGVs accessing the appeal site. For example, an HGV travelling west to east on the A272 could only enter Durbans Road by swinging into the lane of oncoming traffic to execute the turn. Likewise an HGV on Durbans Road turning onto the A272 eastbound would swing into the lane of oncoming traffic before returning to the left side of the road. In view of the volume of traffic on the A272, the additional HGV traffic generated by the proposed development would significantly increase the risk of accidents on the A272. The appeal should be refused for this reason.
- 5.9** Reference will be made to national and local planning policies relevant to the development proposal as necessary. These policies have been identified in the appellant's Statement of Case and in the officer's report to the meeting of the County Council Planning Committee on 22 July 2014. Relevant current highway design guidance documents such as *Manual for Streets* and the *Design Manual for Roads and Bridges* will be used to support the evidence submitted.

6 Character of the Villages

- 6.1** The North East area is described in the Chichester District Council Local Plan (1999) as “*of special character that deserves protection from insensitive development*” and that is the context for the concerns of the local community.
- 6.2** We will present evidence on the impacts that the proposed industrial development would have on the character of Kirdford and Wisborough Green. We will focus mainly on Wisborough Green as this village would bear the brunt of the negative impacts but we will also highlight the effects on Kirdford and its residents.
- 6.3** We will explain the impacts of the proposed development on the special features of Wisborough Green and the health and well-being of residents. These include traffic, the safety of residents and the impact of increased noise, vibration, air pollution, light pollution and the loss of tranquillity.
- 6.4** We will argue that Kirdford Road in particular has special qualities as a traditional country lane both within and immediately outside the village. Its current status without footpaths and street lighting, and with attractive verges, large numbers of vibrant trees close to the road’s edge and a significant canopy of foliage in the approach to the proposed site entrance are crucial to the look and feel of this part of the village. As such, whatever ‘mitigation’ measures Celtique Energie may propose would result in changes to the nature and character of this road which would be unacceptable to the residents of Kirdford Road and both villages.
- 6.5** Likewise, Boxal Bridge is not simply a traffic obstacle to be overcome by demolishing it and replacing with a wider modern bridge just so that lorries can cross more easily. It is a unique and attractive feature of the route between the two villages that has been there for over 150 years and has been identified in Kirdford’s Neighbourhood Plan as a Community Asset and a Historic Bridge. WSCC’s recent proposal to demolish and replace it is contrary to both Parish Councils’ wishes and is strongly opposed by both communities.
- 6.6** We will also highlight the impacts of the proposed development on the numerous activities which form an integral part of Wisborough Green village life, many of which take place on and around the Village Green, which is both cut across and bordered by the proposed lorry route.
- 6.7** The proposed development would adversely affect the activities of children within the village and, in particular, along the proposed route for HGVs, including the adjacent children’s playground, routes to and from the primary school and nursery, and the many other uses and users of the Village Green.

- 6.8** The rural character of the Wisborough Green Conservation Area should be protected from inappropriate development. The village is enjoyed on a very regular basis by walkers, joggers, horse riders, cyclists, and visitors, as well as residents. The proposed lorry route would diminish these groups' enjoyment of the Conservation Area. It would also pass directly through the village Conservation Area that contains 46 Grade II-listed houses.
- 6.9** There is substantial car parking around the village green. This is in use at the majority of times throughout the day, not least by members of the public stopping to use the community toilets on Durban's Road (that have recently been saved from closure due to their importance as a village asset). The parking problem increases when events and activities are taking place on the Green. Alternative parking facilities are not available in the village, so the existing facilities are important. The ability of HGVs to access the proposed route safely would be adversely affected by the scale of village parking, and any reduction in parking to facilitate passage of HGVs to the site would be resisted by residents.
- 6.10** We will provide evidence concerning the proposed industrial development on the economic prosperity of the villages as a whole and the individual businesses within them, including pubs, B&Bs, the café and Fisher's Farm, the award winning children's attraction.
- 6.11** We will show that the essential nature and charm of Wisborough Green and Kirdford as thriving rural village communities and visitor destinations is threatened by the proposed development and that the case made by the appellant does not justify the harm that would be caused if the Appeal were to be upheld.

7 Wildlife

- 7.1** The application site is adjacent to the ancient semi-natural woodland site of Northup Copse, part of the Dunhurst and Northup Copses Site of Nature Conservation Importance (SNCI). It is also close to the nationally important Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SAC) of European importance of Ebernoe SAC and The Mens SAC. Ebernoe SAC contains nationally important roosts for barbastelle and Bechstein's bats, which are primary reasons for the selection of this site as a SAC. The Mens SAC, which is located only 430m to the south of the proposed drilling site, contains a breeding colony of barbastelle bats, which are a qualifying feature for the SAC.
- 7.2** The proposed drilling rig and site is situated within and adjacent to known and potential foraging and commuting habitat for a range of bat species. The proposal is also situated adjacent to potential bat roost sites in trees in Northup Copse. Their status as bat roosts were not fully addressed as part of the application so, as a result, a survey of bat activity in Northup Copse funded by KKWG will be carried out during summer 2015. Its results and an assessment of the likely impact there of the proposed development on bats will be presented in evidence to the inquiry.
- 7.3** The application site is within the known range and distribution of the very rare Bechstein's bat, a species which is known to be heavily dependent on ancient semi-natural woodlands, like Northup Copse, for roosting, foraging and commuting. Together with Ebernoe, The Mens and other local ancient woodlands, Northup Copse is part of a mosaic of functionally-linked habitats of great value to a variety of wildlife. Our evidence will describe the likely serious adverse effects which the proposed development will have on bats, particularly the tree-roosting barbastelle and Bechstein's bats, and in turn on the integrity of The Mens SAC and possibly Ebernoe Common SAC, both specifically designated for these bat species.
- 7.4** All bats and their roost sites are strictly protected under UK and European legislation and decision-makers are required to follow strict legal processes under the relevant legislation when determining planning applications potentially affecting them. Furthermore, the populations of barbastelle bats at The Mens SAC and of barbastelle and Bechstein's bats at Ebernoe SAC have further protection from activities that are likely to have a significant effect. Plans or projects that might affect such sites and/or their interest features can only be approved if it can be demonstrated that there is no adverse effect on the integrity of the site. Case law relating to the latter has shown that the precautionary principle should be followed throughout the decision making process.

7.5 The development proposal will create artificial light and noise within and adjacent to known and potential foraging areas for the two rare bat species and a wide range of other bat species. Our evidence will show that artificial lighting and noise are two factors that are known to disturb and deter bats from roost sites, foraging areas and commuting routes. More specifically we will show that the effects of this proposal:

- are highly likely to deter the known commuting and foraging barbastelle bats from The Mens SAC from commuting and foraging in and around the proposed site, which would result in adverse effects on the SAC and its associated population through reduced foraging time, as well as alter the behaviour and distribution of their preferred prey (moths).
- will potentially disturb any roosting bats using potential tree roosts immediately adjacent to the site, such as the rare Bechstein's bat, and deter these and other foraging and commuting bat species that are currently using the area.

7.6 Whilst the appellant has provided information on bats as part of the application process we consider that the information is insufficient to adequately assess these potential impacts and has overlooked a number of other important points. Our evidence will show that:

- The bat surveys did not follow the best practice guidelines for surveying the bat species likely to be present, in particular quiet echo-locating bats, such as Bechstein's bat. In addition, the surveys have failed to undertake sufficient survey effort, using the appropriate techniques to adequately understand the importance of the site to the nearby population of rare barbastelle bats from The Mens SAC, and potentially from the Ebernoe Common SAC.
- The impact assessment has not adequately addressed the effect on lighting in relation to tree roosting bats, their insect prey and the proposal's effect as a visual barrier to commuting and foraging bats.
- The noise impact during both construction and operation of the site is very likely to have a significant adverse effect on bats, but the application has failed to examine the effects of noise volume, frequency or time structure on bat species.
- The mitigation proposals for bats are highly likely to be inadequate, and are based on limited information with no evidence or science to support their effectiveness, especially with the key bat species affected. They therefore

add to the overall uncertainty of the scheme's impacts on some of the UK's and Europe's most important bat populations.

7.7 In line with case law, the local planning authority should have adopted the precautionary principle at every stage of the Habitats Regulations Assessment process. There is no evidence to show that barbastelle bats particularly will not be adversely affected by this proposal. A series of mitigation measures has been proposed in the application to limit impacts on bats and their habitats, including: the creation of a 15m buffer between the well site and the Northup Copse; soil bunds 2.5-3m high to screen the woodland from visual, noise and especially light disturbance; enclosure of the flare to control light spill; installation of a 4m high opaque screen around the entire application site; and applying cowls to lamps. These measures demonstrate that the application presents a substantial risk to bats and inevitably to the integrity of The Mens SAC (hence the need for the extensive mitigation). However, there is no evidence or science that these 'general' measures will be effective for the specific species associated with these SACs, and in such situations and in line with case law, best practice guidance for habitats regulations assessments clearly recommends that where mitigation measures are unable to completely avoid the effect, then an appropriate assessment will be required.

7.8 Notwithstanding the special procedures associated with European sites (i.e. SACs), the species protection provisions of the Habitats Directive, as implemented by The Conservation of Habitats and Species Regulations 2010, contain three 'derogation tests' which must be applied by Natural England when deciding whether to grant a licence to a person carrying out an activity which would harm a European Protected Species (EPS) such as a bat. For development activities this licence is normally obtained after planning permission has been obtained. The three tests (paraphrased) are that:

1. the activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. there must be no satisfactory alternative; and
3. favourable conservation status of the species must be maintained.

7.9 The High Court judgment (*R (on the application of Simon Woolley) v Cheshire East Borough Council*, June 2009) makes it clear that, notwithstanding the licensing regime, a Local Planning Authority (LPA) must also address these three tests when deciding whether to grant planning permission for a development which could harm a European protected species such as bat. A LPA failing to do so would be in breach of Regulation 9(5) of the 2010 Regulations which requires all competent authorities

to have regard to the requirements of the Habitats Directive in the exercise of their functions.

7.10 It is our view that the effects of the scheme on potential bat roosts from light and noise pollution have not been ruled out, and disturbance of the proposed development on a wider range of foraging and commuting bats, which is likely to result in the deterioration of nearby breeding sites and resting sites, has not been adequately assessed. Therefore the planning authority has not been able to properly discharge its duties under Regulations in this respect.

7.11 In summary, our evidence will therefore show that:

- The application is based on an inadequate level of information about its effects on bats.
- This proposal is likely to have a significant effect on the bat population of The Mens SAC and possibly Ebernoe Common SAC
- The conclusions of the Habitats Regulations Assessment for The Mens SAC and Ebernoe Common SAC are flawed.
- Therefore the decision of the local planning authority not to undertake an Appropriate Assessment under the Conservation of Habitats and Species Regulations 2010 was wrong.
- The residual impacts of the proposal after mitigation will still be so significant for bats that the proposal is likely to have adverse effects on the integrity of The Mens SAC and potentially Ebernoe Common SAC, so that the current appeal should be refused.

8 Noise

- 8.1** The application site is in an area which has been undisturbed over centuries and noise from the proposal would be an intrusion.
- 8.2** Our evidence will show, using the appellant's own data, that significant noise impact will arise from the development. This is of increasing concern into the evening and night time periods where the primary consideration is the prevention of interference with sleep and sleep disturbance. We will show that intermittent noise events with specific character features are capable of causing disturbance during night time and evenings. One example is from passing HGVs through the night. Adverse noise impact caused by HGV movements is acknowledged by the Council and this concern is supported by the KKWG assessment. The presence of noise impact not only during the day but into the evening and night time is significant. Lack of respite from noise is an important factor that cannot be assessed by looking only at decibel levels.
- 8.3** The lack of detailed information provided by the appellant exacerbates the concerns raised by KKWG that adverse impact will arise. The appellant's assessment of noise fails, for example, to include a measure of background noise during evening periods and gives insufficient detail of noise sources arising at the development site and their directionality, frequency and duration of occurrence. Failure to provide adequate detail is a failure to meet Environmental Impact Assessment Regulations, basic environmental noise assessment guidelines and the Overarching National Policy Statement for Energy (EN-1). Misapplication of guidance and continued oversight of relevant factors, including but not limited to noise character, tonality and low frequency noise, prevents a robust assessment being made. The World Health Organisation guidance that specifically considers this type of industrial noise character places significant weight on impact from noise which contains specific, inherent characteristics/ features, tonality and low frequency noise. A lower level of noise would be expected where impact contains these features or combinations of these features.
- 8.4** The impact of noise in context with the character of the area, notably conservation areas and the proximity and association with the South Downs National Park, is a consideration in this case. The impact of the development on the soundscape and tranquillity of the area remains unaddressed by the appellant. KKWG will show that predicted noise levels are significantly in excess of existing background noise levels in the area, which, when assessed appropriately with relevant guidance, indicates unreasonable and significant adverse impact contrary to good practice and national guidance. This impact will be detrimental to the character of the area and to the

residential amenity of those affected to the extent that permission should be refused.

- 8.5** The noise impact assessment provided by the appellant cannot be relied upon to support the application. It omits important detail and fails to consider many other relevant factors. It is unsurprising that by taking a limited approach to noise impact assessment and misapplying noise limits the development can be shown to comply with guidance. This significantly understates the true level of impact. The KKWG assessment shows the correct application of guidance and provides a robust assessment that reveals the significant extent of adverse impact in this case.

9 Summary

- 9.1** Fundamental conflicts between the proposed development and established legal requirements, policy and guidance cannot be resolved by mitigation or by the imposition of conditions or agreements. Adverse impacts would affect the local community. KKWG therefore requests that this appeal should be dismissed.

10 Conditions and obligations

- 10.1** If the Inspector is minded to grant the appeal, then the best practicable conditions should be imposed. KKWG wishes to offer conditions, without prejudice to our objection in principle, after hearing and considering the evidence at the Inquiry.
- 10.2** The group has already indicated above that it is concerned that the proposed treatment of noise and lighting will be unacceptable. If the County Council and the appellant propose to enter into a Section 106 agreement, KKWG may wish to comment on the terms of any such agreement, or any undertaking offered by the appellant.

Documents to be referred to

In addition to application and appeal documents, the group will refer to the National Planning Policy Framework, Planning Practice Guidance and planning policies identified by the County Council and Appellant. We may also need to refer to any further documents, plans or other material which any other party might submit to the Inquiry, and may need to introduce new material either arising between now and the Inquiry or in order to respond to points raised at the Inquiry.

General

Chichester District Council (2010), *Wisborough Green Conservation Area Character Appraisal* <http://www.chichester.gov.uk/index.cfm?articleid=14584>

Chichester District Council, *Chichester Local Plan: Key Policies 2014-2029 Pre-Submission Draft*, May 2014, and supporting documents [Currently at Proposed Modifications stage]

Chichester District Council (2013) *Green Infrastructure map*, Parish of Wisborough Green

Chichester District Council, *Chichester District Local Plan First Review* (1999) Saved policies

CPRE (2006) *Tranquillity report and maps*

DEFRA 2010, 'Making space for nature': a review of England's wildlife sites by Sir John Lawton et. al.

DEFRA, Natural Environment White Paper NEWP (2011) *The Natural Choice: securing the value of nature;*

DECC *Overarching National Policy Statement for Energy* (EN-1)

HM Government, *The Natural Choice: securing the value of nature* (June 2011) Natural Environment White Paper (NEWP)

Kirdford Parish Neighbourhood Development Plan 2014, 2014, Kirdford Parish Council
South Downs Integrated Landscape Character Assessment (updated 2011) Low Weald, SDNP (2014), *Partnership Management Plan 2014-2019*

SDNP (2014), *Consultation document, Preferred Options, Sussex Historic Landscape Characterisation*

The West Sussex Transport Plan (2011-2026)

West Sussex County Council (2003), *A Landscape Strategy for West Sussex*

WSCC (2004), *West Sussex Structure Plan 2001-2016*

Celtique Energie Weald Ltd, 15 December 2011, Letter to DECC

Celtique Energie, 2/12/2012, Oil and gas exploration operations in Southern England, downloaded from www.celtiqueenergie.com

West Sussex Minerals Local Plan (2003) Saved Policies, West Sussex CC

Wisborough Green Pre-Submission Draft Neighbourhood Plan 2014 to 2019 (consultation draft), Wisborough Green Parish Council, 2014

Transport

Design Manual for Roads and Bridges, Highways Agency & others

Manual for Streets (2007), Department for Transport

Manual for Streets 2 (2010), Department for Transport

Character of the Villages

- Austin, J (undated), *Kirdford The Old Parish Discovered*
- Countryside Alliance (2015) *General Election Manifesto*
- CPRE (2006) *Tranquillity report and maps*
- DECC and AMEC (2013), *Strategic Environmental Assessment for Further Onshore Oil and Gas Licensing – Environmental Report.*
- Herbert N, MP, *Blog February 2014*, www.nickherbert.com
- Herbert N, MP, *Blog July 29 2014*, www.nickherbert.com
- Herbert N, MP *Blog October 21 2014*, www.nickherbert.com
- Lines, W (2002), *Billingshurst and Wisborough Green*
- Nairn, I and Pevsner, N (1965), *The Buildings of England, Sussex*
- Natural England, Sept 2013, *National Landscape Character, The Low Weald*, No 121
- Poulton-Smith, A (2012) *West Sussex Place Names* South Downs National Park Authority Dark Skies, <http://www.southdowns.gov.uk/looking-after/dark-skies> Accessed December 9, 2014
- South Downs National Park Authority (2013), *Partnership Management Plan, Shaping the future of your South Downs National Park 2014-2019*
- WSCC (2003) *Low Weald LCA specifically the North Western Valleys*, Low Weald, a West Sussex Landscape Character Assessment
- West Sussex County Council Structures Capital Works 2013 – 2016, Boxal Bridge (WSCC Structure No. 1086) Options Report*, September 2014 (prepared for WSCC by Parsons Brinckerhoff and WSP)

Wildlife

- Altringham, J. (2003). *British Bats*. Collins New Naturalist Series. Collins.
- Bat Conservation Trust (2012). *Bat Surveys: Good Practice Guidelines* 2nd Edition. Bat Conservation Trust. London.
- Davidson-Watts I and Zeale, M.K. (in prep). *The Barbastelle Bat Conservation Handbook*. Pelagic Books. Exeter.
- Davidson-Watts, I (2014). *Land east of Horndean, Hampshire: Bechstein's bat trapping and radio tracking surveys to inform an EIA*. Report prepared for White Young Green. Davidson-Watts Ecology Ltd. Cheltenham.
- Davidson-Watts, I (2014). *Barbastelle bat surveys and radio tracking, Nocton Wood, Lincolnshire*. Report for Beeswax Farms Ltd. Davidson-Watts Ecology Ltd. Cheltenham.
- Davidson-Watts, I.F. (2013). *Bechstein's Bat Radio Tracking Studies at Briddlesford Copse SSSI/SAC*. Davidson-Watts Ecology, Cheltenham.
- Davidson-Watts, I (2008). *Isle of Wight Woodland Bat Project Final Report*. Report for the Peoples Trust for Endangered Species. ID Wildlife Ltd. Salisbury.
- Davidson-Watts, I. and Mckenzie, A. (2006). *Habitat use and ranging of barbastelle bats (Barbastella barbastellus) of the Mottisfont Estate, Hampshire*. Unpublished report. The National Trust.
- Davidson-Watts, I.F. (2004). *Bechstein's Bat Radio Tracking Studies of Briddlesford Copse SSSI/SAC*. ID Wildlife Ltd, Salisbury.

- Department of Food and Rural Affairs (2012). *The Habitats and Wild Birds Directives in England and its seas Core guidance for developers, regulators & land/marine managers. Consultation Draft*, DEFRA, London.
- English Nature (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
- European Commission (2007). *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC*. Brussels.
- European Commission (2001). *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Brussels.
- European Commission (2000). *Managing Natura 2000 Site. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*. Brussels.
- European Courts of Justice (2004). *Judgement of the Waddenzee case (Case C-127/02, ECR-I7405)*:
- Garland, L., Markham, S. (2007). *Is important bat foraging and commuting habitat legally protected?* Bat Conservation Trust Website.
- Gilmour, L. (2014). *Modelling, Mapping and Monitoring Bats: Species distribution modelling for Bechstein's bat (Myotis bechsteinii) in Britain and the use of acoustic lure to study bats in woodlands*. MSc Thesis. University of Bristol.
- Goerlitz HR, ter Hofstede HM, Zeale MRK, Jones G & Holderied MW (2010) An aerial-hawking bat uses stealth echolocation to counter moth hearing. *Current Biology*, 20, 1568-1572.
- Greenaway, F. (2001). The barbastelle in Britain. *British Wildlife*, 12: 327-334.
- Greenaway F (2004) *Advice for the management of flightlines and foraging habitats of the barbastelle bat* *Barbastella barbastellus*. A report for English Nature, Sheffield
- Greenaway F (2008) *Barbastelle Bats in the Sussex West Weald: 1997-2008*. A report for the Sussex Wildlife Trust and the West Weald Landscape Project, Sussex, UK.
- Hill DA & Greenaway F (2005) Effectiveness of an acoustic lure for surveying bats in British woodlands. *Mammal Review*, 35, 116-122.
- Hillen J, Kiefer A & Veith M (2009) Foraging site fidelity shapes the spatial organization of a population of female western barbastelle bats. *Biological Conservation*, 142, 817-823.
- Hillen J, Kiefer A & Veith M (2010) Interannual fidelity to roosting habitat and flight paths by female western barbastelle bats. *Acta Chiropterologica*, 12, 187-195.
- HMSO (2010) *The Conservation of Habitats and Species Regulations 2010*
- HMSO (2000) *The Countryside and Rights of Way Act 2000*.
- HMSO (1981) *Wildlife and Countryside Act 1981*.
- HMSO Circular 06/05 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System* (2005).
- Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom*
- Joint Nature Conservation Committee, JNCC (2013). *Species status assessments for the 3rd UK report on the implementation of the Habitats Directive Article 17*.
- JNCC. *SAC Citation for Ebernoe Common*. Retrieved from <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0012715> on 20/01/2015.
- JNCC. *SAC Citation for The Mens*. Retrieved from <http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUCode=UK0012716> on 20/01/2015.

- Kerth G & Melber M (2009) Species-specific barrier effects of a motorway on the habitat use of two threatened forest-living bat species. *Biological Conservation*, 142, 270-279.
- Miller, H. (2012). *Bechstein's Bat Project Final Report*. Bat Conservation Trust. London.
- Murphy, S., Hill, D. & Greenaway, F. (2009). *Pilot study of a technique for investigating the effects of artificial light and noise on bat activity*. University of Sussex report for People's Trust for Endangered Species.
- Natural England, NE. *Standing advice for protected species*. Retrieved from <https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals#standing-advice-for-protected-species> on 20/01/2015.
- Natural England (Feb, 2014), Natural England's National Character Assessment Area Profile: *Low Weald, No 121*
- Natural England (2009), *Green Infrastructure Report No 176*
- Natural England (2013) *Standing Advice on Ancient Woodlands*
- Natural England (2009) *Biodiversity 2020*
- Russo D, Cistrone L & Jones G (2005) Spatial and temporal patterns of roost use by tree-dwelling barbastelle bats *Barbastella barbastellus*. *Ecography*, 28, 769-776.
- Russo D, Cistrone L & Jones G (2007) Emergence time in forest bats: the influence of canopy closure. *Acta Oecologica*, 31, 119-126, 47, 410-420.
- Rydell J, Natuschke G, Theiler A & Zingg PE (1996) Food habits of the barbastelle bat, *Barbastella barbastellus*. *Ecography*, 19, 62-66.
- Schaub, A., Ostwald, J. and Siemers, B.M. (2008). Foraging bats avoid noise. *J. Exp. Biol.* 211, 3174-3180.
- Siemers, B.M. and Schaub, A. (2011). Hunting at the highway: traffic noise reduces foraging efficiency in acoustic predators. *Proc. R. Soc. B*, 278, 1646-1652
- Sierro A (1999) Habitat selection by barbastelle bats (*Barbastella barbastellus*) in the Swiss Alps (Valais). *Journal of Zoology (London)*, 248, 429-432.
- Sierro A & Arlettaz R (1997) Barbastelle bats (*Barbastella* spp.) specialize in the predation of moths: implications for foraging tactics and conservation. *Acta Oecologica*, 18, 91-106.
- Stone E.L. (2013). *Bats and Lighting: Overview of current evidence and mitigation*. Bats and Lighting Research Project, University of Bristol.
- Stone EL, Jones G & Harris S (2009) Street lighting disturbs commuting bats. *Current Biology*, 19, 1123-1127.
- Zeale, M.R.K., (2011), *Conservation biology of the barbastelle (Barbastella barbastellus): applications of spatial modelling, ecology and molecular analysis of diet*. PhD Thesis. University of Bristol, UK.
- Zeale, M.K., Davidson-Watts, I.F. and Jones, G. (2012), Home range use and habitat selection by barbastelle bats (*Barbastella barbastellus*): implications for conservation. *Journal of Mammalogy*, vol 93(4): 1110-1118.
- Zeale, M.K., Butlin, R.K., Barker, G.L.A., Lees, D.C. and Jones, G. (2011). Taxon-specific PCR for DNA barcoding arthropod prey in bat faeces. *Molecular Ecology Resources*, 11, 236-244.

Noise

BS4142:1997 - *Method for rating industrial noise affecting mixed residential and industrial areas*

BS4142:2014 - *Methods for rating and assessing industrial and commercial sound*

BS5228-1: 2009: *Code of practice for noise and vibration control on construction and open sites - Part 1: Noise* (amended 2014)

BS8233:2014 *Guidance on sound insulation and noise reduction for buildings*
Calculation of Road Traffic Noise

Campaign to Protect Rural England (CPRE) (2005). *Mapping Tranquillity. Defining and assessing a valuable resource*. London: CPRE

DECC (2011) - *Overarching National Policy Statement for Energy (EN-1)*

Environmental Noise Directive (END) (2002)

Kosten and Van Os *Community Reaction Criteria for External Noises*

Noise Policy Statement for England (March 2010)

Pheasant, R., Horoshenkov, K.V., & Watts, G.R. (2010). Tranquillity rating prediction tool (TRAPT). *Institute of Acoustics Bulletin. Vol 35 No 6* (November/December 2010)

World Health Organisation Guidelines (1999)

WHO night noise guidelines for Europe (2009)

WHO Burden of disease from environmental noise (2011)

WHO "Noise and health"

Maps/Diagrams/Illustrations

Video: KKWG proposes to screen a video. A transcript of the video will be provided in evidence. This may currently be viewed at: <http://www.no-drilling.co.uk/blog/kkwg-lorry-footage.html>

Illustrations:

1. A painting of Boxal Bridge will be shown to the inquiry and high resolution digital images of it provided to the parties.

Maps:

2. A map of designated wildlife sites in the surrounding area of the application site will be presented to the inquiry (WSCC)
3. Green Infrastructure (GI) maps of 3.1 the habitat around the site and 3.2 around the area developed for Chichester District Council based on available data and drawn up by Forest Research will be presented to the inquiry.
4. Northup Copse, a Site of Nature Conservation Importance (SNCI) to include foraging route and sightings of barbastelle bats in and around the application site will be presented to the inquiry developed by the West Weald partnership.
5. A map of light pollution will be presented to the inquiry drawn up by the Council for the Protection of Rural England (CPRE)