

Proposed National Grid Richborough Connection Project Application Reference No:
EN020017 Our Ref RCP-AFP056

Our Representaion

To Mr Chris White, MRTPI

Case Manager.

Following the hearing dated the 27th July 2016, We hereby submit evidence pertaining to Kemberland Ancient Woodland, Fox hill, Broadoak, Canterbury, ct3 4ng.

At present, Fisher Germans proposed 'preferred' route for the overhead cables and pylons, lies directly over our land; an area sited by the National Grids 2.1 PEIR assessment document to be in the Zone of Influence and to hold 'such importance that the effects on them could be significant'. We concur that disturbing part of the last remaining 2% of natural ancient woodland in England is not only significant, but crude and unnecessary.

The Forestry Commission has confirmed that the entire 27 acres of Kemberland Woodland is protected by a preservation order. No. ref TPNO.2. This means our Ancient Woodland is protected from the threat of extinction, destruction or any damage that will affect it and the biodiversity within it.

Consultation

At the consultation in Broadoak village hall, Howard Selfe, Kirsten Morris, and Steve Self from the National Grid conversed over re-routing the route around kemberland Ancient Woodland. At the consultation, we asked Steve Self if they could come round Kemberland woods, Steve said Quote: "We could come round (Confirmed by the engineer) but it will cost more money, as we would need more pylons, and we haven't got the budget for it, because it's regulated by the regulators"

The minutes confirm that alternative routes for the overhead connection are available that avoid or reduce the risk of engaging with European Protected Species by avoiding over-sailing the ancient woodland, but the primary reason for these being discounted is one of cost, given that one or more additional pylons might be required.

Even disregarding the veracity of such statements in consideration of the resources available for implementation of this Nationally Significant Infrastructure Project, it is well established in case law that additional cost is not, of itself, a reason to dismiss a viable alternative to any impact on European Protected Species requiring derogation as being 'unsatisfactory'.

Bats and wildlife

Kemberland wood is a Bat Sanctuary by definition and default, not by a title that we have given it but by the very presence of the three species of "Indigenous" Bats that reside prolifically throughout the woodland.

This line of proposed pylons would, if allowed to be erected, cut through the northern part of Kemberland Woods, a protected Ancient Woodland and Local Wildlife Site that houses protected species such as Bats, Great crested newts and Dormice. A habitat where larger bats have been recorded, notably Kemberland Woods is considered to be important to foraging larger bat species due to their scarcity within the county. Kemberland Woodland is also home to a total of eleven species of invertebrates of high nature conservation value due to rarity and scarcity. Five of which are classed as being of outstanding nature conservation value in Natural England's invertebrate assemblage ISIS software.

National Grids own environmental survey's have provided clear evidence that Kemberland woods is a highly sensitive area with many protected species.

Although Great Crested Newts were not found in their survey work, we ourselves found and had recorded GCN presence.

Coronas and Discharge Affecting Humans and Wildlife

Please find attached Documented evidence from the (Electrical Engineering portal website)

which clearly states the negative ill effects on humans and wildlife from as little charge as 110 KV.

This is of extreme concern for us, considering the charge emitting from the Richborough Connection is proposed to be 400KV.

Please also find attached Documented evidence by
(Professor Glen Jeffery "ultra violet vision")

A vision expert at University College London, Dr Nicolas Tyler, an ecologist at UIT The Arctic University of Norway, which was covered by the mainstream media in 2014 regarding Wildlife avoidance in areas of Pylons and over-sailing pylon cables.

Quote:

"Dr Nicolas Tyler, an ecologist at UIT The Arctic University of Norway and another member of the research team, said: "The flashes occur at random in time and space, so the power lines are not grey and passive, but seen as lines of light flashing."

He said the discovery has global significance: "The loss and fragmentation of habitat by infrastructure is the principle global threat to biodiversity – it is absolutely major. Roads have always got particular attention but this will push power lines right up the list of offenders." The avoidance of power lines can interfere with migration routes, breeding grounds and grazing for both animals and birds

Autopsies on dozens of mammals from zoos and abattoirs showed their eyes were able to see UV, including cattle, cats, dogs, rats, "**Bats**", okapi, red pandas and hedgehogs. Also on the list were reindeer and further work published in the journal Conservation Biology showed these animals, whose eyes are specially adapted to the dark Arctic winters, are particularly sensitive to UV light. Their wide irises and sensitive eyes mean the power lines appear particularly bright."

We are extremely concerned on these affects on our Indigenous Bats, and the rest of the flora and fauna that reside in Kemberland Woods.

Woodland Trust.

Quote:

"Ancient woodland is defined as an irreplaceable natural resource that has remained constantly wooded since AD1600. Ancient woodland takes centuries to develop and evolve, creating vital links between plants, animals and soils – a habitat for many of the UK's most important and threatened fauna and flora species. Therefore it cannot be re-created and cannot afford to be lost. The Trust aims to prevent the damage, fragmentation and loss of these finite irreplaceable sites from any form of disruptive development."

Paragraph 5.3.14 of the National Policy Statement for Electricity Networks Infrastructure (EN-5) states that: "Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The IPC should not grant development consent for any development that would result in its loss or deterioration unless the benefits (including need) of the development, in that location outweigh the loss of the woodland habitat."

The scheme also contravenes the following planning policies: Paragraph 118 of NPPF, Keepers of Time/Government Forestry & Woodlands Policy Statement, Paragraph 5.2.4 of UK BAP, Policy BE10 & Policy NE5 (Canterbury DLP).

The Trust is strongly opposed to the proposed scheme and believes that in its current form it directly contravenes numerous local and national planning policies that aim to conserve and enhance biodiversity and as such it should not be given planning permission.

33-40 meter gap

This swathe of the woodland that will be felled, will cause devastation of a 33-40 meter wide gap. National Grid have stated that they will plant "low growing trees" in replacement to the ones lost. These low growing trees will not be indigenous to Kemberland Ancient Woodland, thereby affecting the soil, and the natural tree population, therefore affecting the natural biodiversity within the northern part of the woodland, which will have a greater (knock on affect) impact throughout the woodland a whole.

Japanese Knotweed

National Grid have documented risk of spreading Japanese Knotweed due to ground clearance associated with proposed pylon PC11 access works and scaffolding works adjacent to Kemberland Wood and for ground clearance for preparation of the proposed Westbere site compound. This could be potentially devastating to the ancient woodland as a whole.

Section 14(2) of the Wildlife and Countryside Act 1981 states that "if any person plants or otherwise causes to grow in the wild any plant which is included in Part 2 of Schedule 9, he shall be guilty of an offense". (Japanese knotweed is a Schedule 9 listed plant).

38 Degrees Petition against National Grid coming through Kemberland Wood

Here we submit 4,311 signatures via electronic petition through the campaign site 38degrees.org.uk, opposing the Richborough Connection project coming through Kemberland Ancient Woodland.

(document attached)

Public Interest

If there were no other options but to come through ancient woodland, because a whole town or city would not receive any electricity, then of course, it would be in the public's interest to have that electricity, and it would need to happen.

Considering The National Grid have clearly stated on several occasions they could come around Kemberland woodland, it is therefore in the public interest to save some of the last remaining 2% of ancient woodland, ie: Kemberland wood.

Ancient woodland is defined as an irreplaceable natural resource that has remained constantly wooded since AD1600/Tudor period.

There are stately homes and castles around our country that were built in the 1600/Tudor period. If an infrastructure route were to be planned, it certainly would not be acceptable to the public or authorities for it to cut through a tudor building or grounds. Therefore cutting through a habitat dated to that same time period and before, that is classed as "irreplaceable" habitat not only seems crude, but is obscene to say the least.

Especially at a time when global wildlife populations are plummeting at an alarming rate (50% in the last 40 years).

Surely saving what we can is of more public interest than permanently fragmenting, damaging and destroying what precious archaeological woodland we have left.

Duty

It is our duty to uphold the laws of the land, in the public interest.

It is also the duty of the national grid to find an alternative route. Although were not opposed to the Richborough Connection, the compromise would be for the National grid to go around Kemberland ancient woodland, which agreed can be done.

Please find enclosed in this email attachments of photographs from before and after, the fly tipping and dumping.

Yours Sincerely

Barrie J Boylan & Georgina Selfe
Kemberland Wood

Electric and Magnetic Field (EMF) Effects

Extremely high voltages in EHV lines cause electrostatic effects, whereas short circuit currents & line loading currents are responsible for electromagnetic effects. The effect of these electrostatic fields is seen prominently with living things like humans, plants, animals along with vehicles, fences & buried pipes under & close to these lines.

1. EMF effects on human beings

The human body is composed of some biological materials like blood, bone, brain, lungs, muscle, skin etc. The permeability of human body is equal to permeability of air but within a human body has different electromagnetic values at a certain frequency for different material.

The human body contains free electric charges (largely in ion-rich fluids such as blood and lymph) that move in response to forces exerted by charges on and currents flowing in nearby power lines. The processes that produce these body currents are called **electric and magnetic induction**.

In electric induction, charges on a power line attract or repel free charges within the body. Since body fluids are good conductors of electricity, charges in the body move to its surface under the influence of this electric force.

For example, a positively charged overhead transmission line induces negative charges to flow to the surfaces on the upper part of the body. Since the charge on power lines alternates from positive to negative many times each second, the charges induced on the body surface alternate also. Negative charges induced on the upper part of the body one instant flow into the lower part of the body the next instant.

Thus, **power-frequency electric fields induce currents in the body (Eddy Current) as well as charges on its surface.**

Power frequency electric fields

The currents induced in the body by magnetic fields are greatest near the periphery of the body and smallest at the center of the body.

It is believed that, the magnetic field might induce a voltage in the tissue of human body which causes a current to flow through it due to its conductivity of around them. The magnetic field has influence on tissues in the human body. These influences may be beneficial or harmful depending upon its nature.

The magnitude of surface charge and internal body currents that are induced by any given source of power-frequency fields depends on many factors. These include the magnitude of the charges and currents in the source, the distance of the body from the source, the presence of other objects that might shield or concentrate the field, and body posture, shape, and orientation.

For this reason the surface charges and currents which a given field induces are very different for different human and animals.

When a person who is isolated from ground by some insulating material comes in close proximity to an overhead transmission line, an electrostatic field is set in the body of human being, having a resistance of about 2000 ohms.

When the same person touches a grounded object, it will discharge through his body causing a large amount of discharge current to flow through the body. Discharge currents from 50-60 Hz electromagnetic fields are weaker than natural currents in the body, such as those from the electrical activity of the brain and heart.

For human beings the limit for undisturbed field is 15 kV/m, R.M.S., to experience possible shock. When designing a transmission lines this limit is not crossed, in addition to this proper care has been taken in order to keep minimum clearance between transmission lines.

According to research and publications put out by the World Health Organization (WHO), EMF such as those from power lines, can also cause:

Short term Health Problem

1. Headaches
2. Fatigue
3. Anxiety
4. Insomnia
5. Prickling and/or burning skin
6. Rashes
7. Muscle pain

Long term Health Problem

Following serious health Problems may be arise due to EMF effects on human Body.

1. Risk of damaging DNA

Our body acts like an energy wave broadcaster and receiver, incorporating and responding to EMFs. In fact, scientific research has demonstrated that every cell in your body may have its own EMF, helping to regulate important functions and keep you healthy.

Strong, artificial EMFs like those from power lines can scramble and interfere with your body's natural EMF, harming everything from your sleep cycles and stress levels to your immune response and DNA!

2. Risk of Cancer

After hundreds of international studies, **the evidence linking EMFs to cancers and other health problems** is loud and clear. High Voltage power lines are the most obvious and dangerous culprits, but the same EMFs exist in gradually decreasing levels all along the grid, from substations to transformers to homes.

3. Risk of Leukemia

Researchers found that children living within 650 feet of power lines had a 70% greater risk for leukemia than children living 2,000 feet away or more. (As per British Medical Journal, June, 2005).

4. Risk of Neuro degenerative disease

“Several studies have identified occupational exposure to extremely low-frequency electromagnetic fields (EMF) as a potential risk factor for neuro degenerative disease.”(As per Epidemiology, 2003 Jul; 14(4):413-9).

5. Risk of Miscarriage

There is “strong prospective evidence that prenatal maximum magnetic field exposure above a certain level (possibly around 16 mG) may be associated with miscarriage risk.” (As per Epidemiology, 2002 Jan; 13(1):9-20)

2. EMF Effects on Animals

Many researchers are studying the effect of Electrostatic field on animals. In order to do so they keeps the cages of animals **under high Electrostatic field of about 30 kV/m**.

The results of these Experiments are shocking as animals (are kept below high Electrostatic field their body acquires a charge and when they try to drink water, a spark usually jumps from their nose to the grounded Pipe) like hens are unable to pick up grain because of chattering of their beaks which also affects their growth.

3. EMF Effects on Plant Life

Most of the areas in agricultural and forest lands where high power transmission lines pass. The voltage level of high power transmission Lines are 400KV, 230KV, 110KV, 66KV etc. The electromagnetic field from high power transmission lines affects the growth of plants.

Gradually increases or decreases and reaches to maximum current or minimum current and thereafter it starts to fall down to lowest current or raises to maximum current or a constant current. Again the current, it evinces with little fluctuations till the next day morning.

Current in Power transmission lines varies according to Load (it depending upon the amount of electricity consumed by the consumers). Hence the effect of EMF (due to current flowing in the power lines) upon the growth of plants under the high power transmission lines remains unaltered throughout the year.

From various practically study it was found that the response of the crop to EMF from 110 KV and 230 KV Power lines showed variations among themselves. Based on the results the growth characteristics like shoot length, root length, leaf area, leaf fresh weight, specific leaf weight, shoot/root ratio, total biomass content and total water content of the four crop plants were reduced significantly over the control plants.

Similar trend were observed in the biochemical characteristics like chlorophyll. Reduced growth and physiological parameter was primarily due to the effect of reduced cell division and cell enlargement. Further the growth was stunted which may be due to poor action of hormones responsible for cell division and cell enlargement.

The bio-chemical changes produced in this plant due to EMF stress quite obvious and it affects the production leading to economic loss. It is concluded that the reduced growth parameter shown in the crop plants would indicates that the EMF has exerted a stress on that plants and this EMF stress was quite obvious and it affects the production leading to economic loss. So further research activities are needed to safe guard plants from EMF stress.



By Sarah Knapton, Science Correspondent

6:28PM GMT 12 Mar 2014

Follow

Power lines not only blight the countryside but affect animals who see them as alarming flashing barriers that they are scared to go near, scientists have found.

Animals may avoid high voltage power cables because of flashing UV light that is undetectable to humans, scientists say.

The phenomenon of mammals and birds avoiding high voltage power lines has been recognised for some time but had puzzled scientists because suspended cables are neither a barrier to wildlife nor are regularly associated with humans.

And the avoidance may persist for decades after the lines are built, hampering migration routes and stopping animals breeding with groups on the other side of pylons.

However researchers from University College London (UCL), Moorfields Eye Hospital, London, UIT The Arctic University of Norway and the University of Oslo in Norway, believes that UV light emitted from power cables

How animals view power cables

They detail their findings in a letter published in *Conservation Biology*.

Power lines give off ultraviolet as irregular flashes at insulators and as a corona along the cables.

Ultraviolet is invisible to humans but birds and some mammals, including reindeer, are able to see it.

It is thought likely that ultraviolet sensitivity is widespread among mammals.

Avoidance is controversial in Scandinavian countries owing to demands that power lines should be located away from wild and semi-domesticated reindeer - the latter herded by indigenous Saami people who depend on the animals.

Professor Glen Jeffery of UCL, said: "Animals avoid man-made structures and, in the case of high voltage power lines, this can be by several kilometres. This is perplexing because the suspended cables are neither a physical barrier nor are associated with human activity.

"New information about animal vision along with the characteristics of power lines provides strong evidence that the avoidance may be linked with animals' ability to detect ultraviolet flashing on power lines that humans cannot see and which they find frightening.

"The larger the voltage the greater the degree of avoidance. The animal is avoiding the power lines because it sees the flashing and it gets really worried about it. Animal behaviour is being changed because they see the flashing from the power lines. "

The scientists have shown how distribution of power lines in Norway has been responsible for segregating herds of reindeer. But they also believe it could be affecting wild animal populations in Britain such as deer.

The problem is particularly bad in northern latitudes where the flashing can bounce off the snow making it appear brighter.

Domesticated animals such as cattle, sheep and pets are also likely to be affected by the flashing but do not appear to be as concerned, the scientists found.

By choosing to avoid power lines, animals such as reindeer face disruption of migration and substantial loss of grazing land.

This can, in general terms, affect the growth, viability and genetic variability of populations. For reindeer in particular it influences the well-being of herds and of herders who rely on the animals for their livelihoods, cultural identity and food.

The effect may be more pronounced in snowy areas where the ultraviolet light is reflected and scattered by snow. In dark Arctic winters, the team argues, power lines do not appear to reindeer merely as impassive, grey structures but, rather, as lines of flashing lights stretching across the terrain.

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Help us save our "Ancient Woodland" from the National Grid!

KM

Campaign created by
kirsty mo



4,311
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To: Julian Brazier MP & National Planning inspectorate.

Please persuade National Grid to re-direct the "Richborough Connection" Around the "Ancient" woodland of Kemberland in Broadoak. They have clearly stated they "can" do this!

Why is this important?

There is only roughly 2% of "Ancient Woodland" left in the UK, with over 400 of these under threat from development, and ours is one of those under threat!!

So we are asking for your help by signing this petition.

National Grid have proposed the new Richborough Connection to bring in electricity from Belgium to power homes in Canterbury and the surrounding areas. This will be in the form of pylons and cables running from Richborough power station to Canterbury. Due to this, National Grid want to cut a 40 meter wide avenue through the northern section of Kemberland "Ancient" Woodland.

While we understand that people need electricity to power their homes etc, we do not feel it is necessary to cut through protected "Ancient woodland" affecting protected species when it is in such rapid decline and is under threat, so we are urging for a re-direction around Kemberland Woods.

National Grid state that they "could re-direct" the route away from Kemberland Woods", but that it will cost more money, but we say whats money in comparison to something that is irreplaceable therefore priceless?? and at such a time when our environment is in such a fragile state??

We bought this woodland to preserve it!. The biodiversity within it is rich with an ecosystem that relies on every inch of this woodland. We have protected Bats, Newts, Bluebells, and many other species that need to stay protected.

The woodland floor is what classes this woodland as "Ancient", so having machinery that will cut a 40 meter wide avenue straight through the northern section will not only destroy the trees that birds use to nest, but will also destroy the very ground that makes this woodland "Ancient".

Once Ancient woodlands are gone, they are gone forever, the damage is irreversible and they cannot be replaced!!.

"They are priceless and need to be protected, else everybody suffers from this loss, not just us!"

A quote by The Woodland Trust -

"The Woodland Trust are fully supportive of Your petition, and we will be submitting our own response to the proposals and hope to see plenty of others getting involved to voice their concerns too"

Our aim now is to approach National Planning Inspectorate and Canterbury City`s MP the signatures collected this summer!

So we ask that you help us by signing and sharing this petition far and wide. We, the woodland and all the wildlife that live in it would be very grateful.

They dont have a voice, but we do!!!

Category: Planning

Ultraviolet vision and avoidance of power lines in birds and mammals

Tyler, N; Stokkan, K-A; Hogg, C; Nellemann, C; Vistnes, A-I; Jeffery, G; (2014) Ultraviolet vision and avoidance of power lines in birds and mammals. *Conservation Biology* , 28 (3) 630 - 631. 10.1111/cobi.12262.

The avoidance by mammals and ground-nesting birds of habitat up to several kilometers from high-voltage power lines is a major consequence of infrastructure development in remote areas, but the behavior is perplexing because suspended cables are neither an impenetrable physical barrier nor associated with human traffic (e.g., Vistnes & Nellemann 2008; Pruett et al. 2009; Degteva & Nellemann 2013). Moreover, avoidance may persist >3 decades after construction (Nellemann et al. 2003; Vistnes et al. 2004), suggesting behavioural reinforcement. Integration of new information on visual function with the characteristics of power line function provides compelling evidence that avoidance may be linked with the ability of animals to detect ultraviolet light (UV).

Ultraviolet discharges on power lines occur both as standing corona along cables and irregular flashes on insulators. The discharge spectrum (200–400 nm; Maruvada 2000) is below the normal lower limit of human vision, UV being attenuated by the human cornea and lens, but in birds, rodents, and reindeer/caribou (*Rangifer tarandus*) (hereafter reindeer) the cornea and lens are UV permissive. The former have specific UV sensitive opsins (Bowmaker 2008) and, hence, power line corona may be assumed visually salient in these. Reindeer have no specific UV opsin, but we obtained robust retinal responses to 330 nm mediated by other opsins (Hogg et al. 2011 and unpublished) and propose that corona flashes are both visually salient and a cause of this species avoiding power lines.

Recent demonstration of UV responses in reindeer retinae was based on electrophysiological corneal recordings (Hogg et al. 2011). These, however, are approximately 3 log units less sensitive than psychophysical measurements of visual perception (Ruseckaite et al. 2011).

They demonstrate an ability to see UV discharge but are poor indicators of visual threshold and underestimate visual sensitivity. Furthermore, reindeer and some birds have a reflective surface directly behind the retinal photoreceptors (the tapetum lucidum) which ensures that light not captured as it passes through them is reflected back for a second pass, consequently, increasing retinal sensitivity in dark (i.e., very low light) environments (Johnson 1968). In reindeer, the winter adapted tapetum scatters light among photoreceptors rather than reflecting it which enhances photon capture and increases retinal sensitivity by approximately 3 log units at winter threshold (Stokkan et al. 2013).

Other factors increase the likelihood that reindeer see coronal discharges in the dark. First, retinal sensitivity is maximized in reindeer because their retinæ are almost permanently dark adapted during the extended dusk of Arctic winters, and, given that the mammalian visual range is approximately 9 log units, fully dark adapted eyes are capable of responding to the stimulus of a single photon. Second, the reindeer eye is larger than the human eye and thus provides greater image magnification, and the pupil, which dilates to 21 mm compared with approximately 10 mm in humans, is likely to be permanently dilated in winter consequently increasing retinal sensitivity. The stimulus is also important. Ultraviolet discharge

is both strongly (approximately 90%) reflected and scattered by snow. Hence, in a snowy landscape the corona is likely to appear brighter to animals responsive to UV than in conventional imaging which focuses on source discharge. Second, and crucially, the pattern of occurrence of corona flashes is temporally random, which is likely to impede habituation. These observations constitute a strong argument that reindeer, like birds and rodents (**Bats**), may see corona UV. By extension, we suggest that in darkness these animals see power lines not as dim, passive structures but, rather, as lines of flickering light stretching across the terrain. This does not explain avoidance by daylight or when lines are not transmitting electricity—although, interestingly, electrically earthed cables are more hazardous to galliformes (which detect UV to 355 nm; Lind et al. 2014), perhaps precisely because without corona definition is lost (Bevanger & Brøseth 2001)—but it may be an example of classical conditioning in which the configuration of power lines is associated with events regarded as threatening. approximately 4- fold. Third, dilation exposes more of the peripheral retina that is sensitive to sudden changes in the visual environment.

Acknowledgment

This study was supported by Biotechnology and Biological Sciences Research Council, United Kingdom. Nicholas Tyler, Karl-Arne Stokkan, Chris Hogg, Christian Nellemann, Arnt-Inge Vistnes, and Glen Jeffery Centre for Saami Studies, University of Tromsø, N-9037 Tromsø, Norway Department of Arctic and Marine Biology, University of Tromsø, N-

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