

**EVIDENCE FOR SUBMISSION TO:**  
**THE SELECT COMMITTEE ON ECONOMIC AFFAIRS, HOUSE OF LORDS**  
**On**  
**THE ECONOMICS OF RENEWABLE ENERGY**

**1.0 Why we are qualified to respond to this call for evidence**

**1.1** We are Jane and Julian Davis, we farm (on a county council smallholding) in Spalding, South Lincolnshire. Julian has always farmed, in the place that is our home, and is also an agronomist. Jane is a Nurse, Midwife and Health Visitor (retired) and has been involved with mainly rural communities since 1980.

**1.2** Our house, which we own, on our tenanted arable farm, is 930m from a wind farm, and is downwind of the prevailing wind. The wind farm, comprised of 8 wind turbines, each 100m high at blade tip with 2 MW capacity, became operational in the summer of 2006. Immediately we started having problems with the noise and hum coming from the wind turbines.

**1.3** By May 2007 we were forced to abandon our home as a place in which to sleep and live; we currently rent a property 5 miles away so that our family can live as near a normal life as possible. Our house is now likely to have a value of just the land - £35K-£50K and is no longer marketable as a home for people to live in.<sup>1</sup>

**1.4** We did not object to the wind farm in the planning stage as we had no reason to think that there would be any issues for us and we believed, at that time, that wind power was a good way of meeting the energy gap.

**1.5** As a result of our experiences, including the fact that to date nothing has been done by anyone even to attempt to mitigate the noise issues which we suffer, we have been invited to talk to in excess of 40 communities across the UK where wind farms are proposed, and occasionally we co-present with other noise pollution victims from wind farms across the UK.

**1.6** Some of those communities have been in touch with us to suggest, by virtue not only of our own experiences, but also as a result of enormous interaction with individuals, groups, and experts in diverse fields relating to wind farms, that we are in a unique position to submit very relevant evidence to the Select Committee. We have also presented at the International Wind turbine Noise Conference held in Lyon in 2007<sup>2</sup>.

**1.7** We now know that we suffer from aerodynamic or amplitude modulation created by the noise from the wind turbine array. The government has found it necessary to set a specific measurement for wind turbine noise (ETSU-R-97) and has publicly acknowledged that aerodynamic modulation is not fully understood by scientists. This means that no developer can categorically state that there will not be a noise problem.

**1.8** We know that not every wind farm creates noise issues but those that do make life impossible for those who live near them. By near we mean within 1.5 miles, or 2 km.

**2.0 Our Response to the Committee's Question 2.**  
**What are the barriers to greater deployment of renewable energy?**

**2.1** As far as wind farms are concerned, one of the main barriers to greater deployment is the understandable negativity with which wind farms are now perceived.

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<sup>1</sup> Appendix 1: Housing Issues

<sup>2</sup> <http://www.windturbينوise2007.org/> p 7

**2.2** A deluge of inappropriately and insensitively sited wind farms has resulted in huge, unprecedented communication between people across the UK which, in turn, has fostered increasing cynicism towards wind energy, if not Renewables per se.

**2.3** The behaviour of the wind energy industry, whose tactics to succeed at any price, promotes the impression that there is something unsavoury about wind farms in the first place. Therefore, in our view, the wind energy industry has only itself to blame.

**2.4** People generally do have a genuine concern for their environment, both locally and globally, and do appreciate the need for security of energy supply.

**2.5** However, because these wider concerns are used tactically by the industry, they leave individuals and whole communities subsequently feeling that they have been disenfranchised. beguiled or even duped.

**2.6** Noise, with possible consequential health effects,<sup>3</sup> and flicker from the blades, combine to diminish significantly, and even eradicate, the ability to enjoy the amenity of one's home, loss of value of the home itself, all these increasingly justifiable fears make people very worried. Increasing knowledge is demonstrating that Wind Turbine Syndrome does exist, and emerging evidence from across the world does demonstrate the devastating effects that this can have<sup>4</sup>. A study into flicker and association with photosensitive epilepsy has recently been published.<sup>5</sup>

**2.7** Many people, rightly in our experience (appendix 1), are concerned that their property values will fall. Hopefully not as drastically as our now unmarketable home, but by 20% at least. Given that successive UK governments have promoted home ownership and that wind farms, in the main, are built in small rural areas and villages, this is a significant and greatly underestimated reason for people strongly resisting wind farms near their home. Existing studies, even by such eminent bodies as the RICS have been shown to be flawed in their reporting.<sup>6</sup> Hansard reports some Local Authorities are already giving discretionary Council Tax reductions thus acknowledging the devaluation of some affected properties.

**2.8** As far as our issues with noise are concerned, various investigations have been carried out. The Local Government Ombudsman has been involved. Her conclusion is that the noise planning condition (which is the same as, or similar to, every other noise condition imposed in the country for Wind Farms, based around ETSU-R-97, the so called industry standard) is "**vague, open to interpretation immeasurable and thus unenforceable**". In our case planning conditions were approved by the Planning Inspectorate, which is outside the jurisdiction of the Local Government Ombudsman, so the matter of a non specific planning condition is now being investigated by the Parliamentary Ombudsman.

**2.9** We know that 20% of all current wind farms have some noise problems, and at the moment at least 5% of the total operational numbers cause problems that are as bad as ours. However no-one really knows why, or appears interested in researching and finding out ways to solve an issue which clearly has the capacity to increase, if more wind turbines are built too close to homes. Because the wind energy industry cannot accurately predict if a site will experience problems with noise, and because ETSU-R-97, the guidance used by BERR for planning applications offers no protection to families, wind turbines should never be sited near homes.

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<sup>3</sup> [http://www.windturbineoisehealthhumanrights.com/wtnhhr\\_june2007.pdf](http://www.windturbineoisehealthhumanrights.com/wtnhhr_june2007.pdf)

<sup>4</sup> Nina Pierpont, MD, PhD, Wind Turbine Syndrome: A Report on a Natural Experiment (Santa Fe, NM: K-Selected Books) . August 2008

<sup>5</sup> Graham Harding, Pamela Harding, Arnold Wilkins (2008) Wind turbines, flicker, and photosensitive epilepsy: Characterizing the flashing that may precipitate seizures and optimizing guidelines to prevent them. *Epilepsia*. 2008 April 3. doi:10.1111/j.1528-1167.2008.01563.x

<sup>6</sup> <http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm080513/text/80513w0003.htm>

**2.10 Therefore our experiences as described in this paper show that if you have a problem, even when authorities acknowledge one exists, nothing gets done.**

### **3.0 Our Response to the Committee's Question 3.**

**Are there likely to be technological advances that would make renewable energy cheaper and viable without Government support in the future?**

**3.1** We do not have the Scientific knowledge to be able to answer this, but based on our existing knowledge we are surprised that more work is not being undertaken to examine the viability of using geo-thermal applications (as an example, see Gresham Clacy's work with the DTI in 1993<sup>7</sup>). Wind energy is highly visible politically, whereas serious study/uptake of the geo-thermal option remains neglected.

### **4.0 Our Response to the Committee's Question 6.**

**What are the external costs associated with different forms of renewable energy, such as the impact on rural areas of an increase in wind farms?**

**4.1** We have recently written to the Rural Advocate, Dr Stuart Burgess, about this very subject, with specific reference to what we see as the fragmentation of rural communities caused by an impending wind farm application.

As a result of our experiences we have since early 2007 made ourselves available, at no cost, to groups in other areas who wish to obtain more information about wind turbines, and any problems associated with living near them.

**4.2** In the past 18 months we have visited and delivered over 40 presentations. In our experience Wind Farm developers mainly target small, rural communities. We know that the industry somewhat insultingly calls these NGA's.<sup>8</sup> (Naive, Gullible and Apathetic) areas and they are prime targets. (Not, as we had naively thought, as a result of scientific research to pinpoint areas of high wind and appropriate locality, but simply areas where landowners wish to farm "wind turbines" alongside crops and livestock). Rural communities do not have the financial resources to fight inappropriate wind turbine applications. What is interpreted as apathy by developers is often a loss of morale within communities after prolonged campaigns over wind turbine applications.

**4.3** Over this time we have become increasingly concerned not only about what we see as the fragmentation of small rural communities that is occurring, driven by some rather unpleasant tactics adopted by the wind farm developers, but also because rural communities are by their nature not strong empowered societies with effective infrastructures. We have also seen evidence of what we believe to be undemocratic practice across the UK.

**5.0 Tactics employed by Developers.** (all of which lead the ordinary citizen to become even more suspicious of and opposed to the proposed development)

#### **Some examples:**

**5.1 Marshland St James,** Norfolk there has been considerable animosity ever since the wind farm was first mooted. This has now divided the whole village. Unusually – in our experience – this is the only village where there has been criminal activity, damage to property, vandalism, arson attacks, and tragically a suicide. An internet search will give you much of the detail and the Police Officer leading the Enquiries is Inspector Paul Durham ([durhamp@norfolk.pnn.police.uk](mailto:durhamp@norfolk.pnn.police.uk)) This wind farm application has not yet been submitted and all this is still happening.

<sup>7</sup> [http://en.wikipedia.org/wiki/Geothermal\\_power\\_in\\_the\\_United\\_Kingdom](http://en.wikipedia.org/wiki/Geothermal_power_in_the_United_Kingdom)

<sup>8</sup> Sourced from MD of turbine manufacturer. J Lilley

**5.2 Deeping St Nicholas**, (our own village), a Wind Farm Committee was set up to administer the so called community fund that allocates the village a small percentage of its profits (£30K initially and £10K annually). A complaint has already been made to the Parish Council about how this money is administered. My observation is that small communities (those with less than 2,000 residents) are often used to raising money for church fabric, community halls, for specific purposes and specific groups - but do not have the infrastructure in place to be able to easily administer unearned money with no specific target. Much unease and unrest has been caused, most of it between those who see themselves as “locals” and those who are perceived as “incomers”. The gift of money with no identified purpose seems to cause more disagreement than the raising of money for a specific entity.

### **5.3 Long Benington, Lincolnshire**

The aspiring developers, Infinergy, sent the attached document “Infinergy” to all members of the Development Control committee before a planning application decision was discussed. We can confirm, on oath if needs be, that we have in our possession evidence and proof from South Holland District Council that all the statements within that document are flawed and based on false information and unrepresentative data. The monitoring of noise levels referred to was carried out by the local Council over 27 hours during the month of October 2007. That month turned out to have seen the lowest wind speed across the UK, and thus the turbines were only operating at an unrepresentative 11% during the month. (on average, they usually operate at 25%). These facts would have been known to the Wind Farm Developers when they persuaded South Holland District Council to issue the statement that provides the basis of the “Wind Prospect Statement on Deeping St Nicholas” (see attached document). Despite evidence that this data is inaccurate, there has been no action to rescind the statement’s inaccuracies by the BWEA, which is still using this material.

### **5.4 Glyndebourne, Ringmer Sussex.**

A version of the Wind Prospect statement was sent out by the BWEA. [See sec 5.3]. This was submitted as a “Proof of Evidence” by the Acousticians acting for the Developers at the Glyndebourne Inquiry. South Holland District Council issued a rebuttal in part to the Inquiry

### **5.5 Tynedale Public Inquiry, still in progress, Northumberland..**

BWEA statement [see sec 5.3] submitted as a “Proof of Evidence” by Acousticians acting for the Developers. Mr. & Mrs J Davis will be rebutting this, with evidence, at the Inquiry, in person.

### **5.6 Old Hutton Wind Farm Application. (Banks Development) (South Lakeland District Council)**

Banks Development offered, and the Local Tennis Club have accepted in writing, a sum of money (believed to be about £19,000). Three of the members of the Tennis Club are also on the Local Parish Council who had not yet met to consider the Wind Farm proposal. When the Parish Council did meet later to discuss and consider the planning application for the wind farm, those members had to declare their interest and thus the Parish Council was left not quorate so that matter could not be acted upon. The villagers, therefore, were effectively robbed of their rights to put forward a view, whatever those views might have been.

### **5.7 Mountboy site, Rossie Moor, Angus, Yelland, Isle of Wight, Berwick, (Toft Hill) and many others.**

Activists, brought in from elsewhere by the Developers, set up stalls in local markets and even outside schools to canvas opinion as to whether people support renewable energy, and wind power in general. That response was then taken, and the figures used, to signify support for their specific scheme. As one would expect, many people were concerned and supported a broad

renewable strategy, but did not expect their support to be submitted to planning authorities as support for a specific wind farm, which is quite a different thing altogether. Sometimes children were encouraged to sign such cards. A similar tactic is employed when consultations are sent out within Parishes. Those who do not respond to the so-called consultation are counted as being “broadly in favour” as they did not actively respond to indicate they don’t want the wind farm.

**5.8 “Community Funds” (Bribery.)** These ‘funds’ often come with a caveat that suggests they will be paid only if there is no significant opposition to the wind farm. These ‘funds’ represent a minute fraction of the profits earned by developers, yet are very tempting to communities.<sup>9</sup>

**5.9 Photomontages.** The photomontages used by developers often misrepresent the true scale and impact of the development. For example, photomontages have been criticised for presenting panoramic views, often taken in weather conditions which further diminish the actual visual impact (this includes the infrastructure of the wind farm as well as the wind turbines themselves). This kind of misinformation, deliberately designed to misguide the public and planning officials alike, has done much to foster cynicism, frustration and fury within local communities.

**5.10 Planning Regulations.** Decentralised planning conditions mean that there are geographical areas that have numerous wind farms because planning is undertaken without consistency or coordination and without any real understanding of the enormity of the cumulative impact; this can be seen in areas like Cumbria, the Lune valley, Wales, and Norfolk.

**5.11 Time and money.** We are quite sure that the Government has no concept of the immense amount of time, money and emotional energy expended by villagers, in the vicinity of each inappropriate application. People are trying not only to protect the visual amenity of the area in which they live, but also not to lose the very thing which they have spent their lives working and saving for, notably an environment that promotes the health and well-being of families, as well as the peace, tranquillity and amenity of their homes and gardens.

In our experience, each anti-wind turbine campaign (or ‘pro community and local environment campaign’), costs villages about £100,000 in real terms. If the matter goes to a public inquiry, then this amount can be tripled. This tremendous unseen cost represents the loss of important resources to local government and the communities. Moreover, these processes and inquiries also breed significant distrust, dislike, and disbelief in those who set our planning policies, as many appear to accept as de facto the reports produced by the wind turbine developers to support their applications, without further investigation or independent analyses.

**5.12 Emotional Distress.** One current wind farm application in Devon affects two local smallholding farmers with young families who had bought a small amount of land from a neighbouring farmer and built log cabins for the tourist industry. The farmer from whom they purchased the land has now applied for a wind farm to be built behind the cabins, some 400m away. This has understandably upset many people in the area. The emotional distress experienced by these families is, we understand, mirrored in cases up and down the country.

**5.13 Public Inquiries** for turbine applications can last for weeks, if not months, the current so called Tynedale Inquiry being a case in point. The developers persist because there is so much profit to be made with ROC’s. They employ barristers and their legal teams, in addition to an array of planning consultants, often for extended periods. Local authorities and campaign groups struggle to represent local concerns and protect community well-being, even though financial resources are stretched and strained to accommodate this process. Such unequal financial burdens may already be affecting the ability of many councils to address such responsibilities. Many will be unable to fund proper defence of decisions through the Appeal Courts.

**5.14 Security of Supply.** There are two kinds of power, base load, and reserve (or back up).

<sup>9</sup> Evidence available.

Wind turbines cannot be used as base load production as wind generated electricity is not reliable or predictable enough to allow this.

**5.15 Jobs.** Developers often use the phrase “local employment may be created during construction, boosting the local economy”. In our experience “may” is usually a may NOT, unless you count temporary short-term local contracts for sand and gravel. The more complex engineering, electrical and construction works are put out to local tender, and then aspiring contractors are told – “sorry, – you do not have the appropriate expertise” - after which the services, components and workers are brought in from 3<sup>rd</sup> party suppliers almost always outside the UK, e.g. Vesta, Nordex, Re-Power, Hanssen Transmissions, Suzlon, GE etc.

**5.16 BWEA.** The role of the BWEA is misunderstood, as many members of the public believe that it is an independent organisation set up to give accurate factual information about wind power. In fact, BWEA is the trade and professional body for the UK onshore and offshore wind energy industries. In our experience it does not always present accurate information, as the ASA has pointed out on several occasions. For example, ASA said that BWEA had misrepresented CO2 “savings”<sup>10, 11</sup> Closer to home as already mentioned in our case, BWEA has yet to correct the misinformation that it has put out about us.. BWEA has included this misinformation in summaries submitted to Public Inquiries as part of “Proofs of Evidence”. Thus, it seems that the role of the BWEA is to present misinformation that benefits the industry.

**5.17 Noise and the Nature of Noise.** Our own experience and research suggests that the intrusive nature and the volume, depth, breadth and intensity of the noise are not yet fully understood. We find it very interesting that across the world people, such as ourselves, who suffer intensely from the noise use the same phrases to describe it. Phrases such as “a toy in a tumble dryer”, “a train that never arrives” “a thumping heartbeat”, “someone blowing in your ears”, “2 or 3 helicopters flying above my house”, “a low-pitched, penetrating non-directional hum”, are used by sufferers in Canada, the USA, New Zealand, Italy, Ireland, Scotland, Wales, and other countries. These people usually experience the problem before realising there are others who have already been exposed. Yet developers still promise that noise will not be an issue.

**5.17 A** A reasonable man may question why it is necessary to hold an “**International Wind Turbine Noise Conference**” every two years, outside the UK, with 24 countries attending over 2.5 days if, as the BWEA would contend, Wind Turbines are not noisy.

**5.17B What the Wind Turbine Noise Does...** Wind turbine noise is characterised by its loudness, pulsating character, low frequency component, and its continuous nature (often 24/7), which combine to affect:

- Sleep
- Rest
- The ability to enjoy the amenity that is your home (or was)
- Health issues.
- Loss of value to home
- Concentration making using complex equipment potentially dangerous
- Impaired cognitive ability
- Social lives, e.g. it was no longer possible for our daughter to have “sleep-overs”
- Mood changes and constant tiredness which leads to increased irritability, feelings of despair, and feelings of inability to cope with normal day to day activities.

. Tiredness means that you become more prone to accidents, not ideal in any circumstance but dangerous on a farm. The peculiar noises that the wind turbines emit cannot only be heard, they can also be felt by the body, and thus trying to rest becomes impossible. We tried: fans, white noise machines, sleeping tablets, red wine and ear plugs. The latter mask background noises but allow the low frequency sound wave to penetrate so that it feels part of your body. Meanwhile the

<sup>10</sup> [http://www.asa.org.uk/asa/adjudications/Public/TF\\_ADJ\\_43298.htm](http://www.asa.org.uk/asa/adjudications/Public/TF_ADJ_43298.htm)

<sup>11</sup> [http://www.asa.org.uk/asa/adjudications/Public/TF\\_ADJ\\_43563.htm](http://www.asa.org.uk/asa/adjudications/Public/TF_ADJ_43563.htm)

beat, the pulsation, that is slightly faster than our human hearts beat, means that you feel as if you are constantly trying to get your heart to catch up with this external rhythm that is felt by the body rather than heard, so rest is impossible. The problem with the noises from the wind turbines is that they are so unpredictable, and the noise draws your attention and completely distracts you.

**5.18 Safety Issues** There are an ever increasing number of reports about turbine blades breaking or fracturing and being thrown considerable distances, also some fires, ice “throws” and a small number of deaths in the construction phases. People find these worrying and concerning, particularly when homes are being built nearer to turbines in the UK than anywhere else in Europe.

**5.19 Wildlife Issues.** There are reports of raptors and bats being killed by turbines. Our moles have gone as they cannot tolerate the vibrations and there are ongoing studies into the effects on essential fungi and invertebrates at the bottom of the food chain, which only live in still conditions.

**5.20 Changing Specifications.** Developers seem to change specifications of the wind turbines or the siting of the turbines after planning permissions have been granted with no further amendments or applications, to the detriment of the visual impact, and more worrying, to the audible effects on the health and well-being of those living near the wind turbines. For example, the wind turbines proposed for Deeping St Nicholas initially had a tower height of 67 metres and a rotor diameter of 66 metres. In September 2004, 15 months after the Planning Appeal Decision, Wind Prospect said they wished to change the turbines to RE Power MM82's with a Tower height of 59m and a rotor diameter of 82m. The rotor blades are thus nearly 25% longer, with a corresponding increase in noise, but no further application, measurements or amendments were undertaken that we can ascertain.

**5.21 Community ownership.** Companies such as Energy4all are set up to promote so-called community ownership within a co-operative set up. The most recent to come on line were two turbines at Deeping St Nicholas, the same site that has driven us out of our home. The Financial Services Authority complained about the proposal and the Company had to issue a supplementary prospectus correcting many areas of misinformation.

**5.22 Local Councils.** Local councils do not have the time, equipment or expertise to measure the specific noise standard applied to wind farms. Therefore, they rely on the wind industry's measurements, documentation, and analyses. The councils also have to rely on the operating company releasing wind and operating conditions in order to be able to accurately measure the noise emissions. Councils have no legal powers to insist on a shut down for measurements of background noise to take place. Hence the Ombudsman's conclusion (see paragraph 2.8) DEFRA has recently also put out a research proposal to address this very issue.<sup>12</sup>

## **6.0 Summary**

We hope that we have been able to impress upon you why we are so concerned about the behaviour and actions of the Developers of industrial wind turbine sites. However, we are also concerned about the long term impact on fragile rural communities and their futures, particularly when local voices are ignored and the health and well-being of communities, families, and the local environment are sacrificed for financial and political expediency.

Julian Davis BSc & Jane Davis M.A. RN June 6<sup>th</sup> 2008. This is our own evidence.

Home Address: The Farmhouse, Grays Farm, North Drove Bank, Spalding, Lincs. PE11 3JX  
Residential Address: 10, Mayfair Drive, Spalding, Lincs, PE11 2UG  
Tel: 01775 714515; email sburles@waitrose.com

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<sup>12</sup> Environmental Protection NOISE and NUISANCE page 10 Research Newsletter 2008 – 2009 ISSUE 1 – May 2008 DEFRA