

**Presentation given by Re-Volt at
Burton Joyce Village Hall
Thursday 19 November 2009
Copy of Transcript**

RE-VOLT

Resident Villagers Oppose Local Turbines

**Presentation by
Byron Crawford**

Burton Joyce resident and member of Re-Volt

SAVE OUR SCENERY!

Join the RE-VOLT

RE-VOLT

Did you know that Severn Trent Water is proposing the construction of three huge 132m (433 feet) wind turbines adjacent to the Poplars Sports Ground?

(Resident Villagers
Oppose Local Turbines)

The impact of the turbines on Burton Joyce and the surrounding area will be devastating.

Do you share our concerns?

- Noise pollution & disturbance
- Wind Turbine Syndrome (including sleep disturbance, tinnitus, rapid heart rate, headaches, nausea, irritability etc.)
- Turbine size & visibility (A turbine will be 7 times the height of the Methodist Church spire in Burton Joyce)
- Road safety on surrounding roads
- Shadow flicker
- Impact on wildlife and landscape
- Television reception interference
- Property values

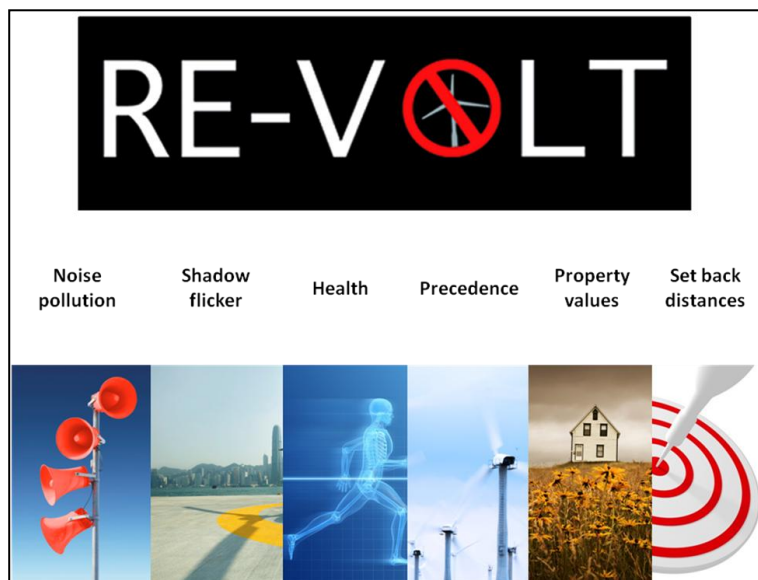
See our website www.re-volt.org.uk

Attend the village meeting

Thursday Nov 19th, 7pm, Burton Joyce Village Hall

We are a local action group opposed to Severn Trent's proposal to build wind turbines in such close proximity to housing within our village.

We recognise the need for renewable forms of energy supply. However having further researched the topic of wind farms we feel that the proposed location is totally unsuitable.



The aim of this presentation is to voice some of the fears that we have uncovered during our research, and hopefully to inspire you to undertake your own research. We of course hope that you as our local community will share our concerns and will join with us to try to prevent this wind farm from going ahead.

NOISE POLLUTION & ANNOYANCE

- ETSU-R-97
- Higher night noise
- Rural area
- Prediction of noise
- Low frequency
- Post construction

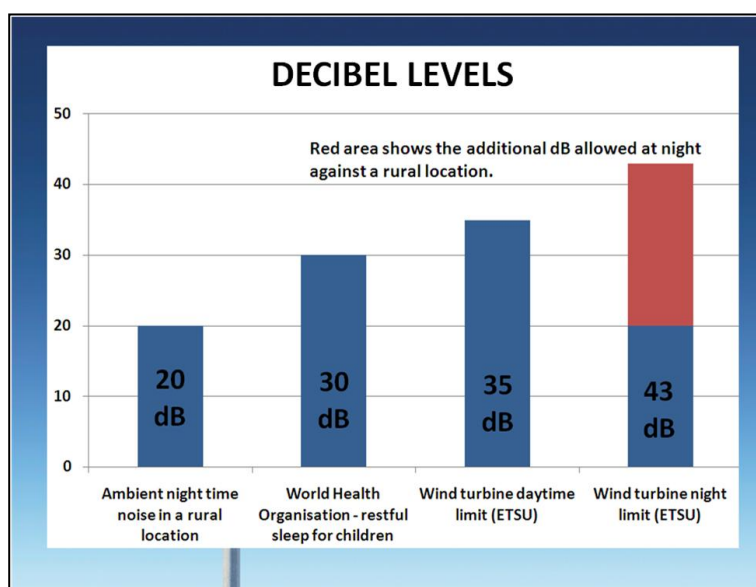
Our major concern is noise. This is a hotly debated topic in the scientific community with opposing views on every aspect.

Our **first** concern is that the current government guidance on wind turbine noise is both out of date and fundamentally flawed. ESTSU-R-97 as it's called is based on the experiences of smaller turbines than those proposed by Severn Trent and does not take into account infrasound. It is widely accepted that the guidance does very little to protect the public¹.

Secondly the ETSU guidance is the only document of its type that actually allows the noise levels to be higher at night² than in the day. The reason for this is simple, turbines are noisier at night because the atmosphere is more stable and as the blades turn they make more noise³.

Just to be clear, when we are all trying to sleep the turbines are not only noisier but the ETSU guidelines allow them to be noisier.

Thirdly we are fortunate to live in a quiet area where the background noise level at night is very low. Typically planning conditions require that new noise be no more than 5db above the pre-existing background⁴.



However the ETSU favours a maximum noise limit rather than just an additional 5dB. At night, levels in a quiet area can drop as low as 20dB⁵. However the ETSU puts a night time noise limit on turbines at 43dB, i.e. a potential increase of 23dB⁶.

¹ The Noise Association - Location, Location, Location (2006) page 10, or Mike Barnard - Wind Turbines & Noise (2007) section 3.28

² Mike Barnard - Wind Turbines & Noise (2007) section 3.23 (comment by the Institute of Acoustics)

³ Mike Barnard - Wind Turbines & Noise (2007) section 4.15 - 4.17 (Extract from G P van den Berge study), or Dr A Harry - Wind Turbines, Noise & Health (2007) page 27

⁴ Mike Barnard - Wind Turbines & Noise (2007) section Executive Summary (with reference to BS4142)

⁵ The Noise Association - Location, Location, Location (2006) page 10, or Mike Barnard - Wind Turbines & Noise (2007) section 3.20

⁶ Mike Barnard - Wind Turbines & Noise (2007) section 3.20

The World Health Organisation has found that to protect children's health, sound levels should be less than 30dB during sleeping.⁷ Obviously the ETSU will allow 43dB.

Our **fourth** concern is that so far accurately predicting the noise output from a wind farm has eluded engineers. For example wind speeds at night can be 2.6 times higher than expected⁸, leading to noise levels being considerably under-estimated.

Our **fifth** concern is that ETSU takes no account of low frequency sound or infrasound. Infrasound is more pervasive as it can travel, both through the ground and through the air, much further than conventional sound. Low frequency noise is much more disturbing indoors than outside⁹. Unfortunately the turbine industry denies that infrasound is an issue, despite there now being over-whelming research to the contrary¹⁰.

And finally, do not be reassured that if the turbines are constructed and are found to be noisy then we will be protected by the environmental authorities.

There are numerous examples where turbine noise has been disregarded by authorities.

For example, the village of Askham¹¹ took the turbine developer PowerGen to court. However, the judge eventually ruled against the residents, saying that **“audibility and annoyance are not to be equated with nuisance.”**

At another UK wind farm, families request that turbines be shut off on nice days or bank holidays so that they can enjoy their gardens¹²!

⁷ The Acoustic Ecology Institute - Wind Turbine Noise Impacts (2009) page 9

⁸ Dr Frey & P Haddon - Noise Radiation from wind turbines installed near homes (2007) page 4, or The Noise Association - Location, Location, Location (2006) page 5

⁹ The Noise Association - Location, Location, Location (2006) pages 12-15, or The Acoustic Ecology Institute - Wind Turbine Noise Impacts (2009) page 9, or Dr A Harry - Wind Turbines, Noise & Health (2007) page 38 (view of Dr Manley - acoustician & engineer)

¹⁰ <http://www.bwea.com/ref/lowfrequencynoise.html>

¹¹ Dr Frey & P Haddon - Noise Radiation from wind turbines installed near homes (2007) page 8

¹² Dr Frey & P Haddon - Noise Radiation from wind turbines installed near homes (2007) page 9



The potential effect that shadow flicker may have for people living on Nottingham Road, Mill Field Close and the users of the Poplars Sports facility simply cannot be ignored.

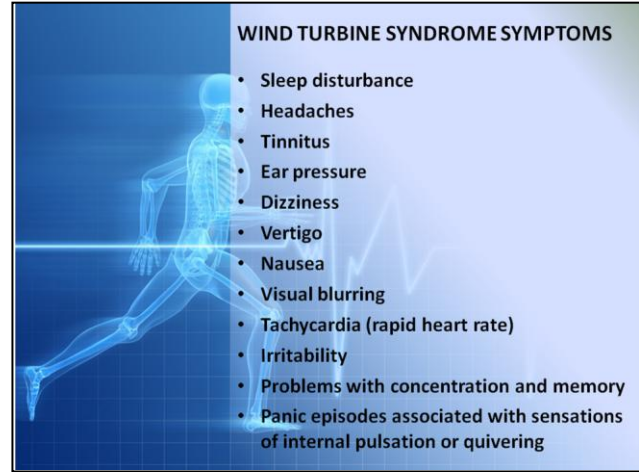
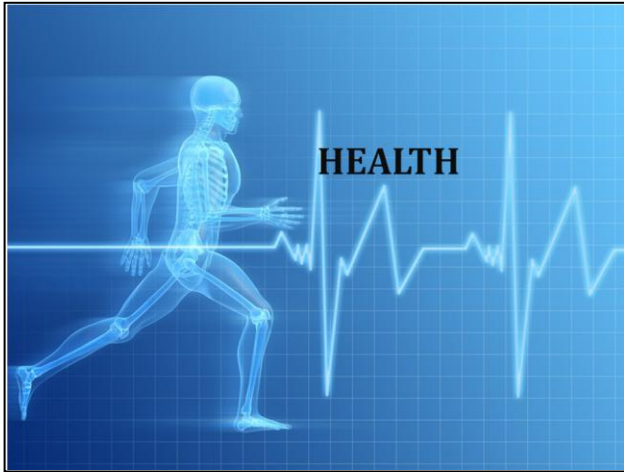
This quote is taken from a resident in Devon living 533m away from an 85m high turbine¹³. (i.e. a smaller turbine than those planned which are to be between 126m and 132m.)

He says **“strobe or shadow flicker entering my Kitchen, Conservatory and Sitting room, all on the East side, when the sun rises in the east, in Autumn and Winter behind the wind turbines. This will last for three months and is NOT ACCEPTABLE ... The prolonged flicker causes a headache, affects my eyes and causes disorientation.”**.

In the developers planning appeal it stated that shadow flicker is not considered an issue due to the distance and orientation of the turbines to the nearest dwellings.

Who are we to believe, and do we want to take the risk?

¹³ Dr Frey & P Haddon - Noise Radiation from wind turbines installed near homes (2007) page 12



There are numerous reports from people living in close proximity to turbines stating that their health has been affected since the arrival of the turbines¹⁴.

Problems are caused by a combination of audible noise, low frequency noise, the visual aspects of the turbines moving and any associated shadow flicker.

Human health effects often take years to emerge as a pattern, and as the numbers of wind turbine installations close to people's homes increase, reports of health effects have escalated.

One doctor in particular, Dr Pierpont has researched these reports and has named this collection of symptoms, "Wind Turbine Syndrome"¹⁵. (See slide for list.)

In a UK study conducted by Dr Amanda Harry¹⁶ in February 2007 81% of those surveyed said their health had been affected.

As developers push the proximity boundaries we can assume that more and more cases relating to ill health will arise.

Again, can we afford to take the risk?

¹⁴ The Noise Association - Location, Location, Location (2006) pages 18 - 19, or Dr A Harry - Wind Turbines, Noise & Health (2007) pages 17 - 20, appendices also

¹⁵ <http://www.windturbinesyndrome.com/> - Dr Pierpont's research is 'original basic research' i.e. she has studied cases of people who have health problems as a result of living close to turbines. Critics of her research say that it is unscientific, that there is no control group etc. The point is that this research is in its infancy, it is only recently that turbines have been placed close to people's homes, therefore problems are only just being discovered. Didn't it take the medical community a while to discover the negative effects of tobacco? It's worth taking the time to listen to this radio interview where Dr Pierpont discusses WTS - <http://www.windturbinesyndrome.com/wp-content/uploads/2008/07/pierpont-interview-4-32-bitrate1.mp3>

¹⁶ Dr A Harry – Wind Turbines, Noise & Health (2007) page 16

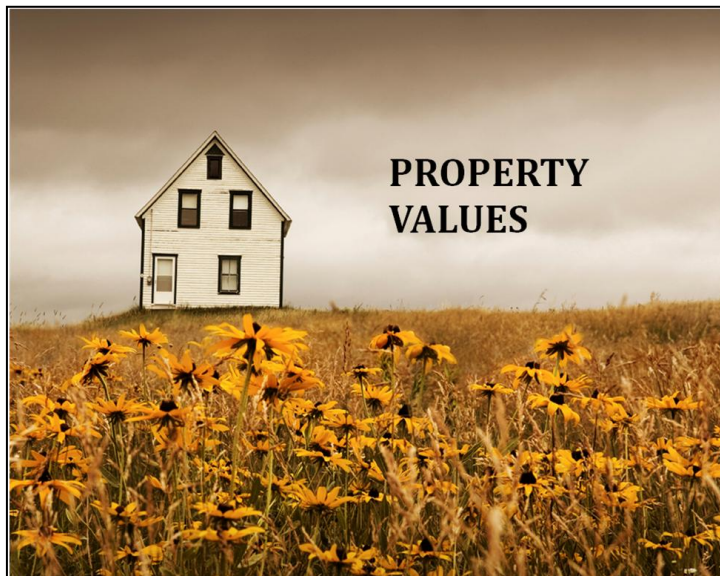


When we purchased our house one of the key factors to us was that the land opposite was designated as green belt, and therefore the views (we thought) were protected. Apparently not! If we were to accept this proposal, what message does this send out? Will we be viewed as an easy target to build perhaps more turbines on the other side of the village?

This image of the surrounding area shows just how much space there is for other potential wind-farms. If we allow **this** wind farm to be shoe-horned in then think of the precedent set for other, larger areas of countryside.



We can only argue for the protection of our landscape once! Once we have accepted these structures which are the equivalent of a 40 storey building. How will this shape our future development constraints?



The question of what effect do Wind Farms have on property values was raised at Severn Trent's original exhibition. They answered this question in a letter to residents by saying that "research carried out has not determined that wind turbines reduce property prices"¹⁷. In the same letter they also quoted from the following research:

"The March 2007 study by the Royal Institute of Chartered Surveyors noted that other factors had a more significant impact on house prices than the presence of a wind turbine. This study also suggests that the threat of a wind farm may have a greater impact than the actual presence of one."

However, they neglected to include the following extract from the same report which states that with regard to house prices, there is:

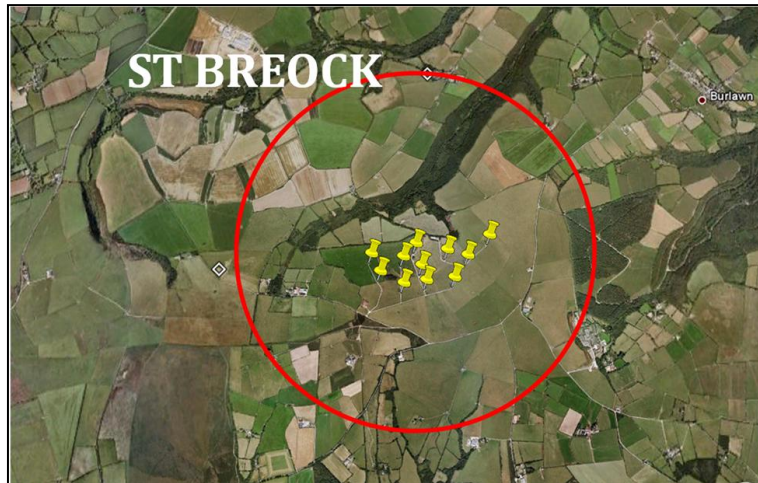
"a significant impact on properties located within a mile of a wind farm"¹⁸.

There are a huge number of homes in Burton Joyce, Gedling and Stoke Bardolph that are within 1 mile of the turbines.

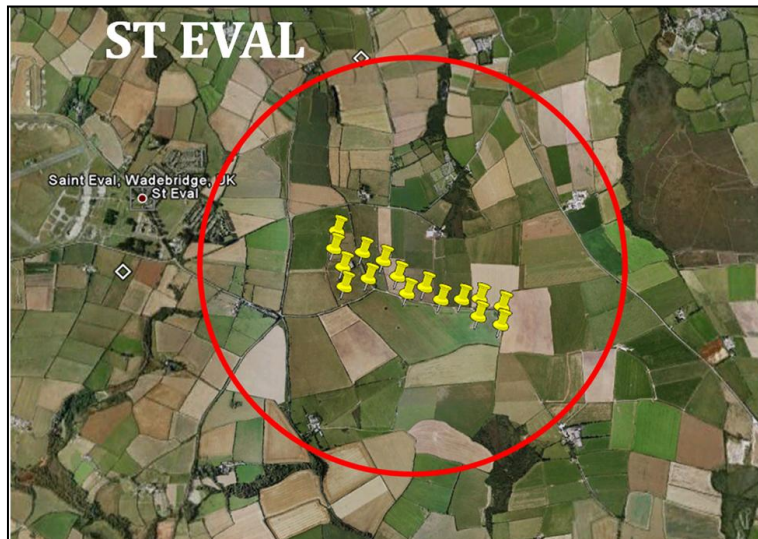
This is such an important issue that appeared to be brushed under the carpet that we looked in more detail at the RICS study. This report was based on three locations one of which was discounted as it was next to an open cast mine.

¹⁷ Letter from STW to residents dated 9/10/09

¹⁸ RICS - What is the impact of wind farms on house prices? (2007) page 1

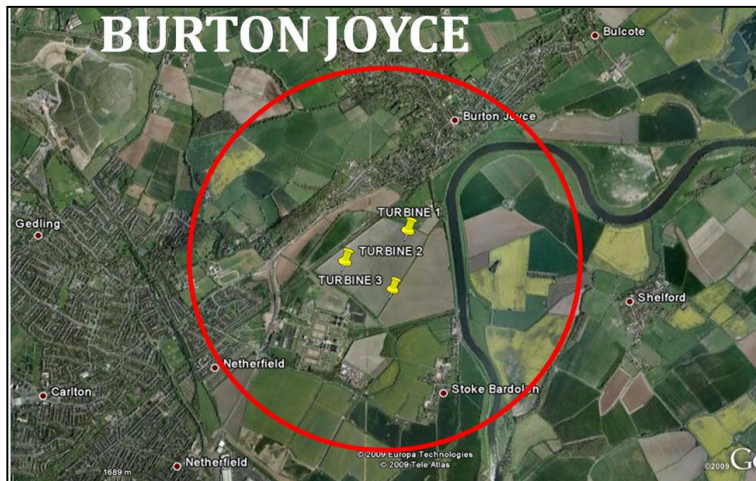


This is an image of the turbines at St Breock and as you can see very few houses are actually within the red 1 mile radius. Most of the data this report is based on is concerned with houses that are up to 5 miles away from the turbines and so will generally be unaffected. (However those that were within one mile were 'significantly' affected'.)



Also in St Eval, again there are very few houses within close proximity to the turbines. There is however a caravan park half a mile away that was excluded from the report. The caravan park experiences unbelievable problems with noise but this wasn't included in the report¹⁹.

¹⁹ 'Hard Wind' article - <http://www.guardian.co.uk/environment/2007/may/24/energy.communities>, or Dr A Harry - Wind Turbines, Noise & Health (2007) appendix 5



Take a look at Burton Joyce, in comparison there are a huge number of properties within the one mile zone. For the wind industry and developers to hold the RICS report up as evidence that house prices are unaffected is quite unbelievable²⁰.

A similar study by the RICS in 2004²¹ concluded that 60% of the sample suggested that wind farms decrease the value of residential properties where the development is in view. 67% of the sample indicated that the negative impact on prices starts when a planning application is made.

In a 2004 court case where a seller had failed to disclose to the buyer that a wind farm was about to be built nearby, the judge ruled that the value of the property had reduced by 20% due to the presence of the wind farm²².

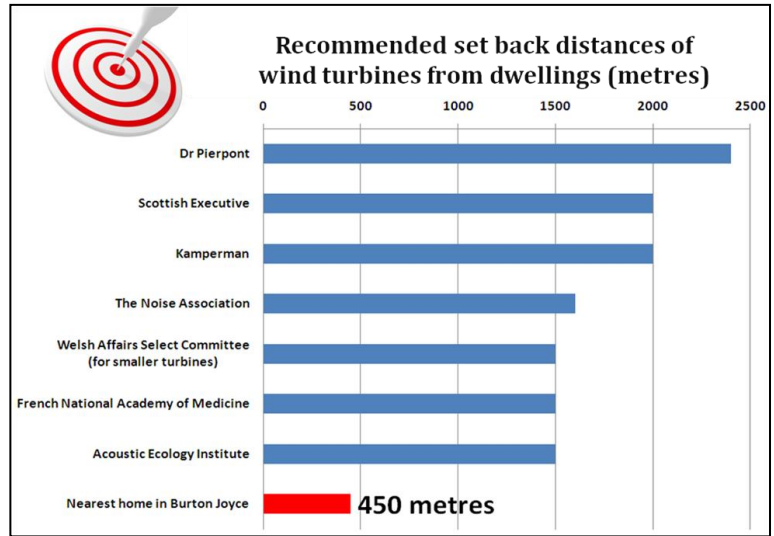
Common sense tells us, that if turbines can be seen from a property, or noise disturbance is experienced, then surely a properties **price** and **desirability** will fall²³?

²⁰ We have gone into this into considerable detail because we think it is a good example of how data and research can be twisted and presented in a different light.

²¹ RICS - Impact of wind farms on the value of residential property and agricultural land (2004) page 6

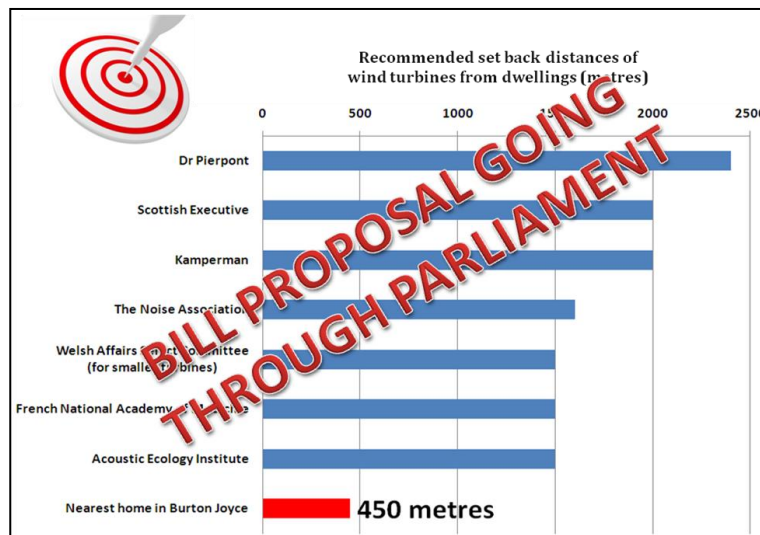
²² Dr Frey & P Haddon - Noise Radiation from wind turbines installed near homes (2007) page 119

²³ Another study (Impact of Wind Farms on residential property prices - Crystal Rig Case Study) is also held up by some wind farm developers as evidence that house prices are not affected. What they don't tell you is that the town of Dunbar (where the study took place) is actually 7.5 miles away from the Crystal Rig turbines and the turbines can't even be seen! The report concludes that the farm may have even had a positive effect on property values. Prices did rise when compared to a control group but this is attributable to the 'Edinburgh effect' as Dunbar is a popular commuter town.



Various academic, health and scientific bodies now recommend that there be a setback distance between homes and wind turbines²⁴.

All of them recommend set-backs in the region of between 1.5 to 2.5 km. In Scotland there is a guideline of 2km. The nearest homes at Burton Joyce would be just 450m away.

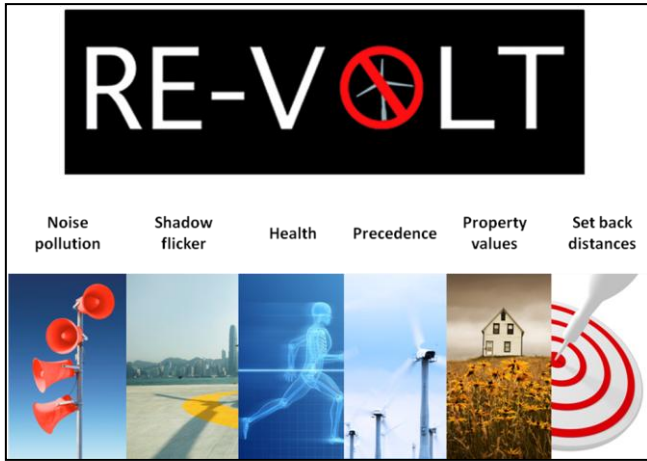


In the last month Peter Luff, MP for Worcestershire proposed a bill to have a setback of 2km for larger turbines²⁵, i.e. the turbine size proposed by Severn Trent. This bill is clearly in the earliest stages and who knows if it will be passed.

We can only imagine that eventually there will be a set-back, in line with other countries, and therefore the proposal by Severn Trent would not be possible.

²⁴ Mike Barnard - Wind Turbines & Noise (2007) section 4.13 - 4.15

²⁵ <http://www.peterluff.org.uk/speeches.php>



So why are we against this proposal?

We hope that we have shown that there are many potential issues that may arise if this proposal goes ahead. Worryingly for issues such as noise, health and property prices, the developers and the British Wind Energy Association seem to deny that the problems even exist, despite evidence to the contrary.

In a nutshell it comes down to the fact that Severn Trent is planning to construct the largest turbines it can, in a confined area and in very close proximity to a highly desirable village. Severn Trent is pushing the envelope to the limit.

You have to question the reasoning for such a proposal, and I suspect it probably makes good commercial sense to Severn Trent, but I cannot see one positive effect that Burton Joyce and the surrounding villages can take from accepting this proposal.

Due to time constraints we have only touched the surface in this presentation. I can only ask that you all take the time to research this fully for yourselves and so that you can make an informed decision as to whether you support or oppose the proposal.

We haven't used scaremongering tactics but the fact is that what Severn Trent Water is proposing is very scary indeed.

Thank you

Quotes that were on the Re-Volt presentation board:

“..the presence of aerodynamic modulation which is greater than that originally foreseen by the authors of ETSU-R-97, particularly during the night hours, can result in internal wind farm noise levels which are audible and which may provoke an adverse reaction from a listener ...”²⁶

‘... it may be appropriate to re-visit the issue of aerodynamic modulation and a means by which it should be assessed.’

“There is a real danger that, in the enthusiasm to embrace clean technology, legitimate concerns about noise are being brushed aside. There is no doubt that some existing wind farms are causing real noise problems. It is quite unacceptable to our fellow citizens for this situation to be replicated in other parts of the country.”²⁷

(Noise Association - 2006)

“At this crucial stage in the development of the wind power industry it would be sadly short-sighted to insist on placement of turbines in the “grey area” between what noise models suggest is enough (perhaps 1500 feet) and the zone where complaints have cropped up (up to a mile or so).”²⁸

(The US Acoustic Ecology Institute - 2009)

“In weighing the evidence, I find that, on the one hand there is a large number of reported cases of sleep disturbance and, in some cases, ill health, as a result of exposure to noise from wind turbines supported by a number of research reports that tend to confirm the validity of the anecdotal reports and provide a reasonable basis for the complaints. On the other, we have badly designed industry and government reports which seek to show that there is no problem. I find the latter unconvincing.

In my expert opinion, from my knowledge of sleep physiology and a review of the available research, I have no doubt that wind turbine noise emissions cause sleep disturbance and ill health.”²⁹

(Dr C Hanning BSc, MB, BS, MRCS, LRCP, FRCA, MD – 2009)

²⁶ Summary of the Measurement of Low Frequency Noise at Three UK Wind Farms, contract number W/45/00656/00/00, URN number 06/1412, Contractor: Hayes McKenzie Partnership Ltd, 2006.]

²⁷ The Noise Association - Location, Location, Location (2006) page 21

²⁸ The Acoustic Ecology Institute, Wind Energy Noise Impacts (2009) page 21

²⁹ Dr C Hanning - Sleep disturbance and wind turbine noise (2009) page 17

“The West Danish model clearly shows that the installation of large numbers of wind turbines can lead to severe and expensive problems with power transmission, and seriously degrade wildlife habitats and the aesthetic value of land- and seascapes for little or no reduction in carbon emissions. It is therefore imperative that energy conservation schemes and alternative sources of renewable energy are more thoroughly explored before large swathes of unique UK countryside and coastal scenery are lost to industrial wind stations.”³⁰

(Wind power in West Denmark by De V C Mason – 2005)

³⁰ Dr V C Mason - Wind Power in West Denmark. Lessons for the UK. (2005) page 5

Copy of 'Wind farm quotes and views' handout (issue 2)

AUDIBLE NOISE & INFRASOUND

1. The regulations (ETSU-R-97) are dated and in other ways inadequate. It is known that modern, very tall turbine, do cause problems, and many think that the current guidelines fail to adequately protect the public."
(Prof Ffowcs-Williams, Emeritus Prof of Engineering at Cambridge University – 2005)
 2. "There is a real danger that, in the enthusiasm to embrace clean technology, legitimate concerns about noise are being brushed aside. There is no doubt that some existing wind farms are causing real noise problems. It is quite unacceptable to our fellow citizens for this situation to be replicated in other parts of the country."
(UK Noise Association)
 3. "We have clearly shown that wind turbines generate low frequency sound (infrasound) and acoustic signals which can be detected at considerable distances (many kilometres) from wind farms."
(Professor Peter Styles, Keele University, on vibrations from the 60m high wind turbines at Dunlaw)
 4. "...the presence of aerodynamic modulation which is greater than that originally foreseen by the authors of ETSU-R-97, particularly during the night hours, can result in internal wind farm noise levels which are audible and which may provoke an adverse reaction from a listener ...". **(DTI report)**
 5. 44-50% of people under a half mile away from turbines were "highly annoyed" by turbine noise. Over a third within half a mile had been awakened by turbine noise. **(Bajdek report 2007)**
 6. 45% of respondents living within 2km heard noise from the turbines, and 80% thought that the turbines were visually intrusive. 20% of households living up to 8km away reported hearing turbine noise." **(New Zealand study by Dr Robyn Phipps et al.)**
 7. "This has completely blighted our lives. Most of the time the noise is serious and all the time it is annoying. We decided to rent another house so we would have somewhere to sleep." **(Lincs, 930m from 8 100m turbines)**
 8. "It drives you mad over extended periods."
"Noise distraction is horrendous, absolutely horrendous."
"We abandoned our home ... Elias (5 year old) has been doing better and sleeps in his own bed each night ."
"Feel it as much as hear it."
"We sit round the table in the middle of the night drinking cups of tea because we can't sleep for the noise."
"Our lives are hell."
"It's an irritation and tiring noise, especially when you have not had any sleep because of it."
(Quotes from UK home owners living close to turbines, various wind farms)
 9. "audibility and annoyance are not to be equated with nuisance." **(Judge's quote at the hearing of Askham village vs PowerGen)**
- ### **SHADOW FLICKER**
10. "strobe or shadow flicker entering my Kitchen, Conservatory and Sitting room, all on the East side, when the sun rises in the east, in Autumn and Winter behind the wind turbines. This will last for three months and is NOT ACCEPTABLE ... The prolonged flicker causes a headache, affects my eyes and causes disorientation."
(533m away from a 85m turbine, UK)
 11. "Turns the rooms into a stroboscopic disco effect and the only thing you can do is shut the curtains or move to a different room, which isn't something you should have to do on a summer's evening. It's something we wouldn't wish on anybody else."
(Cumbrian resident)

HEALTH

12. "In weighing the evidence, I find that, on the one hand there is a large number of reported cases of sleep disturbance and, in some cases, ill health, as a result of exposure to noise from wind turbines supported by a number of research reports that tend to confirm the validity of the anecdotal reports and provide a reasonable basis for the complaints. On the other, we have badly designed industry and government reports which seek to show that there is no problem. I find the latter unconvincing. In my expert opinion, from my knowledge of sleep physiology and a review of the available research, I have no doubt that wind turbine noise emissions cause sleep disturbance and ill health." (2009 - Dr C Hanning BSc, MB, BS, MRCS, LRCP, FRCA, MD)
13. "I feel sick when the turbines are running fast."
"I get headaches and thumping in my ears."
"Ears feel like I experience when travelling by plane – feel as if they are swollen inside."
"Waking with headaches when the noise is bad and feeling sick."
"We abandoned our home ... Elias (5 year old) has been doing better and sleeps in his own bed each night ."
(Quotes from UK home owners living close to turbines, various wind farms)
14. "Of particular concern were the observed effects on children, including toddlers and school and college aged children. Changes in sleep pattern, behaviour and academic performance were noted. 7 of 10 children had a decline in their school performance while exposed to wind turbine noise which recovered after exposure ceased."
(Wind Turbine Syndrome research by Dr Pierpont – 2008)
15. "What most don't understand is that it is the low frequency waves you cannot hear that are so debilitating to one's health. These frequencies also drive away the wildlife. I no longer have deer, geese, swans passing by. These frequencies keep

me awake at night."

"Results of a sleep study I had done showed 214 interruptions in a 6 hour period (note: 6-8 is considered normal) I have very little if any regenerative sleep periods."

"It is also very saddening for me to see my dogs suffering. I cannot imagine the distress they must be enduring because of their sensitive hearing. I have not figured out what to do about it."

(Various extracts from T Whitworth, Ontario)

PROPERTY PRICES

16. In a 2004 court case where a seller had failed to disclose to the buyer that a wind farm was about to be built nearby, the judge ruled that the value of the property reduced by 20% by the presence of the wind farm. The seller paid damages to the buyers. **(UK)**
17. A council tax tribunal panel ruled that a wind farm which was located 930m from a house had reduced the value of the house. The council tax banding was reduced from B to A. **(Lincs)**
18. With regard to house prices there is "a significant impact on properties located within a mile of a wind farm."
(2007 RICS survey) Note: other quotes taken from the same survey would lead you to believe that there was no impact, when in facts it's quite the reverse.

SETBACK DISTANCES

19. "It would be prudent that no wind turbines should be sited closer than 1 mile away from the nearest dwellings. This is the distance the Academy of Medicine in Paris is recommending, certainly for the larger turbines and until further studies are carried out. There may even be occasions where a mile is insufficient depending on the scale and nature of the proposed development. There needs to be a clear and public recognition by the Wind Power Industry that wind turbines are causing significant noise problems for some people. This could open the door to constructive discussion.

(UK Noise Association)

20. "At this crucial stage in the development of the wind power industry it would be sadly short-sighted to insist on placement of turbines in the "grey area" between what noise models suggest is enough (perhaps 1500 feet) and the zone where complaints have cropped up (up to a mile or so)." **(The US Acoustic Ecology Institute)**

WIND FARM VIABILITY

21. "The Danish grid used 50% more coal-generated electricity in 2006 than in 2005 to cover wind's failing. The increase in the demand for coal, needed to plug the gap left by wind farms, meant that Danish coal emissions rose by 36% in 2006."

(Wind Chill report – 2008)

22. "Britain's coastline is over 11,000 miles long and has some of the highest tidal ranges in the world. Tidal energy provides a far higher level of load consistency than wind and can be housed and installed away from the population thereby negating the problems, cost and time taken up with lengthy planning applications so associated with wind. Compared with wind energy, the costs and environmental impact of tidal energy are substantially lower. David Cameron was right to herald tidal power in his speech unveiling the Blue Green Charter.

Wind energy, in contrast, can only play a negligible role in plugging Britain's looming energy gap. It is time to call a halt to new wind farms, and to expand aggressively our nuclear, clean coal and tidal resources. "

(Wind Chill report – 2008)