10. TV Reception

This section comprises 4 sub-sections:

10.1 The Scale of the Problem
10.2 The Developer's Analysis of the Problem
10.3 Inadequate Mitigation
10.4 Other UHF/Microwave Links

10.1 The Scale of the Problem

10.1.1 Few things annoy residents more than a TV picture subject to intermittent distortion, degradation, break-up or total loss. Wind turbines have the potential for causing interference to television reception, primarily where a viewer is in the 'shadow' of and within a few km of the wind farm, with their aerial pointing through the wind farm. Viewers in such locations can have their signal 'scattered' causing loss of picture detail, loss of colour or buzz on sound. Viewers situated to the side may experience periodic reflections from the blades, giving rise to a delayed image or 'ghost' on the picture, which is liable to flicker as the blades rotate.

10.1.2 It is also possible for a wind farm to interfere with TV rebroadcast (RBL) links or super high frequency (SHF) links that carry the TV signal between transmitters. However such interference is predictable and is screened by the network operators. For the purpose of safeguarding domestic TV reception, the UK is split up into areas for which either the BBC or the Office of Communications (Ofcom) is responsible. In an email received on 1st September, 2008, the BBC advised DTOG that **up to 252 homes may be affected by a wind farm at Dunsland Cross:**

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Delete Reply Forward Spam Move...

[The BBC Windfarms Tool] Your query results.

From: "Windfarms" <windfarms@rd.bbc.co.uk>

To: brandisturbines@yahoo.co.uk

If you were to place turbines in the following locations:

SS410033

You would be likely to affect 0 homes for whom there is no alternative off-air service.

In addition, you may affect up to 252 homes for whom there may be an alternative off-air service.

The transmitters likely to be affected are:

CARADON HILL
HUNTSHAW CROSS
HUNTSHAW X CH5

This information is provided for the guidance of Wind Farm developers. The results of this query are a rough estimate of populations that may suffer interference from wind farms built at the locations specified. The information is not intended to be a substitute for an on-site survey where the potential for disruption to television services may more accurately be assessed.

The BBC does not accept liability for the consequence of any use of the information provided by this web site. All television reception difficulties caused by the erection of wind turbines are the responsibility of the wind farm developer.

10.1.3 Bolsterstone's own consultation with the BBC produced an even worse result. 12 extra homes for which there is no alternative off-air service were added to the list **making 264**

properties affected in all. This is all of the houses in the area and some distance beyond. Bolsterstone regards this as not significant in paragraph 14 of the Non-Technical Summary.

10.1.4 The problem with siting a wind farm at Dunsland Cross is that it will be positioned right in the signal path of dwellings south west of the site which receive signals from Huntshaw Cross and dwellings north of the site which receive signals from Caradon Hill. The bungalows Little Copse and Fairlawns are examples of the former. Houses and bungalows at Brandis Corner are amongst the latter. These properties cannot get a good signal from the other transmitter. The situation is shown graphically in Figure 26 below:

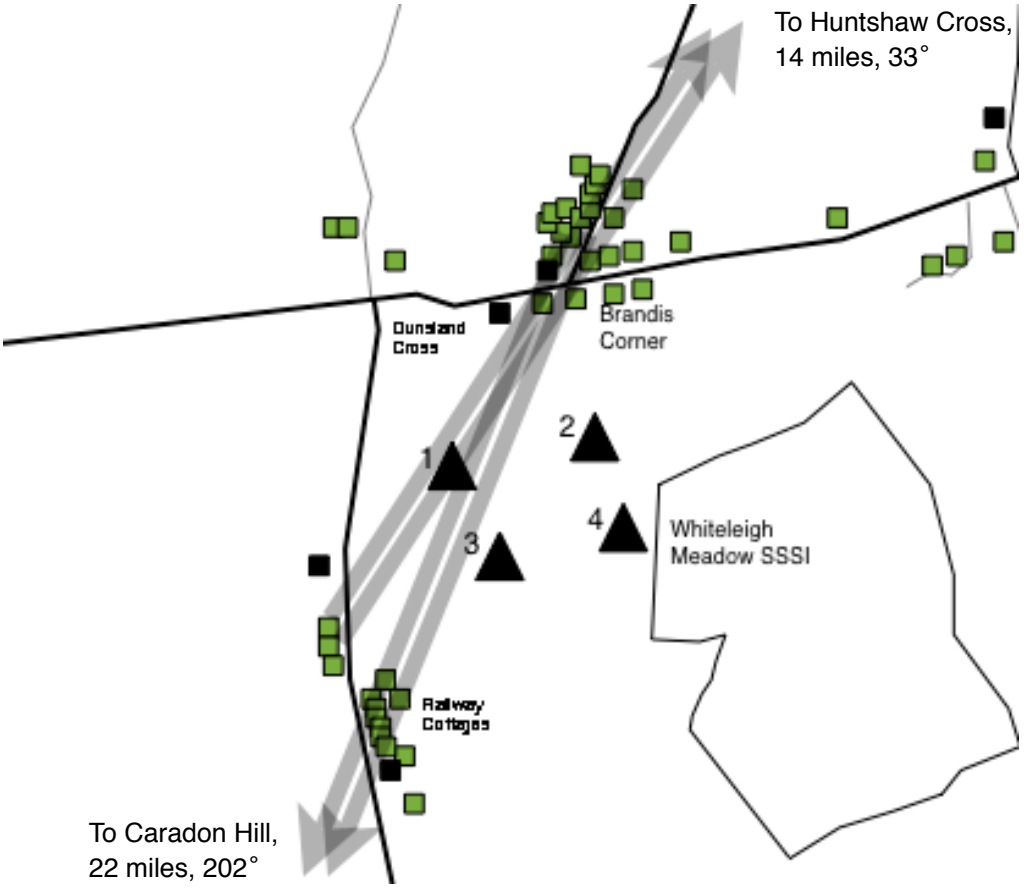

Figure 26

10.1.5 If this wind farm application were to be approved, by the time it became operational this region would no longer be receiving analogue signals from TV transmitters. Wind farm developers assume that the switch to digital will mean fewer TV reception problems in the vicinity of wind farms. Bolsterstone is no exception as its statements in section 12.5.2.1 of its Environmental Statement show. This assumption is shown to be optimistic in section 10.3 below.

10.2 The Developer's Analysis of the Problem

10.2.1 In its Environmental Statement, section 12.5.2.1, Bolsterstone states:

> *'Interference to television reception can occur in any direction within 500 m of a turbine (reflection zone), or within 5 km of a turbine in the line of sight between transmitter and receiver (shadow zone).'*

'Digital television transmission reception does not generally suffer from ghosting caused by minor reflections of the signal, but sudden picture degradation may occur in extreme circumstances due to signal reflections.'

10.2.2 On its website for the Dunsland Cross Wind Farm, Bolsterstone states:

'Television reception will be monitored during development, and any issues will be remedied as necessary.

The main cause of problems are weak signals that are being received by old or poorly tuned aerials. We make an analysis of the potential problem using the BBC windfarm tool and our communications consultants. Where problems are identified we undertake to take remedial action.'

10.2.3 Paragraph 10.1.3 has shown the scale of the problem identified by the BBC windfarm tool. Bolsterstone has yet to say which 'communications consultants' it is using to prepare to mitigate the problem. DTOG suspects it is just going to 'wing it' and see what complaints are generated, then send in an aerial firm to try to sort out the problems.

10.2.4 Responsible developers do not let it get that far before preparing mitigation because they know the strength of the anger felt by the public when their TV enjoyment is affected. They undertake a full technical assessment through prediction modelling based upon International Telecommunication Union (ITU) recommendations on signal propagation and impairment to television reception by wind turbines (ITU-R, 805 & 526-7). This model is generally conservative using a high value of signal reflectivity from the turbines and assuming that reflections from different turbines all add in-phase. The model has been validated using data from existing operational wind farms where TV interference was predicted prior to construction.

10.2.5 The assessment consists of three stages. The first is an analysis of TV coverage from the transmitters in the area and the second is to predict possible interference to reception from each transmitter in turn. Finally, an assessment of practical solutions is performed based on the predictions of coverage and potential interference. Such an assessment would explain why dwellings in the vicinity of this wind farm site just a few tens of metres apart need to be tuned to different transmitters.

10.2.6 Recommendation: CONDITION

Torridge District Council should require Bolsterstone to undertake and submit a full technical assessment of likely TV reception problems, as explained in paragraphs 10.2.3 and 10.2.4 above, before this application can be determined.

10.3 Inadequate Mitigation

10.3.1 In its Environmental Statement, paragraph 12.6.1, Bolsterstone states:

'Any adverse impacts with regard to television reception interference can be resolved through technical solutions that will be agreed between the applicant and the local planning authority. Whilst such mitigation measures may be required to alleviate any television interference, these should only be assessed and considered once the entire site has been constructed and is operating, as

individual turbines can actually improve signal reception to individual aerials as well as degrade received signals.

Mitigation measures can include straightforward solutions such as improving the receiving aerial, changing aerial height, replacing the aerial, retuning television receivers or providing the affected households with an alternative source of suitable television signals off-air from a different transmitter. For homes with no alternative off-air service solutions can include provision of satellite or cables services to affected households.
Any planning consent is likely to include a condition that any effects on television reception that arise as a result of the windfarm will be remedied and paid for by the Applicant.'

10.3.2 After mitigation has taken place, Bolsterstone states: 'no significant residual effect is predicted' (Environmental Statement, section 12.7). The first paragraph confirms DTOG's suspicions in paragraph 10.2.3 above. **The last paragraph sets out a condition that should also be time limited, say within one month of the wind farm becoming operational.**

10.3.3 Many of the properties in the vicinity of the wind farm site have already made the switch to digital and have upgraded their terrestrial aerials. Increasing the aerial height will not be popular, especially where aerials are concealed in lofts (some of which are also bat roosts and cannot be disturbed (see Sections 4.1 and 4.2 of this report). Hideously tall, external aerial masts will not be a welcome addition to the overall appearance of the neighbourhood. Satellite dishes enabling a Freesat service to be received will be the most likely mitigation measure to be acceptable to residents.

10.3.4 **The Station Cottages on the A3079 to the south west of the site are listed buildings. External aerials or satellite dishes are not permitted on these properties. There is no possibility of a cable service in the area. The developer may wish to explain how these properties will be mitigated in the event of TV reception problems.**

10.3.5 Bolsterstone will not be the first wind farm developer to anticipate 'no significant residual effect' after its mitigation programme. It may be in for a surprise, such as that which befell Scottish Power after its Whitelee Wind Farm near East Kilbride was built. On 23rd July, 2008, David Wynn reported in the East Kilbride News:

'Whitelee wind farm causing TV tuning problems

The East Kilbride area is in the midst of a television blackout as thousands of residents struggle to tune in because of the giant Whitelee wind farm.

The News reported back in May that several frustrated viewers in Stewartfield had reported signal failure after their Freeview digital boxes suddenly stopped working. But the problem is now spreading and residents from as far afield as Calderwood, Carmunnock and Auldhouse are now unable to switch on to their favourite shows.

The recent blackout is being blamed on the 110 metre-high turbines which form the Whitelee wind farm, near Auldhouse. The imposing structures, visible from all over EK, are blocking transmissions from the Darvel transmitter, which provides the signal to thousands of homes across East Kilbride. And with up to 100 more turbines due to be installed over the next year, some residents fear things will only get worse.

Scottish Power, who own the wind farm, are now sending engineers out to individual homes to try to solve the problem. Greenhills businessman David Johnston, whose company Omniavision specialises in television aerials,

explained: "Everyone I've been speaking to seems to have had the same problems and it all coincides with the wind farm being built.

"I've had to go round people's houses to re-position their aerials as it seems impossible to get a signal from Darvel. It looks as though people will have to receive from the Blackhill transmitter instead. This must be affecting thousands of homes."

East Kilbride South councillor Archie Buchanan also has first-hand experience of the problems. He said: "At first I just thought my Freeview box had packed in but then more and more people were saying the same thing was happening to them. It needs to be sorted as soon as possible."

The News has been inundated with calls from people bemoaning the situation and some residents have revealed that they threw away their Freeview boxes — thinking they were faulty — only to later discover it was the actual signal that was the problem. One woman from Whitehills said: "It was the talk of the bingo when I was last there. It seems everybody's affected. I'm now onto my third Freeview box because I just presumed the others were no use. But now that I hear it's this wind farm I may seek some sort of compensation."

A spokesman for Scottish Power admitted they had been receiving a number of calls regarding the situation. He added: "Our specialist contractors will investigate all enquiries and, where appropriate, will rectify them as soon as possible. Communication with the local community has always been an important part of the Whitelee project and we remain committed to this approach."

10.3.6 In the event of the wind farm ever being built, the developer would do well to take note of sub-paragraph 22 in paragraph 13.7.1 in section 13: Litigation:

'It has been held that the ability to receive television transmissions free from occasional, even if recurrent and severe, electrical interference was an important part of an ordinary householder's enjoyment of his property as to make such interference an actionable nuisance.'

10.3.7 Recommendation: CONDITION

If this application is approved, TDC should require a Section 106 agreement to ensure that all TV reception problems which arise as a result of this wind farm will be resolved within one month of Bolsterstone being notified. The residents affected should be given an option of having a Freesat installation, at the developer's expense, if they so desire.

10.4 Other UHF/Microwave Links

10.4.1 Section 12.3.2 of the applicant's Environmental Statement makes it clear that CSS Spectrum Management Services (CSS), acting on behalf of South West Water (SWW), has indicated that the development has the potential to interfere with an UHF telemetry link. The company was unable to provide link details as this is considered a security risk to the water industry. Negotiations are ongoing between SWW and Bolsterstone to agree a bond to cover the costs necessary to remedy any effects. **Until these negotiations are concluded, it is likely that SWW will remain opposed to this application, which should, therefore, be refused on the grounds of national security.**

10.4.2 The mitigation proposed for the interference stated in the preceding paragraph is likely to take the form of upgrading the existing link (whatever that means - making it more powerful?) or retransmitting the signal via a mast on the opposite side of the development (Environmental Statement paragraph 12.6.2). A similar solution is proposed if the Airwave MMO2 microwave link suffers interference from the wind farm. Airwave MMO2 is yet to respond as a consultee.

10.4.3 TDC should realise that inappropriate re-siting of UHF/microwave transmitters is likely to trigger further objections from local residents should the new locations be too close to houses.

10.4.4 Recommendation: CONDITION

If TDC is minded to approve this application, planning permission should be withheld until all mitigation proposals with SWW and Airwave MMO2 are agreed. Planning permission for the wind farm should continue to be withheld until any necessary planning permissions are obtained for the re-siting of communications infrastructure.

Summary of this section:

If this wind farm application is approved, 264 homes will have their TV reception adversely affected.

The developer has not yet undertaken an adequate analysis of the problem.

A Section 106 agreement will be needed to mitigate the effects on TV reception.