


**Government Survey into Noise from Wind Turbines**

(REF: NANR233)

<b>Name of wind farm</b>		Blaen Bowi (ε)			
<b>How many complaints were received about this wind farm?</b>		4 (not including objections to planning application for extension to wind farm)			
<b>In what year was each complaint made?</b> (if more than one complaint please list the years)		1. 2003 2. 2005 3. 2005 4. 2005			
<b>Please provide a detailed description of the noise complaint(s):</b> (eg, time of day, wind conditions, description of noise, any other factors that might have contributed to the complaint)  THIS INFORMATION IS VERY USEFUL SO PLEASE USE AS MUCH SPACE AS NECESSARY. IF THERE WAS MORE THAN ONE COMPLAINT AND THE COMPLAINTS HAD DIFFERENT CAUSES PLEASE COMPLETE A SEPARATE TABLE FOR THE DIFFERENT TYPES OF COMPLAINT.		1. Complainant living in a property with other occupants. Complained of churning head, feeling ill and stomach problems. Complainant was the only one at the property affected. Doctor had not found any physical problems. The perceived problems started when the 3 turbines located at the wind farm began operating. The complainant commented that the problems only manifested when wind in a southerly direction and problems disappear when is away from the property. The ill health effects felt tended to be worse within the property. Officers visited the property but did not witness anything. The complainant eventually sold up and moved away. No other complaints received from the property since. We were unable to establish that the wind farm was the cause of the medical complaints.  			
<b>Do any of the following terms describe the noise that was complained about at this wind farm site?</b> (Please delete Yes or No as applies)					
Swish	<del>YES</del> / NO	Throbbing	<del>YES</del> / NO	'train that never gets there'	<del>YES</del> / NO
Swoosh	<del>YES</del> / NO	Thudding	<del>YES</del> / NO		
Ghostly Noises	<del>YES</del> / NO	Thumping	<del>YES</del> / NO	'like motion sickness'	<del>YES</del> / NO
		Pulsating	<del>YES</del> / NO		
Wooh Wooh	<del>YES</del> / NO	Whooshing	<del>YES</del> / NO	Whistling	<del>YES</del> / NO
Beating	<del>YES</del> / NO	Distant Helicopter	<del>YES</del> / NO	Rhythmical Beat	<del>YES</del> / NO
Lapping	<del>YES</del> / NO	Rumbling	<del>YES</del> / NO	Other (please list):	<del>YES</del> ** / NO
Grinding	<del>YES</del> / NO				

<b>** Bass sound played at loud volume &amp; whining.</b>	
<b>Did you visit the home of the complainant?</b>	<b>YES / NO</b>
<b>Did you visit the wind farm site?</b>	<b>YES / NO</b>
<b>Did you hear the noise that was being complained about?</b>	<b>YES / NO</b> (only in relation to the complaints received in 2005)
<b>Briefly describe the investigation that took place.</b>	As the wind farm had applied for an extension to the existing wind farm we met with them to discussing the noise complaints that had been received in relation to the existing turbines. The wind farm agreed to undertake a noise survey at the complainants properties, and submit the report to us.
<b>Was the wind farm judged to be causing a noise nuisance?</b>	<b>YES / NO</b> Judgement not made to date as action currently being undertaken by wind farm
<b>What action, if any, was taken?</b>	
<b>This project is about Amplitude Modulation of Aerodynamic Noise (AM) which can be described as ‘Wind turbine blade noise which is modulated at blade passage frequency (typically once per second) with a sharper attack and a more clearly defined character than usual blade swoosh. It is sometimes described as being like a distant train or distant piling operations’. Does the noise from this wind farm conform to this description?</b>	<b>YES / NO / DON'T KNOW</b>  I had hoped to go out and listen to the noise from property 2 prior to completing this section, but have unfortunately been hampered either by workload or by the weather – I have previous described the noise as similar to noise from an aircraft.

Complaints 2, 3, & 4. In 2005 an application was submitted to the local planning authority to erect a further three turbines at the Blaen Bowi site. It was around this time that we received complaints regarding noise emanating from the wind farm.

The fact that an application to extend the wind farm had been submitted to the local authority and the receipt of noise complaints in relation to the existing turbines on site, allowed us to request that further noise surveys be carried out by the operator in relation to the existing wind farm. The noise monitoring exercises were undertaken by the Hayes McKenzie Partnership.

### Property 1

At property 1, the owners described the noise in their initial letter as a pulsating beat - “thwump” and later in a log sheet they completed as a thumping noise. They found that they were most

affected in the evenings, night and weekends. In the evenings they found it worse when the bird song had stopped. The noise often resulted in them closing windows, although they found that the noise could still be heard in the property. They found that the noise was worse when there was low cloud or fog / heavy mist, and described the noise during these times as unbearable. Following a visit to the property on a few occasions I was able to clearly hear the noise that they had described.

### **Property 2**

Noise from this site has been described by the occupants as whooshing and whining. The complainant has stated that when working in this area he/she frequently has to leave due to the effects of the noise from the wind farm. Not long after the turbines were operational there was also a report of dizziness and symptoms similar to motion sickness. Noise from the wind farm is also audible at the property, and within the property, in particular bedrooms with windows that face the wind farm. On one occasion at the property during the installation of noise monitoring equipment by Malcolm Hayes there was a clear and distinct tonal noise audible within the garden of the property.

At **property 3** the occupants likened the noise to the bass sound on a record being played at a loud volume. Like at property 1 they commented that the noise was dependent on weather conditions, with rain, fog and wind direction worsening the noise. They had on occasions found it necessary to retreat back into their property to escape the noise. No noise monitoring has been undertaken at this property.

Noise monitoring by Hayes McKenzie was undertaken at **Property 1** and **2**. No previous monitoring had been undertaken at these properties for the purpose of the Environmental Statement for the initial planning application, nor for the extension. The results of the monitoring indicated compliance with the guidance set out in ETSU-R-97. A further noise monitoring exercise at Property 2 was carried out by Hayes McKenzie this time looking at tonality. The report concluded that tonality was present and resulted in the addition of a penalty.

Following checks on the turbines, one of the turbines had bearings in its gearbox replaced. A further monitoring exercise is expected to be undertaken shortly.