

Windfarm off Formby Point, Crosby & Hightown.

Prepared by John Gibson - in conjunction with "Countryside Guardian" and local people in Hightown, Formby and Merseyside.

Introduction

"....Wind farms are producing the kind of furious opposition, especially in areas of natural beauty, provoked by road builders or polluters. The technology is still inefficient - a vast array of windmills will power only a small town, a bagatelle compared with the voracious needs of British industry. Wave power is in its infancy. and the demand by environmentalists for 15,000 turbines to be built at sea - at the rate of three a day for the next 15 years - is utterly impractical " From a leading article in **The Times** about Britain's electricity supply problems (Sept 2, 2002)

NB The compiler of this work supports the cause of "green energy" and wind turbines especially – if they are sited in the correct places.

• WIND TURBINES OFFSHORE

The Countryside Agency has recommended the DTI to ensure that our coastline is not damaged by the scale, location or cumulative impact of turbines, and that special care should be taken with the visual impact of the lighting of wind stations at sea since they will have to be illuminated at night. It would like to see mandatory controls of distance from shore: 3 - 5 km off industrial coasts; 10 - 20 km off National Parks, AONBs or Heritage coasts; out-of-bounds in largely undeveloped estuaries.

Unfortunately, developers are likely to be interested in sites within 5 km of coasts, where the water is shallowest, the wind speeds the most favourable and the cable connections the shortest. This is what has happened in the case of the Formby Point windfarm. The Energy Technology Support Unit (a DTI agency) has estimated that nearly half of off-shore turbines will be within 10 km (6.25 miles) of the coast, with fewer than 18% beyond the 20 km line.

How acceptable from an environmental point of view wind turbines at sea turn out to be will depend on how close to the coast they are sited, how scrupulously the developers avoid coasts of special beauty and how carefully cable landing sites and pylons to carry cable to grid connections are sited. Some people will be glad if pressure on our uplands is reduced, but others will be dismayed by the industrial intrusion into the majesty of the seascape. There will be no savings in electricity costs for Formby people. They are the ones – along with Hightown and Crosby – who will have to live with the pollution of their coastline, but without getting any direct benefits.

Here is a more detailed argument on Windfarms and their impact:-

• THE SCALE OF DEVELOPMENT REQUIRED

We have no guarantees that if we allow the 30 turbines off Formby Point, that this will be the last development of its type off our coast. The wind industry argues that 10% of our electricity could be generated by wind turbines. The core of the problem is tiny output of even the biggest wind "turbine", the prominence of the sites necessary if they are to fulfil even their very limited generating potential and the huge numbers required in consequence to generate even modest amounts of electricity.

Wind Power Monthly reported in January 2000 that the installed capacity of turbines on a world-wide basis at the end of 1999 was 12,455 MW. That represents the theoretical maximum output of nearly 40,000 turbines, erected over 30 years! When it is remembered that this derisory achievement was only possible with governments around the world encouraging the construction of turbines with subsidies or

tax credits, it can clearly be seen that at best wind energy is an irrelevant side-show, while at worst it may deceive consumers into believing that something worthwhile is being done to combat emissions.

- **THE PROBLEM OF INTERMITTENCY**

Wind is an intermittent source of power and the only form of energy generation which we cannot control. If there is no wind, there is no generation; if there is too much wind the turbines must be shut down or they will be blown over. At the moment UK turbines generate only an insignificant trickle - less than 100 MW on average from nearly 50 wind "farms", towards an average demand of about 43,000 MW, so that their intermittent supply causes no problems for consumers - indeed those who manage supply simply ignore their existence.

- **BEAUTIES OR BEASTS?**

Aesthetic judgements are subjective and there may be as many who find a wind turbine beautiful as there are who find it ugly. That is not the issue: a wind "farm" is an industrial site of vast proportions and a turbine is a huge and noisy machine - 300 feet high or even more, the height of a 30 storey office block. A 30 storey building by a leading architect might be very beautiful, but on planning grounds would be unacceptable in a small village or on top of the fells in the Lake District. **In the case of the Formby Point wind farm, we are looking at least 30 turbines EACH nearly the size of Blackpool Tower, just 6.4 kilometres off a very special heritage coast.**

Supporters of the technology as committed as Friends of the Earth argue that they should be excluded from Designated Areas like national Parks, Areas of Outstanding Natural Beauty and Sites Of Special Scientific Interest. We have such sites in abundance in our area of Merseyside. Jonathan Porritt, another supporter, wrote in The Daily Telegraph: *"The modern wind turbine is a mighty intrusive beast. It's not into nestling, blending in or any of those clichés so beloved of rural romantics."*

Wind Power Monthly, the magazine for the wind industry and wind enthusiasts, has recognised that the reason for the growing unpopularity of wind power is that a heavy industry has tricked its way into unspoiled countryside in "green" disguise. The editor wrote (September 1998): *"Too often the public has felt duped into envisioning fairy tale wind "parks" in the countryside. The reality has been an abrupt awakening. Wind power stations are no parks."* She went on to point out that in Denmark turbines are treated within the planning process in the same way as motorways, industrial buildings, railways and pig farms!

- **THE NOISE FACTOR**

The noise from a wind turbine comes from both the mechanical gearing and from the aerodynamic properties of the rotating blades. The former can to a degree be controlled and insulated and some makes of turbine are quieter than others. **Also, Cllr John Gibson and others would like clarification on the following: given the fact that the turbines are very near coastal and international shipping lanes, how many fog-horns will be installed on the windfarm? Also what flashing lights will be placed on the top of the turbines to stop air traffic crashing into the turbines.**

The larger the turbine, the greater the air mass moving the blades and the higher the noise level. The noise is a penetrating, low-frequency 'thump' each time a blade passes the turbine tower - **reminiscent of the reverberating bass notes of a discotheque at a neighbour's noisy party**, which can be heard and felt even when the rest of the music cannot be distinguished, or of a helicopter in the distance.

That noise from wind turbines is one of the major environmental costs of the technology is suggested by the fact that 10% of PPG 22 (the Government's Planning Policy Guidance note dealing with renewable energy) is devoted to the issue and by the fact that the Department of Trade and Industry spends more of its budget researching noise from wind turbines than on all other environmental noise problems. The

Welsh Affairs Select Committee recognised the magnitude of the problem in its report on wind energy. *"For existing windfarms we are satisfied that there are cases of individuals being subject to near-continuous noise during the operation of the turbines, at levels which do not constitute a statutory nuisance or exceed planning conditions, but which are clearly disturbing and unpleasant and may have some psychological effects."*

The genuine difficulty that developers face is that noise levels cannot be predicted in advance. The Energy Technology Support Unit has reported (Assessment and Prediction of Wind Turbine Noise - 1993): *"At present there is no established method for the prediction of wind turbine noise and basic understanding of wind turbine noise is low. Not enough is known of the basic mechanisms which control the noise radiation process to allow the development of detailed prediction methods."*

Noise is recognised as a significant cause of stress and stress-related illness in modern society. It is worth recalling that the Americans considered using low-frequency noise as a battlefield weapon in the 1950s! Certainly, health problems have been reported by those living near wind "farms" at Llandinam, Llangwryfon and Ireleth. **While the visibility of wind turbines may reduce the value of a property, their noise will render it unsaleable.**

- **TOURISM, JOBS, HOUSE PRICES in and around Formby, Hightown & Crosby**

The main adverse impact that wind "farm" development is likely to have on the economy of an area relates to tourism. The best wind speed sites are in the areas with the finest landscapes. Wind developers are therefore targeting those areas where the tourist trade consists of those seeking peace, quiet and unspoiled countryside. A National Tourist Board survey shows that 90% of British holiday makers who go to the countryside do so to enjoy it for its own sake and seek no further attractions like theme parks.

A survey by the University of Leiden in Holland in the late 1980s found that the majority of those questioned felt that a landscape lost its interest as turbines accumulated in it.

Although the first wind "farms" in Cornwall attracted tourist visits from those already in the area for other purposes, the attraction was one of novelty and visitor numbers have dropped with each succeeding year. Clearly, if developers succeed in erecting thousands of turbines, novelty value will be lost and those seeking rural peace will head for areas not degraded by turbines - for example National parks, where visitor numbers already cause a problem. There is anecdotal evidence (letters to the press from locals) that visitor numbers have fallen by 40% in areas of Denmark developed for wind energy. The North Devon Tourist Development Manager opposed two local wind "farm" projects fearing the effects "on existing tourism operators." The Welsh Tourist Board's policy on wind turbines reads: "The Board endorses the policies of the Countryside Council for Wales which oppose the introduction of commercial wind turbines and wind turbine power stations in primary designated areas (i.e. National Parks, AONBs, Heritage Coasts and Marine, National and International Nature Reserves). We consider that elsewhere proposals should be considered on their merits, the effects upon tourism being a material issue for consideration." Dumfries and Galloway Regional Council rejected a wind "farm" at Carlesgill partly because of its likely effect on tourism (rejection later overturned on appeal).

In terms of the impact on house values there can be no doubt. A partner in Durrants, the Mayfair and East Anglia chartered surveying firm, wrote (May 1998): *"I can confirm that the outlook from a property does have a major bearing on its value and if this outlook is tarnished by a wind turbine or any similar structure, the values would be significantly decreased."* **In Denmark, the National Association of Neighbours of Wind Turbines say that most estate agents estimate a 25 - 30 % fall in property value when turbines are put up nearby.**

- **THE EFFECT ON BIRDS**

APPENDIX 6

Planning Policy Guidance 22 (PPG 22) which deals with planning considerations relating to the development of renewables states: "*Evidence suggests that the risk of collision with moving turbine blades is minimal both for migrating birds and for local habitats.*" The simple fact is, however, that turbine blades have killed birds in large numbers, which is not surprising when it is remembered that turbine blades weigh up to 1.5 tonnes and their tips are travelling at 180 mph.

At Tarifa in Spain significant numbers of birds of 13 species protected under European Union law have been killed by turbines (Windpower monthly 2.2.94).

The wind turbines in Altamont Pass in California have on average killed 200-300 Redtail Hawks and 40-60 Golden Eagles each year, while it is estimated that 7000 migrating birds a year are killed at other wind turbine sites in Southern California.(California Energy Commission).

The Times reported in May 1999 that Scottish Power was to invest two million pounds creating a new grouse moor away from a proposed wind "farm" to encourage a pair of Golden Eagles to hunt where they would not be at risk from turbine blades. At Largie, Kintyre, Scotland, the inspectors at the Scottish Office overturned a planning consent for wind turbines at an Inquiry in November 1998 because of danger to the population of White-Fronted Geese.

In December 1999 English Nature objected to the erection of wind turbines near the Ouse Washes and the Nene Washes in East Anglia because of a number of potential hazards for wildfowl, including habitat loss and degradation, indirect disturbance from noise, potential for mortality due to collision with wind turbines, effect on nocturnal patterns of movement and danger to birds during periods of poor visibility and severe weather.

English Nature in making the above objection cited studies by Winkelman and Karlsson which respectively recorded 0.54 collisions per turbine per day during the heaviest period of diurnal migration at Oosterbierum in the Netherlands, and 49 dead birds at one turbine during one night of migration at Nasudden in Sweden. Two European Union directives, the Habitats Directive and the Birds Directive, apply to proposed developments which are likely to have a significant effect on designated habitat and breeding sites. These directives have been transposed into UK law by Regulations 48, 49 and 54 of the Conservation (Natural Habitats &c) Regulations 1994. They would appear to constrain wind "farm" development around such sites. In Holland, 49 new bird sanctuaries have been designated in February 2000 and these are proving a major impediment to plans for turbines.

Extracts from The Formby Champion: Wednesday, November 06, 2002

Birds at risk

A WILDLIFE expert has slammed comments made at last week's area committee claiming migratory birds will not be injured by wind turbines along the Formby coastline. Residents were assured last Thursday that birds would steer clear of the 30 wind turbines, each nearly as high as Blackpool Tower, 6.7km off Formby Point. Adrian Maddix, representing project developers SeaScape Energy, addressed members of the committee and public.

Although admitting there could be a few "low bird hits", he said: "Birds are intelligent creatures, they do not fly directly into spinning turbines ahead of them. They'd fly around them and avoid them." However, following the meeting, **Pat Wisniewski**, centre operations manager at **Wildfowl and Wetlands Trust at Martin Mere**, told The Champion: "*Migratory birds follow a routine flight line on their known journeys. If wind farms are positioned in their line they wouldn't consider to stop and avoid them.*"

He added : "*Our view is that if wind turbines effect the flight line of our birds then we oppose them. Whether the birds are migrating from Russia or just travelling the coastline then wind farms can cause an*

obstruction.” The project sited at Burbo Bank, close to Hightown, consists of 30 fibreglass turbines, each 135 metres tall, with underground cabling and the power station based on the Wirral. Work on the offshore wind farm could start in August 2004 with energy supplied to more than 70,000 homes.

The migrating geese of Martin Mere have not been adequately considered in the Seascap proposals. There will be many bird hits if the wind farm goes ahead.

BIRDS AND WIND "FARMS"

1) Birds in general.

- Problems of vision: The eyes of most birds are located on each side of the head, covering a field of vision nearing 360° - to see predators coming from any angle. On the downside, quality of perception is mediocre in front of the animal and in his back, zones that are at the limit of the 180° covered by each eye. This explains why they turn their heads so often when they are on land, where they are particularly at risk. In the air, they often twist their necks to look above them, where falcons and other raptors may be stalking. But unless they turn their heads sideways while flying, their vision of what is in front of them is rather poor. - Rabbits, and other mammals that are usually preyed upon, have the same problem: for this it is easy to capture them in nets).

This explains why so many swans, storks, cranes, bustards, starlings and countless species of other day-flying birds regularly run into tension lines, wind turbines or other obstacles, and die on the ground.

The problem is compounded at night. Low flying nocturnal migrants, such as many species of songbirds, are particularly vulnerable - even when the obstacles are lit (in overcast conditions, flood-lights attract the birds, then disorient and blind them). The guy wires of a television tower are known to have killed 5,408 birds in one night (item 356 of "bird kills" document - available upon request).

"Nocturnal bird kills are virtually certain wherever an obstacle extends into the air space where birds are flying in migration" (item 445 of same document) Birds are known to crash into all kinds of obvious obstacles such as buildings, smokestacks, moving cars etc. -- even by day.

- flying in groups: Where a single bird may luckily pass unharmed through overhead cables, or the maze of a windfarm, those flying in flocks will always leave a percentage of casualties behind: 1) law of numbers 2) breadth of the flock 3) bad frontal vision for those not located in the front row.

- Instinct:

Birds, like any other animal, identify living creatures, not objects, as possible dangers. Their instinct doesn't warn them about television towers, tension lines, or wind turbines.

- Appearance of slowness: The arms of a wind turbine seem to be moving slowly. In view of their length, however, they reach great speed at the tip. This has the effect of deceiving the birds, of catching them off-guard.

A 100 feet-long blade weighing a ton and traveling at 100 miles an hour at the apex will kill anything in its way. In Altamont Pass, California, 60 golden eagles and 300 redtail hawks, among other birds, fell victims to the turbines in 1989; and further south another windfarm killed 7000 migrating birds (source: California Energy Commission). Small birds, more numerous and often flying in flocks, are slaughtered in greater numbers. In Nasudden, Norway, researchers Winkelman and Karlsson found 49 dead birds at the foot of a single turbine during a single night of migration. Extrapolating the figure to the 500,000 giant windmills to be erected around the world, we would get: 24,500,000 dead birds... in one night. Extrapolations are inexact by definition; but they have the merit of providing an order of magnitude.

- Pulling force: All turbines, whether they work in water or in the air, create a depression which has the effect of pulling-in water, air, and whatever happens to be around. It is well-known that birds are prone to be sucked-in by the jet engines of an airplane.

The blades of a wind turbine turn much slower than those of a jet engine, but their sweep is hundreds of times bigger. Their pulling force has been estimated to be in excess of 12 kilos per square meter, reaching 20 kilos when the wind is strong. There is no bird, however big or swift, that can resist such a force.

Table-fans will draw a feather. Giant fans standing 300 feet-tall on hill-tops will suck-in an eagle, a stork, a crane, a swan.

2) Raptors.- vision: Birds of prey, like humans and predators in general, have their eyes located in front of the head, for an in-depth perception of what's in front of them. Their vision is superior to that of other animals: a peregrine falcon can spot a pigeon flying 10 miles away. As they hunt, they often focus their eyes at great distances, allowing them to detect the prey before it can see them, and prepare a surprise attack from a dead angle. Anyone who has used a camera knows that when the lens is focused far away, twigs moving in the forefront are barely visible. And so it is with the arms of a giant turbine when the eyes of a raptor are focused on an area further away. The danger is heightened by the fact that, in the attack, the eyes are locked-in on the prey. Proving this point we have documented evidence of peregrine falcons crashing into highly visible, stationary cables of high-tension lines.

- flight pattern: Birds of prey glide most of the time, to save energy. They use ascending air currents, pass from one valley to the next over hill-tops and mountain-crests, where windplants are normally located. And they drift on the wind itself, the same wind that flows through the turbines of these "farms". This makes them particularly vulnerable. If they wait too long before maneuvering out of reach of the blades, the pulling force of the turbine surprises them and they can't fight both the wind and the pull: they get sucked-in.

3) Flying mammals. From Navarra, Spain, we have evidence that bats are being killed in large numbers by the blades of the turbines. This evidences that their radar-like perception system is unable to save them from windplants.

4) Migrations. Placing wind turbines on a migration route will thin populations down as they fly through. Night-flying songbirds are particularly vulnerable. High-flying waterfowl are less at risk, except when they land to rest – or skirt mountain crests.

A migration route may be as wide as a country. Israel, Italy, Spain are the natural highways to Africa for most European birds.

5) The attitude of bird societies and other nature conservation NGO's. In May 1998, USA Today quoted a Sierra Club official who had labeled wind turbines: "The Cuisinarts of the Air".

Sadly enough, windplants do not really save on greenhouse gases. A critical view, presented in "Windfarm Misapprehension", reveals that the contrary may hold true, through side effects unforeseen by the ecologists – gases emitted by conventional power plants spinning for nothing in back up; gases emitted in the construction of a huge windplant and grid network which will NOT substitute conventional plants, needed for back up; and additional delays in the coming of the clean hydrogen economy.

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- **POLITICS:** In April the Prime Minister made a keynote speech on Renewable Energy to a select group of greens. This is part of what he said:

"I believe the role of Government is to accelerate the development and take up of these new technologies until self-sustaining markets take over. The Government's programme for incentivising renewables will create a new market worth over £500 million through the Renewables Obligation, Climate Change Levy exemptions and the Non Fossil Fuel Obligation. We have already announced £100 million to support offshore wind and energy crops.

Last year I asked the Performance and Innovation Unit to undertake a major study into the future of UK renewable energy. Today I can announce a further £100 million to support those technologies identified by the report. I know that a number of green groups have been campaigning for a target of 100,000 solar PV installations. This new money will help us to promote solar PV, give a boost to offshore wind, kick start energy crops, and bring on stream other new generation technologies. This investment in renewable technology is a major down-payment in our future, and will help open up huge commercial opportunities for Britain."

Tony Blair seems to be saying that onshore wind will be supported by the existing NFFO/SRO contracts and the climate change levy, which is not imposed on windfarms. The new money he is allocating will go the new technologies including offshore, but apparently not onshore wind.

A month after this speech, a list was produced by the DTI of 18 sites for offshore windfarms, which presumably will get some sort of help from the Prime Minister's new funds. The sites are all included in the new 2001/2002 edition of the Red Booklet, in the zone where the nearest land is situated. They are between 0.9 and 6.2 miles offshore, two being less than the 3 miles generally considered 'acceptable'.

The Crown Estates, which owns the seabed around Britain, announced the names of the developers who will be 'seeking the necessary statutory consents'. One of these, NWP, will seek to develop the site at North Hoyle, off the coast between Rhyl and Prestatyn and has produced a brochure indicating that the turbines will have a total installed capacity of between 60 and 90 MW, which suggests 2 or 3MW turbines. It is not clear what the consents will include, **as the sea is not protected by planning legislation.**

Concluding thoughts: Britain is opting for windpower just as Denmark, one of its biggest advocates, is abandoning it. We should support green energy – but not at the expense of damaging the heritage of our environment.