USDA United States Department of Agriculture | Forest Service | International Institute of Tropical Forestry
Tel: (787) 766-5335 | Jardín Botánico Sur, 1201 Calle Ceiba, San Juan PR 00926-1115, Fax: (787) 766-6302

File Code: 1560
Date: September 6, 2007

Engineer Angel David Rodríguez
President
Planning Board of Puerto Rico
PO Box 41119
Minillas Station
San Juan, Puerto Rico 00940-9985

Re: 2006-61-0536-JPU

Dear Engineer Rodríguez:

This letter is to inform you about a meeting we had with Mr. Victor González concerning the Windmar proposal to establish windmills in Punta Ventana, Punta Verraco, and Cerro Toro. Mr. González requested the meeting to discuss his project and seek common ground with our Agency and collaborating scientists.

We were pleased by the announced intention to develop a fire plan to protect against accidental fires. Such a plan should be formalized and discussed publicly.

We found that the exact location of windmills is not known, and that the information in Figure 2 of the Draft Environmental Impact Statement had a $\pm$ 4 to 5 m error. Knowing the exact location of windmills is critical for evaluating their impacts.

The many other issues that we discussed failed to change anyone's minds regarding statements on the record of the public hearings.

We restated that our position at the hearing was intended to call the attention of the Planning Board to issues that required the consideration of the Planning Board. The Forest Service neither endorses nor opposes projects such as Windmar. Consistent with our interest in providing scientific information useful for decision-making and project planning, we are including copies of three documents that we shared with Mr. González during our meeting.

Sincerely,

ARIEL E. LUGO
Director

Enclosures (3)

Cc:
Ann Bartuska, USFS
Lcda. Vanessa García, PB
Mr. Víctor González
Carlos W. López, EQB
Edwin Muñiz, FWS
Javier Vélez Arocho, DNER
Lcdo. Geraldo González

U.S. Geological Survey - Biological Resources
Cooperative Fish and Wildlife Research Unit
Mail Stop 9691
Department of Wildlife and Fisheries
Mississippi State, MS 39762
Phone: (662) 325-0784 (voice), (662) 325-8726 (fax)
Internet: *fvilella@cfr.msstate.edu*

August 21, 2007

Dr. Ariel E. Lugo
Director
USDA Forest Service
International Institute of Tropical Forestry
Jardín Botánico Sur
1201 Calle Ceiba
San Juan, PR 00926-1119

Dear Dr. Lugo:

This letter is a follow up to our phone conversation regarding the report prepared by WindMar Renewable Energy on the status of the Puerto Rican Nightjar *Caprimulgus noctitherus* in the proposed site for a wind farm at Punta Verraco, Guayanilla. I was contacted early on by Paul Kerlinger and we discussed the proposed nightjar survey protocol. However, after carefully reviewing the information presented in the report I have a number of serious concerns I would like to comment on. These are based purely on the scientific merits of the document. I will address these on a point by point basis and will refer to specific paragraphs identified by page number in the text.

1. Nightjar abundance at Punta Verraco was estimated based on a modification of methods I developed during the study conducted throughout southwestern Puerto Rico between 1984-1992 (Vilella and Zwank 1993a). This method essentially uses nightjar detections as an index to abundance. In addition to documenting nightjar detections the authors also recorded locations of nightjar cues. While this methodology will generate an index of nightjar abundance, problems arise when attempting to use these index counts as a population estimation technique. The major problem of index counts is that these rely on assumptions concerning detectability that are difficult or impossible to meet in most field situations (Rosenstock et al. 2002). For an index count to provide reliable information one must assume the index has a consistent and positive correlation to actual bird density. Meeting that assumption implies bird detectability must remain constant despite factors that, individually or in combination, can profoundly influence counts. These include observer variability, environmental variables, and most important, the physical and behavioral attributes of birds that make them more or less conspicuous to human observers. When index counts are conducted on multiple occasions, as in the study reported for Punta Verraco, one must also assume detectability is consistent over time. In the case of the nightjar this is further complicated by being a nocturnal species where only the males can be detected by song. These problems also apply to the nightjar abundance data I collected between 1984-1992 (Vilella and Zwank 1993a) and is the primary reason why we are currently conducting research to update nightjar abundance and distribution using a completely different population estimation methodology. This methodology utilizes empirical models of detectability (not index counts) to estimate nightjar density across its range in southwestern Puerto Rico (Buckland et al. 2004).

The main problem with the report is not as much how they collected the nightjar information, though biases in the data can not be accounted for, but in the interpretation of results. The precision of the "density" estimates reported can not be properly assessed and inherent biases remain unaccounted. Furthermore, while they conducted nightjar surveys during two seasons (2003 and 2004), there is no information in the report that a single nightjar breeding pair was located nor any evidence of nightjar nesting activity. Thus, the statement presented at the top of page #6 "the Puerto Rican Nightjar population has nearly doubled in the past ten years" is made with absolutely no empirical evidence to support it.

2. Using nightjar singing cues to build territory maps (Figs. 4a & 4b in the draft report) is faced with the same assumptions as the index counts. These assumptions are impossible to test given the data. Without individually marking birds with radiotransmitters it is not possible to ascertain whether these polygons may actually include cues emitted by more than one individual nightjar. In the fist full paragraph of page #6 the statement "singing male nightjars defend cores areas, leaving gaps that appear not to be defended", can not be supported by the data. It is merely speculation by the authors. Similarly, my results (Vilella 1989) are used to state "a significant amount of buffer habitat exists around these territories". This is a misrepresentation of my results as I repeatedly observed adjoining nightjar males (both with and without radiotransmitters) defending the edge of their territories.

3. The fourth paragraph on page #7 states "defining nightjar territories based on our methodology was, in part, subjective". However, they turn around and state the location of nightjar territories and the number of territorial birds was not subjective but provide no evidence beyond the statement "multiple birds singing from the same listening point". Again, without information on individually marked birds (i.e., radiomarked) this statement relies on the assumption that every nightjar heard represents a separate individual. I frequently observed radiomarked and unmarked nightjars move in silence under the canopy as they foraged, repeatedly switching singing perches.

4. The statement in the last paragraph of page #7 "increased call frequency strongly reinforces the conclusion that there were significantly more nightjars on the Windmar site during the 2004 breeding season" is made without information on productivity, population structure, and abundance of nightjar insect prey.

5. The statements above are used to set up what I consider the most outrageous claim of this report presented in the second paragraph of page #8 "new access roads cut through the forest at the WindMar site provide better foraging habitat such that more territories can occupy the site". While the West Indian Nighthawk (*Chordeiles gundlachi*) nests and forages in open habitats, the nightjar nests and forages exclusively under the forest canopy. At Guánica Forest, even when nightjars (both adults and juveniles) foraged close to trails and roads, they would always forage underneath the canopy, never in open areas. Therefore, this argument:

1. Has serious potential negative implications for nightjar habitat in private lands. It is precisely the overall absence of fragmentation from road activity why the Guánica Forest remains the area with the greatest amount of quality nightjar nesting habitat.

2. Most importantly, by cutting new access roads into the forest, the project proponent influenced the observer's ability to detect nightjars. Consequently, the supposed "increase" in numbers of nightjars is confounded with detectability. Therefore, the data does not support the argument that there were more nightjars on the second year, simply more access points. The cause-effect statement is made beyond the inferential space of the data collected and must be rejected.

3. Moreover, the attempt to explain the supposed "increase" in nightjar populations following the introduction of forest clearings is based purely on anecdotal observational data, without any quantitative evidence on nightjar-habitat responses. Again, this can have serious consequences for the long-term persistence of nightjar populations in private lands.

4. The most unreasonable statement in this section of the report is the suggestion that cutting roads across coastal dry forests represents "a new management technique for the Puerto Rican Nightjar". This argument is based on "associational thinking" (Romesburg 1981) and must be vigorously challenged by the regulatory agencies.

6. On the following paragraph the authors of the report pretend to reinterpret the conclusions of my studies (Vilella 1989) by stating "the best nightjar habitat within Guánica Forest is not dry forest, but mahogany plantations". The sites mentioned are ≥75-year old abandoned plantations. As I state in my 1989 final report these areas are stands of dry limestone forest dominated by deciduous and evergreen species with relict mahogany trees in the overstory. See Appendix A in Vilella (1989) for vegetation composition of nightjar nesting areas. Similar open areas of mature secondary forest without relict plantations exist throughout Guánica Forest.

As for many other species of forest vertebrates throughout the world, the effects of roads on nightjars are mostly negative (Forman and Alexander 1998). Permanently established road networks across coastal dry forests promote roadside habitats which may provide corridors for exotic predators such as feral cats (*Felis cattus*) and the small Indian mongoose (*Herpestes auropunctatus*). Roads also promote human access to what were previously areas of forest interior. In coastal dry forests this can represent an increased fire hazard during the dry months of the year

(January-March). Most importantly, while the authors included in their estimates of newly created edge only the area represented by forest clearing,, the edge effect generated by roads often extends into the surrounding forest, with a consequent overall decrease in habitat quality that goes beyond the actual "hard edge" of the road (Amor and Stevens 1976).

The report repeatedly cites one of my publications on habitat use patterns of the mongoose and nightjar (Vilella and Zwank 1993b) . In this paper we present the observation that mongoose abundance at Guánica Forest is higher at lower elevations where open scrubby vegetation predominates and fresh water is readily available. Nightjar abundance is higher above 75 meters, where closed-canopy evergreen and deciduous forest predominates and standing fresh water is hardly ever available. Therefore, our results suggest most mongoose and nightjars do not overlap. However, as we clearly state in our paper, our results were correlational in nature. Hence, we make no inference on possible causes for the observed pattern. Nevertheless, the report repeatedly dismisses the risks of increase use of the proposed site by both mongoose and feral cats following fragmentation of the forest and the consequent increase in available food resources (i.e., garbage and rats) and standing water following project completion. **We conclude in our paper that any activity in private lands surrounding Guánica Forest should not reduce forest canopy closure, nor increase water and/or food sources which would favor mongoose.**

In summary, while this report provides information on the presence and relative abundance of the Puerto Rican Nightjar in the proposed Windmar project site, the interpretation of results is designed to generate an overly optimistic scenario where the negative impacts of the project are never presented, seriously engaged, and potential solutions discussed. The information collected does contribute to the knowledge of nightjar presence in private lands of southwestern Puerto Rico. However, I remain skeptical of the sweeping conclusions made by the author, based for the most part on untested assumptions and statements that are beyond the inferential space of the data. Therefore, the major conclusions of the report remain unsubstantiated and speculative. I especially consider the argument pretending to link forest fragmentation to increased nightjar habitat quality a particularly dangerous one.

Sincerely,

/S/ Francisco J. Vilella, Ph.D.
Assistant Unit Leader-Wildlife
Associate Professor of Wildlife Ecology

xc: M. Canals, DNER

Literature Cited:

Amor, R.L., and P.L. Stevens. 1976. Spread of weeds from a roadside into sclerophyll forests at Darmouth, Australia. Weed Research 16: 111-118.

Buckland, S.T., D.R. Anderson, K.P. Burnham, J.L. Laake, D.L. Borchers, and L. Thomas. 2004. Advanced Distance Sampling: Estimating abundance of biological populations. Oxford University Press Inc., New York.

Forman, R. T. T., and L. E. Alexander. 1998. Roads and their major ecological effects. Annual Review of Ecology and Systematics 29: 207-222.

Rosenstock, S. S., D. R. Anderson, K. M. Giesen, T. Leukering, and M. F. Carter. 2002. Landbird counting techniques: current practices and alternatives. Auk 119(1): 46-53.

Romesburg, H.C. 1981. Wildlife science: gaining reliable knowledge. Journal of Wildlife Management 45: 293-313.

Vilella, F.J. 1989. Reproductive ecology and population biology of the Puerto Rican Nightjar *Caprimulgus noctitherus*. Dissertation, Louisiana State University, 160 pp.

Vilella, F.J. and P.J. Zwank. 1993a. Geographic distribution and abundance of the Puerto Rican Nightjar. Journal of Field Ornithology 64(2): 223-238.

Vilella, F. J. and P. J. Zwank. 1993b. Ecology of the small Indian mongoose in a coastal dry forest of Puerto Rico where sympatric with the Puerto Rican Nightjar. Caribbean Journal of Science 29(1-2):24-29.

Junta de Planificación de Puerto Rico - Microsoft Internet Explorer provided by USDA Forest Service

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://www.jp.gobierno.pr/

Go Links SnagIt

Junta de Planificación de Puerto Rico

Portal de Gobierno | Radicación | Censo | PUTPR
El Tiempo | Red Sísmica

"Impulsando la planificación, conservación del medio ambiente y el desarrollo sustentable de Puerto Rico"

- Inicio
- Conócenos
- Infórmate
- Servicios
- Actividad Econ | Apéndice Estadístico
- Vistas Públic | Indicadores Económicos
- Proyectos Esp | Estadísticas Construcción
- Radicación de | Propuestas Federales
- Convocatorias | Publicaciones
- Enlaces
- Comentarios

Junta de Planificación: Conócenos

Mensaje del Presidente | Historia | Organización | Directorio de Programas

Mensaje del Presidente

Estimados amigos cibernautas:

Bienvenidos al portal cibernético de la Junta de Planificación de Puerto Rico. En esta página ustedes encontrarán la información y los datos más relevantes sobre los contextos físico-espaciales, económicos y sociales de la sociedad puertorriqueña, de los que se sirve la Junta para la realización de sus análisis y proyecciones.

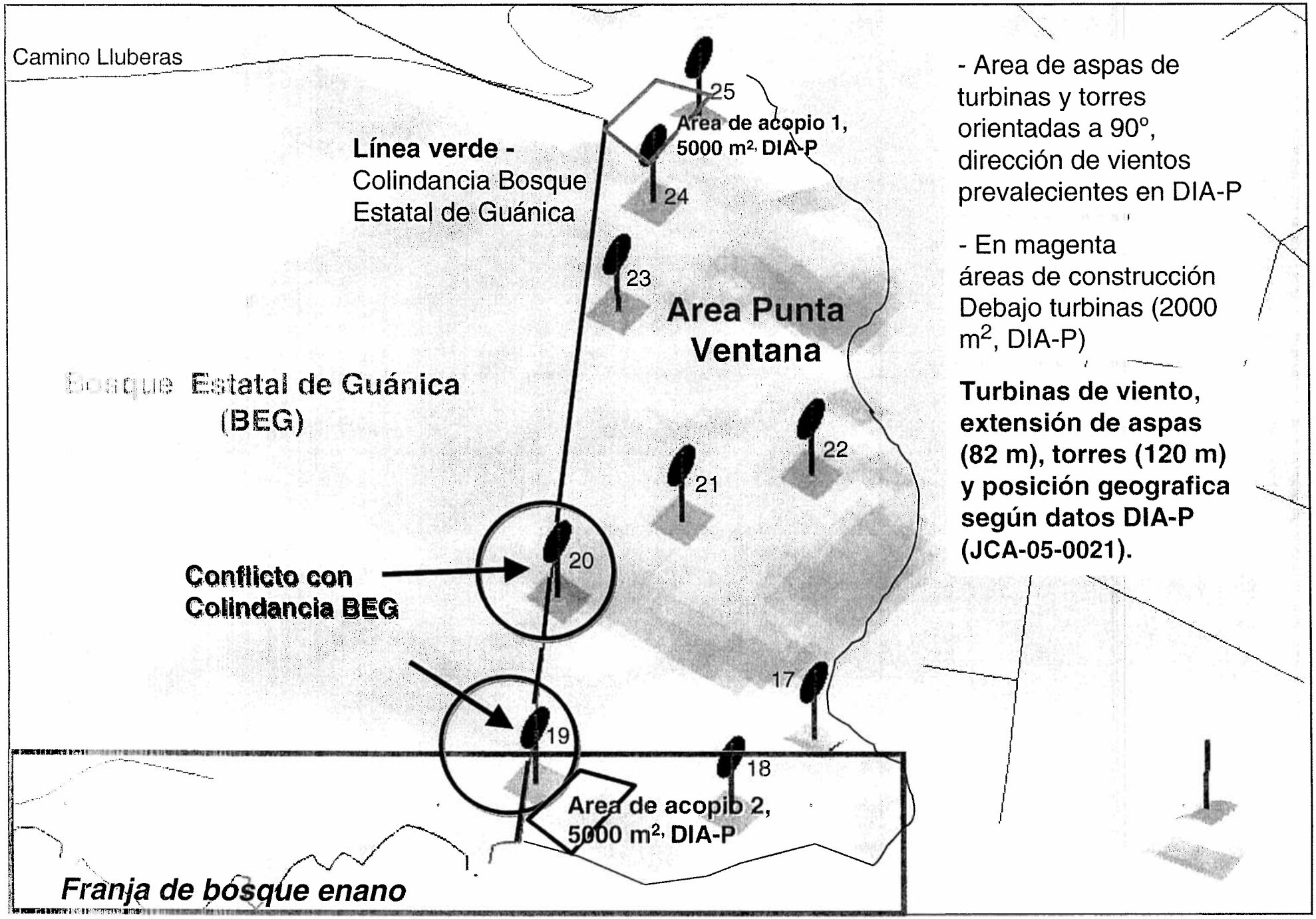
Queremos que ustedes tengan, por este medio, la oportunidad de participar junto a nosotros en la planificación futura de nuestra isla, accesando a la información vital que tenemos a nuestro alcance.

Como observarán esta es una página interactiva. A través de ella, las puertas de la Junta estarán abiertas continuamente para recibir las ideas y los comentarios de todos ustedes de manera que podamos nutrirnos con ellas y podamos hacer nuestros análisis en la confianza de que contienen el pensamiento de nuestra gente.

Tenemos un gran proyecto de frente en la Junta de Planificación. Queremos que nuestra agencia se convierta en una verdadera agencia para la planificación integral de la vida de todos los puertorriqueños; que podamos pasar revista y tomar decisiones sabias -- no solo sobre lo relacionado con nuestro cada vez más limitado espacio físico y sobre nuestro desarrollo económico, sino sobre otros aspectos esenciales para la vida de nuestra sociedad como lo son: la salud, la educación y el ambiente, entre otros.

Done

Internet


Camino Lluberas
25
Area de acopio 1,
5000 m2, DIA-P
Línea verde -
Colindancia Bosque
Estatal de Guánica
24
23
Area Punta
Ventana
Bosque Estatal de Guánica
(BEG)
22
21
20
Conflicto con
Colindancia BEG
17
19
18
Area de acopio 2,
5000 m2, DIA-P
Franja de bosque enano
- Area de aspas de turbinas y torres orientadas a 90°, dirección de vientos prevalecientes en DIA-P
- En magenta áreas de construcción Debajo turbinas (2000 m2, DIA-P)
Turbinas de viento, extensión de aspas (82 m), torres (120 m) y posición geografica según datos DIA-P (JCA-05-0021).

News Front Page
World
UK
England
Northern Ireland
Scotland
Wales
Business
Politics
Health
Education
Science/Nature
Technology
Entertainment
Also in the news

Video and Audio

Have Your Say
Magazine
In Pictures
Country Profiles
Special Reports

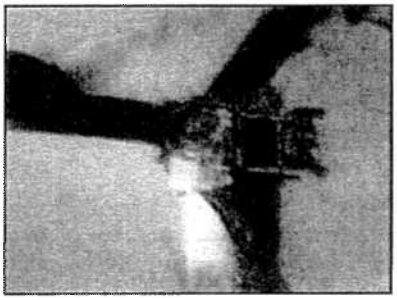
RELATED BBC SITES
SPORT
WEATHER
CBBC NEWSROUND
ON THIS DAY
EDITORS' BLOG

Last Updated: Tuesday, 3 January 2006, 20:40 GMT

E-mail this to a friend Printable version

Engineers to inspect fire turbine

An investigation is taking place into a fire on a wind turbine which forced emergency services to cordon off a busy Sunderland road last month.



The fire on the turbine sparked a major alert

Eight fire brigade crews attended the Nissan car plant after fire broke out on the 51m-high turbine on 23 December.

Crews feared it would fall on to the nearby A19 but it eventually fell into a nearby field and burned itself out.

A crane will arrive on site this week to lift down the remains of the turbine for engineers to inspect.

Building work started on the £2m wind farm at the 750-acre site in September.

The six second-hand turbines, which are three years old and came from a wind farm on the continent, generate 7.5% of the factory's electricity.

WHERE I LIVE

BBC Wear
Travel, leisure, webcams and much more from the BBC website for Wear

SEE ALSO:
Blazing turbine falls into field
23 Dec 05 | Wear
Work starts on factory wind farm
11 Sep 05 | Wear
'Car factory wind farm' approved
07 Feb 05 | Wear
Nissan seeks fair wind for farm
22 Oct 04 | Business

RELATED INTERNET LINKS:
Tyne and Wear Fire Brigade
Nissan
The BBC is not responsible for the content of external internet sites

TOP WEAR STORIES
Rail bridge crash delays continue
Blair's sporting legacy unveiled
Fisherman rescued from North Sea
News feeds

E-mail this to a friend Printable version

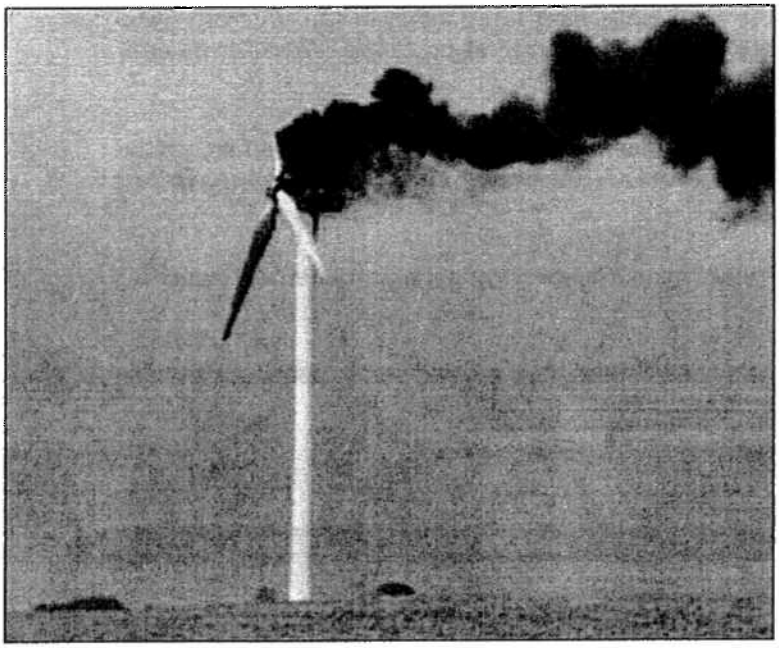
Published: February 27, 2006

Wind farm accident photos show the risks, claims pressure group

A set of photos showing what can happen when wind turbines encounter problems has been released by the pressure group fighting a proposed wind farm on the outskirts of Burnham-On-Sea.

The 'KNOll to Wind Farm' pressure group believes the plans to build five wind turbines on land at Edithmead pose a risk to people and facilities in Brent Knoll.

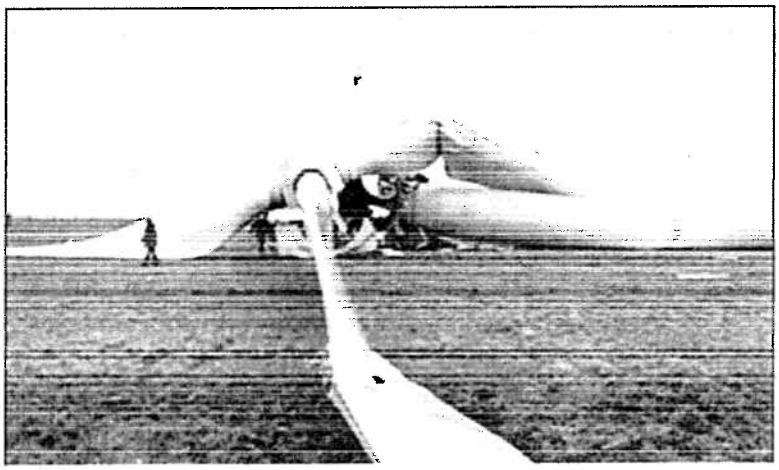
In a statement, it said: "The proposal for a wind farm between Burnham-On-Sea and Brent Knoll, within a few hundred metres of old peoples homes, social housing, a primary school, a village hall, local park, footpaths and bridleways has led local residents to raise questions about the health and safety risks that may be associated with such a development."



The group also released two photographs which, it claimed, show the risks involved with the wind turbines.

It added: "A problem seems to be the turbines catching fire; one of the most recent and significant fires was on December 23rd when one of the five 200ft wind turbines at the Nissan car plant in Sunderland caught fire," it says.

It added that according to the Renewable Energy Foundation, the entire structure and box on top of the tower where the blades were attached, plus 75ft long blades, were destroyed. "Police closed a nearby A road for 90 minutes until the turbine



LATEST BURNHAM NEWS

Burnham-On-Sea News

Walker injured in fall on rocks at Brean Down

Roads flooded by torrential downpour in Burnham

Voters reject Somerset County Council unitary bid

70 take part in Burnham-On-Sea beach event

Vandals force closure of public toilets in Burnham

Illegal van seized and motorist arrested at Brean

Success at Le Mans for top local motor driver

Top guitarists strike a chord at Burnham club

Burnham-On-Sea MP backs fight against lorries

Arrests after late night trouble in Burnham-On-Sea

Plans for Severn Barrage share scheme unveiled

Two arrested after dramatic 80mph town car chase

LIVE BURNHAM WEBCAM

24-hour live pictures
See live images from the seafront and beach with Burnham's Webcam. **Click here**

WHAT'S ON IN BURNHAM

Things to see and do
Check the constantly updated Burnham-On-Sea calendar for what's happening. **Click here**

structure had burned
away because of safety fears," added the 'KNOll to Wind Farm' spokesman.

It also claimed that REF believes fires are a "well-documented problem at wind farms in other parts of Europe."

A spokesperson for 'KNOll to Wind Farm' added: "Whilst we would not claim to be health and safety experts, reports and pictures of such incidences have created a lot of concern."

"A widespread view in the community is that it appears folly to unnecessarily create a potential risk when siting turbines well away from large local communities would eliminate such risk. We trust that the Planning Authorities will take this into consideration when reviewing this opportunistic commercial proposal."

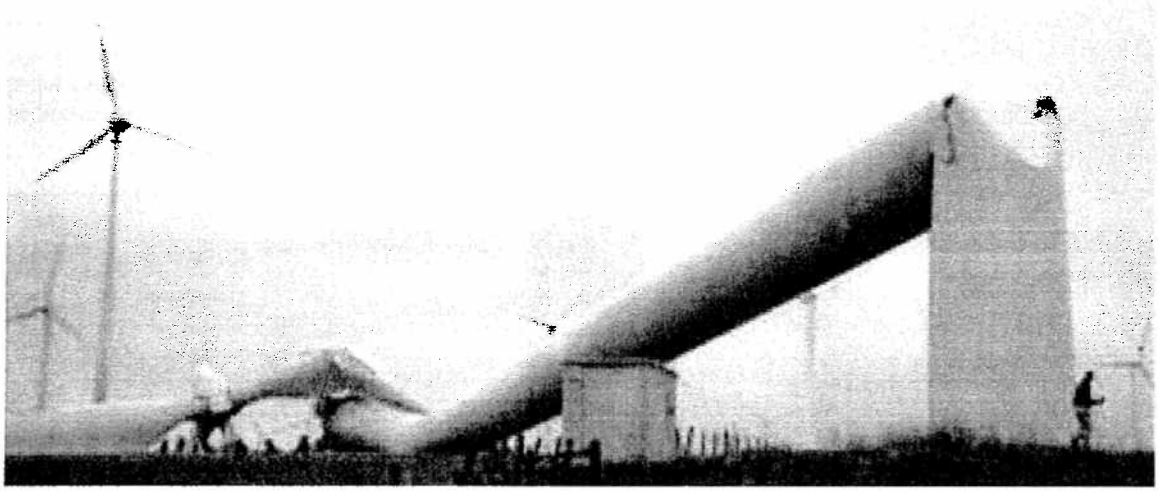
Responding to the statement, Ecotricity spokesman Jamie Baldwin told Burnham-On-Sea.com: "No member of the public has ever been killed in the UK from wind tubines, which isn't the case with other power generation types. Wind farms are a very safe form of power generation."

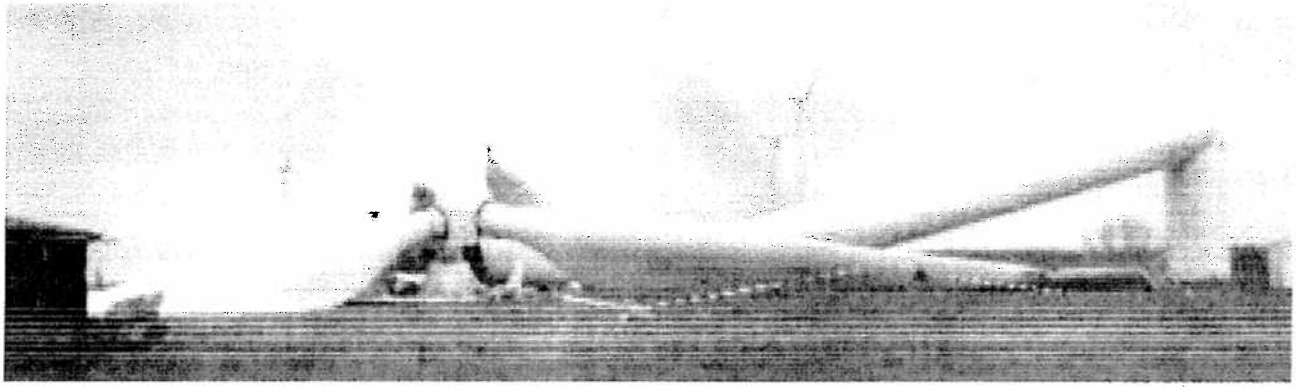
"With the Nissan fire, it was electricians who inadvertently started the fire, rather than a malfunction with the wind turbine. A fire broke out when they were fixing it."

"Our wind turbines don't have gear boxes or moving parts, so have far fewer mechanical problems."

"We use a direct drive - magnetic coils rather than a gear box - which are also less noisy and are less likely to break down."

COMMON WIND TURBINE ACCIDENTS





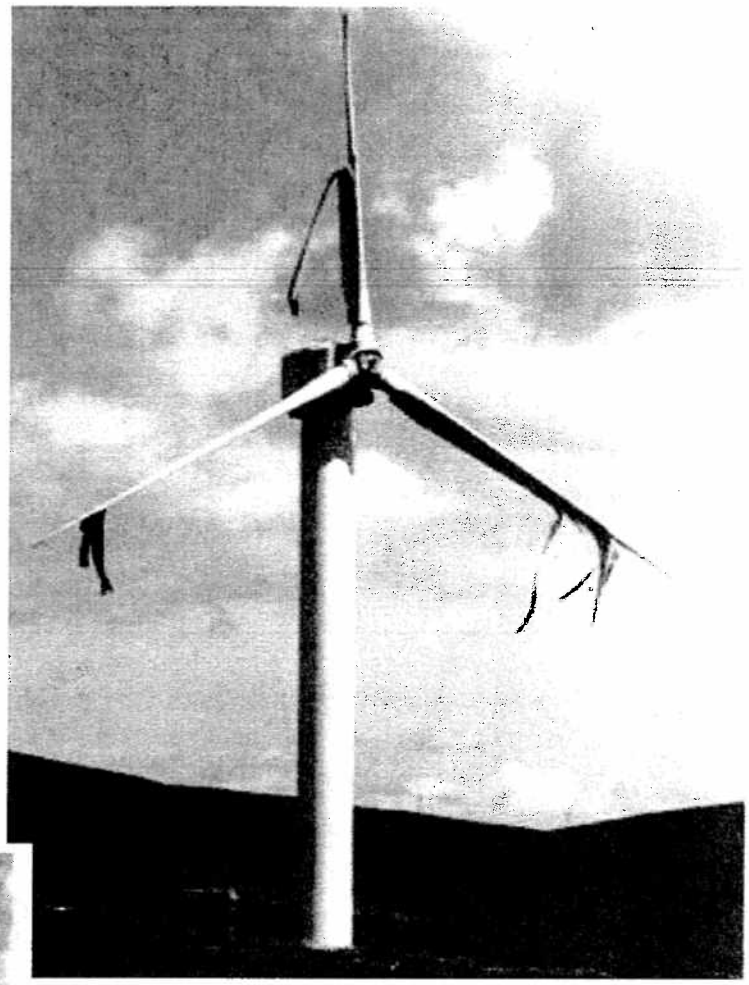
Who would ever think those huge towers could crinkle and fall?

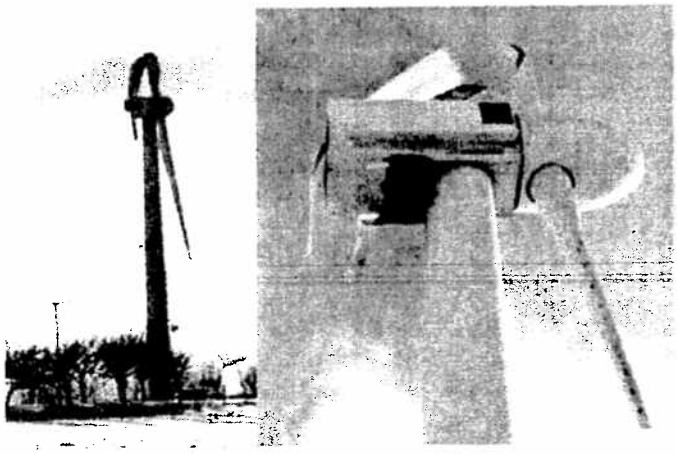
Or catch on fire!

Do the companies provide appropriate ladders for local fire departments?

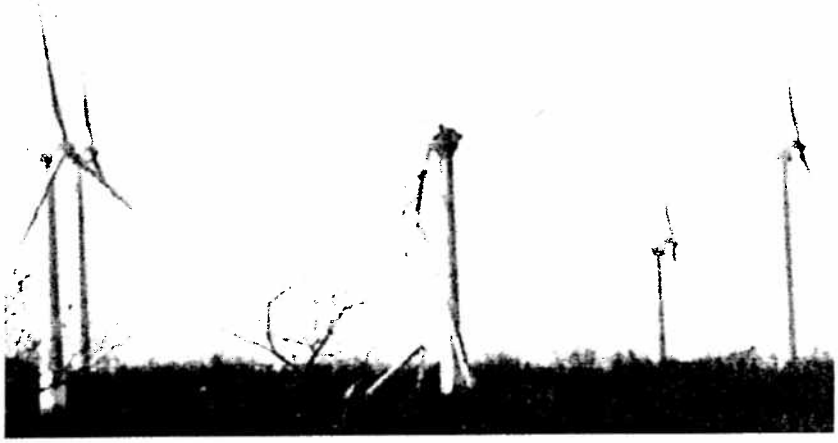
Nur noch eine rauchende Ruine blieb gestern von dieser Windkraftanlage in Tüttendorf bei Rendsburg übrig. Durch Blitzschlag hatte sich die Gondel in 50 Meter Höhe entzündet und brannte aus. Foto: dpa

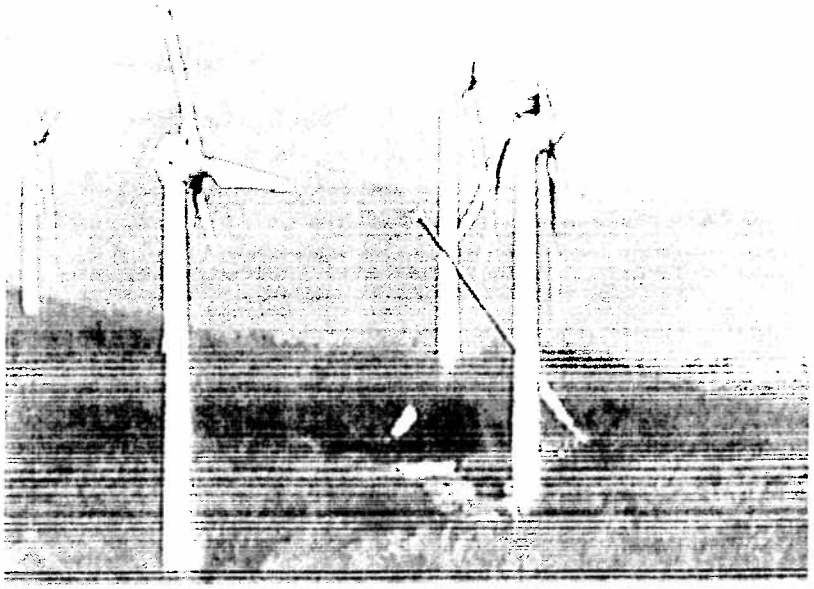
Or come apart.





Blades twist, fold, and fall off.





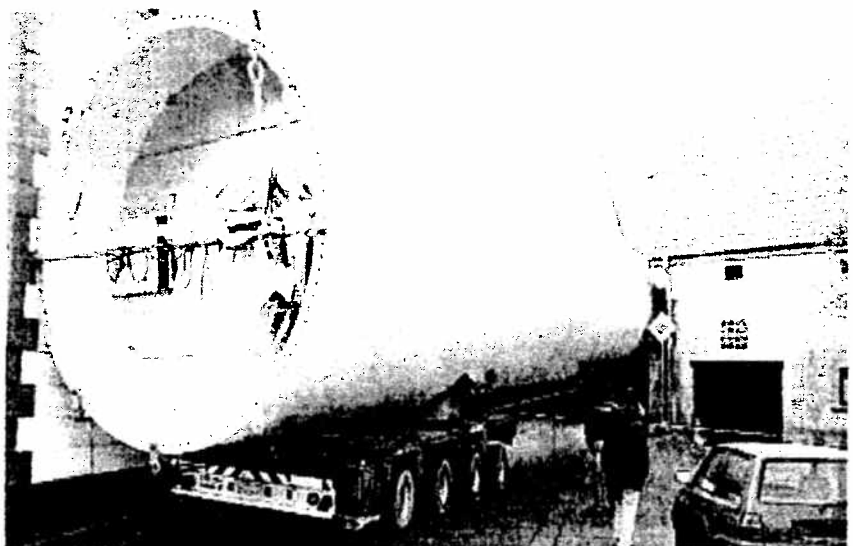
But I bet those cattle often pictured in industry shots under the turbines, wouldn't even notice!

And then there are the bigger, heavier parts that hit the ground.

Bet they'd even heard that thud in town!

What about transporting those huge parts…

DURCHFAHRT IN NIEDERKIRCHEN



Niederkirchen ist einfach zu eng: Links passt zwischen den 45-Meter-Mast und die Hauswand kein Stück Papier mehr. Rechts hat der Mast bereits Teile aus dem Mauerwerk herausgebrochen. Geplant ist, weitere Teile der Hauswand zu entfernen, damit der Lkw weiter fahren kann.

45-Meter-Mast rammt Haus

Saarbrücker Zeitung
St. Wendeler Zeitung
26.Nov. 2004

Das zerstörte Mauerwerk. Vor dem Straßenschild erkennt man die rausgebrochenen Steine.

Der Vorderteil des dänischen Lkw, der sich gestern in Niederkirchen verkeilte.

Guess those homes have to go!

For actual pictures and more information visit:*

http://ventdubocage.net/accident.htm
http://ventdubocage.net/accident2.htm
http://ventdubocage.net/accident3.htm
http://ventdubocage.net/accident5.htm
http://ventdubocage.net/accident-allemagne1.htm
http://ventdubocage.net/accident4.htm

Thanks to:
Mark Duchamp" save-the-eagles@madrid.com
Windfarm/Bird Research Manager
Proact International http://www.proact-campaigns.net

*For translation help, go to --- [illegible]