WHAT IS THE QUALITY STANDARD OF THE "EIA" PROCESS FOR WIND FARMS IN THE ABRUZZO REGION, CENTRAL ITALY ?

Augusto De Sanctis [1], Stefano Allavena [2] & Carlo Artese [3]

[1] *WWF Abruzzo – Via D'Annunzio, 68 – 65100 Pescara (a.desanctis@wwf.it)*
[3] *LIPU Abruzzo (abruzzo@lipu.it)*
[3] *Stazione Ornitologica Abruzzese, C/o Museo De leone – C.da Collalto, 1 – Penne (PE)*

INTRODUCTION

The Abruzzo Region, Central Italy, is hosting three National Parks, one regional park, twenty-five natural reserves; Natura2000 sites cover about 35% of its territory with five SPA and IBA and about 49% of the regional territory is under protection. In the last years a huge amount of projects for the development of industrial wind farms have been submitted to the administration of the Regional Government for approval. Environmental Impact Assessment is claimed as the tool to manage potential impact to wildlife of these projects. However, the quality of the EIA study reports and public databases on wildlife are essential to evaluate the potential impact of each wind farm plant and to mitigate consequences counterbalancing the obvious need of green power with the need to preserve rare species of birds and bats.

METHODS

At first we compiled the list of projects submitted to the administration of the Regional Government for approval as resulted from official documents published on the Abruzzo Region Bulletin website. The website reported also the status of each project (implemented, rejected, approved or under evaluation). In some cases where information were not satisfactory, further information have been collected from websites run by other bodies such as the L'Aquila Province Administration and local authorities (City Councils) or through field visits at the wind farm plants. EIA study reports have been consulted directly during the open access period for comments. Afterwards, we verified the correspondence of the EIA study reports presented by the projects' applicants to the Regional Impact Assessment Committee with the international criteria proposed for environmental assessment of this kind of plants. Older projects did not treat the problem of impact with wildlife deeply. However, as it is only from 2003 (USFWS, 2003) that official bodies have recognized the potential of the impact for bird and bats of this kind of industrial plant, only projects presented from 2004 to 15 of October 2009 entered in the analysis. We referred to the following documents to evaluate if the quality of the reports reflected the requirements proposed by scientists and international bodies: *"Risoluzione in merito all'impatto degli impianti* eolici *sui* Rapaci *e sull'avifauna in genere"* (AA.VV., 2003) Birdlife

Int. - Bern Secretariat (2003), USFWS (2003); *"Bat Conservation International and Eurobats"* (2006), Eurobats (2008).
A EIA study report was considered as fitting international standards if fulfilling the following criteria. *Bats:* 12 months survey with winter roost searching and use of the bat-detector along all the flying period and use of radar/thermal imaging. The EIA study report was considered as partially fitting in case a bat-detector from the ground was used, without covering the entire flying period or if winter roost site were not assessed. *Cliff nesting species:* calculation of pairs in a 10km radius from the wind farm plant; *Nocturnal bird movements:* use of radar or thermal imaging; *Wintering and breeding passerines:* monitoring by repeated liner transects or point counts or mapping with standard methodologies and a proper number of points or transects; *Use of the area by other bird species* (such as Red-Billed Chough *Pyrrhocorax pyrrhocorax*): monthly observations from vantage points and transect by car (partially fitting if not covering the annual cycle).
The EIA Regional Committee prescribed post-construction monitoring activities for approved project. As these studies resulted not published after a WEB search within the WEB-site, we activated an official procedure, with an official letter on 7th of January 2009, reiterated on 10th of July 2009, in order to access the documents directly at the Regional Administrative Headquarters. Wind-farm could affect species at a regional scale. At the scope of assessing the capacity of the Regional Committee to evaluate EIA study reports and the effects on birds and bats species protected under EU Directives, with the same letters we officially requested the Regional Administration their data for the Abruzzo Region about status, distribution and trend of potentially impacted species. To evaluate the capacity of the Committee to discuss and manage a controversy between the comments to the study made by our association and that presented in a EIA study report for a plant proposed in a IBA, on 26th February 2008 we asked the Regional Committee to proceed with a cross-examination directly on the field to verify the effective presence of the Red Kite *Milvus milvus* as we reported.

RESULTS

Fifty-one projects were proposed between 1994 and 15 October 2009 with a steep increase in the latter two years (Fig.1). Throughout 15 years 726 aero generators

	Power	**N. plants**	**Aerogenerators**
IBA	146,84 (81%)	15 out of 18 (83%)	207 out of 248 (83%)
	Mean 9.78 (range 1.2-24)		Mean 13.8 (range 10-34)
Protected areas	35.1 (19,3%)	4 out of 18 (22%)	23 out of 248 (9%)
	Mean 8.77 (range 1.2-24)		Mean 5.75 (range 1-22)

Tab. 1. Basic statistics for wind-farms just operating in respect with IBAs and Protected Areas.

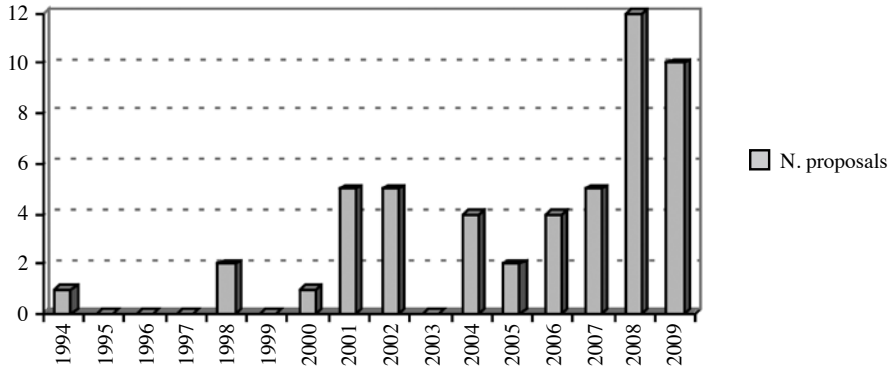

Fig. 1. Trend of wind-farm proposed in the Abruzzo region (2009 till 15 of October).

were proposed, accounting for a total power of 883.9 MW. Most of these projects and their EIA study reports were already under the evaluation. About one hundred aero generators were approved but those were just not operating (Fig. 2). In October 2009, eighteen plants were already operating accounting for 248 towers and a power of 181.5 MW. The number of towers per plant decreased along the years ($r=-0.37$, $p<0.05$) while the power of the plants increased ($r=0.28$, $p<0.05$, Fig. 3). Table 1 showed that most of the operating plants were inside IBAs while only 4 were inside protected areas. Moreover, if in the protected areas a lot of project were rejected (Fig. 4) the opposite figure appears for IBAs where new projects are still proposed (Fig. 5).

Thirty-seven out of the 51 proposals were evaluated for harmony with international

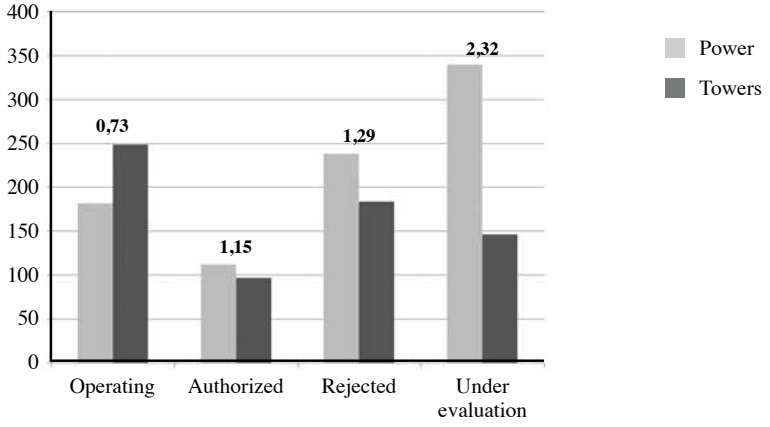

Fig. 2. Status of the 51 proposed wind farms. Numbers on top of bars represented mean power of the aerogenerators in that category.

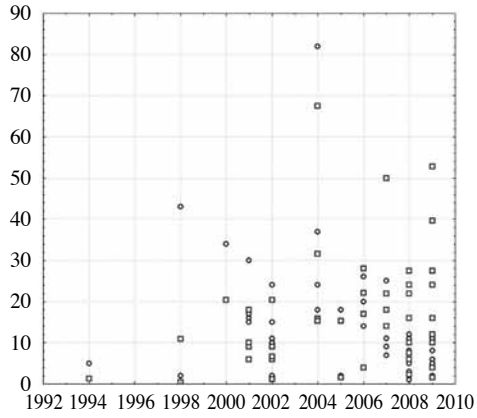

Fig. 3. Trend of the wind-farm size in terms of power and n. of aerogenerators.

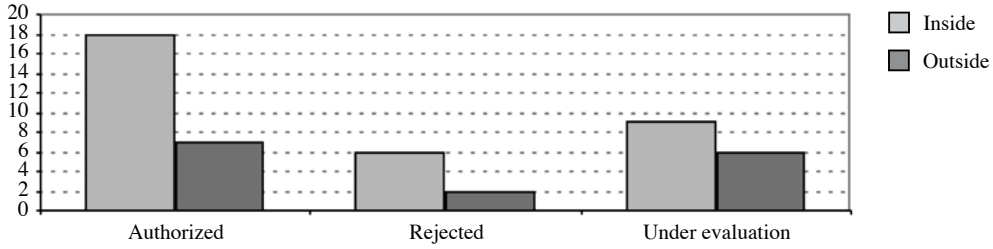

Fig. 4. Status of the projects in respect of Protected Areas.

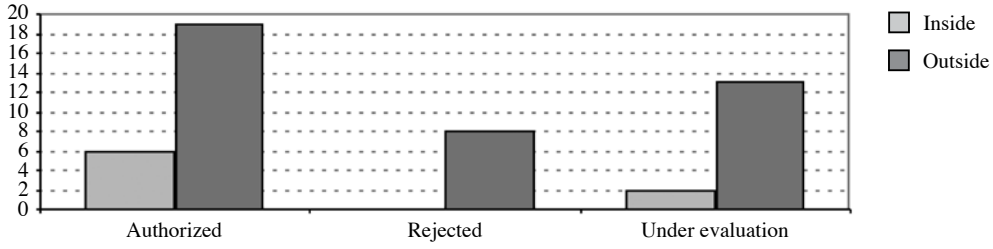

Fig. 5. Status of the projects in respect of IBAs.

standard. No one of them resulted in compliance with international standards. For bats, only 3 EIA study reports were partially congruent (8%), the others being completely deficient. Regarding birds, no one of the EAI study reports monitored the presence of cliff nesting species nor the presence of nocturnal birds of prey and migrants. Moreover no report adopted surveys with a proper number of point counts

or transects and only 5 (13%) reported observation data from vantage points without covering the annual cycle. Because these reports did not clarify basic information such as effort, duration etc , as a consequence were considered only partially in compliance with international standard. Three of them concerned also the work on the field but no one of the studies covered the entire annual cycle. It was not possible to evaluate post-construction reports prescribed by the EIA Regional Committee because no answer was provided upon our requests. It was not possible to evaluate the quality of the data held by the Regional Government because their offices did not answer our requests. Finally, our request of direct cross-examination on the field was not accepted and the plant was eventually approved in the IBA.

DISCUSSION

The Abruzzo Region is a key area for the conservation of rare birds (e.g. Red Kite, Lanner *Falco biarmicus*; reintroduced Griffon Volture *Gyps fulvus*) and bats (e.g. Greater mouse-eared bat *Myotis myotis*) species which could be severely affected by the development of wind power industrial plants both for added mortality caused by collision and for habitat loss. A high percentage of regional territory is designed as IBA and it should be prescribed that in this area wind farm should be forbidden or otherwise severely controlled under strict standards for minimizing negative impacts on wildlife. The present study demonstrates that the opposite was happening. Despite the warnings launched by researchers and international bodies, no one of the proposed projects fulfilled the international standards requested for EIA study reports for any of the categories considered (bats; cliff nesting species etc). Our analysis was restricted to projects submitted from 2004 onward but it is important to note that also the older projects did not treated sufficiently the impact with wildlife. No one of the projects presented data on nocturnal bird migration monitoring with radar or thermal imaging in spite of the importance of the Italian Peninsula for these migrants species. In 2005 the environmental associations proposed to the Regional Administration a document with strict criteria derived from international literature to prepare the EIA study report. Unfortunately, the Regional Administration approved in 2007 its own guidelines without describing in details the methods to be used on the field by consultants, giving only very generic criteria, such as the one of monitoring birds for one year per plants, proposed inside IBAs. It is noteworthy that IBAs area not considered as an obstacle for wind-farm development in respect to just gazetted protected areas (fig.4 and fig.5) but from an ornithological and conservation point of view this "*administrative*" differences have no sense. Despite this document fortunately forbids wind farm development in area used by the Brown Bear *Ursus arctos*, no measures were undertaken to preserve other species such as the Lanner which has the same level of protection under the EU Directives. The remark presented by environmental associations and ornithologists about excluding wind farm development in a 5 km radius around the 15 Lanner nesting cliff located in the Abruzzo region was not considered. As a consequence, the quality of the EIA study reports

did not improve in the last two years. For example, EIA studies reports based on data gathered from 3-point-calculation (and their statistics!) or with "standardised" sentences without any scientific sense (e.g. there is no problems of impact because "*the migrating birds follow the geostrophical quota*" or "*bats avoid towers thank to their perception skills"*) are still present. This happened for projects of 16-24 MW which involved investments for about 30 million Euros. The absence of skilled ornithologists and chiropterologists inside the EIA regional committee and among the administrations' evaluators is one of the key negative factors which prevents the enforcement of scientific-based choice. Our study suggests that it is urgent to adopt clear and rigorous methodologies for EIA study reports at national and EU level such as that developed by Eurobats Secretariat in 2008. Finally, EU and national authorities should request to regional authorities to adopt these guidelines to standardize the quality of EIA among European countries.

Riassunto

Quale è lo standard per gli studi ambientali sull'eolico ? Il caso dell'Abruzzo

Il territorio abruzzese è sottoposto a vincolo di tipo ambientale per circa il 49%, con 5 IBA e ZPS. Negli ultimi 15 anni sono stati proposti 51 impianti eolici con 726 torri per oltre 800 MW, di cui 18 con 248 aerogeneratori sono già produttivi. In Abruzzo le associazioni hanno proposto nel 2005 alla Regione e alle aziende delle linee guida per gli studi di impatto ambientale, basate su questi standard internazionali. Il presente studio ha classificato gli studi di impatto ambientale SIA dei 37 progetti presentati dal 2004 al 15 ottobre 2009 alla Regione Abruzzo in tre categorie - congruente, parzialmente congruente e incongruente - in base alla corrispondenza con gli indicatori di qualità consigliati a livello internazionale per quanto riguarda il monitoraggio di chirotteri, migratori notturni, passeriformi svernanti e nidificanti e uso dell'area da parte delle specie. Tutti gli studi sono risultati "incongruenti" con gli standard internazionali per almeno una categoria. In particolare nessuno studio ha presentato dati sull'attività di volo notturna degli uccelli. Nessuno studio di monitoraggio post-operam è disponibile nonostante siano già attivi sul territorio regionale circa 250 aerogeneratori, molti dei quali all'interno di IBA e ZPS.

REFERENCES

- AA.VV. 2003. Risoluzione in merito all'impatto degli impianti *eolici* sui *Rapaci* e sull'avifauna in genere. Atti I Convegno Italiano Rapaci Diurni e Notturni. Preganziol (TV). Avocetta, 27 (1): 150.
- Bern Secretariat, 2003. Windfarm and Birds: An Analysis of the effects of windfarms on birds, and guidance on environmental assessment criteria and site selection issue. Pp.1-58.
- Eurobats, 2006. Wind turbines and bats: guidelines for the planning process and impact assessment. Annex 1 To resolution 5.6, Pp. 2-25.
- Eurobats, 2008. Guidelines for consideration of bats in *wind* farm projects. *EUROBATS*. Publication Series No. 3 (English version). UNEP/*EUROBATS* Secretariat, Bonn.
- USFWS, 2003. Service interim guidance on avoiding and minimizing wildlife impacts from wind turbines. Pp.1-55.