

## EIA in Portugal: a collection of success case studies

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### 1. Introduction

Impact assessment (IA) is a fundamental tool of any environmental policy system bringing transparency to the decision making process. Nevertheless it is frequent to hear strong criticisms to the IA procedure. Critics focus on the delays caused in the implementation of projects and in the “red tape” processes that often arise around IA. Consequently it is difficult to detect in the public speech positive references to IA with a clear and objective identification of its advantages.

This paper presents a collection of success case studies obtained through an inquiry organized by APAI – Associação Portuguesa de Avaliação de Impactes, the Portuguese affiliate of IAIA. The inquiry was directed to individual and collective members of APAI, including IA authorities, project promoters and consultancy firms. The aim of this paper is to describe the case studies received by APAI, analyze their common characteristics, and finally, discuss the criteria that define “success”.

### 2. Methodology

This study was launched in February 2008 by an e-mail to all members of APAI and to others requesting their collaboration in the selection of success Environmental Impact Assessment (EIA) case studies. In this e-mail the following definition of “success” was used:

- IA caused a reduction of the resources needed for the implementation of the project;
- IA prevented potential environmental and social conflicts;
- IA avoided the implementation of a project with significant negative impacts;
- IA promoted the adoption of a new solution with clear positive environmental advantages from the alternatives included in the earlier versions of the project;
- IA created advantages for the promoters as well as for the environment and the society.

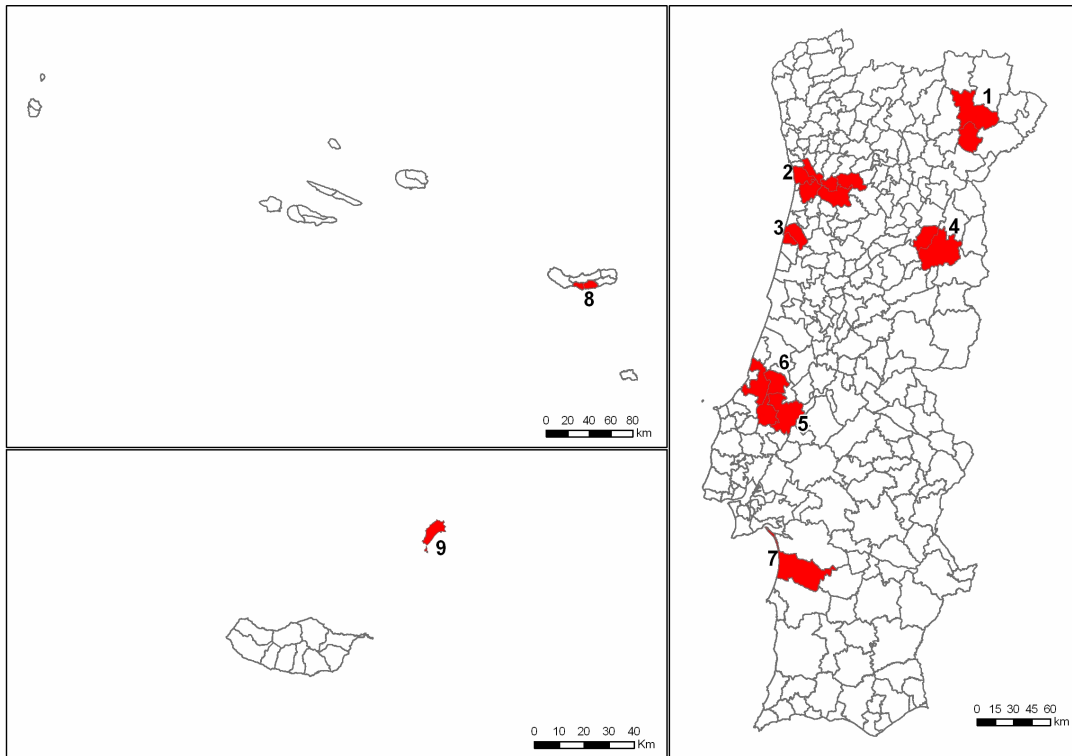
The e-mail attached a written form with the following fields: 1) Identification of the case study: (project, promoter, firm responsible for the EIA, location); 2) Short story of the EIA process with chronology; 3) Reasons that justify qualification as success; 4) Authors of the form; 5) References.

### 3. Case studies

The authors received nine case studies. Table 1 includes the basic information for each case study – EIA name, promoter, location, IA stage, EIS author and date – as well as the indication of the responsible for the submission of the case study. Figure 1 shows the geographical location at county level of each case, In Portugal, the EIA process has three possible stages: scoping (optional), preliminary studies, and detailed project.

#### 3.1 Summary of the case studies

The project of the **Wind Farms of Serra de Bornes** included an overhead electrical power line, of 60 kV, with a length of 36 km, to the national grid substation of Mogadouro. This line crossed designated areas under Natura 2000 Network (Special Protection Area - SPA and Site of Community Importance – SCI of “Rios Sabor e Maçã”). The connection point was established by the DG of Energy and Geology. During the EIA process, the promoter studied an alternative route for the power line still crossing the SPA, but for a shorter length. The impacts of any of the alternative routes for the power line on birds were the basis for the inclusion in the Environmental Impact Declaration (EID) of a restriction on the power line: it should be connected to another substation (Olmos, under project at that time) and should avoid any crossing of the SPA.



**Figure 1 – Location of the case studies.**

Subsequently, the promoter submitted a new solution for the power line, avoiding any designated area and with a length of 8,7 km. This new project of the line was approved.

The company Águas do Douro e Paiva [“Waters from Douro and Paiva” – Douro is the largest river of the North of Portugal and Paiva is a tributary of Douro] started in 1998 the studies for the **abstraction of water from the river Paiva** to supply the Metropolitan Area of Oporto. All possible alternatives for the building of dams, essential to the water abstraction, were located on a Natura 2000 SCI (“Rio Paiva”). This fact and the “absence of demonstration of the non-existence of other viable alternatives” led to a non-compliance decision under the EIA process. A Scoping Proposal, presented subsequently, resulted in an insistence by the EIA authority on the need of a project justification. With this outcome the promoter returned to the starting point of the process, developing new feasibility studies and finding an alternative solution for the water supply, based on a combination of new connections to another system (Cávado river), new abstractions from Sousa river and the exploitation of a small existing abstraction from river Paiva, linked to the Lever subsystem. This new approach had an advantage of linking two autonomous systems (Douro and Cávado) and two subsystems (Lever and Sousa) of the Douro System.

Table 1 – Study cases received

N.º	Project	Promoter	Location (counties)	Phase	EIS author	EIA period	Responsible for submitting the case study
1	Wind Farms of Serra de Bornes – Bornes I e II	Parque Eólico da Serra de Bornes, Lda. (private company)	Alfândega da Fé and Macedo de Cavaleiros	Detailed project	PROCESL, Lda.	EIA: 2005-2006 Approval of the solution for the electrical line: 2007	Cecília Almeida (APA)
2	Water abstraction from the river Paiva and piping to the Treatment Plant of Lever	Águas do Douro e Paiva (water supply regional concessionaire)	Arouca, Castelo de Paiva, Cinfães, Gondomar, Santa Maria da Feira, and Vila Nova de Gaia	Preliminary study, Scoping	IDAD	EIA: 2002 Scoping: 2002/2003 Giving up: 2004	Miguel Coutinho (IDAD)
3	Railway Connection to the Aveiro Port	REFER, EPE (public concessionaire of the railway network)	Aveiro and Ílhavo	Detailed project	Trifólio, Lda.	EIA (1st. process, closed):2003 EIA (2nd. process): 2005	Maria Olinda Saraiva da Costa (ICNB)
4	Wind Farm of Cabeça Alta/ Videmonte	Gamesa Energia Portugal, S.A. (private company)	Celorico da Beira and Guarda	Scoping, Preliminary study	Ecosistema, Lda.	Scoping: 2001 EIA: 2003-04 Application for the detailed project: 2004/05	Júlio de Jesus (Ecosistema. Lda.)
5	Portuguese cobbled stone exploitations on the Natural Park of Serras de Aire e Candeeiros	Association of the Portuguese Cobbled Stone Exploiters	Alcobaça, Porto de Mós and Santarém	Detailed project (Quarry exploitation plans)	ICAT	EIA: 2006-2007	Madalena Coutinho (Atkins) & José Guerreiro (ICAT)
6	Enlargement of the Quarry of Portela da Salgueira	Mármore Vigário, Lda. (private company)	Porto de Mós and Rio Maior	Detailed project	TTerra, Lda. / Consmaga, Lda.	Scoping: 2005 EIA: 2006-07	Carlos Alberto Cupeto (TTerra), Fernando Real, Pedro Carvalho, João Carlos Sousa (Consmaga), Helena Abelha, Maria João Figueiredo, Maria Antónia Figueiredo & Sónia Silva (TTerra)
7	Troiaresort	Sonae Turismo (private company)	Grândola	Scoping, Detailed project (Marina & new ferry wharf)	IMAR	Scoping: 1999 EIA: 2002	João Joanaz de Melo (FCT-UNL) & Francisco Andrade (Univ. de Lisboa)
8	Alternative Road to Regional Road 1-1ª Água de Pau/Água de Alto/Vila Franca do Campo	Regional Directorate for Public Works and Terrestrial Transport	Lagoa & Vila Franca do Campo (S. Miguel island), Region Azores	Preliminary study	Ecosistema, Lda.	EIA: 2002-03 Application for the detailed project: 2008	Carlos Ernesto Faria (DRA, Azores)
9	Cable-car and Restoration of Cultural Heritage in the Islet of Cal	Sociedade do Desenvolvimento do Porto Santo (public company for the development)	Porto Santo, Region of Madeira	Detailed project	DHV-FBO, S.A.	EIA: 2006	Sofia de Castro da Silva & Maria Teixeira Gomes (DRA, Madeira)

APA – Agência Portuguesa do Ambiente [Portuguese Environment Agency]; DRA – Direcção Regional do Ambiente [Regional Directorate for the Environment]; ICNB – Instituto da Conservação da Natureza e da Biodiversidade [Institute for Nature Conservation and Biodiversity]

The project of the **Railway Connection to the Aveiro Port** consisted of a layout parallel to the highway IP5, with the rail infrastructure at a distance of 6 m from the main interceptor sewer of the Aveiro Lagoon Waste Water Treatment System, operated by SIMRIA. That solution was considered by SIMRIA unacceptable and a minimum distance of 25 m was established to ensure the integrity of the sewer. REFER, the railway infrastructure company, developed a solution at that distance but concluded that it had more negative impacts on the natural habitats and the SPA of "Ria [lagoon] de Aveiro". A new solution was then studied, consisting of a viaduct, distant 7.5 m from the sewer; this solution had an advantage of minimizing the occupation of wetlands by temporary access for the construction. This process has been followed by ICNB. The new solution has been subject to a second EIA process and has been approved.

The initial location of the **Wind Farm of Cabeça Alta**, at Estrela Mountain, could foresee a potential conflict with the practice of paragliding at Linhares da Beira, place of an important paragliding national festival and a paragliding school. For this reason, the promoter decided to submit a Scoping Proposal with public consultation. The results of the scoping had shown the dimension of the conflict and forced the National Sport Institute (a Government agency) to define, for the first time, general security rules for the sites for paragliding. These rules established a 3 km minimum distance for the take off or landing of paragliders from wind turbines. The project was relocated, renamed (**Wind Farm of Videmonte**) and subjected to an EIA, without any public opposition or the imposition of significant restrictions by any authority.

In the area of the Natural Park of Serras de Aires e Candeeiros there were a large number of small **exploitations of Portuguese cobbled stone** (limestone), not complying with the new environmental regulations and that should be subject to EIA. A Joint Decision by the Secretary of State for the Environment and the Secretary of State for Land-Use Planning (Despacho Conjunto n.º 106/2004) called for a single EIA process for the different exploitations and considered that this EIA fulfills the role of the Environmental and Landscape Restoration Plans required by the quarry regulations. The EIS produced included 259 exploitations, including 10 new ones. This unique EIA allowed for a joint approach of the exploitation area and its insertion in the Natural Park and influenced the conception of the new land-use plan for the Natural Park. This solution was the only one viable to allow the exploitations to comply with the legal requirements both of EIA and quarry exploitation, avoiding the closing of a large number of exploitations with significant negative socioeconomic effects.

Also located at the Natural Park of Serras de Aires e Candeeiros, the **Enlargement of the Quarry of Portela da Salgadeira** is an example of an innovative approach of exploitation technique. This limestone quarry was in the risk of stopping its activity in one year or one and a half year because the enlargement area was located in a Protected Landscape Area where the exploitation is forbidden. The studies carried out considered the underground exploitation, technique less known and used in Portugal. The option for this solution of underground exploitation allowed for the reduction of the impacts of the exploitation, allowed the approval of the enlargement of the quarry and represented an example of a solution that was technically and environmentally sustainable. This new solution raised great interest amongst other quarry owners.

The study case of **Troia resort** contains a description of the environmental studies carried out after the acquisition by Sonae Turismo of a tourism development in the peninsula of Tróia, started in the 1960 decade. Some of these studies present innovative features: a global study of the development ("Strategic Study"), a scoping procedure before the EIA law included scoping, the availability on-line version of the whole EIS of the marina and the new

ferry wharf. The set of environmental studies facilitated the integration of environmental issues in the conception and development of the project. It represents a case study of good practice and innovation in the national context rather than a “success case” according to the definition adopted. Nevertheless, it could fulfill the criteria “IA created advantages for the promoters as well as for the environment and the society”.

The preliminary study of the **Alternative Road to the Regional Road 1-1ª Água de Pau/Água de Alto/Vila Franca do Campo** only considered one solution, the one that was already part of the tender documents of the S. Miguel Road Concession, launched before the EIA. The EIA process, including a strong public participation has shown some significant impacts of the solution analyzed. The Assessment Committee [Comissão de Avaliação] proposed a major change in the route of the road in order to avoid those impacts and the EID issued has imposed this route change as a condition of approval. Subsequently, the concessionaire chosen has presented a detailed project complying with the change proposed during the EIA process.

The **cable-car link to the Islet of Cal [lime]** included the construction of a cable-car through the inlet between the island of Porto Santo and the islet, with a capacity of 100 passengers per hour. The project included the passenger embarking facilities, the opening of trails, the construction of observatories, and the restoration of cultural heritage elements (trails, galleries linked to the past production of lime, buildings). The islet, presently without any human occupation, is part of the Natura 2000 SCI “Ilhéus [islets] de Porto Santo”. The EIA process, including the assessment by the Assessment Committee and the results of the public consultation, made clear that the site was too vulnerable and that the project was environmentally unsustainable, leading to a negative EID.

### 3.2 Interpretation of case studies

The following table 2 lists the reasons that turn each individual EIA into a success case study.

**Table 2 – Criteria to be considered as a success EIA case study.**

Criteria	Case study								
	1	2	3	4	5	6	7	8	9
a) IA caused a reduction of the resources needed for the implementation of the project;				X	X				
b) IA prevented potential environmental and social conflicts;				X				X	
c) IA avoided the implementation of a project with significant negative impacts									X
d) IA promoted the adoption of a new solution with clear positive environmental advantages from the alternatives included in the earlier versions of the project;	X	X	X	X		X		X	
e) IA created advantages for the promoters as well as for the environment and the society	X	X			X	X	X		

**Case studies:** 1 – Wind Farms of Serra de Bornes, 2 – Water abstraction from river Paiva, 3 – Railway Connection to the Aveiro Port, 4 – Wind Farm of Videmonte, 5 – Exploitations of Portuguese cobbled stone, 6 – Enlargement of the Quarry of Portela da Salgueira, 7 – Troia resort, 8 – Alternative Road Água de Pau/Água de Alto/V. F. Campo, 9 – Cable-Car to the Islet of Cal.

One of the major outcomes of this aggregate analysis is that two thirds of the EIA case studies implied the identification of new alternative solutions that had not been considered in the initial development of the project. These new solutions ensured the environmental

feasibility of the project and its consequent approval by the IA authorities. In some of these cases, the adoption of a new alternative avoided potential social conflicts and, at the same time, provided advantages for the promoters. This specificity of these EIA processes can be interpreted in two opposite directions:

- One of the perspectives that arises from this analysis is the immaturity of the decision making process that did not take into consideration all feasible alternatives that were available for each project. This perspective focuses in the history of the decision making process of each project and emphasizes the crucial role that Strategic Environmental Assessment might play in the creation of alternatives;
- Through a different perspective, it is possible to assume that the generation of alternatives is an integral and noble component of EIA. In any case, additional costs and procedural trauma caused by the appearance of new alternatives in a late stage of the IA procedure should not be undervalued.

Case study #5 is an important example of good resources management. Both promoters and administration simplified the procedure and reduced costs of IA of more than 250 stone quarries through the preparation of a single integrated study. Environmental advantages of this option are quite obvious: the precise identification of cumulative impacts became the focus of the EIA. During the IA process of Case # 4, the administration was forced to define a general rule (a safety distance between wind power turbines and paragliding).

Case #9 raised a very interesting question: should an IA procedure that concludes with the disapproval of a project be considered as a “success”? The answer is not obvious and depends on the stakeholders’ vision of the problem. If the IA procedure was the only process that prevented the implementation of an environmentally hazardous project then it is hard not to consider it a success case. On the other hand, it is not possible to classify all disapproval decisions as a success.

Similarly, according to the success criteria adopted in this paper it is difficult to treat case # 7 as a “success”. Nevertheless, the authors decided to keep the Troia resort case based on the application of best practices and innovative methodologies.

#### 4. Conclusions

The collection of considered EIA case studies as success stories is important to show the relevance of EIA to stakeholders. At the same time, the nine cases herein discussed were used as the beginning of an easily accessible database for training and education in impact assessment (they are accessible, in Portuguese, at the APAI website: [www.apai.org](http://www.apai.org)).

Criteria used for the qualification of any case study as a “success” is debatable:

- Innovation and application of best practices is enough to turn a normal EIA into a success?
- How can we measure the influence of EIA in the environmental and social optimization of a project?
- Is it reasonable to consider a disapproved project as a success?

Additionally, it is important to discuss from these case studies, the contribution that IA professionals, consultants, promoters and administration, might have to adopt more sustainable decisions (Weaver *et al.*, 2008). In many circumstances, procedural and financial limitations turn EIA into nothing more than an additional bureaucratic process. As shown in the success case studies that were presented in this paper, EIA is an opportunity to improve and/or reverse decision making process looking for more sustainable decisions.

#### Reference

Weaver A., J. Pope, A. Morrison-Saunders and P. Lochner: Contributing to sustainability as an environmental impact assessment practitioner, *Impact Assessment and Project Appraisal*, 26(2), 91-98, 2008.