EIA Coordination: A Tool for Decision Making

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Abstract

Given the key role of environmental impact assessment (EIA) in decision making, this paper presents the importance of the General Coordination on Environmental Impact Studies as an integrator of various stakeholders (such as government agencies, project sponsors and population) and processes involved (like the design, the public participation and the opinion of the committee). Developments will be analysed both in the scope of legal and regulatory requirements and of the tools to support the forecast of impacts linked to renewable energy projects.

Key words: *Environmental impact assessment coordination; renewable energy; decision making.*

1. INTRODUCTION

The increasing need of energy in our modern society and the environmental problems that its production and consumption implies make essential to find and implement a system where renewable inputs are more and more important. These are one of the major challenges that our society faces nowadays.

In Portugal the efforts in that sense have been significant in the last few years and the major goal is to reduce fossil energy production with the increase of the eolic production, hydroelectric, natural gas and combined power cycle plants, among others.

These alternative sources of energy have been included in government programs and concessions. To meet the defined goals a large investment on less pollutants, endogenous and renewable energy sources is under way, namely with the application of Dam National Programme and the implementation of a large number of wind farms.

Each kind of energy source has different and typical impacts that in general are significant not only for the natural environment but also regarding social, cultural and economic components.

In addition to these specific impacts there are also those that are induced by the energy sources dispersion in the territory and the need of a lengthy transportation network for the electrical energy to reach consumers.

The environmental impact assessment in such projects is very important not only to find the best solutions and mitigate the impacts but also because it is the opportunity to guarantee a global approach to each project.

The methodology for the characterization and impact evaluation of each environmental factor are well known and beyond the scope of this paper.

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2. THE ROLE OF EIA COORDINATION

2.1 Environmental Impact Assessment Coordination Importance

The coordination of the EIA is a major condition for the success and efficiency of the process due to the increasing complexity of each environmental factor, the need to include all stakeholders in the process, the more and more complex planning and legislative requirements, the growing environmental constraints and the importance of sharing all the information with the authorities and public.

The **Figure 1** below shows the global view of the importance of environmental impact management in all phases of EIA focused on a sustainable project development including environmental impact mitigation.

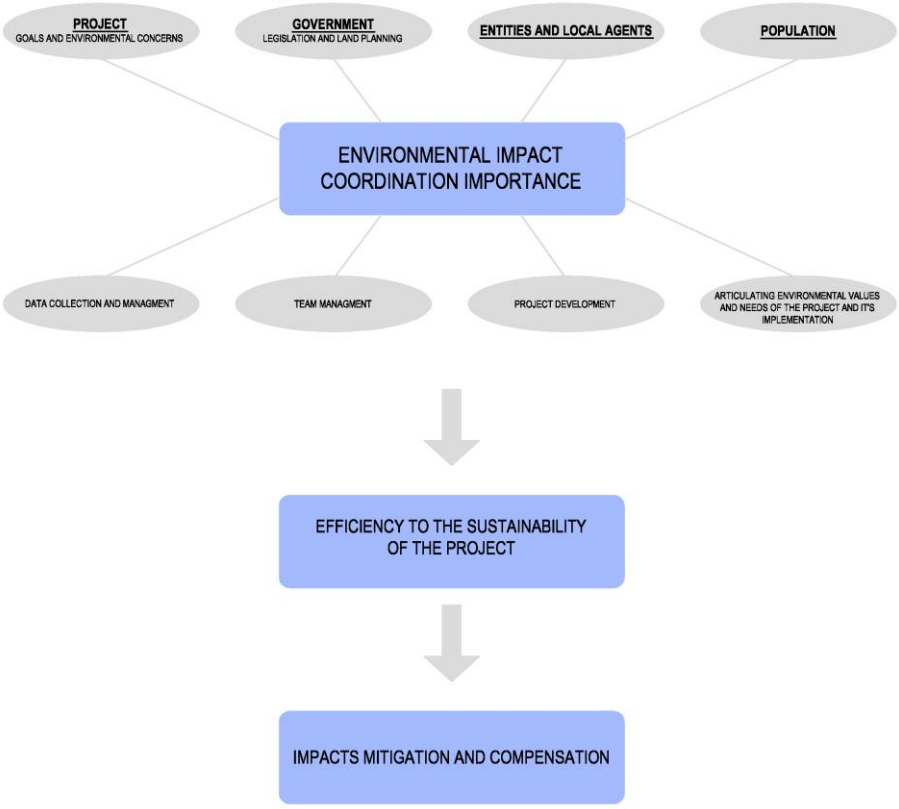

Figure 1 – Environmental Impact Assessment Coordination Importance

Our experience in this approach applied to different types of energy projects confirms the importance of the coordination in these kinds of processes.

The **Figure 2** shows the range of environmental impact assessment processes that are the base of our experience. This includes wind farms, power lines, hydroelectric power stations, power plants, gas pipelines, refineries, oil product storage facilities and liquefied natural gas terminals.

The importance of the Coordination in Energy Projects and its role are represented, respectively, on the **Table 1** and **Figure 3.**

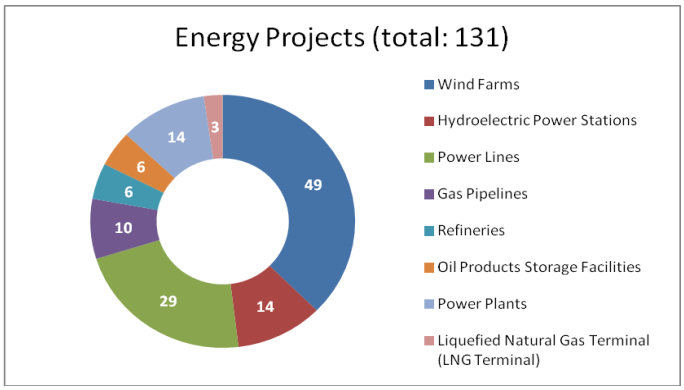

Figure 2 – Energy Environmental Impact Assessment Processes

Table 1 - The Importance of Coordination in Energy Projects

TOPIC	WHY	COORDINATOR	IMPORTANCE
INCREASING FRAMEWORK COMPLEXITY	•Legislation •Constrains •Demands from Authorities and Locals	•Permanent update •Global vision	•Information to the Promotor •Priorities
INVESTMENT NEEDS AND OBLIGATIONS	•Schedule •Alternatives limitations •Costs	•Methodological restrictions •Responsabilities •Answers on time •Balance	•Consequences limitation •Evaluation with the team •Solutions
DESIGN SOLUTIONS AND TECHNOLOGIES	•Project justification •Layout •Technologies •Tasks	•Technology know-how •Best technologies •Best practices •Impacts •Construction methods •Legislation •Risk analysis	•Risk consequences •Improvement of solutions and technologies •Establishment of alternatives •On time information, to the designer, about constrains and minimization proposals
INCREASED SPECIALIZATION OF THE EIA TEAM	•Limited technology know-how •Specific vision •Different needs of study areas and sampling periods	•Specific know-how on thematic areas •Dialogue capacity •Definition of urgent needs of information •Identification of major impacts and evaluations needed •High coordination skills and planification	•Timely information on impacts and constrains •Timely identification of mitigation measures •Timely identification of compensation measures •Balance and homogenization between thematic areas •Synthesis and information

Table 1 - The Importance of Coordination in Energy Projects (cont.)

TOPIC	WHY	COORDINATOR	IMPORTANCE
INFORMATION AND PARTICIPATION NEEDS	•Identification of actors •Basic informations •Contacts •Identification of feelings •Background •Public participation •Education	•High communication skills •Synthesis capacity •Promotion of consensus •Diplomacy •Deep knowledge on technologies and environmental specialities	•Timely identification of constrains •Social feelings •Risk perception •Integration of concerns •Education and information

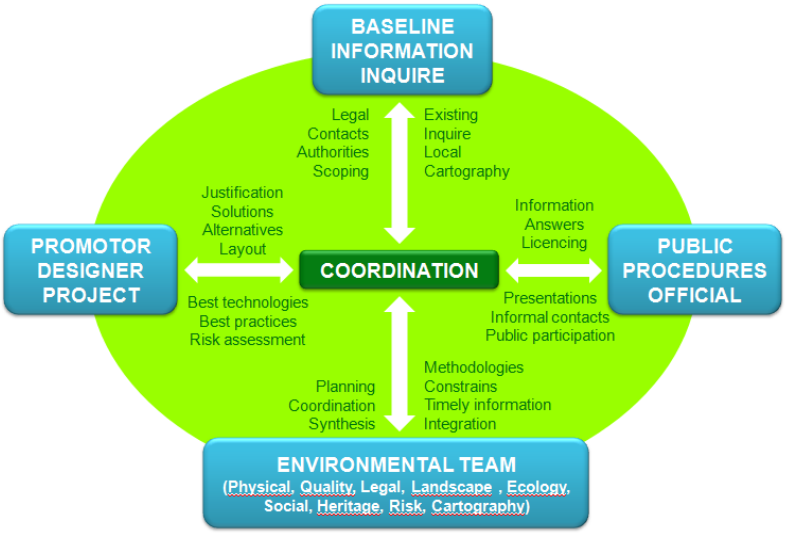

Figure 2 – The role of Coordination in Energy Projects

2.2 PHASES ON THE PROCESS WHERE THE ROLE OF THE COORDINATION IS CRUCIAL

2.2.1 – Early Phase

In the early phase coordination shall contribute for definition of alternative localization, project layout, technological solutions, constraints avoidance and risk identification and minimization

To achieve that, it is necessary to obtain relevant information, to be aware of all the legal obligations, establish contacts with key entities and personnel, to have a deep knowledge of the technology involved, identify precedents and actors and have clear knowledge of the best technologies and practices. In the process it is also fundamental to be able to give the contribution on time, to have the designers credibility and to be able to demonstrate the advantages of the proposed solutions to the Promoter.

If the coordination succeeded, we have impacts minimization, easier studies, less conflicts, less costs and the permits. Otherwise, we have more complex studies, high minimization costs, more conflicts, and on the limit – no permits, what implies the project revision.

2.2.2 – Main Phase

In this phase coordination shall contribute to the identification of major social and environmental conflicts, to the identification of minimization measures to be included on the project and to delineate plans and programs. The team coordination

To achieve that, it is necessary to establish contacts with key entities and personal and to obtain, from specialized teams, the information when identified and not only with the final report. It is also necessary to maintain a permanent dialogue with the promoter and the designer.

Below we list a few examples of measures considered in some environmental impact assessment processes developed by AGRI-PRO Ambiente, in which the role of general coordination was essential to mitigate impacts:

- Compensation of local community impacts due to the dam construction through the construction of a canoeing channel;
- Creation of the dam reservoir use through new recreation centres;
- Reinforcement and protection of high value ecological habitat;
- Establishment of sustainable and feed measures for fauna;
- Integration of cultural and heritage programs;
- Selection of wind turbine location regarding archaeological value protection;
- Selection of power line layout to avoid social and ecological values ;
- Definition of successful models dealing with local population participation in the project.

2.2.3 – Final Phase

In the final phase, the coordination needs to present a balanced EIA, to have the ability to communicate and guarantee a deep knowledge on various thematic areas and the project itself.

3. CONCLUSIONS

Energy is one of society's major challenges, but also leads to relevant impacts for the environment. Significant efforts were made, in Portugal, during the last few years to reduce the fossil energy dependence, with large investments on less pollutants, endogenous and renewable energy sources.
In all energy projects general coordination assumes a key role on EIA's success, for both the environment and the promoter.

All summed up a high level of qualification, knowledge and experience is needed for the process to succeed.