

## Feedback on the management of transmission lines magnetic field in France

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### ABSTRACT

*When a new transmission line is planned to be built in France, there are still concerns and reluctance among the public about the ElectroMagnetic Fields (EMF) generated. Therefore, a comprehensive communication plan has been put into action at RTE since 2012 to play down the irrationality associated with the perception of this phenomenon, to allow anyone to reach easily clear information, through RTE's employees and a user-friendly website. Furthermore, in 2012, the French government declared the establishment of an ambitious survey plan, unique in the world, made of 5000 points of EMF measurements near transmission lines. The deadline is December 2017. Every circuit transmitting more than 400 A must be measured, and the results made publicly available. Finally, a standardized, easy to install, EMF mitigation solution based on passive loops developed by RTE in 2015 is presented.*

### KEYWORDS

EMF, communication, policy, management, legislation, passive loops, joint bay.

### INTRODUCTION

The public concern regarding EMFs is strongly influenced by the technical dimension of the issue: expert debates on EMFs and health, and EMFs themselves are out of the usual field of comprehension of the public. As a result, EMFs are perceived as somewhat mysterious, therefore generating anxiety. RTE has adapted its communication strategy to better take into account this societal fact: information and transparency are the keywords of RTE's action. The main idea is that EMF communication should no longer be only devoted to trained spokesmen but should be more widely supported by the RTE staff, and particularly by the employees who are in charge of everyday relations with the public. In other words, the EMF issue loses a part of its weirdness when "everyday people" deal with it.

The paper describes in details the implementation of this corporate policy: training of the employees (40 to 80 every year) and tools (measuring devices and calculation tools) to help them in communicating with the public.

In parallel, a new website was developed, also with the fundamental idea of making EMF more familiar and less technical.

The last idea is that RTE has to be even more transparent on EMF levels generated by power lines. Therefore the EMF dedicated website also includes a map of the French mainland territory where all ELF EMF measurements are located. Within 5 years, the objective is to offer several thousands of EMF measurements.

### French grid

RTE is a public service company, responsible for operating, maintaining and developing the electrical transmission network over the mainland French territory. RTE's grid includes 105 000 kilometres of HV circuits distributed on 5 voltage levels (400, 225, 150, 90 and 63 kV). RTE also operates 700 substations of extra high voltage (225 and 400 kV) and 1950 substations of high voltage (150, 90 and 63 kV). Since 2010, almost all of the new 63-90 kV circuits are underground links.

### Discussion-consultation process in France

Large projects, such as new cross-border interconnections, involve a large financial investment and a long and uncertain administrative process in order to find / select a route and to reach social acceptance. Like in most countries, the bigger the project, the higher the requirements, and the French administrative and legislative framework in this issue is particularly demanding.

### Consequences for grid projects

The key norm of democracy is simple and compelling: those who are affected by collective decisions should be involved in the decision process. It is also widely accepted that talk-based responses to conflicts are better than any other means. The process thus valorises talk, and hence borrows from the advantages as from the drawbacks of discussion: very positive when open-minded, and very negative when not.

As a matter of fact, during the consultation dialogue process, passion is present and deceptive arguments are often used by opponents to persuade people to veto the project or ask for unacceptable compensations. In this way, the possible health impact of a project (namely the EMF issue for power lines) is one of the most federative arguments, all the more as the main health question is about young children. The general consequence of these long debates and discussion processes is that it gives a sounding box to opponents (via the debate itself, but also via the local/regional media for which an important infrastructure project can generate recurrent leading articles) and it gives time for the opposition to organize and spread.

### Authorities' position

In addition to the scientific health question, the many steps of the discussion process of HV line projects make of the EMF issue one of the major points of debate. The sensitivity of health questions, the liveliness of the debates, and the often biased media coverage also make that most often, local and national authorities adopt a very