



Original research article

Stakeholder empowerment through participatory planning practices: The case of electricity transmission lines in France and Norway



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ABSTRACT

The importance of grid extension in Europe has risen in the last decade as a result of an aging grid and the energy transition toward a decarbonized electricity sector. While grid extension is claimed as necessary, stakeholder opposition has slowed down this process. To alleviate this tension, increased stakeholder participation is considered as a solution to increase acceptance. The question of stakeholder empowerment is central to participation and it is assumed that higher levels of empowerment improve planning processes. In this paper, we describe, evaluate and compare the planning processes for very high-voltage transmission lines in France and Norway by means of a document analysis. We operationalize the degree of empowerment in three levels: information, consultation and cooperation. The results reveal low stakeholder empowerment that barely rises above the level of *consultation*. The evaluation of recent projects entailing innovations to enhance stakeholder participation reveals a trend of increasing empowerment levels, especially in the early phases of the planning procedure, i.e. the discussion about the needs for new lines and about the needs of the affected stakeholders. The results suggest that current planning regulations can benefit from high levels of stakeholder empowerment, especially in the early phases of the planning process.

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1. Introduction

Grid extension has always been an essential topic for the electricity sector, as electricity consumption increased in the last decades [1]. Today, new challenges related to grid extension are emerging: the goals of the European Union for an almost completely decarbonized electricity sector by 2050 [2] are changing today's patterns of electricity production, consumption and transport [3–5]. While grid extension is needed today, citizens' opposition to new electricity corridors is slowing down planning processes for new power lines and power lines upgrades as well, thus decelerating the energy transition for the European electricity sector [6–9]. The reasons of opposition are manifold and include the intrusive nature of transmission lines in the landscape, the fear of health consequences due to population exposure to electromagnetic fields and the decrease of property values nearby new corridors [6].

Opposition to transmission lines is not new in itself, as documented in several cases from the 1930s in the United States [10]. However, while in the past power lines have been considered as a symbol of progress, today some stakeholders consider them as a threat [6]. Stakeholder participation is seen as a way to smooth planning processes, decrease opposition, diffuse conflicts, and develop the grid by addressing stakeholders' heterogeneous concerns and needs [11,12]. While formal stakeholders' participation is already today included in planning processes for transmission lines, several scholars and organizations claim that it should be carried out in a different and better way [13,7]. Yet, it is assumed that enhanced stakeholder participation is a condition for an increased acceptance of power line projects [6,13–15,7,11,8,16,12]. However, while there are no universal metrics to evaluate stakeholder participation [17], empowerment is a concept that can be used to evaluate qualitatively the levels of participation in a decision-making process [18–20].

In this paper, we evaluate the level of stakeholder empowerment in the planning processes of two European countries: France and Norway. In order to do so, we divide the planning processes in three main phases: need definition, spatial planning and permitting [7]. Based on a documentary analysis, we evaluate for each phase the degree of stakeholder empowerment operational-

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ized as information, consultation and cooperation [20]. In order to better understand future trends, we also describe and evaluate recent innovative projects adopting participatory methods for stakeholder engagement. In these projects, the transmission system operators (TSOs) voluntarily improved the planning process and engaged stakeholders by using innovative tools or procedural measures. Finally, we compare and contrast the experiences in the two countries in order to highlight similarities and differences.

2. Evaluating stakeholder empowerment in power line planning processes

Stakeholder engagement in power line planning is a relatively new research topic compared to other fields like environmental conservation [21], water management [22] or sustainable urban development [23]. Since more than one decade, grid development has faced rising public opposition. Stakeholder participation is considered as a way to reduce conflict, foster acceptance and legitimize decisions related to power line projects [6,13–15,7,8,16,12]. Public opposition does not only affect grid extension projects. Wind, solar and biogas energy facilities are also depending on stakeholder acceptance [24–27]. However, while wind turbines, hydroelectric power plants or biogas plants produce energy locally, thus creating an added value to the area, transmission lines do not directly add value to the land they affect. Moreover, the incentives for grid extension are usually linked to additional installed energy production capacity, which also depends on grid availability, causing a chicken-and-egg problem [3]. Nevertheless, stakeholder engagement in the planning process for power lines and other infrastructures related to renewable energy (e.g. wind turbines) is similar due to their impacts on landscape and property value [6].

Today, transmission system operators (TSOs) and regulators carry out planning processes for power lines in a top-down fashion, by providing information or asking stakeholders for feed-back – e.g. on grid positioning – during the different phases of the planning process [7,8]. Many scholars consider these involvements as insufficient and as the root of opposition [6,13,14]. Therefore, it is assumed that enhanced stakeholder participation would ease planning processes for power lines. The premise of this assumption rests on the so-called ‘crisis of representative democracy’: stakeholder participation is seen as a way to revitalize a stiff representative democracy [28] and lack of trust in responsible authorities. Although participation has inherent advantages, it has also limits. This is a highly debated topic in the academic literature. Pellizzoni and Vannini [28] proposed an ‘ascending’ reading of participation-related literature, carried out through optimism in the 1980s, and a ‘descending’ reading of participation literature later in the 2000s, where the optimism faded away for a less optimistic, but more realistic approach.

In the case of power lines, today’s planning processes already engage stakeholders at specific points in time and with specific aims. Economic, social actors and citizens are informed and consulted in the planning process and these interactions are embedded in the current legislative procedures to build the grid [4,7]. Nevertheless, this engagement is not always considered sufficient or appropriate [29,13,7]. More precisely stakeholder engagement is often reduced to one-way information activities that do not serve the purposes of participation such as enhancing the buying in of heterogeneous stakeholders’ perspectives or addressing conflicts in an open democratic debate [13,30,11].

Stakeholders have very different reasons to oppose to power lines. These reasons may be individual, for instance related to health risks due to electro-magnetic fields (EMF), visual disruption or property value loss [6]. However, these can also be of social nature, for instance of disruption of sense of place [24], or of political nature, for instance the influence of the national political context or

the trust stakeholders have in existing institutions [6]. Stakeholders may have a very different perception on the issues at stake depending highly on the context of the project, their needs, interests and values [31]. Nevertheless, most of these stakeholder needs are formally taken into account in current planning processes, which are accurately designed [32,33].

While there is a large body of literature that isolates and explains the public’s reasons for opposition and acceptance of transmission lines (see [6]), the same is not true for stakeholder participation in the planning processes. Stakeholder participation is subject to different interpretations and academics frame it in different ways. Some describe the attributes that define stakeholder participation [21,34–36] and propose outcome evaluation criteria. Other scholars focus on the aims of participation and maintain that participation should reach certain social, democratic or interactional goals [37–40]. The gaps in the literature and research on participatory processes are numerous. So far, little attention has been devoted, for instance to the comparison of methodological approaches used to engage with stakeholders; the methods and tools to co-produce knowledge that is useful and usable to inform decisions; the relationship between process and outcome; the evaluation of the quality of participation [20,40]. In this paper we focus on a research gap that is particularly relevant for stakeholder participation in power line planning processes, i.e. their level of empowerment and its evaluation methods.

Taking stakeholder empowerment as a criterion for classifying stakeholder engagement practices, Arnstein [18] developed a ladder with eight rungs, from (citizen) manipulation to citizen control, divided in three groups: nonparticipation, degrees of tokenism and degrees of citizen power. Although most scholars use the word ‘participation’ as a generic term for stakeholder involvement, Arnstein maintains that the word participation can be used only if stakeholders have a real say, thus power, in the process. Nevertheless, the empowerment levels of stakeholders in a process, although mostly not at the highest rungs as described by Arnstein, can still be evaluated. Therefore, an empowerment scale is appropriated to evaluate the way stakeholders are embedded in a process, in our case power line planning.

While in the case of planning processes for power lines, the procedures are often described accurately in the regulation [32,41], it is possible to evaluate the extent to which the stakeholders are empowered in the process. Without going into detail on the intrinsic nature of the power relation between actors involved in the process [42,43], the way stakeholders are formally embedded in the planning process makes it possible to use a relatively simple empowerment scale like the one formulated by Arnstein [18]. For the purpose of this paper, participation and empowerment of stakeholder starts as soon as stakeholders are engaged in the process. Komendantova et al. [15] already used the scale provided by Arnstein [18] to evaluate stakeholder engagement in power line planning. However, in their research, the authors [18] only focused on new participatory practices of some TSOs across Europe and did not focus on the regular planning processes. This leaves a gap that we aim to address in this paper through an evaluation of the empowerment of stakeholder as a result of the formal process carried out for power line planning.

Drawing on the seminal work of Arnstein’s ladder of citizen participation (1969), several scholars developed other scales of stakeholder empowerment. Instead of eight rungs, Lüttringhaus [19] and Rau et al. [20] described a simpler scale with a split between the process owner and the participants where interactions can be classified in four main levels (see Fig. 1): i. *information*: stakeholders only receive information provided by the process owner; ii. *consultation*: stakeholders’ perspectives are elicited by the process owner; iii. *cooperation*: stakeholders’ perspectives are explicitly taken into account and decisions are co-produced with the pro-

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