**Project no. 608472**

# INSPIRE-Grid

IMPROVED AND ENHANCED STAKEHOLDERS PARTICIPATION IN REINFORCEMENT OF ELECTRICITY GRID

**Instrument**: Collaborative project
**Thematic priority**: ENERGY.2013.7.2.4 – Ensuring stakeholder support for future grid infrastructures
**Start date of project**: 01 October 2013
**Duration**: 40 months

**D5.4**

IMPROVED THEORETICAL FRAMEWORK

Revision: 2.0

**Submission date: 2017-01-02**

Potsdam Institute for Climate Impact Research (PIK) (6)

| Dissemination Level | | |
|---|---|---|
| PU | Public | X |
| PP | Restricted to other programme participants (including the Commission Services) | |
| RE | Restricted to a group specified by the consortium (including the Commission Services) | |
| CO | Confidential , only for members of the consortium (including the Commission Services) | |

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| Status of deliverable | | |
|---|---|---|
| **Action** | **By** | **Date** |
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| Approved (GC) | Stefano Maran, RSE | 20-12-2016 |

| Abstract |
|---|
| This deliverable represents the improved version of the theoretical framework developed in Deliverable 5.1. Both frameworks are seen as complementary. Here we want to gain a better understanding of the role of trust and social capital in transmission grid planning. We identify three major dimensions of trust: trust in institutions, interpersonal trust and a general trust in society. We comprehensively describe how these dimensions work in the context of grid extension, taking into account political, social and cultural aspects. Furthermore we shed some light on the questions how networks, common values, linkages, experiences and other social capital elements influence the stakeholder engagement process. We also identify different understandings on the formal and informal aspects of participation and we indicate how the integration of these views can be a task for investigation in the future. |
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**"Version history"** that will become **"Revision history"** when the final **"version"** is converted into .pdf format and submitted to the European Commission.

| Date | Version | Author(s) | Comments |
|---|---|---|---|
| 8.12.2016 | 0.1 | Ceglarz | Initial draft |

| | | | |
|---|---|---|---|
| 9.12.2016 | 0.3 | Beneking, Ellenbeck | Revised draft |
| 12.12.2016 | 0.5 | Ceglarz | Second revision |
| 13.12.2016 | 0.7 | Beneking, Ellenbeck | Internal revision |
| 20.12.2016 | 1.0 | Maran, Späth | General comments to the deliverable |
| 23. 12. 2016 | 2.0 | Ceglarz, Beneking, Ellenbeck, Battaglini | Final version |

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EMF        Electromagnetic fields

GHG        Greenhouse gases

NGO        Non-governmental organisation

RES        Renewable energy sources

TSO        Transmission System Operator

WP        Work package

# EXECUTIVE SUMMARY

This deliverable presents an improved version of the theoretical framework outlined in Deliverable 5.1. Both deliverables have the goal of improving the understanding of actors involved in participation and engagement processes as part of power grid infrastructure planning. It should be noted that both frameworks developed in WP5 are not exclusive – they are complementary to each other.

Results presented here are based on: an extensive literature review and the outcome of the implementation of three INSPIRE-Grid case studies (WP6) in which we gathered data and findings generated throughout the interaction with stakeholders. Additionally, we incorporated insights formulated in WP2.

Deliverable 5.4 focuses on specific elements that have not been addressed in the previous stakeholder attitude framework, namely trust, its dimensions and social capital. Before describing these new elements we draw on the difference between the terms "acceptance" and "acceptability". Whereas acceptance can be understood as a form of behavior or reaction to an object or technology that already exists (evaluation ex-post), acceptability represents an attitude towards a given issue before its implementation (evaluation ex-ante). Since INSPIRE-Grid deals to a large extent with stakeholder engagement and involvement in the grid development process before the construction phase, in this deliverable we adopt this distinction and concentrate on the attitude dimension.

The first new factor we add to the revised stakeholder attitude framework is trust. It is widely acknowledged that trust is a necessary component for fostering acceptability. But how trust works on the acceptability-side in power grid planning is not fully understood. We distinguish three forms of trust: general trust in society, trust in public institutions and/or in government and interpersonal trust. General trust in society is seen to be crucial especially for the willingness of people affected by a project to support the idea of the "public good" – understood as wealth, security of electricity supply or climate protection. The subjective importance of the "public good" increases the motivation of stakeholders to desist from their own interests in the name of the collective interest. Institutional trust is needed to lower conflicts in the early phases of the projects. When stakeholders have the impression the regulator and the TSO are legitimized by democratic control and are acting for the public good or there are sufficient democratic possibilities to influence the direction of energy policy, the engagement process for a specific project is less likely to become an arena for competing visions of the energy system. However, the most important form of trust in the grid planning context is interpersonal trust, developed mainly between the project manager and stakeholders. We found out that if stakeholders do not have a huge trust in institutions or general trust in society, a trustful relationship with the project manager can partially (but of course not necessarily) compensate it.

Additionally, we discuss the concept of social capital as a frame to better understand existing networks of relationships around stakeholder engagement processes in grid development, with trust

as an important pillar. The careful analysis of such relations in the affected communities and their links to different levels of governance, may unveil different concerns, needs and values. It can be helpful in foreseeing potential conflictual situations or the mobilization capacity at the local level. And a properly conducted engagement process (see Deliverable 5.2) may also contribute to the development of higher social capital stocks.

Finally, we present a first idea for theoretically structuring formal and informal aspects of stakeholder engagement. The common differentiation (*narrow view*) defines the formal participation process as legally binding measures, which encompass the planning and permitting procedures. Through the narrow view the informal participation is understood as any other participation framework or tools, which are not legally binding in the process. The *broad view* takes a different perspective. From this perspective formal participation includes aspects of all official rules and roles that are inherent to a participation process, no matter whether it is a legally binding and a regulated process or any other form of public participation (bus tours, field visits, world café etc.) and independently from the stage at which the project is in. Informal participation comprises aspects existing outside of organizational, formalized and institutionalized contexts and structures (like e.g. trust), which exist at three levels at the same time: interpersonal; social; and as being reflected in interactions with public institutions.

This Deliverable puts attention to often underestimated "soft elements" of stakeholder engagement in grid extension projects. We propose an approach to observe these elements, as they are very important for the functioning of the participation process. Considerations presented in this document will be used as a base for the preparation of the Deliverable 5.3 "Final handbook of guidelines".

# 1    INTRODUCTION

The basic assumption underpinning the INSPIRE-Grid project was that there exist a number of reasons for public opposition to the development of new energy infrastructure, namely the new transmission power lines. Such reasons include: i) the lack of trustworthiness in the relationships between Transmission System Operators (TSOs), other stakeholders and the general public; ii) the difficulty in comparing the benefits of new energy infrastructure, which are typically at a national or global level, with the impacts, which are mostly felt at the local level; iii) the perception that stakeholder concerns are often neglected by TSOs; iv) the lack of tools to facilitate the stakeholder engagement participation process; and v) the fragility, or the complexity, of the participatory processes itself. Within the INSPIRE-Grid project, Work Package 5 (WP5) was designed to analyse and enhance the stakeholder engagement and participation process and thus addressed items (i), (iii) and (iv) in the above list. One of first tasks of this WP was to develop a theoretical framework to improve the understanding of actors involved in the participation and engagement process for new transmission line development. Such conceptual work was completed in the Deliverable 5.1, which concentrated on the different meanings stakeholders attribute to the same issue throughout participation. The starting point for development of that theoretical framework was the notion that actors are continuously engaged in sense-making of a specific situation by subjectively interpreting the data available to them, what is influenced to a large extent by individual values and beliefs they present.

The goal of this deliverable is similar as of Deliverable 5.1 – it should serve to improve the understanding of actors involved in participation and engagement processes. Results presented here are based on: the extensive literature review, the outcome of the implementation of three INSPIRE-Grid case studies (WP6) in which we gathered data and findings generated throughout the interaction with stakeholders. Additionally, it also incorporates insights formulated in the WP2. The starting point here is akin as in Deliverable 5.1 (sense-making of a specific situation), what constituted the foundation for the development of these conceptual considerations. Thus, Deliverable 5.4 presents the improved theoretical stakeholders' attitude framework, which focuses on specific selected elements that have not been addressed in the previous work, namely trust, its dimensions and social capital.

To understand actors involved in participation and engagement processes it is important to know the chain starting with their values and then leading to the (potential) acceptance of the new transmission lines. One must be aware that values are not the only determinants influencing attitudes. Therefore, this theoretical framework offers a more comprehensive analysis of stakeholders' attitudes and trust. Moreover, it proposes a distinction between different potential attitudes towards grid extension, which are very often used interchangeably in the literature to describe the same response. It is also the first attempt to order different responses and behaviors, which can occur in the context of the new power lines development or grid extensions. It should be noted that both frameworks developed in WP5 are not exclusive – they are complementary to each other.

This deliverable is structured as followed: after the introduction, first we will summarize the findings of Deliverable 5.1, which proposed a generic scheme how values become attitudes and introduced a stakeholder attitude framework that was explained with help of two example project typologies. Second, we will amend and differentiate this generic scheme with findings from the literature to arrive at a better understanding of the mechanisms that determine positive or negative responses of stakeholders to new grid infrastructure, before presenting a simplified version that concentrates only on the factors influencing attitudes. Here, insights from the fieldwork in the three case studies (WP6) led us to introduce trust as a new factor in the scheme, which will be discussed in depth in chapter number four. In subsequent chapter we propose the concept of social capital as a frame to better understand networks of relationships that exist around stakeholder engagement processes in grid development, where trust plays a very important role. Finally, in our outlook in chapter 6, we will present first ideas for theoretically structuring formal and informal aspects of stakeholder engagement and, related to that, identify further research needs.

# 2 BACKGROUND

In order to follow the logic standing behind the improved version of the theoretical framework, it is worth mentioning shortly the construction and the content of Deliverable 5.1, which was used as a basis for this report.

Before presenting the stakeholder attitude framework, Deliverable 5.1 introduced key concepts (values, beliefs and attitudes) used for understanding stakeholders' responses towards new transmission power lines and grid extension projects. According to this work, values can be thought of as being abstract, moral principles that give meaning to behaviour and that can be applied to many different situations. Values incorporate deeper concerns about what people think is important and unlike needs, they are less biological and more culturally prescribed. Needs can be derived from concerns, however there is not always such a direct link between needs and concerns and they may influence each other as well (Deliverable 2.1). Beliefs refer to how people perceive the world as it is. When combined, values and beliefs can be thought of as creating an *evaluative belief*, which is understood as a belief that one thing is better than something else (e.g. renewable energy is better than non-renewable energy). Values, beliefs and evaluative beliefs combine to form attitudes, which themselves relate to attitude objects (e.g. a new transmission line or a national energy policy) (Deliverable 5.1). All above mentioned categories are also presented in the glossary of INSPIRE-Grid key concepts and terms (Deliverable 6.1). The relation between these four concepts is schematically shown in the figure below, using the example of the health of the environment as a starting point-value.

| Attitude | Support the development of new transmission lines to allow more renewable energy on the power grid. | |
|---|---|---|
| Evaluative belief | Renewable energy is better for the environment than non-renewable energy. | |
| Beliefs | With new transmission, the amount of renewable energy in the power grid can be increased. | Without new transmission, non-renewable energy from fossil fuels will continue to dominate the power grid. |
| Value | Health of the environment. | |

**Table 1: Vertical structure of a hypothetical attitude toward grid expansion (Deliverable 5.1, p.11)**

Ultimately, Deliverable 5.1 points to behaviour as action that manifests different attitudes. Understanding attitudes can help predict behaviour, but one should remember that attitudes do not alone determine behaviour, since situational, context-specific factors and social constraints play an important role as well.

As the next step the framework presents the sets of determinants, which comprise two primary categories: project characteristics and stakeholder characteristics. These sets contain four sub-categories, or groups of factors. The project characteristics enhances: the purpose of the project (e.g. the increase of the renewable energy's share on the grid); the scale of the project (local, national and international); landscape factors (distinction between urban and rural areas); and stakeholders

themselves. The stakeholders characteristics distinguishes: the past local experience (to which extent stakeholders are already familiar with transmission line development); concerns (e.g. electromagnetic radiation, visual impacts, reduction in property prices); the general societal values (e.g. wisdom, true friendship, happiness etc.); and energy specific values (e.g. efficiency, environmental protection, affordability or social justice). The third, cross-cutting, category is related to the temporal characteristics of the project. All variables are in detail discussed in Deliverable 5.1.

In order to demonstrate how the framework could be used to categorise transmission projects, a description of two example project typologies was provided at the end of this deliverable. The table below exposes these examples and integrates all components of the framework to demonstrate how different projects could be analysed.

| Characteristic | Example typology 1 | Example typology 2 |
|---|---|---|
| Purpose | New line to connect new sources of renewable energy | Upgrade to an existing line to increase capacity |
| Scale | Regional | Local |
| Landscape | Rural – likely to include nature reserves, forests, farmland | Urban – residential |
| Stakeholders | TSO<br>National/regional policy makers<br>Regulators<br>Permitting authorities<br>Local elected officials<br>Environmental NGOs<br>Power producer<br>Adjacent rural communities<br>Land owners<br>Land users<br>Local citizens' initiatives | TSO<br>National/regional policy makers<br>Regulators<br>Permitting authorities<br>Local elected officials<br>Adjacent urban communities<br>Local citizens' initiatives |
| Past local experience | None | Previous experience with the existing line |
| Concerns | Visual impacts<br>Environmental impacts | Visual impacts<br>Health impacts – EMF<br>Property values |
| Relevant societal values | Happiness<br>Equality<br>Freedom<br>National security<br>A world of beauty | Happiness<br>Equality<br>Freedom<br>Family security<br>A world of beauty<br>A comfortable life |
| Relevant energy system values | Availability and affordability<br>Autonomy and freedom<br>Social justice<br>Fairness, honesty and transparency<br>Long-term trajectories<br>Improvement and quality<br>Reliability<br>Reduced use of fossil fuels<br>Environmental protection<br>Nature and naturalness | Availability and affordability<br>Autonomy and freedom<br>Social justice<br>Fairness, honesty and transparency<br>Long-term trajectories<br>Improvement and quality<br>Reliability<br>Safety |

**Table 2: Example project typologies (Deliverable 5.1)**

This short summary gives an overview of what has been already discussed in the INSPIRE-Grid theoretical framework. Altogether it aimed to assist in the development of a more effective engagement process, which would better address stakeholder needs and concerns. However, this framework rather has a descriptive character and using it during the interaction with stakeholders and case studies implementation revealed that it is insufficient for understanding the stakeholders' attitude towards new transmission power lines. Therefore, the research approach was changed and the starting point of the improved theoretical framework has been shifted from "acceptance" to "acceptability", as a desired, potential attitude towards the extension of the grid. These considerations will be presented in following chapters.

# 3    FRAMING OF THEORETICAL INSIGHTS

In recent years the phenomenon of the public responses to the new energy infrastructure has been an area of extensive research and it has been tackled from many different perspectives, like: socio-psychological aspects of affected citizens, justice issues, landscape issues or images, visualizations, understandings and associations of the energy infrastructure (Batel and Devine-Wright 2014; Cain and Nelson 2013; Cotton and Devine-Wright 2013; Devine-Wright 2009; 2012; Devine-Wright and Devine-Wright 2009; Gross 2007; Keir et al. 2014; Soini et al. 2011; Walker et al. 2010; Wolsink 2007). Among this literature the issue of (public) acceptance has gained special attention (Cowell 2010; Friedl and Reichl 2016; Huijts et al. 2012; Rau et al. 2012; Sovacool and Ratan 2012; Wolsink 2012; Wüstenhagen et al. 2007; Zoellner et al. 2008). Despite concentrating on different aspects (like these listed above), scholars usually aimed at understanding why there is a lack of public acceptance for energy infrastructure. Yet, some of them have noticed that actually much of the work discussing this issue, deals with an unspecified definition of what acceptance is, how to compare it among studies, how to distinguish it from other responses (like for example support) and how it should be measured (Aas et al. 2014; Batel et al. 2013; Devine-Wright 2008; Huijts et al. 2012a; 2012b).

All these questions would go far beyond the scope of this deliverable. Here the aim is to look from an alternative perspective on the "soft factors" related to stakeholder engagement, understood here as preconditions of stakeholders' attitudes towards grid extension projects, and potentially leading to acceptance as a "desired" outcome of the stakeholders' engagement process. Some of these soft factors, identified as values (determined by needs and concerns), distributive justice and procedural justice have been already addressed in other parts of the INSPIRE-Grid project (WP2 and WP5). However, in our context trust and its dimensions as well as social capital have not been discussed in a comprehensive manner. In order to understand their role we want to provide a conceptual understanding of how the abovementioned "soft elements" interplay first and then determine attitudes of stakeholders engaged in the participation process.

Batel et al. (2013) provide a useful distinction between two terms interchangeably used in the literature dedicated to public responses towards energy infrastructure, namely between "acceptance" and "support" (see also Aas et al. 2014). According to Batel et al. (2013) the term "acceptance" can be understood as a state regarded as proper, normal or inevitable. It implies a general assumption that even if something is not ideal, it is probably the best compromise available. Although they argue that "support" is more action-oriented than "acceptance", at the same time they refer to the definition that "acceptance" means the act of accepting, so something which is action-oriented as well (ibid.: 2). Huijts et al. (2012a, 2012b) clearly state that "acceptance" is the behavior in the reaction to the technology, whereas the equivalent attitude towards the technology is called the "acceptability". This is in line with the definition of an attitude presented in Deliverable 5.1, saying that attitudes are always associated with an object (e.g. a transmission line). "Acceptability" is related to the process of making all the best acceptable to the greatest number of people (Twitchen 2014). Moreover, "acceptability" refers to a given issue before its implementation

(evaluation ex-ante), whereas "acceptance" refers to a response on this issue after it has been accomplished (evaluation ex-post) (Cowell et al. 2011; Schuitema et al. 2010). Since INSPIRE-Grid deals to a larger extent with the process of stakeholders' engagement and involvement, in this deliverable we adopt the clear distinction between "acceptability" and "acceptance" as, respectively, attitude and behavior. Regarding the notion of "support", we remain in the line of Deliverable 5.1 presenting it also as an attitude (unlike as e.g. Batel et al. 2013 and Rau et al. 2012). Respectively, an adequate behavior to an attitude is the promotion (of the use of a technology) (Huijts et al. 2012a: 526). In addition, "support" is understood as a stronger expression than "acceptability". These considerations combined with the Figure 1 can be illustrated in a following chain:
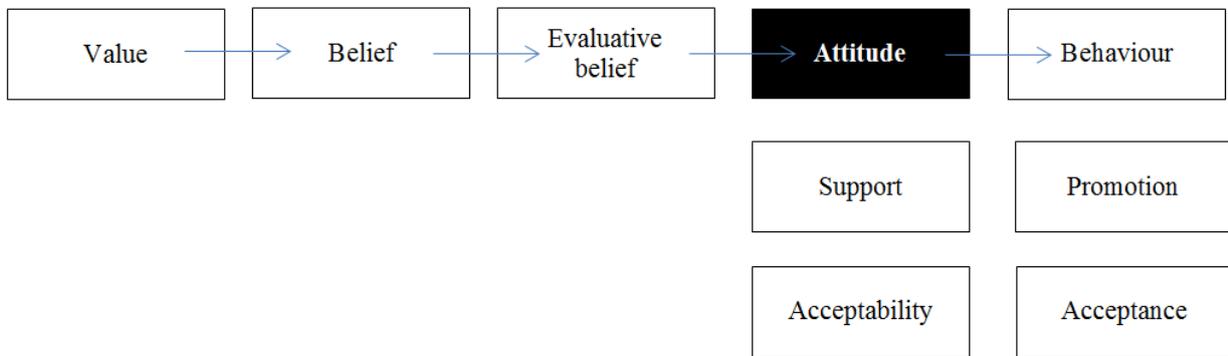


**Figure 1: The logic chain explaining the relation between values and behaviour**

The introduced model is an initial version of a theoretical framework explaining the relation between values, attitudes and behaviours that stakeholders present towards new transmission lines. In this context, it is important to underline that values themselves are influenced by needs and concerns that stakeholders have (Deliverable 5.1). They represent broad plethora of issues, which can be assigned to broader categories, like for example social, ecological or political aspects. The interrelation between them is complex: sometimes needs can be derived directly from concerns, but this is not always the case (for more detailed discussion about needs and concerns see Deliverable 2.1). Nevertheless they influence stakeholders' values, which afterwards have impact on their beliefs and attitudes.

Moreover, very important categories which complete the theoretical framework are the dimensions of appraisal (here understood also as the evaluative belief) and (re)action (see also Deliverable 2.1). Dimensions of the former can range from positive to negative and the latter from passivity to activity. Basing on the conceptual work present in Rau et al. (2012) and Schweizer-Ries (2008) one can distuinguish different levels of attitudes and behaviours depending on the combination of different degrees of the appraisal and the (re)action. For example: a positive appraisal combined with little activity can lead to approval; a negative appraisal combined with little activity can lead to rejection, and a negative appraisal combined with a lot of activity can lead to resistance. These combinations are further complemented with terms which have been considered in the literature as

different responses towards the energy infrastructure (in both categories: attitudes and behaviours) (see for example: Devine-Wright 2008; Huijts et al. 2012a; 2012b; Wüstenhagen et al. 2007). These responses are: attitudes – adoption, tolerance, objection, opposition, and behaviours – using, endorsement, indifference, connivance, ignorance, disuse and protests. We did not follow strictly the same definitions present in the current research[1], especially in the case where there is no agreement between scholars which responses can be understood only as attitude or only as behavior. Sometimes, some of these responses are even presented as different modes of acceptance itself (see for example Schweizer-Ries 2008). When there are only few clear statements what can be defined explicitly (like described differences between "acceptance", "acceptability" and "support"), the rest depends to a large extent on individual interpretations. Therefore, we wanted to propose a first attempt of ordering these responses according to the dimensions of the evaluative belief and the (re)action[2]. Additionally, it is important to note, that attitude itself does not lead to a certain behavior directly – before any action will be taken an intention to behave must occur (Huijts et al. 2012a; 2012b). Even if a stakeholder strongly supports a given energy infrastructure, the intention to behave must take place, before the same stakeholder would actively promote this object. This discrepancy has been addressed in investigations on the local-national gap (for example a strong support for renewable energy technologies at the general level, but a lack of such support, reinforced by opposition at the local level) (see also Batel and Devine-Wright 2015; Bell et a. 2005; 2013). All these considerations complementing the theoretical framework are reflected in the figure below:

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[1] For example, Huijts et al. (2012a) and Schweizer-Ries (2008) argue that tolerance is an effect of a positive appraisal and a passive reaction. We suggest that in comparison to all these responses, tolerance results from a combination of neutral appraisal and neutral reaction.

[2] However, keeping in mind the need to address the conceptual challenge of defining clearly all of these responses in the future research.
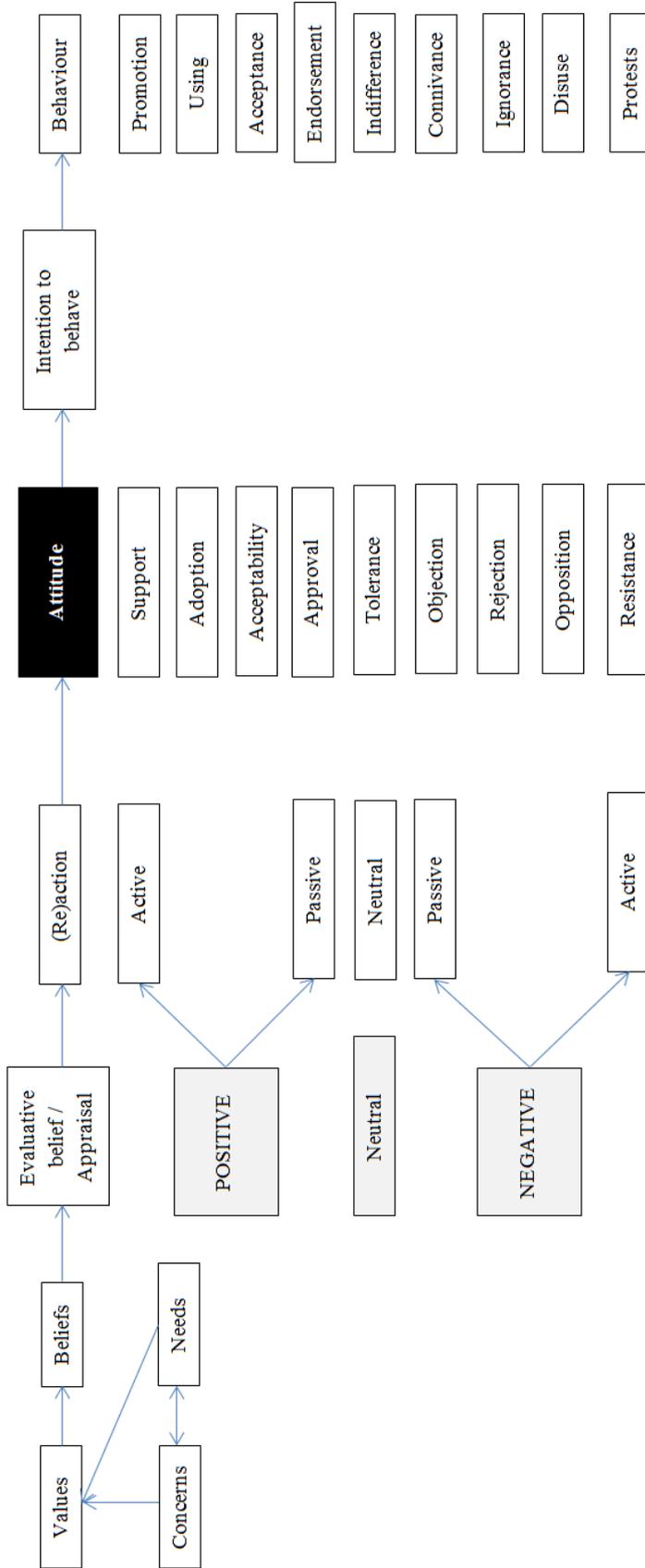
**Figure 2:** The theoretical framework explaining different attitudes towards transmission lines and an adequate behaviour.

One must remember that there are more factors determining different attitudes towards transmission lines and grid extenstion. Huijts et al. (2012a) developed a theoretical framework explaining the acceptance of the new technology, where the acceptance itself is placed at the end of the chain. According to them, next to the attitude, also social and personal norms, as well as perceived behavioral control influence the intention to behave (accept) a new technology. From the point of view of this deliverable it is more important to look what, next to values (as presented in the text), determines attitudes. The authors list respectively: distributive fairness (or: distributive justice), porcedural fairness (or: procedural justice) and perceived benefits, perceived risks, perceived costs, negative affect and positive affect, where all five last aspects are influenced by trust (Huijts et al. 2012a: 530; see also Deliverable 2.3: 8). The combination of elements considered in this work with the developed framework so far leads to the following visualization of factors determining different attitudes and resulting in different behaviours.
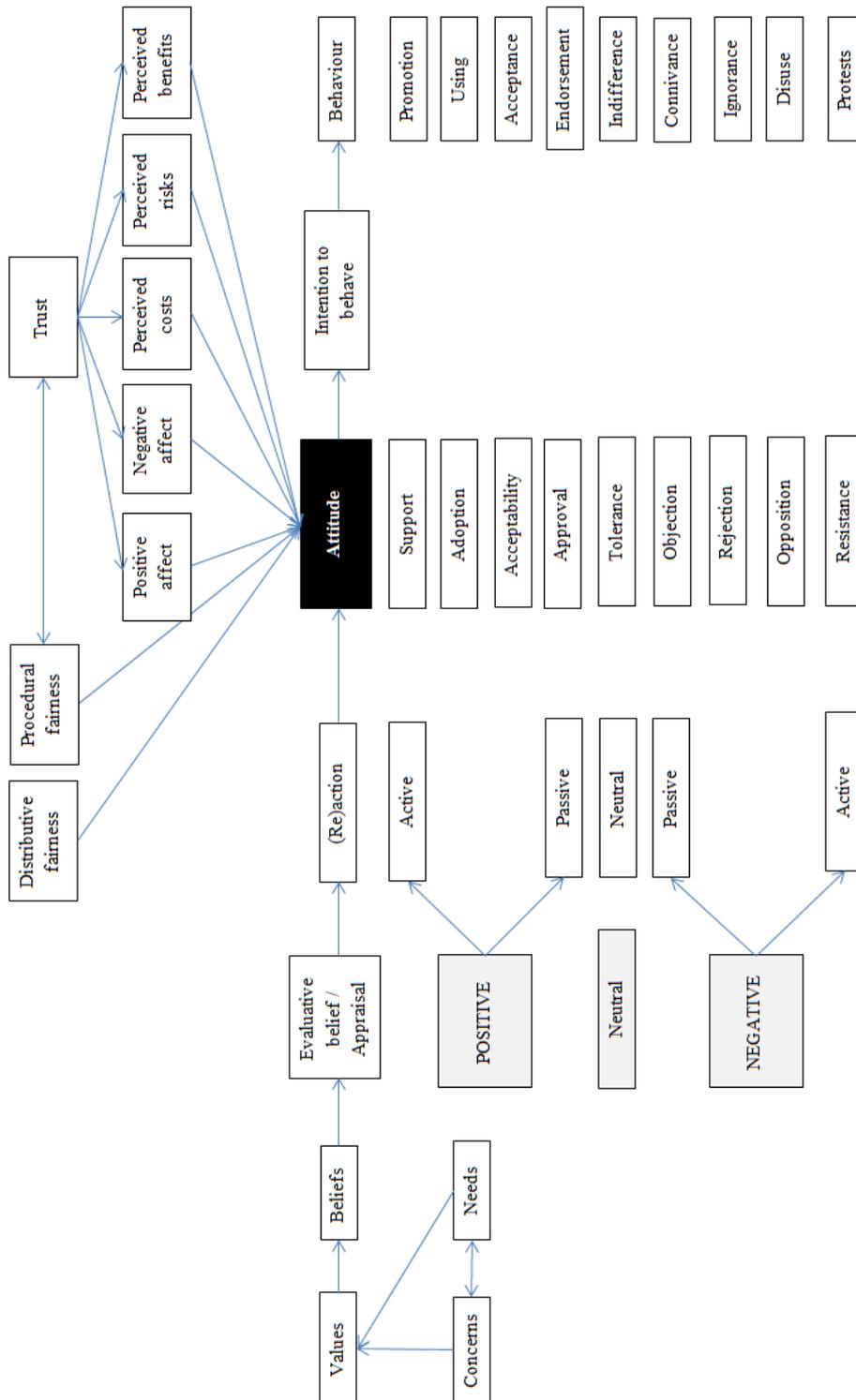
**Figure 3: A schematic representation of factors determining attitudes towards new power lines.**

If we want to simplify this theoretical framework and look closer only on the initial factors which determine attitudes towards grid extension projects, we see that there are four main components, which are crucial in the formulation of a specific response: values (influenced by concerns and needs), distributive fairness, procedural fairness and trust, whereas the last two elements are strongly interrelating with each other. In the work conducted so far in INSPIRE-Grid, values, concerns, needs, distributive justice and procedural justice have been addressed comprehensively in WP2 and WP5. However, the issue of trust has not been acknowledged sufficiently, therefore the improved version of the stakeholders' attitude framework accentuates its focus on this aspect. We will not address perceived benefits, perceived risks, perceived costs, negative affect and positive affect, because these elements are sufficiently discussed by Huijts et al. (2012a) and they are determined by trust. Moreover, in this deliverable we want to concentrate specifically on this initial factor, which then lead to specific attitudes. The extensive literature review on the acceptance and acceptability of the new technologies, development of the energy infrastructure (renewables as well as power lines), participation processes, management of resources, land use planning, governance and organizational and administrational structures enabled us to identify trust as a common determinant influencing stakeholders' responses towards involvement and engagement in the decision-making process, what correlates with responses towards new transmission power lines. In the following sections we will discuss trust and its three dimensions: interpersonal trust, generalized (social) trust and trust in public institutions. Moreover, we will also dedicate a separate section to the concept of social capital in the context of power line planning processes. It can be seen as an overarching category, in which stakeholders' engagement and responses towards infrastructural projects are structured. The simplified version of the theoretical framework is presented below.
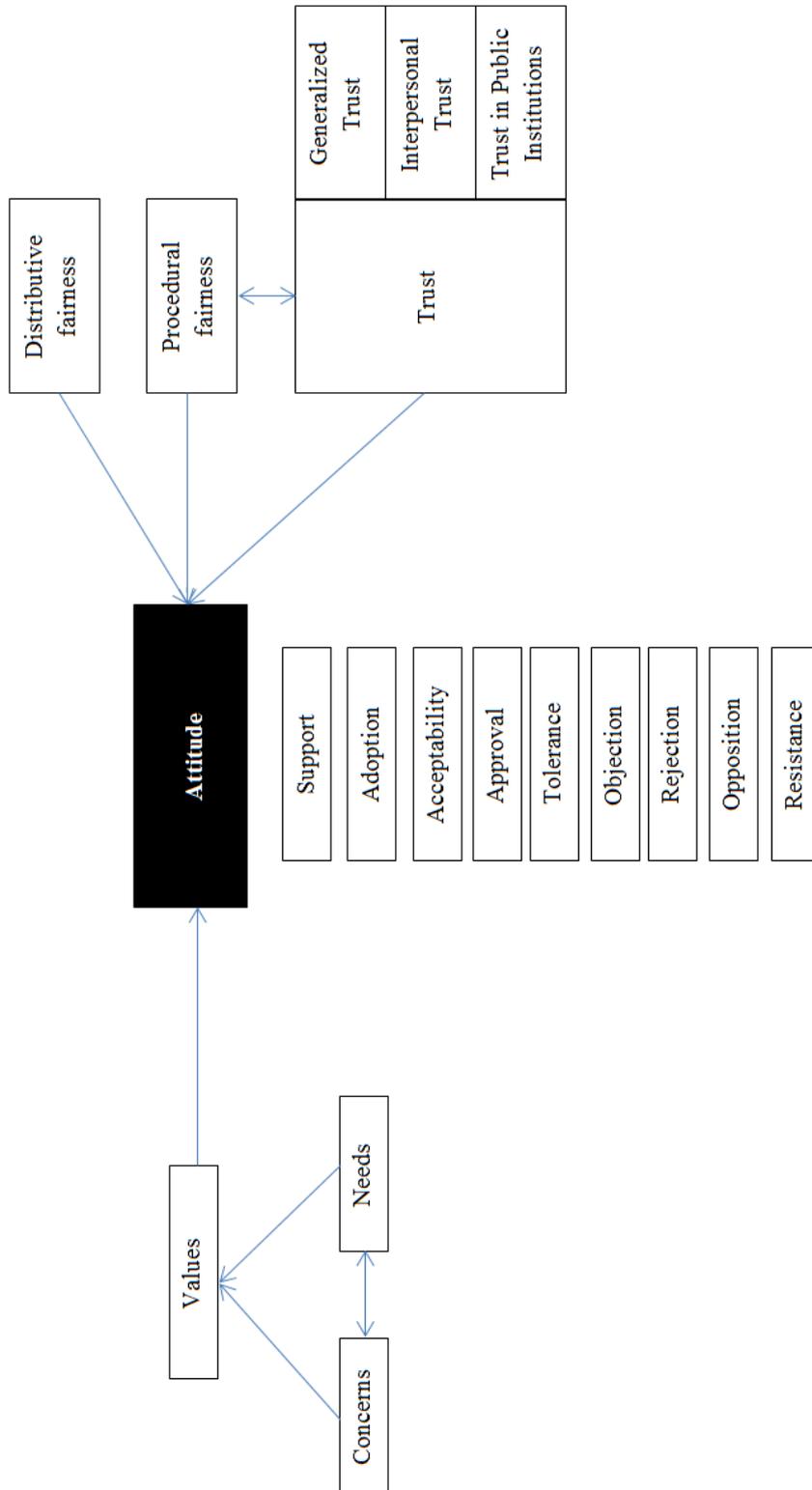
**Figure 4: The simplified version of the stakeholders' attitude framework showing the initial determinants of attitudes towards new power lines.**

# 4    TRUST

It is broadly acknowledged that in the modern world for solving environmental, technological and social problems, as well as for resource management, economic cooperation or good governance, many actors from different networks, scales and levels must participate and cooperate. In such complex settings in order to achieve satisfying outcomes trust is a key (i.e. Batt 2008; Berardo 2009; Börzel 1997; Cuppen 2012; Devine-Wright et al. 2001; Höppner 2009; Klijn et al. 2010; Lowndes and Wilson 2001; Lyon 2000; Ostrom 2010a; 2010b; Poortinga and Pidgeon 2005; Rydin 2006; Rydin and Holman 2004; Teles 2012).

Many empirical studies found that trust is a pivotal element for the acceptance of a new technology, as in the case of genetically modified food (Poortinga and Pidgeon 2005) or EMF resulting from mobile phones' base stations (Siegrist et al. 2003), to list only two of them (see also Huijts el al. 2012a). In a similar vein many authors working on the development of energy infrastructure mention trust as a necessary component for fostering acceptance (Aas et al. 2014; Aitken 2010; Bell et al. 2005; Cain and Nelson 2013; Cotton and Devine-Wright 2013; Devine-Wright 2012; Devine-Wright and Howes 2010; Elliot and Wadley 2012; Ellis et al. 2007; Friedl and Reichl 2016; Keir et al. 2014; Komendantova et al. 2015; Knudsen et al. 2015; Lienert et al. 2015; Toke et al. 2008; Walker et al. 2010; Wolsink 2012; Wüstenhagen et al. 2007). However, they refer to many different types of trust, which can be related to trust in the relevant company, in a project developer, in other members of the community and/or cooperative and in public authorities responsible for the decision-making process. They do not provide an approach which would structure the understanding of trust in the systematic way and which would clearly state what trust is. Therefore this deliverable aims to bring more clarity into the issue of trust and explain why it is important in the context of grid extension.

Trust is understood as a complex and multidimensional concept (Berardo 2009; Höppner 2009; Laurian 2009; Straten et al. 2002) and there is no ruling agreement how it should be defined and measured (Sharp et al. 2013; Siegrist 2010). Here we adopt the definition of trust proposed by Rousseau et al. (1998: 395) explaining it as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another". Laurian (2009: 371) explains trust with a simple model, where actor A (trustor) assesses subjectively that actor B (trustee) will act as agreed with her/him, under condition that B's behavior affects A and the latter does not have capacities to monitor B. In other words, "trust is a positive expectation of B's competence and willingness to do what A needs" (ibid.). In a similar vein Siegrist et al. (2003: 706) underline "the willingness to make oneself vulnerable to another based on a judgment of similarity of intentions or values", where the basis for such judgment is the assumption that the person to be trusted would act as the trusting person would.

Such explanations place the interpersonal relations between trustor and trustee embedded in a complex network of social relations, norms and values into the centre. This embeddedness is reflected in both actors' open and vulnerable positions, in mutual considering of interests of both sides and in significant reduction of uncertainty and complexity of issues, in regard to which such

interaction takes place (Berardo 2009; Klijn et al. 2010; Laurian 2009; Lyon 2000; Siegrist et al. 2003; Switzer et al. 2013; van Ark and Edelenbos 2005). Trust can be understood as an phenomenon that is elusive, dynamic, mutable, context dependent and responsive to this contextual change (Goudge and Wilson 2005; Höppner 2009; Leach and Sabatier 2005; Tait 2011). Taking into account the broader context and the specificity of a given engagement process is therefore critical when analysing trust.

Moreover, trust reflects few distinct elements. First, it is the rule of reciprocity, characterized by a positive feedback loop: when the trustor trusts the trustee, the latter one is encouraged to be trustworthy (Laurian 2009; Lyon 2000; Ostrom 2010a; Switzer et al. 2013; Teles 2012). Second, trust is asymmetrical – generating, building and maintaining trust is a complex, long-term undertaking, but it can be destroyed fast and easily and negative events can have a much stronger impact than positive (Laurian 2009; Lyon 2000; Siegrist et al. 2003; Switzer et al. 2013). Third, it is characterized by a confirmatory tendency, which implies that actors will believe more information that is in line with their prior beliefs than a contradictory one (Laurian 2009; Switzer et al. 2013). Last not but least, trust is closely related to issues of power relations, uncertainty and risk (Berardo 2009; Hovik et al. 2010; Meadowcroft 2009; Laurian 2009, Stein and Harper 2003; Tait 2011).

Scholars distinguish and refer to three different dimensions of trust: interpersonal trust (between individuals), generalized (social) trust addressed to a broader society and trust in public institutions/ government (Hardin 1998; Höppner 2009; Klijn et al. 2010; Larzelere and Huston 1980; Laurian 2009; Leach and Sabatier 2005; Marquart-Pyatt and Petrzelka 2009; Miller 1974; Rousseau et al. 1998; Straten et al. 2002; Switzer et al. 2013; Tait 2011). All of them represent distinct features, but at the same time they are characterized by many overlaps and cross-cutting links, therefore it is challenging to find clear border indicators between individual-to-individual trust relationship, individual-to-group trust relationship and to individual-to-institution trust relationship (Hardin 1998; Tait 2011).

In the following sub-sections we will discuss each of the three dimensions of trust and we will show how they are reflected in the transmission lines development context.

## 4.1. Interpersonal Trust

After having analysed the data from the three case studies, we conclude that the most important form of trust in the grid planning context is interpersonal trust, developed mainly between the project manager and the stakeholders engaged in the process. Generally speaking, it develops between individuals, very often through firsthand contact in which they get to know each other. This form of trust holds emotional features as loyalty, empathy or concern (Tait 2011).

Even the best suited and designed decision-making processes, using the most sophisticated engagement tools, will be not successful if they will be not accompanied by an appropriate behavior of a person perceived as the owner of an involvement process (see also Lowndes et al. 2006). Many

of studies in the past have acknowledged the crucial role of certain individuals in collaborative planning and participatory decision-making processes, which have been responsible for interpersonal trust building and its maintenance with engaged stakeholders (Höppner 2009; Klijn et al. 2010; Tait 2011; Van Ark and Edelenbos 2005). Ostrom (2000) refers to them as *public entrepreneurs*, whereas Reed (2008) calls them *facilitators*. During the process they work as "catalyst" and "engine" for the trust creation (Switzer et al. 2013; van Ark and Edelenbos 2005). They can be found among civil servants, planning officers, public authorities or coming from outside as independent persons. However in the transmission line development context they are mostly project managers.

Their tasks related to trust-building activities start from the very beginning of the engagement process, where they need to identify all possible affected stakeholders and, accordingly, their issues, beliefs and concerns in the multi-level (supranational, national, regional, local) contexts (Deliverable 2.1; Raven et al. 2009). The engagement process conducted by them should fulfill the principle of inclusiveness (Deliverable 5.2), which would also deal with minimizing the feeling of disproportionate positions between stakeholders and a TSO, potentially leading even to non-participation (Haß et al. 2014). In case of any dispute or the conflict between stakeholders project managers can play a role of a mediator (Laurian 2009; Lyon 2000). They are expected to call attention to stakeholders' different perspectives, values and beliefs, what contributes to the creation of an agreement on a shared vision about the project and the process (Laurian 2009; Leach and Sabatier 2005; Reed 2008; Switzer et al. 2013). This task can be challenging since project managers tend to present a different perspective on the decision-making process than affected stakeholders (Keir et al. 2014), what calls for the support of the overall communication, enabling constant (re)interpretation and explanation of discussed issues (Hovik et al. 2010; Switzer et al. 2013).

By high density of interactions with different stakeholders, project managers optimize the functioning of the stakeholders' network and enhance the degree of trust they present to the network (Devine-Wright et al. 2001; van Ark and Edelenbos 2005). Creating trust relationships requires that project managers will not only involve stakeholders, but they will also involve themselves and will be visible, available and accessible for stakeholders (Raven et al. 2009; Reed 2008). As van Ark and Edelenbos (2005: 282) described it in their empirical work "the degree of trust has increased due to (…) strong involvement and his skills in process management". The consistent checking if engaged stakeholders feel respected and as having an appropriate level of control over the final outcome also contributes to trust-building (Leach and Sabatier 2005), as well as ensuring that a body responsible for organizing the decision-making process will act in stakeholders' best interest (Wolsink 2012). A project manager is also a peculiar "bridge", which connects different levels of the decision-making process. This is important in the context of the information flow and mutual understanding and by the fact that sometimes the public available (governmental) information is outdated (Scott and Huq 2014). It might happen that a project manager will need to explain to local citizens details of the European or the national energy policy, justifying the grid extension, at the same time informing the respective decision-makers about the public responses or concerns at the local level.

However, interpersonal trust is a delicate matter. It should not be interpreted as a service mentality to satisfy every possible request from stakeholders (Tait 2011). That could lead to expectations that are not always possible to meet and could create distrust in the end. Also do close interpersonal relations bear the danger of patronage and corruption, when linkages become too strong. Therefore transparent communication and equal standards are mandatory.

During the fieldwork in the two Norwegian case studies it became apparent that stakeholders, who had a negative opinion about the TSO at the beginning of the power line development process, changed their attitude when project managers were able to establish a trustful interpersonal relationship with stakeholders.

*"The initial [attitude] was negative. But as we got older[3] we got more information about it, it was more sensible. And I also think [the project manager] did a good job. I think she came from outside [the TSO]. So she was not part of this old, big [...], [TSO]. And she was very open-minded. I think she wanted to spread information, instead of sitting tight on it."*
(Private stakeholder in the Bamble-Rød case study)

These relationships were based on a transparent and active information policy on the side of the TSO, stakeholder contact on eye-level, listening to stakeholders' needs, openness for compromise, personal communication skills of the project manager, and mutual respect.

**Figure 5: Empirical findings from case studies: Interpersonal trust**

## 4.2 Generalized (Social) Trust

Generalized trust "refers to a person's belief about the character of people in the aggregate" (Larzelere and Huston 1980: 596). It is rooted in interpersonal trust and it is based on personal and other people's experiences in trust situations, as well as on the mass media communication (Straten et al. 2002). Lyon (2000: 664-5) conceptualizes relationships of trust and cooperation in communities as contracts relying on information on reputations, moral norms and sanctions, where the latter include not only the "loss" of trust, but can include also sanctions exacted by formal institutions. In this sense generalized trust is formed on knowledge of social values, norms and ethical and social behavioral codes. Therefore, shared values and norms in the society make individuals more predictable, even when one does not have any specific information or past experience with other actor (Switzer et al. 2013: 1155). Social trust has significant overlaps with

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[3] This expression is written down literally from transcribed interviews and it should be interpreted here as *"once we got further in the process"*.

interpersonal trust, because it determines how individuals react in interpersonal trust situations (Leach and Sabatier 2005; Straten et al. 2002).

No matter how we understand and define community, generalized trust is a substantive element of building qualified social relationships between people, which connect citizens and create the feeling of collectiveness (Walker 2011). Moreover, it enables the creation and maintenance of social bonds and group identity (Laurian 2009). Collective relations of trust reduce transaction costs and the potential risk, because individuals are able to trust society members to act as expected and in consequence, they do not need to invest in controlling others (Klijn et al. 2010; Lyon 2000; Ostrom 2000; van Ark and Edelenbos 2005).

General trust in society is seen to be crucial especially for the willingness of affected people to support the idea of the "public good" (Tait 2011) or the "common good" (Dietz et al. 2003). It can be understood as reflected in many aspects, like wealth, security of electricity supply or climate protection and it is strongly related to the question of the purpose for the power line. That in turn links general trust to trust in public institutions (see the sub-section below). The power line that aims to serve the broader community or society is likely to increase the motivation of stakeholders to desist from own interests in the name of the collective interest.

Moreover, the decision-process itself may generate social trust among stakeholders. Working in a group of people (or a task oriented-team) makes individuals more likely to adopt norms generated by the collectivity than by single individuals (Ostrom 2010b). Effectively engaged stakeholders can learn to trust to one another (among and between many individuals at the same time) and they can constantly monitor their own decisions, what can help avoiding the highest possible number of conflicts and gaining the broadest possible agreement (Ostrom 2010a). It allows to avoid shortages in communication and information flows (Scott and Huq 2014), struggles which are damaging for the community (Gross 2007; Walker et al. 2010) or might be negative for neighbouring communities (Zoellner et al. 2008). The generalized trust is also closely related to the concept of social capital, but this will be emphasized in chapter 5.

In the Norwegian case studies, most stakeholders accepted some personal disadvantages caused by new or upgraded power lines as they were perceived to be built for the utility of the whole society.

*"It is impossible not to support it. Because as long as we need electricity we need lines."*
(NGO representative, Aurland-Sogndal case study)

*"But then again we want to have the utility of enough electricity, so I think that's something you have to accept and minimize the damage."*
(Private stakeholder, Bamble-Rød case study)

*"Well, of course we would prefer not to have it [the power line] but as an association we see the necessity to have it and as an association we can't say we don't want to have it and the neighbor can take it, so we saw the need for it."*
(NGO representative, Bamble-Rød case study)

The capability of affected people to sacrifice their own particular interests, or ability to accept what not the best line alternative for them, is - not very surprising - high in a country like Norway[4], where community, equality and civic participation are highly valued (OECD 2016). This shared value of community by individuals and groups, and owners of different functions could be described as a pre-existent form of trust in society that facilitated establishing trustful relationships between stakeholders and the project manager and the TSO in general.

In contrast, the findings from the French case study showed that stakeholders involved in the decision-making process identify the lack of strong social bonds as a big obstacle in successful organization of the participation processes regarding infrastructural investments.

*"I think we have some of trouble in France ... to change our ways of seeing things and take more account of what is around us. I think we are a people who are relatively self-centered. Less than the Nordic countries or places like that."*
(NGO representative, Cergy-Persan case study)

**Figure 6: Empirical findings from case studies: General trust**

## 4.3 Trust in Public Institutions

Laurian (2009) argues that, similarly as in case of generalized trust, shared values are the ground to trust in public institutions and governments. This is in line with Miller's (1974: 989) definition of trust in government presenting it as "the belief that the government is operating according to one's

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[4] It should be noted that Norway remains a peculiar country also in the context of social attitudes towards spatial planning, landscape, environment and land use change (see also: Daugstad 2008; Vorkinn and Riese 2001).

normative expectations of how government should function". Despite these similarities, trust in government is a different kind of trust than interpersonal and generalized trust (Hardin 1998). Since public institutions introduce "the rules of the game", trust in them influences significantly the perceived legitimacy of these institutions (Hough et al. 2010; Höppner 2009; Switzer et al. 2013).

Especially at the local level, where the project is realized, trust relations between the public officials and other affected stakeholders are important and they work as a "self-reinforcing cycle". On the one hand the staff of public institutions needs to work in citizens' interest to gain their trust (Hardin 1998) and on the other hand the higher stocks of trust in public officials have a positive influence on the improvement of the administrational units' functioning (Teles 2012). Moreover, since local civil servants present higher levels of trust to the project partners on the ground in comparison to civil servants at higher levels of governance (Klijn et al. 2010), do trustworthy relations make stakeholders more likely to engage in local issues (Marquart-Pyatt and Petrzelka 2009). Such involvement, in turn, develops strong relations between stakeholders and public institutions and its leaders (Teles 2012). Local civil servants and authorities, however, do not start from a doomed position, because there exists a certain level of trust between them and other stakeholders (Switzer et al. 2013). Trust given to local public institutions can also reduce the feeling that local civil servants and authorities work has a technical and bureaucratic character and it is more beneficial for powerful groups (Tait 2011).

The trust relationship to public institutions at the local level can be responsive to trust in public institutions at the higher levels of governance, thus they may represent a wider social and political context (Tait 2011). For example, trust in governments and its institutions influences the acceptance for the implementation of environmental projects and policies (Kollman and Reichl 2015). This aspect is visible in studies on the conflicts over new energy infrastructure in Germany. These studies demonstrate that the national level's contradictive deliberations about different political energy-system visions create distrust to the government and results in forming opposition at the local level (Neukirch 2015; Richter et al. 2016; Fahrenkrug et al. 2016). In this context government institutions and planning authorities are perceived incoherent in the pursuit of the overreaching goal of the "energy transition" (*Energiewende*), which aims to step out from the electricity production based on nuclear and coal-fired power plants. Instead of that, they are perceived to push for a certain political-ideological concept of an energy system that is partly preserving centralized fossil-fuel structures with the help of new power lines (Neukirch 2015). Of course, it can work also in another direction, where different stakeholders may not support the energy system based on the renewable energy sources (Sovacool and Ratan 2012).

It shows that trust in public institutions responsible for development of the new power lines is needed to lower conflicts about the actual purpose of a project (the need definition), which is the crucial stage of the grid extension planning (Komendantova et al. 2015; Sataøen et al. 2015). Many of the affected stakeholders (mostly citizens) do not have enough capacities to validate the need of such infrastructures, so they have to trust the relevant institution providing data for its justification (Komendantova et al. 2015). The distrust to these institutions, can in consequence raise the issue

about the legitimacy of the general planning process and planning decisions (Tait 2011). This, in consequence, can be later on reflected in the questioned legitimacy of the participation process, and contributing to the lack of acceptability for the new infrastructure. This is closely linked to the discreditation of the overall country's energy policy, for example in which direction it should go (Neukirch 2015) or what are the current energy policy goals, like in Norway[5] (Gullberg 2013; Gullberg et al. 2014). In this case trust in public institutions can reduce tensions resulting from different political energy strategies. It is true especially since it is very challenging to change stakeholders' attitudes, when they initially held some position regarding the energy system (Komendantova et al. 2015; Lienert at al. 2015). Trust in public institutions can also help in minimizing the cognitive dissonance if the globally (or nationally) produced knowledge is confronted with the local experiences (Devine-Wright 2013; Scott and Huq 2014). For example, if a given power line aims to integrate electricity produced from RES what contributes to overall GHG emissions' reduction, it is a result of calculations carried out nationally and coming from national legislation, which additionally is obliged by international agreements (e.g. the Kyoto Protocol). Since most of the impacts of a new power line are visible at the local level, it might raise questions about the relevance of dealing with climate change since its consequences are difficult to detect in the small scale at the local level.

It should therefore also be underlined that trust in public institutions or government is not related only to energy policy and its goals, but it is embedded in a wider context like the politico-administrational regimes (Sataøen et al. 2015), the political culture of a country or the general identification with the democratic system. One of the German studies argues that the current conflicts over the energy infrastructure "possibly represent a contemporary basic phenomenon of the political-legal-societal consensus: it is not understood nor accepted that higher-level political or legal entities can make decisions that are not wanted on the ground (Fahrenkrug et al. 2016: 20)". Rephrasing Ostrom (2010a), it suggests that these are not the types of policies, governance or rules which make a difference, but how these arrangements fit the local conditions and how they are developed and adapted over time. Trust given to public institutions at multiple scales and levels (local, regional, national and even supranational) can influence the legitimacy and fairness stakeholders see in such systems. And locally suitable mechanisms of mutual learning, monitoring and adjustments may lead to trustworthiness of public institutions dispersed in the polycentric and multi-level system (Hovik et al. 2010; Ostrom 2010c).

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[5] Where there is no public consensus on building new power lines, which are perceived to deliver the electricity produced in Norway to other countries in Europe.

From case studies in Norway we can confirm that discussions with stakeholders might be facilitated, when they initially do not have a strong position regarding the energy system and policy. Most interviewed stakeholders had no explicit opinion about the national energy policy and the need for new power lines was hardly questioned. In a few cases there was some light criticism about the extension of water power or the export of electricity to other countries. Overall, we interpret that as quite a strong trust in institutions, supported by the belief that policy makers will act in the best interest of the public.

That also has implications for the theoretical framework developed in Deliverable 5.1. Energy systems values are only relevant for societies or regions where the development of the energy system is a highly politicized or polarized issue (for the example in Germany, France or Poland). In regions where the energy policy is less politicized general social values (like the common good) might prevail and have more explanatory power for the understanding of stakeholders' attitudes. This can be different for different regions or projects of the same country. Also in Norway there were grid development projects in the past that were more contested (see Ruud et al. 2011).

The French case study confirmed the strong relation between the legitimacy of the involvement process and the project itself with trust in public institutions as well. Stakeholders tend to identify the frameworks regulating the participation process with the overall performance of government and policies, which government introduces. On the question, what one stakeholder would change in the context of the grid extension, if he was powerful enough, the answer was:

*"The government. And put people in who are more involved for their people than what there is at the moment, in fact."*
(NGO representative, Cergy-Persan case study)

**Figure 7: Empirical findings from case studies: Trust in public institutions**

# 5    SOCIAL CAPITAL

In the previous section, in the part dedicated to generalized trust, it was mentioned that social trust is also reflected in the concept of social capital. It is an important approach around which energy-related decisions can be built or developed and at the same time it is impacted by them (Whitton et al. 2015; Wolsink 2012), however it has not been sufficiently addressed in the existing literature (see for example Elliot and Wadley 2012). Therefore, we dedicate the following section to this phenomenon as an important pre-existing condition determining the acceptability of the new power lines.

## 5.1    Trust, social capital and institutions

The concept of social capital supports the idea that social bonds and norms are important for people and communities and that social ties make people's lives more productive (Pretty 2003; Putnam 2000). Social capital is a complex, multidimensional concept of an interdisciplinary character with a potential to integrate insights from different social science disciplines (Batt 2008; Putnam 2001; Rydin and Holman 2004). As Lyon (2000: 677) notices, it can be applied as a broader umbrella term that covers a range of processes by which social relations, institutions and relationships are formed. Social capital can be understood as dense networks of relationships between actors based on trust, mutuality and reciprocity (Putnam 2000; Rydin 2006). Especially the first of these elements makes it special in the context of this deliverable, because the trust can be interpreted as probably the most important pillar of the social capital, which serves as a "glue" to the society (Batt 2008; Laurian 2009; Lyon 2000; Marquart-Pyatt and Petrzelka 2009; Putnam 2000). There might be some confusion, whether trust can be presented as social capital's part, or as its close consequence (Putnam 2001). However, this division is not exclusive. Similarly like with the differentiation of clear borders between the trust types, it is challenging to observe where the trust is the precondition of social capital and where it results from it. Yet, both categories are closely interrelated and therefore important for analyzing stakeholders' responses towards grid extension. In the context of participation process in grid extension projects, social capital and its elements can be understood as influencing all dimensions of trust and being present at levels of formal and informal processes.

Scholars widely agree that high rates of social capital are positive for the functioning of a society, however one must remember that it has also its "dark side" (Ostrom 2000; Rydin and Holman 2004), that can for example stimulate barriers for the development of energy infrastructure (Loring 2007; van der Horst and Toke 2010). There is no consensus about the relation between public institutions and social capital. On the one hand some findings in the literature show that public institutions have a limited impact on social capital creation or can even be damaging for it (Lyon 2000; Ostrom 2000; Putnam 2000; 2001). On the other hand it was proven that public institutions at different levels play an important role in building, maintenance and reinforcement of social capital (Devine-Wright et al. 2001; Lowndes and Wilson 2001; Teles 2012). It can generate stable, inclusive institutional structures (Putnam 2000) and strengthen the economic development and the liberal democracy (Fukuyama 2002). Nevertheless, the presence of well-established networks, within or outside public institutions, can positively influence the economic, business and managerial performance (Batt 2008; Lyon 2000) and can enable sustainable resource management (Berardo

2009; Devine-Wright et al. 2001; Klijn et al. 2010; Ostrom 2000; 2010b; Switzer et al. 2013), including the building of new power lines. It can be reflected in the stakeholders' engagement in the decision-making process, where the decision about the involvement can be based on neighborhood ties and social bonds in the community (Ertas 2013; Lewicka 2005), but to some extent also on the concern about the self-wellbeing (Broese van Groenou and Deeg 2010).

Social capital can be a very useful analytical category, but at the same time it suffers from not being defined precisely enough, and from being interpreted differently and individually by scholars. As a consequence it is not only difficult to observe it, but researchers tend to use different operationalisations, approaches, tools and indicators to detect, measure and describe it (cf. Devine-Wright et al. 2001; Geys and Murdoch 2010; Ostrom 2000; Putnam 2000; 2001; Rydin 2006; Woolcock 2001). This can result in weakening its capacity as a theoretical tool (Lyon 2000), but nevertheless one should not resign from using this concept in order to explain social, political and economic phenomena (Batt 2008; Fukuyama 2002; Ostrom 2000; Woolcock 2001).

## 5.2    Bonding, bridging and bracing social capital

One of the conceptual challenges regarding social capital is its often accepted distinction between "bonding" and "bridging" social capital, which can be considered as a shortcoming of this concept (Putnam 2000; Rydin and Holman 2004). The first type focuses on building, reinforcing and maintaining the strong links *within* the community and the second one refers to social networks *between* groups, networks and communities (Rydin 2006; Rydin and Holman 2004). The latter one is characterized by a horizontal structure (Woolcock 2001) and it describes the capacity of these communities to make links with others that might have different views (Pretty 2003). However, in reality there are no "pure forms" of "bridging" or "bonding" social capital, but rather their "different combinations" (Woolcock 2001), excluding the "either-or" alternatives' choice of these categories, but presenting rather "more or less" dimensions Putnam (2000), meeting on the "middle-of-the-road" (Geys and Murdoch 2010).

As a response to this shortcoming Rydin and Holman (2004) propose to use a third category, namely "bracing" social capital. They extracted five key-elements which enable to describe the social capital type: (1) the definition of boundaries; (2) the role of place and territory; (3) the scale at which social capital is operating; (4) the horizontal or vertical nature of the linkages[6]; (5) and the kinds of actors involved and which sectors they come from (ibid.: 122). The description of characteristic elements of "bracing" social capital is captured in Table 3, in which first items refer

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[6] The connections built in networks created by social capital can be horizontal, vertical or be a combination of both. Linkages between stakeholders at the one scale, for example local, are understood as horizontal. By contrast, the linkages between stakeholders operating in networks from different levels (for example local and national) will have a vertical nature. In grid extension projects, both forms of linkages, vertical and horizontal, are common. For more details see: Rydin and Holman (2004).

directly to the general definition of social capital[7], and the latter five to depict the nature of involved networks of relationships.

| A typology of Social Capital | | | |
|---|---|---|---|
| | **Bonding Social Capital** | **Bridging Social Capital** | **Bracing Social Capital** |
| **Key metaphor** | A kind of 'glue' used to bring people closer together and make them one entity | Bridges are built out to other people and places, often unknown and different people and places | An engineering metaphor suggesting the strengthening of a 'scaffold' of connections between a limited group of people or places, some closer together and other further apart |
| **Nature of network involved** | Dense, relatively limited network | Extensive; lots of contacts; not very dense | Not extensive; variably dense across the network |
| **Role of norms and values** | Common norms central to binding actors together | Given less emphasis than the network of linkages | Common norms important in making relationships effective but often strategic in nature |
| **Boundaries involved** | Central to defining who is within the group to coalesce | Less significant; bridging can occur across several boundaries | Boundary defined by those required for policy problem at hand |
| **Role of place and territory** | Often group is territorially based | Less significant | Policy problem may be location specific but actors need not be |
| **Scales of operation of social capital** | Macro *or* micro; often micro | Macro *or* micro | Tends to be cross-scale |
| **Type of linkage involved** | Horizontal | Horizontal | Vertical and horizontal |
| **Involvement of sectors: state/ economy/ civil society** | Usually one sector | One sector *or* multi-sector | Usually multi-sector |

**Table 3: A typology of different forms of the social capital and their components (Rydin and Holman 2004).**

The category of "bracing" social capital and its framing are relevant in the context of this deliverable and the theoretical considerations. Firstly, each of elements describing the type of the social capital can be reflected in categories of the stakeholders' attitude framework developed in Deliverable 5.1, which were aimed to help in the analysis of specific projects (see also Figure 2 of this deliverable). In this context "the definition of boundaries", "the role of place and territory" and "the scale at which social capital is operating" refer to the whole group of the project characteristic's elements. On the contrary, "the horizontal or vertical nature of the linkages" and "the kinds of actors involved" relate to stakeholder characteristic. Secondly, it includes the role of norms and values, which have been the starting point for the development of the theoretical framework in the INSPIRE-Grid project. Thirdly, it allows to include trust relationships between multiple stakeholders into the analysis, operating at different scales and levels. This in turn is

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[7] 'Social capital' as comprising networks of relationships between actors plus the sets of norms, values and common practices that those actors conform to (Rydin and Holman 2004: 118),

important for understanding contemporary attitudes towards current energy infrastructure developments, which, decentralized in their character, require different forms of governance and as a consequence, different approaches to stakeholders' involvement in the decision-making process (Devine-Wright 2013; Goldthau 2014; Smith 2007).

Empirically, all elements characteristic for "bracing" social capital have been identified in the INSPIRE-Grid case studies. With the task to plan and construct a new power line at hand automatically new networks of relationships are created, consisting of actors from different territorial units, political levels and institutions, in short: all stakeholders that are potentially involved and/or affected.

The boundaries of involved networks refer to external limits of groups that are being considered in the analysis – they restrict the range of actors involved. In our cases the boundaries were defined by the character of the case study projects, because their scope determined who and what kind of networks have been involved in the process. All investigated projects had mostly a regional character, so they activated relevant networks at the local and regional scale. However, in one of Norwegian cases this boundary has been enlarged also to the national scale, because affected stakeholders used their linkages to a person elected to a national parliament from their region.

*(Stakeholder): "We have used the media. And then have talked to several politicians."*
*(Interviewer): "On which level?"*
*(Stakeholder): "On this level. But also to a person that is sitting in Oslo, in the parliament."*
(Private stakeholder, Aurland-Sogndal case study).

One must remember that such boundaries might be widened even to the European level (see for example Ciupuliga and Cuppen 2013; Puka and Szulecki 2014), but it was not the case in the investigated projects.

The same example from the Aurland-Sogndal case study relates to the second element determining type of social capital – the role of place and territory for operating networks. Although the policy problem, here the new power line, was location specific (built in a limited territorial area), the involved actors were not. This is also reflected in the national decision making processes, which engage actors outside of the areas foreseen for the grid extension. It is especially visible in the official French decision-making process, which at different project stages activates different stakeholder networks (for a detailed overview see Deliverable 3.2).

The third element, the scale at which social capital is operating, is closely related to the two previous constituents, but it determines how social capital performs different kinds of work at different scales. For example, it can be 'integrating' communities at the micro level or generating 'synergy' between the state and the civil society at the macro scale (Rydin and Holman 2004: 121). Mostly the Norwegian case studies showed that these roles tend to be performed across both scales, not exclusively micro (intra-community ties) or macro (state-society relations).

The fourth element, linkages, were consequently of a vertical and horizontal nature at the same time or during different stages of the process. For example, horizontal linkages existed in both Norwegian case studies on the local level: between different agencies of the local government, as for cultural heritage, commerce, or nature preservation. Also between the local government and local NGOs that are active in the field of nature preservation or outdoor activity. Particularly interesting in both Norwegian cases were the strategies followed by private stakeholders, which formed new or activated existing horizontal and vertical networks to strengthen their arguments during interaction with the TSO. For example in Bamble-Rød the group engaged a lawyer for legal assistance and help with the correspondence with Statnett.

*"I read a little notice in the newspaper and I also searched on the Statnett-Website. I got some information from there and then everything started. We got together the whole neighborhood up there, also that lawyer was involved."*
(Private stakeholder, Bamble-Rød case study)

In the Aurland-Sogndal case study a group of potentially affected neighbors followed a different strategy. Next to discussing with Statnett directly they reached out to the local media, to local and national politicians and to the regulator NVE.

*"When we were at the [information] meeting, for the first time we heard about [the project] and we decided to fight. [...] We wrote a letter to the level above Statnett."*
(Private stakeholder, Aurland-Sogndal case study)

The data collected in the French case study did not reveal a stimulation of many differentiated networks. These mentioned by stakeholders rather had a vertical character or were expected to operate within a top-down approach. For example, it was observed in regard to the coordination of tasks between national and local NGOs or in expectations towards cooperation between large, mostly state-owned companies responsible for infrastructural projects:

*"And the local opposition is very important, and the national NGOs are also opposed to the project, saying there is no need for it (...)."*
(NGO representative, Cergy-Persan case study)

*"For example, for me, those who make the quarries, those that make up RTE, those who make the freight train that will cross over us at [name of a city], together define a methodology. That is a comprehensive approach for a public entity."*
(Public authority, Cergy-Persan case study)

Eventually, for the fifth element describing the involved actors, we can say that in all investigated case studies actors from different sectors like state representatives, industry, civil society etc. participated.
In summary, in all case studies the engagement process related to the planned power lines has led to new connections between stakeholders or reactivated existing ones. Together with the experiences made, they have contributed to higher stocks of social capital, which can be tapped in stakeholder engagement processes in the future.

**Figure 8: Empirical findings from case studies: Bracing social capital**

As we described is the concept of the social capital helpful in understanding the existing relationships between different stakeholders before and during the engagement process. The case studies underlined that the careful analysis of such relations in the affected community and its links to higher levels of governance may unveil different concerns, needs and values. It can support in foreseeing the potential conflictual situations or the mobilization capacity at the local level. And a properly conducted engagement process (see Deliverable 5.2) may also contribute to the development of higher stocks of social capital.

# 6    OUTLOOK

The improved theoretical framework was used in the creation of the research design during the implementation of three INSPIRE-Grid case studies in Norway and France and was complemented with findings generated through the interaction with stakeholders. These activities revealed the validity and usefulness of this approach in understanding stakeholders' acceptability related to the decision-making process, which can lead to the acceptance of the grid extension. Moreover, it has not only emphasized the importance of trust itself, but it has also exposed the relevance of the informal aspects or "soft factors" of the stakeholders' participation.

The work conducted in WP5 and in cooperation with WP2, showed that there are two different views of formal and informal participation: a narrow one and a broader one. These views are not exclusive, but complementary. Moreover, the narrower view gives a basis for the development of the broader one. These understandings are presented in the figure below.
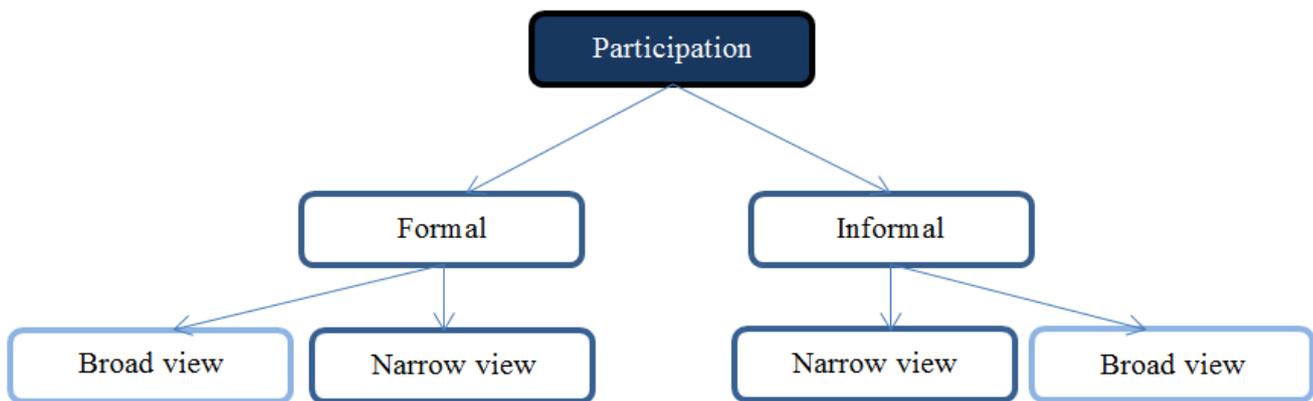


**Figure 9: The distinction of the different views to the formal and informal participation.**

The first differentiation (*narrow view*) defines the formal participation process as legally binding measures, which encompass the planning and permitting procedures. The informal participation is understood as any other participation framework or tool, which is not legally binding in the process.

The *broad view* on formal and informal participation takes a different perspective. In this understanding formal participation includes aspects of all official rules and roles that inherit participation process, no matter whether it is a legally binding and regulated process or any other form of public participation (bus tours, field visits, world café etc.) and independently from the stage at which the project is in. It derives from the institutionalists' tradition of March and Olsen (1989) and Ostrom (2010b), who refer to cultural aspects of institutions, giving them the meaning of routines, procedures, conventions, roles, strategies and organizational forms around which political activity is constructed and the actual rules-in-use on the ground. Thus, the informal participation comprises aspects existing outside of organizational, formalized and institutionalized contexts and structures, which exist at three levels at the same time: interpersonal; social; and as being reflected in interactions with public institutions.

The informal participation in the context of the new power lines can be understood as "day to day" relations between the perceived formal decision-making process' representative or owner and stakeholders, in which the latter are allowed input into decisions. These relations exist under certain process conditions, on which stakeholders are allowed to exert some influence – it concerns stakeholders participation in the process and conditions under which they will operate after the construction of the power line (adopted from: Strauss 1998). The "perceived formal decision-making process' representative or owner" (usually a TSO, but personalized in and identified as a project manager) is seen simultaneously as an individual, the member of a society and the representative of a public institution, where all these roles are combined, mixed and intersecting.

This view concentrates not so much on *what* has been done (in participation), but *how* it has been done. Thus, the broad view does not distinguish between formal and informal decision-making processes understood as formalized or non-formalized procedures or tools, but focuses on differences between what, how and when something is said or done and what, how and when something is meant and perceived. Informal aspects of the participation are in this context considered as a result of the additional experiences of stakeholders' interactions during the process, which by them is expected to be consistent, transparent, inclusive, fair, legitimate and oriented in the interest of the public good. But more importantly these non-formalized parts of the communication can create trust which can be understood as a condition sine qua non for the acceptance of a participation process (not necessarily for the decision in the end). However, it should be also mentioned, that informal participation could not exist without a formal decision-making process. Procedures regulating the decision-making process firstly create formal participation, situated in given formalized and institutionalized contexts and create a space for stakeholder interaction, which probably without this process would not have the chance to happen.

As a consequence, we state a clear need to understand how formal and informal aspects interrelate and what this means for the involved stakeholders. It happens that pre-existing expectations are important in determining not only the outcomes of the participation process themselves, but also the categorization of relationships (see also Townsed et al. 2012). This leads to the conclusion that not only broader contextual variables matter (like scale of the project or the constellations of stakeholders' groups), but also these occurring at the micro-level, where the individual attitude or behavior is strongly affected by the context in which interactions take place (Ostrom 2010b). And the structure of a given situation itself combined with various attributes of stakeholders (whether they can communicate, exit or enter voluntarily, know each other, have information about past behavior etc.) and at a particular moment in time, to a large extent influences the building of trust (Ostrom 2010a; Tait 2011).

For example, at the interpersonal level, a project manager discussing with stakeholders a certain power line issue as the part of public hearings (i.e. in a city hall) would be considered differently as having the same talk, with the same individuals around the coffee machine during the break of the same public hearing (Strauss 1998). Informal social processes at the community level refer to interaction between stakeholders regarding the power line issues in informal settings (for example different talks about it with different neighbors), and eagerness to participate in the community's

life. Thus, the interactions at this level reflect the existence and maintenance of networks connecting people, which can be motivated by the idea of the common good, or more individualist attitudes (e.g. self-wellbeing) (Broese van Groenou and Deeg 2010; Ertas 2013). For example, these attitudes can be expressed by acknowledging the compensation measures serving individuals, but collectivity as well, like a new road. Such measures create a perception of an outsider (the TSO, which was sometimes referred to as "big brother" in the fieldwork) being an equal member of the society and seriously engaged into the local affairs. Last but not least, as such understood informal participation is also the perception of how far the ways of communication are backed by political culture and legitimized by stakeholders, what results from the interactions with public institutions. It can be exemplified by already mentioned issue of the perception about the power lines' purpose, which might be contradictive to the official energy policy and therefore the process representative takes over the task of explaining or justifying the national policy.

The abovementioned findings generated through the literature analysis, implementation of case studies and gained through the interaction with stakeholders led us to the formulation of a challenge for the future research, which would integrate both perspectives on formal and informal participation. This is illustrated in the following figure:
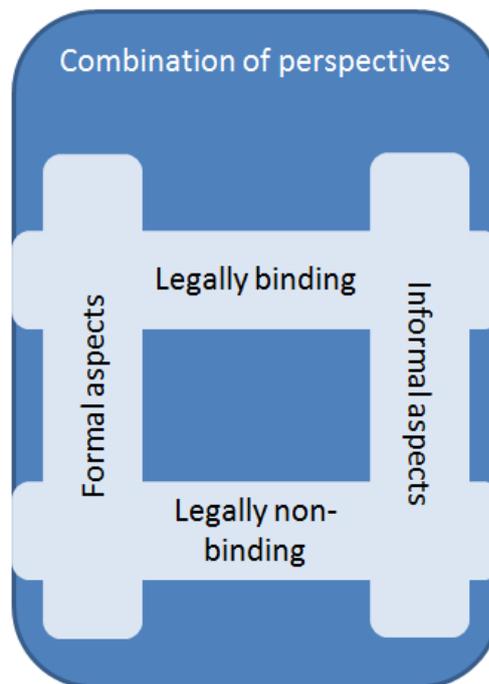


**Figure 10: The combination of the narrow and broad views on the formal and informal participation as research challenge for the future**

# 7    CONCLUSION

The goal of Deliverable 5.4 was to improve the understanding of actors involved in participation and engagement processes. Basing on the insights provided by the extensive literature review, the outcome of the implementation of three INSPIRE-Grid case studies (WP6), findings generated throughout the interaction with stakeholders and contributions formulated in the WP2, an improved theoretical stakeholder attitude framework was developed. This framework was a first attempt to order different stakeholders attitudes towards grid extension projects ranging from support to resistance. It also underlined the importance of the initial preconditions influencing stakeholders attitudes, like values (determined by needs and concerns), distributive justice, procedural justice and trust. Moreover, we also considered the role of social capital.

Since different parts of the INSPIRE-Grid project tackled the three first abovementioned preconditions of stakeholders' attitudes and, additionally with the interpersonal justice (see Deliverables 2.1 and 7.2), in this piece of work we intended to gain a better understanding of the role of trust and social capital in transmission grid planning. We identified three major dimensions of trust: general trust in society, trust in institutions, and interpersonal trust: General trust in society is seen to be crucial especially for the willingness of people affected by a project to support the idea of the "public good" – understood as wealth, security of electricity supply or climate protection. The subjective importance of the "public good" increases the motivation of stakeholders to desist from their own interests in the name of the collective interest. Institutional trust is needed to lower conflicts in the early phases of the projects. When stakeholders have the impression the regulator and the TSO are legitimized by democratic control and are acting for the public good or there are sufficient democratic possibilities to influence the direction of energy policy, the engagement process for a specific project is less likely to become an arena for competing visions of the energy system. However, the most important form of trust in the grid planning context is interpersonal trust, developed mainly between the project manager and stakeholders. We found out that if stakeholders do not have a huge trust in institutions or general trust in society, a trustful relationship with the project manager can partially (but of course not necessarily) compensate it.

Additionally, we discussed the concept of social capital as a frame to better understand existing networks of relationships around stakeholder engagement processes in grid development, with trust as an important pillar. The careful analysis of such relations in the affected communities and their links to different levels of governance, may unveil different concerns, needs and values. It can be helpful in foreseeing potential conflictual situations or the mobilization capacity at the local level. And a properly conducted engagement process (see Deliverable 5.2) may also contribute to the development of higher social capital stocks.

Finally, we presented a first idea for theoretically structuring formal and informal aspects of stakeholder engagement. The common differentiation (*narrow view*) defines the formal participation process as legally binding measures, which encompass the planning and permitting procedures. The informal participation is understood as any other participation framework or tool, which is not legally binding in the process. The *broad view* takes a different perspective. In this

understanding formal participation includes aspects of all official rules and roles that inherit participation process, no matter whether it is a legally binding and regulated process or any other form of public participation (bus tours, field visits, world café etc.) and independently from the stage at which the project is in. Informal participation comprises aspects existing outside of organizational, formalized and institutionalized contexts and structures (like e.g. trust), which exist at three levels at the same time: interpersonal; social; and as being reflected in interactions with public institutions.

However, beside the scientific conclusions, more practical recommendations to project managers are not trivial to make, as trust is a sensitive and complex issue and trust-building activities have the potential to go in both ways: increasing trust and lower conflicts or - if stakeholders have the impression that activities are just more sophisticated Public Relations methods - the opposite effect could be reached. Nevertheless, looking at trust and social capital issues will be of great value for ex-post analysis of conflicts and processes.

# 8    REFERENCES

Aas, Øystein, Patrick Devine-Wright, Torvald Tangeland, Susana Batel and Audun Ruud. 2014. Public beliefs about high-voltage powerlines in Norway, Sweden and the United Kingdom: A comparative survey. *Energy Research & Social Science* 2: 30-37. doi:10.1016/j.erss.2014.04.012

Aitken, Mhairi. 2010. Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature. *Energy Policy* 38(4): 1834-1841. doi:10.1016/j.enpol.2009.11.060

Batel, Susana, Patrick Devine-Wright and Torvald Tangeland. 2013. Social acceptance of low carbon energy and associated infrastructures: A critical discussion. *Energy Policy* 58: 1-5. doi: 10.1016/j.enpol.2013.03.018

Batel, Susana and Patrick Devine-Wright. 2014. Towards a better understanding of people's responses to renewable energy technologies: Insights from Social Representations Theory. *Public Understanding of Science*: 1-15. doi: 10.1177/0963662513514165

Batel, Susana and Patrick Devine-Wright. 2015. A critical and empirical analysis of the national-local 'gap' in public responses to large-scale energy infrastructures. *Journal of Environmental Planning and Management* 58(6): 1076-1095. doi: http://dx.doi.org/10.1080/09640568.2014.914020

Batt, Peter J. 2008. Building social capital in networks. *Industrial Marketing Management* 37(5): 487-491. doi:10.1016/j.indmarman.2008.04.002

Bell, Derek, Tim Gray and Claire Haggett. 2005. The 'Social Gap' in Wind Farm Siting Decisions: Explanations and Policy Responses. *Environmental Politics* 14(4): 460-477. doi: 10.1080/09644010500175833

Bell, Derek, Tim Gray, Claire Haggett and Joanne Swaffield. 2013. Re-visiting the 'social gap': public opinion and relations of power in the local politics of wind energy. *Environmental Politics* 22(1): 115-135. doi: 10.1080/09644016.2013.755793

Berardo, Ramiro. 2009. Generalized Trust in Multi-organizational Policy Arenas: Studying Its Emergence from a Network Perspective. *Political Research Quarterly* 62(1): 178-189. doi: 10.1177/1065912907312982

Börzel, Tanja A. (1997). What's So Special About Policy Networks? - An Exploration of the Concept and Its Usefulness in Studying European Governance. *European Integration online Papers (EIoP) 1*(16). Available at: http://eiop.or.at/eiop/texte/1997-016a.htm.

Broesse van Groenou, Marjolein and Dorly J. H. Deeg. 2010. Formal and informal social participation of the 'young-old' in The Netherlands in 1992 and 2002. *Ageing & Society* 30(3): 445-465. doi: https://doi.org/10.1017/S0144686X09990638

Cain, Nicolas L. and Hal T. Nelson. 2013. What drives opposition to high-voltage transmission lines?. *Land Use Policy* 33: 204-213. doi:10.1016/j.landusepol.2013.01.003

Ciupuliga, Ana Roxana and Eefje Cuppen. 2013. The role of dialogue in fostering acceptance of transmission lines: the case of a France–Spain interconnection project. *Energy Policy* 60: 224-233. doi:10.1016/j.enpol.2013.05.028

Cotton, Matthew and Patrick Devine-Wright. 2010. Making electricity networks "visible": Industry actor representations of "publics" and public engagement in infrastructure planning. *Public Understanding of Science* 1: 1-19. doi: 10.1177/0963662510362658

Cowell, Richard, Gill Bristow and Max Munday. 2011. Acceptance, acceptability and environmental justice: the role of community benefits in wind energy development. *Journal of Environmental Planning and Management* 54(4): 539-557. doi: 10.1080/09640568.2010.521047

Cuppen, Eefje. 2012. Diversity and constructive conflict in stakeholder dialogue: considerations for design and methods. *Policy Sciences* 45(1): 23-46. doi: 10.1007/s11077-011-9141-7

Daugstad, Karoline. 2008. Negotiating landscape in rural tourism. *Annals of Tourism Research* 35(2): 402-426. http://dx.doi.org/10.1016/j.annals.2007.10.001

Devine-Wright, Hannah and Patrick Devine-Wright. 2009. Social representations of electricity network technologies: Exploring processes of anchoring and objectification through the use of visual research methods. *British Journal of Social Psychology* 48(2): 357-373. doi: 10.1348/014466608X349504

Devine-Wright, Patrick. 2008. Reconsidering public acceptance of renewable energy technologies: a critical review. In: *Delivering a Low Carbon Electricity System. Technologies, Economics and Policy*, eds. Michael Grubb, Tooraj Jamasb and Michael G. Pollit, 443-461. Cambridge: Cambridge University Press.

Devine-Wright, Patrick. 2009. Rethinking NIMBYism: The Role of Place Attachment and Place Identity in Explaining Place-protective Action. *Journal of Community & Applied Social Psychology* 19(6): 426-441. doi: 10.1002/casp.1004

Devine-Wright, Patrick. 2012. Explaining "NIMBY" Objections to a Power Line: The Role of Personal, Place Attachment and Project-Related Factors. *Environment and Behavior* 45(6): 761-781. doi: 10.1177/0013916512440435

Devine-Wright, Patrick. 2013. Think global, act local? The relevance of place attachments and place identities in a climate changed world. *Global Environmental Change* 23(1): 61-69. http://dx.doi.org/10.1016/j.gloenvcha.2012.08.003

Devine-Wright, Patrick, Paul Fleming and Helen Chadwick. 2001. Role of social capital in advancing regional sustainable development. *Impact Assessment and Project Appraisal* 19(2): 161-167. doi: 10.3152/147154601781767096

Devine-Wright, Patrick and Yuko Howes. 2010. Disruption to place attachment and the protection of restorative environments: A wind energy case study. *Journal of Environmental Psychology* 30(3): 271-280. doi:10.1016/j.jenvp.2010.01.008

Dietz, Thomas, Elinor Ostrom and Paul C. Stern. 2003. The Struggle to Govern the Commons. *Science* 302(5652): 1907-1912. doi: 10.1126/science.1091015

Elliot, Peter and David Wadley. 2012. Coming to Terms with Power Lines. *International Planning Studies* 17(2): 179-201. doi: 10.1080/13563475.2012.673739

Ellis, Geraint, John Barry and Clive Robinson. 2007. Many Ways to Say 'No', Different Ways to Say 'Yes': Applying Q-Methodology to Understand Public Acceptance of Wind Farm Proposals. *Journal of Environmental Planning and Management* 50(4): 517-551. doi: 10.1080/09640560701402075

Ertas, Nevbahar. 2013. Formal and Informal Social Participation of Public, Non-Profit, and Private Employees. *International Journal of Public Administration* 36(8): 578–587. doi: http://dx.doi.org/10.1080/01900692.2013.772632

Fahrenkrug, Katrin, Michael Melzer, Teike Scheepmaker, Fritz Reusswig, Ines Heger, Eva Eichenauer, Jochen Franzke, Thomas Ludewig, Konrad Ott and Florian Braun. 2016. *Praxisbericht Energiekonflikte. Wie viel Konflikt muss die Energiewende ertragen? Ein Praxisbericht aus den Fallstudienregionen des FONA-Vorhabens*. Raum & Energie Institut für Planung, Kommunikation und Prozessmanagement GmbH, Wedel/ Hamburg. Available at: http://energiekonflikte.de/fileadmin/template/Daten/Veranstaltungen/201608 31_-_Broschuere_Praxisbericht_Windenergie_web.pdf (02. 11. 2016).

Friedl, Christina and Joahnnes Reichl. 2016. Realizing energy infrastructure projects – A qualitative empirical analysis of local practices to address social acceptance. *Energy Policy* 89: 194-193. doi:10.1016/j.enpol.2015.11.027

Fukuyama, Francis. 2002. Social Capital and Development: The Coming Agenda. *SAIS Review* 22(1): 23–37. doi: 10.1353/sais.2002.0009

Geys, Benny and Zuzana Murdoch. 2010. Measuring the 'Bridging' versus 'Bonding' Nature of Social Networks: A Proposal for Integrating Existing Measures. *Sociology* 44(3): 523-540. doi: 10.1177/0038038510362474

Goldthau, Andreas. 2014. Rethinking the governance of energy infrastructure: Scale, decentralization and polycentrism. *Energy Research & Social Science* 1: 134-140. doi:10.1016/j.erss.2014.02.009

Goudge, Jane and Lucy Gilson. 2005. How can trust be investigated? Drawing lessons from past experience. *Social Science and Medicine* 61(7): 1439-1451. doi: 10.1016/j.socscimed.2004.11.071

Gross, Catherine. 2007. Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance. *Energy Policy* 35(5): 2727–2736. doi:10.1016/j.enpol.2006.12.013

Gullberg, Anne Therese. 2013. The political feasibility of Norway as the 'green battery' of Europe. *Energy Policy* 57: 615-623. doi: http://dx.doi.org/10.1016/j.enpol.2013.02.037

Gullberg, Anne Therese, Dörte Ohlhorst and Miranda Schreurs. 2014. Towards a low carbon energy future – Renewable energy cooperation between Germany and Norway. *Renewable Energy* 68: 216-222. doi:10.1016/j.renene.2014.02.001

Hardin, Russel. 1998. Trust in Government. In: *Trust and Governance*, eds. Valerie Braithwaite and Margaret Levi, 9-27. New York: Russel Sage Foundation.

Haß, Rabea, Hanna Hielscher and Dannis Klink. 2014. Germany—A Movement Society? An Investigation of Non-activism. *Journal of Civil Society* 10(4): 353-372. doi: http://dx.doi.org/10.1080/17448689.2014.984971

Hough, Mike, Jonathan Jackson, Ben Bradford, Andy Myhill and Paul Quinton. 2010. Procedural Justice, Trust, and Institutional Legitimacy. *Policing: A Journal of Policy and Practice* 4(3): 203-210. doi: 10.1093/police/paq027

Hovik, Sissel, Camilla Sandström and Anna Zachrisson. 2010. Management of Protected Areas in Norway and Sweden: Challenges in Combining Central Governance and Local Participation. *Journal of Environmental Policy & Planning* 12(2): 159-177. doi: http://dx.doi.org/10.1080/15239081003719219

Höppner, Corina. 2009. Trust—A monolithic panacea in land use planning?. *Land Use Policy* 26(4): 1046-1054. doi: http://dx.doi.org/10.1016/j.landusepol.2008.12.007

Huijts, Nicole M. A., Erik J. E. Molin and Linda Steg. 2012a. Psychological factors influencing sustainable energy technology acceptance: A review-based comprehensive framework. *Renewable and Sustainable Energy Reviews* 16(1): 525-531. doi:10.1016/j.rser.2011.08.018

Huijts, Nicole M. A., Eric Molin, Caspar Chorus and Bert van Wee. 2012b. Public acceptance of hydrogen technologies in transport: a review of and reflection on empirical studies. In: *Transition towards Sustainable Mobility. The Role of Instruments, Individuals and Institutions*, eds. Harry Geerlings, Yoram Shiftan and Dominic Stead, 177-192. Hampshire: Ashgate.

Keir, Laura, Richard Watts and Shoshanah Inwood. 2014. Environmental justice and citizen perceptions of a proposed electric transmission line. *Community Development* 45(2): 107-120. doi: 10.1080/15575330.2014.887130

Klijn, Erik-Hans, Jurian Edelenbos and Bram Steijn. 2010. Trust in Governance Networks: Its Impacts on Outcomes. *Administration and Society* 42(2): 193-221. doi: 10.1177/0095399710362716

Kollman, Andreas and Johannes Reichl. 2015. How Trust in Governments Influences the Acceptance of Environmental Taxes. In: *Political Economy and Instruments of*

*Environmental Politics*, eds. Friedrich Schneider, Andrea Kollmann, and Johanne Reichl, 53-69. Cambridge and London: The MIT Press.

Komendantova, Nadejda, Marco Vocciante and Antonella Battaglini. 2015. Can the BestGrid Process Improve Stakeholder Involvement in Electricity Transmission Projects?. *Energies* 8(9): 9407-9433. doi:10.3390/en8099407

Knudsen, Jørgen K., Line Camilla Wold, Øystein Aas, Jens Jacob Kielland Haug, Susana Batel, Patrick Devine-Wright, Marte Qvenild, and Gerd B. Jacobsen. 2015. Local perceptions of opportunities for engagement and procedural justice in electricity transmission grid projects in Norway and the UK. *Land Use Policy* 48: 299-308. doi:10.1016/j.landusepol.2015.04.031

Laurian, Lucie. 2009. Trust in Planning: Theoretical and Practical Considerations for Participatory and Deliberative Planning. *Planning Theory & Practice* 10(3): 369-391. doi: 10.1080/14649350903229810

Larzelere, Robert E. and Ted L. Huston. 1980. The dyadic trust scale: toward understanding interpersonal trust in close relationships. *Journal of Marriage and Family* 42(3): 595-604. doi: 10.2307/351903

Leach, William D. and Paul A. Sabatier. 2005. To Trust an Adversary: Integrating Rational and Psychological Models of Collaborative Policymaking. *American Political Science Review* 99(4): 491–503. doi: http://dx.doi.org/10.1017/S000305540505183X

Lewicka, Maria. 2005. Ways to make people active: The role of place attachment, cultural capital, and neighborhood ties. *Journal of Environmental Psychology* 25(4): 381-395. http://dx.doi.org/10.1016/j.jenvp.2005.10.004

Lienert, Pascal, Bernadette Suetterlin and Michael Siegrist. 2015. Public acceptance of the expansion and modification of high-voltage power lines in the context of the energy transition. *Energy Policy* 87: 573-583. doi: 10.1016/j.enpol.2015.09.023

Lin, Nan. 2001. *Social Capital. A Theory of Social Structure and Action*. Cambridge: Cambridge University Press.

Loring, Joyce McLaren. 2007. Wind energy planning in England, Wales and Denmark: Factors influencing project success. *Energy Policy* 35: 2648-2660. doi:10.1016/j.enpol.2006.10.008

Lowndes, Vivien and David Wilson. 2001. Social Capital and Local Governance: Exploring the Institutional Design Variable. *Political Studies* 49(4): 629–647. doi: 10.1111/1467-9248.00334

Lowndes, Vivien, Lawrence Pratchett and Gerry Stoker. 2006. Diagnosing and Remedying the Failings of Official Participation Schemes: The CLEAR Framework. *Social Policy and Society* 5(2): 281–291. doi: http://dx.doi.org/10.1017/S1474746405002988

Lyon, Fergus. 2000. Trust, Networks and Norms: The Creation of Social Capital in Agricultural Economies in Ghana. *World Development* 28(4): 663-681. doi:10.1016/S0305-750X(99)00146-1

March, James G. and Johan P. Olsen. 1989. *Rediscovering Institutions: The Organizational Basis of Politics*, NewYork: Free Press.

Marquart-Pyatt, Sandra T. and Peggy Petrzelka. 2009. Digging the Dugway?: Understanding Involvement in Local Politics. *Community Development* 40(3): 262–274. doi: 10.1080/15575330903091670

Meadowcroft, James. 2009. What about the politics? Sustainable development, transition management, and long term energy transitions. *Policy Sciences* 42(4): 323-340. doi: 10.1007/s11077-009-9097-z

Miller, Arthur H. 1974. Rejoinder to "Comment" by Jack Citrin: Political Discontent or Ritualism?. *The American Political Science Review* 68(3): 989-1001. doi: http://dx.doi.org/10.2307/1959142

Neukirch, Mario. 2015. Mehr Netz mit weniger Kohle? Zwei ökologische Perspektiven auf »Korridor D«. *Politische Ökologie* 141: 132-135.

OECD. 2016. Better Life Index. Norway. Available at: http://www.oecdbetterlifeindex.org/countries/norway/ (12. 12. 2016).

Ostrom, Elinor. 2000. 'Social capital: a fad or a fundamental concept?'. In *Social Capital. A Multifaceted Perspective*, eds. Partha Dasgupta and Ismail Serageldin, 172-214. Washington, DC: The World Bank.

Ostrom, Elinor. 2010a. A Long Polycentric Journey. *Annual Review of Political Science* 13: 1-23. doi: 10.1146/annurev.polisci.090808.123259

Ostrom, Elinor. 2010b. Beyond Markets and States: Polycentric Governance of Complex Economic Systems. *American Economic Review* 100(3): 641-672. doi: 10.1257/aer.100.3.641

Ostrom, Elinor. 2010c. Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change* 20(4): 550-557. doi:10.1016/j.gloenvcha.2010.07.004

Poortinga, Wouter and Nick F. Pidgeon. 2005. Trust in Risk Regulation: Cause or Consequence of the Acceptability of GM Food?. *Risk Analysis* 25(1): 199–209. doi: 10.1111/j.0272-4332.2005.00579.x

Pretty, Jules. 2003. Social Capital and the Collective Management of Resources. *Science* 302(5652): 1912-1914. doi: 10.1126/science.1090847

Puka, Lidia and Kacper Szulecki. 2014. The politics and economics of cross-border electricity infrastructure: A framework for analysis. *Energy Research & Social Science* 4: 124-134. http://dx.doi.org/10.1016/j.erss.2014.10.003

Putnam, Robert D. 2000. *Bowling alone: the collapse and revival of American community*. New York: SIMON & SCHUSTER.

Putnam, Robert. 2001. Social Capital: Measurement and Consequences. *Canadian Journal of Policy Research* 2(1): 21-41.

Raven, Rob P.J.M., Ruth Mourik, Ynke C.F.J. Feenstra and Eva Heiskanen. 2009. Modulating societal acceptance in new energy projects: Towards a toolkit methodology for project managers. *Energy* 34(5): 564-574. doi: http://dx.doi.org/10.1016/j.energy.2008.08.012

Rau, Irina, Petra Schweizer-Ries and Jan Hildebrand. 2012. Participation: The Silver Bullet for the Acceptance of Renewable Energies? In: *Vulnerability, Risks, and Complexity. Impacts of Global Change on Human Habitats*, eds. Sigrun Kabisch, Anna Kunath, Petra Schweizer-Ries and Annett Steinführer, 177-192. Cambridge and Göttingen: Hogrefe.

Reed, Mark S. 2008. Stakeholder participation for environmental management: A literature review. *Biological Conservation* 141(10): 2417-2431. doi:10.1016/j.biocon.2008.07.014

Richter, Ina. 2016. *Bürgerbeteiligung in der Energiewende - Grundlagen für eine systematische Erfassung der Beteiligungspraxis: Abschlussbericht zu Modul B (Bestandsaufnahme) des Forschungsprojektes DEMOENERGIE - Die Transformation des Energiesystems als Treiber demokratischer Innovationen*. Institute for Advanced Sustainability Studies (IASS), Potsdam. Available at: http://www.ssoar.info/ssoar/handle/document/47310 (18. 10. 2016).

Ruud, Audun, Jens Jacob Kielland Haug and William M. Lafferty. 2011. "Case Hardanger" En analyse av den formelle konsesjonsprosessen og mediedekningen knyttet til den omsøkte luftledningen Sima-Samnanger. Rapport. SINTEF Energi AS Energisystemer.

Rydin, Yvonne. 2006. Institutions and Networks: the search for conceptual research tools. In: *Networks and Institutions in Natural Resource Management*, eds. Yvonne Rydin and Eva Falleth, 15-33. Cheltenham and Northampton: Edward Elgar.

Rydin, Yvonne and Nancy Holman. 2004. Re-evaluating the Contribution of Social Capital in Achieving Sustainable Development. *Local Environment: The International Journal of Justice and Sustainability* 9(2): 117-133. doi: 10.1080/1354983042000199561

Sataøen, Hogne Leroy, Ole Andreas Brekke, Susana Batel and Martin Albrecht. 2015. Towards a sustainable grid development regime? A comparison of British, Norwegian, and Swedish grid development. *Energy Research & Social Science* 9: 178-187. doi:10.1016/j.erss.2015.08.011

Schuitema, Geertje, Linda Steg and Sonja Forward. 2010. Explaining differences in acceptability before and acceptance after the implementation of a congestion charge in Stockholm. *Transportation Research Part A: Policy and Practice* 44(2): 99-109. doi:10.1016/j.tra.2009.11.005

Schweizer-Ries, Petra. 2008. Energy sustainable communities: Environmental psychological investigations. *Energy Policy* 36(11): 4126-4135. doi: 10.1016/j.enpol.2008.06.021

Scott, Clare and Saleemul Huq. 2014. Knowledge flows in climate change adaptation: exploring friction between scales. *Climate and Development* 6(4): 382-387. http://dx.doi.org/10.1080/17565529.2014.951014

Sharp, Emily A., Rik Thwaites, Allan Curtis and Joanne Millar. 2013. Trust and trustworthiness: conceptual distinctions and their implications for natural resources management. *Journal of Environmental Planning and Management* 56(8): 1246-1265. doi: http://dx.doi.org/10.1080/09640568.2012.717052

Siegrist, Michael. 2010. Trust and Confidence: The Difficulties in Distinguishing the Two Concepts in Research. *Risk Analysis* 30(7): 1022-1024. doi: 10.1111/j.1539-6924.2010.01454.x

Siegrist, Michael, Timothy C. Earle and Heinz Gutscher. 2003. Test of a Trust and Confidence Model in the Applied Context of Electromagnetic Field (EMF) Risks. *Risk Analysis* 23(4): 705-716. doi: 10.1111/1539-6924.00349

Smith, Adrian. 2007. Emerging in between: The multi-level governance of renewable energy in the English regions. *Energy Policy* 35(12): 6266-6280. doi:10.1016/j.enpol.2007.07.023

Soini, Katriina, Eija Pouta, Maija Salmiovirta, Marja Uusitalo and Tapani Kivinen. 2011. Local residents' perceptions of energy landscape: the case of transmission lines. *Land Use Policy* 28(1): 294–305. doi:10.1016/j.landusepol.2010.06.009

Sovacool, Benjamin K. and Pushkala Lakshmi Ratan. 2012. Conceptualizing the acceptance of wind and solar electricity. *Renewable and Sustainable Energy Reviews* 16(7): 5268–5279. doi:10.1016/j.rser.2012.04.048

Stein, Stanley M. and Thomas L. Harper. 2003. Power, Trust, and Planning. *Journal of Planning Education and Research* 23(2): 125–139. doi: 10.1177/0739456X03258636

Straten, G. F. M., R. D. Friele and P. P. Groenewegen. 2002. Public trust in Dutch health care. *Social Science & Medicine* 55(2): 227-234. doi:http://dx.doi.org/10.1016/S0277-9536(01)00163-0

Strauss, George. 1998. An Overview. In *Organizational Participation. Myth and Reality*, eds. Frank Heller, Eugen Pusic, George Strauss and Bernard Wilpert, 8-39. New York: Oxford University Press Inc.

Switzer, Andrew, Leonie Janssen-Jansen and Luca Bertolini. 2013. Inter-actor Trust in the Planning Process: The Case of Transit-oriented Development. *European Planning Studies* 21(8): 1153-1175. doi: 10.1080/09654313.2012.722940

Tait, Malcolm. 2011. Trust and the Public Interest in the Micropolitics of Planning Practice. *Journal of Planning Education and Research* 31(2): 157–171. doi: 10.1177/0739456X11402628

Teles, Filipe. 2012. Local Governance, Identity And Social Capital: A Framework For Administrative Reform. *Theoretical and Empirical Researches in Urban Management* 7(4): 20–34. Available at: http://um.ase.ro/no74/2.pdf (13. 07. 2016).

Toke, David, Sylvia Breukers and Maarten Wolsink. 2008. Wind power deployment outcomes: How can we account for the differences? *Renewable and Sustainable Energy Reviews* 12: 1129-1147. doi: 10.1016/ j.rser.2006.10.021

Townsend, Keith, Adrian Wilkinson and John Burgess. 2012. Filling the gaps: Patterns of formal and informal participation. *Economic and Industrial Democracy* 34(2): 337-354. doi: 10.1177/0143831X12448442

Twitchen, John. 2014. Politics and policy – acceptance and acceptability: where are the distinctions? Infrastructure Intelligence. Available online at: http://www.infrastructure-intelligence.com/article/mar-2014/politics-and-policy-%E2%80%93-acceptance-and-acceptability-where-are-distinctions (13. 07. 2016).

van Ark, Ronald G. H. and Jurian Edelenbos. 2005. Collaborative Planning, Commitment, and Trust: Dealing with Uncertainty in Networks. In: *The Network Society. A New Context for Planning?* eds. Louis Albrechts and Seymour J. Mandelbaum, 271-283. London and New York: Routledge.

van der Horst, Dan and David Toke. 2010. Exploring the landscape of wind farm developments; local area characteristics and planning process outcomes in rural England. *Land Use Policy* 27(2): 214-221. doi:10.1016/j.landusepol.2009.05.006

Vorkinn, Marit and Hanne Riese. 2001. Environmental Concern in a Local Context. The Significance of Place Attachment. *Environment and Behavior* 33(2): 249-263. doi: 10.1177/00139160121972972

Walker, Gordon. 2011. The role for 'community' in carbon governance. *Wiley Interdisciplinary Reviews: Climate Change* 2(5): 777–782. DOI: 10.1002/wcc.137

Walker, Gordon, Patrick Devine-Wright, Sue Hunter, Helen High and Bob Evans. 2010. Trust and community: Exploring the meanings, contexts and dynamics of community renewable energy. *Energy Policy* 38(6): 2655–2663. doi:10.1016/j.enpol.2009.05.055

Whitton, John, Ioan Mihangel Parry, Mito Akiyoshi and William Lawless. 2015. Conceptualizing a social sustainability framework for energy infrastructure decisions. *Energy Research & Social Science* 8: 127-138. doi: 10.1016/j.erss.2015.05.010

Wolsink, Maarten. 2007. Planning of renewables schemes: Deliberative and fair decision-making on landscape issues instead of reproachful accusations of non-cooperation. *Energy Policy* 35(5): 2629-2704. doi:10.1016/j.enpol.2006.12.002

Wolsink, Maarten. 2012. The research agenda on social acceptance of distributed generation in smart grids: Renewables as common pool resources. *Renewable and Sustainable Energy Reviews* 16: 822-835. doi:10.1016/j.rser.2011.09.006

Woolcock, Michael. 2001. The place of social capital in understanding social and economic outcomes. *Canadian Journal of Policy Research* 2(1): 11-17

Wüstenhagen, Rolf, Maarten Wolsink and Mary Jean Bürer. 2007. Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy* 35: 2683-2691. doi: 10.1016/j.enpol.2006.12.001

Zoellner, Jan, Petra Schweizer-Ries and Christin Wemheuer. 2008. Public acceptance of renewable energies: Results from case studies in Germany. *Energy Policy* 36(11): 4136–4141. doi:10.1016/j.enpol.2008.06.026