

# **Involving citizens and stakeholders in wind farm development – social acceptance measures and their effects across Europe**

Abstract for the WindEurope Summit 2016 in Hamburg, Germany

Schneider U. (presenting author); Dütschke, E.; Wesche, J. P.  
Fraunhofer Institute for Systems and Innovation Research ISI

Phone +49 721 6809-433  
Uta.schneider@isi.fraunhofer.de  
Breslauer Straße 48 | D-76139 Karlsruhe

## **Introduction**

Wind energy as the most mature of the existing Renewable Energy System (RES) technologies plays a significant role in the European power sector: In the end of 2014 128.8 GW were installed in the EU which can meet around 10% of Europe's electricity demand. Wind energy is an important technology to support energy transition and to meet the EU's climate and energy targets. While in general the European population is in favour of wind energy (Eurobarometer 2007, Eurobarometer 2011), wind developers are repeatedly confronted with criticism and opposition by the public (Wind Barriers 2010), e.g. regarding the environmental effects of wind farms on a local level. Around 20% of wind energy projects are delayed or seriously threatened due to appeals (Windbarriers 2010). Thus, dealing with social acceptance<sup>1</sup> for wind energy infrastructure is a necessity for all stakeholders involved in onshore wind energy projects. Measures of public participation and engagement strategies are often seen as a promising strategy to avoid and solve these challenges, but require a certain amount of knowledge and resources. In this context it is important to analyze (1) which measures of public participation are employed by project developers and (2) if the measures have led to positive effects regarding the social acceptance of wind energy projects. With these objectives the recent paper extends the analysis of the WISE Power Project (Wesche et al. 2015) by studying the impacts of public participation measures on social acceptance of wind energy.

## **Approach**

In order to assess the status quo of acceptance strategies a survey was conducted in 13 European countries. The sample includes 207 respondents. On average, 15 questionnaires per country were obtained. 30% of the questionnaires out of the 207 were completed by project developers, 17% by administrative bodies and 10% by cooperatives. Further organisational affiliations of the respondents are environmental organizations, financial institutions and others active in the field of wind farm development.

## **Results**

56% of the project developers and cooperatives who claimed to have experience with public participation activities (n=75) experienced delays and stops of wind farms due to social acceptance issues in the past three years (2012-2014). In contrast, 29% indicated they did not

---

<sup>1</sup> Acceptance is a general evaluation, that is, the extent to which people (dis)favour a particular energy alternative (cf. Perlaviciute and Steg 2014).

experience any problems due to a lack of social acceptance. These findings highlight, as already shown by the Wind Barriers project (Wind Barriers 2010), the relevance of social acceptance issues to the onshore wind sector. Before analyzing the research questions, we study the amount of positive and negative reactions to wind farms by local citizens, political stakeholders, the media etc. Regarding the negative public reactions, reactions by local citizens were mentioned most often (29%). Formation of local opponent groups was named second most, followed by negative reactions from political stakeholders on a local level. Considering the positive reactions, most of the respondents (29%) experienced positive reactions by political or other societal stakeholders on a local level. Positive reactions by local citizens and positive local media coverage were named second resp. third most. Thus, local citizens are the most important originators of negative reactions, while positive reactions are expressed more often by political stakeholders.

Regarding the first research question ("which measures of public participation are employed by project developers?") it was found that almost 70% of the 75 project developers and representatives from cooperatives with experience with public participation activities claim that elements of public participation and engagement are part of the usual procedure during planning, building and operating wind farms.

In a second step it was analyzed in which project phases (from project preparation to decommissioning) what kind of public participation activities are applied: *Informational measures* (distributing brochures/leaflets or provide possibilities where citizens may ask questions), *consultation and dialogue with the public* (giving the possibility to the public to give feedback on the project and its specifications which is then considered by the project team and / or relevant administration) and *empowerment of the public* (sharing the decision making process, i.e. the public is involved e.g. via a citizen vote). The respondents were asked which of these options form part of the usual procedure during different project phases. Informational measures are often applied in the construction and in the spatial and technical planning process. Most measures of public participation are applied in the spatial and technical planning and in the permitting process (1.5 measures on average in each case), whereas in the project preparation only 1 measure on average is applied. One possible explanation for this could be the fact that the project developers and cooperatives only apply measures of public participation when there is already some opposition. Furthermore fewer measures are applied in the operation, in the repowering and decommissioning phase compared to the other project stages. This is in line with the findings of the analysis provided in deliverable 2.1 from the WISE Power project (cp. Fraunhofer ISI, 2014) where this gap regarding the knowledge on how to deal with social acceptance when repowering or decommissioning was pointed out as well. Consultational measures are particularly used in the permitting process and also in the spatial and technical planning process. The same applies to measures regarding empowerment of the public (Figure 1). 40% state, they don't apply any public participation measures in the phase of project preparation – but only 7% indicate that measures are not relevant in this phase from their point of view. One reason might be too few resources (staff, time, money) to apply public participation measures in early project stages. Conversely, in the repowering and decommissioning phase almost a third in each case consider these measures not relevant resp. are not sure whether they are relevant. Possibly, in these project stages social acceptance issue might play a minor role (Figure 1).

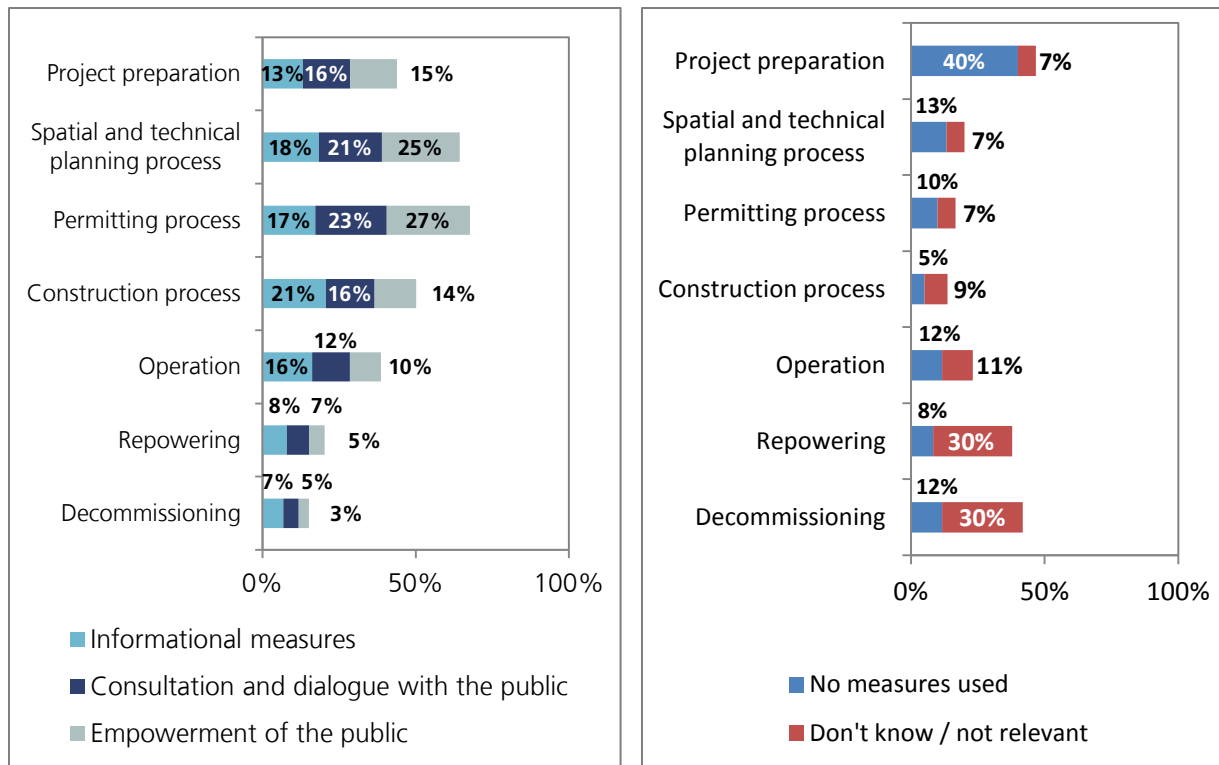


Figure 1: Use of informational, consultational and empowerment measures in different project phases (project developers and cooperatives with experience with public participation activities (n=75)).

Concerning the second research question ("Have the measures led to positive effects regarding the social acceptance of wind energy projects?") correlations were calculated. There is a significant negative correlation between the number of measures carried out in the project preparation phase and the amount of negative reactions by local citizens ( $-.234$ , Pearson's correlation). Thus, applying public participation measures in early project stages is associated with less negative reactions of local residents. The number of measures carried out in several project stages is also interrelated with positive reactions by local citizens: The more measures are applied in the project preparation phase, in the spatial and technical planning, in the permitting and construction process and in the operation phase the more positive reactions by the local public occur ( $.288^*$ ,  $.237^*$ ,  $.473^{**}$ ,  $.411^{**}$ ,  $.363^{**}$ , Pearson's correlations). Consequently, carrying out more public participation measures is associated with more positive reactions by residents.

## Conclusions

Together these findings point out that negative reactions by local residents are an important issue for wind projects. The majority of project developers and cooperatives reported delays or stops of wind farms due to social acceptance issues. However, the projects also face positive reactions, but these are mainly raised by local political stakeholders. The majority of project developers and representatives from cooperatives with experience with public participation are aware of these problems and thus state that elements of public participation are part of the usual procedure in planning, building and operating wind farms. However, asking the respondents in more detail about the use of measures in different project phases it can be seen that especially in early project stages nearly half of the respondents claim to not apply any public participation measures even if most of them find them useful. Regarding the effects of the measures it was found that negative reactions by the local residents can be avoided by starting

very early in applying public participation measures. Thus, for the citizen's acceptance it is crucial to start from the very beginning when preparing a wind project.

### **Learning objectives**

The analysis indicate that it is important to address the public when applying social acceptance strategies as they are often responsible for negative reactions in relation to wind farms. To avoid negative reactions public participation measures have to start very early, but to trigger positive reactions measures in all project phases are important.

## Bibliography

European Commission (2007): Eurobarometer on Energy Technologies: Knowledge, Perception, Measures, available on the European Commission's website,

[http://ec.europa.eu/public\\_opinion/index\\_en.htm](http://ec.europa.eu/public_opinion/index_en.htm)

European Commission (2011): Special Eurobarometer 364 - Public Awareness and Acceptance of CO<sub>2</sub>-capture and storage, available on the European Commission's website,

[http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_364\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_364_en.pdf)

Perlaviciute, G.; Steg, L. (2014): Contextual and psychological factors shaping evaluations and acceptability of energy alternatives\_ Integrated review and research agenda. In Renewable Energy (77), pp. 259–267.

Wesche, J. P.; Dütschke, E.; Schneider, U. (2015): People vs. Windfarms? – To what extent are strategies for public participation used to foster social acceptance in the European wind energy sector?

Wind Barriers (2010): Administrative and grid access barriers to wind power, available on Wind Barriers website, [www.windbarriers.eu](http://www.windbarriers.eu)

WISE Power project (Dütschke E. & Wesche J.P. – Fraunhofer ISI) (2014): Wind-Acceptance a user guide for developers and municipalities review of best practices, guidelines and toolkits on social acceptance in the wind energy sector, available on WISE Power website, [www.wisepower-project.eu](http://www.wisepower-project.eu)