



The International Energy Agency
Implementing Agreement for Co-operation in the Research,
Development, and Deployment of Wind Energy Systems



Task 28 “Social Acceptance of Wind Energy Projects”

“Winning hearts and minds”

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IEA Wind Task 28 on Social Acceptance of Wind Energy Projects engages in collection and dissemination of the current knowledge on how to increase acceptance of wind energy projects with the aim of facilitating implementation of wind energy and subsequently, meeting climate targets. The working group is currently preparing its first outcome, the State-of-the-Art Report.

This paper presents some results from the interdisciplinary and cross-country discussions. Amongst them are:

- There is knowledge available on many issues connected to social acceptance of wind energy, but exchange between various disciplines and dissemination could be enhanced, for example translating the results from social science research into the language of planners, developers and engineers and support for implementation in the institutions and authorities involved.
- Wind power has impacts on the landscapes and the people living around them. As there are serious concerns involved and values at stake, the affected people should get a voice in the planning, decisions making and even ownership to make their inputs heard.
- Opposition should not just be discarded as bad or wrong – there are rightful arguments. Constructive inputs have the potential to improve a project to everyone's benefit.
- Every wind power project is unique – there is no “one-size-fits-all” solution. Planners, developers and investors have to know how to deal with the specific situation and how to create a balance of interests.



The issue of Social Acceptance

Ambitious energy policy targets often necessitate *rapid deployment of renewable energies*. Public opinion is usually highly in favor of - amongst others - wind energy. However, in many countries concrete wind energy projects increasingly meet with resistance from the local population or environmental organizations. As the industry grows and expands, it is possible that social opposition to wind power projects could become a considerable barrier to continued deployment. Figure 1 and Figure 2 give an impression of the illustrations used by pro- and anti-wind groups.



Figure 1: Examples of media-effective opposition to wind energy [1]

IEA Wind Task 28

IEA Wind Task 28 is part of the International Energy Agency Implementing Agreement for Co-operation in the Research, Development, and Deployment of Wind Energy Systems. The working group members of the ten participating countries (to view members see **Annex 1**) engage in discussion of ongoing projects, research outcomes and upcoming issues as well as reciprocal learning. A diverse group, working group members bring *different backgrounds and national experiences*. This contributes to a multi-disciplinary approach and a thorough understanding of wind energy and social acceptance.

The purpose of IEA Wind Task 28 on Social Acceptance of Wind Energy Projects is to engage in *collection and dissemination of the current knowledge on how to increase acceptance of wind energy projects* with the aim of facilitating implementation of wind energy and subsequently, meeting climate targets.



Specific or partial objectives of this task are:

- Establish an international forum for exchange of knowledge and experiences
- Produce a state-of-the-art report on the current knowledge, as elicited from industry experience and scientific research, including an online library of reports and articles
- Establish "Best Practices" and tools for policymakers and planners to reduce project risks and accelerate the realization of the full potential of wind energy
- Establish strategies and communication activities to improve or to maintain the image of wind power.



Figure 2: Examples of pro-wind pictures [2]

The working group is currently preparing its first outcome, the *State-of-the-Art Report*. First insights from this work shall be presented in this paper. For further information and the actual state of the work, please see www.socialacceptance.ch. The report will be fully published on this website in the course of 2010. The insights obtained through work on "State-of-the-Art" will be processed into "Best Practices" which will represent the second outcome of IEA Wind Task 28 and are expected for 2011.



Several projects of the last years have tackled or are tackling similar questions as IEA Wind Task 28. Examples include:

- Project “Create acceptance: Cultural influences on Renewable Energy Acceptance and Tools for the development of communication strategies to promote ACCEPTANCE among key actor groups” [3]
- Project “Study on organizational models and best practice for facilitating local co-ownership and similar ways of increasing community acceptance of renewable energy projects“ [4]
- Project “RENBAR: Good Practices for solving environmental, administrative and social barriers in the deployment of renewable energy systems” [5]

IEA Wind Task 28 is differentiated from these other efforts primarily in its *specific focus on wind energy*: All three projects noted above considered an array of technologies including amongst others hydrogen, CO₂ capture and sequestration, wind, solar power. Moreover, IEA Wind Task 28 adopts a *holistic approach* to the issue. This contrasts for example with the new study commissioned by the Directorate General Energy and Transport which focuses on local co-ownership. Ultimately, IEA Wind Task 28 attempts to analyze the situation of social acceptance of wind energy projects from the *various viewpoints* contributed by the working group members (see Figure 3).

Based on this analysis, Best Practices, in terms of policy development and design, industry standards, and community engagement, will be developed.

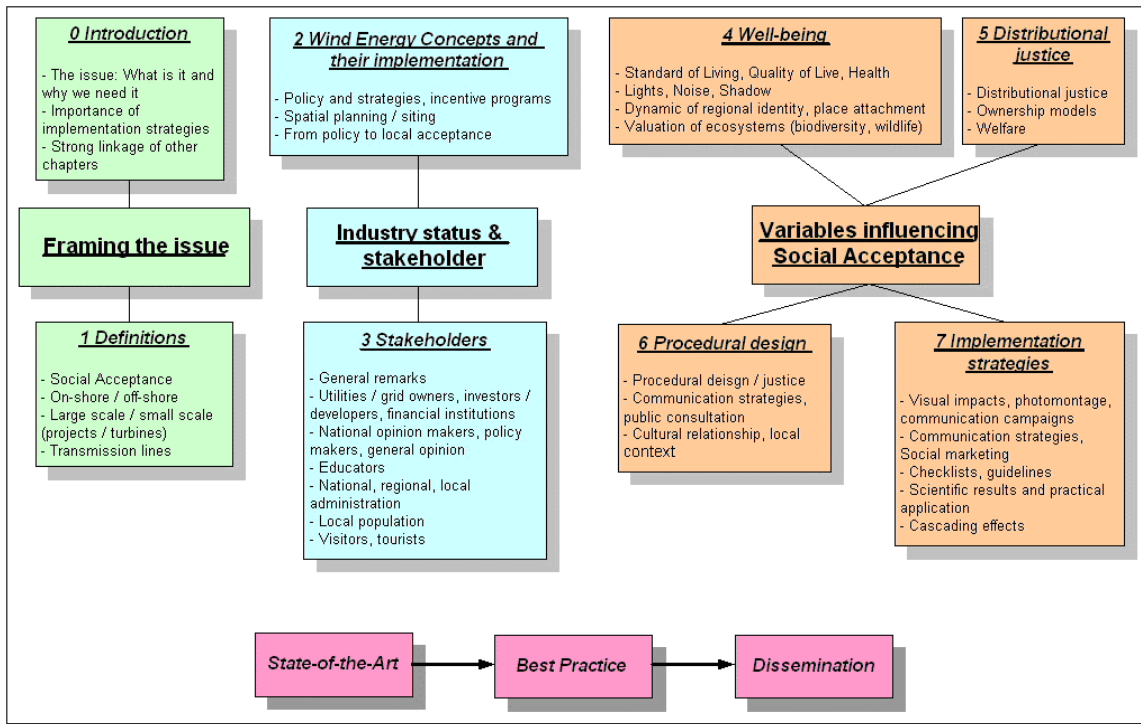


Figure 3: Structure of IEA Wind Task 28's work



Methods

The *definition of social acceptance* proposed by Wüstenhagen et al. (2007) [6] served as the conceptual basis for the approach. Wüstenhagen et al. described three dimensions of social acceptance – socio-political, community and market acceptance – relating to the stakeholder groups involved.

The *international experience* of the IEA Wind Task 28 working group was brought together by collecting national information in the participating countries and then integrating this knowledge into an overall picture. The information from the participating countries will be published in the form of “country reports” along with the integrated State-of-the-Art Report. Literature from additional countries such as UK, France, Spain, Australia and New Zealand was incorporated where available.

IEA Wind Task 28 has neither conducted its own research on scientific and technical issues such as the impact of wind turbines on ecosystems nor lies its main interest in results of such studies. Rather it looks *how social acceptance is framed and under what conditions it arises*.

Results

This section will present some of the characteristics of wind energy that have an influence on social acceptance and will then summarize some of the results of the cross-country and interdisciplinary discussions in IEA Wind Task 28.

Renewable energy technologies feature *special characteristics* when compared to conventional power generation:

- The smaller scale and the lower energy density of the generation units require a larger number of installations to be built. Installations may be closer to where people live – the visual and acoustic impacts therefore tend to be higher. [6]
- There has been – and partially still is – strong support for conventional generation in the form of research and development funding, tax relief or abatements, omission of responsibility for externalities etc. [6]

Wind power specifically,

- is spatially inflexible – the wind resources define where wind turbines are to be placed. [7]
- attracts the human eye with the movement of the blades and therefore has the tendency to become the center of attention. [e.g., 8] This is especially true for modern turbines with their high towers and very large rotors.
- adds a technical element into the landscape that doesn't suit our traditional notions of harmonic landscapes. [9] Landscape is a complex term and is experienced individually with varying connotations to identity or history. Objective criteria are therefore difficult to define. [e.g., 10]
- occupies large areas in open landscapes – but untouched landscapes appear to be more and more rare. [e.g., 11]
- Climate change requires national and global efforts, but it is the local communities that have to act and bear the wind energy's external costs, e.g., the change of landscape. [e.g., 12]



A great deal of *knowledge is available* that is connected to social acceptance of wind energy, be it in form of case studies, description of stakeholders and their arguments, the discussion of quality of life issues and environmental impacts or guidelines and manuals. While work has been invested in understanding the issues and conflicts, implementation of the results either in the form of communication strategies or direct practice appears to be insufficient. *Enhanced exchange* between researchers in the field of social sciences and engineers and developers of wind energy plants (e.g., in the form of best practice projects) together with translation of the results from social science research on social acceptance into the language of the planners, developers and engineers might help with dissemination of this knowledge.

A further insight from cross-country exchange is a *linkage between acceptance of transmission lines and acceptance of wind energy*. Such cases exist where valuable wind resource areas are far from consumption or load centers and transmission lines have to be built to transport the electricity to the customer.

With respect to the framework of social acceptance established by Wüstenhagen et al. (2007) [6], current State-of-the-Art knowledge is discussed here:

Socio-political acceptance

- General opinion towards renewable energy technologies and wind energy specifically is positive.
- The task of policy makers does not stop with the issuing of policy targets and financial incentives. Social acceptance requires a framework for coordination of interests and support for implementation in the institutions and authorities operating at the national, regional and local level. For example, municipalities need access to reliable, unbiased information and resources to deal with applications; regional administrations need support on how to implement guidelines and how to coordinate wind development on a larger scale.
- Wind parks in forests have only recently found their way into the public agenda. The discussion is ongoing how to deal with this issue.

Community acceptance

- When making decisions, people weigh benefits and positive effects against nuisance, annoyance and further negative impacts of a project. While the negative effects are often obvious – e.g., impacts on the landscape, noise, lights, potential property value loss – positive effects are not – e.g., indirect effects on the region in terms of infrastructure or income for landowners and the community.
- The recognition of the local impacts and the communication of the positive impacts require broad dispersion of the benefits in the affected community. There are serious concerns involved and emotions and values at stake – the affected communities should get involved in planning, decision making and even ownership to make their inputs and concerns heard.

Market acceptance

- Opposition should not just be discarded as bad or wrong – there are rightful arguments, and constructive inputs have the potential to improve a project to everyone's benefit.
- Every wind power project is unique – due to the combination of characteristics in the political framework, i.e. people involved, local (energy) history, the specific landscape. There is no “one-size-fits-all” solution.
- Planners, developers and investors have to develop sensitivity and intuition to know how to deal with the specific situation and how to create a balance of interests.



Discussion and Outlook

Wind energy has shown enormous growth in many countries over the last few years. Techniques have been developed to decrease noise and other annoyance impacts and knowledge has been acquired to reduce impacts on the environment. However, *further development is required to reach the ambitious policy targets* set by many countries. Wind farms will likely concern many communities and people will want to see benefits and to have a voice in the development process.

Interdisciplinary and cross-national exchange could facilitate this further development: Developers, planners and engineers will likely benefit from entering into an exchange with social science researchers to *develop an understanding of people's concerns and the unique context of each location*. Opposition has the potential to improve projects when involvement and participation are taken seriously and when developers and investors are honestly committed to a quality project.

Knowledge about social acceptance of wind energy has been gathered in the last decades and informed by experiences with other technologies such as nuclear or waste treatment. However, *actions for the next years* include:

- dissemination of the knowledge about issues such as perceptions of fairness and justice for implementation in the political framework
- minimization of impacts on quality of life, ecosystems and landscapes as well as spreading of the benefits in the affected communities
- further development of practical and specific guidelines on involvement and participation of the affected stakeholders for developers.

IEA Wind Task 28 intends to continue its discussion on the basis of the “State-of-the-Art” knowledge and its conclusions. IEA Wind Task 28 would like to initiate new research projects where gaps have been identified. The working group will process the newly gained understanding into *Best Practices*. The latter will be based on findings that are valuable independent of national settings. Further international dissemination activities will be published on www.socialacceptance.ch.



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¹ Last access for all references to websites: April 22nd, 2010



Annex 1: IEA Wind Task 28 Participating countries and Working Group members

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