

## Final report

# Public acceptance of renewable energy projects: Development of improved methods for dialogue and handling of local social impacts



### 1.1 Project details

<b>Project title</b>	Public acceptance of RE-projects: Development of improved methods for dialogue and handling of local social impacts
<b>Project identification (program abbrev. and file)</b>	Project no. 12442
<b>Name of the programme which has funded the project</b>	ForskEI
<b>Project managing company/institution (name and address)</b>	Aalborg University Frederik Bajers Vej 5, 9100 Aalborg
<b>Project partners</b>	DTU Wind Nordic Folkecenter for Renewable Energy
<b>CVR</b> (central business register)	29102384
<b>Date for submission</b>	22.12.2017

## 1.2 Short description of project objective and results

This research project is aimed at increasing the local acceptance of RE-projects. Focus is placed on Environmental Impact Assessment (EIA), which is a central arena for the dialog and conflicts concerning RE-projects, and thus a valuable tool to improve. Especially, the project takes point of departure in the understanding that social impacts are central to the conflicts, but so far have not played a very significant role in the EIA reports and processes. The project has succeeded in creating an improved understanding of the conflicts and integration of social impacts in EIA. Based on this, recommendations for and examples of improved dialogue and methods for working with social impacts in EIA are inferred, focussed both on improved work with social impacts and improved dialogue in EIA. The dissemination of project results has helped create awareness and discussion concerning the importance of social impacts and how to work with these, especially among Danish EIA practitioners. See more at <https://vvmplus.org/>.

Dette forskningsprojekt har som mål at øge den lokale accept af VE-projekter. Fokus er lagt på VVM (vurdering af virkninger på miljøet), som er en central arena for dialog og konflikter om VE-projekter, og derfor et værdifuldt værktøj at forbedre. Særligt har projektet taget udgangspunkt i en forståelse af at sociale konsekvenser er centrale for konflikterne, men indtil videre ikke har fået særlig meget opmærksomhed i VVM rapporter og processer. Projektet er lykket med at skabe en bedre forståelse for konflikterne og integrationen af sociale konsekvenser i VVM. Baseret på dette er der udledt anbefalinger, både rettet mod forbedrede metoder til at arbejde med sociale konsekvenser i VVM samt forbedret dialog i VVM. Formidlingen af projektets resultater har medvirket til at skabe bevågenhed og diskussion om væsentligheden af sociale konsekvenser og arbejdet med dem, specielt blandt danske VVM-praktikere. Se mere på <http://www.vvmplus.dk/>.

## 1.3 Executive summary

This research project is aimed at increasing the local acceptance of RE-projects. Focus is placed on Environmental Impact Assessment (EIA), which is a central arena for the dialog and conflicts concerning RE-projects, and thus a valuable tool to improve. Especially, the project takes point of departure in the understanding that social impacts are central to the conflicts, but so far have not played a very significant role in the EIA reports and processes. The project has been divided into 6 work packages as shown below, and a 7<sup>th</sup> work package concerning communication of the project and its results.

WP1	WP2	WP3	WP4	WP5	WP6
Mapping current practice of including social consequences in EIA of RE projects	Analysis of conflicts over RE projects with a focus on dialog and social consequences	Analysis of barriers and possibilities for working with social impacts in EIA	Literature study of international experiences with social impacts in EIA of RE projects	Development and testing of methods for working with social impacts and improved dialogue in EIA	Evaluating the outcomes of improved methods and dialogue (from WP5)

As part of the work packages, a number of data collection activities have been carried out. This includes among other things document studies of 19 EIA reports for RE-projects and 200 hearing statements, 35 interviews mostly with local citizens and EIA professionals and a thorough literature review of international experiences. As an important part of the project, three pilot studies were conducted, where different methods were developed and tested in cooperation with Esbjerg Municipality, Ikast-Brande Municipality and Silkeborg Municipality. The pilot projects were evaluated allowing for an important first gathering of experiences.

The project has succeeded in creating an improved understanding of the conflicts and integration of social impacts in EIA. Based on this, recommendations for and examples of improved dialogue and methods for working with social impacts in EIA are inferred. The main recommendations are to:

- Include social impacts in the scope of EIA
- Make a social baseline study
- Include social impacts at the planning level
- Focus on local benefits
- Take the point of departure in the citizens
- Acknowledge and reduce uncertainty
- Describe the whole project
- Create transparency concerning local benefits and disadvantages
- Strengthen participation
- Make a joint communication plan
- Improve the non-technical summary

Added to this is an overall recommendation that there is a need for guidance, experience gathering and competence development in the field, if social consequences are to play a more important role in EIA in Denmark.

The project results have been disseminated mainly through publications, presentations and discussions at conferences and meetings. See more at <https://vvmplus.org/>. Importantly, the project has had a reference group of key professionals, who have contributed with knowledge, ideas and cases. The reference group has also served the purpose of embedding the project and its results in practice. The reference group included practitioners working with EIA from COWI, Rambøll, Sweco and Niras; industry representatives from the Danish Wind Turbine Owner's Association and Danish District Heating Association; and a representative from the Danish Environmental Protection Agency. The dissemination of project results has helped create awareness and discussion concerning the importance of social impacts and how to work with these, especially among Danish EIA practitioners.

#### **1.4 Project objectives**

This research project is aimed at increasing the local acceptance of RE-projects. The overall aim is pursued through goals of building knowledge about the conflicts, and developing improved methods and approaches for dialogue and handling social consequences in environmental impact assessment. The aim is to develop practice to the benefit of many actors: Local citizens will be invited to an improved dialogue and inclusion of their concerns; project developers will potentially achieve a reduction of the uncertainty about delays and rejections of projects due to conflicts with local citizens; local politicians will have an improved basis for decision-making and

better chances of achieving goals of implementing renewable energy. In the end, the aim is to improve the conditions for investment in renewable energy and ease the sustainable transition of the electricity system.

The table below shows an overview of the risks to the project as pointed out in the project description, as well as reflections over how they unfolded during the work.

Risks	Reflections
Problems in finding pilot projects willing to participate	The members of the reference group have used their network to create contact to possible pilot projects, and this eased the process. Four project owners were approached and two of them agreed to participate. We added a project that the researchers were already involved in, which secured a valuable synergy.
Delay in pilot projects	There have been no delays in the pilot projects. One was abandoned after the first phase of the project, however, the work in the first phase was able to stand alone and be evaluated.
Resistance among the local citizens when approaches for example for interviews	The attitude among the local population towards the project has been largely positive. Some have not wanted to participate, but most have been willing to speak to us and share their stories and experience.
Members withdrawing from the reference group	Only one member of the reference group has left during the project. This was due to an overload of work tasks, and was mitigated by the fact that a colleague from the same consultancy company remained in the group.

As can be seen from the table none of the risks identified before the project materialised in a way that was a problem during the project implementation.

The figure below shows the project time schedule and milestones.

	Year 2016												2017											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>Work packages:</b>																								
WP 0 - Projectmanagement																								
WP 0A - Continuous dissemination																								
WP 1 - Mapping EIA practice																								
WP 2 - Analysis of the relationship between basis for dialogue and conflict																								
WP 3 - Analysis of possibilities and limitations																								
WP 4 - Review of international literature and experience																								
WP 5 - Development and testing																								
WP 6 - Evaluation of the effect of an improved basis for dialogue																								
WP 7 - Final dissemination of results																								
<b>Milestones</b>																								
M1 - Session and presentation at EA Day 2016 (WP1+2)								M1																
M2 - Development seminar with the reference group												M2												
M3 - Presentation at IAIA17																M3								
M4 - Session og presentation at EA day 2017																			M4					
M5 - Evaluation seminar with the reference group																						M5		
M6 - Publishing guidance document																								M6

One milestone was changed during the project period, namely M2, which was moved from December 2016 to January 2017, based on wishes from the reference group members. This was discussed and agreed with the funding administrator in ForskEI. Besides from this, the project has evolved as planned, reaching the set milestones at the appointed deadlines.

### 1.5 Project results and dissemination of results

The project has realised its objectives as it has built scientific knowledge about conflicts over RE-projects and use of social impacts in EIA, and through this knowledge as well as international inspiration and specific pilot projects formulated methods

and recommendations for how to work with social impacts and dialogue in EIA of RE projects.

The following are the specific activities and results for the different parts of the project.

- Work package 1 presents a document study of EIA reports for RE projects and a series of interviews with EIA practitioners. The studies reveal that a range of social impacts are often included in EIA report; EIAs are mainly concerning environment, health and local community, while social consequences such as culture, political system and hopes and fears are rarely included. Further the study shows that few of the social consequences are assessed and mitigated, and that they are most often local and negative. The interviews with EIA practitioners add that there is a perceived lack of knowledge and experience with social impacts, and that often impacts, which cannot easily be measured, are left out.
- Work package 2 analyses the conflicts concerning RE projects through document analysis of hearing statements plus interviews with local citizens in areas with contested RE-projects. The analysis shows that there is a discrepancy between the concerns of the citizens and what is included in the EIA reports and dialogue, since the citizens focus on a broader range and view on social impacts. Added to this are problems with the process, in which the citizens perceive a lack of openness, transparency and responsiveness from authorities and proponents.
- Work package 3 utilises a series of interviews with EIA practitioners, proponents and legal experts concerning the possibilities and barriers for working with social impacts in EIA of RE projects. The results show that the respondents see possibilities for integration of social impacts to help reduce conflicts, improve dialogue and transparency, improve work with positive impacts and contribute to the political process. On the other hand identified barriers are among others lack of clear definitions and demands in legislation, lack of competences and experience, problems with communication, and lack of time and resources.
- Work package 4 is based on a literature survey of international scientific literature. Based on discussions of the literature, a range of recommendations are proposed: 1) Social impacts should be clarified, 2) Quality assurance should be strengthened in legislation, 3) Public participation should be used better, 4) Positive initiatives in local communities should be backed up 5) New models for local support should be sought
- Work package 5 consists of 2 pilot projects where methods for investigating social impacts are tested on a wind turbine projects and a biogas plant. In the wind turbine project, a social baseline is established using statistical data and interviews with local citizens. For the biogas plant, an assessment of impacts on property prices is carried out.
- In work package 6 the pilot projects from work package 5 plus an additional project are evaluated. The evaluation is based on interviews with central stakeholders and shows a range of benefits and drawbacks of the methods and approaches used in the pilot projects. The results support the use of approaches and methods for working with social impacts, especially when they are initiated early in the planning process, and are based on dialogue with the local community.

During the project period, it became evident that the conflicts around EIA and social impacts of RE-projects could not be mitigated without also working with public participation. Therefore, the project team decided, within the project budget and time frame, to develop a guideline for dialogue in EIA of RE projects. This output was an extra result compared to the project description, but it was deemed a relevant effort in order to improve practice and reduce conflicts.

### Dissemination

The table below shows an overview of the dissemination activities carried out as part of the project.

<b>Types of dissemination</b>	<b>Products</b>	<b>Target group</b>
<i>Written reports</i>	Four scientific reports have been published based on the workpackages: <ul style="list-style-type: none"> <li>- VVMPlus – Subreport 1: <i>Mapping integration of social consequences in EIA practice</i> (August 2016)</li> <li>- VVMPlus - Subreport 2: <i>Connections between conflicts and social consequences</i> (November 2016)</li> <li>- VVMPlus - Subreport 3: <i>Limitations and possibilities for social consequences in EIA</i> (Februar 2017)</li> <li>- VVMplus – Subreport 4: <i>Testing and evaluating methods for working with social impacts in EIA.</i> (November 2017)</li> </ul> Each report is supplemented with a short summary document for easy access to the main results.	EIA practitioners and planners to influence and improve practice of EIA. The reports have been downloaded a total of 230 times during the project period.
<i>Electronic media</i>	Project website in both Danish and English, with information about the project, news, publications etc. Video displayed via the youtube channels of AAU and DTU and linked to the project website.	Broadly both practitioners in EIA and planning, interest groups, decision-makers, citizens and any others with an interest, but especially aimed at non-technical communication.
<i>Scientific journals articles and papers</i>	<i>The role of EIA and weak assessments of social impacts in conflicts over implementation of renewable energy policies</i> currently under 2 <sup>nd</sup> review at Journal of Energy Policy <i>International experiences with opposition to wind energy siting decisions: What lessons for Appraisal?</i> currently under 2 <sup>nd</sup> review at Journal of Environmental Planning and Management <i>Conflicts and social impacts: EIA of renewable Energy.</i> Peer-reviewed conference paper presented at the IAIA17 conference in Montreal Canada. (April 2017)	The scientific community in order to contribute to the growing body of knowledge on the topic. Journal of Energy Policy aims at research into energy policy and processes broadly, while Journal of Environmental Planning and Management is aimed more narrowly at the impact assessment research community. For the conference paper, also international practitioners in EA, which make up many of the conference attendants.
<i>Popular articles and press</i>	Press release from April 2016. Picked up by Ritzau resulting in broad coverage of the project kick-off (see examples in Annex 1). Popular article presenting main recommendations from the project, sent in to Teknik & Miljø in December 2017. <i>EIA and wind turbines.</i> Planning and chairing session at EIA Day 2016 in both Aalborg and Copenhagen. (August 2016) <i>Social impacts in EIA – Conflicts, dialogue and potential for improvements.</i> Presentation as invited speaker at the 13. UVP Congress in Bremen, Germany. (September	Society broadly to facilitate discussion and impact the public and decision-making on the project topics. EIA practitioners and planners to influence and improve practice of EIA.

	2016)	
<i>Presentations</i>	<i>Conflicts and social impacts: EIA of renewable Energy.</i> Paper presentation at IAIA17 conference in Montreal, Canada (April 2017)	EIA practitioners and planners in Denmark and internationally to influence and improve practice of EIA. Also for the IAIA17 conference the scientific community in order to contribute to the growing body of knowledge on the topic.
	<i>Workshop: Future focus on social impacts in EIA.</i> Presentation made at Rambøll seminar in Fredericia (April 2017)	
	<i>VVMplus: Preliminary results of pilotprojects.</i> Presentation made at EIA Day 2017 in both Aalborg and Copenhagen (August 2017)	
<i>Brochures and other documents</i>	Guidance document communicating the main recommendations, published December 2017. Available online and will be distributed in print at conferences and meetings.	Practitioners in EIA and planning, interest groups, decision-makers, citizens and any other involved in EIA processes.
	Brochure published in august 2016 outlining the project (6 pages). Available online and distributed in print at conferences and meetings during the project period.	Practitioners in EIA and planning, interest groups, decision-makers, citizens and any other involved in EIA processes.
	Brochure gathering the project experiences with stabling good dialogue in EIA, published November 2017 (19 pages). Available online.	Mainly practitioners in EIA and planning to influence and improve practice of EIA, but also interest groups, decision-makers, citizens and any other involved in EIA processes.

Added to this will be a press release published in January 2018 on the project website and through AAU communication channels. Finally, a significant contribution to the dissemination of the results is the use of material and cases from the project in teaching both at AAU and DTU. Here the results of the project are used for teaching planners and engineers at bachelor and master as well as for post-graduate training courses.

#### Environmental and climate impacts of the project

The project has had very limited negative environmental impacts constituted by a few flight travels, however, it has had an indirect positive environmental impact in making the transition to a greener energy system smoother. This indirect impact is, of course, impossible to measure, although potential delays of the green transition has noticeable environmental consequences.

#### Turnover, exports and employment

The project has not directly resulted in turnover, exports or employment. The project may have a contribution to improved turnover and employment from improved possibilities of implementing RE projects. Indirectly, the project may provide consultants with the possibility to market themselves as better equipped at integrating social consequences in EIA.

### **1.6 Utilization of project results**

The project participants expect to utilise the project results for various tasks:

- It is expected that the project results will be used by the practitioners who conduct EIA of RE facilities, mainly consultants and municipal planners.
- The results will be used for continued research and dissemination within the topic.
- The results will continue to be used as part of the work of Nordic Folkecenter for Renewable Energy as an NGO.

- The results will be used in teaching at DTU and AAU teaching engineers and planners both at graduate and post-graduate level, working with EIA and renewable energy facilities.

The project has no direct market potential; however, the goal is to improve the investment climate, providing less risk for projects being challenged by conflicts. This might be supplemented by a small market potential for the consultants who utilise the results. The results have not been transferred to other institutions after project completion.

The project results contribute to the realisation of energy policy objectives also by minimising the risk of RE projects being delayed and halted by serious conflicts in the local communities.

### **1.7 Project conclusion and perspective**

State the conclusions made in the project. Try to put into perspective how the project results may influence future development.

The experiences from the above analyses are synthesised in a guideline document, which puts forward the following 11 recommendations for an improved practice of handling social impacts in EIA of RE projects and thus hopefully improving the acceptance of the projects:

- Include social impacts in the scope of EIA
- Make a social baseline study
- Include social impacts at the planning level
- Focus on local benefits
- Take the point of departure in the citizens
- Acknowledge and reduce uncertainty
- Describe the whole project
- Create transparency concerning local benefits and disadvantages
- Strengthen participation
- Make a joint communication plan
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The recommendations are targeted at municipalities, consultants, and developers, who have insights into the EIA legislation, have experiences from practice and who are the main gate keepers for changing practice. The findings during the project point to a pronounced need for guidance, sharing of experiences, and competences regarding the integration of social consequences in EIA. This is what the recommendations and the accompanying information in the final publication of the project is aimed at contributing to. The purpose of the document is, based on the first experiences in Danish practice, to provide answers to some of the key questions and outline directions for practices that are able to accommodate some of the identified problems with conflicts related to social consequences.



## **Annex**

Relevant links:

- Project website with links to all the produced publications and the video: [www.vvmplus.org](http://www.vvmplus.org) or <http://www.vvmplus.dk/>
- Examples of press coverage at the project kick-off:  
[http://vbn.aau.dk/da/clippings/naboer-staar-i-vejen-for-den-groenne-energi\(35363a81-a103-4693-a541-8056bd0bccea\).html](http://vbn.aau.dk/da/clippings/naboer-staar-i-vejen-for-den-groenne-energi(35363a81-a103-4693-a541-8056bd0bccea).html)  
[http://vbn.aau.dk/da/clippings/naboernes-bekymringer-skal-taenkes-ind-i-vindmoelleprojekter\(4701092e-93f5-486b-b0dc-96d69087d1a5\).html](http://vbn.aau.dk/da/clippings/naboernes-bekymringer-skal-taenkes-ind-i-vindmoelleprojekter(4701092e-93f5-486b-b0dc-96d69087d1a5).html)