



Deliverable 6

Selection criteria of demo projects in CA

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Cultural Influences on *Renewable Energy Acceptance* and *Tools* for the development of communication strategies to promote ACCEPTANCE among key actor groups

Partners of Create Acceptance



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Executive summary

This paper introduces the set of criteria used to select demonstration projects for social acceptance of renewable energy technologies, taking into account results of the analysis of case studies in WP2.

The CA multi-stakeholder tool should be tested in five different technological settings: Hydrogen in Iceland, CCS in the Netherlands, biomass in Germany, wind in Hungary and solar thermal power in Italy.

The approach of demonstration projects is seen as opportunity to consider further and more detailed which of those factors explored in the case studies in WP 2 - and which additional ones - can increase the social acceptance in the context of new and renewable energies.

Therefore, the inclusion of stakeholders and their participation are relevant additional criteria for the demo selection.

The following set of criteria - with a number of sub-criteria - defines the base for the final selection of projects:

- Is the project representative for one of the 5 given technologies?
- Are all different EU-regions covered?
- What stage is the project in
- Is any kind of stakeholder participation apparent?
- What kind of conflicts might derive?

All demo projects meet the five categories and the criteria were evaluated by the demo leaders.

1. Introduction

This paper introduces a set of criteria as a guide to select demonstration projects for social acceptance of renewable energy technologies. These projects should be able to implement a multi-stakeholder process build upon the Socrobust tools.

The analysis of case studies in WP 2 resulted in a set of characteristics and success factors which were helpful to derive the core set of selection criteria (see Chapter 3).

2. Demonstration Projects

The multi-stakeholder tool will be conducted in five demonstration projects:

- hydrogen project SMART-H in Iceland
- carbon sequestration and storage project in the Netherlands
- biomass project in Germany
- wind project in Hungary and
- solar thermal power project in Italy.

A multi-stakeholder process should be initiated for each of these projects. This process includes the following issues:

- Identify and select relevant stakeholders and map their attitudes in the view of the demonstration projects
- Organisation and structuring of communication processes between the stakeholders and avoid or resolve conflicts.

The results of the case studies in WP 2 raised several key factors influencing the success of RES and RUE projects.

The demonstration projects are seen as opportunities to consider further and more detailed which of those factors - and which additional ones - can increase the social acceptance in the context of new and renewable energies.

The demo projects are meant to extend the scope of the WP2 case studies with respect to more (and new) project initiators and a variety of stakeholders.

Therefore, the inclusion of stakeholders and their participation are relevant additional criteria for the demo selection.

3. Selection Criteria

The following set of criteria defines the base for the final selection of projects:

3.1 Is the project representative for one of the 5 given technologies?

- Different renewable energy technologies have different profiles in terms of public image, acceptance in society and technological implementation options.
- National policy supports the kind of renewable energy projects.
- The new technology can compete with existing technologies or companies (upcoming market share).
- Natural resources are available.

3.2 Are all different EU-regions covered?

- Different regions with different climate and cultural background should be covered.
- The different climate conditions cause different energy demands (and supply options).

3.3 What stage is the project in

- The project has just started
- The project runs for several months

3.4 Is any kind of stakeholder participation apparent?

- Political and economical decision makers are familiar with the technology and social acceptability
- A kind of a stakeholder network does exist, a core group of stakeholders is actively involved.
- The stakeholders are interested in new technologies.

3.5 What kind of conflicts might derive?

- Local/regional stakeholders who are relevant for the project are not involved or have conflicting interests.
- Conflict factors concerning the selected technology are obvious.
- The technology can be adapted in the local context.

The following overview of demo project selection gives an impression of the criteria proof that concern in the cases: All demo projects meet the five categories and the criteria were evaluated. Secondly the table offers detailed information on the current state of the specific projects.

4. Overview of Demo Project Selection

Criteria/ Projects	Hydrogen Iceland	Carbon Sequestration Netherlands	Biomass Germany	Wind Hungary	Solar Thermal Power Italy
Representativity of the Project					
Public image (acceptance)	positive	Debated (but positive image gains the upper hand)	positive	positive	To be debated. At present: neutral due to lack of local inconvenience for the local residents; positive due to possibility of dismantling the plant and transferring it in other sites
Technology implementation	The settings resemble modern fishing towns in the Nordic hemisphere. The economy reflects both global and island dimensions.	Innovative new technologies are used but can be replicated in other countries with similar geological setting (Europe and worldwide).	Project can be replicated in other (rural) villages in agricultural setting	Community project model can be replicated with some modifications in other villages showing appropriate wind conditions. However, upgrades in distribution network and system operation might be needed.	Optimisation of technology
Criteria/ Projects					
Hydrogen Iceland					
Carbon Sequestration Netherlands					
Biomass Germany					
Wind Hungary					
Solar Thermal Power Italy					
Support from national policy	strong	under consideration	strong	moderate	Renewed support also due to the involvement of Prof. Rubbia (project creator) as consultant of Minister of Environment.
Competition	From ethanol production plans in the Akureyri, from biogas in Reykjavik	other CCS initiatives and other RES + RUE technologies		with fossil lobby on policy level	Enel has a plan for developing a mix of RES at national level.
Natural resources	good geothermal and	(partly depleted) oil/gas	good regional agricultural	Moderate but sufficient wind	Direct sunlight, low cloud

	hydroelectric potentials	fields with potential for CO ₂ storage and enhanced oil/gas recovery depleted oil/gas fields	and forestry potentials	conditions (for 25% annual capacity utilisation) and for financial return under RES-E policy Onshore wind energy technology is available; (no advanced technology needed).	cover
EU-Regions					
Region (Climate, culture)	Northern Europe	Western Europe	village typical for Central European agricult. communities	Village is typical for Central European agricultural communities	South Europe
Criteria/ Projects	Hydrogen Iceland	Carbon Sequestration Netherlands	Biomass Germany	Wind Hungary	Solar Thermal Power Italy
Stage of the Project					
Start	Project time: 2007 - 2010. First visible implementation in June 2007. Research phase until 2011.	Start execution possibly in autumn 2007	1 st phase (Jühnde village) is operational;	1st turbine is in operation since 2005; further phases under preparation	In February 07 an agreement between Enea (project developer) and Enel (industrial partner), has been signed. Enel has charged by the commitment of financing the demo project.
Runs since...	Preparation has been ongoing since 2004. Announced 6 th of Feb 2007.	Initial idea exists since 1999. Concrete project development started in 2002.	2 nd phase started in late 2006; phase of selection, first workshops of vision building in different villages (ongoing since 09/2006)	1st turbine is in operation; 2 nd stage of 3 turbines: EIA done, many of the permits obtained but one: the Energy Office licence; 3 rd stage of 16 turbines: site selected, EIA is being conducted;	1 st phase started in late 2001 to 2005: during this period the research and the trials as pilot plant were developed. In 2005, the lack of national law stopped the further development at industrial scale.

Criteria/ Projects	Hydrogen Iceland	Carbon Sequestration Netherlands	Biomass Germany	Wind Hungary	Solar Thermal Power Italy
Stakeholders					
Participation exists	Most power companies in the country participate both as providers of energy and users of equipment. Department for Environmental Research at the University of Iceland, all companies, service companies that use fleets	There is no structured participation process with stakeholders.	inhabitants of potential villages, experts	Two questionnaire surveys conducted, Forums (with inhabitants) held on vision and communal model; Organised education and poster exhibition on site	To be explored with Enel
Political decision makers	Government	Government, province, local community	Majors	1. Major 2. Ministry of Economy on RES-E support policy (in 2007 under revision)	Government
Economic decision makers	The ministry of Industry	Project manager, project partners, Government	farmers organisation, district heat customers (residential households)	Project manager; EU grant provider; Landowners;	Enel
Network	Three project managers with direct contacts to providers of equipment and users	Project manager, industrial partners, technology supplier	speakers of working groups, representative of the Jühnde cooperative	Local/regional networks: Landowners;	Project manager (Enea), industrial partners (Enel) and consortium of industrial suppliers.
Interest in new technology	Very high. Questions in the parliament on the status of fuel research in Iceland. Interviews on the national radio, international energy globe award, students, teachers, tourists	Increasing		Booming investor interest in wind in Hungary and in the CEE region; MAVIR (System Operator - security of supply, balancing); Energy Office (regulator);	Recent high interest from the Government and Enel.

Criteria/ Projects	Hydrogen Iceland	Carbon Sequestration Netherlands	Biomass Germany	Wind Hungary	Solar Thermal Power Italy
Conflicts					
Stakeholders interest	Nature conflicts		Regional NGO		
Technology conflicts	A variety of technology undergoes the test the system design is Icelandic, the components come from three continents	conflicts present at the social/political level focussing on general desirability of CCS, safety issues, and competition with RE technologies.		System integration of wind into 1. system operation (e.g. reserve needs) and 2. distribution network;	Question of exclusive licences on project developer's patents. Enea has to choose if and how to transfer patent licenses to industrial suppliers
Technology and local context	No major conflicts so far	No specific conflicts on project level (yet)	Land-use conflicts between nature protection and biomass production, questions of economy, adequate resource supply (competition with agricultural products)	About half of local population wants no more than 5 turbines as opposed to the other half which would agree to even 20 or more Potential land-use conflicts between industrialised character and site of archaeological (Roman) interest seem to be solved with site modification.	No specific conflicts at project level (yet)

Appendix A Summaries of demo projects

Table A.1 *Demo Solar Thermal project ARCHIMEDE - Italy*

Category	Who /What	How
Representativity	Enel central in the south of Italy (Priolo Gargallo, electric generating station) and it will be the first integration between a combined loop plant and a solar thermal plant. System of parabolic mirrors (also called parabolic troughs) that concentrate the direct solar radiation on the absorber, which is placed at the centre of the mirror, and can reach very high temperatures	The demo project should allow the technology optimisation with a commercial return for the industrial partner in the near future. The industrial suppliers, who are mainly precision and optical instruments suppliers, could offer their products on a larger market.
Stage of project	A round of consultancies and definition of agreement and collaborations will be launched, necessary for the realisation and management of the whole project. Afterwards, during the first year, there will be a phase of technical planning, that will be aimed to gather experimental data necessary to build the prototype plant	During February an agreement between Enea (project developer), Enel (industrial partner), has been signed. One aspect of the agreement is related to the assignment of the exclusive licenses on Enea patents.
Involvement of stakeholder	Enea (project developer), Enel (industrial partner) and the Italian government (project promoter); shareholders, customers, workforce, national and local administrators, environmental organisations, opinion leaders	Enel (industrial partner) is promoting an information strategy to spread his aims to all the stakeholders. Industrial suppliers of the project are assembled and organised in a consortium.
Core group of stakeholders (representatives)	Enea, Enel, Ministry of the Environment, Ministry of Industry, Industrial Consortium.	Separated interviews
Conflicts	Question of exclusive licences on project developer's patents. Adequate resources supply (by Government); fragmentation of national industrial suppliers for components realisation and technologies development.	

Table A.2 *Demo Vep Communal Wind Plant*

Category	Who /What	How
Representativity	Village is typical for Central European agricultural communities Wind technology of 0.6, 0.8 and 2 MW turbines	Community project model with some modifications can be replicated in other villages with appropriate wind conditions Wind energy technology is available; (no advanced technology needed). However, upgrades in distribution network and system operation are needed. This requirement is more pressing if many wind projects are connected to the network.
Stage of project	1st turbine is in operation; 2 nd stage of 3 turbines: EIA done, many of the permits obtained but one: the Energy Office licence; 3 rd stage of 16 turbines: site selected, EIA is being conducted; forums held on vision and communal model; project website	Feasibility studies, compiled by a local engineering firm; working groups of villagers
Involvement of stakeholder	Mayor; Inhabitants; Landowners; Rep of E.ON distribution network operator; Authorities; MAVIR (System Operator - security of supply, balancing); Energy Office (regulator);	Personal negotiations/offers for municipality share; 2 Questionnaire surveys, Forums, Visitor Centre with guidance, Permanent poster exhibition on site, 5 displays, brochures, project website, articles in local/regional printed media, open lectures Personal negotiations Addressed with several letters Personal communication and correspondence Not yet particularly addressed (plan: CA interview) Not yet particularly addressed (plan: CA interview)
Core group of stakeholders (representatives)	Landowners, rep of E.ON distribution network operator, Inhabitants; MAVIR (System Operator - security of supply, balancing) Energy Office (regulator)	CA interview As above, especially a forum Not yet particularly addressed (plan: CA interview) Not yet particularly addressed (plan: CA interview)
Conflicts	About half of local population wants no more than 5 turbines as opposed to the other half which would agree to even 20 or more Potential land-use conflicts between industrialised character and site of archeological (Roman) interest seems to be solved with site modification.	Information provision through the channels above Personal communication on forums and face to face

Table A.3 Demo SMART-H2, sustainable marine and land transport, Hydrogen in Iceland


Category	Who /What	How
Representation 	The settings resemble modern fishing towns in the Nordic hemisphere. The economy reflects both global and island dimensions. Hydrogen made with renewable energy in electrolysis and used in transportation. Cross-disciplinary research,	The project is an important test for realising a large scale introduction of locally made fuel to substitute imported fossil fuels. The participants are both national and international, more than 20 in all, 3 project managers, financially supported by the Icelandic state
Stage of project	Preparation has been ongoing since 2004. Project time: 2007.02.06 - 2009. First visible implementation in June 2007. Research phase until 2011.	Negotiations with technology providers and product users. Applications for the financing of accompanying research have been submitted.
Involvement of stakeholder	Government, Department for Environmental Research at the University of Iceland, all major local energy companies, service companies that use fleets	Meetings with users and suppliers, universities, government, press, research institutes, boat operator etc.
Core group of stakeholders (representatives)	3 project managers plus representatives of each company (25 people)	Meetings with parts of consortium, negotiations news announcements, interview on national radio, interviews with project managers and organisation of data sampling
Conflicts	Questions in the parliament on the status of fuel research in Iceland.	Providing information on contacts for all fuels and the status of hydrogen tests and reports.

Table A.4 Demo Execution plans of ZEPP (Zero Emission Power Plant) in Drachten

Category	Who /What	How
Representatively	The ZEPP is a pilot project on a new set of technologies from different countries. The project and technology are not restricted to a specific location	ZEPP-technology can be replicated in other countries (Europe and worldwide). Located preferable close to gas- or oilfields with potential for CO ₂ storage and enhanced gas or oil recovery.
Stage of project	(Final) planning phase. Start execution possibly in autumn 2007	Designing details of plant, developing gas generator, getting building permission, applying for subsidy
Involvement of stakeholder	Project manager, project partners, technology developers, province, local community	Financial support for project manager by project partners to carry out planning phase.
Core group of stakeholders (representatives)	Project manager, project partners, Dutch government (financial support), technology developers	Project consortium established for managing process and getting financial resources. Technical consortium established to develop technology and build plant

Category	Who /What	How
Conflicts	No specific conflicts on project level (yet), but conflicts present at the social/political level focussing on general desirability of CCS, safety issues, and competition with renewable energy technologies. The ZEPP plant in Drachten might become a vehicle for stakeholders to address these issues as well.	'Big, well known' partners are sought to join the consortium to raise chance of getting sufficient resources

Table A.5 *Demo Bioenergy Village Jühnde Dissemination Strategy - Germany*

Category	Who /What	How
Representativity	Village is typical for Western/Central European agricultural communities Biomass technology (district heating with biogas cogeneration and woodchips boiler)	Project can be replicated in other (rural) villages in agricultural setting - Biomass energy technology (biogas, woodchips boiler) is available; fuel logistic need can be met locally (no advanced technology needed)
Stage of project	2. phase of selection, first workshops of vision building in different villages (ongoing) CA: step 1 + 2	Feasibility studies, compiled by a local engineering firm; working groups of villagers
Involvement of stakeholder	Majors, inhabitants of potential villages, farmers organisation, experts	Local working groups, comprehensive planning groups
Core group of stakeholders (representatives)	Majors, speakers of working groups, representative of the Jühnde cooperative	Interviews: CA-specific
Conflicts	Land-use conflicts between nature protection and biomass production, questions of economy, adequate resource supply (competition with agricultural products)	Discussions with farmers on prices for feedstocks; environmental NGO expressed objections concerning nature protection (monoculture, effects on birds etc.)