



## **Deliverable 7**

### **Stakeholder attitudes and potential for resolving conflicts and increasing acceptance**

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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



**SIXTH FRAMEWORK PROGRAMME  
PRIORITY**

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## Contents

Executive summary	5
1. Introduction	6
2. State of the art and definition of stakeholders	7
2.1 Overview	7
2.2 The meaning of stakeholders in the CA project and the model of actors classification	7
2.3 The different roles of stakeholder – evaluated in 27 case studies	8
2.3.1 Stakeholder participation	8
2.3.2 Actors	8
2.3.3 Stakeholders	9
2.3.4 Partners	9
3. Experiences regarding actors and stakeholders' attitudes within the five demo projects	10
3.1 Overview	10
3.2 Smart H2 in Iceland	10
3.3 ZEPP in the Netherlands	10
3.4 Solar thermal power project in Italy	11
3.5 VEP in Hungary	11
3.6 Dissemination of the Jühnde model in Germany	12
3.7 Classification and general observation	13
4. Recommendations for WP4 stage 2	14
4.1 Steps Beyond: early and full participation of stakeholder	14
4.2 Conditions of stakeholder involvement with Create Acceptance	14
5. References	16
Appendix A           Details of demoprojects	17

## Executive summary

The D7 report summarizes discussions on meaning and role of stakeholders in the CA project. It presents the specific meaning of stakeholders as actors who should get involved in the early phase of an innovation process. Experiences of a number of evaluated projects as well as the discussions in five demo projects indicate the high complexity of this task.

One key finding is that active stakeholder groups differ in attitudes and expectations, due to status of projects, type of technology, regional/local customs as well as the PM's 'reputation'. The level of involving stakeholders is more than gaining information from them, but actively involve interested parties into the process of designing and planning.

While asking actors for their visions on the future and expectations regarding new technologies, societal acceptance and potential conflicts might show up and can be addressed by the PM in a targeted manner.

## 1. Introduction

The submitted report summarizes the discussion on the meaning and role of stakeholders in the Create Acceptance (CA) project. It presents the specific meaning of stakeholders as actors who should get involved in the early phase of an innovation process. Experiences of a number of evaluated projects as well as the discussions in five selected demo projects indicate the high complexity of this task. One key finding is that active stakeholder groups differ in their attitudes and expectations, due to the status of projects, type of technology, regional or local customs as well as the project manager's "reputation" and routine as regards participatory practice. While asking actors for their visions on the future environment and their expectations regarding the new technologies, societal acceptance and potential conflicts might show up and can be addressed by the project manager (PM) in a targeted manner.

## 2. State of the art and definition of stakeholders

### 2.1 Overview

Different scientific disciplines and practical discussions deal with the issue of actors' participation and stakeholder involvement. Since the early 1980ies the objectives and conditions of participatory processes have been discussed under optionally signed prerequisites. In the beginning of a more politically motivated participation era – which was also called the “participatory revolution” – the definition and involvement of stakeholders was discussed very controversial (Barth et al. 2007). Meanwhile there is a broad consent among the academic and the political world, that participation and partnership between the private sector, administration and society is a principle of good governance and helps to gain legitimacy in every planning context (Edgar/Marshall, Bassett 2006). In WP 2, a literature review helped to identify the arena of the current discourses. After a comprehensive evaluation we then focussed on the area of renewables and new energy (Heiskanen et al. 2007). In this context, the debates on the conditions of Technical Transition seem to fit quite well and inspired the model building of the CA tool.

### 2.2 The meaning of stakeholders in the CA project and the model of actors classification

One of the core objectives of CA is the adequate inclusion of stakeholders into an innovation planning process. Therefore, the meaning and definition of what is or might be a stakeholders' role and position is crucial in that respect.

There are many ways of defining who is a stakeholder, and which stakeholders are relevant. From the perspective of - for example - organizations, stakeholders can be classified as “any group or individual who can affect or is affected by the achievement of the organization's objectives” (Freeman, 1984). In the context of energy planning or infrastructural innovation, additional aspects gain relevance. These are e.g. potential local or regional impacts, effecting inhabitants or neighbours and caused by the construction or operation of plants. The environment might be confronted with several changes, such as increase in emissions, noise or visual impacts. Stakeholders might be involved as opponents, critical public or as beneficiaries, and might be invited by the PM or by a licensing body, or they take the initiative to get involved by themselves.

In WP2, the CA team worked on the definition of stakeholders in general as well as in the specific context of selected renewable and energy efficiency projects. An overview of what different authors perceive as stakeholders was elaborated.

After clarifying the specific relevance of what stakeholders mean in the project, we classified the different groups, dividing them from a more general perspective and involvement as “actors” up to the particular role of “partners” and the project initiator (who might be different from the current PM). The following distinction between three (four) groups has been made:

0. initiator of the project had the idea and took first steps of realization
1. partners / shareholders surround the project and constitute its core; they are linked to the project through formal arrangements
2. stakeholders are those individuals that can influence and are influenced by the project, but - at the current status - do not have a formal commitment or relationship with it; they might become involved in a later stage of the licensing procedure, though

3. general actors can enter or exit stakeholder status at different points of time (e.g. the media) and their relation to the project might change over time.

## 2.3 The different roles of stakeholder – evaluated in 27 case studies

To learn more about the implications of the potential roles, we evaluated 27 different energy projects in Europe, dealing with renewables and energy efficiency. Based on a set of indicators which also addressed the stakeholder involvement (Feenstra 2006), the findings were structured to support the CA hypothesis.

### 2.3.1 Stakeholder participation

As already stated in WP 2 (Heiskanen et al. 2007), the question of ‘who participates and in what way’ in energy projects is fundamental to the CA project. While in the 1980ies and the early 1990ies, the question of participation appears in the context of risk awareness and risk communication about energy infrastructure and the use of GMO (Barth et al. 2007), the current literature of Technical Transition (TT) discusses the explicit incorporation of the users’ side and view.

In CA we ask for the understanding of multi-stakeholder views and ‘participation’. The role of ‘the public’ in technological developments – at extremes characterised as docile recipients versus active participants – has assumed contemporary interest underpinned by a number of issues, one of them being the relationship between experts and public.

In this context, two positions arise: the ‘deficit’ model and the ‘participatory’ model. The deficit position implies a view of the relationship between technological expertise and ‘the public’ as one of ‘the public’ being acted upon through information provision and ‘public education’ (Heiskanen et al. 2007).

The public per se is seen here in a more passive notion. This passive role of reacting neighbours and other concerned actor groups has - to some extent - been overcome. In the meantime (mainly in the last five years), a new kind of project type that includes the practical view already at the stage of design was experienced through a wide range of applied research activities.

One idea behind this research program (funded in Austria and Germany) is to broaden practices of technological knowledge production and to include experts but also lay publics and their views on technologies in a *transdisciplinary* approach (Bergmann et al. 2005).

These complex processes of knowledge production demand a more elaborated role for what is characterised as ‘publics’ and have implications for the “quality” of participation and the requirement of management.

### 2.3.2 Actors

NGO often are indicated as general actors, while addressing interests on a national or even international level. ‘General actors’ that became stakeholders of the project at some stage include the media, as well as other organizations or institutions that participated in the project at some stage in a way that shaped its course. Some of the projects have had an impact beyond their immediate sphere of action in the sense that other municipalities have adopted the practice developed in the project. Sometimes the resources of specific actors or new actors are needed: for example to renew a project that had initial failures.

In principal, actors are not very much linked to the project, but their role might change during different phases of the project.

### 2.3.3 Stakeholders

The wide range of stakeholders involved in the evaluated projects reflects the complexity of energy projects. Some projects had selected in advance some key stakeholders, e.g. important 'gatekeepers' or customers that the initiators aimed to link to the project. This was the case, for example, in a project focusing on the installation of PV panels on public buildings. Architects, designers, museum authorities were important gatekeepers making decisions on building exteriors, and the organizations owning and managing the buildings were natural key stakeholders.

The bridging role of stakeholders implies that a network of different stakeholders can help the project to anticipate and keep in touch with societal reality. The degree to which stakeholders can have an influence on a project differs, for example in terms of their power to influence, their basis of legitimacy or their interests.

### 2.3.4 Partners

Partners are expected to bring resources into the projects, including financial resources and expertise in different fields and technology applications. Regional and city authorities can contribute to the project financially as well as organisationally. Local actors involved in the project can perform important tasks in bringing information about the local context into the project, as well as in communicating about the project to their local stakeholders. Partners can also contribute to the project through credibility and legitimacy – e.g., by involving user or NGO representatives. Partners with financial resources and expertise can be especially important for projects based on citizens' initiatives.

Partners might be involved through arrangements such as public-private partnership. Some projects have chosen to involve representatives of the local municipality as partners, while community-initiated projects have often involved partners providing funding or expertise to the project.

### 3. Experiences regarding actors and stakeholders' attitudes within the five demo projects

#### 3.1 Overview

We elaborated a twofold actors' profile of the demo projects: one is of a so called core group - selected and defined by the CA team as a consultant to the respective PMs. The second one is the profile of all actors, mentioned and classified by the PM.

Through a stepwise approach of testing the CA tool on one hand and evaluate the demo projects on the other, we could identify the stakeholders' roles and attitudes. The following paragraphs give a short profile of all demo projects – reflecting the temporary pinpoint of our current knowledge.

#### 3.2 Smart H2 in Iceland

Most power companies in Iceland participate as providers of energy and as users of equipment. The consortium of partners also encloses the Department for Environmental Research at the University of Iceland and service companies with own vehicle fleets.

The projects' motivator and PM is a private promoting enterprise, acting in line with the governmental policy. In the background, car retailers and oil companies (e.g. Shell) have their foot in the door - both as providers of technology and users of equipment and infrastructure. The energy industry has a common interest in the extension of renewable energies but seems to wait for the groundwork of the developers while competition is fierce in this market. The motivation to participate is based on the expectation to develop new business activities and to demonstrate the feasibility of new technologies. The scheme of competition results in a joint position towards renewable energies, giving priority to H<sub>2</sub>. For the success of the project it seems to be helpful working with strong players. On the other hand this might create difficulties, through competing strategies and framework conditions. Furthermore, the PM and consultant have to motivate the participation of other stakeholder groups, mainly lay public.

The regional developers support the project and the Smart H<sub>2</sub> project has a convincing notion. The public is eager for a quick implementation of the technology regarding it as a common national task. Nevertheless environmental organisations might follow other interests and remain sceptical.

Meanwhile, an actors' network exists within the project, involving most stakeholders concerned with a H<sub>2</sub> fuel system, both regarding current and future systems. It spans from governmental ministry and agencies to companies and entrepreneurs. Research bodies are entering also, but the success depends vastly on external factors: the expected technical progress and the industrial investments.

#### 3.3 ZEPP in the Netherlands

At present no structured stakeholder participation is in process. The current existing network is mainly dominated by technology suppliers/partners and by government organisations. This is due to the fact that the current status of project is in a planning/permitting phase. Societal organisations are more or less lacking in the current network. Market actors are also not fully in-

volved. Many conflicts at the social/political level are focussing on general desirability of carbon capture and storage (CCS), safety issues and competition with RE technologies.

At present, some stakeholders remain in a wait-and-see position towards the competitive attitude of the other stakeholders. The project process seems to be in stalemate. Powerful stakeholders react cautious, because there are uncertainties regarding technology development. The existing project idea is afflicted by the slow progress of the technology development. As soon as the technology is available, stakeholders will be prepared to further invest in the project.

### 3.4 Solar thermal power project in Italy

Similar to the ZEPP project in the Netherlands, the solar thermal project has no structured participation process with regional stakeholders yet. The project constellation and structure appears difficult to follow. Due to the impression that there is no structured process – and a clarification of roles yet, potential conflicts, which are not foreseen until now, might derive.

A joint vision building (process) is missing: different visions and commitments exist on the one hand between the Ministry of Economic Development (national industrial impact) and the Ministry of Environment (export of national technology, international partnerships and clean energy import). On the other hand, ENEL (industry) is interested to use the results of Archimede to realise the industrial exploitation in Spain and they want to profit by better incentive policies. The visions of the national level might conflict with visions of the local level, but this is not known yet. The public in general has a neutral position vis-à-vis solar thermal.

Research is carried out by ENEA (industrial partner, project manager), but with some specific parallel development by CNR. Furthermore ENEA has some small industrial suppliers, with a low capacity of international competition (low scale of production and investment) and with problems in technology transfer. The joining of ENEA and ENEL seems not to be transparent. The role of action is not clearly defined.

This unstructured partnership might hamper the project progress. German competitors get close actors to ENEA and block their possible partnership with other industrial competitors. Still ongoing debates on media (newspaper and television) about critical aspects of technology and economic performance of Archimede are promoted by some academic representatives. ENEL - the private investor - with a strong position in the energy market and with economic interests in Spain, stands for a possible future development of Archimede.

Visions for technology vary between the different stakeholders. ENEA has to choose how to transfer patent licenses to industrial suppliers. Regional interest is focused on solar technology and not on high temperature solar thermal, as the project predicts. Among a part of the academics a critical position exists towards certain technical aspects of the new solutions versus research in progress.

All this aspects show that the stakeholders need an early communication about aims and visions. Furthermore the roles of the stakeholders should be clarified and what functions are connected. If the present situation doesn't change, the project might get difficulties to be implemented.

### 3.5 VEP in Hungary

The participation process was accomplished with questionnaire surveys and vision forums held with local inhabitants. The project includes two stakeholder parties: conventional producers and professionals versus renewable energy producers. Some conflicts occurred through competition by permits and for land use for wind power plants. All stakeholders have economical interests in common. One half of the local population agrees to no more than 5 turbines (or power plants)

and the other half, including the professionals, would agree to even more than 20 plants. Potential land-use conflicts exist mainly by different interests of the industry.

The existing network is dominated by the regulator (Hungarian Energy Office, HEO) and the (Transmission) System Operator, MAVIR. MAVIR gives opinion to HEO on each project application from system balancing and in general security of supply point of view. MAVIR as a network operator passes the requirements of the system to HEO – in regard to system balance and safe offers in the network. MAVIR did not support the 2nd phase of Vép wind development. This is due to the fact that HEO - also on the advice of MAVIR - set a limit of 330 MW on wind developments for an indefinite time.

The Ministry of Environment challenges this limit, pushes for rapid changes, and it seems that they slowly start a fruitful cooperation with the Ministry of Economy that will last in the future. The Ministry of Economy supervises/controls the HEO. MAVIR is owned by the state and is not supervised by the Ministry of Economy, but political decisions would force them to accommodate. In the local context the mayor, the local population and the landowners are interested in the success of the wind project development, and they are supportive. Also supportive is the Energy Club, an influential RES promoter NGO.

The project shows the conflict between particular economical interests of stakeholders and the common interests of local inhabitants and local supporters. In opposite to the industry local people try to participate in the wind market to stimulate and increase the local income. A common understanding is missing between different ministries. So, the discordance of the political decision makers and the vagueness of responsibilities might hamp the implementation of renewable energies on the local level.

### 3.6 Dissemination of the Jühnde model in Germany

The stakeholders of the Jühnde model base on the already existing project structure. This structure was very successful in the first project phase. The second phase – the dissemination – is built on this project idea. The project manager – as representative of the county administration - is responsible for the regional implementation. Together with the Ministry of Agriculture and the mayors of the different villages he backs up the project. A process of networking is still ongoing and more relevant stakeholders get involved in the project. The PM has an open mind and tries to implement new visions. The mayor is one of the central persons of the stakeholder core group. He also gets support from inhabitants and scientists. A second strong and influencing group are the members and directors of the local companies (founded to run the biogas plants). Their local connection, local common sense and the knowledge about local features support the societal dialogue. This relation creates a strong base for further project activities. The scientists accompany the dissemination process for the county by identifying the need for action and opportunities for inhabitants to participate. The local companies support the technical aspects of the dissemination project.

Conflicts arise from the world market for the dissemination project: land use conflicts between bioenergy and food production came on the table. Resulting from the poor harvest in 2006, many farmers had to decide between food and bioenergy production. The PM still has to persuade farmers in taking part in the biomass project. Furthermore, nature conservation arguments have conflict potential. The regional nature conservation organisations argue against monoculture energy plantation. Within the planning process the PM has to discuss with the NGO to avoid negative impulses. The involvement might be critical and the consultant has an important role in supporting the communication processes through offering scientific facts. And also has the group of IZNE (University of Göttingen), which is moderating the dissemination process.

The strong local network and the rural area demand a clear and straightforward communication between all stakeholders. On the other hand the project is successful because of its engaged local people. If the conflict with rising agricultural prices can be solved, a successful dissemination of the project idea is on the road to success.

### 3.7 Classification and general observation

It can be ascertained that different levels of joint attitudes of all participating stakeholders are necessary for the successful implementation of a project idea (technology). The technology, the context and the people with their different roles have to be “aligned”. This alignment is needed on different levels and across the different levels. The visualization of stakeholder networks indicates the intensity of communication, but don’t allow the assessment of quality and the forecast of success for the project.

In all cases the national level (Ministry of ...) seems to be of high importance to frame the project conditions (economically and politically), while the economic decision makers vary widely in the different projects. One of the successful participatory processes has no industry representative in this position. The very powerful stakeholders are laymen and local inhabitants.

In other cases, roles are not yet clarified. The project process might even stagnate without the support of engaged stakeholders. The visualization of existing stakeholder networks and possible future developments seem to strengthen the PM’s awareness.

On the other hand, no typical pattern of single stakeholder attitudes can be identified which could guarantee a successful (societal accepted) energy planning. So, the PM has to be very flexible and adjust the projects’ conditions.

## 4. Recommendations for WP4 stage 2

### 4.1 Steps Beyond: early and full participation of stakeholder

The core aim of CA is the refinement of tools and management practices to involve stakeholders already in an early phase of planning.

The understanding of participation in the CA context is much more comprehensive and means the involvement of peoples' emphasis and identification *with* the project.

Regarding the second phase of WP 4, we can conclude the following recommendations out of the different demonstration procedures:

- One half of the evaluated projects has a strong orientation on the network of local actors while the other group of projects is concerned with general actors and decision makers on the national level, which means a different kind of communication and information strategy.
- Besides the question of stage, it seems of high importance who is the initiator (e.g. different from the PM) and at what level (national or local) the project did start.
- Furthermore the type of innovation and its penetration is of high influence: for example the CCS technology is linked to a still needed societal positioning – this is quite different in the case of biomass, where a positive common sense already exists.

These facts and differentiations have implications for the core groups and the types of stakeholder communication and workshops we have to deal with in the CA tool:

While some of the project types are already confronted with an existing formal or informal network on the local level, others have to activate stakeholders in this concern and realize a basis of participation.

In some contexts the stakeholders are members of ministries, agencies or top management which are differently (or not yet) concerned with visions. They will expect another type of workshop and will make high demands on communication processes. One of the demos indicates that it might be of advantage to offer target specific working groups.

So, the general goal to involve stakeholders might to be faced on different project levels, with different targets and emphasis.

Generally it has to be stated that the level of involvement is much more than gaining information from the stakeholder but get them actively into the process of designing and planning.

This is crucial for the group of partners and desired for the group of core stakeholders. For the group of general actors the kind of involvement depends on the type of project, technology and specific tradition or routine of the project management. Furthermore the results of different analytical steps allow the pm the identification of potential conflicts and give the opportunity to take countermeasures.

### 4.2 Conditions of stakeholder involvement with Create Acceptance

Within the CA tool, stakeholders are asked to explicit their own visions and expectations and add them actively to the process of project decision and design. Ideally this takes place before the legal licensing process where a formal participation has to be organised (by the licensing administration) - in some types of project.

In the pre-formal process stakeholder learn about the visions of the PM and have to evolve their own ideas and expectations about the future development of the project/technology context and of the environment. The PM gains awareness of potential conflicting situations and societal acceptance.

A core group of stakeholders has two functions: they promote the projects' idea and indirectly support the development of the pm's abilities of risk assessment (and the CA tool) through different steps of evaluation, discussion and adjustment.

While in the first round of contact the stakeholders have a more passive role, the so called core group became much more active – as supposed by the CA tool. A minimum option of one, respectively two workshops will complete the initial session of CA steps and has the objective to align visions and expectations and negotiate on the projects' specifics.

Other interest groups were identified through interviews with the pm and the following steps in the CA tool.

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## Appendix A Details of demoprojects

Table A.1 *'Present actor groups of the demos'*

Project	Project initiator	Partners	Stakeholders	General actors
Smarth2, Iceland	Jon Björn Skulason, Icelandic New Energy	Vistorka, NyOrka, Varmaraf, ISAGA, Raesir, Herz, Elding, Germanischer Lloyd, Siglingastofnun, National power company, Reykjavik Energy service,	All partners, H2 Car manufacturers, H2Logic, oil companies, Methane company, IceTec, University of Iceland Ministry of Industry, students at the academia of fine arts,	City of Reykjavik, Research students local and international media, tourism sector
ZEPP, Netherlands	Wouter van de Waal, project manager	SEQ, ONS (Now replaced by ENECO), Wintershall, Siemens, Volker Wessels, CES, GasUnie, Ministry of EZ, Ministry of VROM, Municipality of Smalingerland, Province of Friesland,	Shell, NAM,, SenterNovem, SodM, TU Delft, Friesche Milieufederatie, Energy Valley, companies next to plant,	ECN, TNO, CE, SNM, Energie Kompas,
Thermal Solar, Italy	Enea, Government	Enel	Ministry of Economic Development, Ministry of Environment, Regional Authority, Consortium of Industrial Supplier, Competitors	Academy, media.
VEP, Hungary	Rudolf Piller Vep Wind Company (Szélerő Vép Kht) owner and project manager	Enercon (turbine supplier), Mayor of Vép, EU PHARE, landowners	EON Distribution System Operator, Hungarian Energy Office (regulator), MAVIR Transmission System Operator, Local population	Energy Club (NGO), Ministry of Economy, Ministry of Environment, National Meteorological Office
Bioenergy model Jühnde, Germany	University (V. Ruwisch); County administration (Dr. Berndt)	Local mayors; Bioenergy co- operative; Companies; Local residents & farmers	Local residents / potential customers of ten villages	Other municipalities, media, Ministries on the national level, FAL, research groups

Table A.2 'Participation, attitudes and context of stakeholder'

Assessment of stakeholder attitudes	Smart H Iceland	Biomass Germany	Wind Hungary	Ceris CNR Italy	ZEPP Netherlands
<b>Participation</b>	Most power companies in the country participate both as providers of energy and users of equipment. Department for Environmental Research at the University, service companies that use fleets	inhabitants of potential villages, experts, working groups, vision workshop	Two questionnaire surveys conducted, Forums (with inhabitants) held on vision and communal model; Organised education and poster exhibition on site Articles in local media	There is no structured participation process with stakeholders.	There is no structured participation process with stakeholders.
<b>Political decision makers</b>	Government	county administration, mayors	Ministry of Economy, Municipality	Government (Ministry of economic development and Ministry of environment)	province, local community, national government
<b>Economic decision makers</b>	Ministry of Industry, local renewable Energy companies and reserach funds	farmers, inhabitants, new cooperatives	Owners of Vép Wind Company, Landowners; Representative of E.ON distribution network operator; Energy Office	Industrial partner (Enel): a private company with the Ministry of Treasure as major shareholder is (quasi monopolistic position)	Project manager, project partners, National government
<b>Stakeholders Network</b>	Project steering board is Vistorka, also financing the project (according to gov. policy); 3 project managers with contact to providers of equipment + users, maintenance shop for fuel cells (2 in staff), hydrogen station and operators (2 in staff), General / marketing manager at the whale watching ship Elding, art students and tutors, University, Dep. of natural resource management, internat. shareholders of	speakers of working groups, representative of the Jühnde cooperative, project manager (municipality), landowners Berndt from the county administration, IZNE (scientists, moderator), consulting firm, farmers, members of local associations	Project manager, turbine supplier, mayor	Project manager (Enea), industrial partners (Enel) and consortium of industrial suppliers.	Project manager, (potential) industrial partners (Gas Unie, nearby industries, Eneco energy company, Wintershall), technology supplier (Siemens, V. Wessel, CES), province, muni-cipality, national government and ministries of economic and environment-tal affairs, intermediary organisation (SenterNovem, Energy Valley), Permit organisation (SopM), local environmental organisation (Friesche

Assessment of stakeholder attitudes	Smart H Iceland	Biomass Germany	Wind Hungary	Ceris CNR Italy	ZEPP Netherlands
	INE, entrepreneur (expert), companies of equipment				Milieufederatie), research organisations (Delft university et al)
<b>Existing conflicts</b>					
<i>stakeholder interest</i>	There is more of a conflict in regional society on how or if renewable sources of energy should be exploited	NGO / BUND, farmers: conflict of availability and prices for the regional biomass is currently on the agenda	conventional producers and professionals vs renewable producers including Vép on policy and market regulation level	1. Different vision and commitment between Ministry of economic development (national industrial impact) and Ministry of environment (export of national technology, international partnerships and clean energy import); 2). Enel interest to use results of Archimede for realising in Spain the industrial exploitation, profiting of the better incentive policy	
<i>technology conflicts</i>	A variety of technology undergoes the test the system design is Icelandic ( which seeks certification) , the components come from three continents	no technology conflicts so far	System integration of wind into 1. system operation (e.g. reserve needs) and 2. distribution network;	1.National industrial suppliers need using public patents / pilot plant and inertia/resistences of the public research institute 2.Question of exclusive licences: Enea has to choose if and how to transfer patent licenses to industrial suppliers; 3. Regional interest is focused on solar technology 4. Critical position towards technical aspects of new technical	conflicts present at the social/political level focussing on general desirability of CCS, safety issues, and competition with RE technologies

Assessment of stakeholder attitudes	Smart H Iceland	Biomass Germany	Wind Hungary	Ceris CNR Italy	ZEPP Netherlands
<i>technology and local context</i>	The production of hydrogen in the local context is straight forward extension of the local renewable energy systems. Most research on local fuels has been on H2. No major conflicts so far	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.	solution versus research in progress and new solutions to bottlenecks Archimede is localised in an industrial zone owned by Enel (no problem of asking for land use). Priolo is a high polluted zone; no expectation of specific return, neither problem of their redistribution; neutral position of the population thanks to the good media campaign on solar thermodynamics by Enel.	No specific conflicts on project level (yet)

Table A.3 'Actors profiles Iceland'

Type/role of actors and stakeholders	Motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<b>A. Private sector companies (business partners, financiers, competitors, etc.)</b>						
<i>Icelandic New Energy, project steering board and</i>	H: project manager	Formal and crucial	Project manager	Project manager, dissemination, user, promoter, organiser,	Strong international network, Strong image abroad but little known in Iceland	Managing expectations of various stakeholders and the public
<i>VISTORKA, project steering board who also finances the project according to governmental policy Elding</i>	H: new business activities	Formal and crucial	Partner	Financial support, management, user, disseminator	S: Direct links to local and governmental politicians,	
<i>Raesir, Daimler car retailer and repair/maintenance shop</i>	M: Leading in know how	Formal and very important	Partner, disseminator	Role as demonstrator and disseminator	Relation to tourism	Vulnerable to accidents or mistakes
<i>IsAGA - Linde group</i>	H: Demonstrate feasibility of new technology and deliver to new clients	Formal	Technology supplier		No strongholds	
<i>Siglingastofnun</i>	L: Control, verify and approve of technology	Formal	Permit and inspections			Relation with administration and safety procedures at sea
<i>Germanischer Lloyd</i>	M: International certification of fresh technology	More important than the above	Permit and inspections	Setting criteria for certification, verifying performance		Relation with international HSE and classification
<i>Framtak</i>	M: engineering service (2 in staff) but enthusiastic	Informal	Technology supplier			Dominant position on gas market

Type/role of actors and stakeholders	Motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<i>H2-Logic</i>	M: testing equipment in a new condition, new business opportunity	Informal	Technology supplier			
<i>Shell Hydrogen</i>	M: Want to be involved in clean image projects					
<i>International oil companies and car manufacturers?</i>	M: Watching threats and opportunities but no actions	Informal	Branding			
<b>B. Experts</b>						
<i>Varmaraf</i>	H: Demonstrate feasibility of new technology new business opportunity	Formal, this stakeholder is betting everything on his own inventions.	System developer, tester, monitor of performance			Positive but uncertain about getting technology ready on time
<i>University of Iceland</i>	H: New era for cross disciplinary research	Formal, tutoring students gives direct contacts with project staff	Research considering energy systems and social / environmental impacts	Research & teaching also beyond immediate SMARTH2-related work	students? And international academic community?	Natural resource use vs. natural resource conservation?
<i>IceTec</i>	L: would like to explore spin-off business but lacks funding?	informal	unresolved		(entrepreneurs? - role is changing)	
<b>C. Public sector (administrators, politicians)</b>						
<i>Ministry of Industry</i>	L: except for clean image	Informal	Provides finance/permits	Finance and policy to facilitate the import/use of H2 technology	Links to politicians and public administrators	
<i>City of Reykjavik</i>	M:	Informal	Provides finance/permits	Promote clean energy image of the city	Links to politicians and public administrators	
<b>D. Associations and NGO (e.g., resident's associations, environmental organisations)</b>						

Type/role of actors and stakeholders	Motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<i>Náttúruverndarsamtök Íslands, largest association for nature protection in Iceland</i>	M: critical towards more of Iceland's renewable energy	Informal	no active participation		Links to media and international associations	
<b>E. Non-associated persons and groups (e.g., neighbours, consumers)</b>						
<i>International media</i>	M: use the opportunity to travel to Iceland only to come up with new stories about hydrogen projects	Informal				Reporters tend to want the project managers to exaggerate and send policy messages to others
<i>Residents of Reykjavik/Iceland: citizens, neighbours and potential users</i>	L-M. Local people are following the development of the hydrogen economy with interest, but are not directly involved.	No current influence. In the future can influence via politicians, administrators and the media, and through consumer behaviour.	Passive "audience" but also formation of public opinion by discussing the project with other people.	Overlaps are high in Iceland. Some are citizens, neighbours and potential users at the same time, can also be employees in partner companies and members of relevant organisations.	Variable, heterogeneous	People ask for visible evidence and a more active role of government. Some are wondering what happened to ECTOS. Some are impatient about the progress in the hydrogen economy.

Table A.4 'Actors profiles Germany'

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<b>A. Private sector companies (business partners, financiers, competitors, etc.)</b>						
<i>engineering office</i>	(h) income, increasing image	contractor		multiplier, contractor	village meeting	gaining clarity
<i>construction firms</i>	(m) new business market	contractor, dedicated by the villages				
<i>Energy supplier</i>		critical observer				losses, less customer
<b>B. Experts</b>						
<i>IZNE (V. Ruwisch, P. Schmuck)</i>	(h) smooth flow, sustainable implementation	informal; support by project management, management task; lead of village meetings, moderation and professional support of working groups	pro-organizer, moderator, organiser	consultant, moderator	with all actors	clarity about lead and evaluation
<i>external consulting</i>	(l) indirect involved	indirect involved; information broker by tender ; professional consulting of PM and Stakeholder	events, presentation	no involvement	Workshops stakeholder core group	
<b>C. Public sector (administrators, politicians)</b>						
<i>Mayor (Hr. Brandenuerg)</i>	(h) economical empowerment of the village; energy independence; nature conservation	formal + informal; representative and contact person; responsible for public relation	participant of working group "public relation"; moderator	inhabitant, politician, partner	contacts to every inhabitant	convincing of local parliament, financing problems

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<i>County (Mrs. Wehmeier)</i>	(h) regional development and sustainable implementation	formal + informal, source, PM	leading and controlling	Initiator, consultant, observer	central planning group	
<i>district chief executive (Dr. Berndt)</i> <i>local parliament</i>	(h) increasing image (h) regional development, economic validation of agriculture	formal (formal PM) formal; initiator, source, confirm selection of villages, authorisation of financial resources	leading		committee meeting	
<i>local representative</i>	(h)	formal + informal; representative and contact person; responsible for public relation				
<i>BMU</i>				funding		
<i>EU</i>				funding		
<b>D. Associations and NGO (e.g., resident's associations, environmental organisations)</b>						
<i>Cooperative</i>	(h) dissemination of the project idea; increasing image	informal, in personal union, responsible for feasibility study; multiplier	drafting of economical base	multiplier, contractor events		competition with engineering offices of other villages
<b>E. Non-associated persons and groups (e.g., neighbours, consumers)</b>						
<i>inhabitants</i>	(h) energetically independence	formal + informal; investors, active stakeholder, participation on planning and financing	future development of planning and visions	investor, planner, consumer, partner	village meeting, working groups	
<i>Farmer</i>	(m) new business market, economic stability	energy supplier		energy supplier, de-tractor	village meeting	

Table A.5 “Actors Profiles Hungary”

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on activities in the project the project	overlaps in roles	social networks	existing / potential conflicts
<b>A. Private sector companies (business partners, financiers, competitors, etc.)</b>					
Enercon Ltd	High - earn profit	Formal - medium importance- price and payment structure terms, but Enercon is substitutable (entailing delays)	turbine manufacturer and regular maintenance service provider	None	supportive - no conflicts
<i>Local service supplier</i>	High - earn profit	Formal - low importance - easily substitutable, but locals preferred if possible	ground construction work	Local population	medium to local population neutral - no conflicts
<i>Hydropower Kft</i>	Low-earn profit	Informal - low importance	potentially might provide energy storage and balancing in the future	none	medium to neighbour village population not individually known, but some are members in wind and RES associations
<i>Rival wind developers</i>	Low -earn profit	Informal - low importance	none	none	conflicting competition for permits and good locations; there are also common interests
<b>B. Experts</b>					
Communication consultant	High -earn profit, reference	Formal - medium importance (important role, but easily substitutable)	Helped information dissemination for 1st phase	None	medium to media supportive - no conflicts
Technical connection expert	High -earn profit, reference	Formal - medium importance (important role, but easily substitutable)	Prepares connection plan and helps negotiate with EON	None	medium to EON DSO supportive - no conflicts
National Meteorological Service	Medium -earn profit Database development	Informal and formal - medium importance	Data provision, Wind measurements,	None	No relevant network supportive - no conflicts

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on activities in the project the project	overlaps in roles	social networks	existing / potential conflicts
Environmental consultant	High -earn profit, reference	Formal - medium importance (important role, but easily substitutable)	Helps in environmental permitting	None	supportive - no conflicts
<b>C. Public sector (administrators, politicians)</b>					
<i>Ministry of Economy</i>	Medium - 1 of three main energy policy goals is environmentally sustainable energy production	Formal - High importance Prepares Electricity Law, issues energy decrees incl feed in tariff rules, prepares RES strategy	Determines regulatory environment incl economic incentives	None	Strong to HEO (supervises it) basically supportive, but main goal is balanced attitude to conventional producers and RES producers
<i>Ministry of Environment</i>	High - promotes sustainable development, wants to increase RES and wind share	Informal and formal - medium importance - coordinates with MoEcon, HEO, MAVIR TSO	- Coordination on energy strategies and regulation, - Prepares National Climate Strategy	None	Medium to MoEcon, HEO, MAVIR TSO, Media supportive - no conflicts with project, conflicting views with MoEcon, HEO, MAVIR TSO
<i>Hungarian Energy Office (HEO)</i>	High - Energy sector regulator, enforcing legislation, maintaining fair market conditions, security of supply, consumer protection, tasks in permitting and determining time horizon of feed in tariff support	Formal - high importance - determines procedures and issues energy operation permits, determines time horizon of feed in tariff support	- Issued permit for the 1st phase, - declined permit for the 2nd turbine, - decides on feed in tariff extension beyond 2007 for 1st phase	None	strong to MAVIR TSO, which provides basic advice on permit applications, strong to Ministry of Economy (executes the legislation brought by the Ministry) non-supportive because of negative opinion of MAVIR TSO

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on activities in the project the project	overlaps in roles	social networks	existing / potential conflicts
<i>MAVIR -System operator (TSO)</i>	High - maintaining security of supply, keeping system balance	Formal - high - provides primary opinion on power plant permit application to HEO from system admissibility/security point of view	Opposing opinion on permit application for the 2nd turbine	None	Strong to HEO non-supportive because of system balancing and concerns of security of supply
<i>(EU Commission - PHARE)</i>	Promoting development and sustainable solutions.	Formal - was high importance in subsidising 1st phase	Subsidised 1st phase - financed 90% of investment cost of erecting the 1st turbine	The required public procurement procedure influenced some decisions of owners/PM	None - PHARE program ceased supportive - no conflicts
<i>Mayor</i>	High - Move forward the development of the village	Formal - high for local context, e.g. incorporating wind park in municipal development plan (done); low for national context	Mayor member of the supervisory board of the wind company	Member of Vep Wind company supervisory board, Local inhabitant	Strong to municipal representatives, to local population, to Austrian wind park operators Supportive - no conflicts
<i>Regional Environmental Authority</i>	High - it is stipulated to deal with environmental permitting	Formal - high - Issues or denies environmental permit for the project phases	Issued environmental permit for project phases 1 and 2	None	Strong to Min of Env. neutral - no conflict
<i>Regional Technical Safety Authority</i>	High - it is stipulated to deal with rights of wire lines	Formal - high - Issues or denies wire rights	Issued wire rights for the 1st phase	None	None neutral - no conflict
<i>Hungarian Trade Permitting Office</i>	High - it is stipulated to deal with building permits for high buildings	Formal - high - Issues or denies building permits	Issued building permit for project phases 1 and 2	None	None neutral - no conflict
<b>D. Associations and NGO (e.g., resident's associations, environmental organisations)</b>					

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on activities in the project the project	overlaps in roles	social networks	existing / potential conflicts
<i>Energy Club</i>	Medium - national energy NGO, supports RES and opposes nuclear and fossil	Informal - medium - lobbying for wind in general	- Observation - Supporting wind in policy/strategy making	None	Weak to MoEcon, HEO, MAVIR TSO, Medium to MoEnv. supportive - no conflicts with PM, conflict with Ministry of Economic Affairs, MAVIR TSO, and HEO
<b>E. Non-associated persons and groups (e.g., neighbours, consumers)</b>					
<i>land owners</i>	Medium - earn profit	Formal - medium - rental fee	contracting rent-out of part of their land	part of them local population	weak - they are not organised into an association supportive - no conflicts
<i>local population</i>	Medium - local development and local environment	Informal - low. If third phase should start, participation and influence would be formal in an Environmental Impact Assessment	attending local forums	they are there in various civil organisations, municipality, local service providers.	weak - they are organised into non-our topic related associations supportive - no conflicts, but about 50% have concerns about more turbines than 5

Table A.6 “Actors Profiles Italy”

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<b>A. Private sector companies (business partners, financiers, competitors, etc.)</b>						
<i>Industrial suppliers and consortia of suppliers</i>	Development of exper-tise and new business	The project is developed jointly with the ENEA	Supplier of the patented coated absorber tube of solar thermal Archimede plant	They can contact other competitors		Industry, using the licenses, can sell directly to the market the single component and can sign new alliances with other competitors. Furthermore, they can improve the production process of the absorber tube.
<i>Competitors</i>	Exploitation of Enea patented research results	Contacts with Enea which could impact on the exploitation of Enea's patents	Schott is a potential direct competitor, now supplier of the conventional coated absorber tube of solar thermal plant		They have a strong market position and control large networks of users.	Schott, a German industry that produces the absorber tube, in 2008 will be able to produce a tube suitable to reach high temperatures, as the Italian absorber tube. This is the main reason for his strong interest to test his new absorber tube into the Archimede plant that, at the moment, is the only exemplar of high temperatures technology
<i>Financiers: Enel Shareholders Local Banks</i>	Business opportunity		Previous contacts, at the moment they are in stand by		Ministry of Treasure, small shareholders	
<b>B. Experts</b>						

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<i>Academia</i>	Visibility in critical debate	Informal media channels, debates, forum	-	No	Inside the Academy and through media	Support to the conventional solution
<b>C. Public sector (administrators, politicians)</b>						
<i>Ministry of Economic development</i>	Industrial and local potential impact	Formal channels	Regulation and Fund. They are waiting for a decision by the Parliament on a reorganisation of all the renewable sources of energy. After this decision, they will enact a specific Green certificate for the solar thermodynamic energy.	No	No	The commitment toward the solar thermodynamic is low compared to alternatives sources of renewable energy
<i>Ministry of Environment</i>	Support a national technology and its development also abroad; at the same time, this represent a feasible solution to the problems linked to the energy needs	Formal channels, networks	Regulation and Fund.	No	Networks linked to all the renewable sources with positive externalities.	Different vision from the Ministry of Economic development
<i>Regional authority</i>	Local socio-economic impact	Formal channels	Authorization. They manage the procedure regarding permission of building the plant	No	Local interest	The Regional Authority has a major interest toward the development of the solar thermal source at low-medium temperatures.

Table A.7 'Actors Profiles Netherlands'

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<b>A. Private sector companies (business partners, financiers, competitors, etc.)</b>						
<i>Wouter van de Waal / SEQ</i>	H: project manager	Formal	Project manager	Many roles	Relation to all project partners	
<i>Shell</i>	L: wait and see attitude potential competitor	Informal			Strong position in Dutch national energy context	Wait and see attitude
<i>ONS Energy Company (later replaced with Eneco company)</i>	H: competitive new business activities	Formal	Partner	Financial partner	Relation to all project partners and energy sector	
<i>Wintershall</i>	H: develop competitive business activities	Formal	Partner	Subsurface activities	Relation to all project partners and oil and gas sector	
<i>CES</i>	H: Demonstrate feasibility of new technology	Formal	Technology supplier	Supply technology	Relation to technology supply industry	
<i>NV Gas Unie</i>	M: reduce costs for nitrogen supply, possible develop CO2 infrastructure	Formal	Buyer of nitrogen	Customer, possible business partner	Relation to Dutch gas sector	
<i>Siemens BV</i>	H: Demonstrate feasibility of new technology	Formal	Technology supplier	Supply technology, possible partner in plant	Relation to technology supply industry and policy makers	Positive but uncertain about getting technology ready on time
<i>Volker Wessels</i>	H: Demonstrate feasibility of new technology	Formal	Technology supplier	Supply technology	Relation to technology supply industry and policy makers	
<i>Companies next to plant</i>	Potential buyers of heat				Relation with municipality	
<i>NAM / De Lier</i>	L: potential competitor	Informal			Dominant position on gas market	Competitive attitude

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project	overlaps in roles	social networks	existing / potential conflicts
<b>B. Experts</b>						
<i>TNO</i>	M: consultant activities on CO2 capture and storage	Formal	Advice		Many links to politics, public organisations, and science	
<b>C. Public sector (administrators, politicians)</b>						
<i>Ministry of Economic Affairs</i>	M: contribute to Dutch climate change policies	Formal	Provides finance/permits	Finance and permits	Links to politicians and public administrators	
<i>VROM</i>	H: contribute to Dutch climate change policies	Formal	Provides finance/permits	Finance and permits	Links to politicians and public administrators	
<i>SenterNovem</i>	H: contribute to Dutch climate change policies	Formal	Provides finance	Finance	Links to politicians and public administrators	
<i>SopM</i>	L: permit organisation for subsurface activities in the Netherlands	Formal	Provide permits for subsurface activities	Provide permits	Links to politicians, public administrators and municipalities	
<i>Municipality Smallerland</i>	H: positive image of municipality, creating jobs	Formal	Provide permits		Links to politics, society	Positive about project
<i>Province of Friesland</i>	H: positive image of region creating jobs	Formal	Provide permits		Links to politics, society	Positive about project
<i>Energy Kompas</i>	Contribute to climate reduction	Informal		Advice municipality	Links to municipality, society	
<b>D. Associations and NGO (e.g., resident's associations, environmental organisations)</b>						
<i>SNM (Stichting Natuur en Milieu)</i> <i>Friesche Milieufederatie</i>	M: critical towards CO2 storage	Informal			Links to society, politics	
<b>F. Other</b>						

Type/role of actors and stakeholders	motivation to participate	Formal / informal influence on the project	activities in the project overlaps in roles	social networks	existing / potential conflicts
<i>EnergyValley</i>	M:	Formal / Informal	Public/private lobby organisation for energy activities in the North	Links to politics	

Table A.8 “Matrix of Core Groups of the Demos”

Name / institution of stakeholder involved in the core group	actors category: powerful / less powerful	socio-cultural background / gender / age / education	association to the project: direct / indirect	involvement: core / peripheral activities	corresponds to the following profiles	comments
<b>CNR Italy</b>						
<i>Enea (ing Vignolini)</i>	powerful		Direct	core	Research project manager	
<i>Enel</i>	powerful		Direct	core	Industrial user/investor and project manager	
<i>Archimede solar energy</i>	less powerful		Direct	core	The main component supplier	
<i>Region Sicilia</i>	powerful		Direct	core	The local source of authorization	
<i>Ministry of economic development</i>	powerful		indirect	core	Responsible of regulation and fund	
<i>Ministry of environment</i>	powerful		indirect	core	Responsible of regulation and fund	
<i>Schott</i>	less powerful		indirect	peripheral	The main competitor for the key industrial component	
<b>ZEPP Netherlands</b>						
<i>Municipality of Smallerland</i>	Medium powerful		Direct	Core: Provide construction permits / promote economic activities in municipality	Local government	Municipality is positive about project
<i>Province of Friesland</i>	Medium powerful		Direct	Core: Provide permits / promote economic activities in the region	Local government	Province is positive about project

Name / institution of stakeholder involved in the core group	actors category: powerful / less powerful	socio-cultural background / gender / age / education	association to the project: direct / indirect	involvement: core / peripheral activities	corresponds to the following profiles	comments
<i>Siemens BV</i>	Powerful		Direct	Core: supply technology	Technology supplier	Is reasonably positive about project, but indicates that there are uncertainty regarding technology development Not yet interviewed
<i>Frische Milieu federatie (local NGO)</i>	Less powerful		Indirect		NGO	Not yet interviewed
<i>Ministry of Economic Affairs</i>	Powerful		Indirect		National government	Not yet interviewed
<i>Neighbouring companies</i>	Less powerful		Indirect		Companies	Not yet interviewed
<b>Jühnde Germany</b>						
<i>farmers</i>	Powerful	local common sense	direct,	resource provider	neighbours, consumers; energy provider	influence success or non-success of the project beneficiary
<i>inhabitants</i>	powerful	civil society dialog, participation of all interested inhabitants in different ages	direct	Participants, Financier	neighbours, consumers; energy provider	
<i>inhabitants as representatives of the cooperative</i>	Medium powerful	local common sense, village community, strong company by neighbourhood and friendship	direct	contractor	administration, politician	
<i>Mayors</i>	powerful	long lived inhabitant, relatedness with the local people and the village community	direct	representative	administration, representative, politician, neighbour, consumer	source of inspiration
<i>representatives of local county (Dr. Berndt; Mrs. Wehmeier)</i>	Medium powerful	social pressure of the village community	direct	Financier, advisor	administration, politician	
<i>engineering firm (E. Fangmeier; Hr. Tannhäuser)</i>	Medium powerful		direct	contractor	private company	

Name / institution of stakeholder involved in the core group	actors category: powerful / less powerful	socio-cultural background / gender / age / education	association to the project: direct / indirect	involvement: core / peripheral activities	corresponds to the following profiles	comments
<i>BUND Germany</i>	Medium powerful		indirect	nature conservation	environmental organisation	be afraid of nature distortion
<b>Iceland H2</b>						
<i>Vistorka</i>	Very powerful	Representatives from large companies	Direct	Core: testing new energy technologies and Very strong links to politicians, municipality, funds,	Provider of energy and funding, user of technology, partially the dissemination	Very positive about project pulling towards the same directions: testing and reporting
<i>Icelandic New Energy</i>	Medium powerful	Mix of ages, education, gender, very large and close powerful network of collaborators	Direct	Core: Drive the projects, launch new ideas and has good supportive lobbying networks to get the job done	Promoter	Project managers have resolved all barriers
<i>Elding</i>	Less powerful	Young entrepreneurs,	Direct	Core: running sustainable tourism	Links to the public and international tourism	Very positive and want to do more
<i>Varmaraf</i>	Less powerful	Entrepreneur in Fuel cell technology	Direct	Only activity	Specialist. Entrepreneur	Believes in the project as a major step towards proofing of technology for marine applications
<i>University of Iceland</i>	Powerful - influential on public discourse	Mixed, high local prestige	Indirect	Core according to new research opportunities and University image	observer and reporter	Very positive but have warned that more dissemination is needed on their level.
<i>Competing fuel technology</i>	Less powerful	Established business but have been through a rough scandal recently	Indirect	Competitors?	Companies	Not yet interviewed

Name / institution of stakeholder involved in the core group	actors category: powerful / less powerful	socio-cultural background / gender / age / education	association to the project: direct / indirect	involvement: core / peripheral activities	corresponds to the following profiles	comments
<i>University of Akureyri</i>	Powerful - influential on public discourse	New University trying to become established as a power block	Indirect	Peripheral	Critique	A few articles in the public press set off a flow of negative discourse which still lacked substantiated references
<b>VepWind Hungary</b>						
<i>Vép Wind Company Owner and Project Manager Mr Rudolf Piller</i>	powerful (internally within project)	male/40/ electric engineer	direct	core	investor	
<i>Ministry of Economy Ms. Aniko Pálffy</i>	institution powerful - RES strategy writer less powerful	female/30/ economist - networks regulation	indirect	peripheral	public official	
<i>Ministry of Environment Ms Adrien Hunyady and Ms Monika Gottfried</i>	less powerful	female /25-30/ meteorologist and engineer	indirect	peripheral	public official	
<i>MAVIR -System operator (TSO) Mr Zoltán Tihanyi</i>	powerful	male/45/electric engineer	indirect	peripheral	basic infrastructure operator	Head of Source Planning Department. He has influence on the TSO's decision on the limit of wind capacities
<i>Hungarian Energy Office (HEO) Mr. Csaba Kovács</i>	institution powerful Mr. Cs K within HEO medium powerful, externally less powerful	male/30/ economist - economic regulation of energy markets	indirect	peripheral	public official	Head of Economic Department at HEO.
<i>Mayor Mr Gyula Varga</i>	locally powerful outside not powerful	male/55/education background??	direct	Core	elected local decision-maker	represents a balance of local interests

Name / institution of stakeholder involved in the core group	actors category: powerful / less powerful	socio-cultural background / gender / age / education	association to the project: direct / indirect	involvement: core / peripheral activities	corresponds to the following profiles	comments
<i>Energy Club</i> <i>Mr. Zsolt Kazai</i>	less powerful	male/30/ geography-regional development, Master in RES in progress	indirect	peripheral	NGO	influential (non-local) energy NGO

Table A.9 “Description of identified networks”

Demo-Project	Description
Smart H Iceland	The network involves most stakeholders to run a Hydrogen fuel system, current and future system (view from stakeholders and outsiders). It spans governmental ministry and agencies, companies and entrepreneurs. Research bodies are entering but the success depends vastly also on external factors: technical progress
Biomass Germany	Dr. Berndt as programme manager of the LEADER+ implementation in the County of Göttingen is also responsible for the dissemination of the Jühnde model through further villages in the region (PM). IZNE, a group of scientists from the University of Göttingen supports the PM scientifically as well as through the organisation of the process with working and planning groups in the participating villages. They identify the need for action and opportunities for inhabitants to participate. Feasibility studies are carried out for the different villages. Working groups of inhabitants and their participation are crucial. New funded local companies and their members support the technical aspects of the dissemination project. Besides the local politicians – like mayors – farmers associations and regional as well as national NGO are of high importance for the project. Together with the national Ministries of agriculture and environment these groups affect the projects’ success in many different ways. While neighbours and inhabitants are positively involved, the economic framework might endanger the technical and societal implementation.
VEP Hungary	At the center of the NETWORK MAP is Szelerő Vép Wind Company with its founder owner Rudolf Piller, who is also the managing director. The most important stakeholders are the regulator (Hungarian Energy Office, HEO) and the (Transmission) System Operator, MAVIR. MAVIR gives opinion to HEO on each project application from system balancing and in general security of supply point of view. MAVIR did not support the 2nd phase of Vép wind development. This is because HEO - also on the advice of MAVIR - set a limit of 330 MW on wind developments for an indefinite time. Ministry of Environment challenges this limit, pushes for rapid changes, and it seems they began a good cooperation with the Ministry of Economy, which in the medium term (a few years horizons) supports lifting the bar. The Ministry of Economy supervises the HEO. MAVIR is owned by a state owned large utility, (which is counter interested in RES) and not supervised by the Min of Econ, but political decisions would force them to accommodate. In the local context the mayor, local population and the landowners are made interested in the success of the wind development, and they are supportive. Also supportive is the Energy Club, an influential RES promoter NGO.
Demo-Project	Description
CNR Italy	Important role of political actors at national level (more for their political commitment than for the funding level of support-except for research) with conflicting visions and subordinately at local level (for the authorization). Research in the hand of Enea, but with some specific parallel development by CNR. Small industrial suppliers, developers of the innovation with Enea, with a still low capacity of international competition (low scale of production and investment) and with problem of technology transfer by Enea. German competitors who are becoming closer actors, since they began a strategic policy towards Enea, for blocking its possible partnerships with other (mainly US) industrial competitors. Still ongoing debate on media (newspaper and television) on the technological critical aspects and on economic performance of Archimede

Demo-Project	Description
ZEPP Netherlands	<p data-bbox="577 320 2051 408">promoted by some academy representative. Enel the private investor with a strong position on the energy market and with economic interests in Spain, for a possible future development of Archimede Here the main actors and underlined the main aspects</p> <p data-bbox="577 411 2051 501">The current network is mainly dominated by technology suppliers/partners and by government organisations. This is not surprising, because of current status of project (planning/permitting phase). Societal organisations are more or less lacking in the current network. Market actors are also not fully involved (compared to future network)</p>

