ELSEVIER

Energy Policy 35 (2007) 2751–2760

ENERGY POLICY

www.elsevier.com/locate/enpol

Local acceptance of wind energy: Factors of success identified in French and German case studies

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Available online 26 January 2007

Abstract

The objective of this paper is to identify and analyse factors that are important for winning acceptance of wind-energy parks on the local level. The developers of wind-energy parks need to know how to manage "social acceptance" at the different stages of planning, realisation and operation. Five case studies in France and Germany focused on factors of success in developing a wind-energy project on a given site and illuminated how policy frameworks influence local acceptance. Our hypothesis is that these factors fall into two categories: institutional conditions, such as economic incentives and regulations; and site-specific conditions (territorial factors), such as the local economy, the local geography, local actors, and the actual on-site planning process (project management).

Keywords: Wind energy; Local acceptance; Case studies

1. Introduction

Public policies in France and Germany have created frameworks for the development of wind energy, and public opinion in both countries is quite positive.[3] But social acceptance at the local level represents an important challenge for the developers of wind-energy parks.

The objective of this paper is to present a synthesis of qualitative case studies analysing factors that are important in winning local acceptance of wind energy. The basis is a review of the literature on studies done since the 1980s together with five case studies—three in France and two in Germany—and interviews with experts done in 2004 and 2005. The framework for the study was a research project on the social acceptance of EDF R&D (France) in cooperation with the European Institute for Energy Research in Karlsruhe, Germany (Escroignard and Jobert, 2004; Mimler et al., 2005).

The literature review will help to identify important factors; a brief look at the distinctly different developments and public policies for wind energy in Germany and France will establish the respective framework conditions for the local cases.

2. Literature review and identification of important factors

Even though public opinion seemed favourable towards wind energy, as early as the 1980s academic researchers anticipated difficulties in the actual local implementation of wind-energy parks—particularly the visual impacts of wind-energy parks and reactions to it. Carlman (1982, 1984, 1986, 1988) in Sweden; Wolsink and van de Wardt (1989) in the Netherlands; and Thayer (1988), Thayer and Freeman (1987), Thayer and Hansen (1988), and Bosley and Bosley (1988) in the USA (documented in Walker 1995) were among the first researchers to analyse the factors behind public acceptance of these parks.

Numerous studies have since examined the factors affecting public resistance to wind-energy projects. One of the most obvious and most often examined reasons for

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[3]A poll by the Louis Harris Institute (2005) found that 91% of the French favoured wind energy; in a 2004 poll, 66% of Germans approved of expanding wind energy in Germany (Forsa, 2004).

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doi:10.1016/j.enpol.2006.12.005

opposition is the visual impact of wind turbines (Carlman, 1982, 1984, 1986, 1988; Gipe, 1990, 1995; Devlin, 2002; Jobert and Merle, 2005; Nohl, 2001; Thayer, 1988; Walker, 1995, 1997; Wolsink, 1989, 2006). Thayer and Freeman (1987) and Wolsink and van de Wardt (1989), for example, studied the effects of different designs and sites. Both came to the conclusion that small wind parks with few large turbines are more acceptable than big wind parks with many small turbines. Nevertheless, the type of landscape is seen as more important than the design or even the size of the park (Wolsink, 2006). Righter (2002) stated that the motion of the rotor blades has a positive effect on acceptance, because working wind turbines confirm expectations of benefit.

The NIMBY (Not In My Backyard) syndrome has been cited by many authors to describe and explain opposition to wind energy (Deegan, 2002; Jobert, 1998; Krohn and Damborg, 1999; Spowers, 2000). Wolsink (1989, 1994, 2000) clearly pointed out that NIMBY is of limited value in explaining public resistance, and that other factors are of equal or greater importance and complicate the picture. Van der Loo (2001) even identified NIMBY's opposite, PIMBY (Please In My Backyard), which emerges when wind turbines are seen as a source of income.

The notion of financial benefit is part of many factors affecting social acceptance, such as the possibility of stakeholder participation in the wind-energy project (Maillebouis, 2003b; Morthorst, 1999), ownership of the wind-energy park (Brunt and Spooner, 1998; Devlin, 2002; Morthorst, 1999; Wolsink, 2006), and ownership of the rented territory (Brunt and Spooner, 1998; Devlin, 2002).

Other factors include how well informed local residents are about wind energy, what the chosen site was previously used for (Wolsink, 1996), quality of communication with the public (Krohn and Damborg, 1999; Maillebouis, 2003a; O'Bryant, 2002; Zoll, 2001), and public participation in the planning process for wind-energy parks (Bosley and Bosley, 1988; Carlman, 1984; Hammarlund, 1997, 1999; Wolsink, 2006; Zoll, 2001). Gross (2006) analyses this aspect in terms of "procedural justice", pointing out that a perceived lack of fairness plays an important role in conflicts.

A country's policy framework (Breukers and Wolsink, 2006; Wolsink, 2006), including the planning rules and financial incentives affecting a wind-energy project, was the starting point for this study. Our hypothesis is that two categories of factors are decisive for the successful development of wind energy: institutional conditions, such as economic incentives and regulations; and site-specific conditions, such as the local economy, the local geography, local actors, and the actual on-site planning process.

After a look at the different framework conditions, the five French and German cases will be analysed according to eight factors identified in the literature review and in interviews with experts in both countries. Those eight factors are divided into four relating to the site and four relating to the project management.

Site:

- Geography, visual impact
  How does the wind park fit into the landscape? How visible is it to the local inhabitants? Does this aspect come up in the local discussion process, and if so, how?
- Former use and perception of the territory
  Was the site used by the local population? For which activities? What impact will the wind park have on those activities?
- Ownership of the territory
  Communal or private
- Local economy
  Role of tourism, economic situation, possible or presumed impacts

Project management:

- Local integration of the developers
  Are the developers from outside or inside the region? Are they familiar with the area? Do they have contacts there? What type of developers are they?
- Information, participation
  When and how are the public informed of and integrated into the planning?
- Creation of a network of support (Wolsink, 2006) around the project:
  Can the developer create a network of local actors in support of the project, and if so, how?
- Ownership of the park, financial participation
  Is financial participation offered to the local population? Does the commune own the park or a part of it?

3. Choice of an approach to social acceptance and research question

Two general approaches to the issue of social acceptance can be identified:

(1) One is orientated towards public opinion (global and local), working with opinion polls or discussion groups to identify the motivations and attitudes of the public.
(2) The other analyses how a project or a program is constructed to understand why it is accepted or rejected, focusing either on public policy or on actors' behaviour during the implementation.

This study takes the second approach, using case studies that focus on factors of success for wind parks.

This approach has implications for the results:

(a) Analysing specific cases implies an interest in the specific context for a project. It involves identifying the main elements of the public-policy framework in which the project is developed.

(b) A locally bound approach leads to an interest in the specific economic and social stakes of the location for a project (methodology of context studies).
(c) An approach focused on success factors has a tendency to favour completed projects and to assume the perspective of a developer who is searching for strategies and wants to gain experience for future projects.

Acceptance is seen here as the goal of the developer and his or her allies in the project. This striving for acceptance is the main object of investigation in the case studies rather than the public opinion of the local population (e.g. Laumonier and Flory, 2000).

The research question is: What contributes to the success or failure of a project? This will be approached by reconstructing the history of each project and interviewing different actors about their perceptions of the various stages as well as of the end result.

4. Wind energy in Germany and France: a different framework for planning

Wind energy has developed quite differently in Germany than it has in France. In Germany, the feed-in laws of 1991 and 2000 (Stromeinspeisungsgesetz StrEG, 1990; Erneuerbare-Energien-Gesetz, 2000), along with the modification of the Federal Building Code in 1997 (§ 35, Baugesetzbuch BauGB, 1960), constituted the basis for a rapid and massive development of wind energy. This became the core domain within Germany's renewable-energy sector, with more than 17,000 megawatts (MW) in June 2005 (Ender, 2005; Mimler et al., 2005).

In France, wind-energy development started later and was much slower and more hesitant (BCG, 2004; Chataignier and Jobert, 2003; Escroignard and Jobert, 2004; Nadai, this issue). In 1996, the government launched a program called "Eole 2005" based on calls for tenders with the goal of reaching 250–500 MW in 2005. In 2001, the program was replaced by a system of guaranteed prices inspired by the one in Germany. By the end of 2005, 757 MW had been installed and 155 MW were under construction (Ministère de l'Économie, des Finances et de l'Industrie, 2005). France is developing its wind-energy parks, but the governmental goal of 10,000 MW by 2010, intended to meet European commitments concerning renewable energy, will probably not be attained (BCG, 2004; Chabot et al., 2004).

Germany provides much more favourable conditions to developers than does France. The major difference is that local authorities in Germany can be forced to accept wind turbines on their territory (§ 35 of the building code).

Interviews with experts in both countries show clearly that although economic incentives are important to a successful development of wind energy (Escroignard and Jobert, 2004; Mimler et al., 2005), they are not sufficient. Before 1997, German developers often had to cope with arbitrary decisions and excessive demands from authorities that lacked concrete directives from the state (Bunge et al., 1996; Tacke, 2003). A change in Germany's Federal Building Law gave wind turbines privileged status, meaning that local communities could define zones for wind-energy parks, concentrating them on one appropriate site, but could not refuse them totally.

In the first years of France's program (2000–2005), French developers faced a difficult planning situation owing to a certain statutory and thus legal insecurity as well as to a lack of knowledge and to barriers in the administration (BCG, 2004).

Several studies (Chataignier and Jobert, 2003; Gueorguieva-Faye, 2006) point out that denouncing an "anarchic" development was a very strong motivation for the anti-wind-energy movement that had formed by 2002 (see the web site of the French anti-wind energy coalition 'Vent de Colère'[4]). In the view of the movement, and of many people on the local level, "untamed" wind energy could strike a major blow at the French landscape, which is seen as a *patrimoine* (national heritage) of great sentimental and economic value. The fact that it was not known how many wind parks would develop in a given region, or when and exactly where, was a major reason for controversy and a lack of acceptance (Chataignier and Jobert, 2003).

It therefore became necessary, as it had been in Germany, to add planning tools to the economic ones. These were first developed in the course of several practical local experiences (Elfassy, 2003) and then validated by law.

The French cases examined in this paper occurred before the planning rules were put into force, but they reveal the difficulties that arose for lack of such regulations. Nowadays, territorial rules give security to projects and to the population by defining zones where wind turbines may or may not be sited. These rules can

- Create trust. Validating a certain number of zones stabilises relations between developers and local actors concerned with the project.
- Establish an alternative model for the development of wind energy, in which local actors propose sites to developers and select from offers (ADEME, 2002; Gueorguieva-Faye, 2006; Maillebouis, 2003a). Most projects in France, however, still arise from initiatives of the wind-energy industry.

In Germany, the privileged status of wind turbines enables developers to get a "foot in the door" in promising localities, while communities can regulate the implementation of wind energy in their regions by concentrating it in appropriate places. Actors in both German cases perceived this latter point as having reduced fear of uncontrolled growth and increased acceptance of the park.

[4]http://www.ventdecolere.org

One representative of a regional planning authority in Germany said in an interview, however, that the privileged status of wind turbines has in some cases caused developers to alienate the local authorities and the local population with an overconfident and demanding manner (Mimler et al., 2005), thereby threatening acceptance of wind energy. Apparently, this opportunity of a "foot in the door" is being exploited by developers, but the actual role of this instrument still needs to be verified.

In both France and Germany, creating trust between a private actor (from outside) and the local population is a major challenge. When trust is created, it functions as a main key to success, as will be seen in the case studies below.

5. Lessons and answers from the case studies

5.1. Methodology

This paper is based on three French and two German case studies and on interviews with scientists, representatives of the wind-energy federation and the wind-turbine industry, politicians, and developers. It constitutes a qualitative approach to comprehending the history of each project, including the different viewpoints of the local actors in their social contexts. The approach refers to a methodology called context studies (*étude de context*). It is often used in France by town and country planners and by consultants and researchers observing projects and analysing conflicts related to projects (e.g., Dziedzicky, 2001; Rui, 2004). Questions concerning social acceptance are addressed by analysing the territory and the actors involved.

For each case study, 11–15 personal interviews were conducted with local actors: city-council members, journalists, project planners, regional representatives, and spokespersons for local associations, citizen initiatives, and municipalities. The interviews were semi-structured, based on interview guidelines, and lasted 1–2 h.

Planning documents, local newspaper articles, and letters to the editor served as additional source material.

The cases in France were chosen in part as "feedback" to an enterprise, but the choice also followed a research logic. Two of the French cases occurred in a region that was favourable in terms of wind but controversial because of the large number of projects. The third case occurred in a less controversial region. Both regions are dependent on agriculture and tourism, and had been identified in surveys and literature as sources of conflict in France (Chataignier and Jobert, 2003). Both German cases occurred in the same federal state, Rheinland-Pfalz, which was chosen because of its below-average density of wind parks and its tourism industry—conditions similar to those in the French cases. Although the German cases had comparable framework conditions, one case was a success and one was problematic.

5.2. The cases

5.2.1. First case in France

(1) General information
Region: Languedoc-Roussillon, Département de l'Hérault
Planning period: 1999–2004
Years of the case study: 2002 and 2004
Wind turbines: 9
Interviews: 15 interviews in 2002, 12 interviews in 2004

(2) Territorial dimension
Geographical conditions: The site is in viticultural hinterland on the first hills in front of the Massif Central, framed by the Mediterranean Sea. The commune concerned consists of about 200 inhabitants. Like other villages nearby, it receives numerous tourists.
The visual impact of the park is rather strong. Placed on a hill in the middle of a viticultural plain, the site is visible from dozens of kilometres away. The territory, which is *owned by the commune*, was *formerly used for hunting* and other leisure activities.

(3) Project management dimension
The *developer* of the project was a small company based in one of the regional towns, with managers from another region. After achieving success with several wind-energy projects (including the one described in the second French case), this local company was bought by a subsidiary of EDF. The project was thus developed by a local entrepreneur.

Languedoc-Roussillon is an important region for wind energy in France, with strong competition between developers. The company initially acted according to the logic of territorial conquest. It tried to "reserve" a maximum of potentially profitable sites.

The local economic actors rose up against the project in 2002, forming a coalition of winegrowers and representatives of the tourism industry. They were worried about the impacts of wind turbines on the regional landscape. The winegrowers were afraid they would give an "industrial" image to the territory, thus endangering a nascent marketing strategy and lowering wine sales. The tourism representatives worried that visitors in search of "authenticity" would stay away.

Information, participation: Because of the competitive environment, the developer negotiated the site allocation primarily with the mayor of the concerned commune, but also with the mayor of the adjacent commune, promising him that the site would be extended into his territory. No information was given to the general public before the municipal council first approved the project in 1999. Not until the granting of the building permit was announced in 2001 did most of the populace and the various actors involved hear of the existence of the project. They resented and denounced the lack of information and consultation.

The rising opposition proceeded to launch a juridical appeal against the building permit and to threaten active resistance to the project.

In the summer of 2003, after the legal appeal had been rejected, the opposition tried to block the building site of the park. But only about a dozen protesters showed up. Because most of the developer's other projects had meanwhile been turned down by the state authorities, the local authorities seemed to have no choice but to support this particular project. These preconditions may explain why the state authorities threatened to use force in order to make the opposition retreat.

The isolation of the opposition was accomplished mainly by a local consultant who helped the developers establish a local network of friends and allies. The strategy was aimed primarily at dividing the winegrowers. The developers allied with a nearby wine-cellar cooperative against the regional representatives of the cru (group of vineyards). To counter the arguments of the opposition, they decided to valorise a tourism link between winegrowers and the project (e.g. combine a visit to the wine caves with a visit to the wind park). They hired young locals and lobbied local journalists.

Realisation of the park: Step by step, a coalition in favour of the project was formed, and in 2004 the project was realised.

Benefits: No financial participation was offered to the population.

Link to the national policy framework (*planning*): This was one of the very first wind-energy projects in France after 2000. At the time, no regulations concerning the legal process for installing a wind-energy park or for involving the local population had been established.

To conclude: This case provides a critical example of the failure to integrate the public into the planning process. The problems encountered by later wind-energy projects in the same region showed that this difficult start had far-reaching consequences for acceptance of wind energy by the public. It was possible to correct the mistake to a certain extent, but the case was a major cause of the slow development of wind energy in the region.

5.2.2. Second case in France

(1) General information
Region: Languedoc Roussillon, Département de l'Hérault
Planning period: 2000–2004
Year of the case study: 2004
Wind turbines: 4
Interviews: 11

(2) Territorial dimension
Geographical conditions: The site is on a woody hill in the region Haut-Languedoc, almost invisible from the valley in which the small industrial town (2200 inhabitants), economically in decline, sits. The territory is *owned by the commune* and was *formerly used* for forestry and hunting.

(3) Project management dimension
The *developer* is the same as described in the first French case: a local company later bought by a subsidiary of EDF.

Given its previous problems regarding the social acceptance of wind energy, the developer searched for more-isolated sites for its projects. Because the commune was in great need of new economic opportunities, it reacted very positively to the developer's proposal.

Information, participation: Only one small informational meeting was proposed for local actors.

The fact that a major controversy over the siting of a toxic waste dump was ongoing in the community had positive repercussions for the project. The numerous citizens' associations opposing the dump found the wind-energy park positive by comparison. Nevertheless, they clearly expressed a strong wish for more public participation in the future.

Realisation of the park: The park was realised in 2004 without complications, particularly because the developer was local and had a thorough knowledge of the social context.

Benefits: No financial participation was offered to the population.

Link to the national policy framework (*planning*): As in the first case, the planning procedure was unaffected by the zone system as well as requests for participation that have since been put into effect.

To conclude: First of all, this case shows the importance of geographical aspects. The isolation of the site and its invisibility to the nearby community minimised the visual impact of the wind-energy park. Second, the municipality's declining economic situation forced its officials to be open to new economic opportunities.

5.2.3. Third case in France

(1) General information
Region: Région Loire, Département de la Vendée
Planning Period: 2000–2003
Year of the case study: 2004
Wind turbines: 8
Interviews: 13

(2) Territorial dimension
Geographical conditions: The site is on the Atlantic coast in a region where both agriculture and tourism play an important role. The wind turbines were slated for installation on a polder near a bird-protection zone. An analysis of the territory shows that the polder closes off the commune from the ocean. Because it lacks a beach, the commune (200 inhabitants) gets only a small share of the numerous tourists coming to the region and subsists on traditional activities: agriculture and fishing. The wind-energy park was the first to be planned in this region.
The territory is *owned by agriculturalists* and was *used for cultivation*, which could also be maintained after the project's installation.

(3) Project management dimension
The project was established by a small local company from the neighbouring village and sold to a subsidiary of EDF during the process, after which it was separated into two parts; the developer took responsibility for five turbines, and the remaining three went to a new company founded by the local authorities.

The project was initiated by the small local company, but it was immediately supported by the mayor of the commune. A wind-energy park was viewed as a local development opportunity and possibly a showcase project that would provide both resources and a tourist attraction.

Information, participation: Public meetings were organised by the municipality and the developer, whose office was in a nearby town. The bird-protection zone was administrated by an influential association, which the mayor and the developer integrated into the project process. Resolution of a dispute between this association and local hunters regarding use of the zone was the first step towards a positive reception of the wind park. Then the association was integrated into the project by a convention to finance an analysis of the park's impact on the reserve, allowing them to maintain an employee for the zone. Later, the association organised combined visits to see the birds and the wind turbines. In the year following the park's opening, an estimated 100,000 persons visited the site, to the great satisfaction of local actors.

Realisation of the park: The project was stabilised by the transfer to a bigger company and by the financial participation (purchase of three of the eight turbines) of a network of local authorities concerned with the electricity grid (Syndicat départemental d'électrification). This creation of a new company was proposed by the mayor in hopes of winning support for the project from other local representatives and from members of the commission responsible for the building permits. An association of opponents, consisting of the owners of second homes, was formed in the end (2002), but they were quite isolated. (This phenomenon of the resistance of people with a secondary residence has been observed in a case study in France by Laumonier and Flory (2000); they state that the local integration favours the realisation of a wind-energy park and point out the differing perspectives of locals and people relocating from cities.)

In 2003, after the realisation, the regional developer conducted an opinion poll to assess the social acceptance of his project; 94% of respondents in the five communes surrounding the park favoured the project, and 3% opposed it.[5]

Benefits: The fact that three of the eight turbines were owned by the communes, which thus accrued additional benefits from the project, was important for local legitimacy and acceptance.

[5]SOFRES Janvier 2003.

To conclude: This is the only case in which some part of the project is owned by local communes. Along with informing the public early and integrating different local actors, this ownership was an important factor for success.

5.2.4. The case studies in Germany

The two German case studies (Mimler et al., 2005) were conducted in the beginning of 2005 and concerned municipalities of the federal state Rheinland-Pfalz, in the central Rhine slate rocks (the administrative and topological factors are thus comparable). Both communities are in highlands.

Because the geographical and administrative frames vary considerably in the different regions of Germany, the two cases were deliberately chosen from the same region. Nevertheless, they differ notably in the way the implementation of wind energy was realised and perceived.

5.2.5. First case in Germany

(1) General information
Region: Rheinland-Pfalz, Central Rhine Slate Rocks
Planning period: 2001–2002
Year of the case study: 2005
Wind turbines: 14
Interviews: 11 personal interviews on location, 1 with the developer, 1 with regional authorities

(2) Territorial dimension
Geographical conditions: The site is in a low mountain range at an altitude of 470 m and is part of the Hunsrück national park. It is clearly visible from the local commune as well as from neighbouring villages.
The commune to which the park territory belongs consists of 19 villages with a combined population of around 11,000 inhabitants. It is an official climatic spa, making tourism an important part of the local economy.
The site is on *publicly owned land*, formerly a military zone that was abandoned in 1995 and turned over to the commune. Its streets, concrete-covered grounds and bunkers had already radically altered the landscape. For this reason, the case may seem very special; but from a more general perspective, it represents one way of (re)valuing a territory which might be applied to former industrial sites as well.

(3) Project management dimension
The *developer* is a company founded in 1996 in Rheinland-Pfalz. It originally focused on the development of wind-energy projects, but soon began to enlarge its portfolio to include other renewable energies such as photovoltaic and bio-energy. Nevertheless, wind energy remains the main pillar of the company's business. The company manages the development, financing, and operation of the projects.

The commune itself initiated the project. When the military left in 1995, the commune began considering

new uses for the site. Because of the infrastructure that remained on the land, the municipality first thought of a holiday or theme park, but could not find investors. Meanwhile, wind-energy developers had approached private individuals and negotiated preliminary contracts, which caused resentment among the neighbours. In an effort to avoid conflict, the building authority of the commune took the initiative, searching for a developer that would conceive an "energy park", to include photovoltaic, biogas, and biomass along with wind energy. The nearby Institute for Applied Material Flow Management (IfaS)[6] assisted the municipality.

Information, participation: After the municipal council approved the project, it decided to conduct a public information meeting. In order to give the local residents a realistic idea of how the landscape would change, the municipality asked the German Federal Armed Forces to fly weather balloons over the sites of the future wind turbines at a corresponding height. Photographs of the balloons were used to show how the future park would look. About 200 inhabitants attended the meeting, and the concept was largely applauded, although some people expressed concerns regarding possible noise pollution and shading. Potential problems for tourism were raised as well, but these were addressed by the intention to integrate the project into the local tourism concept. Two local associations in the field of sustainable development and nature protection were involved in the process, contributing ideas and organising another public discussion. Nowadays, 15 volunteers act as tour guides for visitors to the park.

Realisation of the park: After the public discussion, a call for tender was issued, requesting an "energy park" concept with an opportunity for local inhabitants to buy shares. A regional planner was chosen. The approval process, completed in $3\frac{1}{2}$ months, was extremely fast; the first wind turbines were raised in September 2002.

Benefits: Because the wind-energy park sits on public land, the commune benefits directly not only from tax money but also from rent. In addition, one and a half of the turbines are owned by about 20 local private investors (some shares of 2500€ were jointly owned by several persons).

Link to the national policy framework (planning): The municipality fulfilled its obligation to open its territory to wind-energy planners but chose the planner and the concept itself, and it concentrated the turbines in one desirable—and publicly owned—location.

To conclude: The case presents very positive preconditions for the realisation and acceptance of a wind park: a likely piece of ground that needed a new use, as well as a municipality that could take the initiative to integrate the project into a local development strategy and reap the benefits of siting the energy park on public land.

[6]http://www.ifas.umwelt-campus.de/english/index.html

Several interviewees said that this last point was very important to social acceptance of the project—as were the voluntary information meeting and the overall concept of an "energy park", which calmed objections concerning tourism.

5.2.6. Second case in Germany

(1) General information
Region: Rheinland-Pfalz, Central Rhine Slate Rocks
Planning period: 2003–2006
Moment of the case study: 2005
Wind turbines: 7
Interviews: 11 personal interviews on location, 1 telephone interview, 1 with the developer, 1 with regional authorities

(2) Territorial dimension
The site is at an altitude of 300 m in a low mountain range and is part of the Westerwald. It is on *private land* at the border of the commune's territory and not visible by the majority of its population. But the land *was frequently used for leisure activities* like hunting.
The commune consists of 12 villages and about 11,500 inhabitants. The main economic activities are forestry and agriculture; tourism plays only a minor role.

(3) Project management dimension
The *developer* was from outside the region. The company was founded in 1989 in Baden-Württemberg. Originally it provided services in the fields of water and waste materials. With the renewable-energies boom in Germany, it enlarged its portfolio to include the planning and development of projects relating to heat and electricity generation and renewable energies.

The discussion of wind energy started in 2003, when two wind turbines were raised unannounced on land in an adjacent commune. At the same time, the commune learned that developers were interested in its territory as well. Thus, the *initiative* came from outside. The municipal council reacted by adapting its land-use planning to concentrate the wind turbines in one location. The hope was that the private landowners concerned would not be interested in renting their property for a wind park. But two agriculturists and a cooperative of private forest owners decided to rent their grounds.

When a local newspaper reported on the developers' requests, a local association for the protection of the environment held an informative meeting and appealed for a citizen initiative against the wind turbines. One major point of opposition was that some private landowners would profit while the rest of the population had to "suffer".

A demonstration was organised, and about 300 citizens participated, including representatives of the administrative district. The mayor was one of the speakers. Five hundred people signed a petition against the turbines, and opponents and proponents began an exchange of letters to

the editor—described as "mud-wrestling"—in the local papers. At the same time, the planning was delayed by lawsuits.

Information, participation: During the official approval procedure, 150 objections were handed in. But the emission-control ordinance (2.4.3 and 3.2.6 4.BImschV) was amended in July 2005, obviating the public hearing planned for that month[7] and causing great frustration among opponents of the project Bundesimmissionsschutzverordnung BImschV, 2005.

Realisation of the park: The park is currently being built.

Benefits: The commune benefits from taxes and fees for the use of access routes, but because the wind park is being built on private ground, most of the local profits are going to the landowners. No special financial participation of the population was proposed.

Link to the national policy framework (*planning*): Because German legislation gives developers a "foot in the door", the municipality was unable to keep wind turbines off its territory.

To conclude: Given the policy framework, local authorities and the local opposition could not prevent the wind park; they could only impede its progress (the turbines have yet to be erected, even though the project started in 2003) and increase its costs. This case differs considerably from the first German case: it involves private land used for leisure activities; an outside developer that approached private landowners, making most of the inhabitants feel excluded; and a municipal council that remained opposed to the project, ignoring proposals from local actors to make the best of the situation, as the commune in the first case had done. Our interviewees described the local population as deeply split into opponents and proponents.

5.3. Conclusions of the case studies: some factors of success for wind parks

Our analysis focuses on common factors of success as shown by the different cases. These fall into two categories: territorial and project management.

5.3.1. Territorial

The choice of site is crucial to the success of a wind-park project. Along with the obvious preconditions, such as the presence of wind and the absence of environmental constraints, social factors must be considered.

The case-study communities vary geographically, but all of them were rural and both in need and in search of new economic possibilities.

A point often mentioned in the interviews was *visibility*. This seemed more important in France: in two of the cases studied, minimal visibility was a major factor for social acceptance (Escroignard and Jobert, 2004). In Germany, the visual impact was significant in the first case, but according to our interviewees, the transparency on this point and the overall concept led to a positive reception. *Ownership* of the site was an important difference between the two German cases. In the first case, in which the park was built on communal grounds, a clear advantage was perceived for the commune as a whole. In the second case, in which the developer contracted with private landowners, statements like "They profit and we have to look at it" were frequent and were perceived as disrupting the "local peace" as well as the project. Two of the parks in France were sited on public land.

Circumstances regarding *former utilisation* were very favourable in the first German case: the site was a long-abandoned military installation for which a new use was sought. Such circumstances, admittedly, are rare, but they suggest a use for former industrial sites as well. In the cases affected by tourism—one German and two French—concerns were overcome by integrating the wind park into the tourism concept. In Germany, the wind park was integrated into an "energy landscape" (*Energielandschaft*) with bio-energy, solar panels, a small information centre, and tours guided by local inhabitants (Mimler et al., 2005). In France, visits to the parks were combined with wine and bird-watching tours.

5.3.2. Project management

A particularly important factor in both the French and the German cases was the *local integration of the developer* in terms of proximity, knowledge of the context, contacts with authorities and the media, and the ability to create a network of local actors around the project. This was frequently cited in our interviews in France and for the first German case. In the second German case, the developer was perceived as an outsider interested only in profits, not in the region's development. Thus, distrust was an important reason for opposition to the project. People feel concerned when a "stranger" penetrates their territory, disrupting it for his own profit (Maillebouis, 2003b). In several interviews in France this was described as "stealing" a landscape that is seen as a common good.

The developers in France, with their permanent contacts and good knowledge of the area, were able to overcome initial opposition by creating networks around their projects, integrating politicians, associations, local enterprises, and other actors.

One key factor of success seemed to be taking the interests of the primary actors into account and integrating them with the project. (For example, the bird-protection association was intentionally involved in an analysis of the park's impact on the nearby reserve; local employees were hired; and in one case, a financial interest of the turbines was sold to local authorities.) Building a network of support (Wolsink, 2006) like this was a main factor in the French cases and one important aspect in the first German case, where the commune created a network with a regional university, the developers, and local associations. In the second German case, the developers asserted their legal

[7]It was decided to establish a simplified procedure without public hearing for wind parks under 20 wind turbines (Bundesverband Wind-Energie e.V., 2005).

rights of access to the territory and faced resistance. This would be impossible like this in France—an important difference between that country and Germany.

As stated in the literature (e.g., Maillebouis, 2003a, b), local acceptance of a wind-park project is crucially dependent on *information* (transparency from the outset) and *participation* of the population in the planning process.

In two of the French cases, the initial lack of information about the project was deplored. It was possible to correct the mistakes to a certain extent by integrating important actors later on. Nevertheless, the case studies seem to show that wind-energy developers pay a high price for not informing the population, because the result is a slowing down of their progress in regional development. In interviews and in some planning documents, local authorities said that they wanted no further development of wind turbines in the same zone (Escroignard and Jobert, 2004). In the second German case, two wind turbines had been erected on the border of the neighbouring commune without the prior knowledge of the local authorities in the case study. This was clearly an important disadvantage for social acceptance of the project. People felt passed over and were unwilling to experience this again. In the first German case, the transparency of the project and consultation with the population from the outset were often cited as crucial factors in the park's positive reception. The municipality provided a credible image of how a park would look on the site, using photographs of weather balloons (Mimler et al., 2005).

Apart from public information, most local participation consisted of integrating associations, representatives of the local economy, and other actors in the planning process. In none of the cases was broad participation—apart from information meetings—a factor.

Giving the local population *access to shares*, and thus to direct *benefits* of the wind park, is an approach more developed in Germany than in France. In the first German case, two out of 14 wind turbines were reserved for this, with a minimum investment sum of 2500€. At the time of the study, one and a half wind turbines were owned by local residents (Mimler et al., 2005). But the gesture itself seemed important for local acceptance. In the second German case, no such opportunity was proposed. By reducing the gap between a few "winners" and many "losers" (Gross, 2006), local ownership might well have helped to form a network in support of the park (Wolsink, 2006).

One case in France demonstrated another possibility for local ownership: a network of local authorities associated with the electricity grid (Syndicat départemental d'électrification) bought three out of the eight turbines, in order to assure the support of other local representatives and members of the commission responsible for the building permits.

6. Conclusion

The case studies confirm the factors of social acceptance identified in the literature: visual impact, ownership, information and participation. But they also give further insight into those aspects of acceptance directly related to the implementation—namely, local integration of the developer, the creation of a network of support, and access to ownership of the park. The perspective of a developer dominates these case studies. The reason for this originates in the initial motivation for the research (feed back; see also Section 5.1).

Although the barriers to local implementation of wind energy are much higher in France than in Germany, as revealed by the five cases, there seem to be more parallels than differences between the two countries.

In Germany, the developer's position is supported by the Federal Building Code's definition of wind turbines as privileged projects. The privilege is an important door-opener for wind energy, but it can lead to problems with acceptance and should be backed up by efforts to create local participation. As the representative of a regional planning authority stated in our interview, some companies approached local communities in a "demanding and overconfident" way, neglecting to take local interests and concerns into account and contributing to a loss of trust in the region (Mimler et al., 2005). The second German case showed that the opposition can retard the implementation process, causing financial losses and social conflicts.

The policy framework in France makes developers more dependent on local social acceptance. Consequently, the French cases show much more conflict resolution and networking among local actors than do the German cases.

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