

# "Perceived Procedural Justice as a Conflict Factor in Wind Energy Plants Planning Processes"

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## **Abstract:**

To elicit relevant factors to the formation of attitudes towards wind energy plants, a standardised questionnaire was developed and used to poll 291 households in two German counties.

Within this study the perceived procedural justice became evident as a conflict factor of particular importance. Especially the administrative zoning, planning, and licensing procedures were perceived as rather unjust. Only a small part of interviewed households found the usual proceedings to be fair. Furthermore, the study showed that only few inhabitants were informed about building projects early.

Moreover, residents criticise that their interests are not represented by local politicians, particularly when compared to economic interests. In consequence a large number demands to have a voice in future.

Asked about the assumed motivation of wind energy plants operators, profit seeking and economic interests were named instead of environmental ambitions.

As a result, politicians and wind energy plants operators are condemned as untrustworthy and considered "a coalition of the mighty." More "correct" and objective information from an independent institution is requested.

All in all, the results emphasize the relevance of analysing the issues of perceived procedural justice in planning processes.

## 1 Introduction

Changes in climate and greenhouse effect are subject to current debate and topics of socio-political relevance. A new way of thinking in climate policies as well as a new appreciation of energy resources utilization are necessary.

Renewable energies are playing a central role to achieve climate protection goals set by environmental policies. In Germany, power generation using wind power has been particularly strongly supported by Federal Government, along with photovoltaic and biomass techniques. As a result, Germany has become the worldwide market leader in this sector.

However, this high degree of wind energy utilization is not undisputed in Germany. Parts of the population feel the long-distance visible wind energy plants to be a physical, psychical and asthetical burden. While some environmental protection activists voice concern about the actual net effects of wind mills on the environment, residents and neighbours often consider themselves the victims of climate protection policies. Even though representative public opinion polls show support for a progressive energy policy as well as for a growing part of wind energy in power generation as a matter of principle, many residents feel severely limited in their quality of life. Citizens' initiatives form up on local levels, but also nationwide this dispute became a disputed topic. This vivid discussion notwithstanding, the actual effects of wind energy plants on landscapes, people and the latter's perception on these issues respectively, are only heterogeneously and insufficiently documented.

As a result, in politics, media and civil society alike, there is currently a controversial and highly emotional debate about costs, benefits and suitability of wind energy plants.

With the aim to elicit those factors which are relevant to the formation of attitudes towards wind energy plants, a questionnaire including as many wind energy specific aspects as possible was developed.

In addition to the mere changes of natural scenery and characteristic landscapes, this study assumed that the topic of "wind energy plants" carries several other implications, such as those regarding the meaning of general environmental and climate awareness, estimations of economic impact and reliability, risk evaluation, perceived justice and influence of the media. These potentially important issues were determined by research in literature and other media. Furthermore the questionnaire contained open questions to get access to qualitative data.

During August and September 2004, this questionnaire was used to poll 400 households in the counties of Aurich in the state of Niedersachsen and Ohrekreis in the state of Sachsen-Anhalt, the return rate was 291.

## **2 State of Wind Energy in Germany**

To achieve climate protection goals, such as those agreed upon in Kyoto, renewable energies are a crucial component. In this context, the number of wind energy plants in Germany increased rapidly during the last years. In the year 2004 there were 16.543 wind energy plants installed, several more are still under construction or planned. This means the continuation of a development started in the late 1980s.

The number of wind energy plants varies within the states. Coast regions, especially Niedersachsen and Schleswig-Holstein, carry the most. Due to geographic advantages, these regions were found to be an ideal location for using wind power, and therefore the first systematic generation has been started there.

In Sachsen-Anhalt the wind energy use began during the 1990s, since then a massive increase in wind energy plants can be seen. Meanwhile, within the Eastern German States, Sachsen-Anhalt together with the state of Brandenburg took the lead in the wind energy sector, although those regions do not possess any coastal areas. Therefore, Niedersachsen as an experienced coastal state with a long history of wind energy utilization, and Sachsen-Anhalt, with strong ambitions in this field, are interesting choices for contrasting scientific research.

To keep this development on a high level, new locations are going to be claimed and older and smaller plants will be replaced by modern and more powerful ones (repowering). Furthermore, off-shore plants are going to be constructed in the North Sea, but as these plants deal with very specific issues, they are not discussed in this study.

Technical figures are also not part of this research, because too many different expert opinions exist. In consequence, the polled households were asked to estimate only their personal level of information about wind energy.

In the current debate, central arguments against wind energy plants are changes of natural scenery and potential birdstrikes.

Other critical issues are the economical consequences. On the one hand, parts of the German industry invest in wind energy products and development as an innovative and future-orientated technology. This way, internationally competitive workplaces are created. Other branches, e.g. the tourism industry, fear less profits due to decreasing numbers of guests caused by a less attractive scenery.

Local governments hope for positive effects for rural regions by leasing farmland, and for a rise in tax revenues. In contrast and opposition to this, residents argue that the value of their real estate will drop because of the noise and unpleasant view of a wind energy plant not far from their backyard.

After this short overview concerning the aspects of wind energy, it already becomes obvious that this topic is not an issue of merely technical nature, but instead is embedded in a broader social context.

### **3 Theoretical Background: Environment and Social Justice**

In principle, the term conflict describes a perceived incompatibility of interests through two or more conflict parties (Rubin, Pruitt & Kim, 1994). There are a lot of different conflict types and dimensions possible, these may be of material as well as of immaterial nature. As pointed out before, in case of wind energy plants, there are several potential conflicts and actors existing.

Studies dealing with conflicts in an environmental context have neglected aspects of justice so far, self-interest was the motivation assumed to dominate conflict behaviour.

In recent years, however, questions of justice became more and more the subject of environmental psychological research, e.g. the perception and evaluation of traffic policy measures (Ittner et al., 2003). Conflict progression and estimation are of course strongly influenced by a fair behaviour of the conflicting parties. Thus, in planning and plant construction processes, the justice perceived by the people involved should be considered an important parameter.

Within the social psychological basic research concerning social justice, two essential theories or forms can be distinguished: the distributive and the procedural justice.

Distributive justice means in general the fair distribution of dues and outcomes within a respective group, e.g. the salary. These outcomes do not necessarily have to be of material nature, commendations and other marks of recognition are possible as well. However, distributive justice is not an objective measure but a highly subjective estimation made by each individual group member.

Within the concept of distributive justice, many different principles of distribution can be distinguished.

The approach probably known best originated from Adams (1965), who emphasized in his Equity-Theory the necessary proportionality of dues and outcomes. According to this paradigm, a distribution is found to be fair, if the group members with higher dues receive corresponding higher outcomes. A simple example of salary distribution in working life illustrates this point: A worker earns 160€ for eight hours of work, while another worker gains 320€ for sixteen hours of comparable work. Therefore, this form of distribution linked to the performance-principle. If this proportionality is deranged, the workers feel inequitable relating to the distribution and conflicts can result.

Another form of distribution is represented by the need-principle. In this case the received outcomes do not depend on the prior work performed, but on the particular needs of each group member.

Finally, the principle of uniformity describes the consistent allocation of outcomes to the members irrespective of needs and performance. Many more allocation keys are thinkable.

A general difficulty in researching distributive justice is posed by the task to determine which persons are legitimated to raise a claim to the dispersing outcomes, i.e. who is in the scope of justice.

Procedural justice describes the subjectively perceived fairness of an distribution process, e.g. because of transparency and plausibility.

Leventhal (1980) postulated six essential criteria which have to be satisfied to give a process procedural justice. These criteria are the equal treatment of persons and situations (*consistency*), the absence of self-interests (*bias-suppression*), full and correct information (*accuracy*), the possibility to retract decisions (*correctability*), the involvement of all parties

into the decision making process (*representativeness*) as well as the adherence to elementary moral and ethical values (*ethicality*).

Following the research results of Cropanzano & Folger (1996), the evaluation of perceived procedural justice by the individual takes a stronger influence on the total estimation of the distribution process than the distributive justice. Hence, it is possible that the outcomes of a distribution can be found to be rather unjust or disadvantageous, the process (procedure) that led to this disparity in contrast to be fair. As a consequence, the respective person would feel all in all fairly treated. This phenomenon is also called the procedural justice effect (Tyler & Folger, 1980). But in the long run, a lack of distributive justice cannot be compensated by an accordingly higher procedural justice.

Within the procedural justice concept, Bies and Moag (1986) distinguish another form, i.e. interactional justice. Their notion of interactional justice regards the correct treatment of and respectful communication between the involved conflict parties. This interpersonal component should be adhered to in addition to the other formal criteria.

In summary, the highest degree of perceived justice results -as can be expected- if distributive, procedural as well as interactional justice are satisfied.

As mentioned before, perceived procedural justice can be increased by using participative elements. People get the possibility to co-create the process and bear responsibility, they have opportunities to exert influence and correct decisions. Therefore, they are more satisfied with the process outcomes, because they have worked themselves actively on it. As an example, in organizational development, where planned changes often run against opposition at first, participative methods lead to a higher acceptance of the implemented interventions. Thus, participation became a basic principle in behavioural science organization development (French & Bell, 1999) and successful mediation processes likewise.

Aspects of procedural justice in the context of wind energy might be residents' estimation of the governmental procedures in zoning and licensing processes, the level of participation, time and amount of information etc. Of course, the residents need to have a basic motivation to play a constructive part in the planning process. Several elements of participation are possible, a broad and early information policy is the first step, furthermore profit participation and direct planning participation are potential other forms.

Aspects of distributive justice include the distribution of costs and benefits in a region. Benefits can be monetary, such as the direct financial profit or indirect effects because of new work places, as well as nonmonetary, such as landscape balancing actions in the area.

Costs would be number and position of wind energy plants connected with the change of the local landscape, a potential real estate depreciation, disturbance because of noise, increasing traffic etc.

Finally, as a potential influencing factor on the acceptance of wind energy power plants, the perceived social justice with all its implications should be considered.

#### **4 Research Interest**

The topic of acceptance and wind energy plants in Germany has not been well-studied yet in a holistic way.

The main reason is the altogether small number of research work in this area, in which in addition different and hardly comparable methods are used. Another problem is that already existing studies have their theoretical background usually in landscape planning and/or technological impact assessment. Therefore, the theoretical contents mostly deal with landscape estimations, scenic attractions or the general perception of wind energy plants. Due to the notable height of wind energy plants, it is also understandable to use visual perception focused questions. However, the generalizing conclusions should be considered and transferred carefully.

The best known and researched problematic implications of wind energy plants are the changes to the natural scenery. While the evaluation of changes to natural scenery not surprisingly depends on the respective aesthetic views held by polled households, it is also influenced by their personal opinion on wind energy in general. The results of such existing studies, however, are also affected by the respective study's design and degree of differentiation--for instance, whether individuals are asked about their opinion on pictures of landscapes presented on a PC or whether the study polls a large number of households actually located in the proximity of wind energy plants.

Another existing result is the negative role mostly problem-oriented media coverage plays in the formation of acceptance. Other studies focused on the changes caused by daily exposure

to wind energy plants, i.e. whether looking at these plants on a daily basis can result, for example, in a perceived decline in the quality of life or, to the contrary, in adaptation to the situation.

Moreover, studies analysed the effects of detailed knowledge in environmental matters and existing sensitivity to energy conservation. Polls asked for an assessment of the profitability and both direct accident risk of wind energy plants and its relative risk compared to nuclear energy.

Hence, while significant research exists as regards a large number of currently debated aspects of wind energy, the role of social processes has been neglected. Accordingly, a study based on a perceived procedural justice approach has so far not been conducted.

Taking the results of all studies available in German-speaking areas into account, it is fair to state that the general attitude towards wind energy plants is positive, with opposition concentrated at the actual locations of wind energy plants. Accordingly, such plants were often supported as a matter of principle or on a global scale, whereas they were objected to on the local level. This indicates a NIMBY effect. Therefore, it seems accurate to assume that individuals opposing wind energy plants primarily do so not for reasons of general hostility towards wind energy, but due to the specific location of the plant. Consequently, this fact emphasizes the need for adequate information, communication and procedures at the local level.

In accordance with the holistic definition of acceptance chosen and given the determining conditions, the present study opted for a design geared to include as many aspects of this issue as possible. Furthermore, the choice of counties was meant to foster the recognition and analysis of possible effects of customisation and adaptation.

A direct comparison between old and new German States has not been conducted so far, thus coming to conclusions regarding possible differences between counties in the respective regions which could be supported by solid statistical and empirical evidence was another goal of the study.

Furthermore, the present study aimed at integrating such research dealing with single relevant aspects and intended to systemise their results in the framework of an holistic approach. Among the relevant variables are the perceived changes in landscape and natural scenery, the



importance of general awareness regarding environment and climate, the assessment of economics and reliability, risk assessment, perceived justice and possible impact of media coverage. In the following, the results of the scale „justice“ will be presented and discussed.

## 5 Results

The scale „justice“ used in the questionnaire included seven items, with a reliability of .70 (Cronbachs Alpha). The respective items were:

1. Local authorities conduct the planning of wind energy plants in a fair manner.
2. Planning and zoning procedures are often conducted without the affected local citizens being heard.
3. Local media reports early when wind energy plants are being built in my community.
4. Conflicts in the planning stage are solved to the satisfaction of all.
5. In the planning and implementation stages, all interests of citizens are taken into account.
6. I would like to have a bigger say in the planning procedures.
7. It is always the same certain people who succeed in licensing procedures.

The scale items were poled to match high values with a high degree of perceived justice. The five-step answer structure allowed for „Statement is entirely correct,“ „Statement is partially correct,“ „I am undecided,“ „Statement is rather incorrect“ and „Statement is entirely incorrect“ as possible answers. Table 1 gives an overview over the principle results.

Tab.1: Item means of the scale "Justice"

Scale Justice (N = 291)		
<u>Item</u>	<u>M</u>	<u>SD</u>
1	2,70	,88
2	2,00	,99
3	3,10	1,18
4	2,34	,94
5	2,31	,91
6	2,19	1,06
7	2,56	1,09
Scale	2,45	,61

The consistently low means alone already indicate that there are significant deficits as regards consideration and implementation of justice principles within the planning process. With the exception of Item 3 (media coverage), all item means as well as the general scale mean are below 3.

In addition, a more detailed look at the items clarifies the negative assessment in the various sectors. Only 14% of the persons asked stated that local authorities conducted planning and licensing proceedings in a fair manner, only 13% of participating households are of the opinion that all interests of citizens are taken into account. 11% think that conflicts are solved to the satisfaction of all. In the same vein, 71% of respondents complained that planning proceedings were conducted without the people affected being heard. As a consequence, 64% would like to have a bigger say.

Since both sampled counties differ in terms of structure, history of wind energy usage and number of the wind energy plants, one might expect differences in perception and assessment of this topic by the respective population. The calculated T-tests, however, did not show any significant differences as far as the mean on the justice scale was concerned.

The correlations between perceived justice and a generally positive or negative view on wind energy plants were  $r = .35$  (in favour of wind energy) and  $r = -.22$  (against wind energy) and are each significant on a level of 0.01.

Statements made in the qualitative part of the questionnaire showed that a certain number of the households asked views the political class and operators of wind energy plants as a coalition which is exclusively profit seeking and unwilling to accommodate other interests. Instead of environmental protection, power and profits are allegedly the driving motives. Furthermore, lack of knowledge and often conflicting media coverage influences the assessment. Operators and opponents use different and conflicting numbers, which makes it impossible for laymen to properly analyse the data and fact situation. Accordingly, only 26% of the households polled felt comprehensively informed by the media, 65% would like more information. At the same time, respondents were very much aware of the fact that available information is provided by interest groups which present it in the light most favourable to their cause. Statements in the qualitative part express this quite clearly, for instance when respondents requested objective or „real“ information, preferably by an independent source.

This request is made not only with a view to justice, but can be found relating to all aspects, e.g. concrete numbers for the assessment of economic efficiency, risks to humans and birds, the real contribution to climate protection etc.

## **6 Discussion**

First of all, it has been attempted to demonstrate the importance of the perspective on social processes, even though the latter is often still a bit neglected. More specifically, planning proceedings should always take perceived justice into account. It has to be carefully analysed in advance whom to involve and hear when deciding the central questions, i.e. where and how many wind energy plants should be built.

Evidently, the existing common practice still has many shortcomings as regards the processes as such and citizen involvement in general. The six essential criteria postulated by Leventhal (1980) are obviously not satisfied during the current proceedings. As a consequence, affected citizens perceive local politicians and energy operators as profit seeking interest group, and protests against wind energy projects arise. As already explained, some respondents consider information stemming from the “disconnected elites” as biased and thus do not trust any information provided by those groups. This seems to be both an expression of a general disenchantment with politics and of a perceived lack of power and influence. Consequently, the willingness to get involved and participate in a wind energy plant project among these respondents is low - “it doesn’t change anything anyway.”

In contrast to this and in spite of all voiced criticism, a large number of polled residents expresses their willingness to get involved and demands opportunities for participation. This motivation should be used to counter the negative developments and conflicts described, and to find a lasting and socially acceptable solution at the local level. In doing so, local peculiarities as well as supra-regional regulations need to be considered. Mediation informed by environmental psychology offers a feasible tool in this respect. Through early and comprehensive information and broad inclusion of affected actors, many potential issues in the area of conflict posed by wind energy could be controlled.

In summing up, it should be repeated that the formation of attitudes towards wind energy plants is not exclusively influenced by aesthetic tastes or economic assessments. Nor is it cheap propaganda by the media or individual egoism which forms the central motivation for the parties involved. Instead, a complex interaction between several factors can be witnessed - and perceived justice is a significant component in this structure.

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