Public Acceptance of Renewable Energy Projects: 
Tilting at Windmills - the Danish Case

Prof. Birgitte Egelund Olsen, ReSET, Law Department, Aarhus University, Denmark and the EnERgioN project, Leuphana Universität, Germany

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1. Introduction
The climate change debate has strongly emphasised the need to replace fossil fuels with alternatives, particularly renewable energy sources. Renewables have the potential to switch the dominance of fossil fuels. However, the further development of renewables poses many challenges. One significant obstacle is viable technologies for example the development of large scale storage of energy from fluctuating renewable energy sources such as wind power and photo voltaic to ensure the stability of energy systems when the wind is not blowing and the sun is not shining. Another problem is that some renewables may give rise to strong environmental concerns or they may lead to a competition for land or specific resources, which is the case with for example 1st generation biofuel and hydropower. Yet a common feature of especially larger scale renewable energy infrastructures is that they very often give rise to local opposition, although the public attitude towards renewables, in general, is highly positive in all major renewable energy producing countries. Thus, even if the support is generally strong it does not always translate into support for concrete local projects, and in many countries renewable energy projects are increasingly confronted with local opposition, delaying and in some cases even blocking their implementation.1

An important way to achieve local acceptance of renewable energy developments is to provide information and involve the public in the decision-making process and the actual project development and design. This involvement should be initiated at an early stage in the process, to make sure that there is an opportunity for the public to contribute ideas and take an active part in the early development of proposals and options. The participatory approach is an integral part of the planning and environmental impact assessment procedures in many countries. However, these procedures do not always achieve an overall balancing of the interests concerned or the support of the local community; therefore, there is a need to ensure that the legal framework provides further incentives for increasing local acceptance of renewable energy projects.

1 In Denmark, public opposition has closed down several wind energy projects that have come through the initial planning phases. Also in Germany and the UK several projects have been stopped by local opposition, cf. Roger Cohen, “Britain Goes Nimby”, www.nytimes.com, 27 August 2011.
This paper will examine the need for incentives to enhance the local acceptance of renewable energy projects in order to increase the renewable energy capacity. The focus will be on potential legal measures taking a starting point in the Danish experience with specific measures introduced to promote the support of local citizens for the expansion of wind energy on land. These include a support mechanism for the financing of preliminary investigations carried out by local wind turbine owners’ associations or groups; an option for local citizens to purchase wind turbine shares; a right of property owners to compensation for loss of value of real property due to the erection of wind turbines and a Green Fund supporting local projects in the vicinity of the wind parks.

The structure of this paper is as follows: Part 2 focuses on public attitudes and the NIMBY effect. It introduces the NIMBY explanation for local opposition to renewable energy developments. Different existing instruments and incentives for informing, involving and gaining acceptance from the local population are briefly touched upon in part 3, whereas part 4 analyses the new legal incentives for promoting wind energy and public acceptance introduced in the Danish Renewable Energy Act. Finally, part 5 concludes.

2. Public attitudes and the NIMBY effect

In general, public attitudes towards renewables are highly positive in particular in the major renewable energy generating countries. However, in many countries new developments have proved difficult to realise. There is a great difference between accepting the desirability of renewable energy as a strategy for reducing climate change and increasing energy security, and accepting the actual siting of wind turbines, biogas plants or solar parks as a desirable infrastructure in the landscape. Local opposition to renewable energy facilities has proved to be an important obstacle to promoting the development of renewable energy. Although public support for renewable energy is generally strong, this attitude does not always translate into support for concrete local projects. Local people generally want to know how a wind park or a biogas plant might affect their surroundings and their property values. In addition, they might be concerned about smells, increased road traffic, noise, flickering shadows or the impact on birds and other wildlife. Thus, while people support the general idea of renewables, this support seems to diminish when it comes to the actual implementation of concrete projects. This pattern is often called the ‘Not In My Backyard’ effect, or NIMBY for short.

2 Renewable Energy Act, No 1074 of 8 November 2011.
The NIMBY effect means that while people support renewable energy on an abstract level, they object to specific local projects because of the expected consequences, such as visual interference, smell and noise. The concept can be used in a narrow sense, referring to a preference for the public good, combined with a refusal to contribute to this public good. This understanding, however, would not adequately account for other explanations for opposing a renewable energy project, such as broader concerns for nature conservation or concerns related to the decision-making process, which are also covered by the use of the concept in this paper. The NIMBY effect is not peculiar to renewables. It is seen in many other situations of the construction of large or intrusive infrastructures such as motorways or landfills that will all face resistance from the local community, but will in general be regarded as a public good or as necessary for ensuring i.a. a controlled waste handling.

The arguments of local communities against renewable energy development are multiple. In the case of onshore wind energy, the most common argument concerns the aesthetic intrusion of wind turbines on the landscape. The Danish compensation scheme for loss of value of real property under the Renewable Energy Act clearly shows this, since this argument is indicated in close to all claims for compensation or it is referred to during the viewing of the properties carried out by the valuation authority. However, there may be other explanations for the opposition to renewable energy developments, and environmental concerns may not be the only valid reason for lack of local support. Accordingly, resistance towards renewables may not be solely directed at the facilities themselves or their visual intrusion, smell or noise, but may instead be aimed at the formal decision-making process, and the public authorities that approve the plans and provide the permits for a specific project. Local people may be unconvinced about the suitability of the selected site and perhaps consider the location too sensitive, particularly if they believe that other locations available nearby are more suitable. Or critical attitudes may be triggered, for example, by suspicion of the developer’s motives, particularly if the developer has no local connection, which would be the case with a large energy company. Consequently, there must be broader understanding of the NIMBY effect when identifying appropriate measures for winning local acceptance of new renewable energy developments.


3. Legal instruments and incentives for promoting local acceptance

Traditionally focus has been on measures of information and involvement of the public in the decision-making process and perhaps even in the actual project development. Public acceptance seems to increase with the level of information and local involvement in a project. Access to information is fundamental to public acceptance as there can be no meaningful acceptance without access to relevant information. In addition, the right to participate in the decision-making process can trigger demands for more detailed and elaborate information, thus ensuring that the information provided has a high standard and is relevant to the individual neighbour.

The critical attitudes to renewable energy development seem to peak in the planning phase, after the announcement of a specific project. However, several studies show that people living close to for example wind turbines do not generally have a more negative attitude towards wind power than people who do not have turbines in the vicinity. Some studies even point to greater public support in areas with prior experience of wind farms than in areas with no experience. Thus, local opposition seems to be most significant in areas with concrete plans to establish renewable energy facilities, but where these plans have not yet been carried out and where there is no prior experience and only limited knowledge of the local effects of the renewable energy facility. These findings could indicate that the local acceptance of renewable energy projects would be increased if there were a high level of information and increased public involvement, not only in the formal planning and decision-making process but also in the very early project development.

Studies have shown that participation and an informative approach have positive effects, and lead to a decrease in public opposition by the local community to the planning and siting of wind turbines. It has also been shown that ‘early, timely and effective participation’ ensures that due account is taken of the results of public participation and is more likely to be successful and result in local acceptance. Accordingly, the ability to change attitudes will largely depend upon the perceived possibility of influencing the decision-making. Citizens who doubt the credibility of the information they receive or their ability to influence the decision-making are probably less likely to get involved in the public debate and exercise their right to participate, and thus accept the change.

The participatory approach is however already an integral part of the planning and environmental impact assessment procedures in many countries, although the extent to which such planning or land use control systems deal with renewable energy development may of course vary. In many cases, such instruments have proved not to be sufficient to ensure the local support for concrete projects. Consequently, there is a need to look into different instruments that deals with the ‘uncertainties’ that trigger the opposition of local citizens.

4. The need to introduce new instruments

Besides involving the local population in the preparation of plans and environmental impact assessments, other instruments could be introduced to promote the local support for renewable energy development. This could be done by encouraging local ownership
or financial participation in the projects, by linking the subsidy of local projects to the renewable energy development or ensuring property owners that they will not suffer financially due to loss of value of their property.

To ensure more widespread acceptance of wind turbines on land in particular, the Danish Renewable Energy Act has introduced specific legal measures to enhance positive local attitudes to the establishment of new wind turbines. The Act entered into force on 1 January 2009 with the specific purpose of ensuring greater involvement of local citizens and promoting the acceptance by local communities of new and bigger wind farm developments. The Act contains four new instruments for promoting the development of wind turbines on land. These include:

- a fund to support the financing of preliminary investigations by local wind turbine owners’ associations or groups;
- a mandatory auctioning of a minimum 20 per cent of the shares in a wind turbine to neighbors living within a 4.5 km limit of the wind farm project;
- a right of property owners to full compensation for loss of value to real property due to the siting of wind turbines in their vicinity; and
- a fund to enhance local scenic and recreational values, such as nature restoration projects or the installation of renewable energy sources in public buildings.

These initiatives offer benefits to the local community, support project development and management by local people in order to generate local economic benefits, and encourage the establishment of a more modern and efficient wind energy infrastructure. In addition, some measures may directly promote the local support for specific projects whereas other measures may only indirectly lead to an increased local support.

### 4.1 Promoting local ownership

The notion of local ownership covers at least two different types of ownership involvement, the proactive ownership and the reactive ownership. The distinction between the two types is based upon whether the ownership involves participation in the initial project development and design.

The proactive ownership covers incentives that spur persons or businesses to invest in renewable energy development. Under the Danish Renewable Energy Act, a so-called Guarantee Fund has been established to support the preliminary investigations performed by local groups. Thus, it encourages locals to initiate investigations of whether it is possible both financially, planning wise and politically to realise a wind energy project in a specific site. This may promote local acceptance since local developers are assumed to be better embedded in the local community and to have

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6 In Denmark, local initiatives and cooperative ownership of wind turbines is not new. It was the norm throughout the 1970s and 1980s, and the local ownership approach was supported by the Danish government through subsidies, tax credits and ownership criteria that encouraged cooperative ownership of wind turbines, see J. McLaren Loring, ‘Wind energy planning in England, Wales and Denmark: Factors influencing project success’, in Energy Policy 35, 2007, pp. 2648-2660; and P. Christensen & H. Lund, ‘Conflicting view of sustainability: the case of wind power and nature conservation in Denmark’, in European Environment Vol. 8 Issue 1, 1998, pp. 1-6.
better knowledge of local conditions and thus they are presumed to have greater credibility and to be in a better position to mobilise support and acceptance.

The reactive ownership relates to an ownership initiated after the renewable energy project has been implemented, either the formal decision making process or physically. This reactive ownership is also a feature of the Danish Renewable Energy Act. The Act imposes an obligation on all new wind energy projects to offer a minimum of 20 per cent ownership to local people. To increase local support for a wind project, developers invite members of the local community to participate financially in the project. It is assumed that financial involvement through local ownership can positively affect local attitudes to wind farms. The argument is based on the assumption that a shareholder focuses more on the financial benefits of the wind turbine than the negative local effects.

From an overall perspective, local ownership may promote local dialogue with different interest groups and generate more widespread understanding of the chosen location and design of the wind project. Knowing the local stakeholders, potential conflicts can be avoided by making direct contact with neighbours and others affected by the project at an early stage of the development of a project. Experiences from Danish wind energy projects have shown that there are often more complaints when external investors or large energy companies install wind turbines than when members of the local community do so.7

4.1.1. The proactive ownership mechanism

The Guarantee Fund supports the preliminary investigations performed by local wind turbine owners’ groups or associations.8 A guarantee is granted following an application procedure, which leaves it to the Danish TSO Energinet.dk to decide whether an association or group is eligible for support. The Act lays down a maximum guarantee of 67,000 € per project.9 The guarantee may cover loans taken out on market terms to finance the preliminary investigations of locations, carrying out the environmental impact assessment or investigating the technical and financial aspects of a project. The funding may also be used to prepare applications for the authorities in general. The guarantee lapses when the wind energy project is connected to the grid. There are no requirements of success. If a project is not completed, there is no repayment unless the project is transferred in part or in full to others.

It is a requirement that the group or association has at least 10 members. A guarantee may be provided only if the majority of the members of the wind turbine owners’ group or association have a local affiliation and a controlling influence in the association or initiative group. This includes a permanent residence in the municipal where the installation of the wind turbine(s) is planned or in case a member lives outside the municipality that it is of a distance of no more than 4.5 km from the site where the installation takes place.

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8 Renewable Energy Act s. 21.
9 The guarantees are allocated within an overall economic framework of 1,4 million €. The funding derives from the Danish PSO tariff, and thus the Danish electricity consumers finance it.
installation of the turbine(s) is planned. Furthermore, it is a requirement that the completion of the wind-turbine project is deemed realistic.

From a theoretical perspective, the Guarantee Fund should lead to an increased local acceptance. However, in practice this is probably less likely. Very often, professional developers are involved as well and the local members of the wind turbine owners’ group or association are big farmers or landowners, which the local public in general may have some difficulties in identifying themselves with. Thus, the fact that the wind developer is a local group or association does not necessarily make the project a ‘local’ project.

4.1.2. The reactive ownership mechanism

The co-ownership scheme imposes an obligation on all new wind energy projects to offer minimum 20 per cent ownership to locals, thus providing local citizens with an option to purchase wind turbine shares. The co-ownership scheme covers all wind turbines that are at least 25 meters in height, including offshore wind turbines established without a tendering procedure.10 Household turbines and testing turbines are outside the scope of the scheme.11

The wind turbine shares are offered for sale prior to the commencement of construction, and the tender has to be accomplished before the turbines are installed. Local citizens who live within a maximum of 4.5 km from the installation site have preferential rights to purchase shares.12 If not all the shares are sold to residents in the vicinity of the turbine, they are offered to citizens with a permanent residence in the municipality in which the wind turbine is to be installed.13 In order to provide an adequate basis for potential shareholders to decide whether they would like to make use of the co-ownership option, the wind turbine developer is obliged to prepare information on the nature and financial conditions of the project in accordance with the specific requirements of the Renewable Energy Act.14 The sales material is approved by the competent authority, the Danish TSO, Energinet.dk, as a condition for the wind developer to obtain subsidies for renewable energy generation under the Act.15 The wind turbine developer must explain the sales material at a public meeting convened after a reasonable period of notice and announced in local newspapers. Following the public meeting, local citizens have a period of four weeks to make a purchase offer.

Among the professional wind energy developers, the co-ownership scheme is not highly valued. It is from their perspective a bothersome process and it diminishes their profit performance. Nevertheless, the aim to promote public acceptance is recognised, and the scheme has become more widely accepted. However, the current framework contains some in-build conflicts with the interests of the developer. If some of the shares are not sold, they return to the wind energy developer, which could – and probably already does

10 Renewable Energy Act s. 13(1).
11 Renewable Energy Act s. 13(2).
12 Renewable Energy Act s. 15.
13 In case of an oversubscription of shares, the allocation takes place as a draw carried out by Energinet.dk.
15 Renewable Energy Act s. 13(4).
- weaken the economic incentive of the professional developers to actually sell the shares.

The aim of the co-ownership scheme is to involve the general local public in the projects as co-owners. The scheme is directed at private individuals. In many cases, the scheme has stimulated the local citizens’ engagement in the projects. One obvious explanation is of course the observation that “when the turbines are spinning the money comes rolling”. Wind energy investments can be very profitable, and experience shows that there are often less opposition when a large host of locals take advantage of the co-ownership option. However, the scheme has not rom a local community perspective been a success in all cases. In some projects, very few shares have been sold, usually because the local community has been very strongly opposed to a specific wind energy project. Thus, they would rather “sell their souls than buy wind turbine shares”. In other cases, the co-ownership option has attracted big investors or even external investors. In a number of cases, the investor group has consisted of a few very big investors that has bought shares at an average of more than 100,000 € per investor. Thus, the general investor is then no longer an average local citizen. Consequently, there has been a proposal for an amendment of the Renewable Energy Act to ensure that no investor is allowed to buy more than 50 shares. This would in general correspond to an investment of approximately 25,000 €. Another problem has been so-called ‘wind energy nomads’ – that is investors buying up neighbouring properties to become neighbours and thus eligible for taking part in the co-ownership scheme. However, their residence ends when the tender is accomplished, which makes them just pro forma neighbours.

4.2 Compensation for loss of value of real property

The aim of the compensation scheme for loss of value to real property is to gain acceptance of a wind energy project from an affected owner of property close to the wind turbine site. The reasoning behind the measure is that neighbours to a wind turbine will be more accepting of it if they are compensated for their loss of property value. From a wider perspective the reasoning behind is that economic justice, which is inherent in the compensation scheme, will generate more general acceptance of wind energy projects in local communities. It is also believed that the financial compensation of affected neighbours and greater local acceptance will give a stronger incentive for local authorities to designate wind development sites and adopt concrete wind development plans, as decisions on them will be less disputed and considered fairer, due to the payment of financial compensation to individual property owners in the local community. Accordingly, the decisions of local politicians will be less controversial and thus be less difficult to make. The question is, however, whether this logic corresponds to the reality.16

The compensation scheme obliges wind energy developers to fully compensate the economic loss of any property owner facing more than a 1 per cent decrease of their

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16 The compensation scheme is a significant departure from traditional Danish neighbour or nuisance law. In traditional neighbour or nuisance law, the threshold for compensation is far higher than a 1 per cent decrease of property value. Compensation claims based on neighbour or nuisance law against wind turbines have generally been rejected by the Danish courts on the grounds that the interference does not exceed what should be expected according to the general societal development, see the latest case Ugeskrift for Retsvæsen 2009.2680H.
property value as a consequence of the establishment of new wind turbines.\textsuperscript{17} Basically, the scheme covers all wind turbines, except those less than 25 meters in height and offshore wind turbines established following a tender procedure.\textsuperscript{18} Accordingly, it also covers testing turbines.

According to the Renewable Energy Act, owners of property who claim that the erection of a wind turbine will cause a loss of value of their property must submit a claim for compensation to the authorities within four weeks after the public meeting held by the wind developer.\textsuperscript{19} The aim of the public meeting is to inform the local community about the effects of the wind project on surrounding properties, options to buy shares and the submission of claims for compensation for loss of value. Submitting a claim is free of charge. However, owners of properties located further from the planned wind turbine than six-times its height pay a small fee for the costs of processing the claim for compensation. The fee will be returned if payment for loss of value is granted or agreed.\textsuperscript{20}

According to the Act, the amount of the loss of value is initially determined by a voluntary agreement between the developer and the owner of the property. If there is no agreement, the decision on the loss of value is referred to an impartial authority. Under the Act, special valuation committees have been established to deal with neighbour claims for compensation.\textsuperscript{21} So far, the decisions have mainly been made by the valuation committees and only very few claims have been settled voluntarily between wind developers and property owners.

At present more than 100 wind projects have been registered under the scheme, of which 56 has been assessed.\textsuperscript{22} Most projects are located in Jutland close to the West Coast; an area that has very good wind resources, and which has many existing onshore wind farms.\textsuperscript{23} During the period from spring 2009 until the turn of the year 2012 almost 1400 MW installed capacity has been dealt with under the scheme. However, so far only about 30 per cent hereof has actually been connected to the grid.

The first decisions of the valuation committees, which concerned the Svoldrup Kær project, were announced in July 2009. This development triggered compensation payments of up to approximately EUR 27,000. The average level of compensation for

\textsuperscript{17} Renewable Energy Act s. 6(1) and (3).
\textsuperscript{18} Renewable Energy Act s. 6(2).
\textsuperscript{19} The meeting is announced in local newspapers. This has caused problems in practice, given that not everybody reads local newspapers. Although announcements in local newspapers are a common way to notify a local community about a plan or permit, the compensation scheme is viewed differently by property owners, as it may have direct financial impact on the owner of property.
\textsuperscript{20} Renewable Energy Act s. 9(4). The current fee is approximately 530 €.
\textsuperscript{21} There is one valuation authority per region, and 5 in all. Each committee consists of chairman who satisfies the conditions for appointment as a judge, and an expert in valuing real property, an estate agent; see Renewable Energy Act s. 7(2).
\textsuperscript{22} The numbers are as of 1 February 2013.
\textsuperscript{23} A turbine on the west coast of Jutland generally produces twice as much energy as a turbine of the same size at an inland location; see Danish Energy Agency: Wind energy in Denmark, 2009.
properties where payment for loss of value was granted was approximately EUR 18,475. Since then more than 630 decisions have been made providing some precedent on the issue, although there is still not any clear practice. All decision are very concrete although based on the same main criteria for calculating the loss of property value, which are: The characteristics of the area, the visual interference, the distance to the wind park, the estimated level of nuisance, public and private restrictions on the property and the property value and type. During the period 2010-2012 the average level of compensation for properties where payment for loss of value was granted has been rather consistent, corresponding to approximately 13,500 €. The average level of compensation is however, very different from the eastern part of the country to the western part of the country. The lower level of compensation in the western parts of the country are partly due to the fact that there are more existing wind farms in Western Jutland than in any other part of the country. In addition, the property values are much lower in the western regions. So far, only few decisions have been brought before the courts.24

If the property owner has contributed to the loss of value of the property the amount to be paid may be reduced or not payable at all.25 For example, this is the case if the owner of the property has sold off or let out the land used for the erection of a wind turbine. Such an agreement with the wind developer would imply that the owner had accepted the loss of value. In practice, these agreements are often very lucrative and thus very desirable for property owners.

The compensation scheme was - and still is - very controversial, particularly in the view of legal academics, the wind industry and green NGOs.26 One major concern of the wind industry was the substantial increase of the costs of wind development. A consultancy report commissioned by the Danish Energy Agency prior to the enactment of the Renewable Energy Act predicted estimated losses of value of certain properties of more than 80,600 €.27 More than 600 decisions later, this has only been the result once – in a case of wind shadowing, where the operating loss of an owner of two existing wind turbines triggered a compensation payment of approximately 100,000 €. Among the other cases, the compensation payment has only come above 67,000 € in four cases. Before the enactment of the compensation scheme, the wind industry estimated that the costs of a wind project would increase by up to 16 per cent if the compensation scheme was adopted.28 However, the level of compensation has been significantly lower than that predicted.

24 As of February 2013, five decisions of the valuation committees have been reviewed by the lower courts. The most recent court review is the decision of 13 February 2013 by the District Court in Holstebro. However, so far there has been a lack of conformity in the court reviews, and no decisions have yet been appealed to the High Court.
25 Renewable Energy Act s. 6(1).
26 The scheme has been widely criticised by e.g. H. Tegner Anker, ‘Lovkvalitet – en kamp mod vindmøller?’, in Miljøretlige emner, H. Tegner Anker & B. Egelund Olsen (eds), Jurist- og Økonomforsamlings Forlag, 2008, pp. 421-438. See also the criticisms made by the Danish wind energy sector and NGOs in the statements made in the consultation for the first draft of the Renewable Energy Act.
While the costs of new wind developments may not be as high as initially assumed and the compensation scheme may not be the major obstacle to further wind development, as predicted by the wind industry, the compensation scheme is still questionable from a public acceptance perspective. First, wind turbines are treated differently from all other large or intrusive infrastructure projects such as highways and landfill sites, which only give rise to compensation if the activity results in an unreasonable interference in accordance with neighbour or nuisance law. The mere fact of this seems to indicate that wind turbines are a very disturbing activity, even if the specific public law assessment and distance requirements for the establishment of wind turbines are adhered to. The design and approach of the scheme emphasises the negative local impacts of wind projects and disregards any focus on the global/societal benefits of the climate friendly energy source.

Second, the design of the scheme is not transparent. It gives rise to immense difficulties of adapting expectations. Experience shows that it is difficult for affected property owners to comprehend that it is not the nuisance of the wind turbines as such that is compensated; it is the impact of the wind turbines on property values that is compensated. Thus, a neighbouring property, which is not a private home, may receive less compensation, if any, than another neighbouring property which is a private home, even if the impact of a wind turbine on the first property is greater. In addition, if a property is in a very bad state of repair, the owner may not be eligible for compensation even though a wind turbine is located very close to the property. The proposed wind development may have no influence on the value of the property because it may actually be of very little value. Such decisions are difficult for the parties involved to understand, because the estimated impact of a proposed wind development is not based on precise and objective criteria. The neighbour who is not compensated will find that they have been treated unfairly, and consequently they may be dissatisfied not only with the valuation committee, the neighbouring wind park and the wind developer, but also with the public authorities and perhaps even with their neighbours. These reactions will not lead to increased public acceptance of wind projects, or to any greater acceptance of wind energy or renewable energy in general.

4.3. The Green Fund support mechanism

The aim of the Green Fund mechanism is to promote local acceptance of the installation of new onshore wind turbines by granting subsidies to local initiatives such as the enhancement of local scenic and recreational values. The reasoning behind the measure is that neighbours to a wind turbine will be more accepting of it if they are compensated for the degradation of their surroundings caused by the turbine.

The Fund is accessible for municipals that have completed wind energy projects, but subsidies may also be granted to initiatives of local groups provided that the activities

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29 The Circular provides general national planning guidelines, which are binding on the municipals. It lays down specific requirements for example that the maximum height of a turbine may not be above 150 meters - if higher the turbine needs an approval by the central government administration – and a minimum distance requirement of 4 times the maximum height of the wind turbine to the nearest dwelling, cf. Circular No. 9295 of 22 May 2009 on planning and zoning for the establishment of wind turbines.
are of a more general local public interest. It has to be new activities that have not yet been launched. The subsidies can be paid when the wind turbine in question is connected to the grid. However, it is also possible prior to the instalment of the turbine, to make reservations for the funding of activities under the scheme. The subsidy corresponds to 0.05 cent per kWh for 22,000 peak-load hours for each wind turbine. Consequently, one turbine of 3 MW entails an amount of approximately 36,000 € to the scheme.

At first hand, the application process seems a bit bureaucratic. Only a municipal council may apply for a subsidy. Thus, a municipal council forwards an application from the municipal or a local group in the municipal to Energinet.dk for a commitment for a subsidy. The application for a subsidy may be submitted in connection with the application for approval to install a wind turbine pursuant to the Planning Act, or at a later stage. Based on the application, Energinet.dk may give a commitment for a subsidy for expenses paid by the municipal council. The subsidy is confined to two types of initiatives, that is:

“construction work to enhance scenic or recreational values in the municipality, and cultural and information activities in local associations etc., in order to promote acceptance of the use of renewable energy sources in the municipality.”

These requirements could be interpreted strictly, not allowing many initiatives to be funded. However, a study of the projects that have been accepted so far clearly proves that this is not the case. The TSO has been rather open towards the support of projects. Examples of projects that have received a subsidy are bicycle paths, nature restoration projects, renovation of sporting facilities, instalment of renewables (i.a. solar panels or geothermal energy) in public buildings etc. Due to an uncertainty about the field of application of the Green Fund - and probably also a certain lack of information about this funding possibility, especially among the local public - the scheme came off to a very slow start. However, it has in particular with in the last six months become more widely known and used, and in several local papers, the Green Fund has been pointed out as an important gain of the local wind energy projects. In the municipal that has initiated the largest number of wind energy developments, Ringkøbing-Skjern, approximately 5,8 million € has been reserved for future initiatives in the municipal under the scheme. This corresponds to about 100 € per inhabitant in the municipal. So far more than 200,000 € has been allocated to activities under the scheme. Eventually, this opportunity may lead to an increased local acceptance of wind energy projects, although it will probably not be decisive for the public opinion in the initial phases of planning. Nevertheless, the Green Fund has the potential to increase the level of acceptance when the wind turbines have been installed.

5. Concluding remarks

There is a need for better and more open decisions that take into account the diversity of the stakeholders involved or affected by proposed renewable energy projects. If local
concerns are brushed aside or not sufficiently taken into consideration, there will be a risk that opposition and conflicts between the stakeholders involved will intensify, and that the general support for renewable energy projects will fade immensely. Although most major renewable energy producing countries would probably argue that access to information and public participation is important and that it is already an integral part of their decision-making process, renewable energy projects nevertheless increasingly meet local opposition, delaying and blocking implementation. Consequently, a well-planned project is no guarantee for either the acceptance or successful implementation of a renewable energy project. Thus, there is a need for new legal instruments to spur local acceptance.

In Denmark, there has been a distinct need to implement further incentives to achieve the planned development in wind energy capacity. The different schemes of the Danish Renewable Energy Act have been in operation for more than four years allowing some conclusions to be drawn concerning the effectiveness of the schemes. A planned revision of the Act started out in the spring of 2011 and has resulted in a proposal for an amendment of the Act, which was presented to Parliament 6 February 2013.32 The proposal for an amendment contains several revisions of the existing schemes. However, most of them are clarifications or minor adjustments, thus the proposal maintains the basic elements of all schemes. There is no doubt that from a political perspective the schemes have been very successful. Although, the schemes have not been without problems - differences in interests, values and opinions do remain, and it is unlikely that all stakeholders will be satisfied - they have within the period 2009-2012 nevertheless underlined a significant growth in installed capacity. The local opposition, however, continues to rise and the interest groups opposing the development of wind energy have become stronger and adopted a more professional attitude. Consequently, there is a persistent need to consider further and new instruments. Such instruments could involve new ownership designs, such as local partnerships, citizen or consumer driven facilities or facilities owned by the municipals.