

# **Problems, mistakes and good practices in community participation in local renewable energy projects**

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## **ABSTRACT**

Citizen participation in local renewable energy projects is often promoted as many suppose it to be a panacea for the difficulties that are involved in the energy transition process. Quite evidently, it is not; there is a wide variety of visions, ideologies and interests related to an 'energy transition'. Such a variety is actually a precondition for a stakeholder participation process, as stakeholder participation only makes sense if there is 'something at stake'. Conflicting viewpoints, interests and debates are the essence of participation. The success of stakeholder participation implies that these differences are acknowledged, and discussed, and that this has created mutual understanding among stakeholders. It does not necessarily create 'acceptance'.

Renewable energy projects often give rise to local conflict. The successful implementation of local renewable energy systems depends on the support of the local social fabric. While at one hand decisions to construct wind turbines in specific regions trigger local resistance, the opposite also occurs! Solar parks sometimes create a similar variation: Various communities try to prevent the construction of solar parks in their vicinity, while other communities proudly present their parks.

Altogether, local renewable energy initiatives create a rather chaotic picture, if regarded from the perspective of government planning. However, if we regard the successes, it appears the top down initiatives are most successful in areas with a weak social fabric, like industrial areas, or rather recently reclaimed land. Deeply rooted communities, virtually only have successful renewable energy projects that are more or less bottom up initiatives.

This paper will first sketch why participation is important, and present a categorisation of processes and procedures that could be applied. It also sketches a number of myths and paradoxes that might occur in participation processes.

'Compensating' individuals and/or communities to accept wind turbines or solar parks is not sufficient to gain 'acceptance'. A basic feature of many debates on local renewable energy projects is about 'fairness'. The implication is that decision-making is neither on pros and cons of various renewable energy technologies as such, nor on what citizens are obliged to accept, but on a fair distribution of costs and benefits. Such discussions on fairness cannot be short cut by referring to legal rules, scientific evidence, or to standard financial compensations. History plays a role as old feelings of being disadvantaged, both at individual and at group level, might re-emerge in such debates.

The paper will provide an overview of various local controversies on renewable energy initiatives in the Netherlands. It will argue that an open citizen participation process can be organized to work towards fair decisions, and that citizens should not be addressed as greedy subjects, trying to optimise their own private interests, but as responsible persons.

## **KEYWORDS**

Please supply six to eight keywords, which apply to your paper, after the abstract. This will assist in the preparation of an index for the Proceedings.

## **INTRODUCTION: WHY CITIZEN PARTICIPATION IN RENEWABLE ENERGY PROJECTS?**

The 2015 Paris agreements have created ambitious goals for reducing the emissions of greenhouse gases. This necessitates drastic measures: reduction of energy consumption by energy frugality, developing renewable energy sources and transformations of energy systems in order to cope with different energy carriers, provide storage for the annual and daily fluctuations of renewable energy sources and deal with this revolution in energy business conditions.

These transformations do not just affect the energy sector. Renewable energy generation will affect the rural and urban landscape, climate & energy market policies and changing energy prices might affect households and various economic sectors financially. The transformation of energy systems will lead to a considerable loss of fixed assets, of consumers, industry and energy companies. Naturally, there will also be new business opportunities.

At the global level, the world has recognised the interrelation of environmental and equity issues: conflicting interests of rich and poor, underdeveloped and developed nations and regions, fossil fuel producers and -consumers, potential climate change victims and regions with considerable resilience towards climate change, regions with rich renewable energy assets, and regions that are poor in this respect. The concept of Sustainable Development created a milestone on this pathway of promoting integrated policies.

However, at the local/project level similar equity issues often occur: Renewable energy technologies often create nuisances for local inhabitants, while owners/operators reap the benefits, and landowners are sometimes compensated quite generously. Besides these different interests, the local community as a whole might question the necessity of actions in their community; why should their region produce renewable energy (for others)?

### **From ‘acceptance’ to ‘participation’**

Controversies on ‘siting’ decisions have occurred manifold. For example, the siting of nuclear power facilities in the 1970s was a politically sensitive issue; if local resistance was strong, final decisions could be delayed considerable. However, the argument of local employment could sometimes persuade the local population to accept a nuclear power station near their community. Studies showed that local ‘acceptance’ was not just an issue economics versus impact: local history and its social conditions, and local economic conditions were quite important (Byrne and Sucoy 1977). Stakeholders not only determine their assessment of a local project by their assessment of costs and benefits for themselves: values, ideologies and religion might play an important role in assessing new technologies or large local operations in local communities. Mapping such issues was helpful in preparing policy makers (Mulder 1996).

Could local acceptance be measured unambiguously, in order to decide what is acceptable in a local community, and what is not? Or to decide at what site a certain facility would be most acceptable? No tool can provide such an assessment unambiguously:

- The subject and object are interdependent, a general social science phenomenon that especially occurs in micro studies. As a result, actors will often try to influence the result of the study:

Questioning local people on certain issues, and gathering data in a local community, will generate interests, and might make the inhabitants feel ‘special’ and/or it will stimulate them to think about certain issues, and affect their views.

Local residents know that there is something at stake; they will emphasize issues and downplay others, as to serve their values/interest concerning the perceived aim of the study

Although a proposal might be acceptable or unacceptable as such, people might reject/accept it, as it is part of a larger enterprise that they reject/support.

- The image of the analyst making the ‘acceptance’ study is of major importance. Citizens might refuse cooperating with companies or agencies that they do not trust. Scientists are often regarded as independent and neutral, but local residents might distrust them if stakeholders hire them. Past conflicts might still create distrust.

- Such an assessment of local acceptance will be influenced by external events. Global catastrophes might have a major impact. ‘Acceptance’ might even be an issue of ignorance that might be flushed away if unfavourable facts become known. Critical minorities might be able to gain community support rapidly.

Local projects aimed at reducing greenhouse gas emissions, might be perceived differently by various local stakeholders, might affect local assets and local values, and might trigger conflicts of interest. Ignorance might play a considerable role among all stakeholders as some might be unaware of the applications and the impacts of renewable energy technologies, while others have no idea of the implications for the local community. For these reasons, local decision making on projects to reduce greenhouse gas emissions might be a challenge. Such projects face challenges of

- Providing insight into the need to implement changes (in relation to measures elsewhere)

- Assessing novel energy technologies and the local impacts are often unknown

- Differences in perceptions of the proposed energy technologies and their impacts

- Balancing the cost and benefits for various stakeholders

- Achieving the project goals at acceptable costs.

Hence, local decision making on the introduction of renewable energy technologies is a learning process to understand the potential impacts for the community, both positive and negative, and how the community could deal with these impacts to optimise opportunities and prevent harm. This means ‘second order learning’ in order to adapt behaviour and organisation of the community (members) to the new options and new barriers. Important in second order learning is not just conveying knowledge on new local phenomena, such wind turbines, solar parks, or hydropower dams, but also facilitating discussions and creativity, in order to reach understanding for conflicting views. So besides learning on the direct implications of renewable energy technologies, processes of social learning are a crucial element for local communities in order to strengthen local democratic decision making, prevent conflict, and to discuss compensation for specific actors that might fear negative impacts of a renewable energy technology. Careful decision making, being ‘fair’ to all members of the community, giving regard to various viewpoints and interests is an important element of local decision making on renewable energy technology.

## **Issues in local renewable energy projects**

Local renewable energy projects take rather encompassing change: the renewable energy is to be harvested from the landscape, and so there are landscape effects; wind turbines are quite visible, produce noise and flicker and might affect bird life, PV panels in solar parks affect the

pasture and landscape, PV on roofs might cause a fire safety issues, which might turn into an insurance issue, hydropower disturbs river flows and the river aquatic ecosystems, it might also affect recreation and water management, and geothermal energy might create induced seismicity.

Another important factor is that renewable energy is not (always) available on demand, and so energy storage might be required. Storage of energy might have major impacts on local energy systems.

All these changes might affect some stakeholders more than others, and so there is an issue of 'fair compensation'. Finally, the climate change issue has some urgency. A local community might be proud, of being the first to .... Which might create spirit of competition with neighbouring communities. Local decision makers are also often triggered by this argument. This might also create the risk of focussing on large steps in renewable energy. Such projects might have too much impact on local communities.

### **Conflict in local energy projects**

The energy crises of the 1970s sparked a renewed enthusiasm for renewable energy generation. In the 1980s, novel types of wind turbines were deployed, and solar energy projects were initiated. However, wind turbines and solar energy also triggered resistance, especially as the equipment became larger.

In most modern democracies, various local actors have the power to postpone or block decision making on larger scale local projects. Besides renewable energy projects, many infrastructure projects were unsuccessful because of local resistance. In 1980, Livezey called this phenomenon NIMBY, not in my back yard (Livezey 1980). 'NIMBY' was made the brand of people that rejected common interest projects, because their private interests were affected. NIMBY was thereby a negative term that referred to selfishness and the uncompromising pursue of the own sake. The acronym rapidly got political influence in the USA and UK and was used to denigrate local protestors against 'common interest projects'. Branding opponents as 'NIMBY' was an effective weapon, as it blamed the opponents as being narrow minded and selfish. It often enabled decision makers to neglect local protests, have the lawyers deal with the objections, and show to their constituents that they were able to deliver.

However, one question if such a policy is fair: rural communities have to accept the nuisances of wind turbines, solar parks or hydropower dams, but the energy is for a large part fed into the city electricity grids. Why should only the rural population take the burden? (Wolsink 2007). Compensation for residents living near wind turbines has become common practice, but despite, conflicts that are more serious have occurred.

Therefore, this paper is analysing a number of local conflicts regarding local renewable energy generation: are the conflicts mainly to be explained by different perceptions of what is a fair distribution of costs and benefits, or is it mainly a matter of self-interest? Could an approach be developed that would allow for more consensual decision-making and less conflict?

## Different Perceptions of Renewable Energy in a local context

### Wind turbines

In various regions of the Netherlands, wind turbines are by far the most controversial renewable energy technology. What are the issues of discussion, and how are conflicts solved?

In September 2013, the 12 provinces of the Netherlands and the national government agreed on a distribution of the wind turbine capacity that is required to work towards a national renewable energy system. In 2020, wind turbine capacity on land should be 6000 MW. The five coastal provinces would be responsible for the major part of this capacity. The provinces would be responsible for siting of the wind turbines, and for all accompanying measures that were required.

The pathway to this goal proved not really to be smooth for the provinces. At this moment 3300 MW of wind power has been created and 700 MW is under construction (Interprovinciaal Overleg n.d.).

At various sites, the provincial implementation of the plans created conflict. Negative impacts of wind turbines that played a role in these conflicts are:

a. Landscape. The image of the landscape is affected. As the provinces were bound by the national agreement, the resistance against wind turbines that was motivated by landscape impacts could hardly be prevented. In order to compromise, the Friesland province, right from the start, embarked on a policy of concentrated wind parks, and aimed at preventing the construction of single wind turbines (van Houten 2011). In this way, landscape deterioration was confined to a few spots.

i. However, this concentrated wind park policy also created conflict. For example in the village of Roordahuizen, a local cooperative produced sufficient electricity by a single wind turbine. The cooperative had been successful for about 15 years, but needed to replace its wind turbine. In order to stay competitive in respect to the electricity prices of the national grid, the villagers needed a somewhat larger wind turbine. However, the Friesland province refused a licence. The municipality supported the villagers, and so long lasting legal procedures started (van den Berg 2016). Only in 2019, the High Court of Appeal for Government Decisions decided against the villagers and their new wind turbine. Meanwhile, however, the Friesland province was governed by a new coalition that was willing to compromise with the villagers (Omrop Fryslan 2019).

1. Besides these bottom up initiatives, also farmers were victims of this wind turbine concentration policy. During the years, novel 50 KW wind turbines were introduced that were ideal for farmers: they were profitable, required no changes to the farm's electricity grid connection, required little maintenance, and as these wind turbines were about as high as the highest trees, there were hardly landscape objections. For long, farmers in Friesland could not get a licence for these wind turbines, and they felt disadvantaged as compared to their colleagues in other provinces

ii. The areas that were determined to be the location for wind turbines felt as scapegoats. Ultimately, the main contribution to fulfil Friesland's obligations was achieved by constructing a large wind park in the large lake IJsselmeer, which triggered resistance from national environmental organisations but local communities were hardly affected (Anonymous 2018).

b. Disadvantaged Regions. Government siting decisions for wind- and solar parks are for a major part determined by perceptions of landscape value. Valuable landscapes need

protection. Industrial areas and reclaimed land are preferred locations for wind turbines. The reverse side of this argument, i.e. that locations for wind parks are ugly places, is not helpful in communicating a siting decision to a region: The inhabitants identify themselves with their region, especially if it has a stable population. As a result the inhabitants of regions that have to accept wind parks, not only are losers of the political game; they are also sad inhabitants of an 'ugly region'.

c. Noise. Noise production by wind turbines is proportional to wind speed. However, the normal noise of wind increases similarly, and this creates a 'natural mask' for wind turbine noise. However, this does not apply under all conditions. After numerous complaints of people living near wind turbines, a research project showed that wind turbines might produce much more noise than expected, especially during low winds at night. The cause of the additional noise is the large gap between the wind speed at top position of the wing, and its lowest position. Hence, this phenomenon occurs especially at larger wind turbines (Van den Berg 2006).

d. Annoying visual effects: shadows, flicker, and night (flash) lights. These are considered a nuisance and disturb wildlife (Pennewaard 2016)

Wind turbines can be put on halt to prevent annoying shadows (Kingdom of the Netherlands n.d.).

e. Bird mortality. The wings of wind turbines move at high speeds (maximum about 200 km/hr), in relation to the speeds of most migratory birds (about 40 km/hr). The wings might knock the birds out of the sky. For this reason, Conservationists had been opposing wind turbines in and near conservation areas. Bird mortality can be limited by not placing any turbines at migratory bird routes, or by putting the turbines on hold in the migration season (ter Steege 2019)

f. Space use. Wind turbines need limited space. A relatively small, 1 MW turbine produces about 1,5 million KWh annually. This is sufficient electricity for 450 dwellings. Except for the construction phase, space use of a wind turbine is negligible. In order to generate a similar amount by a solar park, more than 20.000 m<sup>2</sup> is needed. An average supermarket is about 1000 m<sup>2</sup>, which means that 20 supermarkets have to cover their roofs with PV in order to generate a similar amount of electricity. Larger buildings are often not designed to carry the weight of a PV panel cover. Insurance costs of these buildings will rise. The low use of space is for farmers often an argument to prefer a wind turbine.

g. Real estate value. As people experience nuisances from wind turbines, prices of nearby real state might fall. This again might trigger resistance of those fearing to lose part of their capital.

h. Employment and economic benefits. The local economic impacts of a wind park are generally not very large (Munday, Bristow et al. 2011) The turbines are remote controlled and development of turbines have been focussing on low maintenance costs. Therefore, there is hardly direct local employment. However, there are investors that seek green power as they consider direct access to green power as an important asset for their company, both for security of energy supply and for their green image (Rengers and Houtekamer 2020)

In 2014, the NWEA, Netherlands Wind Energy Association, recommended its members to make a 0,40-0,50 euro/MWh per annum deposit in a fund that should upgrade the local environment of a wind park. This will amount about 3000 euro/annum per wind turbine. Under the pressure of local conflict, some wind parks pay already much higher contributions (van der Laan 2020).

i. Necessity of wind turbines. Do we really need wind turbines? After the oil crises of the 1970s, wind turbines were perceived as a crucial option for future energy security. However, as energy prices slumped in the 1980s, support for wind diminished. Moreover, off

shore wind turbines were a new option, so why accept wind turbines in your area? (Wolsink 1988)

Nowadays, the societal need for renewable energy is not an issue. Even in an area where a large controversy took place regarding wind turbines (The area of the 'N33' and 'Drentse Monden-Oostermeer' wind parks in the North of the Netherlands where discussion escalated into violent resistance) 63% of the inhabitants was opposed to the wind turbine plans for the region (22% in favour). However, 65% of the same inhabitants wanted more wind energy (25% opposed) to provide renewable energy, even if turbines would have to be placed in their region (Brandsma 2019)

### **Wind turbines and 'fairness'**

'Acceptance' of wind turbines is based on all of these factors. However, apart from the separate issues, and how they work out for various stakeholders, there is a general issue: Is the distribution of costs and benefits of a new local wind turbine, or a wind park, fair? In other words: are there stakeholders that benefit, without much risk, and are there stakeholders that suffer without any compensation?

A wind park does not just need the consent of main local stakeholders, and a licence of the appropriate authorities. It needs a location without residents in the vicinity, to prevent nuisances. Landowners need to admit the placement of a wind turbine. In general, farmers own the land and have to cooperate. Moreover, they also live between their parcels. Hence, they are the ones that might object the noise and visual impacts of wind turbines. Hence, the farmers were key actors for the wind park developers. They were offered considerable compensations for accepting wind turbines on their land. Some farmer organisations lobbied in order to get their area legally assigned as a wind park location. Villagers could not benefit from the wind turbines in this way. Noise, visual hindrance and falling real estate prices were not individually compensated. A main slogan of the protestors was *'Boeren slapend rijk, onze huizen dalen in waarde'* ('Farmers become rich without any effort, the prices of our dwellings go down'). Moreover, the area where the conflict occurred has a historic class divide between capitalist farming and agricultural workers.

The resistance against wind parks in the North of the Netherlands should therefore primarily be seen as a conflict on fairness of distribution of costs and benefits, and not as a selfish attempt of some groups to refuse cooperating in achieving a common goal. Farmers were blamed for not supporting the other villagers in getting proper compensation for their loss: *"In this way, a division is created between farmers and citizens (Op deze manier zaai je verdeeldheid tussen de boeren en de burgers)."* (Brandsma 2019)

### **Solar Parks**

Discussions on solar parks have in some respects a similar character. Sometimes solar parks are regarded as alternative for wind turbines, and sometimes, wind turbines are promoted as alternatives for solar parks.

The main objection against solar parks is the harm they do to the landscape: solar parks take considerable space and many people detest the view of large fields with shiny plates. Everybody agrees that roofs, especially the large ones of commercial buildings, are to be preferred as locations for PV panels. However, a fire in the village Marknesse, caused by PV panels, caused a sharp increase in insurance costs. Investors prefer meadows as locations for solar parks (Keukenkamp 2019). The attempts to create solar parks created several local

conflicts. In several cases investors tried to persuade municipalities to accept solar parks, by promising to take measures to prevent landscape deterioration (E.g. a girth of trees and shrubbery surrounding the park). However, such a promise should be legally solidified in spatial plans and/or contracts (Zurhake 2019).

In another case, a field that was part of a Natura 2000 natural reserve area was planned to become a solar park (van Rootselaar 2019). This caused negotiations between environmental organisations and the PV industry. In a covenant of November 2019, they agreed that natural reserve areas would not be used for PV unless it would be clearly beneficial for the area. This could be the case if there would be much less PV panels per area. In that case, grazing cattle and other small animals could potentially create a richer ecology (Straver 2019).

Besides the landscape, also agriculture played a role: farmers rejected withdrawing good soil from agricultural food production ('nog minder grond') as it would be an economic threat and a risk for food security. In the municipality of Hilvarenbeek Kronos Solar presented a good landscape plan for a solar park. However, villagers protested: 'One should first cover roofs of stables and commercial enterprises' (van Hest 2019). This argument can be heard everywhere. For many roofs, this is impossible, or too expensive by high insurance costs.

However, just like the siting issue of wind turbines, in solar parks 'fairness' is an important issue.

Large investors from elsewhere make a profit by their solar park, but the landscape in the village deteriorates, and local farms are closed down. Dominique Doedens, an advisor for local energy projects: "The problem is that project developers own the solar park. They use some so-called 'participation', i.e. local people can buy a share. However, the large profits leave the local community, often the profits go abroad. The burden remains in the local community." (Laconi 2018)

So in fact, the problem is similar to the one that was described above for wind turbines: some inhabitants of a local community gain (by having shares, by renting out their land, etc.) but the others are worse off as the landscape deteriorates and the value of their property is declining.

In addition, in this case, the resistance of the local population against renewable energy projects is neither an issue of support for fossil fuels, nor a sign of 'NIMBY-ism'. The main underlying issue is that of a fair distribution of costs and benefits of interventions in the landscape.

## **Noise Screening**

Renewable energy technologies contribute to a more sustainable society, but at some expense for the local population, especially because of landscape issues. In noise screening, the benefits are intended to be for the local population while a government body often covers the costs, which is far more at distance from the local community. Hence, if NIMBY-ism would be the main or single explanation for citizen's perceptions, noise screening would hardly give rise to any controversy. Let us see:

In The Netherlands, measures limiting noise of (rail-) traffic are strictly regulated by chapter 11 of the Law on Environmental Management. Based on this legal framework, the national government initiated an investment program aimed noise reduction at 'hotspots': Any dwelling that was subjected to noise in excess of 65 dB (motorway) or 70 dB (main railroad) would be 'remediated'. Legally, it was prescribed that noise reduction measures with highest efficiency (i.e. noise reduction per euro) should be applied, which implies that models decide whether the façade of a building will be treated, noise reduction measures will be applied in the railroad track/road surface, or a noise reduction wall be built (Rijksoverheid nd). Noise

walls are therefore no ‘negotiable solutions’: they are prescribed by law in case noise levels are too high and the wall is the most efficient solution. Noise reduction options in the railroad track or by the road surface are limited.

As noise reduction only applies in the built environment, deterioration of the natural landscape is hardly an issue. However, aesthetics is important: noise walls are considered as ugly for two reasons:

- The walls are dull and grey, and attract graffiti. Plants and flowers can cover the external side of the wall but that takes additional budgets for maintenance. The walls could be painted, which might be cheaper, but less effective in preventing graffiti.

- Noise walls create a visual barrier in a residential area. As people do not see their fellow villagers anymore (e.g. across the railroad track) they feel ‘disconnected’: one no longer will be part of ‘the same community’; one perceives the local community as being split up by a noise wall. This problem especially occurs for dwelling that have their facades towards the railroad/highway. If a back garden is separated from a highway/railroad by a noise wall, it is regarded as ‘additional privacy’ (NH Nieuws 2016). Serious protests against noise walls are frequently made, for example regarding noise walls in Heiloo (NH Nieuws 2017), Tricht (Bijl 2011), Gouda (Peters 2017). Also in Germany, noise walls are often controversial, like e.g. in Hohenlimburg (Bremshey 2019) and Vilshofen (Glas 2020).

In principle, there are options to reduce railroad noise without applying high walls. Besides adapting the railroad tracks, railroad noise can be reduced by lower walls that are placed closer to the tracks (Prorail 2018). However, this solution affects railroad safety (in case of a train evacuation), and railroad maintenance becomes harder (as the walls create barriers for equipment and maintenance workers).

Hence, for a local community noise screening is not a simple execution of legal measures to protect the inhabitants: It is a procedure that has costs and benefits, for inhabitants, Prorail (as owner of the tracks), train passengers, local municipality, etc. and the issue is not just health, but also involves the aesthetics of the village and community life.

### **Decision making on local projects: Outsmart the opponents?**

Decision making on local projects is highly regulated in laws and regulations that are aimed both at characteristics of the object at stake, as well as at the procedure by which decisions are to be taken. Both types of regulations require expertise, which the incumbent actors generally have, but which creates barriers for citizen groups. This creates an option for actors to outsmart their opponents, e.g. by quick action before anybody is aware what really is at stake, or by filing a licence application at such a moment that it will be made public during summer holidays. Whether this is smart behaviour is doubtful. Such behaviour will certainly raise suspicion among the population, and will therefore not contribute to a productive dialogue:

In 2011, the municipality of Boxtel issued a licence to the British gas company Cuadrilla, to start exploratory drilling for shale gas in their territory (Persson 2011). Only after the permit was issued, the media payed attention to this application. Inhabitants got worried, and started studying the issue. Internationally, there were growing worries about the impacts of shale gas fracking, which were highlighted in the film ‘Gasland’, by Josh Fox (Fox 2010). Especially after this film was broadcasted on Netherlands national television, the local population got worried. A local committee appealed against the permit at court. The court destroyed the permit (ANP/Redactie 2011), which became the start of a legal battle. This controversy was terminated in 2018, after the minister of Economic Affairs announced in parliament that there would not be any shale gas drilling in The Netherlands (van Mersbergen 2018).

Local politicians considered the whole course of events rather unfortunate. The fiasco could probably have been prevented if the local community would have seriously discussed the issue earlier (de Vries, van Est et al. 2013).

### **Towards consensus oriented participatory decision making**

During the 1990s, various attempts started to revitalise procedures for public participation in local decision-making. Until the 1990s, participation had been confined to public hearings regarding infrastructure decisions. Such hearings did not really contribute to creating consensus among stakeholders. On the contrary, they generally triggered a process in which contestants were entrenching. Moreover, decision making processes were much delayed by this process, as parties were adding studies to support their own vision (Bruning 1994). In reaction, there were various attempts to introduce new procedures to involve stakeholders in public decisions (De Rooij 1994, van Enthoven and de Rooij 1996, Rijkswaterstaat 1997). Generally, a more open interaction with stakeholders, before problems were defined, and pathways towards solutions entered, was the basis of these new approaches.

In the beginning, decision makers feared that the new procedures would create a conflict between stakeholders and the responsible politicians. However, it turned out that by a good participation process, decision makers might learn, and take better decisions. Participatory decision-making does not erode the position of elected bodies, on the contrary. Political parties can actively determine their own position by actively following the participation process and make themselves less dependent on the information provided by the executives. Various political ideologies have a link to participation: Sometimes the strength of the community is emphasized, sometimes the mature judgment of independent citizens, and sometimes the flexibility of open local policy making and aversion to bureaucracy play a role; the social objective of many projects and increasing the involvement of citizens in them are also important arguments.

Participation should definitely not be confused with promoting "acceptance". If "creating support" or "acceptance" is limited to informing citizens, there is nothing wrong with this, but if this clearly aims to win citizens over for already established government policies, this degenerates into propaganda with all its negative consequences. Citizens recognize propaganda and mistrust is reinforced rather than removed. (Cf. Wolf 2020).

Participation sometimes leads to disagreements. That is not a problem, it might even be considered a precondition for participation as it is a sign that there are crucial issues at stake for local communities; or in other words: if there is nothing "at stake", then there are no "stakeholders", and decision-making is of no interest. Citizens' participation in decision-making actually makes sense only if there are public issues and arguments "in favour" and "opposed". Specific 'Interests' of citizens might be good arguments, as long as stakeholders equally respect the interests of others.

What must be prevented, however, is that a difference of opinion leads to a "controversy": a difference of opinion is based on different values or interests and arguments derived from them; in a controversy, the opinion has become fixed, and arguments are selected to support that opinion (Nelkin 1979, Mazur 1981, Mulder 2012). A difference of opinion can eventually be bridged in a debate, or the debate can reveal a deeper layer from which the difference of opinion arises. This is almost impossible in a conflict; we are therefore talking about bridging a difference of opinion and settling a conflict.

## **Participation, How?**

Participation processes might have various aims. Stakeholders should be clearly informed on those aims, as it might easily turn into a source of conflict. Aims of such a process might be:

- Informing the population. Decision makers define the decision-making process but the stakeholders are informed. Stakeholders do not submit viewpoint that will be part of the formal procedure. Just informing stakeholders can be sufficient if decisions to be taken are not expected to raise any debate. In small communities, distance between formal decision makers and stakeholders is so small that decision-making and participation virtually coincide.
- Consult the population. In this case, the decision makers want to get an overview of opinions and views of the population regarding a specific subject.
- Jointly shaping a certain decision: Stakeholders are more actively involved. They are invited to submit their views or submit alternatives for an existing plan. Developing alternatives is facilitated. The decision making body remains responsible for the final decision.
- Invite stakeholders to develop a joint plan. Decision makers will refrain from interference if the joint stakeholders will develop a plan that fulfils certain predetermined conditions.

In order to achieve these highest forms of participation, stakeholders should trust each other, mutually respect values and interests, and act open and transparent. Accusing others as being ‘Nimby’s terminates the process, as ‘Nimby’ implies in fact not caring for viewpoints or interests of others. In the wind cases presented above, it also makes no sense sending civil servants to communities without any scope for compromise. Above all, the discussion in local communities should be focussed on fair decisions regarding costs and benefits for all stakeholders.

In order to achieve that the local process should be

- Open, i.e. all relevant actors are allowed and all relevant information is accessible.
- All stakeholders have equal rights. No stakeholder might claim a privileged position.
- Arguments and debate determine the quality of the outcome. The process should provide scope for developing arguments, and debate should be facilitated. There should be clear ‘rules of the game’ that guarantee that debate is focussed on arguments.
- There should be sufficient means for the process.
- Participants should be committed to the process and its outcome.

## **Conclusion**

Participative decision-making has achieved good results in complex situations, in which various aims and values coincide, and expertise plays a major role. Experts can share their expertise with stakeholders, and argument scan be exchanged: In such a process, the participants learn, about the subject matter, but also about their fellow citizens. The necessity to deal with these challenges of local decision making on renewable energy projects has been widely acknowledged. However, the root causes of the need to involve local communities are often perceived from a too narrow perspective:

The first perception of the root cause is the ignorance of the local population; Especially scientists and engineers perceive the root cause of problems of local renewable energy decision making as a lack of understanding of the challenges of climate change, the depletion of fossil fuels, and what it takes to replace the current energy system by one that is fuelled by renewable sources. The problem of this perception is that it regards the nature of the problems

as that of techno-scientific problems (Given the knowledge that is available, there is ‘one best solution’; everyone should reach that same solution after being educated and provided with all the relevant facts). However, local decision-making is not a specification of national politics: it is on values (landscape, wildlife, nature) and on ‘fairness’, in the context of local factors and a local history. Our attention has been focussed on international decision making regarding climate change policies (Akerboom 2018), it is time to shift our attention to the local level in order to successfully take action.

## References

Akerboom, S. (2018). Between public participation and energy transition: The case of wind farms, Universiteit van Amsterdam.

Anonymous (2018). IJsselmeer to get large wind farm. De Ingenieur. The Hague, KIVI-NIRIA.

ANP/Redactie (2011). Rechter verbiedt proefboring schaliegas Boxtel. Algemeen Dagblad.

Bijl, A. (2011). Tricht vreest voor tweedeling dorpskern. Reformatorisch Dagblad.

Brandsma, M. (2019). Enquête rond windmolenparken: 'Het schort aan overleg met bevolking: als niets helpt krijg je extremistische uitwassen'. Dagblad van het Noorden. Groningen.

Bremshey, V. (2019). Bahnstrecke Hagen - Siegen: Larmschutzwand sorgt in Hohenlimburg für Bürger-Proteste. Westfalen Post.

Bruning, A. J. F., J. Siersma (1994). Grote projecten in Nederland; een analyse van het tijdsbeslag van twintig besluitvormingsprocessen. The Hague, Wetenschappelijke Raad voor het Regeringsbeleid. W77.

Byrne, J. F. and E. W. Sucof (1977). Correlational Tools for Predicting Community Acceptance of Nuclear Power Plant Sites. Methodology of Social Impact Assessment. K. Finsterbusch and C. P. Wolf. Stroudsburg PA, Dowden, Hutchinson & Ross Inc.: 235-244.

De Rooij, A. (1994). The infralab initiative calls for a renewed transport planning. Colloquium vervoersplanologisch speurwerk 1994. Implementatie van beleid. De moeizame weg van voornemens naar actie., Rotterdam.

de Vries, A., et al. (2013). Samen winnen. Verbreding van schaliegasdiscussie en handvatten voor besluitvorming. The Hague, Rathenau Instituut.

Fox, J. (2010). Gasland. USA, Independent Pictures 107 minutes.

Glas, A. (2020). Die Lärmschutzwand, die kaum jemand möchte. Süddeutsche Zeitung. Interprovinciaal Overleg (n.d.). "Klimaat en Energie / Wind op land." Retrieved May 27, 2020, from <https://ipo.nl/beleidsvelden/energie/provinciale-rol-structuurvisie-wind-op-land>.

Keukenkamp, S. (2019). Geen verzekering voor bedrijfspand met zonnepanelen: onderneming uit Lochem ten einde raad. De Stentor.

Kingdom of the Netherlands (n.d.). Activiteitenregeling Milieubeheer, artikel 3.12, .

Laconi, P. (2018). Weerstand groeit tegen wildgroei zonneparken: meer dan 50 concrete plannen in deze regio. De Stentor.

Livezey, E. T. (1980). Hazardous Waste. Christian Science Monitor.

Mazur, A. (1981). The dynamics of technical controversy, Communications Press Washington, DC.

Mulder, K. (2012). "The dynamics of public opinion on nuclear power. Interpreting an experiment in the Netherlands." *Technological Forecasting and Social Change* 79(8): 1513-1524.

Mulder, K. F. (1996). Maatschappelijke aanvaarding van Duurzame Technologie, een inventarisatie van culturele weerstanden. Delft, Interdepartementaal programma Duurzame Technologie Ontwikkeling. werkdocument CST2.

Munday, M., et al. (2011). "Wind farms in rural areas: How far do community benefits from wind farms represent a local economic development opportunity?" *Journal of Rural Studies* 27(1): 1-12.

Nelkin, D. (1979). Controversy: politics of technical decisions. Beverly Hills, Sage Publications.

NH Nieuws (2016). Geluidsmuur langs spoor verdeelt Heiloo: "Ik heb er bijna slapeloze nachten van".

NH Nieuws (2017). Bewoners langs spoor Heiloo vrezen geluidsscherm: "Het dorp wordt verdeeld in oost en west". N. Nieuws.

Omrop Fryslan (2019). "Raad van State: geen vergunning voor nieuwe windmolen Reduzum." Retrieved May 27th, 2020, from (<https://www.omropfryslan.nl/nieuws/894481-raad-van-state-geen-vergunning-voor-nieuwe-windmolen-reduzum>).

Pennewaard, K. (2016). Bewoners willen af van verlichting windturbines. Leeuwarder Courant.

Persson, M. (2011). Britten boren naar heel veel gas in Brabantse bodem. Algemeen Dagblad.

Peters, M. (2017). Protest tegen nieuwe schermen langs het spoor. Goudse Post.

Prorail (2018). "Experimenten met lage geluidsschermen positief." Retrieved May 27th 2020, from <https://www.prorail.nl/nieuws/experimenten-met-lage-geluidsschermen-positief>.

Rengers, M. and C. Houtekamer (2020). Gebroken beloftes: hoe de Wieringermeerpolder dichtslibde met windturbines en datacentra. NRC Handelsblad. Rotterdam.

Rijksoverheid (nd). Meerjarenprogramma Geluidsanering.

Rijkswaterstaat (1997). Drie jaar Infralab: samen een brug bouwen tussen overheid en burger. The Hague.

Straver, F. (2019). Doorbraak voor zonne-energie: milieubeweging akkoord met grote zonneparken in het landschap. Trouw.

ter Steege, L. (2019). Hoe een UvA-er de vogelsterfte door windmolens wil voorkomen Folia. Amsterdam.

Van den Berg, G. P. (2006). "The sound of high winds. The effect of atmospheric stability on wind turbine sound and microphone noise."

van den Berg, J. (2016). Dorpsinitiatief Reduzum vakkundig nek omgedraaid De Volkskrant.

van der Laan, M. (2020). Windmolens: In Noord-Holland bedongen omwonenden 8000 euro per jaar aan compensatie. Dagblad van het Noorden. Groningen.

van Enthoven, G. and A. de Rooij (1996). "InfraLab. Impuls voor open planvorming en creativiteit." Bestuurskunde 5.

van Hest, E. (2019). Plan voor zonnepark bij Diessen stuit meteen op weerstand, 'Waarom goede landbouwgrond opofferen?'. Brabants Dagblad.

van Houten, M. (2011). Friezen weren windmolens uit open gebied. Trouw.

van Mersbergen, C. (2018). Boxtel en Haaren juichen: schaliegas-spook nu écht verdreven. Algemeen Dagblad.

van Rootselaar, A. (2019). Weerstand tegen zonnepark op landgoed Quadenoord. De Gelderlander.

Wolsink, M. (1988). "The social impact of a large wind turbine." Environmental Impact Assessment Review 8(4): 323-334.

Wolsink, M. (2007). "Wind power implementation: the nature of public attitudes: equity and fairness instead of 'backyard motives'." Renewable and Sustainable Energy Reviews 11(6): 1188-1207.

Zurhake, S. (2019). Steeds meer weerstand in Lochemse kernen tegen zonneparken, Lochemse politiek begint te schuiven De Stentor.