

# Siting conflicts in renewable energy projects: A biogas case study

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## **1. Introduction**

Conflicts sometimes arise over the siting of renewable energy facilities. This paper starts with a discussion on the differences and similarities in comparison with conflicts over other controversial issues, such as nuclear power plants, chemical factories and the construction of roads. The main part of the paper is concerned with the results from a case study of a failed attempt to site a biogas plant in southern Sweden. The results show that a lack of public participation in the early stages of planning and the local residents' negative perceptions of the developer and of their possibility to influence the decision, contributed to the development of opposition to the project and polarisation of the conflict. The role of planning legislation in shaping processes that mitigate or accentuate conflicts is also discussed. The paper concludes with the observation that the biogas case showed similarities to both traditional siting conflicts and other conflicts concerned with renewable energy.

Governments, industry, environmental groups and the public in general are all very positive to the increased exploitation of renewable energy sources, which are seen as a crucial element in the development towards a sustainable energy system (Government bill, 2001/02:143; Holmberg, 2000; Government bill, 1996/97:84). At the local level, however, specific renewable energy projects can be controversial. Previous research on environmental siting conflicts has mostly dealt with technologies that have a clear negative impact on the local area and few environmental benefits, such as hazardous waste facilities, chemical factories, waste incinerators and the development of infrastructure (Löfstedt, 1997; Dorshimer, 1996; Leiss, 1996; Lidskog, 1994; Rabe, 1994).<sup>1</sup> The increasing exploitation of renewable energy sources calls for research into the conflicts generated by the siting of renewable energy facilities and into the ways in which such conflicts can be handled. This paper seeks to contribute to this body of research.

This first section provides an introduction to different types of renewable energy and a discussion on differences between and similarities to other siting conflicts. The aim of the discussion is to outline an agenda for further empirical and theoretical research on the characteristics of siting conflicts involving renewable energy facilities. Empirical research in the form of case studies of specific renewable energy

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<sup>1</sup> The study of the conflicts concerning the construction of railroads is an exception since this is generally seen as a way to increase the ecological sustainability of the transport system and here parallels might be found with renewable energy (Boholm et al., 1998 and *National Objectives—Local Objections*, 2001).

projects that have led to conflict is needed. The main part of the paper presents the results from one such case study, that of a failed attempt to site a biogas plant in southern Sweden. Section two gives an introduction to the case while sections three and four contain discussions of the main results. The final section presents concluding comments about the case and about its relation to other siting conflicts.

Renewable energy is the umbrella term for a heterogeneous group of energy sources (mainly bioenergy, wind power, hydro power, solar power and solar heating), that have in common the fact that they are not consumed once they are exploited, but can be replenished. They contribute little or nothing to the emission of greenhouse gases, such as CO<sub>2</sub>, which means that switching from fossil fuels to renewable energy sources reduces the problem of global warming.

A central question concerning the siting of renewable energy facilities is whether such facilities are associated with new problems in comparison with traditional siting conflicts. First of all, it should be acknowledged that renewable energy projects are very heterogeneous and can mean anything from the installation of a solar heating system in a single-family house to the siting of a large wind park of several megawatts. Renewable energy projects differ regarding aspects such as the scale of the facility, the risks they imply in the local area, the uncertainties in those risks, type of ownership and the actors involved in the planning of the facility. Despite these differences, renewable energy facilities have many characteristics in common which distinguish them from the siting of other facilities, and it is useful to discuss them in general terms. Renewable energy tends to be strongly supported by public opinion, while activities such as the use of nuclear and fossil energy, the burning of waste, chemical factories and the construction of roads are often met with resistance. This has implications for the nature of local siting conflicts.

While conflicts over other facilities are often connected to the agendas and activities of established environmental organisations (Jiménez, 2001; Rootes et al, 2000; Lidskog, 1994), local opposition to renewable energy facilities is typically organised by ad hoc interest groups, consisting of neighbours and other people in the community, who feel that their local environment is being threatened. The major environmental organisations have a positive attitude towards renewable energy and see it as a key factor in the development towards a sustainable energy system. This means that environmental organisations working at the local level are faced with a dilemma, since they, in principle, support renewable energy but, at the same time, are confronted with the worries and opposition of local communities. This dilemma was evident in a study based on interviews with representatives of local environmental organisations in different municipalities on the Swedish west coast, about their views on wind power development (Böhler, 1998). All the organisations involved wanted to see an increase in wind power in their local area but none of them was actively working to promote it. They were furthermore sceptical to the large-scale exploitation of wind power. While established local environmental organisations are hesitant, new networks, as in the case of wind power, are being established that unite people who have had bad experiences in their local area and who are against the implementation of renewable energy facilities in their own areas.<sup>2</sup>

Since the literature on siting conflicts is mostly concerned with facilities characterised by high uncertainties and risks, work has been focused on the development of appropriate methods for the assessment and communication of risks.

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<sup>2</sup> In Sweden the name of the network against wind power is Svenskt Landskapsskydd (Swedish Landscape Protection) (for their Internet home page address see the reference section). Similar networks exist in the United Kingdom, Denmark, Germany and France.

It can be argued that such a focus might be somewhat misplaced in the case of many renewable energy projects, where the uncertainties are not so pronounced and where the risks are less dramatic. For wind power, the main cause of conflict is the visual impact on the landscape, something that does not cause much uncertainty. For bioenergy and biogas plants the uncertainties in the risks are higher, even though they cannot be compared, for example, to radioactive waste or a chemical factory. This suggests that for many projects in renewable energy generation, there would be less need to use the more elaborate and sophisticated methods of risk analysis and communication developed within the field of risk research.<sup>3</sup> Considering the relatively small scale of many renewable energy projects, such a strategy would often prove impossible because of the limitations on time and resources.

However, we can still learn a great deal by comparisons with other siting conflicts, since some of the reasons for the development of local opposition are essentially the same, and stem from worries about the effects of the facility, lack of trust in the developer and the lack of opportunity for citizens to influence the outcome of the project (Leiss, 1996; Kasperson et al., 1992). A closer look at renewable energy siting conflicts shows that, in most cases people are genuinely worried about the possible effects of the facility and tend not to perceive the project as environmentally friendly. Regarding wind power, the visual impact on the landscape might be the most important environmental question for people who have lived for a long time in an area with an unspoiled landscape. From such a perspective, a large company wanting to build several wind turbines is not necessarily viewed as environmentally friendly and certainly not as working for the good of the local area.

The opposition against a specific project is often connected to local residents having a negative perception of the developer and of the limited opportunity they have to influence the planning process. In the discussion on the biogas case study, later on in this paper, I argue that an expert-oriented planning process which excluded public participation, contributed to the development of opposition to the biogas plant and to the highly polarised conflict between the developer and the opposition group. The same observation has been made in relation to wind power projects (Hammarlund, 1997; van Erp, 1996; Wolsink, 1990). The fact that a project is concerned with renewable energy does not mean that it will be automatically welcomed by everybody and the lessons concerning inclusive planning processes are as important here as in the siting of other facilities. The people who oppose a facility are not usually negative to renewable energy per se, even if they are critical of the location chosen and the way it has been selected.<sup>4</sup> Bad experience with specific projects can, however, lead to a more sceptical attitude towards the technology itself. The fact that renewable energy projects tend to be small-scale and are often initiated by actors at the local level, increases the possibility for the economic involvement of people from the local community, which can help to create a feeling of ownership in projects and thus increase the likelihood of acceptance. The development of wind power in Denmark is a good example of the potentials of economic involvement (Brunt and Spooner, 1998; Tooke and Elliot, 2000). Even without economic involvement, the small-scale of the projects may make it easier for the local population to become involved in the planning processes and to influence the decisions about the siting of a new facility.

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<sup>3</sup> See *Earthscan Reader in Risk and Modern Society* (Löfstedt & Frewer, 1998) for an introduction to the research on risk analysis and risk communication.

<sup>4</sup> See Wolsink (1994) for a discussion about different possible local reactions to a new facility.

The discussion above has touched on some of the issues concerning renewable energy facility siting conflicts. Further empirical research is needed to obtain a more complete picture of this matter and to answer the question of whether renewable energy constitutes a special case in siting conflicts. The remainder of the paper is devoted to a discussion of the results from a case study, which deals with a failed attempt to site a biogas plant in southern Sweden. The findings are of course specific to this case and cannot form the basis of general conclusions regarding renewable energy facility siting conflicts. They can, however, indicate interesting questions for further research.

## **2. Biogas in Lund: An introduction to the case study**

In January 2000, a political majority in the municipality of Lund in southern Sweden decided to abort plans for a biogas plant outside the village of Dalby; a decision that put a stop to a planning process that had been in progress for more than four years, and that had been met by heavy local public opposition and much political hesitation. The overall purpose of this case study is to reconstruct the planning process and the interactions of the actors involved in order to understand why the siting of the facility failed. One of the main areas of interest in the study is why opposition against the project developed, and this is discussed in relation to the form of the planning process and the lack of public participation. The importance of the local residents' perceptions of the planning process and of the developer is given particular attention. The discussion also covers other aspects such as different interpretations of the planning process and the role of relevant legislation in shaping constructive or destructive planning processes.

The empirical material for the case study consists of written documentation and interviews. The *written documentation* has been collected from various sources such as the developer, the authorities, the opposition group and newspapers. Since the case study focused on the interaction between the key actors and on how they interpreted the planning process and the actions of other actors, *interviews* have been the most important source of empirical information. Eleven semi-structured interviews were carried out with different key persons such as representatives of the developer, members of the opposition group, municipal politicians and civil servants.

### *Case background*

Biogas is a form of bioenergy that is derived from the digestion of organic matter, such as manure and animal and vegetable residues. The main purpose of a biogas plant is to make use of such organic waste instead of depositing it on landfills or burning it. The biogas process produces two end products: (1) biogas, which can be used to produce heat or as a substitute for natural gas in pipelines and vehicles, and (2) the digested product which can be returned to the land and used as a fertiliser. Biogas plants typically create concern among local communities regarding the risk of unpleasant odours.

The present case study followed a failed attempt to site a biogas plant in southern Sweden. The facility was planned to be located in the municipality of Lund, 2.5 kilometres away from the village of Dalby which has around 7,000 inhabitants. The planning and application process extended from 1995 to the beginning of 2000 and involved a variety of different actors. The key actors were the developer, the

municipality of Lund and the local opposition group. *The developer* was the regional waste management company. The company is jointly owned by nine municipalities in south-western Skåne (the southernmost county in Sweden) and is in charge of waste disposal and recycling in the area. The developer was in charge of the planning process and made the formal application to build the biogas plant. *The municipality of Lund* was a central actor throughout the process and its role was rather complex. Politicians and civil servants played different roles and that of the municipality as a whole varied in the different stages of the planning and application process. In short, the municipality initially worked actively to site the biogas plant in Lund, but later distanced itself from the plans and acted more as a critical authority in the application phase. At the end of the process a political majority within the municipality voted against the project. The *opposition group* consisted of neighbouring residents as well as households in the nearby village of Dalby, who worked actively to oppose the plans. Other significant actors were the County Administration, which administered the environmental permit for the biogas plant and the population of Dalby where strong public opinion against the plant developed.

The key issue in the conflict was the specific location of the biogas plant and the perceived negative impact it would have on the local environment and on the people living there. The main concerns were unpleasant odour, increased traffic, adverse effects on the landscape and that the use of water might affect an environmentally protected pond and the groundwater level (Letters from the public, comments by the authorities and interviews with members of the opposition group). It is difficult to judge who was right and who was wrong in the debate about environmental impact, since further studies on the suitability of the plant were blocked by a political decision. Such a judgement is beyond the scope of this paper and would demand a detailed analysis of the different arguments and of the environmental impact assessment. However, a few comments are possible to make.

In a study of siting conflicts, Carlman (1992) distinguishes between genuine and false conflicts of interest. *Genuine conflicts* are those where the parties agree about the actual effects of a facility but disagree about how to handle them and how serious they should be considered, while *false conflicts* appear when one of the parties has a mistaken idea about the effects of the facility. False conflicts should be possible to resolve through more information while genuine conflicts have to be resolved by other means, such as a legal decision, compensation or compromise. The picture becomes more complicated, however, when there is uncertainty associated with the effects, which allows for different interpretations and makes it unclear whether a conflict is genuine or false. Furthermore, distrust of the developer can mean that information which could potentially solve a false conflict is viewed as unreliable. The main issues of conflict in the biogas case, were either genuine or fraught with uncertainty. This was also the view of the authorities involved, who called repeatedly for supplementary information before considering themselves ready to make a decision. However, several false conflicts also existed and the opposition group used some arguments that were clearly wrong or exaggerated and brought up issues that had nothing to do with the environmental impact of the facility, simply in order to discredit the project.<sup>5</sup>

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<sup>5</sup> Examples of incorrect arguments were claims that it was not possible to return the dry residue to the land and what seemed to be a deliberate misunderstanding about the amount of traffic that would be generated by the facility. Examples of arguments that did not concern the environment were claims that there was not sufficient supply of manure and that there would be problems selling the gas (1998-2000 Letters from the public).

### *Two phases of the planning process*

The planning process for the biogas plant can be divided into two distinct phases, the early planning phase and the application phase. *The early planning phase*, started in 1995 and continued to June 1998, when the first consultation meeting was held with neighbours of the chosen site. The early planning phase started as two parallel processes, where both the developer and the municipality started planning for a biogas plant. In 1996 the developer completed the first location report in which six locations in its geographical region of activity were studied. One of the alternatives was the location 2.5 kilometres outside Dalby (hereafter called the Dalby location). The report did not state whether any of the locations was better than any other and it concluded that more research was necessary to determine this (1996-09-16 Lloyd). Since politicians in the municipality of Lund were very positive towards a biogas plant, it became natural for the developer to focus on Lund in the continued planning.

The final part of the early planning was carried out as a joint planning project between the developer and the municipality and was characterised by close co-operation between the two parties. The planning was done in working groups covering issues such as the location of the plant, technology and market, the use of the biogas and co-operation with farmers (1997-01-30 – 1997-09-01 Memoranda from the developer). Civil servants from several of the municipal departments were involved in the working groups and the most active politicians took part in the steering group that supervised the planning process.

The early planning also involved other actors who had an active interest in the project, such as farmer's organisations and the local energy company.<sup>6</sup> However, a striking feature of the early planning phase is that it only involved stakeholders who would benefit from the project, and therefore had a positive interest in it. The planning dealt primarily with technical aspects of the project and did not include a broader political discussion on issues that could be controversial, such as environmental aspects and the location of the facility. There was, for example, no working group dealing exclusively with environmental aspects and planning did not involve local environmental organisations. Likewise, the working group on location involved only civil servants and did not include consultations with the public or the local political representatives of the areas in which possible locations had been identified. The purpose of the working groups was not to reach a consensus which all parties would accept, although they partly served as a means of spreading information and gaining support for the project among the major stakeholders. Instead, their principal purpose was to make the planning process more efficient by including experts with different types of experience and knowledge (Interviews: 2000-05-09 Ekwall and 2000-06-27 Tufvesson).

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<sup>6</sup> Farmers are vital to the biogas system, since they deliver animal manure which is an important raw material in the biogas process. They are also the recipients of the digested end product which is used as fertiliser. The local utility was involved in relation to the use of the biogas.

<i>The Early Planning Phase</i>	
1995	Political discussions about the construction of a biogas plant start in Lund. The regional waste management company develops plans for a biogas plant somewhere in its region of activity.
October 1996	The first location report is completed by the developer.
1997	Joint planning between the developer, the municipality and other stakeholders.
Autumn 1997	The second location report is completed by the developer.
<i>The Application Phase</i>	
June 1998	Consultation meeting with the neighbours of the site.
July 1998	The application is submitted. Protests start from neighbours.
September 1998	An opposition group consisting of neighbours to the site and residents in Dalby is formed.
November 1998	Two public meetings are held in Dalby. There is strong opposition to the project.
January 1999	The authorities ask the developer for supplementary information.
October 1999	The developer supplies the supplementary information.
Autumn 1999	The opposition group continues its activities to stop the project including personal lobbying of politicians.
January 2000	A political majority of the Planning Committee decides not to allow detailed planning to take place. The project is stopped.

*Table 1. Chronology of the planning and application process*

Although the working groups involved different parties, the developer was in charge of the planning process and made the final decisions about, for example, the location of the facility. One possible reason why nothing was done to involve the public in the early planning phase, or to encourage a broad political discussion, is that the project was not seen as controversial since all political parties were positive to biogas. The feeling of strong political support was expressed by the representative of the developer several times during the interview (Interview: 2000-05-09 Ekwall). At the end of 1997, the developer completed a report in which the Dalby location was declared as the chosen location and this later served as the basis for the legal application (1997-10-13 Ekwall and Lloyd).

*The application phase* started in June 1998 with the first public consultation meeting and ended in January 2000 with the political decision that put an end to the

project. The biogas plant needed a permit according to the Environmental Protection Act<sup>7</sup> and this application was sent to the County Administration in July 1998 (1998-09-16 Sysav AB). A building permit was also needed under the Planning and Building Act and this was handled by the Planning Office in Lund. While the early planning phase was characterised by an atmosphere of co-operation between the developer and the municipality, the application phase was marked by a polarised conflict between the developer and the local residents.

Project developers can use different approaches towards the public when they want to site facilities that imply risks to the local area. Leiss (1996) has distinguished between three main approaches: the expert, the market and the participatory approach. In the *expert approach*, risk management and project planning are seen as strictly technical tasks, which are best carried out by experts. Public worries are considered to be due to a lack of knowledge implying that the best way to avoid opposition is objective research and relevant and sufficient information. This approach is furthermore characterised by a disregard for public and local knowledge as being irrelevant. In the *market approach*, the developer is more aware of the importance of good communication and borrows communication methods from the marketing sector. However, the underlying view is still that planning is best carried out by experts alone which means that the public is not invited to take part in the decision-making process. The market approach, therefore, does not address the fundamental gap between the technical risk assessment of experts and the views and worries of the public. In both the above approaches, public participation is limited to information from the developer and to legally prescribed consultation, which tends to be interpreted in a restrictive way. The *participatory approach* recognises that public trust in the developer and in the project is fundamental for public acceptance and that trust can only be based on a planning strategy that takes into account the views of the public and allows them to influence the outcome of the project. This approach is characterised by the use of deliberative methods to involve the public in planning, and often strives to go beyond what is legally prescribed.

The siting approach of the developer in the biogas project was a typical example of an expert approach. The public was not involved at all in the early planning phase, and in the application phase the only forms of public participation organised by the developer were an information meeting and legally prescribed consultation. According to the Environmental Protection Act, the developer is obliged to hold a consultation meeting before the application is submitted, with those members of the public who will be affected by the facility. The consultation meeting was held with neighbours in June 1998 and this was the first time they had any notice whatsoever of the plans. People living in the nearby village of Dalby were not invited. The meeting was held one month before the application was submitted to the County Administration and at this point the technical description, as well as the environmental impact assessment, had already been completed. The meeting was strictly informational and although the neighbours had many questions and comments there was no possibility for these to be included in the application, since it had already been completed. During the first meeting people wondered whether there would be further meetings and the developer answered that no other informational activities had been planned (Interviews: 2000-05-30 and 2000-06-06 neighbours). Shortly after the consultation meeting, some neighbours started writing letters to the local authorities

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<sup>7</sup> The Environmental Protection Act was replaced in 1999 by the Environmental Code but the application continued to be handled according to the former legislation.



where they criticised the plans, and when the application was submitted people in Dalby also started to question the plans. Soon, an opposition group with ten core members had formed, consisting of both neighbours to the site and residents of Dalby.

The members of the opposition group formed a homogeneous group, being middle-class, well educated, of middle age or older and mostly men (Interviews with members of the opposition group). The members of the group were very active and opposed the plans both by mobilising public opposition and by influencing decision-makers. They wrote letters to the local newspapers as well as formal petitions to the County Administration and the municipality. They had door-to-door discussions with people in Dalby, spread flyers criticising the biogas plant, collected signatures for a petition and organised public meetings. In response to the negative public opinion and as an effort to counter the intense informational activities of the opposition group, the developer organised an information meeting in November 1998 to which the residents of in Dalby were invited. By that time, however, there was already strong public opinion against the biogas plant, which could not be swayed. The County Administration was of the opinion that there was not enough information in the application to determine the environmental impact of the plant and requested supplementary information, which was submitted by the developer in the autumn of 1999 (1998-2000 County Administration, 1999-09-30 Sysav AB). Meanwhile, civil servants in the Planning Office had come to the conclusion that it was necessary to make a detailed plan of the site before a decision could be made about whether to grant a building permit according to the Planning and Building Act (Interviews: 2000-07-20 Aronsson, 2000-11-15 Källqvist).<sup>8</sup> It was then up to the politicians in the Planning Committee to decide whether they would allow a detailed plan to go ahead. These developments in the application process meant that the activities of the opposition group went into a new intensive phase at the end of 1999, with more letters to the editor, formal petitions to the authorities, the attending of official meetings and personal phone calls to politicians in the Environmental and Planning Committees.

The County Administration decided to call for a final consultation meeting concerning the suitability of the plant, which was to be held at the beginning of 2000. The meeting never took place, however, since a political majority of the Planning Committee decided, in January 2000, that they would not allow a detailed plan to be made (1998-2000 Minutes from the Planning Committee, Interviews: 2001-01-16 Brinck, 2001-01-11 Jönsson, 2001-12-01 Wadenbäck). This meant that the project was stopped on political grounds and that the decision was not the outcome of a full legislative process.

### **3. Perceptions of the developer and the planning process**

One of the important aims of the case study was to explore the reasons why opposition developed to the project and the following chapter provides a discussion on this issue. It is of course very difficult to give a full account of all the reasons behind a siting conflict and the development of opposition, and any attempt will have to focus on certain aspects and disregard others. This study was focused on how

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<sup>8</sup> The purpose of a detailed plan is to investigate whether an area is suitable for the construction of buildings or other facilities, and it is required when the new facility is expected to have a considerable impact or if there is a big demand for the land in the area. The planning procedure for a detailed plan is strictly regulated and involves extensive consultation with many parties, including neighbours and other people concerned.

people's perceptions of the developer, the planning process and their possibility to influence the outcome of the project, contributed to the development of opposition. Before going into this, I will briefly discuss people's perceptions of the possible environmental impact of the facility and the risks it implied to the local community, since such perceptions obviously played a significant role in the development of opposition.

The numerous letters to the newspapers and the authorities, and interviews with members of the opposition group, indicate that it was the environmental impact that was at the heart of the conflict (1998-2000 Letters from the public; Interviews with members of the opposition group). Regardless of whether the criticism from the public corresponded accurately to the actual risks and possible impact of the facility, it did reflect an authentic worry and the main issues were genuinely perceived as potential threats to the local environment and the local population. From the perspective of the activists themselves, the environmental impact was the single most important reason for their opposition. In contrast to this view, it can be noted that other biogas plants in Sweden have not created such opposition and in comparison with some of these, the plant near Dalby would not have been in a particularly bad location. There were four farms closer than the recommended safety distance of 500 metres, and the distance to Dalby was 2.5 kilometres. Some existing plants are located much closer to residential areas. Furthermore, within the municipality of Lund this was one of the best locations considering proximity to housing. Even though the perceived impact of the plant played an important role, there was no obvious reason why it should be seen as an unsuitable project and the chosen location was not necessarily destined to face such fierce opposition.

In the literature on risk communication and the siting of controversial facilities, the concept of trust is given a very important position, and lack of trust is stated as one of the key factors in public opposition and a major reason why it is often difficult to reach a solution acceptable to all parties (Löfstedt, 1999; Kasperson et al., 1992). There is a general consensus among risk researchers today that in order to gain the trust of the public regarding a project, it is important that planning processes are open and allow for early and substantial public participation. In the present case, we have instead a situation of an expert-oriented planning process with very little room for public participation and the underlying question in the following discussion is to what extent this had a negative effect on trust and thus contributed to the emergence of public opposition.

It is of course very difficult to determine a direct causal link between people's perceptions of the developer and the planning process, and their opposition to the project. Such a link can hardly be identified from the direct answers of respondents, and as mentioned above, the members of the opposition group said that the only real reason for their opposition was that they were of the opinion that the plant would be harmful to the local environment. The negative perception of the developer and the planning process was not seen by them as a crucial factor in their opposition. However, when people look back over their role in a process they tend to seek logical explanations of their own behaviour which, in this case, would mean opposing the project based strictly on objective motives, and they might play down, both to themselves and to others, the significance of negative perceptions of the developer and the planning process. The task of the researcher then becomes to try to read between the lines and interpret whether the perception of the developer and the planning process was of any significance, even if no causal explanation is evident. Because of these methodological complications no attempt was made to weigh the

importance of the perception of environmental impact in relation to the perception of the developer and the planning process. Instead, it is argued that these two factors are likely to reinforce each other, which means that in a siting case where potential conflicts may arise, it becomes even more important to use planning procedures that do not exacerbate conflicts and undermine public trust.

When the neighbours were called to the first consultation meeting they did not know anything about the plans and during the meeting there was no outright opposition to the project even if the atmosphere was tense and suspicious. The suspicion turned into a clearly negative attitude after the meeting had been held and this change had a lot to do with the neighbours' negative perception of the developer and the way the project was being handled. There was a perception that the developer wanted to carry out the application process with as little contact with the public as possible, and that the information given was neither comprehensive nor objective.

They told us rather clearly that they had arranged this consultation meeting in order to fulfil the requirements of the law. We asked if they planned a further information meeting in Dalby and they said no, and that they had fulfilled the requirements placed on them. The purpose of the meeting was not to inform us or to hold a consultation with neighbours or those who saw themselves as being affected, it was that such a meeting had to be held. So they did (Interview: 2000-05-30 neighbour).

The impression of skewed information continued throughout the whole process. Both the opposition group and the authorities asked for supplementary information on several issues, which fed people's suspicions that the developer could be holding back information or did not itself have the required knowledge to begin with.

Apart from dissatisfaction with the information, there was an impression at the first meeting that the representatives of the developer had difficulties in answering questions about the project and particularly that they did not have good knowledge of the local conditions of the site, for example, how the facility would affect the ground water and a nearby environmentally protected pond (Interviews: 2000-05-30 and 2000-06-06 neighbours). The perception that the developer did not have enough knowledge about the specific conditions at the site was especially important since the crucial controversy was over the location itself. It may well have reinforced the impression of a big company coming from outside to build a facility in the local area without knowing or caring about how it might affect the people living there. The members of the opposition group acknowledged that their view of the competence of the developer improved as the process went on, and they also expressed respect for the competence and professionalism of the consultant appointed by the developer, who had written the technical and environmental report. However, the work of the consultant was ultimately seen as being dependent on the motives of the developer and their respect for his competence could not compensate for the lack of trust in the developer.

Another important perception that affected the attitude towards the project was that the developer acted as if the real decision had already been made and that there was no point in trying to do anything about it.

At the consultation meeting they presented completed plans and they even said when building was going to start and when the plant would be ready, before the application had been sent to the authorities. So the fact that it was going through the County Administration and the Environmental Committee was really just a formality (Interview: 2000-05-30 neighbour).

The main conflict was about the specific location of the biogas plant and one issue that had considerable impact on public trust in the developer concerned the grounds on which the decision regarding the location of the site had been made. There was suspicion among the opposition members that the site was chosen simply because the developer had found a farm property for sale, that the location report was basically made after the site had been chosen and that the report was manipulated in order to show that the selected site was the best. A closer scrutiny of the planning process shows that this suspicion was unfounded and it is clear that the location decision was based on a great deal of prior analysis.<sup>9</sup> However, a few critical issues regarding the location decision fuelled people's suspicions.

First, there was some unclearness about two alternative locations that had been investigated in the first location study, but which were not presented in the application to the County Administration. The two alternative locations had advantages concerning economy and local environmental impact, but had the major disadvantage that it would be necessary to use sewage sludge, making it difficult to return the end product to the land (1996-09-16 Lloyd). The reason why the developer did not present these alternatives in the application was that they were located in the municipality of Malmö, while the plan was to locate a biogas plant in Lund. However, the developer later presented the two alternatives after the authorities had asked for supplementary information on other possible locations. The opposition group interpreted this as fear on the part of the developer that it would be obvious that the locations in Malmö were more suitable (Interviews with members of the opposition group).

Secondly, it was clear that political pressure from the municipality had influenced the decision to focus on finding a location in Lund, and this was interpreted by members of the opposition group as doubt as to whether it was suitable at all to site a biogas plant in Lund.

Thirdly, after the developer had made the decision regarding the location, it focused completely on showing that the chosen site was the best and was no longer interested in discussions about alternatives. This inflexibility on the part of the developer made it easier to believe that it wanted to avoid a discussion, knowing that this was perhaps not the best location. The discussion above shows the importance of an open and transparent planning process during all the different steps in order to avoid misunderstandings and to counteract the spreading of rumours.

All in all, the interviews with members of the opposition group show that trust in the developer was minimal and that this originated from the way in which the project had been presented and from a perception of the developer as arrogant and uninterested in the views of the public. This lack of trust meant that the negative attitudes to the project, and particularly to the specific location, were exacerbated, and the main objective of the opposition group early on became to stop the facility from being built at the chosen location. Since it was not possible to discuss any alternative locations they focused on trying to stop the project entirely and if this was not successful, their second aim was to achieve as strict environmental demands as possible on the facility. This meant that they were not interested in a dialogue with the developer, since they perceived that their objectives and that of the developer were impossible to reconcile (Interviews with members of the opposition group).

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<sup>9</sup> The final location was mentioned as a possible alternative already in an early location report from 1996, which was completed long before the developer had any specific plans to buy a property (1996-09-16 Lloyd).

#### 4. Lessons to be learnt from the case: Two themes of interest

An underlying question regarding a siting conflict such as this, is naturally whether it is an example of a sound project that has been stopped because of the influence of a small group of individuals guarding their selfish interests, or if it is an example of a bad project that has been avoided thanks to a working local democracy and active citizens. As I see it, this question is very difficult to answer since it depends on different interpretations of the possible effects of the facility. The different actors had diverging and sometimes contradictory perceptions of the planning process and it is impossible to say that one way of looking at it is more legitimate than the other. Instead, it is better to realise that the present case demonstrates a situation where *all* the key actors, to some extent, have lost something and that this could have been avoided. The members of the *opposition group* felt ignored and were worried that the project would be carried out without them being able to influence the situation, which made them feel forced to expend considerable time and effort throughout the application process on opposing the plans. The *municipality* lost the chance to build a biogas plant within its area, something that all political parties favoured, and it seems that the chance will not return within many years to come. The *developer* had been planning for many years in order to find a suitable place to locate a biogas plant and had invested a great deal of time and money in the Dalby location, which can be considered as largely wasted.

The most serious loss resulting from this case is that of trust. The public lost trust in the developer, who will find it even harder to site facilities in the future. Biogas technology as such might also have been affected by the loss of trust, making biogas appear more like a controversial technology and less like something that is beneficial for the environment. With regard to such a perspective it is more appropriate to ask what we can learn from this case about how to avoid planning processes that are perceived as negative by all parties involved, and how we can achieve processes that are both democratic and effective at the same time. In relation to this question I will discuss two themes that have been significant in this biogas facility planning process and which might be of interest regarding siting conflicts in general.

##### *Different interpretations of the planning process*

An interesting result of the case study is that the actors involved show very different interpretations of the planning process, which are derived from their own position and from what they have been able to observe. It is noteworthy that the developer interpreted the planning process as being open and inclusive, while the opposition group perceived it as a typical example of a closed process where the aim had been to hurry through the project in secret. The lack of communication between the actors involved fostered misunderstanding and misinterpretation and enabled them to create images of each other's motives and actions that did not correspond with reality. This was most obvious in the relation between the developer and the opposition group, which was from the very start marked by mutual distrust. The developer saw the conflict as a typical NIMBY phenomenon (not in my back yard), where local people, out of purely selfish motives, manage to stop a project, which they would otherwise regard as positive since it benefits society as a whole as well as the environment. This view was reinforced since the opposition group was not interested in a discussion with the developer and organised public meetings without inviting the developer. The public opinion in Dalby was seen as being largely created by the opposition group by

the use of aggressive propaganda and information that manipulated the truth. The opposition group, on the other hand, was deeply suspicious of the motives of the developer and perceived the information coming from that source as being modified in order to show that the chosen site was the best. This negative view was based on the first meeting where representatives of the developer had difficulties in answering some of the questions, and where it became clear that they had not planned any further informational activities. The view was reinforced by the fact that the developer was not willing to contemplate any other locations. Distrust made it possible to question how the site had been chosen and even made people suspect that it was a more or less random decision. As we have seen, both views were highly exaggerated, although they contained some elements of truth on which the negative images were constructed and confirmed.

These findings are similar to those of an earlier study from the mid 1980s concerning conflicts surrounding the siting of energy facilities in Sweden (Sjöström, 1985). From a psychological perspective, the author illustrated the processes in which the actors created and reinforced the negative images of their counterpart, in order to maintain the image of themselves as fighting for a just cause. As in the present case, the main reason why these images could be sustained was a total lack of communication between the opposing parties. The solution advocated in that report was to strive for more democratic and participatory planning processes, where the different perspectives could meet, which would counteract decisions being based either on the influence of experts or on single-question opposition groups. In a later study from the early 1990s, which included case studies of several energy projects, the same conclusions about the importance of more participatory planning processes was reached (Carlman, 1993). And almost a decade later, in the present study, the same conclusions have once again been reached.

### *Open and closed planning processes*

One of the most striking features of the decision-making process in the biogas project is the sharp contrast between the level of public involvement in the different phases of the process. The developer, the municipality and the direct stakeholders were the only ones involved in the initial planning of the project, which completely excluded any form of citizen involvement. When the developer had decided upon a location and the application was ready to be submitted, the neighbours of the site were still unaware of what was being planned in their vicinity. However, when the application entered the legal system, citizen involvement became very pronounced and took the form of active opposition to the project. The legal system allows for a certain influence from members of the public when a project with potential environmental impact is proposed and, for instance, gives people the right to submit official comments and opinions about an application, which the authorities must take into consideration. When official channels are combined with other ways of influencing the decision, as in the present case, active citizens have considerable opportunity to affect decisions and even to stop a project completely. Thus, we have a situation in which there is normally little incentive for project developers to involve the public in the planning of projects, while there are many opportunities for people to become involved in the legal process and influence whether the project is approved or not. As the present study has shown, this tends to lead to polarised conflicts between the different parties involved. This points to a shortcoming in the legal system, since it guarantees public involvement only in the later stages of the process and may thus contribute to

confrontation rather than serving as an instrument to deal with conflict and to mediate between different parties.

In Sweden, this problem has partly been addressed in the new Environmental Code (which came into effect in 1999), which stresses the importance of early consultation with the public and states that alternative locations should also be proposed when a new facility is to be built. It is, however, still unclear how much the new law can actually contribute to shaping planning processes and encouraging meaningful public participation, since the regulations concerning the type and aims of consultation are vague. Case studies of planning and application processes which follow the Environmental Code are needed to gain empirical knowledge about the possibility of increasing public participation and avoiding polarised conflicts.

## 5. Final comments

The present case study is one example of the shape a conflict regarding the siting of a renewable energy facility may take, and we can find similarities both with other renewable energy siting conflicts and with traditional siting conflicts. Concerning the nature of the opposition and the role of the local environmental organisations, there were clear parallels to other renewable energy siting conflicts. The opposition was organised by an ad hoc interest group whose members did not have ties to the environmental movement. The local environmental organisations remained passive throughout the planning and application process. They were positive to a biogas plant somewhere in Lund, but were unofficially critical of the specific site and the way in which the planning process was handled by the developer. Although they were critical of the same things as the opposition group, they did not voice this openly, since it would contradict their support for biogas.

In other ways the case resembled traditional siting conflicts: the facility was fairly large-scale, there was no economic involvement of the local community and there were unresolved uncertainties concerning the impact of the facility. Most strikingly, it showed how a project developer failed to involve the public in the crucial early stages of the planning process and the role this played in turning differences of opinion between the parties into a polarised conflict. This result is in line with earlier research, and the case serves as yet another reminder to project developers that the public can have a decisive influence on the outcome of a project, originating both from their legal rights and from the fact that people nowadays are more aware about environmental matters and better able to fight for their case (Löfstedt, 1997; Dorshimer, 1996; Leiss, 1996; Rabe, 1994). Planning strategies with the aim of hurrying through projects with a minimum of information and dialogue will be more and more difficult to pursue, and developers will face the risk of being discredited.

The reaction of the local population and their genuine concern about their local environment were also similar to other siting conflicts. The fact that biogas production is both an environmentally sound way of dealing with organic waste and a substitute for fossil fuels, did not mean that the local population saw the project as good for the environment. To some extent this might be explained by a lack of information and awareness about the nature of a biogas plant. However, some members of the opposition group were environmentally aware and were not against biogas in general, but still felt that the negative impact of the specific siting in the local environment would outweigh the positive ones. In this way the conflict can be viewed as a variant of the well-known dilemma, where the local community bears the burden while society in general reaps the benefit. From this perspective, it is not

surprising that it became difficult for the developer to make people listen to arguments affirming that the biogas plant was an environmentally friendly facility. Since these arguments were not followed up by a clear effort to mitigate the negative effects of the facility or a willingness to discuss the possibilities of compensation to the local community, they were not viewed as relevant or trustworthy by the opposition group.

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##### Written documentation

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- 1996-09-16, Lloyd, Ola, 1996, Utvärdering av olika lokaliseringalternativ för behandling av biologiskt nedbrytbara material, EnerChem, Sysav Utveckling AB, Lund.
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- 1998-09-16, Application for an environmental permit to build a biogas plant. Sysav AB.
- 1998-10-16, Supplementary information for the biogas application, Sysav AB.
- 1999-09-30, Supplementary information for the biogas application, Sysav AB.

###### The Municipality and the County Administration:

- 1998-2000, Planning Office and Planning Committee, Municipality of Lund.  
 Statements about the application. Notes from meetings and decisions concerning the biogas plant.

1998-2000. County Administration. Decisions about the need for supplementary information.

The public:

1998-2000, Letters to the County Administration and the municipality from neighbours to the site and people living in Dalby. Some letters contained protest lists.

1998-2000, Debate articles sent to the following newspapers: Sydsvenska Dagbladet, Sydskånska Dagbladet and Arbetet.

Newspapers:

1998-2000, Articles from the following newspapers: Sydsvenska Dagbladet, Sydskånska Dagbladet and Arbetet.

Interviews

Politicians:

2000-06-27 Sven Tufvesson, Member of the Environmental Delegation until December 2000 (Social Democrat), Municipality of Lund

2001-01-11 Gunnar Jönsson, Member of the Planning Committee (Social Democrat), Municipality of Lund

2001-12-01 Cecilia Wadenbäck, Member of the Planning Committee (Left Party), Municipality of Lund

2001-01-16 Göran Brinck, Chairman of the Planning Committee (Conservative), Municipality of Lund

Civil servants:

2000-07-20 Bengt Aronsson, Planning Office, Municipality of Lund

2000-11-15 Christer Källqvist, Planning Office, Municipality of Lund

Representative of the developer:

2000-05-09 Kjerstin Ekwall, Executive Planner at Sysav AB

Members of the opposition group:

2000-05-30 Neighbour to the site (Confidential)

2000-06-06 Neighbour to the site (Confidential)

2000-06-13 Dalby resident (Confidential)

2000-11-22 Dalby resident (Confidential)