

Management and stakeholder participation in local strategic energy planning – examples from Sweden

Sara Gustafsson¹, Jenny Ivner² and Jenny Palm³

- 1 Corresponding author Sara Gustafsson, Division of Environmental Technology and Management, Linköping University, 58183 Linköping, Sweden, e-mail: sara.gustafsson@liu.se, Phone: +46 13286602
- 2 Jenny Ivner, Division of Environmental Technology and Management, Linköping University, 58183 Linköping, Sweden. Present address: e-mail: jenny.ivner@grontmij.se. Grontmij AB, Norra Oskarsgatan 27C, 58273 Linköping
- 3 Jenny Palm, Department of Thematic Studies: Technology and Social Change, Linköpings universitet, 58183 Linköping, E-mail: jenny.palm@liu.se

Abstract

Rapid environmental degradation and consumption of natural resources is a growing global concern, leading to the awareness that environmental sustainability is a critical new strategic objective. Municipalities are important actors when it comes to energy efficiency and improve environmental sustainability. One important tool to promote this work is implementing a local energy and/or climate strategy. How such local strategies are and could be designed in order to make a difference and promote sustainable energy solutions will be in focus for this paper. In order to promote strategic energy work at the local level, the Swedish Energy Agency initiated a program called Sustainable Municipalities. As a part of this program participating municipalities were mandated to develop local energy and climate strategies.

This paper aims at creating a general overview of approaches to, and uses of, local energy strategies among the participants in the Sustainable Municipalities program. This overview includes: analyzes of whether energy plans or strategies are present, which issues these plans address, what actors that are included, and whether follow-up is pursued.

We will elucidate local energy strategies from a management perspective, and discuss if and how the composition of actors influence suggested goals and measures, if there were plans for implementation and follow-ups. Our theoretical ambitions are to integrate theories on how to manage an efficient energy strategic planning and on how to achieve successful stakeholder participation. This in order to discuss weaknesses and strengths in existing municipal energy planning practices and how to improve energy planning in relation to those theories.

Document studies and structured telephone interviews with representatives from 60 municipalities were used to collect data. Around 75 percent of the municipalities in the study had adopted local energy strategies. This figure is surprisingly low; given that participation in the sustainable Municipalities program required energy strategies. In general, processes to develop a strategy included different parts of the municipality, and resulted in concrete measures. There were no correlations between included actors, and measures suggested and themes in the strategies. Most commonly

occurring were strategies related to public buildings and other buildings owned by municipality owned companies. The most commonly suggested measures were related to transports. Almost all respondents claimed that they performed follow-ups and that this was planned for already in the set-up phase.

Ten out of sixty respondents, who mainly were managers or strategists, meant that they were they alone were the main driving actors in strategic energy issues.

The studied municipalities had not adopted energy plans or strategies to a higher degree compared to other Swedish municipalities. Cooperation is often broad within the municipalities but limited when it comes to external actors. The content of the energy plans do not always reflect the content of the measures and goals. The rather limited participation in the process could affect the impact and legitimacy of the strategies in the organizations.

Key words: energy strategy, planning, Swedish municipalities, participation, management

1. Introduction

Rapid environmental degradation and consumption of natural resources is a growing global concern, leading to the awareness that environmental sustainability is a critical new strategic objective. Municipalities are important actors when it comes to energy efficiency and improve environmental sustainability (UN, 1992) and become key actors in areas such as energy planning, energy advisory activities, Agenda 21 activities, and fighting climate change (Aall et al, 2007; Baker and Eckerberg, 2007; Betsill and Bulkeley, 2007; Ivner, 2009; Nilsson and Mårtensson, 2003; Palm, 2006). The current development suggests that the importance of local authorities in the transition towards sustainable energy systems will not decrease, and that there will still be a need to formulate energy-plans and/or strategies. But to avoid the risk of producing yet another weak paper product, local authorities will need to adopt new working strategies that include a Plan, Do, Study, Act approach (Demming 1982) combined with a participative approach including stakeholder that can take part in realising local energy-plans. This means that there is a need to provide political support and guidance to enable local authorities to use traditional forms of authority as well as to work in partnership with other actors (Bulkeley and Kern 2006).

In Sweden one important tool to promote environmental sustainability is implementing a local energy and/or climate strategy. In order to promote strategic energy work at the local level, the Swedish Energy Agency initiated a program called Sustainable Municipalities. As a part of this program participating municipalities were mandated to develop local energy and climate strategies. How these municipalities have designed their strategy and the planning process will be our empirical focus.

Our theoretical ambitions are to integrate theories on how to manage an efficient energy strategic planning and on how to achieve successful stakeholder participation. This in order to discuss weaknesses and strengths in existing municipal energy planning practices and how to improve energy planning in relation to those theories.

This paper also gives a general overview of approaches to, and uses of, local energy strategies among municipalities participating in the Sustainable Municipalities program. This overview is based on results from a questionnaire covering questions on whether energy plans or strategies are present, which issues these plans address, what actors that are included, and whether follow-up is pursued.

1.2 Municipal energy planning in Sweden

In Sweden municipal energy planning is governed by the Planning and Building Act (PBA) of 2010 and the Law on Municipal Energy Planning (SFS 1977:439) with later revisions. According to PBA, stakeholder participation is required to improve the basis of decisions, create transparency in the decision process, and allow stakeholders to influence decisions. The aims of stakeholder participation, as stated in PBA, are to foster better planning, increase efficiency, and create legitimacy for planning by increasing citizen confidence in planners and the planning process.

The Law on Municipal Energy Planning urges cooperation between municipalities, large stakeholders (e.g., industries that require large amounts of energy), and companies producing energy (SFS 1977:439). The law on Municipal Energy Planning is however rather weak in its implementation and in practice the law means that municipalities are encouraged, rather than obliged, to produce an energy plan. Therefore municipal energy plans differ greatly in comprehensiveness, age, environmental impact, and implementation (Ivner, 2009b).

In the late 1990s and early 2000s the Swedish government launched several investment programs aimed at stimulating local projects to reduce climate impact (see e.g. Swedish EPA, 2012). In the application procedure municipalities were encouraged to produce local climate strategies. Since the contents of such strategies and municipal energy plans to great extent overlap when it comes to the transition towards renewable energy and efficient energy use, many municipalities have chosen to combine their local energy plans and climate strategies. In this study we include all kinds of strategic documents with aim to change energy production and use at the local level, therefore municipal energy plans as well as climate strategies and combined documents are included. The notion of such documents varies, but for simplicity we have chosen to use the term energy strategies in this paper.

2. Management and participation in energy planning

In this paper we are interested in revealing and reflecting on which actors that are involved in the process of developing local energy strategies and whether there are any correlations between actors involved and scope of the strategies. Even if the results from this study are limited to the above mentioned issues, we are also interested in reflecting on the influence of the actors in the processes to develop, implement and follow up the strategic energy work in order to promote continuity. The discussions and reflections in this paper are therefore based on theories related to environmental management and participation.

The strategic energy work in the Swedish municipalities has a basic technical or formal goal and that is to develop a strategy document. This document is then to be implemented in the municipality. To produce local energy strategies is a way for local authorities to manage local energy systems. The energy strategy is used to clarify, prioritize and suggest measures connected to the local authority's fields of responsibility and activity within the energy system. The potentials of energy-plans have been highlighted in a number of studies (Jaccard et al 1997; Butera 1998; Anderson and Doig 200; Jank 2000). Historically there have however been debates about the effectiveness of producing such documents, for example because many of the factors influencing the energy system lie beyond the reach of local authorities (Guy and Marvin 1996; Olerup 2000, 2002; Palm 2004, 2006).

One way to analyze the energy planning process is to relate it to the Deming cycle that includes the steps Plan, Do, Study (Check) Act. In this approach continual improvements is key (Deming, 1982). In the first step, the current situation is mapped where the (in the case of environmental management) the environmental performance is estimated, along with strengths, weaknesses and identification of areas for improvements (ISO, 2004). This constitutes the basis for developing a policy, targets and objectives. In the second step, the policy is converted into action supported by routines, delegation of responsibilities among the actors etc. In the *study step* consists, among other things, to evaluate whether the measures and actions are appropriate and whether the targets are relevant and if the plan or strategy operates as planned. In the last phase in the PDSA-cycle, the *act step*, the management reviews how the work is proceeding and decides on what to change in order to continually improve. This evaluation could be based on documentation from audits, the objectives and targets, the action plans and indicators. This is then reflected upon by top management, who decides on what actions that should be made in order to achieve continual improvements and to keep up the good work. In the case of environmental management in municipalities in general (Emilsson and Hjelm, 2005) and in local energy planning in particular (Ivner, 2009b), it has proven difficult to achieve a proper process where the plans actually are evaluated and followed up and where these evaluation has led to any changes and improvement actions. Planning is often seen as a linear process. Is it possible to get a more effective and efficient energy strategy work if having a more systematic approach aiming at continual

improvements? We will discuss the ongoing work with local climate and energy strategies in relation to this cycle.

According to the Sustainable Municipality Program, local climate and energy strategies are to be developed by creating arenas and processes in which regional actors can meet and develop common strategies and goals. There are different perspectives on participation and participative processes. Sometimes participatory methods are justified with reference to the nature of democracy, as a way to empower citizens and stakeholders. In this democratic perspective the participatory process is a goal in itself (van Asselt Marjolein and Rijkens-Klomp 2002). Another participation strategy is to expand the range of voices of those affected by a given decision that is heard in the decision-making process. Policy-driven participation seeks to include those affected by a policy in the process. It also concerns the partial transfer of power from decision-makers to participants and creating a transparent process that exposes how decisions and policies are made (Bishop and Davis, 2002; Rowe and Frewer, 2000). Politicians and public officials strive for public involvement both to achieve greater acceptance for their decisions and to reach better decisions. The quality of a decision can be improved by having more minds examine an issue. Stakeholder involvement provides opportunities to frame an issue in a broader context by bringing in more views, leading to a more innovative decision process (Bayley and French, 2008). Here participation is part of a decision-support process, rather than a way to organize the decision-making process itself (Ivner et al forthcoming).

In other contexts participation is a way to enhance learning. The idea is a collective process that creates relationships, insight, coordinated action, and social change through learning (Collins and Ison, 2006; Schiller, 2009). From this perspective, learning occurs through collective engagement with others and has cognitive and normative dimensions. During the process, actors learn about the roles, relationships, and rationale of the other stakeholders (Collins and Ison, 2006; Ljung, 2010). For social learning to be legitimate, various normative standpoints must be respected and all participants perceived as having equal legitimate voices (Cundill and Fabricius, 2009; Polk and Knutsson, 2008).

When it comes to Swedish municipalities preparing energy-plans stakeholder participation is much related to the municipality's limited power over most parts of the local energy system. This means that the municipality has to cooperate with other actors if the plan shall be implemented. If these actors are involved in the energy energy-planning process they will be part of a process of sharing and developing knowledge, which in turn facilitates building capacity for action. Stakeholder participation will then be a means to identify wider public concerns, share experiences and knowledge and develop mutual knowledge concerning shared problems and complex processes (Dryzek 1990; Benhabib 1996; Gutmann and Thomson 2004). Such processes may increase the capacity of different actors to meaningfully participate in the planning process as such, but also strengthens the willingness to take part in sustainable energy practices in the long run (Cuthill and Fien 2005). The importance of a successful participation approach for efficient goal implementation made us include also this aspect in our study.

3. Method

This study is based on structured telephone interviews (resembling an inquiry) with representatives from the municipalities that participated in the second phase of the Swedish Energy Agency's program Sustainable Municipality. The purpose of the interviews was to get an overview of the municipalities' approaches to developing local energy strategies. The interviews were carried out with 60

municipalities during the period November 2010 to January 2011. An alternative to structured telephone interviews could have been to send out a web-based questionnaire to the respondents, however since we wanted a high response rate in order to get a general view of the municipalities' approaches, we considered telephone interviews as more appropriate. The interviewees were those listed as local contact persons for the Sustainable Municipality program. In some cases this list did not correspond to the reality due to changes in the organizations, however in these cases we interviewed their new contact person. In the interviews only public officials were addressed, thus there were no interviews with politicians.

The interviews consisted of ten questions exploring the municipalities' approaches to energy strategies. The interviews mainly included questions with predefined multiple choice answers; however there were a few more open questions where the respondents could leave comments. The interviews covered questions on whether the municipality had an adopted energy strategy, when it was adopted, what areas the strategy encompassed, what areas in which actions were taken and what actors that were involved in the process of developing the local energy strategy. Whether or not the strategies were followed up was another thing that was asked about in the interviews.

The results from the structured interviews were compiled in a database, in which they were compared and analyzed from different perspectives. Among other things, correlations and non-correlations between different answers were revealed. For example analyses were made concerning on issues such as how the actions taken in the municipalities related to the main content of the energy strategies (e.g. how many of those that state in the strategy that they invest in biogas actually have measures for promoting biogas).

Since many local authorities have chosen to use environmental management systems that are based on the principles of the PDSA cycle, we have chosen to use the PDSA as a way of analyzing and structuring the results in this paper. PDSA is well known and has proven to be a useful approach in management contexts and since local authorities (and several of the local authorities in this study) use this approach for their EMSs, we found it interesting to see what would come out if being applied in an energy planning context. This could be seen as an attempt to integrate planning and management.

This study should be regarded as a snapshot of the situation in the selected municipalities during the autumn 2010/spring 2011 and due to the progress and maturing of the energy planning processes in these municipalities, it is possible and probable that different answers would be achieved if the same set of questions were asked again. However, the purpose of the study was to achieve this snapshot and overview, since it was to constitute the basis for selection of cases for a deeper case study on these issues.

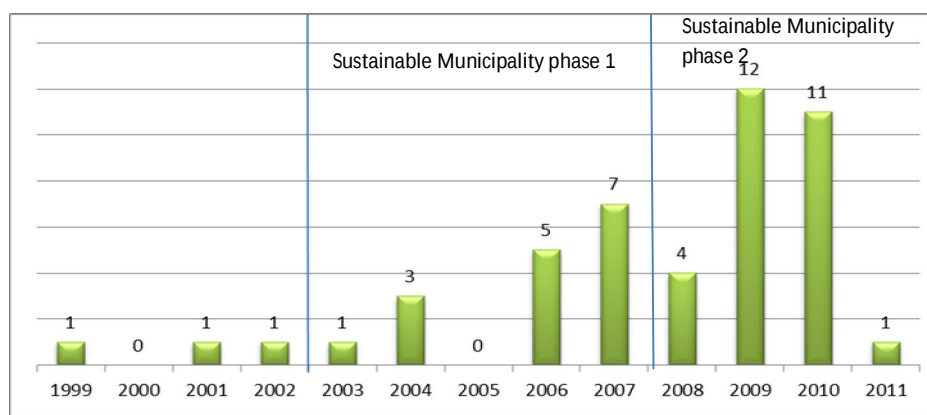
4. Results and discussion

Document studies and structured telephone interviews with representatives from 60 municipalities were used to collect data about when the energy strategies were adopted, their scope, and which actors were involved in the process to produce the strategy. This chapter presents and discusses the results from the study with the PDSA as a point of departure. However, the Act phase has been without the scope of this paper, therefore we have not included this in the discussions.

4.1 Adoption of energy strategies

Around 75 percent of the municipalities in the study had adopted local energy strategies. This figure is surprisingly low. This is not only surprising given that having an energy plan/strategy in place was a

precondition for participating in the Sustainable Municipality program, but also since a study made by the Swedish Environment Agency shows that 88% of Swedish municipalities (not only Sustainable Municipality participants) have implemented an energy strategy (Swedish EPA, 2010). One explanation to this could be that some municipalities saw Sustainable Municipality as a motivator to get the energy planning process started. Based on this study, we cannot draw any further conclusions regarding the role of the Swedish Energy Agency and their Sustainable Municipality program in the municipalities' processes to develop and implement energy strategies, however this question is relevant and interesting and it will be studied more in depth in forthcoming studies.



Most of the strategies were adopted during the second phase of Sustainable Municipality program (see Figure 1), and there were few municipalities that had adopted energy strategies before the Sustainable Municipality program was initiated.

How these strategies were labeled varied greatly among the municipalities. While some of the municipalities used the term energy plans, others called them energy and climate strategies and another example of label is energy and climate program. In all, there were 20 different names for this kind of strategy or plan. Climate strategy was the most commonly used one (9 municipalities), followed by Energy and Climate Strategy (8 municipalities) and Energy plan (6 municipalities). In some cases the municipalities have combined their strategy document with their plan and some had two separate documents. One reason for these differences could be that the municipalities' have chosen different approaches based on their organizational structures and tradition of managing these issues. Earlier research point at the importance of adapt the local strategic work with energy and environmental issues to the local conditions such as tradition of doing things, organizational culture (Emilsson and Hjelm, 2009; Ivner 2009a; Jank, 2000). It has proven easier to get acceptance for a new approach or strategy if it is close to the existing routines and therefore does not require an organizational reform. However, it is not totally uncomplicated to make local adaptations. In the case of labeling strategies and processes (as just discussed), there could be difficulties in comparing and exchange experiences if they have few common features. Furthermore, it could also be difficult to estimate the quality of the strategies if they are not possible to compare.

It is however interesting to note that not all municipalities have something labeled *Energy Plan* since there is a law stating that all municipalities must have an energy plan (SFS 1977:439), however this study does not give any reasons for this. One explanation to the wide use of Climate Strategy could derive back to the Swedish Environment Agency's requirement of climate strategies in the former Climate investment programs in which many Swedish municipalities took part in to get funding for projects related to decreasing the emissions of greenhouse gases. Furthermore, the Swedish Energy

Agency chose the concept of *Energy Strategy* or *Energy and Climate Strategy* when speaking of these types of documents in the context of Sustainable Municipality.

4.2 The first phase – Plan

The content of the energy strategies were connected to the following eight themes (that also have been focus areas for Sustainable Municipality program):

- Biogas
- Provision and distribution of renewable energy
- Spatial planning
- Business development focusing energy issues
- Planning for wind power
- Municipal travels, transports and public transport
- Municipal real estates, housing and premises
- Municipal crisis management
- Energy education in schools
- Public procurement

The most commonly addressed theme in the studied municipalities was the *Municipal real estates and housing and premises* (50 municipalities) and *Municipal travels, transports and public transports* (49 municipalities). *Municipal Crisis management* was the least commonly addressed theme in the strategies; only 14 municipalities mention this in their strategy documents.

4.3 The second phase - Do

All of the respondents that said that their municipality had an adopted energy strategy also claim that it has been implemented. Moreover, most of them (55 municipalities) state that they have started to carry through actions and measures in order to contribute to fulfilling the objectives in the energy strategy. One of the reasons that was brought forward in one of those municipalities that had not yet taken any action in accordance with the energy strategy was that it is difficult to make this happen in small municipalities due to limitations in resources.

In general, the studied municipalities' processes to develop energies strategy included different parts/areas of responsibility of the municipality, and resulted in concrete measures. Only four respondents said that no actions had been taken in order to fulfill the objectives in the energy strategy. One explanation to this is that three of these had not yet adopted an energy strategy. Among those 56 municipalities that stated that action had been taken, the dominant theme within which they had made efforts were *Municipal travels, transports and public transport* (40 municipalities), followed by *Municipal real estates and housing and premises* (37 municipalities). Hence, the most commonly mentioned themes in the strategies were also actively addressed in practice in many of the municipalities. *Municipal crisis management* was the least commonly addressed theme; only 6 municipalities had taken actions related to this.

Table 1. Correlation between the themes addressed in the local energy strategies and the actions/measures taken by the municipalities.

Sustainable Municipality Theme	Number of strategies with actions/measures within this theme (%)
Municipal travels, transports and public transport	57
Municipal real estates, housing and premises	53
Biogas	40
Provision and distribution of renewable energy	40
Public procurement	28
Business development focusing energy issues	28
Energy education in schools	22
Planning for wind power	20
Municipal crisis management	8

4.3 Mismatches between the Plan and Do phases

We have observed a discrepancy between the scope and content of the strategies and the area in which the municipalities claim that they have taken measures. The measures taken are more technical compared to the positioning in the strategies that include more “soft” issues. The correlation analysis in Table 2 shows for example that more than half of those that say something about transports in their strategy also claim that they actually take measures within this area. Least correlations were found between content in strategy and measures and “softer” issues such as procurement, education and municipal crisis management. This means that the measures taken by many municipalities are often more technical compared to the positioning in the strategies that include more “soft” issues. This is not highly surprising since technical measures are more concrete and are easier to identify and follow up in terms of figures, performance etc. (Ivner, 2009b; Stenlund, 2006). This has also been identified when it comes to strategic environmental management; municipalities find it easier to set goals and targets for issues that are easy to understand and grasp, such as energy use, vehicle mileage, use of fuels etc. compared to effects related to education, decision-making (Emilsson and Hjelm, 2007). The latter are difficult to estimate when it comes to which extent they give rise to environmental impact, what can be controlled by the municipality and what lies in the responsibility or power of other actors, such as business, citizens etc. However, when comparing the scope of the energy strategies in this study with previous similar inventories, our results indicate that the scope of the energy strategies in this study generally is wider. This is particularly the case when it comes to transports. We guess that this is a consequence from the Energy Agency’s announcement that transports are important within the Sustainable Municipality program.

4.4 The third phase - Study

All municipalities but four say that they have followed up or have plans to follow up their energy strategy efforts. Most of them claim that they had follow-up in mind when designing and developing the strategies. However, the main part of the energy strategies in this study is quite recently adopted and they might not yet have been followed up. Some of them also stated that follow ups were performed. This is interesting given that earlier studies show that follow up is often the weak link in the context of local strategic environmental management (Ivner and Gustafsson, 2011; Ivner and Sonesson, 2010). However, follow up is a key in understanding whether or not the strategy put in place is relevant, whether it contributes to achieve the desired ambitions and whether it has an appropriate and realistic level of ambition.

4.5 Stakeholder participation

It was the contact persons for the Sustainable Municipality program that were interviewed in this study and they were also, most often, the ones coordinating the energy planning in the municipalities. It is interesting to note that these have a wide range of titles and are positioned in different departments of the municipalities. Most of them had some kind of coordinating role, while others had the role and position of managers. Some of them worked in the departments of the municipality while others had a more central position close to the top management. The role and the organizational position of the coordinators could be of importance for the priority and status of the strategic energy work. Earlier studies related to strategic environmental management in Swedish municipalities show that centrally positioned coordinators often have more power and possibilities to get acceptance of the work since he/she is closer to the top management, compared to someone doing the same work in a satellite department (Emilsson and Hjelm, 2005). Furthermore, previous research has shown that there is a connection between an actor's function/formal role and how energetic he/she is in the organization (Palm, 2004). The respondent in 15% of the cases in this study states that he/she is the main promoter of the energy planning process. The research within policy studies often emphasize actors that have or have created a central function in the policy process as policy entrepreneurs. These can be either officials or politicians. The policy entrepreneurs mobilize support and mandate to bring forward their core matters and thereby get them prioritized on the agenda (Kingdon, 2003). Policy entrepreneurs can cross departmental and disciplinary borders in order to get greater power to implement ideas and have an influence on decisions in the municipal organization (Fallde, 2011). They do this by creating networks with actors in other policy fields.

When it comes to involving different actors in the process of developing energy strategies, all respondents claimed that several departments within the municipality had been involved in the energy planning process (Figure 2). Most of the municipalities (51) also included the municipally owned companies in this process. However private business, industry, commerce and citizens were involved to a much less extent in these processes. Only eight municipalities involved local commerce in their energy planning.

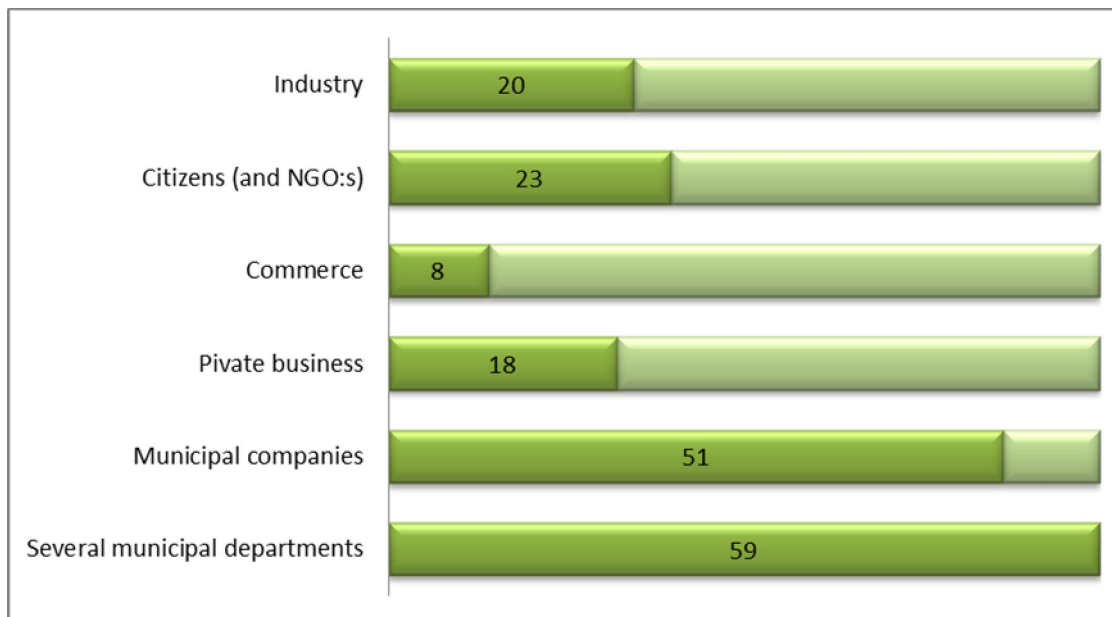


Figure 2. Actors that have been involved in the energy strategy process. This questions was answered by all respondents but one.

Most of the municipalities in this study claim that several departments within the organization have been active in developing the energy strategy. In those cases where only one group of actors (apart from internal departments) has been involved, it has been municipally owned companies. However, fewer had involved private actors and citizens in their processes. As mentioned in chapter 2, participation is key when it comes to create policies or plans that the stakeholder are willing to adapt to or to take an active part in (e.g. Cuthill and Fien, 2005). There were no correlation between included actors and measures taken in the studied municipalities' strategic energy efforts. Almost one third of the municipalities in this study have actions related to biogas and renewable energy, which are areas that, at least in Sweden, often are covered by municipality owned companies. Most of the municipalities involve their own companies, so this is not very surprising. However almost one fourth of the municipalities have actions that are related to business development and private business and industry; this is interesting since Figure 2 shows that only a few municipalities have involved industry and private business in their energy planning process. This could affect the legitimacy of the strategies' effectiveness and relevance.

5. Concluding discussion

This study raise several issues in relation to management and stakeholder participation in planning that are interesting from an energy strategy perspective, and these will be discussed and explored in this section.

As mentioned in chapter 1, the legislation on energy planning in Sweden emphasizes the importance to include stakeholders when developing local energy strategies (SFS 1977:439). Stakeholder participation could be the basis for developing common goals among actors. Having a common goal among the local actors on what the municipality as a region should strive towards and to achieve when it comes to energy issues is difficult. However, it is regarded as a key issue in this kind of processes (Healy, 2009). Different actors have different agendas and different approaches to doing their business. It is not the formulation of the document that is the goal but it is the process where mutual

learning (Collins and Ison, 2006), creation of relationships and social change that are the real outcomes along with the actions made in order to fulfill the visions stated in the strategy.

In this study, however, there has been a limited number of stakeholders from outside the local administration included. In practice, Swedish municipalities have become the “owners” of the energy strategies, which could be an explanation to the limited cooperation with local stakeholders such as industry, NGOs and citizens. This means that important stakeholders might feel that they do not have equal legitimacy in the process, something that e.g. Cundill and Fabricius (2009) and Polk and Knutsson (2009) stresses as important for participation processes. Constraints such as organizational cultures, time, and no tradition of stakeholder participation could contribute to this limitation. Having an inclusive process involving many actors could be experienced as being too complex and a reason why municipalities choose to only involve its own departments and companies. Hence, a broad participation could lead to too complex processes which make the development of the strategy both inefficient and ineffective, due to e.g. difficulties in compromising all actors’ perspectives and to fit everything within the scope and frames of the strategy (Emilsson, 2010; Gustafsson and Hjelm, forthcoming). Furthermore, if looked upon this from the stakeholders’ perspective; if it is the municipality that in practice “owns” the strategy, there needs to be a clear argument for why other stakeholders should make an effort to contribute and take initiatives. The municipality needs to clarify what is in it for the different actors.

Formulating strategies with contents and action plans with measures that are to some extent not controlled or managed by the municipality without involving the targeted organization could contribute to unwillingness of adapting to the strategy or to take on the challenge to take the stated measures. If the process has been exclusive, mainly engaging municipal actors could also lead to that the implementation and the follow up becomes the task of only the municipal organization. When the municipality does the strategy work to an internal business then it is also difficult to involve local business and other actors within the geographical area of the municipality, rendering the strategy a paper tiger and not an effective planning and development tool.

Follow up is of utmost importance for creating a continuous process striving for improving the performance on a continual basis (Emilsson and Hjelm, 2005). Lack of continuity has been put forward as a problem in strategic environmental management in municipalities (Emilsson and Hjelm, 2005; 2009). Ling et al., (2002) mean that a broad participation could contribute to continuity since there are several actors that feel responsible for forwarding the process. However one problem is that this kind of processes (i.e. developing a strategy) often is seen as a project, and once the project is finalized (i.e. when the strategy is developed), there is no receiver that continues where the project ended. In practice it is the other way around, it is when the strategy is developed when the hard work starts. If there has been an including process where those that are to be affected by the strategy have been involved (so called policy-driven participation) this work is not that complicated. If, however there has been an exclusive process including only a limited group of actors, along with a limited communication with others, then there is a risk that the implementation of the strategy becomes a real struggle.

Through this study, we have mobilized a general knowledge of Swedish municipalities’ (at least those participating in the Sustainable Municipality program) approaches to energy strategies, what topics these encompasses, whether these strategies are turned into action and which actors that are involved. We have among other things seen that cooperation is often broad within the municipalities but limited when it comes to external actors and that the content of the energy plans do not always reflect the content of the measures and goals. The rather limited external participation in the process could affect

the impact and legitimacy of the strategies in the organizations. This knowledge is important and useful for further and deeper studies on this topic. It would be interesting to analyze how the composition of involved stakeholders in the energy and climate strategy work influence suggested goals and measures, and if a variety of stakeholders have an influence on the development of plans for implementation and follow up of the strategies.

6. References

- Aall, C., Groven, K., Lindseth, G., 2007. The scope of action for local climate policy: the case of Norway. *Global Environmental Politics* 7(2), 83 – 10.
- Anderson, T., Doig, A., 2000. Community Planning and Management of Energy Supplies - International Experience. *Renewable energy* (19), 325-331.
- Baker, S., Eckerberg, K., 2007. Governance for sustainable development in Sweden: the experience of the local investment programme. *Local Environment* 12(4), 325 – 342.
- Bayley, C., French, S., 2008. Designing a participatory process for stakeholder involvement in a societal decision. *Group Decision and Negotiation* 17(3), 195 – 210.
- Benhabib, S. 1996. Toward a Deliberative Model of Democratic Legitimacy In: S. Benhabib, ed. *Democracy and Difference. Contesting the Boundaries of the Political*. Princeton: Princeton University Press, 67-94.
- Betsill, M.M., Bulkeley, H. 2007. Looking back and thinking ahead: a decade of cities and climate change research. *Local Environment* 12(5) 447 – 456.
- Bishop, P., Davis, G. 2002. Mapping Public Participation in Policy Choices. *Australian Journal of Public Administration*, 61(1), 14-29.
- Butera, F. M. 1998. Moving Towards Municipal Energy Planning - the Case of Palermo: The Importance of Non-Technical Issues. *Renewable Energy* (15), 349-355.
- Collins, K. Ison, R. 2006. Dare We Jump Off Arnstein's Ladder? Social Learning as a New Policy Paradigm. PATH (Participatory Approaches in Science and Technology) Conference, 4-7 june 2006, Edinburgh.
- Cundill, G., Fabricius, C. 2009. Monitoring in adaptive co-management: toward a learning based approach” *Journal of Environmental Management* 90(11) 3205–3211.
- Cuthill, M., J. Fien, J. 2005. Capacity Building: Facilitating Citizen Participation in Local Government. *Australian Journal of Public Administration*, 64(4), 63-80.
- Deming, E.W. 1982. *Out of the crisis*. Massachusetts Institute of Technology. Cambridge, Massachusetts.
- Dryzek, J. S. 1990. *Discursive Democracy. Politics, Policy and Political Science*. Cambridge: Cambridge University Press.
- Emilsson, S., Hjelm, O., 2005. Development of the use of standardised environmental management systems in municipalities. *Corporate social responsibility and environmental management* Vol: 12, 144-156.
- Emilsson S. Hjelm O. 2007. Managing Indirect Environmental Impact Within Municipalities’ *Environmental Management Systems*. *Local Environment* 12, 73-86.

- Emilsson, S., Hjelm, O., 2009. Towards sustainability management systems in three Swedish municipalities. *Local Environment* Vol.
- Emilsson, S. 2010. Den sociala aspekten i hållbar utveckling – standardisering en möjlighet?. Opublicerat material från en fallstudie gjord på uppdrag av Sveriges Kommuner och Landsting. Stockholm.
- Fallde, M., 2011. Miljö i tanken? Kommunala policyprocesser vid införandet av alternativa drivmedel i kollektivtrafiken i Linköping och Helsingborg, 1976-2005. Doctoral thesis. Linköping University,
- Gustafsson, S., Hjelm, O. (forthcoming). From tool technique to tool practice. Submitted to *Local Environment*.
- Gutmann, A., Thomson, D. 2004. *Why Deliberative Democracy*. Princeton: Princeton University Press.
- Guy, S., Marvin, S., 1996. Disconnected Policy: The Shaping of Local Energy Management. *Environment and Planning C, Government and Policy*, 14, 145-158.
- Healey, P. 2007. *Urban Complexity and Spatial Strategies: towards a relational planning for our times*, London: Routledge.
- ISO, 2004. *Environmental management systems- Requirements with guidance for use (ISO 14001:2004)*.
- Ivner, J., 2009a. Energy planning with decision-making tools: experiences from an energy-planning project. *Local Environment*. 14, 833-850.
- Ivner, J., 2009b. *Municipal Energy Planning: Scope and Method Development*. Thesis (PhD). Linköping University, Linköping.
- Ivner, J., Gustafsson, S., 2011. Follow-up of local energy and climate strategies: A study of six small Swedish municipalities. *World Renewable Energy Congress 2011*, 8-11 May 2011, Linköping, Sweden,
- Ivner, J., Sonesson, M., 2010. Uppföljning av energiplaner: Erfarenheter från sex svenska kommuner. Linköping University, LIU-IEI-R; 0107, Linköping.
- Jaccard, M., L. Failing, L., Berry, T., 1997. From Equipment to Infrastructure: Community Energy Management and Greenhouse Gas Emission Reduction. *Energy Policy*, 25(13), 1065-1074.
- Jank, R. (Ed.), 2000. *Advanced Local Energy Planning (ALEP) - a Guidebook*. International Energy Agency.
- Kingdon, J., 2003. *Agendas, Alternatives and Public Policies*. Longman, New York.
- Ling, E., Mårtensson, K., Westerberg, K., 2002. Mot ett hållbart energisystem. Fyra förändringsmodeller. Malmö Högskola, Rapporter i flervetenskap 1, Malmö.
- Ljung, S., 2010. *Approaches to Participative Planning: Potential Applications in Municipal Energy Planning* Master's thesis, Department of Thematic Studies: Water and Environmental Studies, Linköping University, Linköping, Sweden.
- Nilsson, J. S., Mårtensson, A., 2003. Municipal energy-planning and development of local energy-systems. *Applied Energy* 76(1 – 3) 179 – 187.

Olerup, B., 2000. Scale and Scope in Municipal Energy Planning in Sweden. *Journal of Environmental Planning & Management*, 43(2), 205-221.

Olerup, B., 2002. Mitigating Global Warming: Traditional Versus Alternative Approaches in a Planning Versus a Market Context. *Energy Policy*, 2002(30), 709-716.

Palm, J., 2004. Makten över energin - policyprocesser i två kommuner 1977-2001. Thesis (PhD). The Tema Institute - Department of Technology and Social Change, Linköping university, Linköping.

Palm, J. 2006. Development of sustainable energy systems in Swedish municipalities: a matter of path dependency and power relations. *Local Environment* 11(4), 445 – 457.

PBA.2010. Plan and Building Act. Sweden.

Polk, M., Knutsson, P. 2008. Participation, Value Rationality and Mutual Learning in Transdisciplinary Knowledge Production for Sustainable Development. *Environmental Education Research*, 14(6), 643-653.

Rowe, G., Frewer, L .J. 2000. Public participation methods: a framework for evaluation. *Science, Technology & Human Values* 25(3), 3 – 29.

SFS 1977:439 (Swedish code of statute) 1977. Lag Om Kommunal Energiplanering.

Stenlund, J., 2006. Plan and Reality - Municipal energy plans and development of local energy systems. Thesis (Licentiate). Environmental Technology and Management, Department of Mechanical Engineering, Linköping University, Linköping.

Swedish EPA: 2012. Investeringsprogram. <http://www.naturvardsverket.se/Start/Lagar-och-styrning/Ekonomiska-styrmedel/Investeringsprogram/> (Accessed 1st of July 2012).

van Asselt, M., Rijkens-Klomp, N. 2002. A look in the mirror: reflection on participation in Integrated Assessment from a methodological perspective. *Global Environmental Change* 12, 167-184.