

Sustainable Energy and Climate Strategies: lessons from planning processes in five Swedish municipalities

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Preface

This study is part of the research project “*Sustainable energy and climate strategies – lessons learned and potential for development*” that is run by Paul Fenton, Sara Gustafsson, Jenny Ivner and Jenny Palm at Linköping University.

The project is funded by the Swedish Energy Agency within the Sustainable Municipality programme. The overall purpose of the project is to develop knowledge about the policy processes related to municipalities’ development and implementation of energy and climate strategies. The aim of the project is to contribute with empirical and theoretical knowledge in order to increase the effectiveness of energy strategies in local authorities. The project runs from 1 September 2010 until 31 December 2012.

This report is based on a multiple case study encompassing interviews, observations and document studies in five Swedish local authorities. The data collection was made in the autumn of 2011. This report is also the basis for an article that is to be submitted to a scientific journal.

If you are interested to know more about the research project and its development, don’t hesitate to contact the project leader Sara Gustafsson (sara.gustafsson@liu.se or +46 13 286602).

The authors wish to thank all respondents for sharing their experiences and contributing with valuable information to this study.

Summary

This report forms part of the research project “Sustainable Energy and Climate Strategies – development and potential”, which is financed by the Swedish Energy Agency’s Sustainable Municipality programme. In this research project, case studies of the processes to develop energy strategies in five municipalities were prepared. The five municipalities were participants in the Sustainable Municipality programme’s second phase, which began in 2008, and represent different types of municipality, in terms of geography and population.

This report presents analysis of the five case studies, using a policy theoretical perspective to focus on issues including how problems and solutions are identified and formulated, which solutions are proposed, which actors are included or excluded from the process, and which local resources are used or not used in the process. The report reflects on the implications of increasing stakeholder cooperation in energy planning processes and using different types of organisational approaches during the development of energy and climate strategies.

Each case study began with an inventory of publically-available documents shaping the context for energy and climate strategies in each municipality. These documents were compiled in time lines showing the documents or decisions influencing energy planning in each municipality. Subsequently, group interviews were held with participants in planning processes in each of the five municipalities. In addition, individual interviews took place with stakeholders who had been active in the processes. Interviews were recorded and then transcribed. The results from the document study and interviews were then compiled in a summary of each municipality’s energy planning process, forming the basis for the analysis in this report.

The case studies highlight both similarities and differences with regard to the organisation of work to develop and introduce energy strategies. All municipalities established, at an early stage, internal organisations for the process and throughout the processes, the organisational form, participants and their role, and division of tasks and responsibilities were fairly clear. For example, all five municipalities made use of Steering Groups and Working Groups, although the extent of the roles which these groups played – and the background of their members - varied. Four municipalities had a Reference Group in which external stakeholders were represented. A number of other constellations, including thematic working groups, were present in some but not all municipalities.

The municipalities also took different steps in their energy planning processes and identified different drivers stimulating their activities. Participants from one municipality considered the Sustainable Municipality programme as a pivotal moment in their strategic energy work, whereas others felt the programme did not significantly influence their approach or outputs. The report identifies a number of factors influencing the development and implementation of municipal energy strategies, as well as a strategy’s scope and content.

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Glossary

Energimyndigheten	Swedish Energy Agency
Uthållig kommun	The Sustainable Municipality
Naturvårdsverket	Swedish Environmental Protection Agency
Statistiska centralbyrån	Statistics Sweden
Sveriges Kommuner och Landsting	Swedish Association of Local Authorities and Regions
Län	County
Länsstyrelsen	County Administrative Board
Regional energikontor	Regional Energy Agency
Kommun	Municipality
Fullmäktige	(Municipal) Council
Kommunstyrelsen (arbetsutskott)	Municipal Executive (Committee)
Kommunstyrelsens kontor	Municipal Executive Office
Ledningsgrupp	Management Group
Arbetsgrupp	Working Group
Styrgrupp	Steering Group
Referensgrupp	Reference Group
Kommundirektor	Municipal Director
Energirådgivare	Energy Advisor
Detaljplan	Development Plan
Nämnd	Committee
Förvaltning/kontor	Department/office

1. Introduction

Local authorities are key actors in the development towards a more sustainable society (UN, 1992.) Among other things, they attempt to translate visions of the sustainable society into practice. Their role, when it comes to advancing sustainability, is multifaceted (Emilsson and Hjelm, 2010) and covers many fields of responsibility. This report reflects on Swedish municipalities' roles in the field of energy planning. The Swedish local authorities' responsibilities when it comes to energy and climate issues are regulated in a law on municipal energy planning (SFS 1977:439). These responsibilities include having an energy plan that is accepted by the municipal Council. The plan should describe the provision, distribution and use of energy in the local area. The main message in this regulation is that local authorities should take an active role in the development of the local energy system. The local authorities could adopt different roles in this work, such as public actor, information provider, real estate owner, employer, or as the owner of an energy company. In order for municipalities to be prepared for future challenges regarding strategic energy issues, capacity building is necessary.

This requires collaboration and exchange of experiences between actors and over organisational boundaries. Traditionally, the energy sector has been dominated by government and formal steering (both locally and nationally) where established professions and rigid regulations have been in focus (Wihlborg and Palm, 2008). This approach has, however, changed over the years as the challenges that are faced today require different approaches. Governance through networks of public and private actors has proven important in order to manage environmental and energy issues. The development of a more sustainable energy system is partly a result of the development of the local authorities' internal environmental management strategies. This is, however, not sufficient. There is also a need to create a local arena where different strategies and objectives can be developed. Through joint actions, the actors learn to collaborate, however how this collaboration develops (in what way and with whom) is dependent on the actors' power relationships (Sabatier and Jenkins-Smith, 1993).

There is a wide range of national programs and schemes to support local authorities in their ambitions towards a more energy efficient and more sustainable society. For example, in the late 1990:ies, the national government in Sweden introduced Local Investment programs, in which local authorities could apply for co-funding for projects that would support the development towards a more sustainable society (SFS 1998:). This, among other things included projects related to energy efficiency (such as expanding the district heating grids. This was followed by a climate investment program that built on the same idea; however it had a narrower scope, focusing climate and energy issues (SFS 2003:262). In 2009 a new regulation was launched to further support the development towards more sustainable energy systems (SFS 2009:1533). This was derived from the EU directive on energy end-use efficiency and energy services (2006/32/EC). In Sweden, local authorities could apply for financial support from the national government (via the Energy Agency) to improve the local strategic energy efforts.

The Swedish Energy Agency has also been active in supporting the development towards more a more energy efficient society. One of their initiatives is a program called Sustainable Municipality (see Swedish Energy Agency, 2012). This program started as a pilot project (2003-2007) including a limited number of local authorities (Swedish Energy Agency, 2008). The purpose of this project was

to develop the local actors' approach and widen their knowledge base when it comes to energy issues. The pilot project led to a succeeding project that included a greater number of local authorities and that had a clear focus on strategic energy issues. Participating municipalities were required to adopt climate and energy strategies to clarify, prioritize and suggest measures connected to their fields of responsibility and activity.

This working paper focuses on the development and implementation of energy strategies in selected local authorities participating in the Sustainable Municipality program. Energy strategies have proved to be labelled differently by different local authorities (and in some cases also differ in content and scope) (see Gustafsson et al, 2012). In this report we have chosen to use the generic term of energy strategies.

The main purpose of the paper is to increase understanding of the processes to develop energy strategies. The local authorities' processes to develop energy strategies are therefore analysed from a policy theoretical perspective, where issues such as how problems are formulated, what solutions are suggested, which actors are included/excluded and what local resources are used/not used are in focus. Implementation of the strategies and their follow up are other important issues in this study. One important field is the increasing demand for collaboration and networking with other societal actors and this is reflected on and explored in this report.

Background

Since the late 1970s, Swedish local authorities have been obliged to produce municipal energy plans (SFS 1977:428). Municipal energy plans are supposed to be strategic tools for the local authority to manage use and supply of energy in the municipal geographical area. However, energy plans have been sparsely used by local authorities, as there is a lack of instructions and advice on how to produce effective plans, and also because their impacts are uncertain as many other factors influence the development of local energy systems. In the late 1990s and early 2000s, the phenomenon of energy planning was heavily criticized because of its lack of impact on local energy systems (Palm, 2004; Olerup, 2000). There was also a discussion about whether local authorities should be involved in energy supply discussions on a deregulated energy market, which for example meant that the Swedish Energy Agency paid more attention to supporting the local authorities' role as a spatial planning authority and supporting energy-conscious spatial planning practices. An example of this is the special focus on spatial planning in the first round of the Sustainable Municipality program.

During the 2000s, however, the necessity of an overall strategy for handling energy and climate issues at the local level became more evident and several national and regional initiatives aimed at supporting local authorities in their strategic work were initiated, e.g. Climate Municipalities supported by the Swedish Environmental Protection Agency and the second round of the Sustainable Municipality program. The importance of having an overall strategy for energy and/or climate issues is now acknowledged by most Swedish municipalities (Swedish Energy Agency, 2006, Swedish Environment Agency, 2010).

During this "renaissance" for energy-planning or energy strategies, the importance of "good" process has become evident. In the 1980s and 1990s, the focus of energy plans was on supply issues and much attention was paid to giving a correct picture of the current energy use in the municipality, in order to ensure enough energy supply (Stenlund, 2006). Today's energy-planning processes have

broader scope, with the inventory of current energy use as a foundation for a discussion about goals and targets and how to reach the goals with different actions and measures. A “typical” energy planning process is described in table 1.

Table 1. Typical energy-planning process as commonly described in Swedish energy planning handbooks (Swedish Energy Agency 1998; Rydén 2001; Klimatkommunerna 2008; Swedish Energy Agency 2008).

Stage	Activities	Output
Inventory	• Data collection: compilation and analysis of statistics, user data and other information • Analyses of external trends and politics and goals • Analyses of the contemporary internal organisation and goals	Present-state report
Goals and visions	Relevant goals for the energy sector are discussed and set	Clearly defined goals for the energy-plan
Actions and measures	Based on the present-state analysis and goals for the energy sector, actions and measures to reach the goals are worked out	Action plan
Compilation of plan	• Energy-plan is written • Remittance procedures and revisions	• Draft energy plan • Final energy plan
Implementation	The energy plan is adopted by the city council Actions and measures are completed	Campaigns, projects, etc
Monitoring	Follow-up on actions and measures Monitoring on progress towards goals	Knowledge of successes and failures
Revision/update	The energy plan and/or the action plan is revised or updated	Revised and/or updated energy plan and/or action plan

2. Energy strategic planning in a communicative network context

Energy planning has followed the general trend in planning and gone from a rather rational planning model to a more communicative model. The traditional rational planning describes the planning process as a linear, process often including the following steps: 1) problem formulation made by politicians; 2) investigation of policy options and impact assessments made by experts and planners; 3) choice of options and ultimately the plan. The planners present their recommendations and the politicians decide; 4) Implementation 5) evaluation and feedback (Khakee 1999: 25f). In this perspective the divide between politicians and planners is clear and built into the model. The politicians should only decide on the targets and which of the plans should be implemented (if different versions exist). The planner is in this perspective a social engineer that only refers to the common good (Fainstein 2003).

This is also in line with classical implementation theory, in which implementation is regarded as a rational process, structured from above. In theory, implementation is assigned to public administration, which is regarded as a tool of government and is therefore assumed not to influence implementation. The process is governed by control, direct intervention and regulation. In the 1970s, Pressman and Wildavsky (1973) developed their bottom-up perspective to serve as a counterbalance. They claimed that the implementation process itself helps form policy and solve political problems. According to their perspective, public and private actors participate in policy formation and policy change, so the process cannot be specified beforehand. Later research into grassroots bureaucrats, i.e. the officials that often have influence over how policy is put into practice (e.g. social workers, teachers, nurses) has demonstrated that both action and decisions influence policy formation (Lipsky, 1980). In Lipsky's (1980) bottom-up perspective, the focus of policy analysis is grassroots bureaucrats and their freedom of action to form the final policy outcome.

From more recent research, we also know that different actors have different power resources to gain influence in the policy process. Local politicians for example, have political resources in the sense that they have formal authority over issues, such as the budget. Administration can exercise power through their professional knowledge of a topic. Generally, actors with professional knowledge have resources to define a policy problem, since their knowledge is less contestable than political statements. The municipal administration usually initiates and prepares new political proposals and has a strong influence on production and spreading of information, and its interpretation and implementation of policy (Peters, 1989; Palumbo and Callista, 1990; Lundquist, 1992; Gustafsson, 1996; Pierre, 200).

As a contrast to this rational perspective the communicative planning model has developed, in which all stakeholders influenced in some way by a planning strategy should take part in a dialogue where all interests and requirements are clarified and discussed to reach a conclusion that all can agree on (Innes & Booher 2004: 33ff). The focus on participation in process makes the stages in the planning process less important and the planning process is seen as a relatively unstructured. The participation of different groups and key actors that interact continuously leads to a planning process where the stages occur in parallel or in different orders. Citizens and private interests have an obvious role to play in the communicative model.

In the different models, the municipalities go from a rather internal process to a more all-inclusive process that includes a variety of actors and as a consequence a variety of issues, e.g. ecological issues turn into sustainability issues. It is argued that, in most western states, policy-making is characterized by a process opening up government towards broader governance of partnerships and network-oriented decision-making in intricate interplay between public, private and non-profit organizations. The role of local government then changes – they become one player among many (Pierre & Peters, 2000). Governance structures have developed in response to the State's increased need to mobilize actors (and their resources) outside their formal context to formulate and implement public policy (Considine, 2005).

In a similar way to the rational planning process, the traditional government approach highlights the formal steering chain of public organizations and top-down hierarchal decision-making by political actors. 'Government' implies that governing takes place within governments and their formal institutions and the state's monopoly on the use of legitimate coercion is in focus (Boyer, 1990; Stoker, 1998). In governance contexts, networks are self-organizing and cannot be fully accountable towards the governmental bodies in the governance approach. Cooperation and coordination make governance horizontal, even if the State may take on a hierarchal role to express power. Legitimacy in governance is gained through the interplay of legal interpretations, common understanding and trust (Börzel, 1998; Peters & Pierre, 2004; Rhodes, 1997). The main differences between the governance and government approaches relates to structure and the actions of participating actors (Wihlborg & Palm, 2008)

Several studies that have analyzed local climate and energy policy, planning and implementation have noticed that a certain amount of governmental involvement is good for local action. Good examples mentioned are clear guidelines and the possibilities for funding (Baker and Eckerberg, 2007; Fleming and Webber, 2004; Nilsson and Mårtensson, 2003; St. Denis and Parker, 2009; Neves and Leal 2010). Neves and Leal (2010) also state that there are surprisingly few technical support tools to provide guidance on how local authorities should develop energy and climate action plans. There are however some handbooks that we will discuss in more detail below.

In other areas, there is some rather hands-on guidance for municipalities on how to act. Two such examples are the Environmental management system (EMS) and the EU regulation Eco-Management and Audit Scheme (EMAS) (see ISO, 2004; EC, 2009). This is a tool that local authorities all over the world have used over the last decade. Although EMAS is a regulation, in this context it is treated and used as a standard. This will be discussed further in the next section.

Environmental management systems

As with other sectors in society, the way local authorities address environmental management has shifted from a legislation-based approach to a voluntary approach that addresses a broader range of activities. This shift is often referred to as 'ecological modernization' (Hajer, 1995). There are many tools and approaches that are commonly used by local authorities, e.g. ecological footprints, Local Agenda 21 (LA21) action plans, and environmental budgeting. As a means for coordinating voluntary environmental approaches, many local authorities use environmental management systems (EMSs; Emilsson and Hjelm, 2002a). These systems are based on the principles of the international standard ISO (International Organisation for Standardization) 14001 and the EU regulation Eco-Management

and Audit Scheme (EMAS) (see ISO, 2004; EC, 2009). For example, local authorities in Sweden, Finland, the UK, Greece, Italy and Germany (LIFE98, European Commission Life Fund 98, 2001; PreSud, Peer Review for European Sustainable Urban Development, 2005) as well as in the US, Canada, Japan, New Zealand and Australia have shown an interest in EMSs (respectively, GETF, Global Environmental and Technology Foundation, 2002; Bekkering & McCallum, 1999; Ito, 2003; Cockrean, 2001; Swift & Broady, 1998). Although EMAS is a regulation, in this context it is treated and used as a standard.

The EMS standards are designed according to the Plan–Do–Survey (Check)–Act cycle (Deming, 1986) and are compatible with the ISO 9000 quality management series (ISO, 2004). After making the decision to implement an EMS, an organization first identifies its environmental impact. This is done in an environmental review. Next, the significant environmental aspects are assessed, and the organization formulates an environmental policy. Then environmental objectives and targets are set using the significant environmental aspects and the environmental policy. Environmental programmes are formulated to ensure that the organization addresses the environmental objectives and targets. When implementing an EMS, procedures should describe how to act in emergency situations and how to document the EMS and the progress made. To ensure that improvements are achieved, follow-up of the EMS is vital. This is done by performing either internal or external environmental audits. When fulfilling the requirements in ISO 14001 or EMAS, the organization can choose to go through a certification process. Third-party certification is, however rare in a local authority context (Emilsson and Hjelm, 2005; 2009).

The focus of this paper is energy planning and the communicative processes related to planning. However, as 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 apply the concept in an energy planning context. This could be seen as an attempt to integrate planning and management.

3. Methodology

This report presents results from Phase 2 of the project. In Phase 1, a survey was sent to all municipalities participating in the Swedish Energy Agency's Sustainable Municipality programme. Based on the responses to the survey, ten municipalities were selected for additional study and five for the detailed case studies presented here. Additional information about Phase 1 can be found in a report by Gustafsson et al (2011).

Document study

Materials – in the form of strategic documents – were gathered and recorded in a log book and timeline for each municipality. These materials were publicly-available documents downloaded from the subject municipality's website, with relevant supplementary information downloaded from the websites of other organisations. Documents and results from previous research projects were also used where available.

Documents were selected only if they were considered to relate to the planning or implementation of energy strategies, organisational structures and management systems (including guidelines and budgets), climate strategies, Local Agenda 21 processes, the Covenant of Mayors, the Aalborg Charter and Aalborg Commitments process, and related action plans addressing, for example, sustainability, transport or waste. On average, 25 documents per municipality were gathered.

Table 2. Overview of results from the document study

Municipality	# of documents	Type of documents	Themes covered (keywords)
A	28	Municipal strategies; plans; annual reports; organisation/ process diagrams; research papers; report to external actor	Energy; Climate; Sustainable Development; Economics; Environment; Traffic; Urban Planning; Cycling; Health; Organisation
B	43	Municipal strategies; plans; guidelines; annual reports; organisation/ process diagrams; research papers; report to external actor; regional plans	Energy; Climate; Sustainable Development; Economics; Environment; Traffic; Urban Planning; Waste; Organisation
C	20	Municipal strategies; plans; annual reports; organisation/ process diagrams; related web links	Energy; Climate; Sustainable Development; Economics; Transport; Organisation; Citizens
D	26	Municipal strategies; plans; evaluations; annual reports; organisation/ process diagrams; related web links	Energy; Climate; Sustainable Development; Economics; Environment; Urban Planning; Waste; Organisation
E	8	Municipal strategies; plans; annual reports; organisation/ process diagrams	Energy; Climate; Economics; Urban Planning; Organisation
Total / Average	125 / 25	Mainly municipal strategies; plans; annual reports; organisation/ process diagrams	Mainly energy; Climate; Economics; Organisation

Interviews and Observation

The municipal contact persons listed on the Sustainable Municipality website were contacted and each contact person was asked to organise a group interview in their municipality. Five group interviews were held, one in each municipality, during the period September-November 2011. Each group interview was attended by researchers, municipal representatives and other invited stakeholders. On average, each group interview was attended by 4.8 persons invited by the municipality (span 3-7) and 2.4 researchers (span 2-3). An overview of this information is presented in Annex 1.

Each group interview lasted one hour and addressed the issues of how the municipality had conducted its energy planning process, which actors were involved, and how implementation and monitoring will occur. Although the researchers attempted to follow a basic format and ensure certain key issues were addressed, participants were encouraged to “tell their story” and as such, the content of the interviews and themes discussed varied.

At the end of each interview, the participants were asked if any other actors (who were not present at the group interview) had played a key role in the process and should be contacted for follow-up interviews. Subsequently, 10 additional interviews were held (8 by telephone and 3 in person), an average 2 per municipality. This means that, on average, 6.4 persons per municipality were interviewed.

All interviews were recorded, transcribed and their contents, together with the empirical data gathered and recorded in the log books, were summarised under thematic headings (e.g. organisation, planning process, status of energy plan, contents, monitoring, role of the Sustainable Municipality programme, etc). The researchers’ own observations - made and noted during interviews - were discussed by the research team.

Definitions

In this study, five municipalities are studied. The five municipalities vary in size, both in terms of population and geography, and have a range of varying characteristics. The Swedish Association of Local Authorities and Regions (SALAR) categorises municipalities into ten categories. The five municipalities belong to four of these categories (representing 52.5% of all municipalities), two of which are the categories containing the largest number of municipalities.

Municipality A and B are 2 of 31 municipalities classified as “Larger towns”. This means the municipal population is 50,000 – 200,000 and over 70% of the population live in urban areas. In this study, we call these “large municipalities”.

Municipality C is one of 16 municipalities defined as a “low density region”, meaning that less than 300,000 people live with a radius of 112.5 km. In this study, we call this a “medium-sized municipality”.

Municipality D is one of 51 municipalities classified as a “Commuting municipality”, where more than 40 percent of the night (residential) population commute to another municipality to work.

Municipality E is one of 54 municipalities defined as “Goods producing”, in which more than 34% of the residential population aged 16-64 is employed in mining, production, manufacturing, energy, etc. In this study, we call municipalities D and E “small municipalities”.¹

Table 3. Overview of municipalities by category, type of strategy/plan produced, document length, period covered and date(s) of adoption.

Municipality	In this study	SALAR definition	Type	Length (pages)	Baseline > Target	Strategy / Plan adopted
A	Large	Larger towns: population is 50,000 – 200,000 and over 70% of the population live in urban area	Separate Strategy & Plan	68 & 48	2009-2035; Plan 2011-2013	Strategy - January 2009; Plan – September 2010
B	Large	Larger towns: population is 50,000 – 200,000 and over 70% of the population live in urban area	Separate Strategy & Plan	20 & 48	2009-2030; Plan 2011-2014	Strategy - March 2009
C	Medium	Low density region: less than 300,000 people live with a radius of 112.5 km	Integrated Strategy & Plan	84	2008-2020	December 2010
D	Small	Commuting municipality: more than 40 percent of the residential population commute to another municipality to work	Separate Strategy & Plan	12 & 14	2009-2020	Strategy & Plan - February 2009
E	Small	Goods producing: more than 34% of the residential population aged 16-64 employed in mining, production, manufacturing, energy, etc	Integrated Strategy & Plan	35	2011-2015	November 2011

¹ For more information about the classification, see: SALAR. 2012. Classification of Swedish municipalities, 2011. Available at http://www.skl.se/kommuner_och_landsting/om_kommuner/kommungruppsindelning (accessed 2012-04-24)

Are we referring to strategies and/or Plans?

The five municipalities use the following terms: Energy Strategy and Energy Plan (Municipality A), Energy Plan and Action Plan (Municipality B), Climate and Energy Plan (Municipality C), Energy and Climate Strategy and Action Plan (Municipality D) and Climate and Energy Strategy (Municipality E).

The documents from municipalities C and E are integrated, comprising both strategy and actions, whereas municipalities A, B and D publish this information in two separate documents. Actions may also be referred to or specified in other strategic documents. In the text below, we refer to “Integrated strategy and plans” and “(Individual) strategy” or “(Individual) action plan”; when referring to the overall approach or implementation of the strategy and/or plan, we refer to “Strategy”.

The documents vary in length. The two municipalities with the smallest populations published the shortest documents; the three larger municipalities published the longer documents. This may be a consequence of different processes, the scope and range of planned actions, levels of resources, size of the municipalities, or other factors. The integrated documents are 84 pages (municipality C) and 35 pages (municipality E) long, whereas the separate documents are 68&48 (municipality A), 20&48 (municipality B) and 12&14 (municipality D) respectively. This is equivalent to 65.8 pages per municipality or 41.1 pages per document, with a range of 90 pages between municipalities. Integrated strategy and plans were on average 59.5 pages with a range of 49 pages. Individual strategies were on average 33.3 pages with a range of 56 pages; individual action plans on average 36.7 pages with a range of 34 pages; together individual strategy and action plan documents averaged 70 pages per municipality with shared average range $(56+34/2)$ of 45.

Although there is no direct significance to these statistics, as length is not a barometer of anything in itself, the statistics do show that there was no major deviation in terms of average length between those publishing a single document or those writing two documents. However the range within groups is large, indicating that some municipalities published substantially longer documents than others. It is interesting to consider to what extent document length reflects the type of processes used (are there lengthy descriptions?) and the planned actions, and whether or not in this context, size matters.

Analytical method

The researchers made a preliminary qualitative assessment of the empirical data in order to identify issues identified by participants as positive/negative, strengths/weaknesses, etc. Findings from the log books and interviews were written into case studies of each municipality and subsequently compared to illustrate variations between the municipalities. The five municipalities and all respondents remain anonymous, as this was a precondition for conducting the workshops and interviews.

4. Results

In the following section, we present results from the document study and interviews.

“Results from the document study” presents various aspects of the results that are comparative in nature – the similarities and differences in the five municipal organisations; the purposes, structure/contents and scope of the municipal climate and energy strategies; and the way work to develop climate and energy strategies in the five municipalities was organised.

“Results from the interviews and document study” presents a summary of the group interviews in each of the five municipalities. In each section, aspects of the comparative results that are specific to each individual municipality are presented, e.g. figures showing the process and organisation. The results from the five group interviews are followed by a comparative discussion of how the five municipalities planned measures and plan monitoring and evaluation activities. Together, this material forms the basis for the analysis presented in Chapter 6.

Similarities and differences in the municipal organisations

The five municipalities vary in size, both in terms of population and geography. As such, the organisational complexity and challenges facing the municipalities vary considerably. For example, the two “large” municipalities employ around the same number of people as the joint population of the two “small” municipalities.

The two “large” municipalities share similar organisational characteristics. Elected politicians decide on municipal targets and budgets in the Council. Tasks are allocated to municipal departments, several municipally-owned companies and other actors (including private entrepreneurs) by politicians sitting in the Municipal Executive and a number of Committees. These Committees also have responsibility for monitoring and evaluating implementation. Municipal departments prepare and implement policies.

In both “large” municipalities, finance is a task for the Municipal Executive Office and in both municipalities the budget for implementation of the Strategy is clearly documented (in the annual budget of municipality B and annexes to the Action Plan of municipality A), along with targets for respective departments and companies.

In municipality A, a number of Delegations with their own staffed Units are housed within the Municipal Executive Office. These Delegations fulfil a strategic function and aim to raise awareness and ensure various themes – including Sustainable Development – are integrated into municipal work and budgets. The Delegations also scrutinise performance on an annual basis. Municipality B has a municipal association with a neighbouring town. This association carries out strategic functions including joint procurement and together, the two municipalities have developed a joint climate vision.

The “medium-sized” municipality also has a clear structure comprising the same basic elements of Council, Executive, Executive Office, Committees and Departments. The municipality also owns five companies and a stake in a sixth company. These companies include operations in residential and commercial properties, port, waste, water and energy. Group interviewees cited the reacquisition of

50% of shares in the municipal energy company from an international energy company in 2009 as a key moment which had significant impact on the development of their Strategy.

The “small” municipalities share the same basic structure as the other three municipalities, with a Council, Executive, Executive Office, Committees and Departments. Each municipality has stakes in their local energy and property companies and other companies/associations. Interviewees in both municipalities remarked that, due to the size of the municipalities, relationships within the municipal organisation and wider community are often personal and sometimes informal.

What are the purposes of municipal climate and energy strategies?

The municipalities emphasise different reasons for preparing a Strategy and different aspects of sustainability. Municipalities A and B cite energy (efficiency and renewable) as a key driver; municipalities D and E cite climate impacts; municipality C emphasises sustainable development.

Two municipalities (A and C) explicitly link their Strategy to their overall municipal visions of becoming an attractive and sustainable community and leading example in Sweden. These municipalities emphasise the geographic zone of the municipality more strongly than the other three municipalities, which emphasise the municipality's own organisation and internal routines.

Several other purposes are identified by the municipalities. These include: the legal requirement for an energy plan; the need to describe what the municipality has done in the past; the need to address an absence of policy; the need for information/baseline data; the aim to support decision-making; the need to improve cooperation between stakeholders; and the need to *show* that the municipality is working on these issues; and the need to contribute to national/regional targets.

The word *show* has been emphasised –municipalities A and C stated a desire to strengthen their profiles and market their municipalities. This desire to proactively generate and demonstrate good practice can be contrasted with municipality E, which was obliged to act following a larger chain of events. Municipality B emphasised the need to practice as it preaches, an approach that can be categorised as having both proactive and defensive connotations.

What are the contents and structure of municipal climate and energy strategies?

There is some degree of variation in content, depending partly on contextual factors (e.g. the perceived need to explain different issues) and partly on the choice of format.

Broadly speaking, four of the municipalities have structured the contents of their documents in a similar way - introduction, background information, statement of purpose, information on regional/national initiatives, information on the municipality's strategic vision, the local process, targets, measures and plans for monitoring and evaluation. The fifth municipality (C) has split its contents into two parts which could broadly be categorised as a) targets and measures, b) context, baseline and forecasts.

As stated above, two of the documents represent integrated strategy and plans, with the other three comprising two documents, a strategy and an action plan.

The contents of the two integrated strategy and plans vary considerably. Municipality C's document is longer and the description of the municipality's role is contained in the document's introduction. The remainder of the document contains two parts – the first part describes targets and measures. This part refers to a national publication concerning international and national targets, and concentrates on regional and local targets.

The second part contains six chapters, which present developments during the period 1998-2008 and the current state (including climate impacts) of the energy system, industry, transport and consumption. A prognosis of energy demand up to 2020 is included, together with information on climate adaptation and an environmental assessment of the Strategy. To a large extent, "Part 2" represents the baseline data from which targets in "Part 1" were formulated or refer to. In addition, the document contains annexes showing road transport emissions, information on climate change in the region, and a description of terms.

Municipality E's integrated strategy and plan is a shorter document based on a template provided by a municipal association (Climate Municipalities). The document contains a vision for the municipality, background on climate change and energy planning legislation, and a description of the municipality's role. An analysis of current circumstances describes the municipal boundaries, demographics and local economy, historic and current energy use, emissions of greenhouse gases and other pollutants, renewable energy, and forecasts for future trends.

National and international emissions reduction targets are described, with linkages to regional climate targets and the municipality's goals and ambitions with regard to climate change. A description of measurable goals and an action plan are described, along with information on the follow-up process, conclusions and annexes.

Where the strategies and action plans have been published separately, the strategy document has broadly the same format as that provided by the municipal network. All three municipalities (A, B and D) include an introduction, background information, statement of purpose, information on regional/national initiatives and information on the municipality's strategic vision. The local processes, stakeholders and targets are described, as well as plans for monitoring and evaluation. One municipality includes a number of detailed annexes.

The Action Plans vary in format, from a simple document in municipality D outlining overall goals and specifying measures, responsible actors, indicators, etc, to longer documents containing greater levels of detail. The two longer documents of municipalities A and B share a similar structure, with an introduction, analysis (environmental assessment in municipality A and energy use in municipality B), an overview and description of measures (by sector/entity/municipal organisation-geographic zone) and annexes.

Municipality A's document is more explicit, containing information on the municipality's method for coordination of environmental and energy issues and its linkages to annual reporting. Municipality A

also include detailed economic analysis of its Strategy, including information on investment and maintenance costs and discussion of socio-economic impacts.

Table 4. Overview of the scope of municipal strategies/plans, the type of measures planned and implementation period, relationship to other initiatives, and drivers/motivations for municipal energy planning.

Municipality	Scope	Measures	Delivery	External influence	Key driver	Related ambition
A	Geographic zone	Mix of hard & soft	Strategy medium-term; Plan near-term		Energy (efficiency & renewable)	Attractive community; be a leading example
B	Municipal organisation	Mix of hard & soft	Strategy medium-term; Plan near-term	Regional initiatives/ targets	Energy (efficiency & renewable)	
C	Geographic zone	Mix of hard & soft	Short-term	Regional initiatives/ targets	Sustainable development	Attractive community; be a leading example
D	Municipal organisation	Mainly soft	Strategy short-term; Plan near-term	Regional initiatives/ targets	Climate change	
E	Municipal organisation	Mainly soft	Near-term	Regional initiatives/ targets	Climate change	

What is the scope of municipal climate and energy strategies?

In each case, the five municipalities claim to address both the municipal organisation and the municipality as a geographic zone. Nonetheless, the specificity of targets and the extent to which measures represent ambitions or actual plans, particularly when targeting sectors that are not directly influenced by the municipality, varies. There also appears to be variation within the municipalities' own organisations.

Two documents stand out for being particularly explicit about the role of different municipal entities in the process to plan, implement and monitor/evaluate their strategies. Municipality A has produced economic analysis including cost-benefit scenarios for the proposed measures and estimated budgets for implementation. Municipality B has mapped linkages between municipal policies in a clear way.

Three of the five strategies - municipalities A, B and C - contain a mix of "hard" and "soft" measures, including for example substantial infrastructure investments and awareness-raising. The other two strategies - municipalities D and E - mainly focus on "soft" measures, although some notable investments in infrastructure are included in Municipality D's Strategy.

Four of the municipalities (B, C, D, E) make reference to regional initiatives that influenced their choice of baseline or target. None of the municipalities has chosen to adopt a long-term goal (i.e. 2050). Municipalities A and B have selected medium-term goals (2030, 2035), municipalities C and D have chosen the short-term 2020 and municipality E the near-term 2015. All Action Plans specifying measures address the near-term.

Organising the strategy planning process

Although their organisational forms vary to some extent and different contextual factors influence their work, the five municipalities organised the process to plan their energy strategies in similar ways. Typically, the process included a Working Group (all), Steering Group (all) and Reference Group (four).

The organisation of work to develop the strategies and action plans was similar in the two “large” municipalities. In municipality A, the Strategy was developed by a Working Group including representatives from several municipal departments, municipal companies working in energy, residential and commercial property, the port and the regional waste company. Managers for these entities formed a Management Group (responsible for strategic direction), with board and council representatives forming a Steering Group (responsible for decisions). A Reference Group comprising representatives from diverse local stakeholders was also involved. The Working Group was divided into four sub-groups, focusing on Production and Distribution; Users and Information; Transport; and The Municipal Organisation and Physical Planning. These groups met to discuss targets, using other strategic documents and assessments of potential as a basis for their proposals.

The process was similar in the municipality B. A Working Group comprising public officials from different departments were supported by a researcher providing expert input. The Coordinator played a larger role, conducting an analysis of the status quo and studying numerous other energy strategies. This group prepared a draft, which was submitted to the Steering Group, which consisted of members of the Social Development Committee.

The Steering Group provided input to the draft on several occasions, and the final draft was sent to all municipal departments and entities for consultation prior to approval. A Reference Group for the process was created (the Climate Commission), including representatives from industry, retail, transport, NGOs and other prominent local figures (e.g. housing associations and similar interest groups). This group met in workshops and helped develop a first draft of a climate vision for the municipality. However, they have not met since the Strategy was adopted.

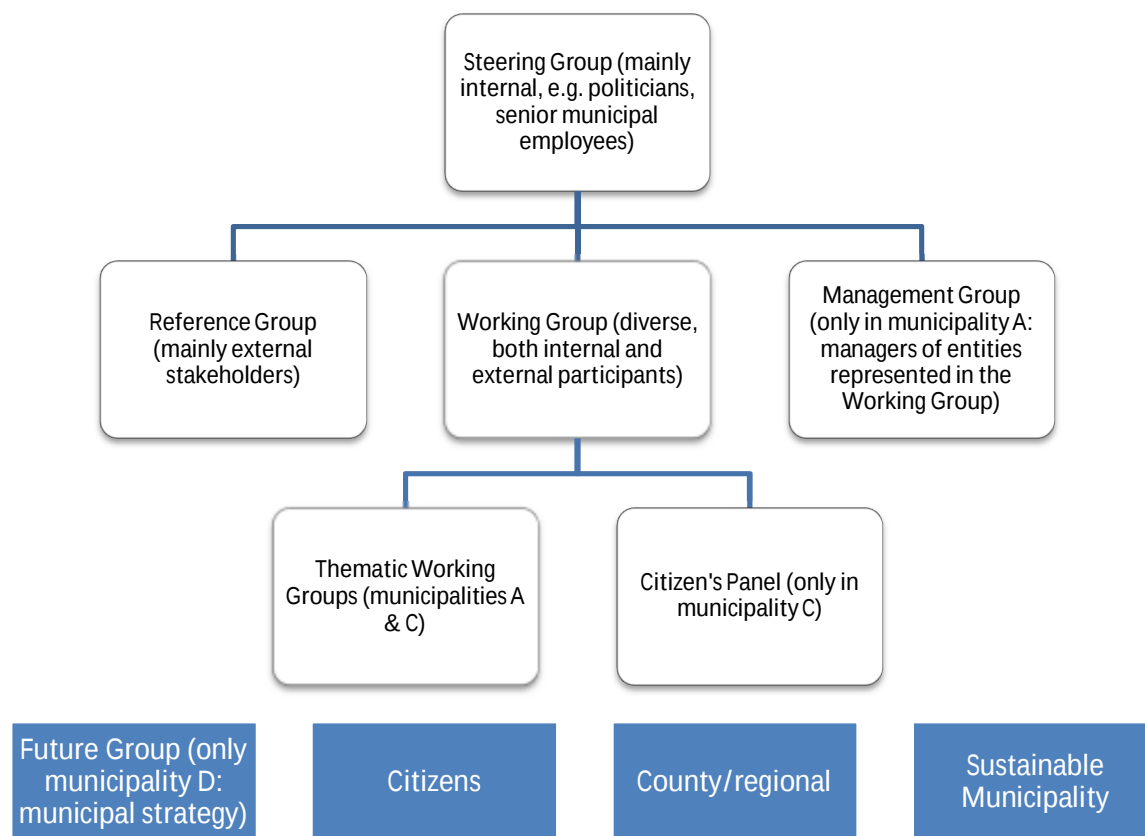


Figure 1. Organisation of planning processes in the five municipalities. Other influences are presented in the boxes below.²

A similar process occurred for the Action Plan. The process was led by Energy Strategist (Coordinator), with support of procured statistical services which are also used for The Sustainable Municipality and the national energy efficiency support. A Working Group of individuals from different departments, nominated by the Municipal Director, was formed and met on several occasions. The Coordinator says there was an expectation that larger departments would form sub-groups to select targets and plan implementation in their respective organisations, although it is unclear to what extent this took place.

² In *Energy planning as part of public planning*, Rydén states that “as a general rule, an organisation consisting of the following working groups should be established”. He defines the groups as a “Management Group” comprising “decision-makers and the Head of Planning”; a “Working Group” comprising “the Head of Planning and important key persons, and also possibly consultants”; and a “Reference Group” including “experts from local companies, organisations and interests” (Rydén 2006). Rydén states that the exact nature of the relationship and roles between these groups varies depending on a municipality’s size, but a “Working Group” is an active, operational entity whereas a “Management Group” is not involved in daily work, but provides leadership and makes decisions based on the Working Group’s proposals or actions.

In this paper, what Rydén (2006) calls the “Management Group” is referred to as a “Steering Group”, as this more accurately reflects the categories proposed in Sustainable Municipality programme and the operational titles used by the municipalities studied. Moreover, in this paper, the term “Management Group” exclusively refers to a group of managers active in Municipality A’s energy planning process that was specifically known as a “Management Group”. In addition, it should be noted that in the energy planning processes of the five municipalities studied, the Head of Planning was not (in all cases) a participant or chair of Working Groups, as the responsibility for coordinating Working Groups was allocated to designated Coordinators.

In both municipality A and B, there were changes in personnel - including the persons coordinating the processes - during the process. However, these changes occurred at different points in the process. For example, in municipality B, the work to initiate and develop the Strategy was done by a different official to the person with responsibility for developing the action plan.

In municipality A, the same change occurred at an earlier point in the process, meaning the person initiating the process left and was replaced by a new Coordinator with responsibility for both the strategy and plan. In both municipalities, the Coordinators of the Action Plans have subsequently been given responsibility for coordinating implementation.

In the “medium-sized” municipality C, an internal organisation comprising a Working Group and political Steering Group was established, with the two groups working in parallel. The Working Group included the Coordinator plus the chairs of four thematic working group, which were created following consultations with the “Citizens’ Panel” (see below).

The thematic working groups focused on transport, consumption, buildings and energy efficiency. Each working group included representatives from the municipality, businesses and citizens; the chair was always a municipal representative. The thematic working groups developed goals and proposed measures for their respective topics. During the implementation phase, the political Steering Group operates has been transformed to operate as an informal Reference Group, as responsibilities are clearly allocated within each theme.

The process to develop strategies in the two “small” municipalities differed profoundly, yet also contains several notable similarities. In both cases, there was a regional stimulus; in one case - Municipality D - a regional project in which the County Administrative Board received a grant from the Swedish Environmental Protection Agency to work with municipalities in the region and support the development of local climate strategies and energy plans. This programme stipulated that municipality nominate a contact person and form a working group and political steering committee for their project.

Municipality E was invited – along with all other municipalities in its County – to join the Swedish Energy Agency’s Sustainable Municipality programme. Interviewees suggested that this invitation was communicated to civil servants as a *fait accompli*, in which the Municipal Director received a letter inviting the municipality to join the programme and then delegated tasks to the responsible civil servants. Their proposal to join the programme was then submitted to the politicians for approval. As such, the Municipal Executive had overall responsibility for the municipality’s participation in the Sustainable Municipality, with the Municipal Executive Committee acting as Steering Group.

According to the municipality’s Guidelines for the Municipal Executive, the Municipal Executive should – amongst other things - lead and coordinate energy planning and promote energy efficiency and ensure implementation of work with Local Agenda 21 in all aspects of the organisation. The first decision made by the Municipal Executive was to establish a Working Group composed of individuals from different municipal departments. As in the other municipalities, the individual appointed to coordinate the process was a specialist on environmental issues. However, as this person was on

parental leave during the planning process, much of the practical work to draft the Strategy was done by another team member.

No budget was allocated to the “project” and interviewees remarked that much too little time was allocated for tasks, as participation in the Sustainable Municipality was unplanned (and effectively forced upon the municipality, according to the interviewees), meaning the Department had to squeeze the tasks into existing budgets and time plans.

In the other “small” municipality D, the aforementioned regional project to develop local climate strategies and energy plans was well underway by the time the municipality joined the Sustainable Municipality programme in summer 2008. As such, the programme represented a continuation of the previous activities and an opportunity for long-term planning beyond 2011; it presented no organisational or budgetary problem.

The municipal contact person for both projects is employed at the Environment and Development Office. A Working Group comprised six members including the Coordinator and representatives from the local energy company, Environment and Building Office, Technical Office (a central function of the municipality) and the municipal housing company; and a Steering Group consisted of members of the Social Development Group and representatives for the energy and housing companies. The Steering Group continues to monitor implementation of the Strategy and there is also a “Future” group that makes strategic decisions on overall developments in the municipality.

Table 5: Simplified map of key stages in the planning process of five municipalities, chronological order from top to bottom.

Step taken by municipality	A	B	C	D	E
Participation in regional project				X	X
Establish internal organisation	X	X	X	X	X
Commission external energy analysis			X		X
Hold internal conference			X		
Consultation with citizens			X	X	
Creation of thematic working groups			X		
Working Group (and sub-groups) make proposals	X	X	X	X	X
Working Group (WG) / Coordinator (C) prepares draft strategy	WG	C	WG	C	C
Consultation (C); with Management/ Steering/ Reference Groups (G)	G	G	C	C	C
Revision of draft	X	X			
Consultation with all municipal departments/companies	X	X			
Revision > final proposal	X	X	X	X	X
Approval	X	X	X	X	X

Reflections on the planning process from the five municipalities

In this section, different aspects of the process to develop energy strategies and action plans will be elaborated on in more detail. In particular, issues highlighted by the interviewees will be presented here.

Municipality A

Municipality A has a tradition of changing political majorities, meaning politicians of all parties are often involved in long-term planning to ensure smooth transitions. Moreover, the municipality has a history of cross-sector planning which the interviewed politician said was extremely beneficial.

Municipality A

- Large Town
- Separate Strategy (68 pages) & Plan (48 pages)
- Strategy adopted January 2009; covers period 2009-2035
- Plan adopted September 2010; covers period 2011-2013
- Focus on energy
- Scope – municipality's geographic zone
- 28 documents assessed by this study
- 6 individuals interviewed for this study

In the case of energy planning, the municipality committed itself to preparing an Energy Plan in its Environmental Programme (for the period ending 2010) and this has been implemented, despite changing political circumstances. The process of involving both officials and politicians in planning is appreciated by both groups. Despite this, it was not clear whether the energy plan would be a single or multiple documents. The strategy and plan model emerged during the process, as participants saw the need to separate overall targets and specific measures in a clear way.

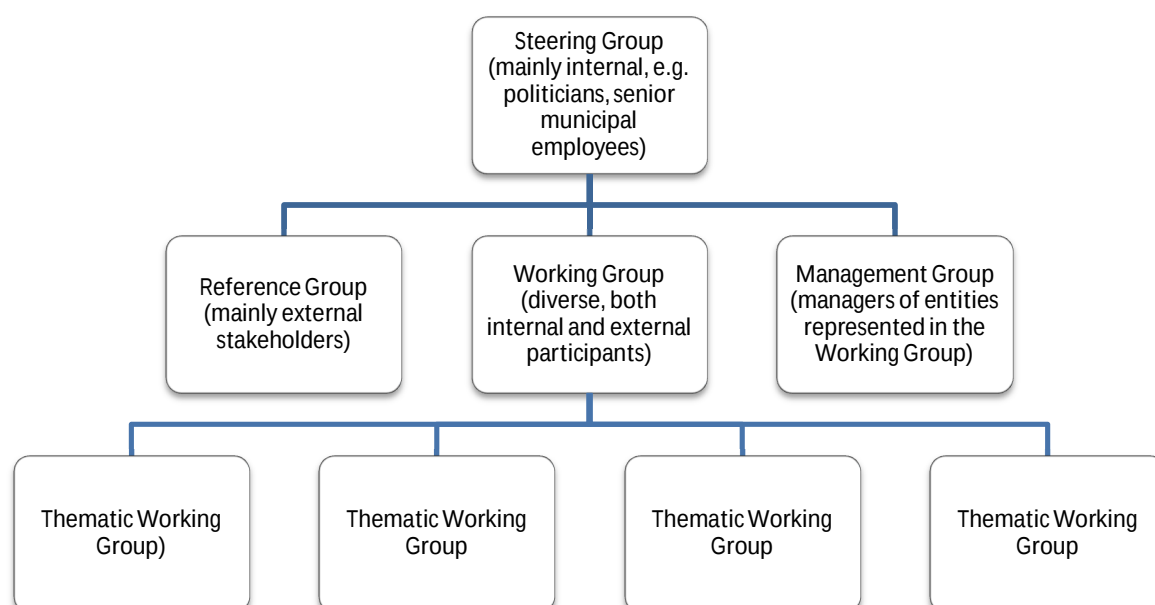


Figure 2. Organisation of planning process in Municipality A

The role of the process's Management Group was the subject of intense discussion among the interviewees and there were different views of its effectiveness and the level of coordination. One interviewee remarked that communication from the Working Group to the Management Group felt a one-way process, but that the Management Group and Steering Group contradicted each other, complicating the role of the Working Group. This was particularly difficult for actors needing clear directives. All interviewees felt the process was slowed down by the uneasy coexistence of the Management Group and Steering Group.

Interviewees remarked that the Coordinator was burdened with too many tasks and more resources could have been allocated to the process. Reducing the number of organisations and individuals in future processes and providing clear guidance on tasks and responsibilities is expected to improve future processes, in part by engaging all participants and ensuring that no participants come to meetings simply to "represent" their respective organisations.

Interviewees said that, excluding the Reference Group, they did not attempt to involve actors in the process that did not appear to have a clear role in the work, e.g. Social Services Department, and that such actors will inevitably be influenced by the Strategy as they are end users of other services, e.g. as tenants. Linkages between environmental and energy management may indirectly influence other actors, e.g. schools. Other stakeholders, such as the regional transport company, were not involved as these are the subject of other municipal strategies.

The Reference Group itself was not especially active during the process. On occasion, meetings were held and the municipality interviewed the members. The draft action plan was sent to the group for consultation. The group was disbanded after the action plan was approved as it was perceived as too complex to persist with it in that format. The Steering Group may also be disbanded, to be replaced by direct reporting the Municipal Executive.

Interviewees considered that the process to develop the strategy and plan helped to increase awareness of energy issues among the different organisations, although they speculated that implementation is uncertain and a new form of Management Group may be necessary and meet more infrequently (e.g. twice per year).

Interviewees also commented on the existence of conflicting aims within the municipality, for example between the overall aim of the municipality to reduce energy use and the business model of the municipally-owned energy company.

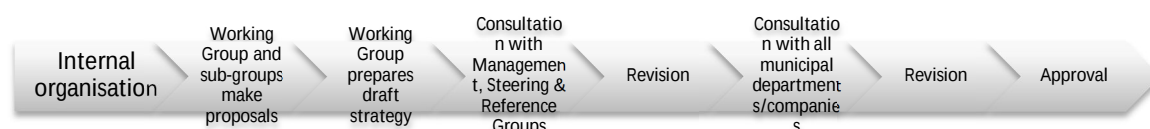


Figure 3. Simplified map of key stages in the planning process of Municipality A, chronological order from left to right.

Interviewees had conflicting views about whether the energy planning process and the organisations involved handle these issues in an appropriate way (politician optimistic, officials diplomatic, company negative).

The interviewee from the municipal energy company said that they were not represented in the Working Group, although the documentation provided by the municipality suggests this was the case. The energy company considered that their expertise was insufficiently utilised during the process and the process was opaque. The same interviewee said that the company was unable to influence the draft action plan, its comments during consultation were not considered and the municipality has not discussed implementation of the approved action plan (in terms of tasks, responsibilities and the plan's relationship to the company's directives) with the company.

Other interviewees stated that the municipality considers the action plan as an approved directive to the municipality and therefore sees no need for communication. However, the interviewee from the energy company cites the Municipal Executive's rejection of a strategy for wind power, contained within the Strategy, as evidence of the Strategy's overall lack of significance. This interviewee argued the municipality are making the same mistake with the vision for 2035 (see below) and have developed a proposal that is too detailed and unworkable.

The Strategy was developed from the Environmental Programme and has clear links to the work done in The Sustainable Municipality, the municipality's Traffic Strategy, Bus Vision, Parking Policy and Sustainable Development Plan. The mix of strategy, plan, vision, policy, programme, project and process creates some degree of uncertainty about the relationship between documents and hierarchy of documents. The municipality is currently working on an "umbrella" strategy (vision for 2035) which will provide a framework to incorporate the different policies.

The municipality recently disbanded its Delegation for Sustainable Development and there is some uncertainty about the future organisation. Several interviewees expressed hope that the new Municipal Director, upon whose initiative the reorganisation and development of the "umbrella" strategy have begun, will resolve the conflict between different entities over long-term strategy.

An Environmental Office has been established for a range of awareness-raising and service functions aimed at the general public and the municipality's own employees. The municipality has decided to sign the Covenant of Mayors and will remain in The Sustainable Municipality during phase 3. The interviewees expressed different opinions on the utility of The Sustainable Municipality.

Municipality B

The draft Action Plan was prepared by Coordinator and discussed with the departments, before a round of consultation took place. One interviewee commented that his organisation did not receive this draft and it was also stated that, of those that did, two companies considered the goals too ambitious. Following revisions, the Action Plan was adopted.

According to the Coordinator, the (then) Chair of the Building & Environment Committee proposed that the municipality focus on internal measures before conducting extensive external actions. This would increase the municipality's credibility and is the reason why the Climate Commission have not met since the adoption of the Action Plan. Instead, an internal Working Group comprising representatives from the departments and companies is engaged in implementation.

One interviewee suggested that the management model used by the Council at the time, which prohibited mixing of targets and measures, influenced this decision. As the Energy Plan built upon these principles and approved, it is a legal document and therefore binding. However, a new management model has now been adopted. Under this model, the municipality shall not adopt "programmes", meaning other non-binding documents, such as the Environmental Programme, will cease to be used.

One interviewee (politician) remarks that the Action Plan is good and ambitious, but lacks acceptance among politicians and civil servants outside of those working directly with environmental issues. This was caused by a lack of information, dialogue and engagement in the process, and use of inappropriate metrics which are not used by operative functions. Another interviewee remarked that coordination of the process could have been better and more relevant to stakeholders, with improved exchange and more specific measures.

The interviewee (politician) remarked that he himself broke down the targets to show relevant key indicators before discussion of the Action Plan in his Committee. He suggests that energy efficiency was perceived as an environmental target approved by politicians, rather than an economic issue, which would increase its relevance to all municipal operations. This means the document is not integrated into other processes and is not considered important. Moreover, the same interviewee suggests that there was no strategy for implementation, as there is a lack of political will and a

Municipality B

- Large Town
- Separate Strategy (20 pages) & Plan (48 pages)
- Strategy adopted March 2009; covers period 2009-2030
- Plan covers period 2011-2014
- Focus on energy
- Scope – municipal organisation
- 43 documents assessed by this study
- 6 individuals interviewed for this study

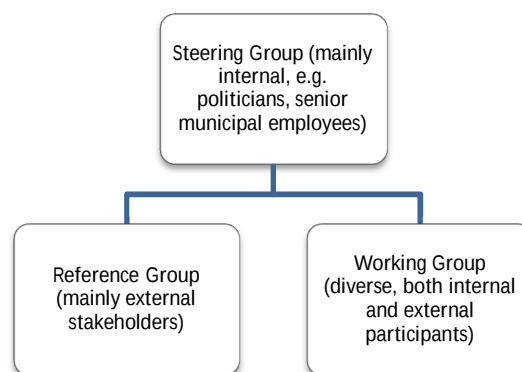


Figure 4. Organisation of planning process in Municipality B

culture of defensive in municipalities, especially during times of crisis . The old management model did not facilitate implementation, as targets were not structured and allocated in a logical way; this has been changed.



Figure 5. Simplified map of key stages in the planning process of Municipality B, chronological order from left to right.

Municipality C

The Strategy was developed partly in the context of the municipality's engagement in The Sustainable Municipality and subsequent signing of the Covenant of Mayors.

At the same time, interviewees cited a long-standing interest and engagement in energy issues in the municipality and the fact that the decision that a new energy plan was required had already been made, although nothing had been done.

Municipality C

- Medium-sized municipality
- Integrated Strategy & Plan (84 pages)
- Adopted December 2010
- Covers period 2008-2020
- Focus on sustainable development
- Scope – municipality's geographic zone
- 20 documents assessed by this study
- 8 individuals interviewed for this study

Thus, interviewees felt the timing of this process was right, that the right combination of factors existed, creating good conditions for the process

Once the municipality had joined The Sustainable Municipality, the first step in the process was a conference to which all Committee Chairs, project managers and companies working on sustainable development issues were invited. Analysis and future scenarios were prepared by an external consultant. A presentation of the results of the scenarios was presented to the Municipal Executive and other invitees. External consultants led the conference and helped the participants identify issues they considered important to address.

The municipality was considering purchasing consultant services to prepare the energy plan, when the offer to join the Large Cities Cluster was made. As the municipality had no existing plan, they decided to join the Cluster in 2009. Choosing to join the Cluster meant the municipality committed to preparing its own plan.

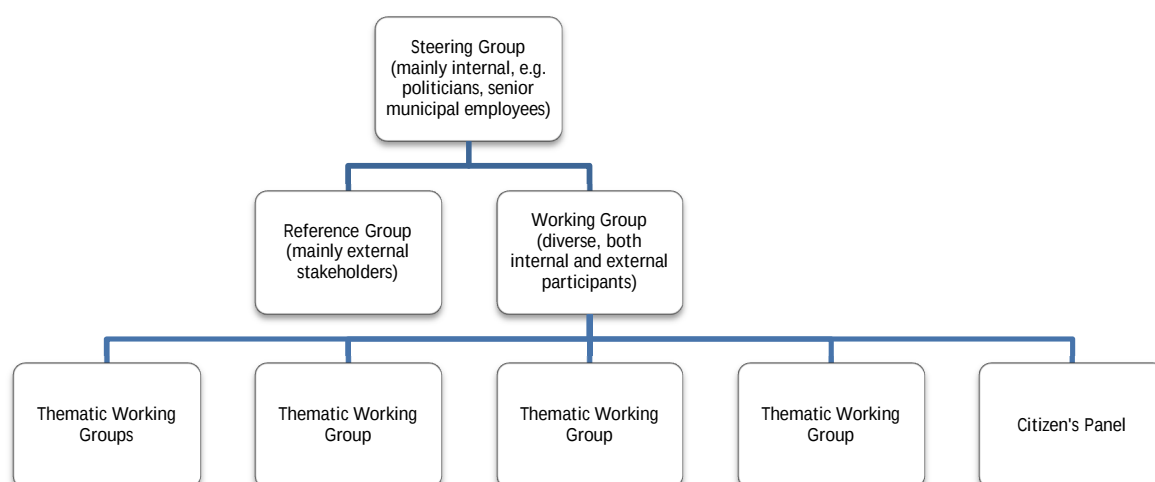


Figure 6. Organisation of planning process in Municipality C.

The next step was to discuss climate and energy issues with the “Citizens’ Panel”. This group of 200 citizens has on numerous occasions been invited to provide input to municipal processes, often at a very early stage. There was clear evidence of interest among citizens, a willingness to be engaged and participate. The output of this first meeting (May 2009) was the proposal of the four themes on which the thematic working groups focused.

A number of external and internal informal meetings were held and a draft was prepared. This was circulated among stakeholder and within the municipal organisation, and publicised on the municipality’s website. A number of comments were received and the draft was updated. Interviewees remarked that the exchange of information and ideas with major companies has been extremely interesting and mutually beneficial.

A number of different initiatives were underway when the call to join The Sustainable Municipality opened, including wind power investments, a gasification pilot plant and an inactive assignment to develop a municipal energy plan. The municipality was initially asked to join a different cluster in The Sustainable Municipality, before being placed in the “Large Cities” Cluster. The Sustainable Municipality was described as useful, as it provided sources of inspiration from other municipalities and an opportunity to focus and stimulate different parts of the municipal organisation. Interviewees remarked that the presence of a young, daring politician with new perspectives and a will to transform has been an influential factor.

On 17 September 2010, an event was held for all Committee Chairs, project managers, department managers, and the Chief Executives of municipal companies. This event aimed to inform them on developments since the process kicked-off and inspire them ahead of future actions. This day was documented and the materials published on the municipal website.

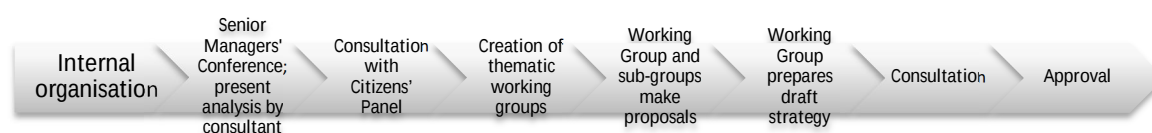


Figure 7. Simplified map of key stages in the planning process of Municipality C, chronological order from left to right.

Municipality D

The municipality has a long history of engagement and action on environmental issues, having been one of the first “eco municipalities” in 1990 and having worked with Local Agenda 21 since 1998. Cross-sectoral planning of environmental issues took place during this period and the process of raising awareness has therefore occurred over the long-term. The municipality publishes annual reviews of its sustainability actions.

Municipality D

- Small municipality
- Separate Strategy (12 pages) & Plan (14 pages), both adopted February 2009
- Both cover period 2009-2020
- Focus on climate change
- Scope – municipal organisation
- 26 documents assessed by this study
- 7 individuals interviewed for this study

Political dynamics were credited by one interview as helping strengthen the municipality’s work; namely that the sitting majority faced a brief challenge from another party that strongly emphasised environmental issues. As a consequence, there was greater political knowledge and commitment to sustainability. The level of political engagement was described as supportive yet varying throughout the process; it was clear that energy issues were not the highest priority among politicians. Political leadership was described as a key structure in ensuring efficient municipal operations by another interviewee (politician).

The municipality began the process in autumn 2007 with a series of meetings with different stakeholders from the local community, including businesses, associations and the general public. These meetings, which lasted until spring 2008, enabled group discussion of climate issues without pre-conditions (e.g. relation to economy, likelihood of implementation, etc).

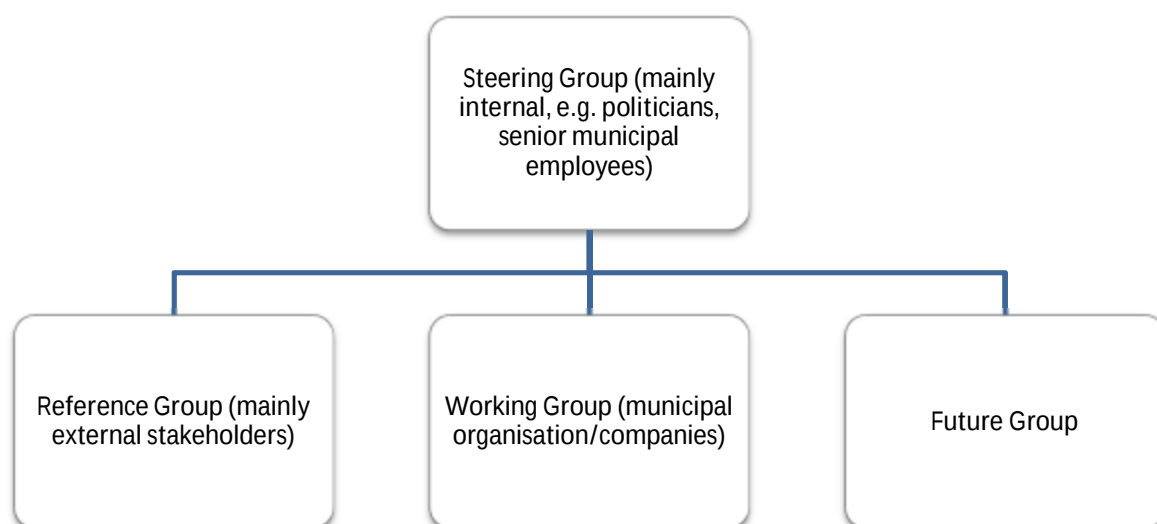


Figure 8. Organisation of planning process in Municipality D

Participants formed groups focusing on different topics (e.g. district heating, schools, business) and subsequent meetings were held with specific stakeholder groups. The groups made proposals, which were collated and used by the Working Group to identify three critical problems related to the climate – use of fossil fuels; waste of energy; and ignorance.

Interviewees responded that the working method was successful, with high levels of engagement and inclusion. The municipality has previously used this method in other sustainability work, such as environmental management systems. The method identifies problems around which measures can be formed. Interviewees emphasised the importance of making a specific person responsible for leading the work and ensuring that resources for development, implementation and monitoring are guaranteed. The municipality has not reported the results of this process to participants directly, although all outcomes are available on the website.

Significantly, the method generated ideas that the interviewees said the municipality would not have proposed in an internal process and that several of these 'bottom-up' proposals were subsequently implemented. For example, a public transport terminal was constructed alongside the railway station to improve access to buses (which previously had a separate facility in the town centre, meaning users had to walk around 1km between the two). Another implemented proposal was the installation of a wind turbine for use by the municipal housing company.

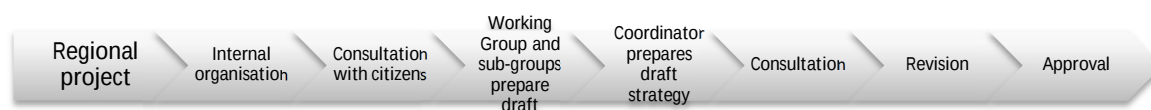


Figure 9. Simplified map of key stages in the planning process of Municipality D, chronological order from left to right.

In addition to using a working method previously employed in environmental management, the Working Group have also tried to make use of the same terms and concepts, as many of the environmental coordinators at workplaces will now become contact persons for implementation of the Strategy in their respective organisations. The Coordinator remarked that the form and content of communications must be tailored to meet the needs of different target groups.

When the Strategy was approved, all departments were visited and provided with information on their role and responsibilities in the process by the Coordinator. They were also provided with thermometers and asked to complete surveys on the indoor climate at every workplace. A 100% response rate was achieved. The survey also asked if further visits from the Coordinator were desired, leading to several additional visits.

During the group interview, positive and negative aspects of being a small municipality were discussed. Advantages including proximity to other employees in the municipality, citizens and other

actors; and, that municipal managers have operational roles and are not only administrators, leading to strong engagement. This advantage also creates a problem, as managers sometimes have too many responsibilities and thus have limited opportunity to work on strategic issues. It was also considered hard for small municipalities to work on some issues, e.g. environmental vehicles, as small markets are less attractive than larger communities to the numerous stakeholders (primarily, in this case, fuel infrastructure providers and suppliers) required to instigate change.

Municipality E

The Strategy is intended to be a “living” document and subject to continuous updates and improvements. The process began with the selection of targets, followed by identification of a strategy for implementation. Participants attempted to select SMART (specific, measurable, attainable, relevant, timely) goals, although targets will be adjusted according to need/circumstance.

In practice, the majority of the work to prepare statistics and content was done by one civil servant, whilst another was on parental leave. The civil servant was selected in part because he was new to the municipality and it was felt that no prior knowledge was required to prepare the Strategy. Energy flows in the municipality were mapped by the Regional Energy Agency and an energy efficiency strategy was prepared by external consultants.

Municipality E

- Small municipality
- Integrated Strategy & Plan (35 pages), adopted November 2011
- Covers period 2011-2015
- Focus on climate change
- Scope – municipal organisation
- 8 documents assessed by this study
- 5 individuals interviewed for this study

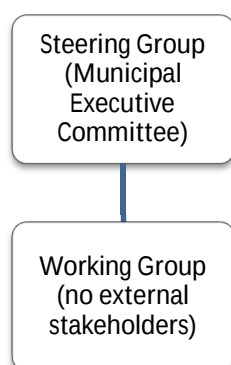


Figure 10. Organisation of planning process in Municipality E

Some awareness-raising actions took place during the process, although one interviewee stated the need for support in planning and implementing communications. The municipal Energy Advisor is named as an important resource for awareness-raising actions (this is actually the same person as the Climate and Energy Coordinator, who works part-time in both roles).

The draft Strategy was circulated to the different municipal departments and companies, but comments were only received from one department. Interviewees remarked that the Municipal Executive Committee displayed little interest in the process but will receive half-year progress reports. Political unity was cited as a reason for limited discussion of the issues and no presentation of the final Strategy was made to the Municipal Executive Committee.

The municipality names several previous documents in the Strategy - an Agenda 21 document and plans for Energy and Environment, both of which were prepared in 2003 with targets for 2010. The implementation of these plans was not monitored or evaluated. An interview remarked that the new Strategy is one strategy among many, implying there is also a lack of hierarchy or prioritisation of strategies across departments.

In the municipal Development Plan, the opportunity provided by renewable energy and resource efficiency is emphasised. The Development Plan states that the municipality should strive for development of dialogue and cooperation between its Environment Department (now Department for Social Development) and businesses. Interviewees said that the Development Plan was prepared during 2007-2008 by an individual who had a clear idea of how it should be implemented. However, this person subsequently left the organisation and, as numerous appeals to the plan's contents were made, the Development Plan has only recently been approved. As a result, the interviewees suggested that it should be totally revised.

The interviewees felt that working on a regional basis added value to their work, as civil servants from different municipalities could share information with each other on conferences, reports, financing, etc. The municipality was also able to benefit from trainings held in the region which otherwise may not have been easy to organise there. At the same time, the volume of information exchanged, including frequent emails from the Regional Energy Agency, increased time demands; trainings offered by the programme were sometimes aimed at specialists, whereas civil servants in small municipalities must be multi-tasking non-specialists.



Figure 11. Simplified map of key stages in the planning process of Municipality E, chronological order from left to right.

How did the municipalities select measures?

Each of the five municipalities lists and/or describes the measures planned to enable achievement of their respective targets. The number, scope and detail of the measures varies somewhat, partly due to the different contextual factors influencing the municipalities. Generally, measures are identified following a classification by organisation and/or theme.

For example, municipality A sort measures into eleven thematic groups, focusing on specific issues such as solar energy, freight and distribution transport, etc. For each thematic group, measures are then selected, prioritised and responsibilities and budgets allocated. The measures detailed in the Action Plan are now being implemented. Implementation will be evaluated, with new measures to be planned and come into effect from 2015.

The group interviewees in Municipality A stated that procurement is not directly addressed in the Strategy. However, the measures have been linked to the municipal finances, in order to enable long-term analysis of the implications of different investment decisions. This was a decision of the Political Steering Group, which views the municipality as a company. To enable this linkage, an Economist developed a model which all municipal departments and companies can use to see investment costs and revenues; this means some entities (e.g. property company) are now able to make investments that – on a strictly departmental level – are not “beneficial”, yet from a company perspective are. The investment budget addresses a seven-year cycle.

Municipality B has chosen to allocate measures by organisational entity and then theme; this is partly because this municipality has chosen to focus primarily on internal operations during the near future. Energy efficiency is the primary focus of the measures. Interviewees suggested that some of the energy efficiency goals included in the Action Plan were so ambitious that they were not accepted or understood by departments and municipal companies

At the same time, interviewees in Municipality B suggested that the introduction of a new economic model for financing of energy efficiency projects, the presence of a new, engaged Councillor and the national funding for energy efficiency has reinvigorated the process. Nonetheless, there is uncertainty as to how conflicts will be resolved (e.g. simultaneous demand to increase number of visitors to facilities whilst reducing energy consumption etc), nor the way in which decisions around such trade-offs will be made (i.e. what will be prioritised, increased revenue or decreased expenditure?).

In the “medium-sized” municipality C, the municipality began by consulting with citizens about which issues needed addressing and then worked with local stakeholders to choose relevant yet realistic goals. For example, the local industrial actors had previously made significant efforts to reduce emissions and are committed to reducing use of energy. At the same time, these actors are sensitive to the implications (for both the companies and the municipality) of implementing the right measures too fast or in the wrong order, or the wrong measures altogether. Thus, selection of measures and targets was a collaborative process involving those who will implement actions from an early stage.

The measures were developed by thematic Working Groups and are divided into targets for the municipal organisation, with related action plans, allocation of responsibility, etc; and goals for the municipality's geographic zone, with relevant stakeholders and steps identified. The targets are split into near-term (2014) and short-term (2020) targets.

Building permits and other legal tools may be used to stimulate processes in Municipality C, with energy advisors offering support to contractors. Other measures include existing and new investment projects, internal initiatives such as climate compensation for municipal departments, introduction of vegetarian days at schools, and "soft" measures, such as the inclusion of sustainable development education in school curriculum. Some measures are dependent on external actors, e.g. the development of a new rail connection is a national decision. Interviewees said that discussion of real projects with entrepreneurs provided a good forum for energy issues and the municipality is also working to develop bottom-up planning processes. Interviewees also emphasised the importance of having a shared vision and making the vision reality. Innovation and energy were considered key aspects of the municipality's brand.

In the two "small" municipalities, the process varied considerably. In municipality D, the planning process began with a broad consultation with local stakeholders. Focus groups discussed specific functions, such as schools or business, and made proposals which were collated by the project's Working Group. These proposals formed the basis for the general classification of measures into themes, and also specific measures themselves.

Three general problems were identified – the use of fossil fuels, wasting energy, and lack of knowledge – and five themes for action selected: – phasing out the use of fossil fuels in heating and warm water supply; increasing the share of renewable energy; more efficient use of energy; energy efficient transport; increased knowledge; and climate-smart consumption. For each theme, different targets are proposed, and each target consists of two elaborations, one target for the municipality as a geographic zone, the other a target for the municipal organisation. These themes and targets partly correspond to goals stated in the environmental management system and follow the same working method. The Action Plan states who is responsible for each action and the Working Group, and in particular the Coordinator, encourages the departments and companies to implement their tasks.

Interviewees responded that the working method was successful, with high levels of engagement and inclusion. The municipality has previously used this method in other sustainability work, such as environmental management systems. The method identifies problems around which measures can be formed. Interviewees emphasised the importance of making a specific person responsible for leading the work and ensuring that resources for development, implementation and monitoring are guaranteed. The municipality has not reported the results of this process to participants directly, although all outcomes are available on the municipal website.

Significantly, the method generated ideas that the interviewees said Municipality D would not have proposed in an internal process and that several of these 'bottom-up' proposals were subsequently implemented. For example, a public transport terminal was constructed alongside the railway station to improve access to buses (which previously had a separate facility in the town centre, meaning users had to walk around 1km between the two). Another implemented proposal was the installation

of a wind turbine for use by the municipal housing company. This municipality emphasised the need for a relevant and comprehensible strategy.

In contrast, Municipality E emphasised the need for a realistic strategy and measures were selected with reference to national, regional and local targets. Seven measures fall into three categories – Information to society; Energy efficiency in own operations; Actions to reduce energy use in transport. Each measure is described, including how and when it should be implemented and by whom. The actor with responsibility for monitoring is also named, as well as perceived risks. Most measures will be coordinated by the Climate and Energy Coordinator from the Department of Social Development and implemented by respective departments/companies. Few targets are quantitative and there does not appear to be a hierarchy or sequence of measures, although there are quantitative targets for transport (the largest source of emissions in the municipality).

Municipality E's Strategy states the need for increased engagement from politicians and dedicated resources to enable implementation. Interviewees indicate that the Strategy is considered a starting point to discuss measures in more detail, but that choice of measures and implementation may depend on the personal preferences of individual politicians. The Strategy suggests the municipality could make better use of procurement and inspection powers to improve environmental compliance and performance among companies. The Climate and Energy Strategy is also linked to a Strategy for Energy Efficiency, with joint implementation during the period 2011-2015. The preparation of the Strategy for Energy Efficiency is measure four of the Climate and Energy Strategy. The division of tasks between these strategies is not always clear.

Municipality E's Strategy emphasises the size of the municipality. The municipality has a small population and little direct control over sources of emissions within its municipal boundary, although the Strategy notes that the municipality is a relatively large emitter in the local area. The interviewees also emphasised the limitations and challenges facing small municipalities and stated that this led to the focus on awareness-raising measures in the Strategy. Politicians remarked that one major advantage of a small municipality is proximity to citizens.

Interviewees say that Municipality E performs well in relation to existing targets and in comparison with other benchmarks for emissions and energy use. Both the document and interviewees remark that, although this is not a reason for inaction, it is hard for the municipality to make significant further reductions in the absence of transformations in the regional and national contexts. For example, one major source of emissions - vehicles travelling on the E22 highway - is mentioned in the Strategy but excluded from the scope of the measures, as highways are the responsibility of national authorities.

Likewise, public transport is planned on the regional level and therefore not a measure. Explicit references to the highway, the need to reduce use of cars and increase use of other forms of mobility are found in the municipal Development Plan (Chapter 7 Communications and Transport). The municipality will also (subject to legal approval) include guidelines on the localisation of wind turbines in the municipality an annex to its Development Plan, for which the Strategy contains no direct measures.

How do the municipalities plan to monitor and evaluate implementation?

Of the five municipalities, municipality D has completed two annual progress reports and was therefore in a position to explain how their monitoring and evaluation process functions. Municipality D plans annual reviews with revision of the Strategy at least once every four years. Monitoring takes place on an on-going basis. During the first year of implementation, 2009-10, the municipality's Working Group met three times and discussed the planned actions and any deviations. This provided input to the first progress report in April 2010, which provides a thorough description of each measure, the responsible actor, a comment on status and a (subjective) assessment of progress. The interviewees remarked that they received a surprising volume of new proposals from local politicians at this stage (more comments than during the planning process).

For some measures - mainly communications and planning - notable progress was made, including planned investments in wind and solar installations and a new terminus for public transport. Among other measures, environmental inspectors have increased the fee for inspections of industrial facilities using oil heaters. When environmental inspections take place (of different business sector each year), the Energy Advisor attends and makes an energy analysis of the operation. Resources from regional projects are then offered to increase energy efficiency. In this way, the municipality acts as a "messenger" and raises awareness about the benefits of energy efficiency. In one industrial area, this has led to cooperation on energy issues between businesses using the facility.

In addition, a significant change to the scope was made. In the original document, targets cover the period 2009-2012. However, in the first progress report, it was noted that some targets must be revised to meet the new requirements of the Swedish Energy Agency's energy efficiency programme (2010-2014). Thus targets for the period 2009-2012 became targets for 2009-2014. Targets for 2020 remained unchanged.

The other four municipalities have a similar approach to monitoring and evaluation. All four municipalities plan a mix of annual progress reports with updates linked to the Action Plan's life cycle. In this work, the Strategy forms a baseline. The municipalities all emphasise the need continually reassess and update targets as part of the process.

The reporting processes for monitoring and evaluation vary between municipalities. For example, in municipality E, implementation will be monitored by the Working Group established to develop the Strategy, with representatives from municipal departments and companies (although these representatives should secure financing in their own organisation for implementation). Each department/company will submit data and results in a form to the Strategy Coordinator, who will submit half-yearly reports to the Municipal Executive Committee, updating them on progress and developments. A public annual report will be published, indicating whether existing targets should be amended or new targets set. The contents, evaluation and proposed new targets will be discussed in the Working Group and the Building & Environment Committee.

In addition - and subsequent to the approval of the Strategy - several key indicators for Municipality E's organisation and geographic area have been developed, to describe how the municipality should orient itself with regard to the targets. It was intended that monitoring would be linked to economic

reporting, although it is unclear whether this will be the case or not. The municipality has no other procedure for systematic management and reporting.

The Coordinator of the Strategy planning process plays a central role in monitoring implementation in two other municipalities (A and C). In municipality C, tasks include gathering information, updating the Action Plan and distributing information to stakeholders to keep them informed on the plan and its progress. A full evaluation will be carried out in 2014.

Group interviewees in Municipality C considered it helpful that the Coordinator involved in preparing the Action Plan is also working on implementation and monitoring, not least because the Coordinator established contacts with key stakeholders during the preparatory phase and has not needed to repeat this process to initiate actions. Contacts, continuity and trust are thus considered important success factors. The Coordinator collects data on an ongoing basis for an annual follow-up of the Action Plan and (for the municipal organisation) scenarios developed by an external consultant. At present, the municipality is able to monitor use of electricity, as the local energy company publishes this data on its website. However, the municipality is procuring a new economic management system which aims to facilitate improved feedback. Energy is included as a key indicator in the economic reporting.

Group interviewees in Municipality C remarked that the inclusive process and continuous monitoring enables the municipality and other stakeholders to avoid complacency by reassessing their approach and targets. In this way, the process evolves and is not simply planned and implemented. Likewise, there is awareness that different stakeholders have different experiences or levels of engagement and that this affects the process. Interviewees also pointed out that the action plan is not a parallel document, but is integrated into operational plans and budgets with targets and indicators, enabling evaluation as part of half-year and annual reporting. Results are assessed within the municipality's ordinary steering and management system routines.

In municipality A, the Coordinator is responsible for monitoring, although the Economist advising the project is likely to become more involved in order to monitor investments. The municipality will make use of its existing environmental management systems and internal monitoring system, to which all departments must deliver financial and other significant information. This will automate the data collection process whilst making use of existing routines and enabling potential synergies between different sectors. However, the group interviewees were uncertain as to exactly how they will proceed and as to how they will avoid issues such as double-counting of benefits across departmental budgets, nor how to resolve differences between reporting procedures and access levels within the municipal IT systems.

One interviewee stated that the strategy and plan provide clarity and a point of reference for all kinds of processes in Municipality A. Several interviewees felt that the Strategy had been well-communicated within the municipal organisations, although one interviewee vehemently contested this view. One interviewee (politician) remarked that some parts of the organisation are using the strategy and plan as a basis for key decisions and that energy issues are regularly discussed in political debates.

In municipality B, a consultant has been hired to work with the municipality's annual environmental accounts and a new staff member will develop a model for monitoring implementation of the Strategy. The annual progress reports will be included in the municipal annual reports from 2012 and presented to the municipal Council. Results will also be published in the municipal sustainability report every other year, and energy statistics will be reported to the Swedish Energy Agency. A larger evaluation will take place after three years, enabling revision of the original Strategy and the development of a new Action Plan. At this point, the data will be compared with Statistics Sweden's energy balances.

Reflections on participation in the Sustainable Municipality programme

Three of the municipalities – the larger three – will participate in the third phase of the Sustainable Municipality programme. Neither of the smaller municipalities felt that the programme was designed for them. In both cases, the interviewees emphasised the relevance and importance of ongoing regional initiatives and felt that some of the services provided in the Sustainable Municipality programme lacked focus or relevance for small municipalities.

For example, one interviewee felt training in advanced methods and statistics for climate auditing was inappropriate for a municipality where climate issues are not considered a high priority and civil servants have multiple tasks and limited resources. Several interviewees remarked that small municipalities need a different kind of support, possibly through provision of specialist services on a regional level. In contrast, tasks such as interpreting statistics and preparing publications or campaigns are more suited to officials in small municipalities.

At the same time, interviewees felt that participation in the Sustainable Municipality programme helped to raise the profile of climate and energy issues in their municipalities and also provided the municipality with access to additional resources, in the form of regional and national contacts and examples. Nonetheless, the interviewees felt that these opportunities could have been tailored to better suit the needs of participants; for example, one interviewee remarked that the role of the Cluster Coordinator could have been more clearly defined.

Interviewees from municipality B remarked that their participation in the Sustainable Municipality programme led to high levels of political engagement and their Cluster worked effectively. Interviewees from municipality A stated that competition with neighbouring municipalities, both within and outside of the programme, has been a key driver for their work. An interviewee in municipality C emphasised that municipal knowledge and awareness had increased over a long period and that programmes such as the Sustainable Municipality or conferences such as "Energitinget" have supported this long-term development.

Interviewees from municipality B commented on the availability of statistics and in particular confidential data from Statistics Sweden. This comment implies that the Swedish Energy Agency should consider working to address the issue of statistics, so that larger municipalities are supplied with more relevant data and smaller municipalities are provided with human resources and support to collect and interpret data.

5. Comparative analysis

This analysis is an extract from the extended analysis in the conference submission to the Greening of Industry Conference in Linköping in October 2012 and a presentation made to the 3rd International Urban Researchers' Symposium at the ICLEI World Congress 2012 in Belo Horizonte, Brazil, during June 2012. For more information see Fenton et al (2012).

The five case studies provide an illustration of how different types of municipality organise strategic planning processes, with focus on energy and climate strategies. Comparison of the case studies show that significant variations exist between the municipalities, variations that are not limited to contextual factors such as a municipality's geographic size, population, number of employees or organisational structure. Whilst contextual factors are undoubtedly influential, it is possible that some non-contextual variations may exert a stronger influence on processes.

For example, municipalities make decisions that influence the organisational form and scope of the process, such as the choice of methods and participants, the levels of interaction and exchange, focus on internal or external actions, etc. These decisions may have profound implications for the strategic planning process in question. Evidence from the five case studies suggests that there is no typology that explains which municipalities will utilise different approaches in strategic planning. For example, municipalities A and B are categorised as large municipalities, but the form and scope of their processes vary considerably; the same is true of municipalities D and E, even though both are categorised as small municipalities. Each municipality needs to be studied individually and then in comparison, validating the choice of methods in this paper.

The same is true if we look at the municipalities from a process perspective. Of the five municipalities, municipalities B and E are considered to have used more rational models than the others, as the processes in these municipalities were more top-down, less inclusive, had a stronger emphasis on formal roles and the municipal organisation, and were conducted in a more linear fashion, with a defined sequence of steps and clear division between the roles of politicians and planners (see figure 12 for a comparison of rational and communicative models). Yet Municipality B is a large municipality, whereas municipality E is small.

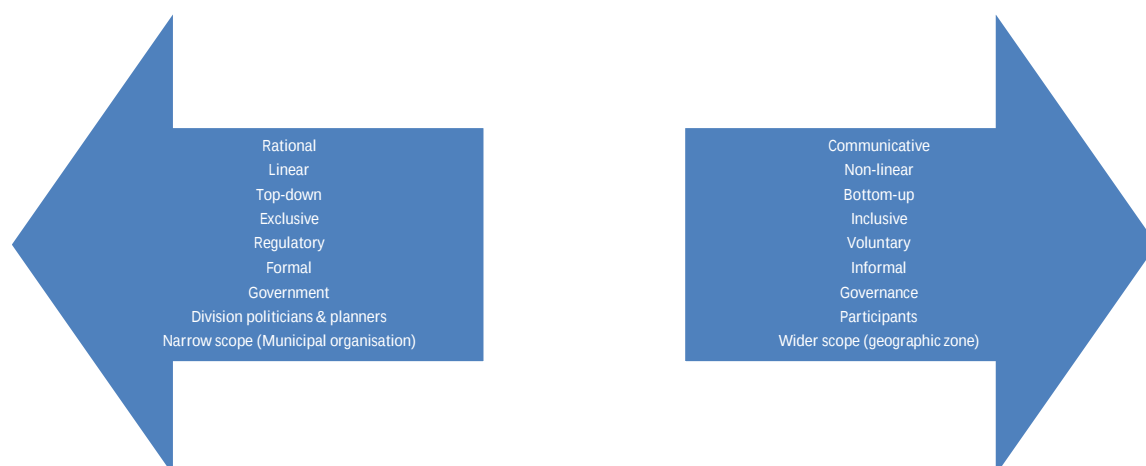


Figure 12. The rational and communicative models suggest different types of processes will emerge.

A similar pattern is observed between the two municipalities using more communicative models, namely medium-sized Municipality C and small municipality D. In both of these cases, the planning processes appear to be more inclusive and bottom-up, with citizens playing an active, early role in the processes. In Municipality C, the role of politicians and planners appears to have been less hierarchical than in the other municipalities studied. Municipality A appears to have chosen a path between the other municipalities, with a fairly well-defined process with greater inclusion for external stakeholders than in municipalities B and E yet a narrower, more restrictive approach than municipalities C and D.

It is possible that these variations reflect different ideological influences or other factors. For example, the municipalities have differing concepts and interpretations of their influence. This is partly reflected in the differing scopes of the strategies (this may in turn influence the interpretations). The scope of processes and strategies is narrower when a rational model is used and wider when a communicative model is used.

It is also clear that, by expanding the scope of processes, activities become increasingly social and less individualistic (in terms of a single person or a single organisation being perceived as implementing a “project” or “owning” a process). Interestingly, this trend was observed in the municipalities studied in this paper, with evidence suggesting a greater feeling of co-creation and co-ownership for energy and climate strategies in the more communicative municipalities. All five municipalities experienced personnel changes during their planning processes and an important lesson is to plan for the inevitable and assume the “unexpected” occurs - people are often absent from work or change jobs.

Inevitably, personnel changes impact upon processes, particularly if there is a lack of communication or inadequate routines. In rational models, risks are minimised through definition of tasks and reduction of scope, but individualisation increases the risk of interruption should a person suddenly be absent. Conversely, communicative models are by nature flexible and knowledge is diffused across networks; it is challenging for all participants to understand the roles and expectations of others.

Another interesting observation was that municipalities with experience of working with Environmental Management Systems in municipal operations were more communicative in their approach and placed greater emphasis on the importance of monitoring and evaluation in their strategies. This implies that use of tools and standards may have a subtle influence on how municipalities perceive both the scope of environmental problems and their own influence and role.

A good example of this was observed in Municipality D, the only of the five municipalities to have begun monitoring and evaluation. Interviewees in Municipality D remarked that a number of the measures that were first to be implemented had in fact originally been proposed by citizens during an initial consultation period that took place before the municipality discussed its own ideas and proposals. Moreover, these were measures that the municipality would not have proposed or implemented without the consultation. Thus, the communicative approach not only led to implementation generating direct, visible impacts for citizens, it also provided genuine additionality to the process.

Of course, it is unclear to what extent the past use of EMS and the use of communicative models in the five municipalities are linked. Likewise, the extent to which municipalities are prepared – or allowed – to involve stakeholders in processes may vary; traditions, routines and past experiences inevitably exert some influence on processes, not least as they form the basis for internal guidelines and procedures. In Municipality B, such guidelines mean that politicians and planners do not interact and that the municipality's strategy contains no detailed targets as these must be contained in an action plan. Municipality B also saw a multi-stakeholder Reference Group, established during strategy planning, disbanded during the action planning – it was unclear whether this was a consequence of changing politics, changing personnel, changing priorities or other factors. However, Municipality B was the only municipality which successively excluded stakeholders as the process went forward.

In practice, the seemingly rational model used by Municipality B left individual civil servants and entities isolated from one another. The allocation of functions within the organisation, together with the routines employed by the municipality, did not enhance understanding of the process within the municipality's own organisation. This may explain the decision to focus internally and limit the involvement of other participants. However, this also greatly limits the likelihood that the municipality will achieve its own targets. Municipal departments and entities select their own detailed targets for implementation, increasing the risks of deviation and lack of coordination.

In Municipality E, a lack of time and budget was cited as a major impediment to the planning process. Indeed, gaining access to resources was one reason for the municipality's involvement in the Sustainable Municipality programme; another was that the municipality was invited to join a regional project and felt obliged. As such, its participation was not planned in great detail, meaning responsibilities were allocated for a project (to develop the energy strategy) but no budget was allocated to departments to participate in the project or implement measures. Thus, the municipality benefitted from access to some resources on the regional level, but did not have sufficient human or financial resources to have a wide scope during its planning process.

In this context, it is perhaps understandable that Municipality E opted for a rational model. However, Municipality D, another small municipality, also initiated its process to develop an energy and climate strategy in the context of a regional initiative and with similar constraints, yet Municipality D chose a communicative model. Both municipalities rely on specific individuals, often non-specialists, to fulfil multiple, complex roles, and often issues are not documented as informal networks are used to share information. As mentioned before, Municipality D has previous experience of working with EMS and it may be that this, together with other factors, goes some way toward explaining the disparity.

Use of external financing may add value to on-going work and provide a stimulus in municipalities where resources are scarce. Participation in projects or programmes may also provide a focal point for stakeholders or impact upon political will, a point noted by several interviewees in this study. However, there is a risk that use of external financing - and particularly project financing stipulating terms of employment on a project basis - may create or increase uncertainty and reduce or inhibit the effectiveness of long-term planning. This point was noted by several of the participants in this study and is significant, partly because the Sustainable Municipality programme is time-bound, but also because the municipalities received other types of funding (e.g. EU project financing, regional

financing, national energy efficiency support) which they used in synergy. This either meant that individuals held multiple roles or that it was unclear to what extent municipalities were actually funding their own strategic planning processes. Perversely, this runs the risk of reducing the legitimacy of energy and climate planning, as municipalities may choose to link this strategic work to project financing, instead of integrating it into core processes.

6. Concluding discussion

Contextual (e.g. municipality's size, population, etc) and non-contextual factors (e.g. choice of methods, participants, focus internal/external, etc) influence the choice of approach taken when developing energy and climate strategies; these factors also influence the scope and content of strategies and the opportunities for and levels of engagement of stakeholders.

Municipalities adopting more interactive, communicative approaches suggested that inclusive processes add value in terms of engagement, legitimacy, partnership, synergies, etc. More streamlined processes may deliver outputs with a narrow scope, may appear less legitimate or fail to take advantage of potentials such as burden-sharing.

There is a weak correlation between the size of a municipality and its choice of organisational form for the strategic planning process. However, size may impact upon the choice of measures, their scope and implementation period in a strategy. Resources alone do not explain the choice of organisational form. Other factors, such as level of political will, administrative routines, or individual choices may also influence the organisation of the process.

The following points were identified and considered worthy of exploration in further analysis.

- Cross-party political commitment and a shared vision is more important than political stability to address strategic challenges related to climate and energy;
- Stable municipal structures and continuity throughout the planning process (from inception to implementation, monitoring and evaluation) are considered strengths ;
- The municipal organisation can be an enabler or barrier to change. Politicians must be explicit about the importance of the issues, and ensure both planning and implementation processes receive necessary resources and mandate;
- Having an abundance of strategies and planning documents may cause a lack of cohesion and confusion; it may be preferable that climate and energy strategies be contained within and contribute to a single shared vision for the municipality;
- It is vital to involve, engage and inform stakeholders throughout the planning process;
- Involving citizens at an early stage of planning and throughout the process improves the quality and content of strategies; moreover, it offers the potential to address immediate short-term needs and generate positive short-term momentum for the medium-long term implementation processes;
- Use of external project-based financing to fund planning processes may create uncertainty and inhibit long-term planning; however, such financing can add value to on-going work and provide a stimulus in municipalities where political will is lacking or resources are scarce;
- Larger municipalities have greater scope to act as they have more human and financial resources; small municipalities may depend on specific individuals, often non-specialists, to fulfil multiple, complex roles;
- Risks and contingency planning are often understated; it is far from certain that the measures proposed are possible to implement in full, on time and on budget.
- It is not always clear why baseline and target years have been selected; related to this point, it is not always clear that proposed measures and targets are meaningful in the sense of reflecting scientific evidence, global needs or the availability of resources.

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Annex

Table 6. Information on composition of interviews.

	Group interview			Individual interviews		
Municipality	# participants	Participants' roles	Reason	# participants	Participants' roles	Reason
A	4 interviewees and 3 researchers	Coordinator; municipal executive office representative; 2 municipal company representatives (property, waste)	Invited by Coordinator; all members of Working Group	3 interviews of which 1 in person with 2 researchers present, 2 by telephone (1 researcher)	Municipal company manager; Municipal politician; Coordinator	Unable to attend group interview; other role/perspective
B	4 interviewees and 3 researchers	Coordinator; municipal Energy Advisor; municipal IT department; municipal property company	Invited by Coordinator; all members of Working Group	2 interviews, 1 in person, 1 by telephone (1 researcher)	Municipal water company; Municipal politician	Unable to attend group interview; other role/perspective
C	8 interviewees and 2 researchers	Coordinator; 2 municipal politicians (Steering Group Chair and member); 2 representatives from municipal companies (energy, water), 3 civil servants (transport, buildings, consumption)	Invited by Coordinator; members of Steering Group/Working Group/leaders thematic working groups			None necessary
D	5 interviewees and 2 researchers	Coordinator; 4 representatives from municipality with different roles (including environment, construction, maintenance, schools)	Invited by Coordinator due to role in Working Group/municipality	3 telephone interviews by 1 researcher	Municipal politician; municipal energy company; Coordinator	Unable to attend group interview; other role/perspective
E	3 interviewees and 2 researchers	Coordinator; 2 civil servants	Invited by Coordinator; members of Working Group	2 telephone interviews by 1 researcher	Municipal politician; municipal property company	Unable to attend group interview; other role/perspective
Total (32 individuals interviewed)	24 interviewees	Mainly Coordinator and civil servants	Majority actively involved in Working Groups	10 interviews of which 8 individuals did not attend group interviews; 8 by telephone; 2 in person	Mainly politicians and representatives from municipal companies	Unable to attend group interview; other role/perspective
Average (6.4 individuals per municipality)	4.8 interviewees per group interview; 2.4 researchers			2 interviews per municipality		