

Local Opportunities in Energy Guidance to Improve Energy Efficiency in Households

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This paper discusses local opportunities for improving energy efficiency that arise in households' everyday practices and in relation to energy guidance. I discuss municipal energy consultants and information targeted households in relation to "local opportunities". That is, situations where householders have a wide influence on the energy consumption: how to make investments, routines and behaviour more energy efficient and at the same time where energy consultants has the possibility to reach households and discuss how to make their routines and behaviour more energy efficient. The central question is: what are the local opportunities for energy consultants to reach households and contribute to increased energy efficiency in households? In the analysis I use the results from interviews with municipal energy consultants and householders done in five case studies. The analysis shows that the households are aware of behavioural issues and how to behave in an energy-efficient way. Information campaigns about switching off the lights, washing with a full machine, etc., have reached the households. They could repeat such advice, though that did not indicate that they had implemented it. While homeowners looked for specific information, the tenants and tenant/owners did not ask for any information at all. Disseminating information on energy efficiency to tenants and tenant/owners is one opportunity for the consultants to increase these groups awareness of their local opportunities for energy efficiency. General energy efficiency advice was often so general that households had difficulties relating to it. Conducting individual inspections and keeping individual statistics regarding family energy use was often mentioned as an attractive measure. It was when information was combined, for example, with the installation of a meter that measured the reduction in energy use, that households realized the practical implications of, for example, advice to turn off the lights systematically. The combination of advice and direct feedback from a meter exemplifies how an often missed local opportunity can be turned into a seized opportunity.

Introduction

The EU directive (2006/32) on more efficient energy use and services states that by 2016 member states should reduce energy use by 9% compared with their average over the five years before 2006. The reduction, to be achieved by improved energy efficiency (SOU, 2008:25, 399), concerns all end-users and energy efficiency measures must be implemented in all sectors. This paper focuses on households as end-users and on one means to achieving the end of better efficiency, namely, information provision, specifically municipal energy counselling in Sweden.

In public policy household energy use has long been treated as a “black box,” something one might, should, or could not intentionally attempt to influence. Energy use has usually been regarded as something to be regulated only by individual consumers. Notwithstanding this, a possible means of control is general information provision, as formulated in phrases such as: “Turn off the light when leaving a room,” and “Do not waste water.” The state then tries to influence its citizens, using logical argument to persuade them to do the “right” things. Policy aiming to promote energy efficiency in the household sector must relate to and rely on individuals and on their daily choices, household routines, and everyday lives. The values and knowledge of individuals are important for the development of an efficient and ecologically sustainable energy system. People’s understanding of their own responsibilities and willingness to shoulder them are seen as key factors in creating a sustainable society.

But how effective is it to disseminate the same general information to all households and how do the households relate to this kind of information? This will be discussed here in relation to municipal energy guidance directed towards households.

The Swedish energy guidance model is considered unique for Sweden, where the energy consultants are employed by the municipalities but financed by state subsidies. The purpose of this municipal energy guidance is to disseminate objective knowledge of environmentally friendly energy sources, energy distribution, and energy use. Both the Swedish Energy Agency (SEA) and the commission of an energy efficient Sweden believe municipal energy guidance is especially important when it comes to reaching single-family houses (SEA, 2007; SOU, 2008:25). The municipal energy consultants are important as a communication link between public policy goals and the citizens.

An important restriction on the municipal energy guidance programme, though, is that the consultants can only provide general information and cannot conduct individual house inspections (Swedish Government Decree, 1997:1322). This prohibition is in place so that municipal energy consultants do not compete with private consultants on the market. According to the commission of energy efficient Sweden, which investigated important public measures to help Sweden achieve a 9% reduction in energy use by 2016, information and education are basic and necessary, but not sufficient preconditions for achieving more efficient energy use. According to the Commission, information provision can influence knowledge, attitudes, and behaviour (SOU, 2008:25:89).

In this paper, I will discuss municipal energy consultants and information targeted households in relation to “local opportunities”. That is, situations where householders have a wide influence on the energy consumption: how to make investments, routines and behaviour more energy efficient and at the same time where energy consultants has the possibility to reach households and discuss how to make their routines and behaviour more energy efficient.

Aim

In this paper, I will discuss local opportunities for improving energy efficiency that arise in households’ everyday practices and in relation to energy guidance. What are the local opportunities for energy consultants to reach households and contribute to increased energy

efficiency in households? When and how do these opportunities arise? That will be discussed below.

Outline of the paper

The paper starts by discussing the concept of local opportunities and how it can be related to households' energy use and municipal energy guidance. I give a short description of the municipal energy guidance in Sweden. Then, I describe the field studies on which this paper is based. The results of interviews with municipal energy consultants and householders are then presented. The paper ends with conclusions concerning local opportunities identified and possible consequences for the efficiency potential of households in the future.

Finding and making use of local opportunities

Strong pro-environment attitudes and values (i.e., environmental consciousness) are common among Swedish citizens, and people generally claim to be willing to undertake activities promoting environmental sustainability. However, the challenge is to translate these attitudes and claims into everyday routines and make them part of everyday practices (SCB 2006). There are on the other hand examples of people actually changing their behavior, and one profound one in Sweden concerns waste sorting. According to a 2008 study for the Swedish Environmental Protection Agency, 57% of Swedish citizens had increased their waste sorting activities over the previous two years (Söderberg 2008). Clearly, this is one area where translating norms into behavioral change has been relatively successful. In the case of waste sorting, public policy and personal behavioural norms has merged and new habits have been developed.

In the public policy literature, the “window of opportunity” concept has been used in discussing why certain policies can change direction and for example develop new routines. Kingdon's (1984) window of opportunities is a rather structural approach, where the model explains decision making in public policy processes and how and why policy can be changed. Kingdon arguing that the agenda consists of three streams: the problem, policy, and political streams. The critical situation is when these three streams merge and a problem is recognized and a solution is found that can be accepted by the political community and where resources is possible to uphold—a window of opportunity for policy change has been opened.

Later on, Svane (2008) used similar terms, stating that it is important to identify a Situation of Opportunity, that is, *what* to do, but also discussing *when* to do it. This includes the importance of taking account of the cost of *missing* an opportunity. An opportunity situation can be a chance lost or a chance taken. Opportunity situations are periods when actors have a wide influence on the outcome of a process. According to Svane (2008), the concept of opportunity differs from that of policy window in that the latter is used in analyzing historical policy-making processes, while the situation concept is used in the early identification of opportunities in a process, as well as in retrospective analysis.

Inspired of these perspectives I will discuss what the local opportunities for increased energy efficiency in households and in relation to energy guidance are in relation to five case studies conducted in Sweden. In this context local opportunities is situations where householders have a wide influence on the energy consumption: how to make investments, routines and behaviour more energy efficient and at the same time where energy consultants has the possibility to reach households and discuss how to make their routines and behaviour more energy efficient.

Before I describe the five case studies this paper emanates from, I will give a short historical description of municipal energy guidance in Sweden.

Energy guidance targeting households in Sweden: an overview

Swedish municipalities first began receiving state funding to provide energy inspection and consultancy services to households in the 1978–1986 period. The activities generally involved outwardly directed energy advice, which was often imparted through a guidance office or at special informational meetings. (Palm, 2004, 2006).

State support for municipal energy guidance was withdrawn from 1986 to 1998, but reinstated on 1 January 1998 (SEA, 1999). It was intended to provide impartial and locally adapted information and guidance on energy issues; this guidance concerns areas such as energy, technology, and consumer advice but cannot include inspections. The Swedish Energy Agency supports municipal energy guidance activities by providing both information and funding. The official purpose of this municipal energy guidance is to disseminate knowledge of environmentally friendly energy sources, energy distribution, and energy use (Palm, 2009).

Every year the municipal energy consultants report their activities over the course of the year to the Swedish Energy Agency. This report is related to the state financing of the municipal energy guidance: municipalities only receive state subsidies if they complete and submit this report, which results in 100% submission frequency. According to these the municipal reports all municipalities provided some sort of energy guidance in 2007, and 5% of the Swedish population or 500,000 people had contact with a municipal energy consultant (SEA, 2008). Information provision over the telephone is the most common activity and the most common issues advised on concern energy subsidies, pellets, heat pumps, and general energy advice. The implemented measures are not evaluated, however. Informational activities are also generally considered hard to evaluate, because of validation problems in isolating and specifying the effect of a single information campaign (Bemelmans-Vidéc, Rist, & Vedung, 1998).

Methodology – five case studies

In the analysis I will use the results from interviews done in five case studies. One of the case studies was an energy use reduction project arranged by municipal energy consultants where homeowners have been part. This was a time-limited project where the energy consultants were allowed to visit the homeowners and conduct individual inspections. In this study, we conducted in-depth semi-structured interviews with the two energy consultants and six of the 10 households included in the project. Four households declined to take part in our research. We asked about the information given by the consultants, what information was included and excluded and what opportunities they saw to influence household to increase energy efficiency at home. In another ongoing research project, we interviewed householders who had invested or are interested in investing in wind turbines and/or solar panels and/or solar heating. Then, another 17 homeowners and three tenants were interviewed about how they perceived the general information they received from the energy consultant and what issues they thought were too private to discuss.

We also interviewed 14 energy consultants in the counties of Östergötland and Dalarna using the above questions. The turnover of energy consultants is quite high, so not all municipalities had energy consultants in place in autumn 2008 when the interviews were conducted. It is also quite common for municipalities to cooperate and share energy consultants. In Dalarna, 12 of the county's 15 municipalities are represented and in Östergötland, 10 of the county's 13 municipalities are represented.

A third case study concerned households that had built new houses. The fourth case study included tenants living in apartments. The last case study involved households that had bought their apartments and were members of housing cooperatives.

In all case studies, we partly used the same interview guide, which asked about: awareness of energy use, ability to decide on energy-related factors, energy-efficiency measures and their implementation, and information and opinions on energy policy. Altogether, we interviewed 23 homeowners, 8 tenants, 15 tenant/owners (i.e., housing cooperative members), and 17 homeowners who recently built their houses. The interviews were recorded using an MP3 recorder/player and then transcribed.

In discussing the results of these case studies, I will consider the householders' views on energy efficiency according to whether they rent or own their homes. I will use four categories: tenants, tenant/owners (i.e., housing cooperative members), buying homeowners (who had bought an already built house), and building homeowners (who had built their own house sometime over the previous three years).

The interviewed householders are made anonymous in this paper and will be referred to as: tenants (T1-8); tenant/owners (TO1-15); home-owners (HOBuy1-23) and; homeowners who recently built their houses (HOBuid1-17). Where two members of a single household were interviewed, this is indicated by appending 'a' or 'b' to the number. I will refer to the energy consultants as energy consultants A–N. This lets the reader see, for example, how often a single interviewee is quoted or referred to.

Local opportunities for energy efficiency in households – results from the case studies

Using an inductive method, I will discuss the results of the in-depth interviews and the local opportunities for energy efficiency that appeared during our discussions.

In this section, I present the results of the interviews with municipal energy consultants and households. First, I discuss the energy consultants' view of the guidance and their possibilities to influence the households' energy related activities in everyday life.

Experiences of energy consulting

The consultants emphasized that their main task was to disseminate information. The main topic for discussion with the citizens was technology, and the households wanted to know about various technologies available on the market and what products were comparatively better. The consultants are also supposed to be neutral, so they can inform about different technology available on the market, but not recommend a certain technology such as district heating.

The most common way to contact an energy consultant is by phone or e-mail. A problem the consultants mentioned was that citizens often phoned them with a specific question in mind: often they wanted to know whether there were any subsidies for a particular investment, or what product was the best to choose in a given situation. The consultants realized that this contact was an important opportunity for them to reach the households with information on energy efficiency, but at the same time they often felt that the household would be better off if they had more of a systemic perspective and perhaps started with another issue. The most common question in Sweden in the autumn and winter concerns the heating system, due to the cold climate. For a while, there has been a trend to invest in heat pumps, so the homeowners call the energy consultants to get more information about various related products available on the market. The consultants, however, thought that the homeowners were starting with the *last* question, and that they should start by investigating their building envelope before comparing various heating products on the market. If they saw this as an local opportunity to energy efficiency and started by changing windows and insulating the walls or attic, then they could invest in a smaller heat pump, which would make them save more money and the environment in the long run. This was the tricky part for the consultants. The citizens just wanted comparative information on the products on the market

and did not want to discuss consequences or alternatives. The consultants felt they had to answer the specific question asked them, and found it hard to direct the discussion towards energy-efficiency measures and reduced energy use. So, this often become a missed opportunity for the consultants

One consultant said that ‘people hear what people want to hear’, meaning that often people called him for confirmation that a planned investment was good:

When we perhaps mention some critical or negative aspects of the investment, then they can be a little disappointed and think that we just mess things up. (energy consultant J)

A common view was also that behaviour issues were hard to initiate and discuss with the householders. The energy consultants could inform and appeal to the households but not really interfere with their decisions. This energy consultant developed his ideas when he said that he could only appeal to people:

And this with showering and bathing. You should know that it costs six, seven kilowatt hours to take a bath and it costs two, three kilowatt hours to shower. If you know that, then it is ok whatever you do. /.../ It is not that you are not allowed to use energy, but it is the awareness that energy costs money. That is what I want to achieve; that is the message. (energy consultant N)

In general the energy consultants meant that if the households had knowledge and could do an informed choice, then their mission was completed. There exist in this way trusts in that knowledge and awareness on energy efficiency were coupled to behaviour, and that increased awareness will in the long run change attitudes and benefit energy efficiency.

At the same time the consultants had several examples on the problem that people not always act according to their attitudes, so even if the households are aware of the climate change issue and how they should act, it can be hard to put this into practice. One common example was when energy efficient advice was connected to reduced consumption:

Anything where people regard their quality of life as decreasing is hard to deal with. Even though the things are not really necessary...it is still hard to change. (energy consultant J)

There are several behaviour-related trends that point in the wrong direction in relation to the energy use reduction goal of society and about which the consultants felt they had no influence. One such trend was that of garden and patio heaters that make it possible to sit outside or on the balcony even when it is just a few degrees outside. Most people are not prepared to sacrifice these items just to reduce their energy consumption. One tactic used by the consultants in this situation was to make people at least choose an ‘energy smart alternative’ (energy consultants G and H).

In the time-limited project ‘the Energy Hunt’, run in 2005–2006 by energy consultants in Linköping the energy consultants had the opportunity to use more individual tailored information and was also able to do house inspections. Ten detached-house owners were involved. The goal of the project was to foster ‘sustainable energy use’. The included families received energy counselling over the course of one year on how to reduce both household energy costs and environmental impact. Every family received an energy inspection in their home, during which the consultants followed a set routine. In every house, they inspected the

insulation, windows, ventilation, and how the building envelope in general was constructed. In terms of energy use, they examined the household electricity use of appliances and noted the ages of the fridge, freezer, dishwasher, washing machine, and electric stove. Every family also received advice on energy-efficiency measures, such as insulating the attic, sealing windows and doors, buying a new water heater, and converting to a system with water as heat carrier. At the first meeting, the homeowners also received a bag of useful products, such as a low-energy lamp, electricity meter, sealing strips, an indoor thermometer, and brochures. The energy hunt project was successful in such way that the 10 householder in average reduced their energy consumption with around 10 percent. This was mainly due to behavioural changes, because most households had not done any major investments at the time for the evaluation, which was when the project had been running for one year. I will come back to this below when discussing the answers of the householders.

The householders' perspective on public information and energy efficiency measures

Regardless of whether the householders rented or owned their homes, most of them knew the general energy-efficiency advice, for example, “turn off the light,” “wash with a full machine,” and “turn off stand-by.” One householder said:

I have begun to think about the stuff we have at home, and, like, aha, this is an energy thief! (HOBuid1)

The expression “energy thief” is something that the energy consultants try to promote to increase the reflection on invisible electricity use in homes, and this is something that this householder has picked up.

Regarding receiving information about energy efficiency, interest in this matter varied however between the different household categories. Tenants and tenant/owners rarely asked for any information about energy efficiency and did not actively search for it either:

Nah, it is nothing. It is what you get through TV, but nothing except that. (TO10b)

The tenants and tenant/owners, for example, were less aware about their indoor temperature than did the homeowners. One tenant thought that the heat in the apartment could not be adjusted: “It is always warm and that [i.e., the temperature] is controlled centrally, even if you turn off the radiators. You must open the windows to get air and ventilation” (T1). Three tenants also meant that they could not directly influence either electricity or heat consumption in the home. The tenants generally also had less knowledge of how much electricity different appliances consumed, which probably is related to that they do not take part in the buying process of these capital goods.

Those who built new houses had better knowledge about appliances energy use, but felt they lacked information about related issues for example the benefits of alternative, environmentally friendly heating systems and about the up-front costs and cumulative savings of such systems. They also requested descriptions of the various heating systems, and asked how they could be combined with each other, how much money could be saved by reducing the heat one degree, and how they could visualize their energy consumption.

The buying homeowners also asked for more tailored information, but were generally more critical than were the other categories of households regarding the information available and the energy advice offered, for example, by municipal energy consultants. They often thought that the public energy advisers were ignorant and that they just gave “simple” energy-saving tips that could simply be looked up in a brochure at any time. The buying homeowners

wanted to have home visits and individual inspections in which consultants measured the family's energy use and gave feedback on how family habits could change in order to reduce energy consumption. They had specific questions for which they had sought and not found answers, for example: Should you turn off the water heater when leaving the house for longer periods? How much energy should a house built in 1964 use? They wanted more individually tailored, specific information related directly to their houses or living conditions.

Several householders emphasized at the same time the importance of nagging about the need to improve energy efficiency. A common sentiment was that households were happy to receive information, but that it should then be up to them to decide how to act; for example:

I gladly receive tips and advice, but then it is up to me what to do with it, what suits my home the best. I want to decide on my own. (HOBuy21)

Another way to reason was to state that authorities could make sure that people had the opportunity and information to make good choices if they wanted to, but that they did not need to tell them how to act: 'But they can facilitate those of us who want to contribute to the environment' (HOBuy26).

Not all households, however, were grateful for all information and tips. One was annoyed at the requests, for example, to shower for less time and not use the tumble drier: 'This makes me only angry, and this is something that I should decide on my own' (HOBuy22).

Wanted tailored information

Several of the householders meant that authorities needed to make information personal for people to react. One homeowner said for example that a better method would be to give every household an individual report on their energy use, i.e., how much was used by the tumble drier, heating, various appliances, etc. Then it should be up to every individual to decide what s/he wanted to give up. The individual report should only show the potential energy savings instead of requesting specific things to do (HOBuy22).

Surprisingly, several householders said they wanted more individual inspections where the consultants measured all energy-related activities and appliances in their homes and gave them feedback on what they could do to reduce their energy consumption. That these inspections would result in figures seemed to make such advice neutral and could explain why the householders did not feel that they should be supervised. One homeowner, who was rather critical of municipal energy consultants, said that they should make individual inspections because they needed to

... go to the individual consumer and look at individual needs in order to suggest suitable solutions: what can different individuals in different phases of life do to reduce their consumption, how are individuals living, what habits, priorities are they doing, and so on. (HOBuy19a)

This statement was related to the desire that authorities should inform citizens better about how to behave in various situations. Instead of 'interfering in people's lives', as one homeowner put it, government should give concrete advice on how to act in various situations. She cited an example of a question related to a hot water tank: should she turn it off or was it more energy efficient to keep it on when going away on vacation? (HOBuy33) Several households lacked such specific and useful information.

In the 'Energy Hunt' project, the energy consultants visited the participants' homes and gave practical tips on how to save energy. Even though these inspections were seen as a

positive element of the project, some of these households felt that the consultants could have been even more specific during the individual inspections and given even more practical tips.

The households were generally supportive of the Energy Hunt. Not that many of the suggested measures had however been implemented by the households. The most common reason for that was economic: the suggested measures were simply too expensive. Another common reason was related to design. It was important, for example, that a new more energy-efficient door should match the overall design of the house. If the homeowner could not find such an item, then the measure was postponed until they found one (HOBuy13). One family, for example, had handmade windows that they wanted to keep at any cost (HOBuy10). One householder could not 'sacrifice' an aesthetically attractive thing for one that was more energy efficient. Several of the suggested measures were rejected by the households because they could not find solutions for their house design.

A common problem was that the households had difficult to relate to general advice and that general advice was not implemented. Energy use was successfully reduced when specific information was combined with concrete measurement techniques and experimentation. This was done in the Energy hunt project:

We monitored the freezer in the basement for a month. We defrosted it and tracked how much we could save by defrosting it more often. We got a meter that we put in the electrical outlet... I was surprised at how much energy we could save. (HOBuy13)

Although awareness of energy and environmental issues was high, it was sometimes difficult to understand the implications of this awareness in practice:

Yes, the most shocking thing was to see how much [energy] the television consumed, and all the other appliances. It was the biggest shock. ... And you think then when you hear people talk about "do this and that" and you can save SEK 100 and SEK 200, but the total sum of that can be a big deal in a year ... It is quite another thing to see how much you can save. Because you don't see the money before you try to put into practice the different tips at home. (HOBuy11)

The measurement contributes to visualize energy reduction and how much money a family could save by many small energy-efficiency measures in the aggregate.

Conclusions

The households are quite aware of behavioural issues and how to behave in an energy-efficient way. Information campaigns about switching off the lights, lowering indoor temperature, washing with a full machine, etc., have reached the households. They could repeat such advice, though that did not indicate that they had implemented it.

Homeowners can save more money from energy-efficiency investment than can tenants, which contributed to their interest in finding information about available efficiency measures. While homeowners looked for specific information, the tenants and tenant/owners did not ask for any information at all. Disseminating information on energy efficiency to tenants and tenant/owners is one opportunity for the consultants to increase these groups awareness of their local opportunities for energy efficiency. Today, most public energy-efficiency information, such as municipal energy counselling, is directed toward homeowners. This seems to be a waste of time and resources and a missed opportunity for municipal consultants,

because homeowners already have this information. It would be wiser to target the tenants and tenant/owners with this information.

Various local opportunities for energy efficiency appear in the households' everyday lives. Today it also exist both considerable knowledge and sustainable energy-efficient technology, but the problem is diffusion. Existing knowledge is in general also disseminated through information. As we have seen this general energy efficiency advice was often so general that households had difficulties relating to it. They could not grasp what it would actually mean for their energy consumption if they implemented this advice. That is why it was only when such advice was combined, for example, with the installation of a meter that measured the reduction in energy use, that households realized the practical implications of, for example, advice to turn off the lights systematically. The combination of advice and direct feedback from a meter exemplifies how an often missed local opportunity can be turned into a seized opportunity.

It is also interesting that conducting individual inspections and keeping individual statistics regarding family energy use often was mentioned as an attractive measure. That this could expose and give a rather detailed picture of family life is not problematized. Instead, the householders highlight the possibilities of such mapping, letting the consultants give them specific information on how to change behaviour to reduce energy consumption.

Individual inspections and keeping energy statistics on households would be a local opportunity for consultants to encourage the active involvement of householders in energy-efficiency measures. The consultants could discuss both new investments and behavioural issues in terms of kWh or money spent on a special activity, and in this way discuss lifestyle issues without judging or moralizing on the household's way of life. The households perceive figures and statistics as neutral and objective knowledge. If the consultants inform them by visualizing their actual consumption patterns and point out various ways to reduce energy consumption, leaving implementation decisions to the families, then most of our householders meant that this would be a way to make general information more personal and meaningful for them.

The problem for the Swedish consultants, however, is that they are not legally allowed to go far enough into the home that they can give such specific advice. This prohibition means that the consultants are forced to keep giving general advice with which the households are already familiar and to inform them about technology available on the market that the householders have already found for themselves on the Internet. With the development of smart meters and other technological devices, energy consultants have possibilities to develop their methods and still follow the directive to not do home visits. This is an opportunity that needs to be developed further.

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References

- Bemelmans-Videc, M-L, Rist, R. and Vedung, E. (Eds), (1998) *Carrots, Sticks, and Sermons: Policy Instruments and Their Evaluation*. New Brunswick: N.J.:Transaction Publishers.
- EU directive 2006/32/EC of the European Parliament and of the Council on energy end-use efficiency and energy services.
- Kingdon, J. W. (1984) *Agendas, alternatives, and public policies*. Boston, MA: Little Brown.
- Palm, J, (2004) *Makten över energin: policyprocesser i två kommuner 1977–2001*. Linköping Studies in Arts and Science no 289, Linköping University.

- Palm, J, (2006) Development of Sustainable Energy Systems in Swedish Municipalities: A Matter of Path Dependency and Power Relations. *Local Environment*, 11: 445–457.
- Palm, J (2009) Public interest in the private sphere: how far into the home can local policy making reach? In *ecee 2009 Summer Study. Act! Innovate! Deliver! Reducing energy demand sustainably. Conference proceedings*, 287-297.
- SCB (Statistics Sweden) (2006) Ekologiska livsmedel - ett strategiunderlag för livsmedelsbranschen, Report 2006:13. Stockholm: SCB.
- SEA (Swedish Energy Agency) (1999) *Uppföljning av stödet för kommunal energirådgivning*, Report ER 3:1999, Eskilstuna: SEA.
- SEA (Swedish Energy Agency) (2007) Effektivare energianvändning. Beräkning av uppnådda effekter mellan åren 1991 till 2005 och förväntade effekter av nyligen beslutade styrmedel för en effektivare energianvändning fram till år 2016, Report ER 2007:21. Eskilstuna: SEA.
- SEA (Swedish Energy Agency) (2008) *Allmänheten och den kommunala energirådgivningen 2007*, Report ER 2008:11, Eskilstuna: SEA.
- SOU 2008:25 (Swedish Government Official Reports) Ett energieffektivare Sverige. Delbetänkande av Energieffektiviseringsutredningen. Stockholm: Fritze.
- Svane, Ö. (2008) Situations of opportunity: Hammarby Sjöstad and Stockholm City's process of environmental management. *Corporate Social Responsibility and Environmental Management* 15(2): 76–88.
- Swedish Government Decree 1997:1322 om bidrag till kommunal energi- och klimatrådgivning.
- Söderberg, P. (2008) *Hållbara hushåll: Miljöpolitik och ekologisk hållbarhet i vardagen*. Report 5899. Stockholm: Swedish Environmental Protection Agency.