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Case Study
Heat domain - Stockholm:
Sustainable Community Hökarängen

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Executive summary

*Sustainable Community Hökarängen* was a sustainable community initiative outside of Stockholm implemented during 2012 – 2015 that used an action research approach to create engagement among residents and other local stakeholders around increased energy and resource efficiency within the community. The initiative was led by the public housing company *Stockholms hem* in collaboration with the company *Sustainable Innovation* (Sust) and with *Stockholm Environment Institute* (SEI) engaged as the research partner. The initiative serves as one example of a heat/building niche within the framework of the Pathways project.

The results illustrate that the initiative was important for inspiring several community residents to transition to a more resource efficient lifestyle and for strengthening the social sustainability in the community. Several groups were formed that appear to be well placed to remain in the area and to continue addressing local and global sustainability issues after project closure.

It was difficult however, to create engagement among the residents around increased energy efficiency. One of the main reasons for that was assumed to be that the area consists mainly of rental housing apartments where energy consumption is included as part of the rent (mainstream housing option in Sweden) and hence provide limited incentives for residents to save energy. Instead, the case demonstrated that residents showed more engagement in activities around increased resource efficiency in general, such as community gardening, nature walks or climate smart cooking – activities which relates to residents leisure time. Furthermore, the project demonstrated that a transition towards a low-carbon society for some people can be strongly facilitated by using social sustainability as an entry point. By offering a broad spectrum of activities that appeal to peoples different interests and at the same time strengthen peoples social relations at the community level, these activities can function as entry points for broader understanding and engagement also for environmental sustainability issues, such as energy efficiency.

The case also suggest that building sustainable transition pathways through local agents with a strong convening power, that rests partly on their status and appreciation within local informal networks, can be important for creating long term sustainability changes. These agents often have an engagement in the area (such as residents), plan to remain at the community level and are eager to contribute to an improved atmosphere and sustainability practices in their neighborhood. Working with these agents increases the likelihood that the activities implemented fills a local need, uses the right ‘language’ and can be scaled up in local networks.

Hökarängen results indicate that the strengthening of the social community was instrumental in changing the behaviour of many residents. This suggest that if we find ourselves in a social context with close contacts with other people and where we are perceived to be positively acknowledged for a pro-environmental behaviour, this increases the likelihood that we will change our behaviour.
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1 Background of the Initiative

*Sustainable Community Hökarängen* was a sustainable community initiative outside of Stockholm that used an innovative approach to increase the energy and resource efficiency of the community by working in collaboration with residents and other local stakeholders. The initiative will serve as one example of a heat/building niche within the framework of the Pathways project. The initiative was led by the public housing company *Stockholms hem* in collaboration with the company *Sustainable Innovation* (Sust) and where *Stockholm Environment Institute (SEI)* was engaged as the research partner.

1.1 National context

During the past decade, a series of ambitious goals and ambitions to reduce greenhouse gas emissions and energy consumption in the built environment have been set at EU and at the national level. For Sweden, these include (STEM 2012, SEPA 2012):

- GHG emission reductions with 40% by 2020, compared with 1990
- Renewable energy at least 50% of total energy consumption in 2020
- Zero net greenhouse gas emissions by 2050

In addition to these goals, two main energy efficiency targets have been set for the national level, as well as for the local government of Stockholm (compared to 1990):

1. 20% reduced energy consumption by 2020
2. 50% reduced energy consumption by 2050

There are a number of different economic, instrumental and other policy instruments available at EU and national level to help steer towards these goals, such as carbon and energy taxes (STEM 2012).

At the end of 2014, Sweden had around 4.7 million apartments in total (SCB 2015a). Out of these, approximately 2.4 million were apartments in multi-dwelling buildings. There are also close to 2 million apartments in small houses (ibid). Estimations suggest that around 75% of the apartments in multi-dwelling buildings need to be renovated, at a cost of 50.000-100.000 EUR per apartment. It is also expected than an additional 15.000-20.000 EUR per apartment is needed in order to reach the energy and resource savings targets (IVA 2012).

Rental apartments constitute 60% of the total apartment stock in Sweden (SCB 2015b). Many of these apartments can be found in publicly owned rental housing buildings as this is a mainstream housing option in Sweden. About a third of all apartment buildings are owned by public actors (such as local governments). Public owners have been recognised as pioneers in the energy and climate work that should show the way towards a sustainable energy system. They are also considered to have an important role in influencing the end users of energy (STEM 2012).

1.2 Local context

The public housing company Stockholms hem is owned by the local government of Stockholm (City of Stockholm). They constitute one of Sweden’s largest public housing companies (Fastighetsvärlden 2012 and Stockholms hem 2015). Stockholms hem’s articles of association and the objectives with their business are decided upon by the Stockholm City Council. In accordance with the Local Government Act, the City Council also appoints the board members and determines the owner directives. This also means that Stockholms hem is bound by the energy policy objectives and
guidelines established by the City of Stockholm. In all other operations, Stockholmshem is run like a regular corporation, controlled by the companies act (Stockholmshem 2015).

Stockholmshem continuously renovates their housing stock, considering both regular maintenance and energy efficiency needs (Stockholmshem 2011). Stockholmshem’s environmental work includes measures to improve the built infrastructure, reduce energy consumption and engage their tenants in the overall work. Stockholmshem gained ISO 14001 certification for their environmental management system in 1999 (ibid).

In 2010, and as part of the development plan for Stockholms’ suburban areas, the City of Stockholm initiated what they called “Residential dialogues” together with the public housing companies and the community councils. The dialogues are a means to meet and collect peoples’ visions, complaints and ideas for how to improve their suburb (Boendedialogen 2015). Hökarängen was one of the first areas were such a dialogue was arranged in 2010 and the outcomes were important for Stockholmshem’s decision to invest in the initiative Sustainable Community Hökarängen.

1.3 Analytical structure

The initiative taken by Stockholmshem to initiate a pilot project around increased energy and resource efficiency in the Hökarängen community should be understood against the background described above about the national and local targets for energy efficiency and GHG emission reductions, plus Stockholmshem’s own targets about further improving their environmental and social sustainability work.

The initial plan was that this case study should constitute one example of an initiative part of an energy socio-technical regime, representative of the heat/building domain and inspired by the works of e.g. Seyfang et al (2014). While the project owners’ ambition was for the project to have a large focus on residential energy use, the bottom-up approach taken meant that the initiative rather developed as an example of grassroots innovation around increased resource efficiency in general. Seyfang and Smith (2007) suggest that there is a growing body of research on grassroots innovations as important drivers in the dynamics of system transformations, and this case aim to add to those findings (Seyfang et al 2014, Seyfang and Smith 2007).

To analyse the case, Geels and Deuten’s (2006) analytical structure for local transition cases was applied (see Figure 1). The Hökarängen project was initiated at the local phase, where new technologies or practices emerged and were tested independently and with the primary purpose to create new knowledge for the resident’s as well as for Stockholmshem’s own purposes. Over time, the initiative started to diffuse to subsequent phases by sharing lessons learned with other actors and communicating results externally. Actors involved also engaged in inter-local phase activities, indicating that a niche level of development could be emerging (ibid). This process will be discussed in more detail in the subsequent chapters.
1.4 **Timeplan**

The Sustainable Hökarängen project consisted of two phases. The first phase focussed on improving the community centre area. The second phase focussed on improving the environmental and social sustainability of the area and this has been the phase in focus for the Pathways case study. A time plan detailing three stages of development “Gestation”, “Development”, and “Implementation” has been applied to all cases under the PATHWAYS programme (Berg and Echternacht, 2014). We use this to illustrate the major events leading up to Sustainable Hökarängen Phase II, see Figure 2. Chapter three will outline each period in detail.

**Figure 2. Major events leading up to Sustainable community Hökarängen Phase II**

- **Gestation period**
  - Nov 2009 – Aug 2012
  - Sustainable Hökarängen Phase I;
  - Stockholmshem establish collaboration with Sust;
  - Joint proposal developed

- **Development period**
  - Sep 2012 – Feb 2013
  - Proposal submitted to STEM;
  - Proposal approved;
  - Staff installed;
  - Research partner contracted;
  - Initiative made public and stakeholders invited

- **Implementation period**
  - Action research approach;
  - Slightly revised approach;
  - Engagement with residents and other local stakeholders for increased energy and resource efficiency;
  - Stockholmshem’s continued investments for increased energy efficiency
1.5 Delimitations

An important note to be made about this case study is that the time period for the project in focus was about 2.5 years. During this period around 20 different sub-projects were initiated and around 40 different activities. Collaboration was established with a range of different local actors. This case study will not be able to present or go into detail of all of these activities or collaborations. A number of sub-projects of particular relevance for how the case developed have therefore been selected for the framework of this study. For a full review of all the activities undertaken, the reader is kindly advised to refer to the project’s final report (see Axelsson et al 2015, in Swedish).
2 Methods applied

The Hökarängen case study has used a co-creational and an action research approach (McNiff and Whitehead 2011). The project team has worked in close dialogue with the residents and other local stakeholders (such as businesses, schools and other organisations) in supporting long-term transition pathways. Residents have been invited to different meeting platforms (such as the project office, seminars, workshops etc) where they were encouraged to share their thoughts and ideas for how to make the community a more sustainable place to work and live in.

The case study rests mainly on primary data collected within the initiative (Ghauri and Grønhaug 2010). Some of the data were collected by other project team members and is considered secondary data.

The methods used for collecting data include:
1. Written evaluations (10 groups, around 170 responses)
2. Web surveys (65 responses)
3. Observations (in all processes/ activities, formal/informal meetings and discussions, electronic communications, see e.g. Section 3.4)
4. Discussions (e.g. project meetings and informal discussions with residents and other stakeholders)
5. Focus groups (4 groups, 27 participants)
6. Interviews (in person/telephone, 32 in total)
8. Desk studies (e.g. comparative studies and collecting statistics)

Through these data, primarily qualitative data about participants and peoples’ perceptions, interests, ideas and visions were collected. It was also learnt what methods worked better than others when it comes to engaging participants and enabling the changes the project was aiming for (see chapter 3 for more information about these).

Different kinds of more quantitative data was also collected, such as energy statistics, number of seminar participants, newsletter subscribers etc.

To follow-up on and analyse the project’s result, different indicators were used. The choice of indicators were discussed and agreed within the project team. Other neighbourhood initiatives were studied to get an understanding of the type of indicators used elsewhere. From these analyses, it was concluded that there seems to be a lack of established indicators to follow up on this type of initiatives. The most commonly used indicator seemed to be energy consumption or greenhouse gas emissions per square meter of living space (CO2e/sqm). Such more quantitative results can give an interesting indication of trends but are often difficult to link to the individual project’s impact and results, especially when it comes to behavioural changes.

It was therefore necessary to complement such quantitative indicators with more qualitative ones that could be used to demonstrate the extent to which residents felt that the project contributed to behavioural and societal changes. This does not necessarily mean that they have actually changed their behaviour in the longer term, but it can give a better understanding of how households perceive that the project has contributed to change.
Analytical framework for analysing the projects’ impact on changed behaviour

To support a more qualitative follow-up, SEI developed a model which we named "Sphere of influence" to support the analysis of how the initiative was picked up by different actors (Axelsson et al 2015). The model is inspired by the "Theory of Change approach" and "Outcome Mapping methodology" (Earl et al 2001). See figure 3.

Figure 3. Spheres of influence and measurable changes in behaviour

1. Includes sustainability ambassadors; HOPP; participants energy contest; Stockholmshem
   Participates often. Changes in behaviour are expected. Changes that by time could lead to societal changes.

2. Includes WS participants, pupils, participating local stakeholders (businesses/organisations etc.)
   Participates occasionally. A certain degree of behavioural changes can be expected.

3. Includes pupil’s parents, ambassadors families, participants larger events, other residents of Hökarängen, policy makers (local-national), study visit groups, blog/Facebook/newspaper readers etc.
   The project has no direct contact with these, but could be expected to have impacted on indirectly or on somewhat longer term.

With this model, the stakeholders that the initiative was likely to reach out to were identified as a starting point. The groups were then positioned according to the possibilities to actually engage with and influence these groups, as well as the possibility to also follow-up on the changes in behaviour that the initiative hoped to inspire these groups to.

Excluded from this model are actors like SEI and Sustainable Innovation, actors who were deeply involved and to a large extent also helped drive the initiative. Through their involvement, these actors are likely also influenced by the initiative and might also be able to apply the lessons learned in other settings and therewith contribute to societal changes. However, we decided to draw the analytical boundary around actors with a long-term presence in the community, such as Stockholmshem, local residents and other local stakeholders (schools, local businesses and organisations).
Group 1 is made up of individuals and actors who often participate in project activities and that the project team have direct and regular contact with. In Sustainable Hökarängen, this included four sets of actors; the sustainability ambassadors, the transition movement, the households that were part of the energy saving contest and Stockholmshem. Each actor will be described further in chapter 3. These are individuals and actors who have chosen to participate actively as they have a major interest in the issues discussed or who is interested in the social community that the project offers. Group 1 often also consists of so-called early adopters (Rogers 2003), people who are curious and engaged and interested in trying out new things. The inner-initiative speed (Berg et al, 2014) for transformation is at its highest in Group 1.

These are also individuals and actors who are regularly invited to meetings where they are expected to participate and sometimes also undertake different assignments for the project even if it is on a voluntary basis. Among individuals belonging to Group 1, measurable changes in behaviour are expected at the end of the project. In Group 1 we also find individuals who can contribute to social change in the short term (for example, influence organic product range in grocery stores). The commitment among these individuals and actors is also expected to spread to other groups in society in the longer term.

Group 1 also includes actors who have a clear role and responsibility for the local sustainability work such as Stockholmshem in our case. As a public housing company, Stockholmshem also have the possibility to apply the lessons learned to other parts of their housing stock and influence other actors (firstly other public actors at the municipal level).

Group 2 consists of individuals and actors involved in project activities at irregular intervals, but with which the project team does not have any regular contact. They may participate in several activities, or only in one. These are often individuals who already share the project’s vision and are interested enough to want to get involved a bit more, but who may not have time or interest to engage as much as Group 1.

In the Sustainable Hökarängen initiative these included workshop participants, pupils and local stakeholders (schools, local businesses etc). These are individuals and actors that the project meets one or several times in connection with various activities but where participation cannot be expected and where no specific is feedback is requested. A certain degree of behavioural change can be expected from Group 2, but these will be difficult to follow up with since there is no regular contact with these individuals or actors.

Group 3 consists of individuals and actors that the project team in most cases has no direct contact with but where it is reasonable to assume some indirect impacts from the project’s activities. In the Sustainable Hökarängen initiative these included pupil’s parents; sustainability ambassador’s families; households that were visited during the door-knocking campaign or as part of larger events; people that read about the project in different media (newspaper, blog, Facebook etc) and study visit groups. Group 3 don’t participate in the activities themselves but is potentially impacted indirectly from hearing what other residents and local stakeholders do.

In the short term, the impact on Group 3 is difficult to follow up on although it is reasonable to
assume that the project has an indirect impact also on this group. However the inner-initiative speed for transformation is generally slower in Group 3 compared to Group 1 and 2. The impact on Group 3 can partially be monitored quantitatively, e.g., the number of newspaper articles, hits on Google, Facebook posts and ‘Likes’ but the actual impact on the individuals and actors in Group 3 are often difficult to follow up on. The effect on Group 3 could also be investigated through a statistically representative sample of the local population, asking people about their knowledge about the initiative and how it has eventually impacted on their behaviour. A statistically representative survey is however costly and was not possible to do within the framework of the Hökarängen project. A random sample of interviews with residents on the street was, however, done in May 2015. Nine interviews with representatives of the many study visit groups that were received during the project time frame were also conducted (see chapter 4 for more information).

With regards to the classification of the different Groups 1-3, individuals and actors belonging to one Group for a start can later move up or down to another Group. This is affected by how individuals’ and actors’ opportunities and interest for involvement increase or decrease over time.

See chapter 4, for a continued discussion about how the project succeeded in reaching out to these Groups.

**Ongoing research on sustainable consumption and lifestyles, and increased resource efficiency**

According to Power and Mont (2010), one of the most dominating ideas about effective measures for more sustainable consumption is that if consumers had access to more information, they would make the “right” decisions and live more sustainably. Campbell (1996) suggest that our consumption and lifestyle choices at most times rather are guided by our habits and behaviours and that this often has greater significance than increased knowledge, which is really not enough to change our behaviour.

Changing behaviour is a complex issue that is often influenced by the interaction between various factors such as economic influences, marketing of products and innovations, regulations around consumption and perhaps primarily our peers and media (Mont and Power, 2010). When developing strategies for a more resource efficient society, this is important to be aware of. To only try to motivate residents and other stakeholders to act more sustainably is often not enough (Dietz, 2014).

Many of today's policies and strategies that address sustainable lifestyles are focusing on technical solutions for increasing resource efficiency, sustainable transport and energy systems (Mont et al., 2014; Lindahl & Rydehell, 2014). Growing insights however suggests that social innovation is crucial for achieving sustainable lifestyles and thereby achieve greater resource efficiency (ibid). Social innovations are innovations that target social needs by creating new solutions which may have a commercial value, but that is primarily aiming at generating a high societal value. Social innovations build a stronger acceptance for change, and are for this reason considered essential for the growth of sustainable societies. As one example, Lindahl and Rydehell (ibid) mention second hand stores through which sustainable lifestyles are supported through the reuse of clothing.
Rubrik et al (2009) suggest that while much contemporary research suggests that the individual is an important actor for the sustainable society to form, support structures still need to be in place in the communities where people live and work. Hargreaves (2011) suggests that sustainable behaviour requires a social context in which they are understood, accepted and even expected to be the norm because sustainable consumer behaviour cannot be expected to function without support in the practical context.

As will be outlined in the following chapters, these insights support the action research approach taken within the Sustainable Hökarängen initiative.
3 Detailed case description

This chapter will describe the theoretical framing for the Hökarängen case study in detail. It applies the conceptual framework set out in the Case Study Protocol and separates between Gestation period, Development period and Implementation period in order to be able to explain the casual linkages that led to the development of the project.

3.1 The Hökarängen community

Hökarängen is a neighbourhood in the southern part of the municipality of Stockholm. The community is dominated by apartments that were built from the mid-40s to mid-50s. The area is known for its architecture and the district was one of the first examples of the many new suburbs built along the new subway in the decade after World War II. The community has a pedestrian centre area that became iconic for planning new suburbs in Sweden. Hökarängen is often referred to as the first community in Sweden with a planned pedestrian zone (Schönning 2000).

Today, Hökarängen consists of close to 9000 residents in about 4700 households (Stockholms stad, 2014), mainly in publicly owned apartments. Together with another public housing company, Stockholmshem own about 75% of the total housing stock in Hökarängen. This also means that they have a large influence on and responsibility for the community structure and atmosphere.

3.2 Gestation period (Feb 2009 – Aug 2012)

In 2009, the CEO of Stockholmshem participated in a seminar arranged by the neighbourhood council in Hökarängen. A group of researchers presented the results of a two year project where they had studied community center formations in the suburbs of Stockholm and the effect these had had on the community inhabitants. Their recommendation was a thorough rehabilitation of the community center area of Hökarängen (Borén and Koch 2009).

As a result, the municipality of Stockholm together with Stockholmshem, the neighbourhood council, local social service institutions and other local stakeholders started to prepare for a residential dialogue around these issues (see chapter one). The dialogue was held during the spring 2010.

As a result of this dialogue, it was learnt that many residents felt that the community was unsafe and that the area was run down. Being a major actor in the area, Stockholmshem thus felt that something had to be done to improve the situation as they were anxious that the tenants would thrive in the area.¹

The outcomes of the residential dialogue in Hökarängen, the political energy reduction targets (see chapter two) plus the fact that Stockholmshem owns the majority of the apartment buildings in Hökarängen, all contributed to Stockholmshem’s decision in 2011 to invest in the project “Sustainable Hökarängen” (Phase I). In Stockholmshem’s Annual Report for 2011 it was stated that (Stockholmshem 2011):

¹ Regular discussions with Åsa Stenmark, project leader at Stockholmshem during 2013-2015.
'Our aim with this project [Sustainable Hökarängen] is to enhance the environmental, social and economic sustainability in the long term. This is another way of expressing the balance between the public mission and the expectations to also act professionally. In this way, Sustainable Hökarängen becomes a concrete example of what the new rules of public housing means in practice.'

With reference to what was also mentioned in chapter 2, from this citation it seems clear that Stockholmshem saw themselves as a role model for public housing companies.

Initially the focus of the initiative (phase I) was on the social and economic sustainability of the area and had the ambition to make Hökarängen a nicer place to live and work in, by filling unused retail spaces, renovating the community center area etc. Stockholmshem also began large scale energy efficiency investments investing in heat recovery, insulating attics, improving ventilation, installing heat pumps etc., hence adhering also to the ecological sustainability (Stockholmshem 2008).^2

One specific investment was to build a zero energy house (passive house) in Hökarängen (Stockholmshem 2014). In 2013, this house was the first apartment building in the Stockholm region to be awarded a Gold classification (Stockholmshem 2013) according to Sweden Green Building Council’s classification system (Sweden Green Building Council). The house combined several tested energy efficiency techniques such as solar panels, thermal heating and heat recovery system, which made it unique at the time (Stockholmshem 2013).

As illustrated by the citation above, Stockholmshem already from the beginning also wanted to invest in a program addressing all three sustainability dimensions (social, economic, ecological).^3 The main drivers for including also the ecological dimension were the national and local political targets about lowering emissions and increase the energy efficiency (as explained in the background chapter).

Early 2011, Stockholmshem applied for additional funding for an ecological dimension (focusing on ‘Sustainable neighborhood units’) from a national initiative but this application failed.^4 In the autumn 2011, Stockholmshem approached Sustainable Innovation (Sust)^5 with ideas for a joint project. Sust is a national centre for energy efficiency, which runs large scale demonstration projects, supports innovation and entrepreneurship, and conducts dissemination and knowledge development activities. Sustainable Innovation finances its activities partly by corporate membership fees. Stockholmshem is one of Sust’s member organisations. ^6

Sust, who aims to be an innovator when it comes to energy efficiency, wanted a demonstration project to test their ideas and see what could be learnt and have the potential to scale up. Sust’s mission is also to provide support to their member organizations, such as Stockholmshem. Sustainable Hökarängen was a very good match for both organizations to collaborate around.

^2 Discussions with Olof Sjögren, Sustainability manager of Stockholmshem, 15^{th} May, 2015. NB. That Stockholmshem had invested in replacement of plumbing in all the buildings in the Hökarängen community already by 2008.

^3 Also confirmed by Olof Sjöberg, Stockholmshem, Director of Sustainability, interview 24rd March, 2015

^4 Stockholmshem thought it was primarily due to tough competition.

^5 See http://www.sust.se/en/om-sust/

^6 Ibid
Stockholmshem and Sust eventually decided that they would apply for joint funding from the Swedish Energy Authority (STEM) for a project in Hökarängen.

During 2011, Stockholmshem and Sust begun working on an application for STEM. The funding requested from STEM was not allowed to exceed 1 MEUR. Co-funding was required for at least 50% of the total budget. To begin with, Stockholmshem therefore did a feasibility study of the energy efficiency measures they would be able to invest in and use as co-funding. The investments planned were primarily investments in the outer shells of the buildings that would not affect or require the involvement of the residents.

Stockholmshem’s planned investments in energy efficiency measures amounted to about 23,5 MEUR in total, so this was clearly well above what was required for the co-funding. Out of these 23,5 MEUR, about 15 MEUR was allocated for improved ventilation and heat recovery. Approximately 6 MEUR was planned for investments in improved insulation. Another 0,5 MEUR was planned for investments in heat pumps. Other investments (approximately 2 MEUR) were planned for investment in waste solutions, renovation of elevators, low-flow faucets, windows etc. The plan also included contributions in kind for project office facilities, project officer and other support staff.

In addition to increasing the energy efficiency, another objective with the planned project was to develop methods and models that could create inspiring and repeatable example for how energy and resource efficiency could be pursued within a neighborhood by involving and engaging the individuals who lived and/or worked there. For this reason, Stockholmshem and Sust agreed that an action research approach would be used.

Thus, the overall objective of the project was formulated as:

"... Through interdisciplinary action research and in connection with Stockholmshem’s energy efficiency investments, develop, test and demonstrate methods for how property owners, residents and other people can work together to reduce energy and other resource use in a residential area.”

The ambition was also to frame it as a pilot project, and where Stockholmshem and other housing companies (mainly) could learn from the project’s experiences. Hence, an additional objective was formulated as:

"Develop methods and models that can create inspiring and repeatable examples for how resource efficiency can be pursued within a neighborhood by involving and activating the individuals who live and/or work there"

Nine specific targets were established for the project as illustrated in Box 1.
Box 1. *Project targets for Sustainable Hökarängen*

1. At least 10 sub-projects based on the participation of residents or stakeholders in the area
2. Develop a number of good examples, based on the methods and models that have been tested and evaluated in the project and disseminate the results to relevant target groups, mainly other housing companies.
3. The behavioral methods and models being tested in cooperation with tenants shall further reduce energy consumption by approximately 15%, compared to a zero measurement at the start
4. Develop general knowledge about the attitudes and behaviour of the residents that will enable further resource efficiency among the tenants.
5. Receive at least 20 study groups
6. Develop and test methods for activating consumers in more a responsible use of energy.
7. Evaluate the methods tested for establishing collaboration between Stockholmshem and the residents and other local stakeholders and the results gained
8. Develop, test and evaluate technologies and services that support consumers in a more responsible energy use
9. Develop, test and evaluate design methods for innovative solutions for increased energy efficiency

As illustrated by Box 1, the basic idea was for the project to have a strong focus on energy efficiency measures, even if resource consumption in general is also mentioned as well as involvement of residents.

### 3.3 Development period (Sep 2012-Feb 2013)

Due to staff changes at the STEM, there was a delay in submitting the application. Stockholmshem and Sust had hoped to submit the proposal early 2012 but they were not able to apply until after the summer 2012. The application was eventually approved in October 2012.

The total project budget approved was close to 4 MEUR with 75% co-funding from Stockholmshem, thus STEM funded about 25% or close to 1 EUR. As highlighted above, Stockholmshem’s investment in energy efficiency measures totalled a much higher amount (23,5 MEUR).

Once the project was approved by STEM, Stockholmshem and Sust designated one person from each organization to work on the project, both already permanent staff of each organisation. An empty apartment in Hökarängen was already in use as the project office in phase I of the project and the project officer from Stockholmshem was now based here for phase II. Since phase II focused more on engaging with the residents, the project office was eventually moved to an empty retail store in the pedestrian street in the community centre in order to allow a closer interaction with the residents (beginning 2014).

The first steps taken were to make the initiative public and communicate the project to the residents and local stakeholders, inviting them to become engaged and to put forward ideas for what to focus the project on. A number of meetings were set up with local stakeholders such as the schools and the local art gallery. Overall, the initiative was well received even if it did not result in any massive movement of stakeholders that wanted to be involved. A number of residents and stakeholders contacted Stockholmshem with their ideas or by welcoming the initiative and saying that they were keen to engage. This did not lead to any concrete project activities, but a few acquaintances were made with residents and stakeholders that were later personally invited to different activities.
With the project objectives in mind (see 3.2), the strategy was strongly influenced by the idea to have the residents and other local stakeholders fill the contents of the project. No specific technology or activity was planned for. From the initial project plan however, it was clear that a number of activities were envisioned, but the plan was that these ideas should only become a reality if put forward by residents and stakeholders in the area. In addition to the activities implemented in collaboration with the residents, Stockholmshem’s planned energy efficiency investments would be implemented as a parallel track. The project approach is summarized in Box 2.

**Box 2. Extract from the initial project plan. Sustainable Hökarängen implementation strategy and approach**

<table>
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<th>Implementation strategy (Sundén 2012)</th>
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<td>The starting point of the project should be the engagement of residents and other local stakeholders in Hökarängen. Activities and sub-projects will be based on ideas and suggestions from residents and stakeholders, they should not come from within the project organization. To take advantage of engagement and interest, the project should be characterized by transparency, responsiveness and dialogue. Networking, collaboration and project experiences from Phase I of the project shall be utilized and further developed in Phase II. If necessary, in areas where there is no expertise in the project organization or otherwise of the project partners, resources/expertise from outside, e.g. research skills, inspiration, lecturers, etc. will be brought in.</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
</tr>
<tr>
<td>A. Create engagement for activities among residents and local stakeholders</td>
</tr>
<tr>
<td>B. Implement technical measures in the building and installations (Stockholms’s planned energy efficiency investments)</td>
</tr>
<tr>
<td>C. Evaluate and describe the results/experiences</td>
</tr>
<tr>
<td>D. Communicate findings/experiences</td>
</tr>
<tr>
<td><strong>Tentative plan for about 10 different projects</strong></td>
</tr>
<tr>
<td>- Energy visualization</td>
</tr>
<tr>
<td>- Car pool</td>
</tr>
<tr>
<td>- Study circles⁷</td>
</tr>
<tr>
<td>- Reuse of food waste</td>
</tr>
</tbody>
</table>

Stockholms was already a long term actor in the neighbourhood. This meant that they already had access to all relevant local data and knew who the local stakeholders were, so no particular efforts were made to map out local stakeholders. Phase I of the project was also still ongoing (being wrapped up) and run by Stockholms and within the framework of that phase, a lot of meetings had been held with different local stakeholders. If additional information about the community was needed, this could be easily collected without involving additional stakeholders.

Sust now also began to approach different research institutes to explore their ability and interest to engage in the project. The idea with engaging a research partner was that Sust and Stockholms wanted the project properly documented and results evaluated and analysed to allow replication

⁷ A study circle is a common Swedish phenomenon. A study circle means that a small group meets to learn about something together, always out of their own interest. A study circle can be participant driven or led by an expert on the topic. Many study circles are run with a subsidized participant fee and are entitled to basic support in the form of access to a meeting place etc. They are usually run by a study circle association.
and conclusions on lessons learned. Also, neither Sust nor Stockholmshem had any experience from running projects with an action research approach and wanted to engage a partner with an understanding about this process, including what environmental sustainability really entails.

No formal tender process was followed to invite interested research partners to submit tenders. Sust is a private actor and not bound by the Swedish Public Procurement Act. Instead they contacted different research organisations directly. Stockholm Environment Institute (SEI) was eventually approached in late November 2012 and a discussion started around SEI’s possibilities to be involved.

Following a round of discussions and a written proposal, SEI was selected as the project’s research partner and formally engaged around February 2013 to lead the research component and to become part of the project team. In addition to leading the research component, SEI also developed and took responsibility for a number of the sub-activities. In November 2013, another consultant (Sustopia) was also taken on board to support the project team, especially with communication work plus responsibility for a number of the sub-activities.

One representative from each of these organizations (Sust, Stockholmshem, SEI and Sustopia) made up the operational project team. In addition to the project team, there was also a steering group that met at regular intervals. The steering group consisted of two representatives from Stockholmshem and Sust, one representative from the STEM. The two operational project leaders from Stockholmshem and Sust also participated the steering group meetings.

The steering group’s responsibilities included ensuring that the project delivered in accordance with the plans and objectives set and that the project’s resources were used correctly.

During the implementation period, the project team began to communicate more systematically with residents and local stakeholders. They were invited to share ideas, ask questions and submit proposals for activities addressing (mainly) ecological sustainability issues to undertake within the framework of the project. This strategy was suggested to fall well in line with the action research approach that the project owners had decided upon already during the gestation period and where a very strong bottom-up perspective was envisaged, as has been outlined above. While the approach taken was attractive, it unfortunately meant that not much happened in the project.

In an attempt to get one activity underway, the project owners decided to offer residents in one building energy counselling services plus a new refrigerator (which was a departure from the bottom-up perspective). The aim with this activity was to investigate whether energy counselling services could be an effective method for helping residents become more energy conscious and save energy.

As a pilot, one building (about 18 apartments) was selected on the basis of the standard of the refrigerators (see Box 3 for explanation). In return for receiving the energy counsellor, the participating households would receive a new energy efficient refrigerator for free, something which is otherwise associated with a monthly fee. Only five households signed up for this offer. The new

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8 Email from Thomas Sundén, Sust, 26th November, 2012
refrigerators did however not fit into the kitchens. A carpenter had to be engaged to rebuild the kitchens somewhat. This created a lot of complaints from the households and as a result, Stockholmshem decided that this activity would not be extended.

Energy counselling services continued to be available as an open offer to residents throughout the project. This offer was communicated via the regular newsletter, at the blog and in the community news journal. It was also offered to the sustainability ambassadors (see below). The households have however showed limited interest for this as no households signed up for this offer.

Revised approach
After about 6 months, a revised approach was taken which meant that the project team was allowed to be a bit more proactive. This was not formally decided upon but a practice that slowly began to be acknowledged. The communication approach was also broadened to include a more active project blog and Facebook account; posters; a monthly electronic newsletter (2014) and a door-knocking campaign (2014). The more active blog and Facebook account was also a natural effect of more activities taking place in the community where a number of events where planned for to which residents were invited. The move of the project office to the pedestrian street (as mentioned under 3.3) was also important for establishing a more direct relation with the residents. The project office was open every weekday and often also during evenings and residents were invited to pop-in whenever. This was very well received by the residents. Stockholmshem did not have any local open office since before and besides coming in to discuss the initiative, many residents now also took the opportunity to pop in and ask practical questions about their apartment. All in all, the project office provided excellent opportunities to meet up with the residents.

3.4.1 Laying the ground for engagement - seminar series on sustainable consumption
One example of the more proactive approach taken was that the project team during the autumn 2013, planned for and invited residents and local stakeholders in the community to a seminar series (four parts) about sustainable consumption. This had not been proposed by any community member but was an initiative that eventually shaped the whole initiative as it provided a good platform for the interaction with the residents.

The aim of the seminars was to increase awareness and knowledge of global sustainability issues and create commitment around these issues locally. The plan was also to invite those who were interested to join a network of local sustainability ambassadors. The aim was also that the seminar series would attract a relatively large group of residents that would strengthen the social sustainability within the community and bring forward new ideas for new sub-projects and activities around increased resource efficiency and sustainable lifestyles.

The set up was to begin with a seminar on sustainable consumption in general terms (footprints) and some of the global environmental issues faced today, and then go into more detail on the three main consumption areas: our food consumption, our housing and our transportation. The format for all four seminars was to combine presentations with group work and then finish each seminar by giving the participants voluntary assignments to work on until the next seminar. The assignment could be to see a short film clip, read something, visit a web page or similar. The participation rate was on average 23 participants per seminar (plus project team and Stockholmshem staff). From
comparative analysis of similar initiatives, the team concluded that this was a fairly good participation rate for a community initiative of this size.

Participants were asked to fill in an evaluation survey after seminar 1, as well as after seminar 4 (for Seminar 2-4). Overall, the evaluation showed that the seminar series was much appreciated (see 3.4.3 for further discussion). The overall rating was about 4.5 out of a maximum 5. In the final evaluation, participants were also asked to give suggestions on what they would like to learn more about, or activities to be implemented locally. This was also something that was discussed during each seminar. The proposals put forward in the evaluation are presented in Table 1. The table also indicates which of these proposals that were actually turned into concrete activities in the end.

Table 1. Proposals for topics and activities to be implemented within the framework of the project, put forward in the final evaluation of the seminar series. Also see Annex 1.

<table>
<thead>
<tr>
<th>Proposed topics and activities</th>
<th>No of proposals</th>
<th>Implemented</th>
<th>Proposed topics and activities</th>
<th>No of proposals</th>
<th>Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban farming</td>
<td>4</td>
<td>X</td>
<td>Urban nature</td>
<td>1</td>
<td>X</td>
</tr>
<tr>
<td>Vegetarian cooking</td>
<td>3</td>
<td>X</td>
<td>Town hens (for eggs)</td>
<td>1</td>
<td>X</td>
</tr>
<tr>
<td>Chemicals in our everyday lives</td>
<td>3</td>
<td>X</td>
<td>Tips about energy saving measures</td>
<td>1</td>
<td>X</td>
</tr>
<tr>
<td>Renewable energy (wind, solar)</td>
<td>2</td>
<td>X</td>
<td>Social trust</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Composting</td>
<td>2</td>
<td>X</td>
<td>Bike pool</td>
<td>1</td>
<td>X</td>
</tr>
<tr>
<td>Perma culture</td>
<td>2</td>
<td>X</td>
<td>Community barbeques</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Bee farming/keeping</td>
<td>2</td>
<td>X</td>
<td>Outdoor seminar about household waste separation</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sustainable consumption</td>
<td>1</td>
<td>X</td>
<td>Information meeting about car pool</td>
<td>1</td>
<td>(X)²</td>
</tr>
<tr>
<td>Sustainability festival, flea market</td>
<td>1</td>
<td>X</td>
<td>Movie night including flea market</td>
<td>1</td>
<td>X²</td>
</tr>
</tbody>
</table>

1. Solar panels were planned for on the roof of one residential building but without involvement from the residents. 2. No meeting were arranged. However, information was sent out and residents were offered discounted rates during a test period. 3. Has been done but as separate events.

Most participants came back to participate all four seminars, however on each occasion there was always a number of new participants, allowing the local network to grow and the social sustainability further strengthened.

### 3.4.2 Further project activities - Learning what creates engagement

As of the spring of 2014, residents were offered additional seminars and activities, see Annex 1. These were based largely on the proposals put forward by residents during the seminar series (see table 1 above). The local sustainability ambassadors (see below) helped the project team prioritise between and frame these proposals.

It is not possible to analyse all the activities implemented within the project phase II in this case study report. Here we can conclude that the activities that attracted the most participants were the seminar series, the climate smart cooking activities, the guided nature walks and workshops, i.e. *activities that the residents had direct influence over and probably also considered ‘fun’, often containing a workshop element were they were invited to do something practical (e.g. skin care products, bee hives) (see Annex 1 for participants numbers). The sustainability festival was another, large event which attracted several hundreds of people. This was an activity that worked well for increasing the awareness for the initiative, also from outside of Hökarängen. All in all, the activities that engaged people the most were often practical and social activities around topics that people
have a fairly good control over and often find joyful, or a topic that people are keen to learn more about.

Activities that attracted the least number of participants included the ‘Household energy saving measures’, ‘Climate-smart travelling’, ‘Energy contest’ and ‘Discussion evening about biking in Hökarängen’, i.e. activities that were all part of the focus areas identified in the initial plan for the project (see Box 2). The main reason for the low interest in energy efficiency activities is thought to be due to the fact that the majority of the dwellings in Hökarängen are publicly owned rental apartments. Hence, there are limited incentives for households in rental apartments to engage in efforts to reduce their housing energy (see Box 3 about the characteristics of the Swedish public housing sector). With regards to transport, public transport is well developed around Hökarängen and there are plenty of cycle paths. The availability of parking spaces is also relatively good.

Another reason for the low interest in these activities is assumed to be that residents simply have no emotional attachment to these questions. With regards to transport, it is also assumed that many regard these as either something they need to do and have no options around (such as commute to work) or regard as something they do not wish to compromise around (such as the vacation trip to the Mediterranean). This was unfortunately not possible to investigate further within the timeframe of the project but would be an interesting topic to explore in a future research project.

Box 3. Energy consumption in the Swedish public housing sector

<table>
<thead>
<tr>
<th>Energy consumption in the Swedish public housing sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publicly owned rental housing is a mainstream housing option in Sweden (also see 1.1). Public housing practice in Sweden means that heat and hot water is provided as part of the rent. Also privately owned flats in multi-dwelling houses have a similar communal provision of heat and hot-water as private flats are owned as shares of a housing cooperative. Building heat and hot water for apartments are in turn often provided through a district heating system with centralised control. This means that households have limited or no influence over heat and hot water. The household is only responsible for paying the electricity bill. However, public housing practice also means that the landlord provides the refrigerator, stove and laundry facilities (plus wallpaper and painting), which means that there is limited room for the household to influence electricity consumption as well. If a household want their refrigerator/wallpaper exchanged earlier than what the maintenance plan suggest, a monthly fee is added to their rent. If they on the other hand decide to keep the refrigerator/wallpaper longer than the plan, they get a discounted rate. Altogether, this provides limited incentives for households to save energy.</td>
</tr>
</tbody>
</table>

This is the situation also in the Hökarängen community. The majority of the households in Hökarängen are 2 or 3 room apartments. The average electricity bill is perhaps 20 EUR/month, which most households can afford.

Using the revised approach, it was clear that many activities led to other activities thanks to the inspiration, knowledge, understanding and networking that were created and allowed to flourish during each seminar/activity. The social aspects are suggested to hold one key to why people felt motivated and continued to participate. In planning every event, large efforts were put down on ensuring that it would be a nice and social atmosphere. Coffee, cakes and fruits were served and often also light dinners as many events took place early evenings. Every participant were warmly greeted and discussion friendly. Kids were also welcome. At every occasion, the project team was also careful to point out that the whole idea of the initiative was to pick up on their ideas and was dependent on them to bring proposals forward plus that the project team was there to support them. The project team had an important role in capturing and confirming the ideas brought forward by the residents, since the participants’ ideas for obvious reasons were not always fully
formulated or thought through in every detail. In some cases the proposer were involved in the formulation, at other occasions the sustainability ambassadors were consulted or the project team took the next steps to prepare for a new activity or event.

From observations and focus groups it was concluded that many participants appreciated the way in which activities were implemented.

One concrete example of how one activity led to another was that many of those who attended the seminar series wanted to learn more about the harmful chemicals that surround us in our everyday lives, a topic which was only briefly discussed during the seminar series. About one year later, a seminar with the topic "Chemicals in our everyday lives" was arranged. At this seminar, the participants began to talk about the importance of minimizing harmful plastics, and that it is possible to make your own skin care products and household chemicals in an easy way at home. It also turned out that one of the participants was very good at just that. This resulted in a workshop led by this person and where participants learnt e.g. how to make their own plastic wrap out of beeswax and their own deodorant out of coconut oil and scents. The workshop was highly appreciated by the participants and suggestions was put forward that this workshop also ought to interest parents of young children. Subsequently, one such workshop was also arranged where participants made e.g. bibs or plastic wraps out of beeswax. The workshop also started off with a discussion around how to minimise harmful chemicals around our youngest children.

At the end of the project, this also led to a group of residents starting to discuss the possibility of setting up a study circle about how to make their own cleaning products and skin care products. See illustration in Figure 4.

*Figure 4. Examples of spin-off activities from the seminar series*

*Note. Question mark and red box indicates the activity was still being discussed at project closure.*
Local sustainability ambassadors

One of the comparative studies conducted at the beginning of the project focused on the concept of “climate families” implemented in many municipalities around Sweden. The basic idea behind these initiatives is that interested families are invited to become “climate families”, i.e. families that want to learn more about environmental issues and how to live more sustainably and are willing to share their experiences with the public at the local level. The concept often also includes a training package including open seminars.

With inspiration from the concept of these so-called climate families, SEI developed the concept of "local sustainability ambassadors". The purpose of inviting to this network of local sustainability ambassadors was to engage participants around reduced energy and resource consumption and to get participants to work as "sustainability ambassadors" at the local level, and be a source of inspiration for other households. The “ambassador” concept felt as an important complement to the common "climate family concept". Here the idea was that the participants also would be given the task to carry out activities jointly and individually in order to spread awareness about various environmental issues further in their networks locally (but also elsewhere).

The aim was also to form a small group of dedicated residents that the project team could use as a sounding board for new projects and activities. Yet another aim was also to investigate whether this could be an effective method for creating engagement around sustainability issues locally. By engaging a group of locally based people – who would hopefully still live in the area after project completion – the ambition was also that this would lead to a long term commitment among the participants.

The offer to join the network went out at the end of the seminar series on sustainable consumption. It was also presented on the project blog and in a news brochure sent out to the households. The goal was to get between five to ten members. The group started with eight ambassadors, this grew to ten after a couple of months and was reduced to six towards the end of the project. Seven out of the ten had participated in at least one of the seminars during the seminar series.

During the first nine months, the network met regularly every 4-6th weeks to discuss different topics, report on assignments and prepare joint activities. Some of these meetings were held back-to-back with open seminars (as presented in Annex 1). At one of the first meetings, the ambassadors were asked to discuss and rank the different ideas presented by the participants of the seminar series (see table 1). From this exercise, a broad plan for a continued seminar/activities program for 2014 was developed together with the ambassadors.

One of the first activities that the group jointly decided that they wanted to implement was a carrot mob where the two local grocery stores ICA and MatDax were encouraged to include more organic products in their product range. The group spent a lot of time preparing this event. They did inventories of the two stores, arranged meetings with the store representatives and wrote appeals on Facebook asking other residents what kind of ecological products they wanted to see in their local stores. The first petition informing about the initiative was read by about 115 people and more

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9 Sweden has 290 municipalities. A Swedish municipality refers to a geographical area governed by a Local Government.
than 80 comments and suggestions were received, all positive. It was clear that the action engaged many residents and got large support. The project team also wrote about the initiative on the project blog. The work of the ambassadors was also highlighted by a local newspaper who wrote two articles about their work.

The grocery store that responded best to the challenge was ICA who was awarded a positive purchase action a Saturday in March where about 50 people gathered and entered the store on the same timing. Live music was performed and one of the ambassadors held a speech. The selected date was also the annual Earth Hour Day and this was emphasised in the communication about the event.

During the autumn 2014, the ambassadors did a new inventory of the organic range of products in the two stores. The result indicated that both stores had greatly expanded their product range.

In order to follow-up on how the action was perceived by the two grocery stores, the representatives of the two stores were interviewed at several occasions, both in person and via telephone. The results from these interviews show that both stores found the action very positive and had been positively triggered by the event to extend the organic product range even more. The store that did not win the contest (MatDax) has a reputation of being one of the cheapest grocery stores south of Stockholm. Prior to the carrot mob they had a very limited organic product range (the other store had a basic organic product range). As a result of the action, MatDax decided that they would expand their organic product range to ensure that organic products were available in all product categories. Even if it is difficult to estimate how much the action contributed to the expansion and how much that was thanks to the general trend in society toward increased organic products, MatDax confirmed that the carrot mob had contributed to this change in focus to a large extent. Also ICA put down a lot of efforts to continue to expand their organic product range and said that the carrot mob had been an important support in these efforts.

**Sustainable Hökarängen inspires local transition movement**

An important goal with the initiative was to find actors that could continue to work for the issues that the initiative had brought to the fore also when the project had come to an end, i.e. continue to engage and inspire others to increased resource and energy efficiency and sustainable lifestyles.
Thanks to the inspiration from the project, the seminar series and the work of the ambassadors, one of the ambassadors together with one other person initiated the local transition movement HOPP! ‘Hökarängens Odlings och Permakulturprojekt’ [HOPE! Hökarängen’s urban farming and permaculture project]. As the name suggest, they had a large interest in urban farming activities.

During the autumn 2014 and spring 2015, the project team supported HOPP! both financially and practically. This resulted, among other things, in that HOPP! in March 2015 could start their first courses in urban farming and permaculture. They also arranged seminars, workshops and events around different sustainability aspects. They also put a lot of personal efforts into developing a professional webpage and blog.\(^\text{10}\)

Up to this date it had been difficult to get the other urban farming initiatives up and running. It had for instance been difficult to find residents that were willing to take on a coordinating role for the common garden. Now HOPP! was given the responsibility for the common garden and for supporting other residents that wanted to use the common space for urban farming.

During the spring 2015 they arranged two courses in urban farming and permaculture that were very well received and quickly filled up with participants mainly from the community but also from outside. Through this initiative, the common garden developed nicely during the spring 2015 with several residents active in the farming through the courses.

\[\text{Photo 1: Bengt Alm, Maria Svennbäck, Jenny Cederholm och Maja Lindström from HOPP!} \]
\[\text{Photo 2: Katarina Axelsson. Activities in the common garden.} \]

**Activities around sustainable food consumption - Climate smart cooking**

During the seminar series it became clear that sustainable food consumption was a topic that engaged many residents. Many wanted to cook more vegetarian food but lacked the inspiration and knowledge about how and what to cook. It was also a topic that several participants in the final evaluation proposed additional activities around. This commitment was captured by the project team and resulted in a climate smart cooking course (1 full day) to which all interested residents were invited to register for. Focus was put on ‘climate smart’ food, meaning 100% vegetarian but without telling people that they had to stop eating meat and instead leaving that decision to the participants. The total number of seats were 30, divided up in two groups and these quickly filled up.

\(^{10}\) See [http://hoppbloggen.com/](http://hoppbloggen.com/)
Each group ended the course with a buffet to which each participant were allowed to invite around 3 guests from the neighborhood (could be family, friends and neighbors). This was very well received and the buffet was enjoyed with a nice ambience.

From the concluding evaluation that the participants were asked to fill in, it was learnt that many residents wanted to continue cooking together. As a result of this feedback, the project team invited residents to a study circle in climate smart cooking. Again, two groups of a total of 30 seats quickly filled up, out of which about half of the participants had participated the previous course. The groups met five evenings every second week to cook and socialize. The final evaluation of both the course and the study circle showed that apart from the new cooking skills, participants found that the social dimension was almost equally important for their motivation, i.e. they greatly appreciated the opportunity that the activity provided to socialize with other residents of the community.

From the evaluation of the study circle it was also clear that many participants wanted to continue cooking together. The project team supported them in setting up a ‘participant driven’ study circle, i.e. without an external course leader. The project support meant that the project team made initial contacts with one local school to ask if they could hire the school kitchen plus put them in contact with a study circle that could help them organize administratively, by collecting participant fees to cover food purchases etc. The first such course got started in the spring, again two groups.

At the annual community event end of May 2015, five of the participants sold vegetarian burgers and invited interested residents to become members of the study circle that was set to continue in the autumn 2015 (after project closure).

![Photo 1. Bengt Alm. Photo 2. Katarina Axelson](image)

**Activities addressing energy efficiency and consumption**

The energy efficiency investment programme that Stockholms hem initiated in Hökarängen in 2011 (see 3.2) was expected to be completed during 2017 at the latest. Hence, when the Pathways case study started the investment programme was already ongoing. The investment programme did not include any engagement with the residents with the motivation that no investments were made inside the apartments. By the time phase II was completed (June 2015), Stockholms hem had already reached their 2020 target (energy consumption reduced with 20%, see chapter one) and was close to also reach the 2050 target within a couple of years. Stockholms hem had also set an additional target to halve greenhouse gas emissions already by 2017 (Stockholms hem 2014) (see 1.1 for comparison with national goal).
With regards to the initial ambition to produce energy locally (see Box 2), Stockholmshem and Sust started discussions around this in the autumn 2014. This had also been proposed by some of the residents (see table 1). After about 6 months of investigations, Stockholmshem with support of Sust decided to invest in solar panels on one of the residential buildings as a pilot project. The pre study suggested that the electricity generated would be used in the common areas of that building, such as the shared laundry facilities, lighting in the stairwell, attic and basement. Hence, this investment would not involve or benefit the residents directly. The initial time plan suggested that the system would be up and running in the autumn 2015. This schedule was however delayed due to the Stockholm City Museum\(^{11}\) opposing to these plans as they suggested it would detract from the architectural harmony in the area. As of spring 2016 the different parties were still negotiating.

Another activity around energy efficiency that was initiated included an ‘energy contest’. In the autumn 2014, interested households where invited to participate a three-month energy contest. The idea was to offer training on energy saving measures (mainly electricity due to most participants living in rental apartments) and then have the households compete about which household that could save the most energy compared to the same period previous year.

Nine households signed up for the activity and all showed great motivation to participate. All households but two managed to reduce their consumption. On average, the nine households reduced their consumption with 14%. The winning household reduced their consumption with 32%. The participating households were interviewed both at the start and at the end and it was clear that the participants did not participate from economical motivation, rather several showed genuine interest in sustainability issues and referred to that as the main motivational factor were they wanted to explore how much electricity they would be able to save if they worked really hard. The fact that it was set up as a contest triggered them as well as it was considered a ‘fun’ element. The winning household reported that they reduced their cooking and vacuum cleaning activities to a minimum plus had most lights turned off and nothing on standby.

The winning household was awarded with having their electricity billed payed by the project for the three month period of the activity. In reality this was not a huge amount of money (around 50 EUR for three months) so in addition they also got a basket with organic fruit and vegetables at a value of about 100 EUR.

As mentioned under 3.4, free energy counselling services was an open offer to residents throughout the project. This offer was communicated via the regular newsletter, at the blog and in the community news journal. It was also offered to the sustainability ambassadors. The households however showed limited interest for this and no households signed up for this offer.

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\(^{11}\) One of the roles of the City Museum is to assess whether proposed changes in the city can be reconciled with the preservation of buildings and sites’ heritage values.
Activities around mobility - Sustainable transport

Sustainable transport was one of the areas where the project owners had hoped to see broad engagement among the residents (See 3.3, Box 2). Several initiatives were taken to meet this ambition.

In December 2013, the car density per adult (20%) was slightly lower in Hökarängen compared with the average for Stockholm (25%) (SCB 2012). It is clear that a carpool was one of the activities that the project hoped to initiate as an important feature of a more resource efficient community (see Box 2). As the project started, it turned out that a carpool already had been initiated by a private company in 2012. Something that could indicate wrong assessment of needs, but at the same time this was also something that had been requested by residents so it had apparently not (yet) been well marketed in the community. This was also illustrated by the fact that the carpool at the beginning of the project (Phase II) had so far not attracted a lot of interest among the residents. In an effort to increase membership, Stockholmshem’s tenants were offered a 3-month membership for free.

The carpool membership rate in the community showed a slow start with only three residents signing up in 2013, by accepting the discounted price offer. From the slow start in 2013 the number of members grew to 43 in 2014, then went down slightly in 2015 to 35 (whereof 7 new members). A more in depth analysis is needed to understand whether this can be considered to be a high or low figure. Carpooling is likely dependant on number of different factors such as current number of car owners in the area; number of competing car pools in the area; price and availability etc. and such a detailed study is beyond the scope of this report. The number of carpool members can also be expected to increase in the longer perspective as car sharing is increasing in Sweden at large.

One aspect that would have been interesting to analyse is if those who choose to become members were part of households who never had owned a car and now began to drive occasionally or if it was households who sold their car and instead joined the carpool. Given the goals of the project, a desirable development at the community level would be that households sold their cars and joined a carpool instead. It would also have been interesting to know if this was primarily due to their environmental awareness or whether it was primarily for practical reasons. If an increased environmental awareness was the main reason, further qualitative analysis through interviews or questionnaires could potentially uncover the extent to which the project contributed to their decision to join the carpool.

Other initiatives taken on mobility and sustainable transportation included activities around biking (bike swopping event, test of cargo biking and electrical bikes, discounted bike service) and seminars about biking and sustainable transportation. While the activities were well received, they didn’t result in any obvious changes to the practice of car driving or increase in electrical bikes. Residents also showed very limited interest in seminars to meet up and discuss biking and sustainable transports in general and two out of three events even had to be cancelled.
3.4.3 Role of governance during the implementation period

During the implementation period, Stockholmshem and Sust continued as the formal project leaders (PL) of the initiative and with the PL of Stockholmshem being the main point of contact for the residents and the external actors (study visit groups, presentations etc).

Stockholm Environment Institute (SEI) also had a very large influence on the activities implemented in its role as responsible for the action research component, by observing and participating many of the activities and discussions and continuously analysing and recommending further actions for the project leaders. SEI was also responsible for many of the activities that resulted in broad interaction with the residents such as for example the seminar series, sustainability ambassadors, climate smart cooking, door-knocking campaign; several of the seminars and workshops etc. This meant that SEI built a strong relation with the residents and the ambassadors in particular and were able to pick up what residents were interested in pursuing and could propose this for the PL.

Figure 5 illustrates the stakeholders involved during the implementation phase and how information was mainly exchanged.

Figure 5. Stakeholders main flow of information during implementation period. References to groups refer to the model used for following-up on the project’s result, see chapter 2 and 4.
4 Outcomes of the initiative

At the end of the project, about 20 different sub-projects with about 40 different activities had been implemented out of which this paper has presented a selection of these. For a full account of the project’s results, please refer to the project’s final report. In this chapter we first discuss the project’s outcomes in connection to the model around ‘spheres of influence’ that was presented in chapter two, something that also can be said to illustrate the initiative’s scale, scoop, speed and depth within different groups. Then we discuss the role of governance and connect the results to the project’s overall and specific objectives. The chapter concludes with a discussion about the potential for replicability and diffusion and a discussion about identified drivers and barriers.

4.1 Spheres of influence

This section refers back to the analytical framework for analysing the outcomes of the project as presented in chapter 2.

Group 1. From surveys, interviews and focus group discussions it was learnt that the project contributed to a number of positive changes towards a more resource efficient behaviour among the sustainability ambassadors. When interviewing the sustainability ambassador who later started HOPP!, she stressed that the project had been instrumental in creating the right conditions for HOPP! to develop.

Both these groups (Ambassadors and HOPP!) contributed to significant societal changes at the local level, for example through the carrot mob that encouraged the grocery stores to expand its organic line faster than they were likely to otherwise have done. They also proposed and/or contributed significantly to a series of local initiatives that all residents had the opportunity to take part in such as the local cargo bike pool, the sustainability festival, a power tool pool, cooperation with an initiative named ‘Skänk och Tigg’ ['Donate and Beg'] etc. Last but not least, these two groups functioned as platforms for discussions about the sustainable society, especially at the local level, through their blogs, Facebook groups and the activities initiated.

As for the households that took part in the energy saving contest (see 3.4), most of them seem to have changed their energy behaviour, at least in the short term as a result of their involvement. The responsibility for the interviews with these families were given to an external partner which means that the project team unfortunately did not have the opportunity to have any closer interaction with this group. This meant that it was difficult for the project team to engage this group in the initiative or assess eventual contributions to societal change. In hindsight, this group should probably have been categorized as group 2 rather than group 1.

With regards to the role of Stockholmshem, they already during the implementation of the initiative started to apply lessons learned in other parts of their housing stock (Stockholmshem 2014). During

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13 Interview with Stockholmshem’s acting CEO, 20th April 2015 plus Stockholmshem’s annual report 2014.
project implementation, Stockholmshem also communicated actively about the work, receiving study visit groups and presenting outcomes at conferences and seminars. As one of Sweden’s largest public housing company (see 1.2), Stockholmshem is seen as a role model for many housing companies, and much of their work is likely to inspire and diffuse to other actors in the housing sector.

**Group 2.** Results from surveys and focus group discussions with participants in the seminar series and the cooking activities show that these participants perceived that the project had contributed to a number of positive changes, both when it comes to their awareness about sustainability issues in general; climate smart diets and with regards to strengthening the social sustainability of the community. With regards to the cooking activities, results from surveys and focus group discussions point to changed behaviour towards more climate smart diets and as discussed in chapter 3, they also took further initiatives in order to extend the cooking activities at the local level, something which in the longer term could be expected to lead to broader societal changes. This group of people can therefore be said to have evolved into group 1 already during the project. With regards to the pupils that the project engaged with, it was unfortunately not possible to follow-up with these as most of them soon moved on to higher grades in other schools.

With regards to the two local grocery stores, they were encouraged to expand their range of organic products at a much larger speed than they probably would have done otherwise, as indicated above (see 3.4).

**Group 3.** The initiative was frequently mentioned in local electronic and social media (but also other media at national level). Hence, it is likely that the initiative had an indirect impact also on group 3. The blog that targeted mainly the local residents evolved into an effective communication channel during the project with a few hundred visitors a day. The project’s Facebook page had about 900 followers at the end of the project. The project team also experienced that the initiative became well known among external stakeholders with an interest in sustainable urban development issues. At the end of the project period, the project was regularly described in the local media.

The impact on all groups identified under group 3 has not been possible to follow-up upon other than through a broad survey on peoples ‘common knowledge’ about the initiative that was undertaken during May 2015. At this occasion about 50 respondents were interviewed on the street during the annual community day. The majority of these (88%) was aware about the initiative. Most of these respondents experienced Sustainable Hökarängen as something very positive (86%). Only one of the respondents was negative towards the initiative. A majority of those who were familiar with the initiative (81%) was aware about some of the projects’s activities and 66% mentioned the project's environmental initiatives specifically.

Conclusions from observations, interviews, surveys and focus group discussions etc suggest that the initiative inspired many fruitful discussions about the sustainable society. Also, that it has led to a strengthening of the social community and to inspire many residents to transition to a more resource-efficient consumption.
The initiative also received some 40 study visits and held about 40 presentations for external groups. Nine representatives of the study groups were interviewed either by phone or via email. In summary, the project seems to have made a positive impression on those groups and the majority referred to the project as a very positive and inspiring example of how to work at the community level.

Clearly, the inner-initiative speed was higher in group 1 than compared with group 2 and 3. The ambassadors quickly picked up and begun transformational changes with regards to their own lifestyles and also contributed to societal changes. Some of these initiatives started to diffuse already during the case study period (see 4.4 and 5.4).

Hopefully by time, there will be a snow-ball effect from group 1 to group 2 and then also group to 3, as the awareness about sustainable lifestyles starts to spread and the other groups start picking-up more sustainable practices at the community level. It will however, be difficult to assess if the influence comes from a general trend in society or if it can be attributed to the initiative.

4.2 Evaluation of outcomes against initially set goals

As mentioned in chapter 3, the overall objective of the project was formulated as:

"... Through interdisciplinary action research and in connection with Stockholmshem’s energy efficiency investments, develop, test and demonstrate methods for how property owners, residents and other people can work together to reduce energy and other resource use in a residential area."

The ambition was also to frame it as a pilot project, to allow Stockholmshem and other housing companies (mainly) to learn from the project’s experiences. Hence, an additional objective was formulated as:

"Develop methods and models that can create inspiring and repeatable examples for how resource efficiency can be pursued within a neighborhood by involving and activating the individuals who live and/or work there"

In summary, the assessment is that the project succeeded well in achieving these overall objectives. Several activities were developed that built on cooperation between Stockholmshem (through the project team), the residents and other stakeholders in Hökarängen and most of the activities aimed at increasing the energy and resource efficiency of the residents either directly or indirectly. A number of the activities have the potential to serve as inspiring examples of how resource efficiency can increase within a neighborhood through the engagement of the residents.

Annex 2 summarizes the nine project objectives and reflects on (in short comments) to which extent these were achieved. In summary, the initiative managed to achieve most of them although it was difficult to create engagement among the residents for activities around energy and transportation, as discussed in earlier chapters.
Although the project plan had not formulated any objectives with regards to the resident’s long term engagement around increased resource and energy efficiency, this was suggested to be an important long term objective. The project team put down a lot of efforts in ensuring that relevant activities could be handed over and taken forward by residents when the project came to a close. Many of the activities also appear to be well placed to become a permanent feature in the community with the support of the transition movement (HOPP!) and their responsibility for the common garden, the ambassador’s network, the cooking groups and other actors.

With regards to the explicit objective to use an action research approach this worked very well for creating a strong commitment especially among the residents. From the beginning however, there was a too large focus on a bottom-up perspective and that proposals for different activities should come exclusively from the residents and other local stakeholders. The consequence was that the project got a slow start with few activities being implemented. When the project team eventually was allowed to be a bit more pro-active and take the first initiatives meeting venues were created that functioned as platforms for discussion and further engagement around sustainability issues. After that, most of the following activities were based exclusively on the ideas and initiatives of the residents.

This illustrates that the activation and engagement issue is complex. The first challenge is to get the households interested enough to come to the first meeting, event or activity. The second challenge is to ensure that the interest and commitment is maintained until the end of the project as well as long after (Axelsson and Carson, 2013). It is important to be aware that continuous engagement and dialogue is an essential part of the action research approach, were the residents in our case were invited to put forward suggestions and ideas, but where there was also a need to have someone around to capture, confirm and help build on the ideas put forward. This was particularly important in a project with a defined timeframe and set objectives as in Sustainable Hökarängen. The process of change is also highly dependent on the individuals involved in the initiative. Who these individuals are is almost impossible to control. Depending on the individuals, how the group functions and the nature of the activities, the group will need different types of support, either in terms of formal or technical knowledge and skills, teaching skills, time available and also motivation. It can be a challenge for the project team to accurately identify any gaps and ensure that they are addressed.

4.3 Governance

Governance among the incumbent actors involved
As owner of the majority of the housing in Hökarängen, Stockholmshem had large influence on most of the project activities including the energy and resource efficiency measures. The PL from Stockholmshem had her office base in the community and had daily contact with many local actors. She also had responsibility for the communication activities and several of the sub-projects such as the urban farming activities.

Being Stockholmshem’s main project partner, Sust also had an important role. They contributed to forming and steering the initiative and took responsibility for most of the activities around energy use.
and transport. Sust was also responsible for bringing in additional capacity, such as the research partner. Stockholm Environment Institute (SEI) and Sustopia also contributed substantially to how the case developed, through the close interaction with the residents and responsibility for many of the activities and with SEI also in an advisory role towards Stockholmshem and Sust as responsible for the research components.

Other actors at this level included local government officials and politicians that paid attention through study visits and by showing an interest in the outcomes. Stockholmshem’s Board also consist of representatives of political parties but these were not directly involved in the initiative.

The city’s local district board was involved in discussions about the use of community land for urban farming. Also, Stockholm Vatten [Water], with responsibility for Stockholm’s water and waste, was involved in discussions about improving the recycling possibilities in the area.

Stockholmshem had (and still has) a natural convening power at the local level. For this reason, they have large responsibility and possibility to influence and even form sustainability practices at the local level in Hökarängen. Apart from initiating the whole project, this was done for instance through various energy efficiency measures; by allocating space inside their buildings for recycling of waste; selecting tenants for the local stores; negotiating with the city for allocating space for tenant allotment gardens etc. Hence, housing companies should be seen as important agent for change with large possibilities to facilitate transition pathways (at least in Sweden).

As part of the project’s final report, a number of indicators and methods that Stockholmshem was recommended to use for following up on the projects results in a few years were outlined (Axelsson et al 2015). It will also be important to ensure that Stockholmshem’s regular service staff and customer managers based in the community continues to maintain the good atmosphere and relations that were built up with the residents during the initiative. At the end of the project, Stockholmshem’s regular staff was invited to a couple of workshops as a formal handover to ensure that the project results were carried forward in the best possible way.

**Governance among residents at the local community level**

After about one year, the local sustainability ambassadors took an important role as agents for change. The ambassadors initiated joint activities and proposed numerous activities to be undertaken at the local level. The aim with inviting interested residents to this network was also to form a small group of dedicated residents that the project team could use as a sounding board for new projects and activities.

By engaging a group of locally based people – who would hopefully still live in the area after project completion – the ambition was also that this would be a group of people with a long term commitment for increased resource efficiency/sustainability at the community level. Another aim was also to investigate whether this could be an effective method for creating engagement around sustainability issues locally. Eventually this group developed into a very important facilitator for the initiatives taken at the community level.
After about 1.5 year, one of the ambassadors took the initiative to form (also) a local transition movement - HOPP!. This initiative became very active at the local level and invited interested residents and others (from outside Hökarängen) to a large number of activities with environment sustainability in focus. This group appears to have the potential to influence the discussion about transition pathways in the long term in Hökarängen as well as the wider Stockholm region. They were also given the responsibility for coordinating activities in the common garden and to administer the community cargo bike pool, as mentioned in chapter 3.

The residents that participated in the climate smart cooking group were another important group. After a number of climate smart cooking activities, a group of dedicated residents continued to meet up and cook together outside of the initiative. The group grew slowly and the participants expressed a vision that these activities were a good means to increase both the social and ecological sustainability in the community. At the end of the project, they also arranged a couple of public events in the community. At one of these events they handed out leaflets and invited other residents to sign up to join the climate smart cooking activities that they aimed to continue in the autumn.

Local businesses also had a certain role. When retail spaces in the area became available for subletting, Stockholmshem had the ambition to select new tenants with some kind of sustainability agenda (plant store with green labelled products; second hand clothes and products; bakery with organic products etc). This clearly also contributed to a certain ‘atmosphere’ in the area.

In conclusion, findings suggest that building sustainable transition pathways through local agents with a strong convening power that rests partly on their status and appreciation within local informal networks can be important for creating long term changes. These agents often have an engagement in the area (such as residents), that plan to remain at the community level and are eager to contribute to an improved atmosphere in their neighbourhoods together with their neighbours.

Even if the findings point to positive results at project closure, it will be important to follow-up on how the initiative continues to develop in the longer term. Only then will it be possible to draw conclusions on the type and role of governance in the longer term.

### 4.4 Replicability and diffusion

The initiative was a pilot project for Stockholmshem. A number of similar community initiatives have been implemented around Sweden, although most of them in quite different settings. Large interest has been shown for this project from all over Sweden. From an interview with Stockholmshem’s acting CEO they learnt that they saw the initiative as a role model for other communities. They had already taken measures to replicate the successful parts of the initiative in other communities where Stockholmshem own a large part of the housing stock. They had also started to incorporate the finding into their

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14 Telephone interview, Mikael Källqvist, acting CEO of Stockholmshem, 20 April 2015.
strategies for how to engage with the residents. In their annual report for 2014, Stockholmshem reported that “with the good experiences from the Hökarängen project...we started a similar initiative in another community...which, among other things...will take advantage of the ideas that promote social, environmental and economic sustainable development” (Stockholmshem 2014). Hence, diffusion of parts of the initiative is likely already within a short time frame to other initiatives at the local level.15

From interviews with representatives of the study groups that paid study visits to the Hållbara Hökarängen project it was learnt that several would look into the possibilities to replicate parts of the project activities in other settings (such as other municipalities). The seminar series on sustainable consumption followed by the sustainability ambassadors seems to have been an activity that several found very inspirational as well as the bottom-up approach taken and the close collaboration with residents. The broad approach taken to work with several sustainability aspects as well as the lessons learned about the weak engagement around energy issues was also mentioned as important lessons learned. It was also clear that several respondents had discussed the Hökarängen project with others in their respective networks.

Several of HOPP! activities look promising with regards to the possibility for diffusion into other urban settings. The common garden, the local purchase cooperative, the cargo bike pool and the seminars arranged and communicated via their blog are all examples of activities initiated by HOPP! that have a good potential for upscaling.

By time, there were signs that the initiative started to be acknowledged also in other communities, attracting non-Hökarängen residents to the open seminars and workshops. While this does not mean that similar initiatives are initiated elsewhere, it does indicate that the initiative might have influenced people also outside the community to a change in behaviour and social practices.

4.5 Barriers and drivers in the engagement process

Initially, the initiative suffered from a number of start-up problems mainly due to institutional and organisational structures and problem understanding. These problems resulted in activities taking longer to get started. For example, as mentioned in chapter 3, the strong bottom-up approach meant that the project group was not allowed to take any broader initiatives. Once this strategy was allowed a bit more flexibility, a number of initiatives could be initiated that worked well to create initial engagement among the residents.

The case has demonstrated that it was difficult to create engagement among the households in Hökarängen around efforts to reduce household energy consumption. This is thought to be mainly due to the characteristics of the Swedish public housing sector, but also due to the limited emotional attachment that residents have for these issues.

15 With local level here is meant the Stockholm region where Stockholmshem own a large part of the public housing stock – about 50,000 tenants in 26,000 apartments plus about 3500 retail spaces in the Stockholm region.
In order to have a chance to create engagement around the energy consumption behaviour, a number of carefully planned activities had probably been needed, possibly in combination with novel technology. That said however, in a community with mainly public housing apartments, this might be a difficult challenge regardless of the approach. With the action research approach taken, were the residents were invited to put forward ideas for activities to engage in, it became clear that housing energy was not part of their main interest.

To start off with a seminar series and then a network with sustainability ambassadors worked very well to create local engagement in Hökarängen and may very well be replicated in other similar initiatives. Through the seminar series the participants got a basic understanding of the environmental problems humanity currently face, and then those who wanted to learn and engage more was offered to join the network of sustainability ambassadors. The seminar series was an effective method for creating or strengthening the ambassadors’ initial commitment and motivation, as the ambassadors on several occasions referred back to the seminar series and what they learned there.

It also seemed as if the network worked well for spreading awareness about these issues further in Hökarängen. Several of the ambassadors presented their own ideas about how they wanted to spread the message and expressed pride in belonging to the network.

The ambassadors were thus important for Sustainable Hökarängen for several reasons. They were well entrenched in the area and had the ability to capture ideas and needs of others and help form the different activities that were planned for. Through their networks, Sustainable Hökarängen also got in contact with other local resources/people. Together they conducted several outreach activities in order to create awareness and commitment for the project. They were also an invaluable sounding board for the project group’s further thoughts and ideas.

Through two evaluation surveys and a concluding focus group discussion, the feedback from the ambassadors was overall very positive. They also indicated that their participation in the network had made them change their behaviour on a number of different points (e.g. by eating more vegetarian and organic food; changing to green electricity; only buying second hand furniture). They also reported having functioned as ambassadors, i.e. spreading the word about the different topics the project discussed to neighbours friends.

Activities as gateways for further engagement and strengthened social structures
Much of the work done in the context of Sustainable Hökarängen also helped strengthening the social structures. Meeting platforms were created where different activities were designed in dialogue with the residents. Through these venues, residents met to discuss and promote a more sustainable society with environment and resource efficiency in mind.

Evaluations, interviews and focus group discussion all point to the conclusion that apart from a concern about the environment issues and an interest to know more about that, many participants were also attracted to the social dimension of the project. Hence, results suggest that in order to create
engagement around sustainable transition pathways among residents, it is important to create meeting platforms around people’s interest areas, activities that they have direct influence over and ideally also consider ‘fun’. These can then serve as an entry point for engagement also around other issues, such as reduced household energy consumption. The findings suggest that stronger social networks are important for creating these changes.

By inviting residents to different kinds of activities, the likelihood increases that the residents will find one activity that attracts their interest. The different activities can thus be used as gateways for further engagement around different sustainability issues (such as energy efficiency and transport). For instance, from evaluations and focus groups it was learned that the cooking activities and mushroom picking event triggered a number of residents to become more active and that they explicitly said that it was not until these activities came up that they felt that the initiative had something to offer them.

From interviews, surveys and focus group discussions it is clear that the project have inspired numerous community residents to more sustainable lifestyles, although it is too early to say that this will also be a long-term lifestyle and behaviour change. Follow-up studies to evaluate the long-term impact are needed as was recommended to the project owner (Stockholmshem and Sust).

As expected, many of the residents who showed interest in the project from the start, had already been given some thought to environmental issues and wanted to learn more. It was also learnt that printed and web-based communication was not enough to generate interest among the broader groups in the area. Meanwhile, we also understand that an initiative like Sustainable Hökarängen cannot reach out to and interest everyone. By starting somewhere it is possible to reach different core groups who, through their connections in the local community, are more likely to eventually reach out and engage others (see also chapter 2). The work with for instance the network of sustainability ambassadors and the study circles was very interesting, not least from this perspective. In an attempt to create interest and activate broader groups among the households, the project also conducted a door knocking campaign, which resulted in very positive feedback.
5 Pathway analysis

This chapter presents an analysis of the case study using elements from the framework for the Case Study Protocol. An initial short summary of the case is followed by two sections discussing the case from Pathway A and B perspectives. This is followed by a discussion about the case’ momentum and then concluded with a discussion about the significant results identified from the case. Also see data sheet in Annex 3.

5.1 Summary

The case suggest that the initiative Sustainable Hökarängen was important for inspiring several community residents to transition to a more resource efficient lifestyle and for strengthening the social sustainability in the community. Several groups were formed that appear to be well placed to remain in the area and to continue addressing local and global sustainability issues after project closure.

It was difficult however, to create engagement among the residents around increased energy efficiency. One of the main reasons for that was assumed to be that the area consists mainly of rental housing apartments where energy consumption is included as part of the rent (mainstream housing option in Sweden) and hence provide limited incentives for residents to save energy. Instead, the case demonstrated that residents showed more engagement in activities around increased resource efficiency in general, such as community gardening, nature walks or climate smart cooking – activities which relates to residents leisure time. Furthermore, the project demonstrated that a transition towards a low-carbon society for some people can be strongly facilitated by using social sustainability as an entry point. By offering a broad spectrum of activities that appeal to peoples different interests and at the same time strengthen peoples social relations at the community level, these activities can function as entry points for broader understanding and engagement also for environmental sustainability issues, such as energy efficiency.

The case also suggest that building sustainable transition pathways through local agents with a strong convening power, that rests partly on their status and appreciation within local informal networks, can be important for creating long term sustainability changes. These agents often have an engagement in the area (such as residents), that plan to remain at the community level and are eager to contribute to an improved atmosphere and sustainability practices in their neighborhoods. Working with these agents increases the likelihood that the activities implemented fills a local need, uses the right ‘language’ and can be scaled up in local networks.

The initiative also made a positive impact on the visiting study groups where the majority referred to the project as very inspirational. It was also learnt that Stockholms hem view Sustainable Hökarängen as an important model for their continued sustainability work, something which also have the potential to influence the work of other (public) housing companies.
5.2 A combination of Pathway A and B

The case study findings suggest that Sustainable Hökarängen was a combination of a Pathway A and B transformation.

It was initiated as a Pathway A transformation by (the incumbent actor) Stockholmshem and Sust, with co-funding from STEM. It partly left that path to instead follow a Pathway B transformation - Broader regime transformation with transformative changes among some groups of actors.

The planned bottom-up approach applied meant that the case to a large extent was driven by civil society actors at the community level, involving several socio-technical dimensions. Changes were radical, deep and fast in some areas and among some groups of residents, and slower and shallower among other groups (also see chapter 2 and 4.1). Several initiatives taken led to behavioural and societal changes among different groups. The sustainability ambassadors, the transition movement (HOPPI!) and the study circle movement around climate smart cooking can serve as the obvious examples. Focus group discussions, interviews and surveys all indicate that the project inspired these groups to behavioural as well as societal changes, with new user practices and new institutions being formed. See table 2.

Table 2. New groups formed and dimensions involved

<table>
<thead>
<tr>
<th>New groups</th>
<th>Activities undertaken</th>
<th>Leading to new practices</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability ambassadors</td>
<td>Carrot mob; movie evenings; plant swopping; second hand activities; bee hives workshop, proposing and participating numerous seminars and workshops; initiating discussions about the sustainable society at local level and with neighbours etc.</td>
<td>Expanded range of organic products in local stores; more sustainable lifestyles among group members - acting as role models within the community; community socially strengthened</td>
<td>Consumer preferences, user practices, cultural, social</td>
</tr>
<tr>
<td>Transition movement</td>
<td>Urban farming initiative incl. training courses; cargo bike pool; power tool pool; seminar and initiatives on various sustainability topics such as local purchase cooperative; local soil farm, harvest markets; sustainability festival</td>
<td>Well-functioning common garden; expanded group of local farmers; a cargo bike pool and a power tool pool the area; inspiration for changed practices towards more sustainable lifestyles among participants in their various activities/seminars</td>
<td>Consumer preferences, user practices, cultural, social, technical (bike and power tool pool), markets, organisational</td>
</tr>
<tr>
<td>Study circle on climate smart food</td>
<td>Climate smart cooking activities: training courses and outreach events</td>
<td>Expanding group of residents cooking together spreading climate smart cooking practices and strengthening the social community</td>
<td>Consumer preferences, user practices, cultural, social, organisational</td>
</tr>
</tbody>
</table>

The transformative speed was slower in the beginning but picked up speed with the seminar series as the initiative was extended into the society through the group of dedicated residents that formed the network of ambassadors. The network came to function as a vehicle for change in that they took a
number of initiatives to which other residents were invited plus that they functioned as a sounding board for the project team.

Even if the activities were formed by the resident’s interest areas, Stockholmshem and the project team was continuously there to support the initiatives taken by the residents, in many cases also providing financial and logistical support. This suggests that it also contained Pathway A transition elements. With regards to some of the activities proposed by the project team, the residents also demonstrated what they were not interested in engaging in (e.g. by being absent), which led to Stockholmshem and the project team having to adapt the initiative to the interest of the residents. At the same time, project funds would probably not have been allocated to initiatives that the project owners were not supportive of.

The initiative could also be said to follow Pathway A for other reasons. The project was initiated by one of Sweden’s and Stockholm’s largest public housing companies together with the private company (Sust). They saw the initiative as a pilot or demonstration project with the overall objective to increase the energy and resource efficiency of the community. So even if the applied bottom-up approach meant that the residents formed a large part of the initiative, the planned energy efficiency investment component of the project was still there and was the sole responsibility of Stockholmshem. The residents were not invited to influence this part of the project.

Stockholmshem worked in parallel with the energy efficiency investments, by replacing or improving incumbent technologies with more modern ones. These investments alone helped Stockholmshem achieve their overall energy reduction targets. This part of the project can be said to have promoted a technical component substitution in order to achieve a sustainable, low-carbon society, with socio-cultural practice elements unchanged.

5.3 Deviations from the ideal type

As suggested under section 5.2, Sustainable Hökarängen demonstrated a combination of a Pathway A and B transformation. The bottom-up approach taken meant that the local actors were invited to get intensively involved in a multi-dimensional approach and in accordance with a Pathway B approach. Several new groups formed that to a large extent formed their own agenda.

Stockholmshem (through the project team) supported the Pathway B transformation while at the same time focusing on their energy efficiency programme. This means that the case can be said to follow a Pathway B that has been planned by an incumbent actor (Pathway A). This transformation pathway probably deviates from the ideal type.

Looking only at the Pathway B transition, it can in many aspects be said to illustrate an ideal-type B pathway. Within specific groups there were substantial departures from the existing system, with new civil society groups being formed. From surveys and focus groups discussions we learnt that several of
these showed a radical transformative change in their behaviour as well as through new organisations (e.g. HOPPI) and local practices (e.g. carrot mob, urban farmers market, cargo bike pool).

Many of these changes were multi-dimensional in that they meant illustrating new consumer preferences and user practices; a stronger social network within the community; affecting market behaviour (e.g. organic product range), all together illustrating a new community culture around environmental and social sustainability practices.

With regards to Stockholmshem’s investments in energy efficiency measures, this followed a Pathway A with no involvement from the residents. Overall, these investments only made minor departments from the existing system performance. The solar panel investment was however a substantial departure from the existing system performance. But, as noted in section 3.4.2 this investment has met opposition and delays and might not take place. Earlier, Stockholmshem also invested in a multi-dwelling passive house which was clearly also a substantial departure. Both these investments suggest a certain depth of change.

Had Stockholmshem engaged more with the residents around the energy efficiency investments in Pathway A, that could have been an opportunity to create a larger engagement among residents in all groups (see chapter 2) for a transition to a more sustainable society, since a majority of the residents are Stockholmshem’s tenants. At the same time this could also have meant that the residents were less interested to form their own transition pathway.

The case suggest that a public housing actor such as Stockholmshem has an important role to fill in the transition to more sustainable societies, both when it comes to replacement of old technology and for providing the incentives for their tenants to increase their engagement around resource efficient lifestyles.

### 5.4 Significant results

The transitions illustrated by the case have come about through the interaction between processes at different levels where a series of niche-innovations built up internal momentum within a number of newly formed groups. These groups with residents had an interest (demand) to support emerging innovations around increased ecological and social sustainability and also worked to reinforce each other. The initiative contributed to several novelties such as for example a network of local sustainability ambassadors as a vehicle for transition, a local transition movement as a forum for discussions around the sustainable society. At the same time these transitions have not come about in isolation. Apart from the initiative as whole providing important incentives for these transitions to take place, it is likely that the transitions in several aspects also have been fueled by similar transitions at other levels. I.e. even if the transition and the way in which it unfolded was unique for the case, many actors were aware that similar transitions were already ongoing elsewhere. It was probably also changes at the landscape level that created pressure on the prevailing regime (public housing sector/Stockholmshem) to allow opportunities for niche-innovation in this field (and for this case).
Several factors suggest that components of this niche have the potential to diffuse into the inter-local and perhaps also trans-local phases (Geels and Deuten 2006):

- The interest shown for the case by study visit groups. These groups consisted of representatives from: other housing companies; local governments; architects; researchers; politicians; students; consultancies etc. There have also been a few study visits from other countries. Several of these indicated that they were interested to replicate components of the case in other settings or have them inform their overall work
- During the autumn 2015, SEI was contacted by Sweden’s second largest municipality who reported having found the final report of the project very inspirational and planned to replicate several of the methods used in Hökarängen in their communities
- The around 40 presentations held about the initiative at different events are likely to have made some influence and spreading practice
- The residents and local stakeholders spreading the word about their community and the activities going on in their networks
- Neighboring communities picking up what was going on and wanting to replicate
- The project team members continued work. Stockholmshem, Sust and SEI all hope to be able to replicate the most successful parts in other settings. SEI will also aim to publish articles about the lessons learned
- News media writing about the case and spreading the word

It is too early to say to what extent the case has provided seeds for systemic change. If this niche would be able to inspire several similar initiatives, it would have the potential to positively influence at national as well as global levels.

5.5 *Momentum of the initiative and implications to be drawn*

A large part of our everyday actions is based on routines and habits rather than active choice. This was something Sustainable Hökarängen put close attention to, by highlighting issues that are considered important for a sustainable society and by arranging situations where residents could get together, socialise, discuss and help each other form new sustainability practices. In this context, it is important to be aware that the perception of what resource efficiency, a sustainable society and sustainable lifestyles actually means can be very subjective. Whatever the starting point, it is important that people understand why some choices are better or worse than others if they want to increase the energy and resource efficiency in their overall consumption. Knowledge and information is therefore of fundamental importance so that it becomes easier to make sustainable choices. However, this is often not enough in order to change habits and behaviour. The motivating factors need to be understood and these are likely to be different for different people (as well as geographical and social contexts). It is likely however that we can identify a number of unifying factors regardless of the setting.
Sustainable Hökarängen worked to carefully address these issues and the project’s findings will hopefully be an important contribution to other efforts to examine how we can create conditions for a sustainable society with increased energy and resource efficiency in mind.

Hökarängen results indicate that the strengthening of the social community was instrumental in changing the behaviour of many residents. This suggest that if we find ourselves in a social context with close contacts with other people and where we are perceived to be positively acknowledged for a pro-environmental behaviour, this increases the likelihood that we will change our behaviour.
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Stockholmshem (2011), Stockholmshems annual account/årsredovisning 2011, see http://www.stockholmshem.se/Om-Stockholmshem/Foretagsfakta/Arsredovisning/


Sweden Green Building Council, Miljöbyggnad – en svensk certifiering som värnar om människa och miljö, see http://www.sgbc.se/docman/certifieringssystem-1/25-broschyr-miljobyggnad/file
Annex 1: Seminars, workshops and activities implemented within the framework of Sustainable Hökarängen

The table below illustrates most of the seminars, workshops and activities implemented within the framework of Sustainable Hökarängen. Most of the activities implemented after the seminar series in the autumn 2013 were based on proposals by the residents who participated the seminar series as well as subsequent events.

<table>
<thead>
<tr>
<th>Timing</th>
<th>Topic</th>
<th>No of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2013</td>
<td>Seminar on Urban farming – inspirational workshop</td>
<td>30</td>
</tr>
<tr>
<td>Sep 2013</td>
<td><em>Sustainable consumption</em> 1:4 – Our global environmental impact</td>
<td>25</td>
</tr>
<tr>
<td>Oct 2013</td>
<td><em>Sustainable consumption</em> 2:4 - Transports</td>
<td>23</td>
</tr>
<tr>
<td>Nov 2013</td>
<td><em>Sustainable consumption</em> 3:4 - Food</td>
<td>20</td>
</tr>
<tr>
<td>Dec 2013</td>
<td><em>Sustainable consumption</em> 4:4 - Housing</td>
<td>23</td>
</tr>
<tr>
<td>Jan 2014</td>
<td>First meeting of the local sustainability ambassadors. Closed meeting. This group subsequently met every 4-6 weeks.</td>
<td>8</td>
</tr>
<tr>
<td>Mar 2014</td>
<td>Household energy saving measures</td>
<td>8</td>
</tr>
<tr>
<td>Mar 2014</td>
<td>Climate smart cooking 1 day course</td>
<td>30</td>
</tr>
<tr>
<td>Mar 2014</td>
<td>Carrot mob</td>
<td>Around 50</td>
</tr>
<tr>
<td>Apr 2015</td>
<td>Discussion evening about biking in Hökarängen</td>
<td>0 (cancelled)</td>
</tr>
<tr>
<td>May 2014</td>
<td>Climate smart travelling</td>
<td>6</td>
</tr>
<tr>
<td>May 2014</td>
<td>Sustainable consumption</td>
<td>3</td>
</tr>
<tr>
<td>Jun 2014</td>
<td>Urban nature and forest – guided nature walk</td>
<td>25</td>
</tr>
<tr>
<td>Sep 2014</td>
<td>Sustainability festival</td>
<td>Several hundreds</td>
</tr>
<tr>
<td>Oct - Dec</td>
<td>Energy contest. All interested households invited to participate an energy battle/contest. Winning household got their energy bill paid for the whole period</td>
<td>9</td>
</tr>
<tr>
<td>Oct 2014</td>
<td>Urban farming – Design workshop</td>
<td>12</td>
</tr>
<tr>
<td>Oct 2014</td>
<td>Followed by workshop for planting tulips (Nov)</td>
<td>3</td>
</tr>
<tr>
<td>Oct 2014</td>
<td>Chemicals in our everyday lives</td>
<td>20</td>
</tr>
<tr>
<td>Oct 2014</td>
<td>Guided nature walk - Mushroom picking in the nearby forest</td>
<td>20</td>
</tr>
<tr>
<td>Dec 2014</td>
<td>Urban farming – Practical tips for urban farming</td>
<td>8</td>
</tr>
<tr>
<td>Dec 2014</td>
<td>Workshop – Participants made their own plastic foil/wrap out of beeswax and deodorant</td>
<td>20</td>
</tr>
<tr>
<td>Dec 2014</td>
<td>Pop-up flee market</td>
<td>About 50</td>
</tr>
<tr>
<td>Jan 2015</td>
<td>Workshop towards parents of infants. Participants made their own beeswax bibs or plastic foil. Discussion about infants and sustainability issues.</td>
<td>10</td>
</tr>
<tr>
<td>Mar 2015</td>
<td>Movie night – The importance of bees and other pollinating insects [<em>‘The Bee effect’</em>]</td>
<td>15</td>
</tr>
<tr>
<td>Apr 2015</td>
<td>Workshop where participants made their own bee and insect hotels plus bat boxes.</td>
<td>35</td>
</tr>
<tr>
<td>May 2015</td>
<td>Climate smart cooking group sold vegetarian burgers at the annual community festival plus inviting interested residents to join the group</td>
<td>6</td>
</tr>
</tbody>
</table>
Note. 1. Participant numbers excl. lecturer/project team members (at least 2 persons at each occasion). 2. Open seminars but participants were mainly local sustainability ambassadors who were specifically encouraged to participate.
### Annex 2: The initiative’s sub-objectives and activities implemented that relate to these

<table>
<thead>
<tr>
<th>Sub-objectives</th>
<th>Activities that relate to these</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At least 10 sub-projects based on the participation of residents or other local stakeholders in the area</td>
<td>The objective was reached. About 20 different sub-projects and 40 activities was initiated and communicated to different actors in different channels.</td>
</tr>
<tr>
<td>2. Develop a number of good examples, based on the methods and models that have been tested and evaluated in the project and disseminate the results to relevant target groups, mainly other housing companies.</td>
<td>The objective was reached. A number of activities should qualify as good examples of how a housing company and residents can work together for increased sustainability. Perhaps especially the seminar series about sustainable consumption; the sustainability ambassadors; cooking classes as study circles; sustainability festival; doorknocking campaign, nature walks; energy saving contest and practical workshops (e.g. bee hives, skin care products); power tool and the communication work. Interviews of representatives of study groups and Stockholmshem indicate that there is potential that several of these sub-projects and activities can be replicated in other, similar initiatives.</td>
</tr>
</tbody>
</table>
| 3. The behavioural methods and models being tested in cooperation with tenants shall further reduce energy consumption by approximately 15%, compared to a zero measurement at the start | The objective was not reached.  
- Re the residential energy consumption we learnt that the households (HH) showed limited interest for this. The 9 HH’s that participated the energy saving contest reached an average energy reduction of about 14%. The HH’s that managed to save the most reached about 30%.  
- Re the electricity usage (HH have control over) it was difficult to get access to regular statistics on this. Estimated figures from Stockholmshem suggest a reduction of about 3,5% during the project period.  
- If with ‘energy consumption’ is mean resource consumption in general, most sub-projects connect to this goal. Local farming decreases the need for commercial or imported vegetables and fruit; reuse decreases that need for new clothes, furniture etc. The seminar series encouraged the participants to a more energy and resource efficient consumption; the cooking activities to less meat consumption etc. The work with the web tool Min Klimatpåverkan, the initiative in the shared laundry facility and the ambassadors also encouraged to energy savings. However, it has not been possible to estimate the eventual savings from these activities.  
- Stockholmshem’s investments led to energy savings of about 14% in total or 32% in the buildings where the investments had been completed. Once completed and after system optimization, savings of about 40% is expected. These improvements can however not be connected to the residents and their energy behaviour. |
| 4. Develop general knowledge about the attitudes and behaviour of the residents that will enable further resource efficiency among the tenants. | The objective was reached. Through the sub-projects, focus group discussions, interviews, discussions, observations etc., new knowledge about attitudes and behaviour has been gained about what stimulates the residents in Hökarängen to increased resource efficiency and what does not.  
It was learnt that the activities (around resource efficiency) that engages people the most were activities that the residents consider important and/or interesting, fun and can influence such as cooking together; farming; waste separation. Resource efficiency that people have limited influence over and with apparently weaker incentives interested fewer such as energy saving measures |
and transports. Common meeting platforms that strengthen the social sustainability is important for influencing attitudes and behaviour in the longer term.

<table>
<thead>
<tr>
<th>5. Receive at least 20 study groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>The objective was reached. Around 40 study visits have been received, almost as many presentations and lectures have been held and two radio interviews have been given. The common garden was also broadcasted on TV in connection with the visit of an ‘urban farming’ celebrity. On June 11, 2015, interested external actors (outside Hökarängen) were invited to visit the project’s final exhibition. Approximately 100 representatives from municipalities, other housing companies and similar participated. The final exhibition was also open to the public throughout June.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. Develop and test methods for activating consumers in more a responsible use of energy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The objective was not reached. It has been difficult to create broad commitment among the residents for housing energy. However, several methods for engaging the residents around resource efficiency broadly worked very well.</td>
</tr>
<tr>
<td>- With regard to residential energy use the energy saving contest showed positive results. A competition component combined with visualization of electricity consumption seems to have appealed to the participants.</td>
</tr>
<tr>
<td>- The sustainability ambassadors participated a seminar about electricity-saving measures and were given the task of measuring their electricity and report back at a subsequent meeting. Several indicated that the task has been difficult. The eventual impact this had on the ambassador’s electricity consumption was not possible measure, but if nothing else it is thought to have increased the awareness of the ambassadors about the issue.</td>
</tr>
<tr>
<td>- A concept for giving interested HH’s energy advice in their homes was developed but aroused no interest among the HHs.</td>
</tr>
<tr>
<td>- A concept about an energy ‘pain spot’ workshop was developed by Sustopia. An interesting concept but unfortunately HH’s showed limited interest and had to be canceled (2 signed up).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Evaluate the methods tested for establishing collaboration between Stockholmshem and the residents and stakeholders and the results gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>The objective was reached.</td>
</tr>
<tr>
<td>- As mentioned under point 2 above, several of the methods tested for collaboration with residents worked well, e.g. the seminar series on sustainable consumption; ambassadors; HOPPI; climate smart cooking groups.</td>
</tr>
<tr>
<td>- During the sustainability festival in September 2014, about 40 businesses and other stakeholders participated or contributed of which the majority was local. In addition to the sustainability festival, the project has also collaborated with a large number of local stakeholders in Hökarängen throughout the project.</td>
</tr>
<tr>
<td>- With regards to the community schools, the project established very good collaboration with especially one of them (Hökarängsskolan). The project team arranged lectures and seminars; arranged a ‘sustainability idea contest’ and supported an activity about food waste in the school kitchen.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. Develop, test and evaluate technologies and services that support consumers in a more responsible use of energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The objective was partly reached. As mentioned above, activities around energy consumption has been difficult to create engagement around.</td>
</tr>
<tr>
<td>- The energy saving contest with elements of competition and energy visualization showed positive results that could well be replicated in other contexts.</td>
</tr>
<tr>
<td>- The Min Klimatpåverkan encourages the user to become more conscious about their energy as well as resource used. The tool worked great to use in small groups, but it was difficult to gain wide acceptance for it among the residents.</td>
</tr>
<tr>
<td>- The power tool pool and cargo bike pool are good examples of services that encourages to increased energy and resource use.</td>
</tr>
<tr>
<td>- The advice was another good &quot;service&quot; accommodation sadly showed minimal interest.</td>
</tr>
<tr>
<td>- The energy counselling services were another service for which the residents...</td>
</tr>
</tbody>
</table>
unfortunately showed very limited interest.

- The project also arranged an activity in one of the shared laundry facilities to encourage the residents to a more responsible laundry behaviour, by visualizing the energy consumption and giving laundry advice.

| 9. Develop, test and evaluate design methods for innovative solutions for increased energy efficiency | The objective was partly reached. The ‘sustainability idea contest’ together with the school; energy saving contest; the tool Min Klimatpåverkan and the activities in the shared laundry make up the best examples of “design methods for innovative solutions for increased energy efficiency’ that have been developed and tested within the project. |
## Annex 3: Data Sheet for Case Studies in PATHWAYS - WP 3 “Transitions in the Making”

### Case Name:
Sustainable community Hökarängen

### Research Institute:
Stockholm Environment Institute (SEI)

### Contact Person:
Katarina Axelsson

### E-Mail:
katarina.axelsson@sei-international.org

### Phone:
+46-73-707 85 77

### Part I

#### Short summary of the case (aim/character):
The project aims, through interdisciplinary action research, to develop, test and demonstrate ways in which various forms of cooperation between property owners, residents and others can work together to reduce energy and other resource use in a residential area. The projects aim is to create inspiring and repeatable examples for how resource efficiency can be achieved within a neighbourhood by involving and activating the people who live and/or work there. The project is owned by Stockholm’s (and Sweden’s) largest public housing company Stockholmshem, who implements the project in collaboration with Sustainable Innovation AB. SEI is responsible for the action research component which includes exploring innovative methods for engaging residents around more resource efficient lifestyles.

#### Location of case:
Sweden, Stockholm – suburb Hökarängen

#### Website(s) of case (if applicable):
www.hallbarahokarangen.com
http://www.sei-international.org/projects?prid=2076

#### Case duration: (from...to...; or: since:...)
October 2012 – June 2015

#### Scope of the initiative (city programme, regional, city district...):
Community initiative. The area consists of close to 9000 residents in about 4700 households. Mainly publicly owned rental housing (mainstream housing option in Sweden). A small number of privately owned apartments and row houses.

#### Is a specific technology addressed or involved? Which?
No

#### Domain of the Case:
The proposed project focus was on improving the energy and resource efficiency of the community and therefore the project was suggested to form one of the case studies under the Heat/Building domain under the Pathways project. Considering that mainstream practice in the public housing domain in Sweden is that heat and hot water is provided as part of the rent, there are limited incentives for households to save energy. Building heat is provided through a district heating system with centralised control, which means that households have limited or no influence on heat. Same with hot water.

That there are limited incentives among the residents in public housing for saving energy was confirmed already in the beginning of the project, when it became clear that it was difficult to create engagement among the households around energy efficiency measures. Realising the difficulties to engage, influence and measure changes in the residents’ energy consumption at the apartment level, the ongoing project focus shifted to “resource efficiency” on a more general level and to engage residents in activities around sustainable lifestyles and increased resource efficiency on multiple levels.

#### Are there other domains of the project also addressed by your case? Which? How?
Mobility and electricity. Considering that the project aim was to address energy and resource use in general (also see above), the project has included several activities around mobility and electricity use. With regards to mobility, activities have included car pool; electric bikes; cargo bike pool; subsidized bicycle service and bike swopping events. In addition, a few seminars/workshops have been offered around “mobility”. With regards to electricity, examples include: an ‘energy saving contest’ was set up; an electricity saving activity was arranged in the shared laundry facilities; a group of residents was invited to measure the electricity consumption of their household...
The case represents one of the key regimes in the housing sector in that it addresses typical Swedish multi-dwelling housing with the heat source being district heating. However, as mentioned in the two previous answers, it was confirmed early on that it was difficult to create incentives among the residents for a reduction of the heat energy as the heat and hot water is included as part of the rent. Residents affect the energy consumption through showers, kitchen work, airing etc. The landlord provides information brochures to their tenants with tips about how to save energy etc. It is in the interest of the landlord to deliver energy efficiently and minimise energy losses. Hence, the landlord decides on the average temperatures in the apartments and invests in energy efficiency measures regularly in all of their housing stock. In the longer term, energy saved (through user behaviour and investments) influences the tenants’ monthly fees, although the awareness about this appears weak among the tenants, or the effect on the individual appears minimal and hence still provides limited incentives among the residents to save energy. Given these circumstances, the case took a different direction with focus on resource consumption on more general terms. This included activities connected to other Pathways niches such as transport/mobility and electricity, as mentioned above.

The Hökarängen case has direct links to WP2 and indirect links to WP1 (via WP2). WP1 (International mainly): Integrated Assessment Models (IAMS) and scenario analysis. The outcomes of WP2 (which has been influenced by WP3) will provide input to WP1. Our WP3 cases could potentially influence WP1 indirectly also through the LEAP’s model descriptions of the Sweden heat domain in WP1. This work is still in planning stages but the aim is to conduct this during late 2015 and spring 2016. If this modelling effort is successful, the results of our WP3 case studies could feed more directly to WP1 work. WP2 (National mainly): Socio-technical analysis of dynamics and governance implications of transition pathways. Outcomes of local case may suggest what rules and regulations would be desirable at the national level for more effective (social and technical) transformations at the local level (broadly). WP3 (Local mainly) Higher intensity level of engagement is clearly more likely to lead to behaviour change, but what methods are more effective than others when it comes to creating that engagement? We see that the primary form of engagement as evidenced in our case study is more likely to encourage behavioural change than others. Social dynamics per se is also very important for the take up and transformational change.

Where would you classify this case / this initiative in terms of the two pathways (A or B)? As a help you may first “tick” the boxes below.

- **Key actors**
  - **Pathway A:** Incumbent actors (often existing industry actors and national governments)
  - **Pathway B:** New entrants, including social movements, civil society actors

- **Focus of transformation**
  - **Pathway A:** Focus on replacing technologies and management types by better ones with the
  - **Pathway B:** Technological changes are combined with wider behavioural and cultural changes
<table>
<thead>
<tr>
<th>Speed</th>
<th>Easier to implement in the short run</th>
<th>Depends on wider societal change, therefore slower in the beginning and more risky</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth and Scope</td>
<td>Changes are implemented only in as far as they meet the societal goals</td>
<td>Broader societal involvement and changes</td>
<td>X</td>
</tr>
</tbody>
</table>

**Part II**

**Size and character of the initiatives**

**Which kinds of actors and stakeholders are involved (e.g. action groups, citizen initiatives, companies, NGO’s, governmental organizations, etc. Please also provide their names.**

**Project team**
- The project was owned by one of Stockholm’s and Sweden’s largest public housing companies: *Stockholmshem*. *Stockholmshem* is owned by the municipality of Stockholm.
- The project was officially run by *Stockholmshem* in collaboration with *Sustainable Innovation AB (Sust)*. Sust is a national centre for energy efficiency and owned by the Association for Energy Efficiency (an NGO). Sust finances its operations by member fees and grants.
- *Stockholm Environment Institute (SEI)* was a main project Partner as mentioned under question one. In addition to SEI, a smaller consultancy company, *Sustopia*, was also engaged to contribute to the communication and other activities.
- The project was co-funded by the *Swedish Energy Authority (STEM)* who sat on the project’s steering committee.

**Residents and other stakeholders**
- The residents of the area were the main target group for the project (see further below).
- Apart from the residents, the project also targeted *businesses and other local stakeholders* that were based in the area (supermarkets, cafés, shops).
- *Local schools* were another major target group. Several activities were undertaken in collaboration with especially one of the schools.
- The political interest in the project was fairly large at the local government level. The project received regular study visits from representatives of local governments (in Stockholm and elsewhere); political parties; NGO’s; spatial planners/architects, students etc.
- The project has also established a network of engaged residents with which the project collaborated closely. The network was named “the local sustainability ambassadors of Hökarängen”. This network also started to undertake activities on their own so can be said to have evolved into a “citizen initiative”. They set up a Facebook account and eventually changed the name of their network to “Gröna Hökarängen” (eng. Green Hökarängen) to facilitate future communication around their activities at the local level.
- One of the local sustainability ambassadors initiated a local transition movement named *HOPP!* (eng. Hope!) together with another resident. This is another example of a “citizen initiative” that evolved during the project.
- A third example of a “citizen initiative” that evolved during the project is a group of residents that met regularly for joint activities around climate smart cooking.
- A number of organisations and NGO’s were involved in different project activities. For instance *the Swedish Association for Nature Conservation* who contributed to some of the activities.
- An urban farming NGO - *Boodla* - also played an important role as responsible for the urban farming activities. They contributed to the project through consultancy services.
- In addition to Boodla, *Holistic Gardening* has also been engaged in some of the gardening activities through consultancy services, working in collaboration with HOPP!
- Through the climate smart cooking initiatives, *Klimatmat* was engaged to hold training sessions on climate smart cooking (the initiative provided them with a
**new framing for their services).**

- Hökarängen has a large and active *community of artists*. The project collaborated with a number of them in different parts of the project. As an example, in October 2015, *Konsthall C* ran an exhibition about the older generation’s perceptions about sustainability and lifestyles, to which the project contributed.
- Several *students* also used the project as a case study as part of their thesis work.

**What can we learn about the role of governance in your case?**

<table>
<thead>
<tr>
<th>Have there e.g. been agents (individuals and/or organizations) that especially facilitated, managed or dominated the case?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>With regard to the community/municipal level:</strong></td>
</tr>
<tr>
<td><strong>Who is governing?</strong></td>
</tr>
<tr>
<td>- Clearly, the public housing company <em>Stockholms hem</em> (SH) has been an agent that has had large influence on the energy and resource efficiency measures in our case at the local level. As owner of the majority of the housing in Hökarängen, they have had influence on most project activities including any energy efficient measures. As a public housing company, SH follows the rules and regulations as stipulated, which includes target to reduce the energy consumption with 20% to 2020 and 50% to 2050 at the local government level compared to 1990 (same at the national level).</td>
</tr>
<tr>
<td>- <em>Local government</em> officials and politicians have paid attention through study visits and by showing an interest in the outcomes. Apart from that they have had no influence.</td>
</tr>
<tr>
<td>- The city’s <em>local district board</em> was involved in discussions about the use of community land for urban farming.</td>
</tr>
<tr>
<td>- Also, <em>Stockholm Vatten</em>, with responsibility for Stockholm’s water and waste, have been involved in discussions about improving the recycling possibilities in the area.</td>
</tr>
<tr>
<td>- Being Stockholms hem’s main project partner, Sust also had an important role in forming the initiative. Sust had an important role in steering the initiative and took responsibility for most of the activities around energy use and transport. Sust was also responsible for bringing in additional capacity, such as the research partner.</td>
</tr>
<tr>
<td>- Stockholm Environment Institute also contributed substantially to how the case developed, through the close interaction with the residents and the advisory role towards Stockholms hem and Sust as responsible for the research components.</td>
</tr>
<tr>
<td>- The <em>Swedish Energy Authority</em> also had an important role as co-funder and member of the project’s steering committee.</td>
</tr>
<tr>
<td><strong>How to govern?</strong></td>
</tr>
<tr>
<td>- SH have had a natural convening power at the local level. For this reason, SH have a large responsibility and possibility to influence and even form sustainability practices at the local level in Hökarängen, through energy efficiency measures; by allocating space inside their buildings for recycling of waste; selecting tenants for the local stores; negotiating with the city for allocating space for tenant allotments etc. Hence, housing companies should be seen as important agent for change with large possibilities to facilitate transition pathways (at least in Sweden). Between 2011-2015, SH invested around 26 MEUR in energy efficiency measures and planned to invest another 9 MSEK for the coming few years. As a result of these investments in the Hökarängen community, SH expected to reduce the energy consumption with about 40% by 2020.</td>
</tr>
<tr>
<td><strong>With regards to the local community:</strong></td>
</tr>
<tr>
<td><strong>Who is governing?</strong></td>
</tr>
</tbody>
</table>
| - After about one year, the ‘local sustainability ambassadors’ (see above) took an important role as agents for change. The ‘ambassadors’ initiated joint activities and proposed numerous activities to be undertaken at the local level. The aim with inviting interested residents to this network was also to form a small group of dedicated residents that the project team could use as a sounding board for...
new projects and activities. By engaging a group of locally based people – who would hopefully still live in the area after project completion – the ambition was also that this would be a group of people with a long term commitment for increased resource efficiency/sustainability at the community level. Another aim was also to investigate whether this could be an effective method for creating engagement around sustainability issues locally. Eventually this group developed into a very important facilitator for the initiatives taken at the community level.

- After about 1.5 year, one of the ‘ambassadors’ took the initiative to form (also) a local transition movement - HOPP! (as mentioned above). This initiative has become very active at the local level and has invited to a large number of activities which participants from outside the Hökarängen community also participate. This group appears to have the potential to influence the discussion about transition pathways in the long term in Hökarängen as well as the wider Stockholm region. They have for instance also been given the responsibility to coordinate activities in the common garden and to administer the community cargo bike pool.

- Climate smart cooking group. After a number of climate smart cooking activities, a group of dedicated residents continued to meet up and cook together. The group grew slowly and participants expressed a vision that they saw these activities as a good means to increase both the social and ecological sustainability in the community. At the end of the project, they arranged a couple of public events in the community.

- Local businesses have also had a certain role. When retail spaces in the area become available for subletting, SH has had the ambition to select new tenants with some kind of sustainability agenda (plant store with green labelled products; second hand clothes and products; bakery with organic products etc.). This has clearly also contributed to a certain ‘atmosphere’ in the area.

How to govern?

- As can be seen from the descriptions of the actors involved in the case, local governance is exerted mainly through networking, capacity building and knowledge generation rather than through financial means.

In conclusion, initial analysis suggest that building sustainable transition pathways through local agents with a strong convening power, that rests partly on their status and appreciation within local informal networks, can be important for creating long term changes. These are often agents that have an engagement in the area (such as residents), that plan to remain at the community level and are eager to contribute to an improved atmosphere in their neighbourhoods together with their neighbours.

It remains to be seen how this initiative continues to develop on the longer term – without the support of the project. Only then will we be able to draw conclusions on the type and role of governance in the longer term.

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<tr>
<th>How much money is (approximately) involved, e.g. 1 million, 10 million 100 million euro? (if applicable) How is it financed?</th>
<th>About 1 million Euros. The funding was provided by the Swedish Energy Authority. In addition to this budget, <em>Stockholms hem</em> contributed in kind (one project leader, office facilities etc). <em>Stockholms hem</em> also planned to invest in total about 35 MEUR for energy efficiency measures.</th>
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<tr>
<td><em><strong>Which element(s) of socio-technical configurations does the initiative aim to change (e.g. technology, infrastructure, consumer behaviour, policy, cultural meaning, local infrastructure); in what way – What is the innovation?</strong></em></td>
<td>Primarily consumer behaviour. The innovation comes with the different methods for reaching out and engaging residents, including a number of different methods for communication. In isolation, these methods are not unique but it is the context in which they are applied and the combination that makes it innovative. I.e., the overall approach that has been taken to reach out to, train, involve and increase residents’ awareness and interest in sustainability issues at the community level. The ‘sustainability ambassadors’ is possibly an innovative and new concept/method on its own. In order to generate more momentum about sustainable lifestyles, technology can sometime be a facilitator. For instance, in one activity about reducing household electricity consumption, one group got electricity plug-in meters together with the</td>
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| **Please provide a short delineation of the process:**  
Who started it? Who joined? Has there been a change in leadership? Has the case reached its goals? What were the outcomes (intended or unintended)? | **Stockholmshem** started its first project in Hökarängen in 2011. The community had for a long period been a somewhat socially disadvantaged area with a higher share of people outside the labour market than the average and higher sickness rates. At the same time, the community has strong cultural and architectural values and a new generation of people wanting to contribute to an improvement of the community. During 2011 and 2012, Stockholmshem implemented a project that focussed on improving the economic and social sustainability of the area. After discussions with Sust who was keen to find a suitable site for a larger demonstration project on energy and resource efficiency, Stockholmshem and Sust in 2013 extended the initial project to also include ecological sustainability issues through energy and resource efficiency measures. |
<p>| <strong>Were there any policy interventions that occurred?</strong> | Not really. At the start of the project there were pretty lengthy discussions about land use rights in connection with the apartment buildings. The public housing company SH owns the houses but the municipality owns the land. If someone wants to grow their own vegetables in the area etc, permission needs to be given by the municipality. In the longer run, as more and more requests come in, policies around this might have to be revisited. |
| **<em><strong>Which barriers and conflicts did the initiative face?</strong></em> | Initially, the initiative had a number of start-up problems due to mainly institutional and organisational structures and problem understanding. All in all, these problems resulted in activities taking longer to get started. Once the problems were solved, the project got up to speed. About halfway into the project, an anonymous person started the blog “Unsustainable Hökarängen” with the motivation to challenge “Sustainable Hökarängen”. Posters were put up around Hökarängen where it was argued that all work done within the project was leading to gentrification. Overall, the activity shortly ceased and the blog never got any visible followers (i.e. likes on Facebook, twitter streams or similar. From this it was learnt that it is important that the purpose of the initiative is communicated clearly, including where funding comes from. (In the case of this initiative, a large part of the funding came from the Swedish Energy Authority and hence where not taken from the income from rents as the critics suggested). |
| <strong>Has the initiative found replications? (was it picked up anywhere else, planned or spontaneously)?</strong> | This was a pilot project for Stockholmshem. A number of similar community initiatives have been implemented around Sweden, although most of them in quite different settings. Large interest has been shown for this project from all over Sweden. Stockholmshem has taken measures to replicate the successful parts of the projects in other communities where they own a large part of the housing stock, for instance in their strategy for how to engage with residents. Hence, diffusion of parts of the initiative at the local level is likely already within a short time frame (i.e. Stockholm region where Stockholmshem own a large part of the public housing stock – about 50,000 tenants in 26,000 apartments plus about 3500 retail spaces in the Stockholm region). A number of interviews have been conducted with representatives of some of the groups that paid study visits to Sustainable Hökarängen. Several of those indicated that they would look into the possibilities to replicate parts of the project activities in other settings (such as other municipalities). The seminar series on sustainable |</p>
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<tr>
<th><strong>How did learning occur within the case?</strong></th>
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<tr>
<td><strong>Learning among project partners</strong></td>
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<td>Through the project it has been learned that a transition toward a low-carbon society can be strongly facilitated at the local community level through using social sustainability as an entry point. The residents that participated most actively in the case study can be broadly categorised as followed:</td>
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<td>- People with a large interest and concern around sustainability issues</td>
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<td>- People who were eager to contribute to a more positive atmosphere in the community</td>
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<td>- People with a weak social network in the community, in most cases due to recently having moved in to the community, and wanted to learn more/new people in their neighbourhood.</td>
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<tr>
<td>We have also learned a lot about how different methods can be used at the local level.</td>
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<tr>
<td>We also learned that it is important to mix different methods for reaching out to and gaining interest among residents. Residents without a strong interest in sustainability issues might be triggered by other factors. By offering a broad spectrum of activities, it is more likely to reach out to residents. Once you succeed with that, the possibilities for long-term engagement increases.</td>
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<td>It has also been learned that building activities around local champions is effective as it increases the likelihood that activities fills a local need, uses the right “language” and can be scaled up in the local champions networks (snowball effect). And to combine this approach with activities for reaching out more broadly such as through a seminar series and door-knocking campaigns, newsletter etc.</td>
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<td>Being a pilot project for Stockholmshem, they learned about how to best engage with residents; how they could set up similar projects in the future etc. (Institutional learning).</td>
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<td><strong>Learning among project participants</strong></td>
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<td>A number of other types of learning could also be mentioned:</td>
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<tr>
<td>1) Learning about sustainable lifestyles among the residents:</td>
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<td>Through seminars; practical workshops (gardening, nature walks etc); training workshops; discussions including focus group discussions.</td>
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<td>2) Social learning, i.e. learning from interaction with other peers, was also prominent. This could perhaps also be said to include learning about how to access the cargo bike pool, power tool pool etc</td>
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<td>3) Understanding consumer preferences and behaviour. With regards to other stakeholders, some learned how to better target the local customers and that it is increasingly important to provide environmentally labelled products and services; the NGO’s and similar learned that there is a growing market for selling their services to local community initiatives and the potential framing for that.</td>
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<th>Which sources of information and methods did you use in your case study?</th>
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<td>Through an action research approach, we invited residents and other local stakeholders to different meeting platforms that were used as a basis to discuss innovative ideas for how to engage residents around activities/topics of their interests and needs.</td>
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<td>Primary data was collected using a variety of different methods. For instance: Surveys (printed); Questionnaires (web); Observations; Workshop discussions; Door-knocking campaign; Interviews; Focus group discussions.</td>
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<td>Through these data, data about participants and peoples’ perceptions, ideas, visions were collected (incl. Stockholmshems). It was also learnt what methods worked better than others when it comes to engaging participants and enabling the changes the project was aiming for.</td>
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<td>A number of quantitative data sources have also been collected, such as energy statistics, number of participants, newsletter subscribers, electricity consumption etc.</td>
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<td>Secondary data was used for a few minor comparative studies. Some of the data</td>
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were collected by other project team members and is therefore also considered secondary data. The climate and ecological footprint footprint of the residents was estimated using our web based footprint calculator [www.minklimatpaverkan.se](http://www.minklimatpaverkan.se) (based on environmentally extended input-out methodology). We also did comparative analysis of other community based initiatives. For following-up on the project’s result, a model was constructed inspired by the methodology around outcome mapping (Earl et al 2001). A number of both quantitative and qualitative indicators were also used to follow-up on the outcomes.