



Energy efficient construction in Tampere

Feedback report from the CASCADE
Peer Review

Tampere, 18-20 June 2012

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Executive Summary

In June 2012, Tampere hosted a peer visit under the CASCADE project. The cities of Birmingham, Eindhoven, Malmö, Mannheim, Milan and Warsaw visited the city to carry out interviews, see implemented projects and assess Tampere's plans and ambitions in the energy efficiency field. This report is a reflection by the visiting cities. It contains remarks and recommendations on how Tampere could continue to improve its work to reach the goals mentioned in the Sustainable Energy Action Plan and the Regional Climate Strategy, as well as suggestions on how the municipality could go even beyond these targets.

The peers felt that Tampere has the capability, both institutional as well as with regard to staff knowledge and experience, to have more ambitious targets than the ones stated in the above-mentioned plans. The upcoming new Master Plan for the city of Tampere is an opportunity to increase ambition levels and integrate them in the overall development strategy of the city.

Tampere has come a long way on the road towards high energy efficiency and low greenhouse gas emissions. It is obvious that there is the political will to address challenges and the political mandate has been translated into organisational structures that support this effort. What seems to be missing is an appointed official coordinating the work towards the city's sustainability goals.

Tampere has acted mainly through a project-based approach, by setting up the ECO2 project team which manages and coordinates pilot projects on energy and sustainability. One example is the Vuores development, which acts as a showcase of best possible solutions, both on the technical side but also in respect to managerial and other 'soft' measures. Using the experiences from the Vuores project, and especially the housing fair, for illustrating what is possible and thus convincing internal and external stakeholders to promote low-energy housing is a great chance that the city should exploit to its full extent. The role of the ECO2 project team needs to be strengthened and a long-term financial basis needs to be provided, though.

The peers felt that Tampere is making headway in the field of energy efficient new construction. However they did not find a lot of evidence on renovation of existing buildings. A cross-departmental strategy for addressing and reinforcing retrofit measures could benefit the city's energy efficiency targets, doubling the effect of measures under implementation.

The fact that Tampere Power Utility is a municipally-owned company opens up a lot of potential for reducing greenhouse gas emissions. There is already a lot of cooperation going on, but the municipality should be aware that the interests of Tampere Power Utility and those of the city can differ. The peers felt that there are some areas where the power utility could assist more in reaching reduction targets. One example in this sense is the data on energy consumption collected by the power utility on a daily basis, which provides an excellent opportunity to plan and implement effective measures for energy efficiency as well as emission reduction. Nevertheless, this would require introducing a feedback loop to insert this data into the planning process.

The peers got the impression that Tampere is involved in a number of successful networks with municipalities, research institutions and private companies, both at a regional and on a national level. This can be a very effective form of cooperation, but a high number of different networks

can lead to inefficiencies and overlapping of work.

On an internal level Tampere has and is developing the Eco-Support programme which provides an excellent platform for information exchange as well as dissemination. Make sure that the representatives in the Eco-Support programme are fully supported. Experiences from different pilot and show-case projects should be spread through these networks to ensure continuous improvement and prevent experiences from getting lost once the projects finish. A municipal communication strategy which covers sustainability aspects will aid this process.

From a financial perspective, the peers feel it is crucial that there is a long-term financial commitment securing the existence of a team that continuously pushes and plans for new best-practice and show-case projects, such as ECO2. Regarding external stakeholders and reducing risks for investments in energy efficiency, Tampere has already implemented some measures, such as a reduced rate for land lease. Nevertheless, the peers felt that more financial incentives would broaden the implementation base for energy efficiency and emission reduction measures.

1. Introduction

Tampere signed the Covenant of Mayors in 2008, the Sustainable Energy Action Plan (SEAP) was approved by the city board in 2009, and complemented in 2010. The plan states the city's targets regarding CO₂ emissions: reduce the emissions with 20 % by 2020, compared to the reference year 1990. In 2010, the City signed the Regional Climate Strategy, setting the targets at a 30 % absolute and a 40 % per capita reduction of green-house gas emissions until 2030 (reference year 1990).

Tampere owns the energy company Tampere Power utility, and has members of the city council on its Board, offering a great opportunity to set the agenda on low-carbon energy sources. Around 90% of the buildings in the city area are connected to district heating, and Tampere owns 28 % of apartments in the city. These two facts give a sense of the potential for carbon emission reduction the city itself can achieve, of the influence that the Council has on carbon emissions and energy use in the city, but also of the scale of the investment needed.

In June 2012, Tampere was the host of a peer learning visit with the theme "Energy efficient buildings and districts" within the CASCADE project. Five European cities, Eindhoven, Malmo, Mannheim, Milan and Warsaw, were each represented in the peer group by two experts, one city officer and one local stakeholder.

The main focus of the peer visit was on the Vuores eco-city area. In this new suburb, buildings for a total of 13 000 residents and 3000-4000 jobs are being built. Energy efficiency plays a central role in planning and building in this area. Eco-efficiency targets have been set and cooperation with actors that have ambitions in energy efficiency is the defining element in the planning and development process.

In Vuores, Tampere City has developed pilot projects on energy efficiency in buildings and districts in co-operation with construction companies. An example of this is a near-zero energy building connected to the district heating. There will also be a low-energy school. Besides buildings, there are also plans for sustainable transports to the area, including a new tram line. Renewable energy sources, like solar panels, and an energy-effective waste collection system add to the energy efficiency profile of the neighbourhood.

Vuores was the stage of the annual national Housing Fair in 2012. The objective of the organisation arranging the fair, Housing Fair Finland Co-op, is to improve the quality of housing and living conditions in Finland. This year's theme was eco-efficiency. The Tampere Housing Fair has nine passive houses and two zero-energy houses.

2. Peer Learning Methodology and Visit

The peer learning methodology is based on the assumption that organisations existing under similar conditions are well suited to give advice and suggestions to each other. In the CASCADE project, the methodology is used by cities to assess and review each other's strategies and performances in the area of energy and climate policies. The methodology starts with a creation of benchmarks, defining ambition levels against which the performance of the city will be measured. The host city makes a self-assessment related to these benchmarks. Before the peer review visit, the peers make a written assessment on that (a desk review), which is supplemented during the visit, with help of interviews, workshops and site visits. This report is based on all the information which was collected and reviewed by the peer team and contains the conclusions and recommendations from the team to the host city, Tampere.

Peer Learning Visit in Tampere

Tampere provided a self assessment report on April 23rd, addressing specified benchmarks concerning the theme "Energy efficient buildings and districts". Feedback from the thematic leader Malmö was sent back to Tampere on April 25th. A compiled desk review on the self assessment with comments and questions from the peer cities and Malmö was completed on May 30th. The peer learning visit in Tampere took place between June 18th and 20th.

The main focus during the visit was to confirm hypotheses and get additional information on Tampere's performance in the field of energy efficiency in buildings. This was done through site visits and peer-to-peer interviews. Interviews were conducted with 20 interviewees: politicians, relevant municipality staff and external stakeholders from the energy and housing sectors. During the interviews, evidence on Tampere's performance concerning energy efficient buildings and districts was presented. Participants also had the opportunity to visit the Vuores eco-city, to learn about the zero-energy houses and the waste collection system. A seminar where peers exchanged information was also held on the last day. Also on the final day, the team gave the feedback to the host city, presenting the first conclusions of the review team.

The members of the Peer Review Team were:

Birmingham	Sandy Taylor (City of Birmingham) Bill Goodfellow (Birmingham Energy Savers)
Eindhoven	Alfredo Verboom (City of Eindhoven) Dennis Kerkhof (Foundation Housing Company Domein)
Mannheim	Agnes Hähnel-Schönfelder (City of Mannheim) Hans Hertle (IFEU - Institute for Energy and Environmental Research GmbH)
Milan	Antonella Piva (City of Milan) Marta Papetti (AMAT - Municipal Agency for Mobility, Environment and Territory)
Warsaw	Marcin Wróblewski (City of Warsaw) Henryk Urbański (Polish Association of Development Companies)

The peer learning team was supported and facilitated by

- Kerstin Rubenson and Roland Zinkernagel (City of Malmö)
- Denisa Naidin (EUROCITIES)

The benchmark

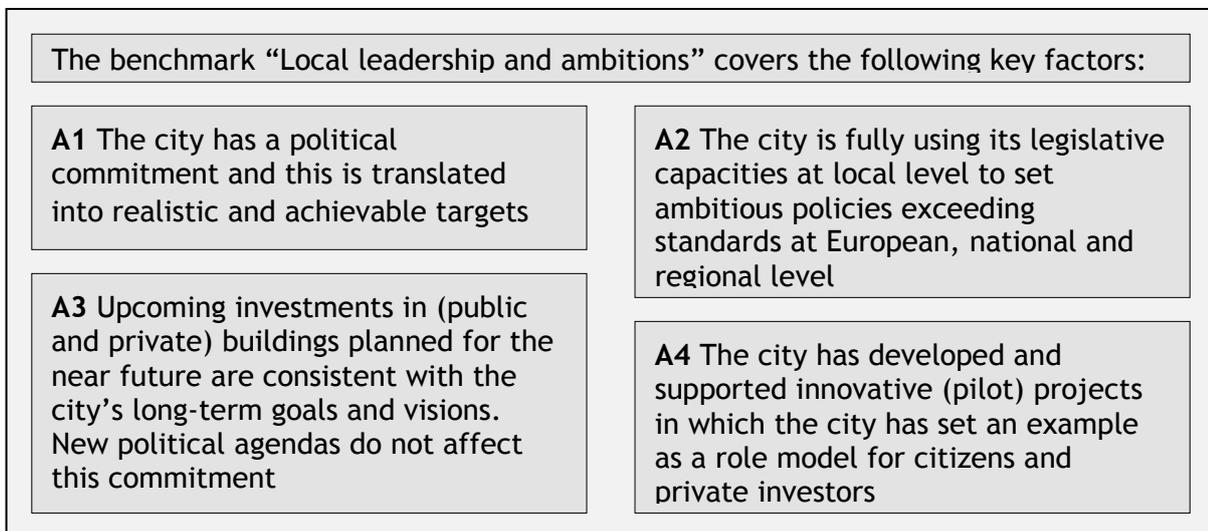
The benchmark for the thematic field of “Energy efficiency in buildings and districts”, developed in CASCADE as the main reference document for the peer learning process, addressed the following issues and indicators:

- A Local leadership and level of ambitions
- B Local strategies and policies
- C Organisational and managerial issues
- D Stakeholder and citizen involvement
- E Information, knowledge and awareness
- F Financing, investments and risks

3. The assessment

The information, conclusions and suggestions in this feedback report are based on the information given to the peers by Tampere in the self assessment report, during the peer learning visit interviews and from further investigations made by the peers. The thematic leaders (Malmö) and the peers have cooperated in drafting this report. This section follows the structure of the CASCADE benchmark and key factors.

A - Local energy leadership and ambitions



This benchmark looks at the ambitions of the city regarding climate and energy visions, targets and measures. How well are these ambitions initiated and connected to the political decision making level? Are there any areas of operation that are not fully explored? What support mechanisms exist in order to reach these ambitions?

The peers appreciate and acknowledge the work done so far by Tampere. The city has not been focusing on energy efficiency in buildings and districts for a long time, but has already started important projects and taken crucial political decisions to be able to move forward. The peers believe that the Vuores housing fair is a good way to concentrate resources and will inspire others to build energy-efficiently.

Review and evidences

There is a political commitment toward energy efficiency in buildings and districts in Tampere. The evidence has been presented in the form of plans, strategies and been refined and confirmed during interviews. The targets for energy efficiency and reduction of greenhouse gas emissions are

defined in the Sustainable Energy Action Plan and the Regional Climate Strategy, approved politically in 2009 and 2010. The documents vary both regarding reduction percentages and target years, but there is no contradiction between them. The city strategy, Tampere Flows, approved in 2009, consists of non-quantified goals for the year 2020 and objectives for the current City Council's term of office (2009-2012). Since the document refers to the Covenant of Mayors (and therefore the SEAP) and other commitments in the area of energy efficiency, the lack of quantification is not a problem.

The group finds the SEAP target of 20 % reduction until 2020 not very ambitious. If Tampere has the ambition to take the lead on the climate change issue, both locally, nationally and internationally, that goal has to be raised. Also, the targets in the Regional Climate Strategy, of 30% absolute and 40 % per capita reduction until 2030, are not particularly high. And at the same time, the peers are somewhat questioning whether even those goals can be reached under current circumstances. It seems that the structural financing measures linked to environmental goals do not have a sufficiently solid foundation for reaching the targets. (See further Benchmark F.)

Class A

The classification system of buildings is a European model for determining the energy performance of buildings. Class A buildings are the most energy efficient ones, with efficiency factors of 0.68 to 0.9. The numbers are dependent on what the building is used for and are relative to a standard building of class C.

A municipality has the opportunity to set high standards on energy efficiency in buildings, both new-built and renovations through local law and regulations. Regarding new-build, Tampere is using some of this capacity. Good examples are the requirements of class A buildings starting from 2012, and the subsidy of 50 % on land leases when building passive or near-zero energy buildings. The cooperation with the power utility when planning new developments (energy planning models) is also good. The City is also itself building class A, which is consistent with the long-term goals in the SEAP.

However, even if there are requirements for class A in new-build, there doesn't seem to be an evaluation mechanism for the buildings after they are constructed to make sure that they really are class A. The same goes for the subsidy on the land lease for low-energy buildings on municipality-owned land.

The energy efficiency requirements set by a municipality may not exceed national Finnish levels, due to national legislation. In that context, Tampere's focus on urban planning is good. New-build areas planned along the tram line, and densification projects are examples of this.

When it comes to renovation of old buildings, we have found no evidence that the municipality is using legislative capacity when determining energy efficiency standards for privately owned houses. For renovation of municipality-owned buildings Tampere has a retrofit plan, managed by the Building unit, consisting of both a long-term and a short-term programme. But at the same time, there is also evidence that retrofitting is mainly done out of immediate maintenance needs, with little or no concern for promoting energy efficiency issues.

The focus on energy efficiency in Tampere is relatively new. Even if the political support is high at the moment, the peer group is somewhat concerned that there is not yet political consensus on the importance of the subject. With the upcoming election in October, the peers see the potential risk of a changing political agenda on the issue.

Finally, Tampere is setting the example for cities and investors by driving forward good innovative projects, such as the Vuores eco-district, on energy-efficient new buildings, with both passive houses and near zero energy buildings. Since it is a housing fair, there is good potential for spreading effects to both citizens and investors. The peer group appreciates that the low-energy thinking is not restricted to residential buildings, also including e.g. a school. We are also happy to see it in other areas of the city, like the passive energy Luhtaa day-care centre.

The peer team suggests the following areas of improvement:

- The City should do a feasibility study of the SEAP targets, and also evaluate the progress made as a result of the projects that have already been implemented.
- If it is realistic considering the results from the feasibility study, try to set more ambitious long-term goals for reduction of energy usage and greenhouse gas emissions.
- Set up a monitoring system for the newly constructed class A buildings, to evaluate whether they are really class A. Also evaluate the buildings getting cuts in land lease, to make sure they really are passive or near zero energy buildings.
- Try to find more ways to use the full extent of energy regulations set on national level and try to push the boundaries of these regulations.
- Introduce some legislative measures when it comes to renovations. These could be in the form of subsidies for e.g. insulation, regulations on energy performance on new heating systems (at least heat pumps) and maybe restrictions on energy efficiency in renovation of buildings on municipality-owned land.
- Use the Vuores housing fair as much as possible for promoting low-energy building, both locally and nationally.
- The importance of energy efficiency should be even better acknowledged by all political parties as well as senior city officials. The potential cost reductions should be pointed out even more strongly.

Warsaw - low-carbon projects

While working on low-carbon area projects (but also having in mind the SEAP's goals in general), Warsaw investigated the possibility of inserting energy efficiency requirements in the city's spatial planning documents, which are binding not only for the city itself but also for external stakeholders. If the Finnish law allows for these requirements, they should be used in city spatial planning, thus constituting a firmer basis for climate and energy policies than merely voluntary partnerships. On the other hand, if the law should be amended to render making the energy requirements possible, perhaps Tampere could try to initiate parliamentary work on the needed amendments. Such a move would also boost Tampere's position as a leader in climate and energy policies among Finnish cities.

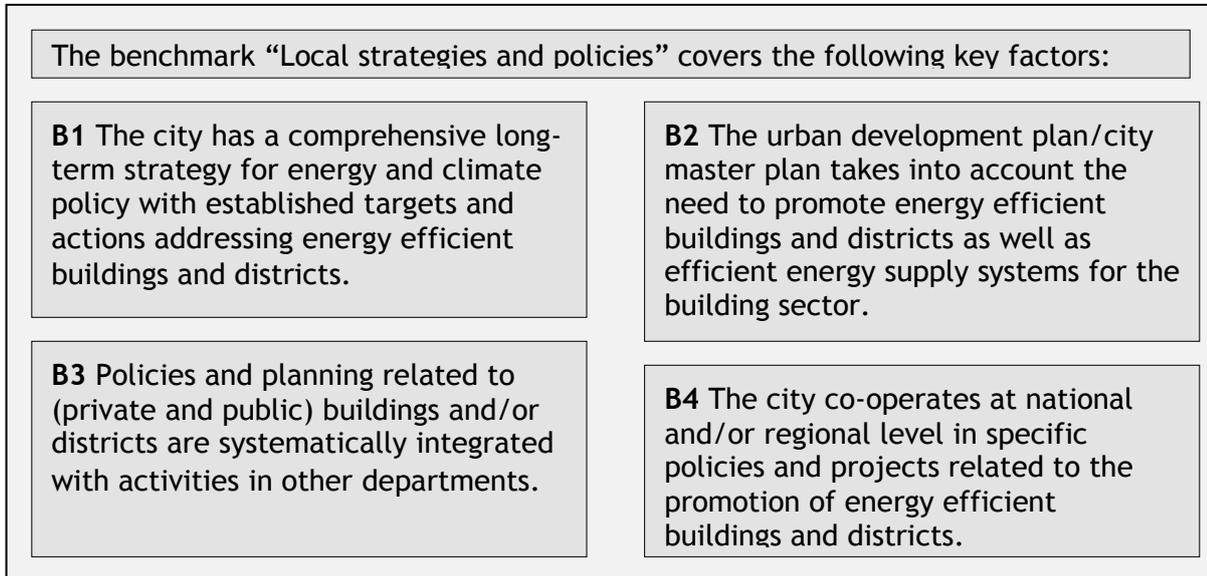
Milan – reduction of charges

In Milan a reduction of infrastructure charges is provided for new and refurbished buildings with an energy performance (primary energy for building heating) superior to the standard fixed by current regional legislation. The reduction is proportional to the energy performance, with a maximum of 30% reduction of the due charge. Additional discounts are provided for PV installations, solar thermal panels and reversible geothermal and groundwater heat pumps (over a fixed COP).

Malmö – co-operation of projects

In the City of Malmö, different projects, with different funding sources, are carried out in the city district of Rosengård, improving different problem areas such as public transport, green area management, energy efficiency improvements of residential buildings or providing better facilities for local commercial actors. These actions are implemented under the "Sustainable Rosengård" umbrella.

B - Local strategies and policies



This benchmark highlights the need for strategies at the local level that facilitate and foster energy efficiency and the generation of renewable energies in city development. Strategies and plans need to be founded on a broad base of internal and external stakeholders. Long-term planning to reach goals and targets and at the same time a road map for intermediate targets are analysed in this benchmark.

As mentioned already under the previous benchmark, Tampere has both a SEAP and a regional Climate Strategy. The peers acknowledge the existence of these plans but feel that the level of ambitions could be higher.

Tampere shows high willingness to cooperate with other municipalities, both regionally and locally. We find this very important, since the road towards high energy efficiency and emissions reductions cannot be walked alone. The most important strategies are in place, giving you a basis for future work.

Review and evidences

The peer team was provided with a document listing the measures needed to be taken to reach the SEAP goals, including estimated costs and reductions in energy usage and CO₂ emissions. This is good, but we have only seen the final targets for the measurements, and no short-term targets. That is not absolutely necessary, but makes it easier to evaluate whether the measures taken are sufficient early on. Having an ongoing evaluation of the work done to reach the SEAP goals and setting clear short-term targets would help you assess the effectiveness of the actions undertaken and re-evaluate the long-term plan in order to reach your sustainability objectives.

The current urban master plan is from the 1990's, and does not take into consideration energy efficiency at all. However, a new one is being developed which plans to include energy and climate issues. At the time of the visit, the peers could not assess the content of the new plan under development.

Tampere is using the concept of strategic development projects which are defined as important for city development. These strategic projects report to the city council, cooperate with various departments as well as external stakeholders. In the field of energy efficiency, ECO2 is such a project. This structure seems to work, and the peers find good potential in working that way.

However, the collective impression given from various interviewees is that the ECO2 project is not well integrated in the city organisation. It seems to be its own entity, with little direct influence on other units and departments. There is even some uncertainty on the role of ECO2; interviewees had differing expectations on what the project can and should achieve. Both the lack of influence and the uncertainty about the role of ECO2 could jeopardize the good work that is done in the project. The uncertainty can create conflicts and unnecessary criticism, consuming energy and time on defining and defending the purpose of such an important project.

ECO2 – Eco efficient Tampere 2020

The ECO2 programme implements the energy and climate objectives of the City of Tampere. The programme supports projects that promote a low-carbon and carbon neutral urban structure and encourages cooperation between relevant actors. ECO2 also facilitates growth in environmental businesses, and aims to participate in national and international networks in order to spread good practices.

Source: www.eco2.fi

Besides the strategic development projects, the peers have seen evidence both of high-level cooperation between departments, such as in the Vuores project, and informal cooperation, such as in the Five Star City Centre project. However, an overall strategy on how to integrate the work on energy efficiency across all departments does not seem to exist.

Tampere is active in numerous regional and national cooperation constellations. On the regional level, the Regional Climate Strategy agreed on with the neighbouring municipalities in the Tampere region, is welcomed by the peers and seen as a good strategy for broader cooperation. Another positive example in the region is the integration of public transport, which is an important measure when it comes to sustainable mobility.

However, we have not found any evidence that there is regional cooperation on building regulations. If this was done, it would be easier for companies active in the region to adjust. With all municipalities having different regulations or setting different standards, it is harder to mass produce cost-effective low-energy buildings.

Such cooperation does exist at national level though. There is both a climate network and a project on renewable energy with the bigger municipalities. We find it useful to cooperate at national level, where the conditions for the cooperating municipalities are more similar. By spreading these initiatives throughout the country, the impact of such initiatives is amplified.

The peer team suggests the following areas of improvement:

- Identify short-term targets for the measures taken to reach the SEAP goals, in order to evaluate the adequacy of the measures.
- Make sure that energy and climate issues are integrated in the new master plan. Not only as an individual chapter, but mainstreaming it in the whole document.
- In addition, in the new master plan for the city, make sure that its objectives really match the goals of the SEAP.
- Create a realistic, specific and timed plan on how to reach the targets set (in the SEAP, the Regional Climate Strategy, the upcoming master plan), i.e. a plan with clear deliverables on both reductions and measures, with defined time-tables.
- Make sure that there is also financial coverage for the measures in the above mentioned plan.
- Define short-term targets connected to the SEAP.
- Clarify the role of the strategic development projects in general and the ECO2 project. This maybe has to be done at political level, since there seems to be a high level of uncertainty on their role.
- Integrate the work of the ECO2 project more in the organisation. Give more influence to the officials in the project, or make sure the reporting to the Council really is spread to other departments, and that the ideas and results are taken into consideration there.
- Develop a strategy on how to integrate energy and sustainability issues in all departments, and on how to cooperate between departments and units.
- Try to seek regional cooperation on building regulations.

Example Malmö: Environmental Building Programme

The city of Malmö and the City of Lund have developed and implemented together an 'environmental building programme' which is applied when ground owned by those municipalities is sold to private developers ahead of construction.

The programme currently has six thematic priority areas:

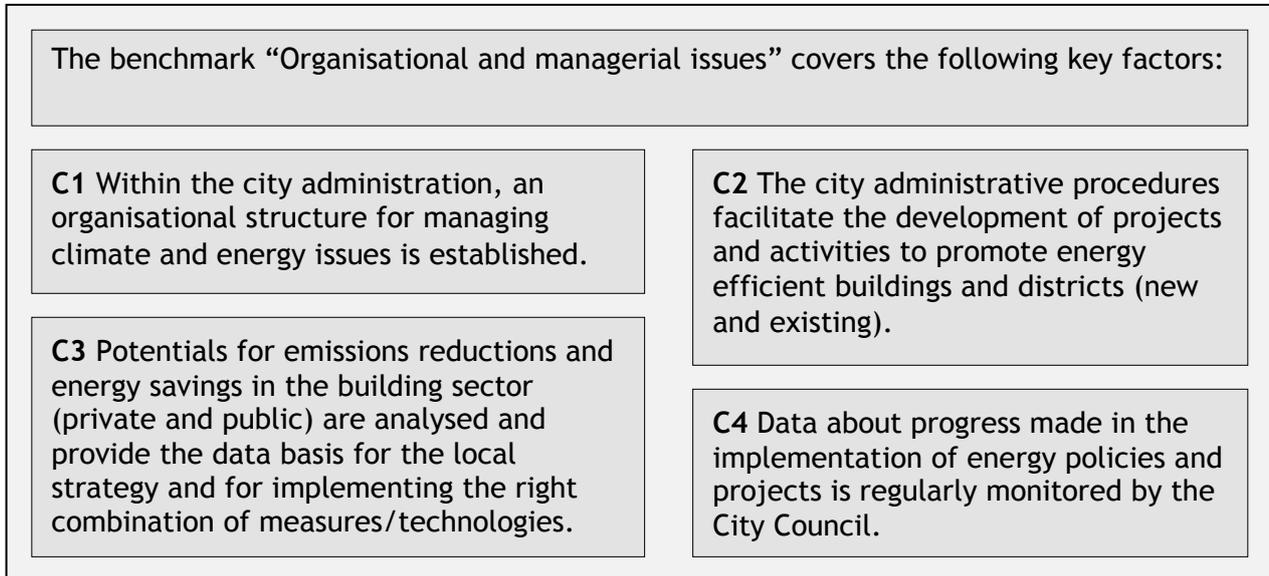
- Moisture control during the construction process
- Indoor noise
- Outdoor noise
- Indoor air quality
- Biodiversity
- Energy consumption

Within each of these priority areas there are three ambition levels, the least ambitious setting higher requirements than national construction legislation. The construction companies can however choose which ambition level they want to achieve. Through a construction dialogue process, the companies get support for achieving higher levels.

Two years after completion there is an evaluation to check if the planned requirements have been met in practice.

For more information see www.miljobygprogramsyd.se

C - Organisational and managerial issues



This set of benchmarks aims to highlight the need for a good organisational structure in order to identify and follow up energy efficiency potentials and to be able to respond to shifting challenges and conditions.

We have found that Tampere has a good way of thinking when it comes to organisation and structuring of the sustainability work. What is missing is a clear division of responsibility, and someone being the highest responsible for sustainability issues. When this is in place, Tampere has the potential to integrate the energy and climate issues throughout the organisation.

Review and evidence

The Sustainable Community Unit is the one responsible for the energy and environmental policy, according to the organisational chart presented. It is placed in the central administration, in the Economic and Urban Development Department. We consider this to be a good decision, giving the unit strong connections to both economy and urban development, two areas of large importance for sustainability. Combined with the upcoming Eco-support network, we have confidence that Tampere has a good ground for an organisational model to structure the work on energy and climate.

However, in the organisation the peers have not found the one person responsible for energy, climate and sustainability. There seems to be no one that can take the lead and steer the city and its employees in that direction. Therefore, the peers are under the impression that most of the work is done without a common long-term goal. This might lead to sub-optimal results, knowledge being lost and contradicting goals and working methods.

The organisational structure in the municipality facilitates development of energy efficiency projects and activities. We have learned that both the Sustainability Community Unit and the ECO2 project, as well as other departments, facilitate and develop such projects and activities.

Still, what seems to be missing is the integration of energy and sustainability on a deeper level. The peers are worried that these issues may be left to be handled by those most interested, and thus not made an integral and natural part of the day-to-day work. If so, the city is missing a lot of opportunities to create sustainable solutions in different areas. Sustainability has to be integrated already in the planning stage to have a significant impact.

To have a good overview of the measures that have to be taken for emissions reductions and energy efficiency, data has to be collected and analysed. Decisions should be taken based on these analyses. In Tampere, there is some data collected. The greenhouse gas emissions are calculated annually with the Kasvener tool, giving a good knowledge base. This is reported to City Council. The ECO2 team has also made calculations of the carbon footprint, emissions and CO2 reductions in the building sector. This is a good start.

Kasvener tool

The Kasvener tool is used to calculate direct greenhouse gas emissions of municipalities. The tool uses energy production, industrial processes, traffic, agriculture, forestry, waste management and domestic energy usage. *Source: <http://www.environment.fi/default.asp?contentid=405526&lan=EN>*

But data collected has no meaning if it is not used. Statistics can be a powerful tool in planning and decision-making, providing supporting evidence when deciding what measures to take and what activities to prioritise. According to the experience of the peers, creating a well-functioning structure to collect, analyse and use data is difficult to accomplish, but it is of high value when it is done.

Regarding data collection, we have identified a valuable source that at the moment seems to be unused. The energy utility company monitors data on electricity and heat usage on a daily basis. This contains valuable information on the structure of energy use in Tampere, which could serve as a basis for decisions on retrofitting priorities.

There seems to exist a structure for annual reporting on progress in the fields of energy, climate and sustainability. The annual reporting is done to the City Council (the latest one being Tampereen kaupungin energia- ja ilmastotoimien raportti 2011). The information is provided by the relevant units in the City administration to Ecofellows, who compile the report. Also, the ECO2 project is annually reported to the city council. According to what the peers found, the information on the progress is to some extent used to form future work. But it has the potential to have an even greater impact, and should be integrated more in the planning process. The different results should also be weighed against each other, in order to identify the most efficient measures under different circumstances.

The peer team suggests the following areas of improvement:

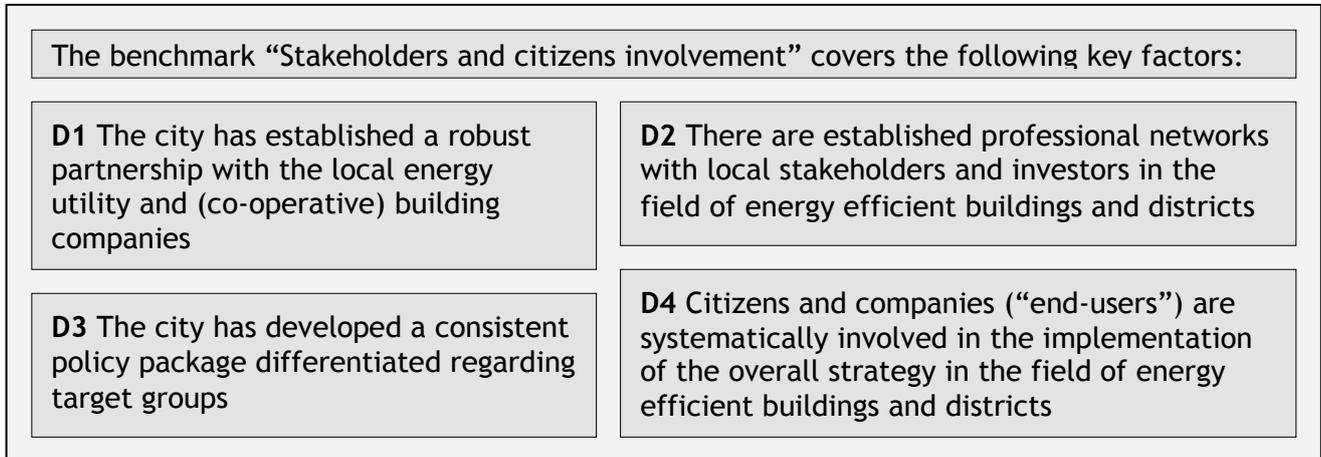
- Appoint someone at senior level as the ultimate responsible for energy, climate and sustainability issues.
- By assigning a person or team responsible for having an overview of all the strategic documents and their implementation, including overseeing the implementation of measures for energy efficiency, you can put more emphasis on these targets.
- Gather resources (financial and personnel) in one or a few departments or units, rather than having them spread over many entities.
- Make sure all work done on energy efficiency issues is coherent with the goals in the SEAP.
- Integrate energy, climate and sustainability in all areas and all departments from the beginning, in the planning stage.
- Evaluate what kind of data you collect today, and what you could start collecting, to get the best knowledge on energy and climate performance. Use that data in a structured way that systematically informs future planning and decision-making.
- Use the collected data from the power utility. Currently it is an unused resource of highly interesting information.
- Take as much knowledge as possible from Vuores, and use it in future projects and decisions.

Warsaw – creating climate structures top-down and bottom-up

In July 2008, an interdepartmental Climate Protection Team was created in the City of Warsaw. From the beginning, it was chaired by the Mayor of Warsaw and included Directors of units of the Warsaw City administration, whose competences are connected with energy and climate issues. While just after its creation the team comprised members from the Infrastructure and the Environmental Protection Departments, subsequently it was extended to include city units relevant for information and promotion, such as the Social Communication Centre and the Education Department. The team was recently enlarged, as pro-environmental NGOs were invited to participate. Thanks to that, the Team has been serving as a tool not only for disseminating knowledge on climate and energy policies in the City administration – since participating directors were transferring this knowledge on sustainability issues to their employees – but also for 2-way communication with external stakeholders representing civic society.

Due to efforts of the Climate Protection Team, Warsaw signed the Covenant of Mayors and then adopted the resulting Sustainable Energy Action Plan. The role of SEAP secretariat is performed by a selected group of employees within the Infrastructure Department. The implementation of the Plan requires cooperation of all stakeholders. This is why all municipal units, districts and companies are being asked to nominate persons (at an operational level) responsible for exchanging information on all SEAP headings (including city employees training), both internally and externally. Consequently, communication on the SEAP goals is also provided bottom-up, from lower to higher ranks in the administration.

D - Stakeholders and citizens involvement



This benchmark deals with involvement of citizens and stakeholders in the energy efficiency issue. What arenas for involvement are created? Which stakeholders are involved, and how? To what extent are different end-users involved?

In Tampere, there are a lot of examples on the involvement of citizens, companies and other stakeholders. Different methods are used to reach different groups concerning knowledge, interest and function. The peer group hopes that you keep up that good work!

Review and Evidence

The city of Tampere is the sole owner of the local energy company, Tampere Power utility. This should make it easy to cooperate and should guarantee the power utility to work towards the same energy and climate targets as the municipality.

The cooperation does seem to function well. The peers have found evidence of cooperation on specific projects, such as the ECO2 and the Härmälänranta development. What the peers have not found is a plan or strategy for the cooperation identifying key stakeholders, planning for possible activities, focus areas or communication strategies. That cooperation strategy should also include densification and other measures in existing areas.

Härmälänranta development

In the Härmälänranta development, an area previously housing an airplane factory, is being transformed into a neighbourhood with housing, shopping, parks etc. The industrial buildings will be reused and adapted, and new buildings will be constructed in between the old ones. *Source: <http://www.francescoallaix.com/net/2011/12/harmalanranta-2011/>*

The peer group is concerned about the fact that the power utility has a too low focus on energy and climate issues. Their main goal is profit, which is logical for a company and important since it provides a revenue for the city. But it should be possible, and even necessary in some areas, to

combine profit with high environmental goals.

When it comes to building companies, the peers have found that Tampere has good relations and cooperation with at least some of the major ones. The network seems to be active and ambitious. The peer group has been told about functioning, long-term cooperation within the ECO2 project and in the Härmälänranta and Vuores areas, where energy and emissions targets are taken into account.

Unfortunately, that can not be said about Tammela, a development project in an old part of the city with plans to fill in gaps in the city scape by new construction of low-energy buildings. We have not seen the same good cooperation in this area. Thus, there is a risk that the cooperation between the City and building companies that is developed is not transferred to or used in other areas or projects.

There are several networks on energy efficiency established with stakeholders and investors. These range from the ECO Support network with a dedicated person in each department responsible for energy savings to the Mayors network, i.e. a network of the mayors from the six biggest cities in Finland. There are also networks established with construction companies, the university, transport experts etc. What the peer group is missing is evidence on what comes out of these networks. We have not seen any real evidence that the networking is fruitful in the area of energy efficiency of districts and buildings.

The peer group wants to give a warning about having too many different networks. There might be a risk that there is little integration between them, with information and knowledge staying within a network, or in a group of networks.

The peers are impressed to see that both RANE (Rakentamisen ja asumisen energianeuvonta, construction and housing energy advising) and Ecofellows are well-established and function both as networks and as information and contact points for end-users.

In Tampere, there are a lot of attempts and actions taken in the area of citizen and company involvement. The peers have been presented with a number of examples as evidence for this, such as brochures, a web-based information platform (www.neuvoo.fi) and activities focused on entertainment, aiming to reach those not as interested in sustainability. The wide variety of ways to reach the citizens is positive, and should make for a high degree of awareness on the energy efficiency issue.

Some of these involvement actions are part of a larger context, for example within the Ecofellows structure and in the Ilmankos project. In that way, actions can complement and reinforce each other.

There are also examples where the involvement is connected to

EcoFellows Ltd

Ecofellows is a company owned by the City of Tampere. It promotes sustainable development through training, education and dissemination of information. They also develop products and services.

Ilmankos

The Ilmankos project aims to promote participation of citizens and organisations in climate change issues. It has both a publicity campaign and a research and development section. *Source:* <http://www.sitra.fi/en/projects/ilmankos-climate-change-and-civic-participation-tampere>

a specific geographic area, like in Vuores. The peer group finds this to be a good way of organising the involvement process, as long as the knowledge, methods and lessons learned are transferred across city areas. If there is no structure for doing this, there is a risk that the same mistakes will be made over and over again.

Even though we have seen a lot of examples of citizen involvement, the peers are concerned about the degree of participation in the activities. After all, there is a difference between information and actual participation, even if both can be defined as involvement. Participatory actions, where stakeholders are asked to give suggestions or are even involved in the planning and decision-making process, take more time and require more effort. However, they are needed to reach a high degree of stakeholder involvement. When that is reached, the stakeholders will be more satisfied with the decisions made, as well as with the outcomes of the planning process and the housing project built.

The peer learning team suggests the following areas for improvement:

- Continue and deepen the cooperation with Tampere Power Utility. This could be done by making it more formalised, e.g. through a plan or a structure defining the way to work together, including densification and other measures in existing areas.
- The goals for energy efficiency and climate should be better aligned with the commercial objectives of TPU. Members of the City Council should put this issue in the agenda of the TPU board meetings.
- Identify the crucial parts in existing, well-functioning co-operations with building companies, and transfer those structures to areas and projects where the cooperation is not as good.
- Monitor and evaluate the outcomes and results of the existing networks. If the outcome is not satisfactory, try to restructure the methods and the networks, or reconsider your participation in them.
- Do not let the networks be their own entities, they have to be communicating vessels. Coordinate or consolidate the networks that include similar groups of stakeholders.
- Make sure that the knowledge and experiences from different citizens' involvement activities are used in future activities. To do so, you may have to appoint someone within the municipality responsible for this and create cooperation structures and/or communication channels.
- When involving citizens, use higher levels of participation more often. Depending on the nature of the project, you should reach the right level of citizens' involvement on the scale going from information to taking part in decision-making.
- Establish and encourage sustainability as a natural basis for partnerships with the private sector. This is obviously connected to information and training measures. At the same time it is necessary to create a common sustainability goal for the city and distribute responsibilities to different actors, while at the same time communicating these on the base of the sustainability goal.

**Milan - building participation through EU funds**

In September 2011 the city of Milan published a call for proposals directed to institutions, non-profit organisations and associations in order to collect ideas to elaborate projects proposals to be presented to the European Commission in response to some of the 7th FMP calls (within the smart cities initiatives). Among the 48 projects ideas received, some were selected and integrated.

One of the projects presented to the Commission, named EU - GUGLE, concerning "Energy Efficient Buildings", was considered eligible for financing and the negotiations on the grant with the Commission are completed.

Eindhoven - involvement of citizens

From the start of a joint development project, housing company Domein and the City of Eindhoven have actively involved future inhabitants (both for rental and for bought properties) in the plan making process, since ultimately the plans are meant to benefit these people.

By having a constant dialogue between the consortium and the future inhabitants, the latter were able to significantly influence the plans. E.g. the future inhabitants chose the urban planner, decided on the set up of the project, chose the architects, gave input for the plans, etc. Working like this has enabled us to look further than just the technical and financial aspects of the project and see it more through the eyes of future inhabitants. The questions and doubts are often much more practical and simple than professionals would expect, but at the same time much more difficult to answer.

The future inhabitants now feel that this is 'their' project, resulting in commitment, volunteer work, a smooth process, ambassadors, people wanting to rent/buy the new houses, etc.. Furthermore, this approach has given us a lot of valuable marketing information directly from our target group and a product which should be easy to market.

E - Information, knowledge and awareness

The benchmark “Information, knowledge and awareness” covers the following key factors:

E1 Relevant municipal staff is knowledgeable and adequately trained to promote energy efficient buildings and districts

E2 The city has a consistent strategy to increase skills and the level of knowledge of planners, engineers, investors and other external market actors

E3 The city works towards increasing awareness and social acceptance of energy efficient buildings and districts among citizens and key stakeholders

E4 The city has a consistent strategy to communicate the results, benefits and opportunities of local projects on energy efficient buildings and districts to stakeholders and the general public

E5 There are examples of private initiatives in the field of energy efficient buildings and districts which were implemented on their own

This benchmark deals with knowledge on energy efficiency, and communication of projects and results. How does the city act to increase this knowledge, both internally and externally? Are the communication efforts sufficient? Does the information and knowledge get implemented externally?

In Tampere the peers have seen many examples of information and awareness raising strategies on energy efficiency often connected to implemented measures that have been a combined effort of the municipality and of external actors. This is very important, since the efforts to reduce energy use and the carbon footprint must include actors both inside and outside the municipal administrations. Public involvement also raises the acceptance for both the sustainability goals and the measures taken to reach them.

Review and evidences

According to what the peers have found out during interviews, there is no compulsory training for the personnel on climate change issues. There are some awareness-raising activities though, such as workshops and seminars. We have also seen training within some specific areas, like the Keko tool for energy-efficient urban planning. This is a good start, but a more structured way of working with educating the staff on the energy and climate issue is needed.

KEKO tool

The KEKO tool is used to assess eco-efficiency. It is newly developed, and Vuores is a pilot project for its development. The indicators used are divided into soil, water, energy, traffic, services, carbon cycle and material cycle. Source: http://www.fig.net/pub/fig2012/papers/ts05d/TS05D_tamminen_5717.pdf

On the other hand, the officials working on energy and climate issues seem to be highly skilled and trained in their field of expertise. This is a good starting point, but it also poses a risk, since a high degree of specialisation ensures not only relevant and high-quality output, but also might cause narrow views. When personnel only know about their own part of sustainability, the bigger picture is not taken into account in the day-to-day work.

The Eco-support project (<http://www.eco-support.net/>) will be implemented in Tampere in 2012 or 2013. Judging by the results of the Helsinki experience, it is an ambitious project, assigning officials in all the different municipal departments to be responsible for energy and climate issues. The focus is not on buildings and districts, but rather on the every-day issues the officials handle at work. The outcome of the project is highly dependent on the interest and capacity of individuals, and thus a little bit out of the control of the project staff. Besides the evident risk of people leaving, it is also highly important that the support and training given to the Ecosupporters is of sufficient quality and that a well-functioning network is created for them.

The peer group has not seen clear evidence of a strategy for increasing skills and knowledge of external actors. There are actions taken to involve actors like schools and hospitals, but other groups are missing, such as engineers or investors. This is a lost opportunity for the City. Since Tampere can not accomplish everything on its own, external actors need to be on board with working towards sustainability and the goals of the City. Therefore, a strategy for increasing the knowledge on energy efficiency among key stakeholders is crucial. By identifying key stakeholders and consequently providing this training, Tampere also ensures that those prioritised factors reach the stakeholders.

In the city administration ECO2 organises seminars for professional stakeholders. But the peers feel that ECO2 needs to have an even bigger role in raising awareness and acceptance. The ECO2 team is a very qualified group with a lot of knowledge and skills, something that should be used more widespread also externally.

There are also a lot of activities carried out under the project Ilmankos. According to the website www.ilmankos.fi, there have been numerous events organised within the project. It is an ambitious project, aiming to reach the citizens in the target neighbourhoods. But the peers have not seen any thorough documentation or evaluation of the project, its participation rates and its awareness-raising activities. Therefore it is hard to assess whether it is successful. Either way, it is important that continuation of the work is ensured when the Ilmankos project ends this year, and that the knowledge gained is taken into account when designing future plans and projects. Otherwise, it will get lost and mistakes will be repeated.

As far as the peers could see, there is no consistent strategy to communicate results from energy efficiency projects externally. There are separate strategies for different projects or units, like the one for ECO2, called Viestintä. But there is nothing connecting the different strategies or making sure they are consistent with each other. This might lead to extra work, since the strategy has to be re-written for each new project. Extra work may also arise from efforts not being coordinated, like two seminars on the same topic being organised twice. The cooperation benefits that might exist are most likely missed. It might also lead to different entities having communication strategies that are in part contradicting.

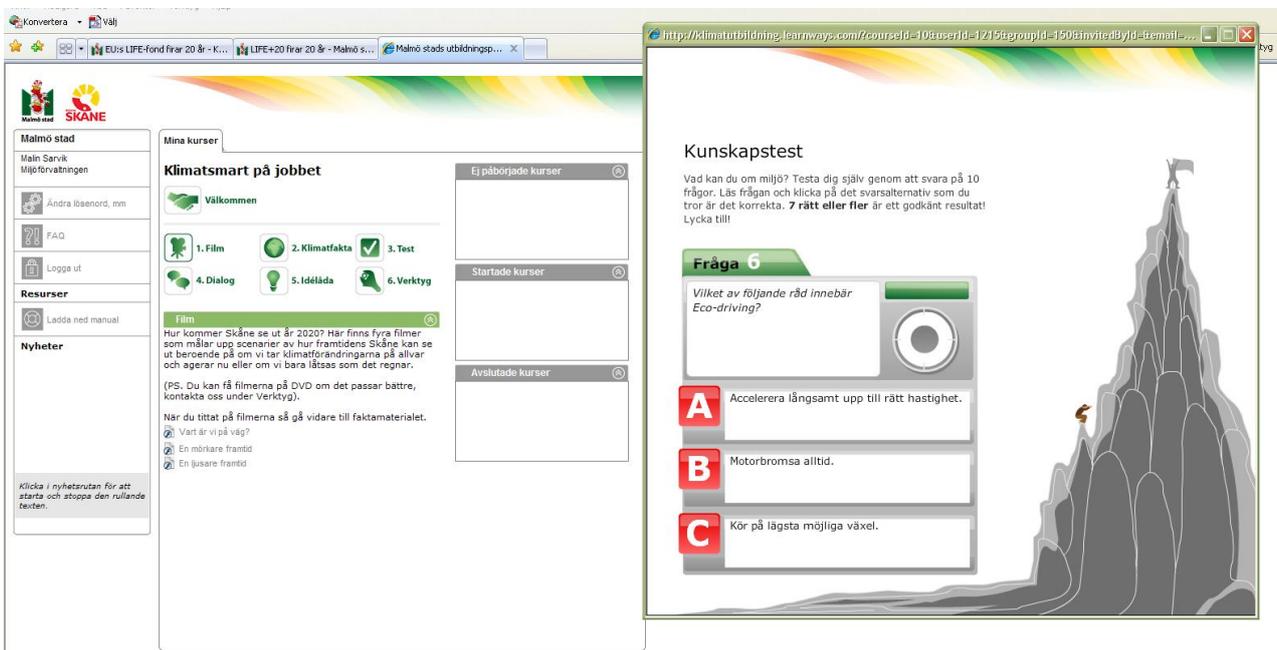
The peer team didn't find any evidence that the communication personnel is skilled or

knowledgeable on sustainability issues. This, combined with the lack of an over-all strategy for communication of energy projects, could potentially cause problems. First, there is a risk that something important is missing, due to lack of knowledge. This is easily solved by tight communication during the creation of the communication material, and should not be a problem. More worrying is the risk that the good work on sustainability is not seen as part of a bigger picture, and thus not communicated in other contexts.

In Tampere, there are construction companies that are taking their own initiatives on building low- or zero-energy buildings, and also taking into account factors surrounding the buildings, like transportation. We have also been told that there are more companies interested in the field, and we hope that the City encourages that interest and cooperates with these actors.

The peer learning team suggests the following areas for improvement:

- Develop an internal strategy for communication and training, e.g. for pilot projects, for energy efficiency.
- Create a campaign to communicate to staff in relevant departments the overall goals on sustainability, and how their activities can contribute to achieving the Council's targets.
- Make a program for educating City employees on energy, climate and sustainability, in order to integrate sustainability aspects in all operations of the city administration. This should go beyond the scope of the Eco-support project, including issues not being part of their every-day work.
- Create a strategy for increasing the knowledge on energy efficiency in districts and buildings among key stakeholders. This could include structured dialogues with construction companies or owner of buildings.
- Give ECO2 a bigger mandate and more resources to raise acceptance and awareness on the sustainability issue
- Make sure that results and knowledge on participatory processes, gained in projects like Ilmankos, is evaluated and used in future projects.
- Create a successor to Ilmankos, in order to not lose valuable knowledge.
- Formulate a consistent, written external communication strategy for energy and climate issues. Specify how different target groups will be informed. Information campaigns as well as other forms of regular dissemination on planned and ongoing projects increases involvement and acceptance of the general public.
- Try to make the sustainability issue a natural part of all communication material.
- Welcome initiatives from companies building low-energy buildings and districts (not limited to buildings).
- Take advantage of the early adopters when communicating projects and programmes, since information spread between external, private stakeholders is often valued higher than information from a government.
- Involve citizens' actions more strongly into the SEAP, to make the plan more widely accepted, since the involvement and support of the public is crucial to reach the SEAP goals (see also comments in Benchmark A).

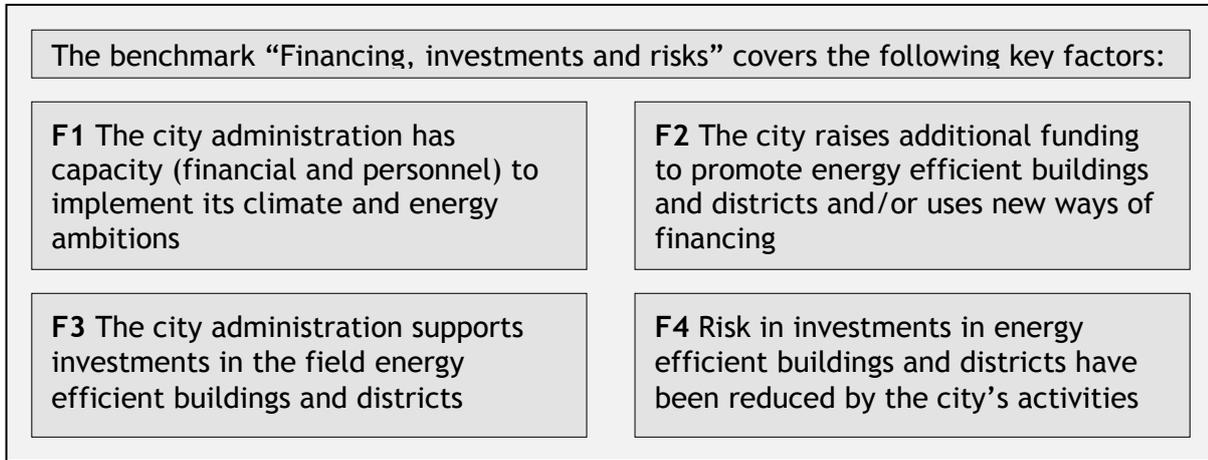


Malmö - Climate Education

The City of Malmö has, in cooperation with the regional government, started a climate education programme for its employees. The purpose is to initiate dialogues in the different departments and units on climate and what each employee can do to reduce their climate impact. It is a web-based platform containing introductory films, facts, figures, a test (shown in the picture), help to initiate dialogues, and other tools.

As a start so called dialogue leaders were educated so that they may start talks in smaller groups on how the 'climate issue' can be broken down into smaller questions that can be handled and discussed better and to generate and support own ideas and proposals for action.

F - Financing, investments and risks



This benchmark deals with the economic aspects of energy efficient buildings and districts. Are the ambitions economically possible to implement? Are support and funding sufficient? Have actions been taken to reduce risk in investments?

The peer group is happy to see that Tampere has started off well in working in the sustainability field. We see the use of external funding and the gathering of resources in the ECO2 project, as important elements of what we hope will be a future Tampere taking the lead in respect to energy efficiency in buildings and districts.

Review and evidences

The peer team has seen the initial ambitions of Tampere in the field energy efficiency in buildings and districts. The investments connected to the Vuores housing fair is one example, the specific budget for small-scale energy efficiency measures for the city’s own building stock is another one. It might still be in early stages, both economically and ambition-wise, but is a good start.

However, the peers have not seen a sound financial foundation, including costs, expected revenues, risks, for the whole SEAP nor a roadmap on how to reach the goals mentioned in that document. Measures that are planned to be implemented in order to reach SEAP targets are not fully budgeted for, at least not in one overarching budget directly related to SEAP implementation. This may cause measures not to be developed, since no one takes full responsibility for them.

The peers also got indications that when the profitability of measures in terms of CO2 reductions is estimated, the calculations are based on the total cost, not on the additional cost for extra emissions reductions. Due to this choice, you risk getting a false picture of the cost-effectiveness of actions for CO2 reductions, meaning that economically viable measures are being disregarded.

The organisational structure which places the Sustainable Community Unit in the Economic and Urban Development Department, and which defines ECO2 as a strategic project, ensures an

effective use of resources, both economically and personnel-wise. The peer group acknowledges the key role of ECO2, but has some concerns regarding its long term financial support.

When it comes to external financing, Tampere uses both the EU and national funding from the Finnish Innovation Fund Sitra and Tekes, the Finnish Funding Agency for Technology and Innovation. These are not innovative sources of financing, but they are reliable. Apart from this, we have not seen evidence of efforts to get financing in less obvious ways, or finding new forms of financing.

The examples we have seen on city funding for promoting energy efficient buildings are not remarkable. The city seems to rely too much on working in accordance with policies from higher levels (regional, national, EU), based on financing from these levels, compared to developing its own goals and initiatives with some alternative financing. The reduction in land fee and rent when building energy-efficient houses on city-owned land are, in monetary terms, small, compared to the costs for the entire project. These minor measures are not very likely to create a significant increase in the construction of energy-efficient buildings.

The picture the peer group has gained on how Tampere reduces risks in energy efficient investments is mixed. The cooperation with the bigger construction companies seems to work very well, with good support from the city for the planning phase. Such support contributes to reducing the risks these companies.

Apart from this support, the team has not seen any scheme that provides direct economic risk reduction measures from the city towards construction companies; moreover, none were connected to privately owned land. Tampere could for example let private companies form districts for improvement, where they can levy property taxes, used for reinvestments in the area.

The initialisation of such a scheme would probably lead to a lot of energy-efficient new-builds and refurbishments, something that would be beneficial for the whole city. The projects would inspire other construction companies and real estate owners. And the scheme as such could inspire other cities to take similar action, making Tampere more of a fore-runner in energy efficient buildings and districts.

Risk reduction in Birmingham

The "Big City plan" defines how certain areas in the city centre can be developed in a sustainable way, and the plan is spread outside the city centre. When an area is open for development or redevelopment, the risks are individually assessed from the beginning and are being constantly re-evaluated. There are negotiations with private developers on what sustainability criteria can be implemented in an economically sound way. The council also uses Compulsory Purchase Orders, to be able to implement all necessary sustainable requirements. These procedures contribute to lowering the risks in development processes. Initially, so called dialogue leaders were educated so that they may start talks in smaller groups on how the 'climate issue' can be broken down into smaller questions that can be handled and discussed better and to generate and support own ideas and proposals for action.

The peer learning team suggests the following areas for improvement:

- Dedicate a specific budget aimed at reaching the goals in the SEAP. This should also be connected to the specific actions to be taken to reach those goals.
- Calculate cost-effectiveness of measures with CO₂ reductions on the additional cost of the reduction, not the cost of the entire measure.
- Secure long-term financing of the ECO₂ project. That could be done by finding external financing (national, EU) for consecutive projects under the ECO₂ umbrella. Another alternative is to seek co-operation with the private sector, where the latter could take the economic risk and the City offers knowledge. (C.f. below.)
- Seek new ways to get financing for energy efficiency projects, apart from national and local funding. There is a wide range of funding schemes in other European cities to get inspiration from. Try also to find financing options where a third party (like a construction company) benefits as well.
- Find ways to reduce the risk for external stakeholders willing to invest in energy efficiency measures, for example by using long-term contracts, extending the possibility for lower-rate land lease or training and information spreading on new technological solutions.

4. Conclusions

A lot of what the peer team has seen in Tampere has been impressive. At the same time, there is also room for improvement. The city has established the structure for working on energy efficiency and greenhouse gas emission reductions. The city has produced the Sustainable Energy Action Plan for the local level and a Regional Climate Strategy for cooperating with surrounding municipalities. At the same time Tampere has the capacities to go further and to become a true fore-runner nationally and internationally, although this is currently not clearly reflected in these plans.

Tampere has set up an internal structure to be able to plan, develop and implement pilot projects such as Vuores that will result in a low energy city district, connected by efficient public transport, and a thought-through waste management system which minimises the impacts on the environment. Vuores is well on the way to be a truly sustainable city area. However, it seems that the expertise and the experiences from this project are not strategically embedded in the rest of the city.

The pilot projects on energy efficient buildings and districts, and this includes the Vuores but also other projects such as Härmälänranta, Ilmankos or Luhtaa, form the basis for future city development. In order to benefit from these projects at city level, it is necessary to build structures that evaluate them and analyse what should and could be taken into the 'ordinary' planning structure.

One important prerequisite for this is the need for someone, a person, a team or a unit, to be ultimately in charge of sustainability and climate issues. In addition, this person needs to be known by all employees in the city administration and they need to have the power to influence and advise city development activities.

Tampere has managed to establish forward-thinking organisational structures and competences. The challenge seems to be to broaden the field of activities, both into the 'normal' city development processes but also into different fields of activities such as retrofitting, densification, citizens' engagement or private company involvement.

Appendix I: List of Interviewees

Kaisu Anttonen, Environmental Director, Sustainable Community unit, City of Tampere

Timo Hanhilahti, Deputy Mayor

Suvi Holm, CEO, Ecofellows Ltd

Sanna Huikuri, Sustainable Development Coordinator, Sustainable Community unit, City of Tampere

Tero Karislahti, Product manager, YIT Ltd

Leena Karppi, Project Manager, Ecofellows Ltd

Elli Kotakorpi, Project Specialist, ECO2, City of Tampere

Antti Kurvinen, researcher, Tampere University of Technology

Antti Lakka, Project Engineer, Tampere Real estate services

Jyrki Laiho, Planning Director, Economic and Urban Development, City of Tampere

Tiina Leppänen, Architect, Centre project

Hanna Montonen, Community Planning Manager, City of Tampere

Antti Nikkanen, Project Specialist, ECO2, City of Tampere

Mika Pekkinen, Development Director

Pertti Tamminen, Project Director, Vuores project, City of Tampere

Tero Tenhunen, Director, Centre project, City of Tampere

Minna Tjäderhane-Ojala, Environmental Economics Designer, Tampere Sustainable Community Unit

Toni Tuomala, Region Manager, Skanska Ltd

Jaakko Vihola, researcher, Tampere University of Technology

Pauli Välimäki, Project Director, ECO2, City of Tampere

Appendix II: Summary of initiatives presented during the peer exchange seminar

Vredesplein - an urban renewal project in Eindhoven, Eindhoven, The Netherlands

Managed by the Domein non-profit organisation, the Vredesplein project aimed to improve the housing situation in one of the poorest neighborhoods in Eindhoven. According to Dutch law and to the company's internal rules, the 425 buildings that were to be rebuilt needed to comply with the energy efficiency requirements of an A+ label and reduce CO2 emissions by 20% in that area.

The innovative aspect of this initiative is the involvement of all stakeholders from the start of the building project, via public consultations on the urban structure that the rebuilt area should have, the building types and the sustainability aspects to be incorporated in the redesigned neighborhood. Groundwater aquifers and heat pumps were chosen to be incorporated in the site for both environmental and economic reasons; however, national law prevented charges for the extra investment from being transferred to the tenants. Domein managed to go around this restriction by creating its own non-profit energy company whose long term goal is to lower energy bills and which functions through DBMO procurement.

Organisation: Domein
Contact person: Dennis Kerkhof
Email: d.kerkhof@domein-wonen.nl

German national goals and local strategies, Mannheim, Germany

Germany has refused to continue producing nuclear power, but this decision puts extra pressure on local communities to find ways to compensate for it. Although alternatives are available, efficiency plays a major role as well, due to the fact that energy resources are more and more limited. To help municipalities in balancing renewables and efficiency, the Institute for Energy and Environment Research has created an online tool that graphically illustrates where a city is in terms of climate policy, energy, transport and waste management activities compared to the German average. Moreover, this benchmark can also suggest courses of action to increase performance in one or several domains, thus helping local authorities improve local energy activities.

The benchmark is reliable only up to a certain point, as data has not been harmonized across German cities. Nevertheless, it can still be used to point out local inefficiencies, as can be seen from the example on the Gluckstein area in Mannheim. This area has been identified as having a high potential for a successful transition from using electricity and fossil fuels for space heating to a low-cost low temperature district heating system.

Organisation: Institute for Energy and Environment Research
Contact person: Hans Hertle
Email: hans.hertle@ifeu.de

Hyllie - Malmo's new district, Malmo, Sweden

In order to accommodate Malmo's growing population, a new neighborhood is being developed in Hyllie. Comprising around 9000 homes and 7000 workplaces, Hyllie is also meant to be Sweden's most climate-friendly district due to its energy efficient buildings and its exclusively renewable energy supply. To increase sustainability, the neighborhood will have excellent rail and public transport links, will be designed to favor cyclists and pedestrians, and will be heated by its own waste.

The credo at the base of this development is that doing "the right thing" for the environment can be made easy, through a combination of local regulations, excellent urban design encouraging soft mobility modes, educating the public and offering individuals the means to monitor and control their energy consumption.

Organisation: City of Malmo
Contact person: Roland Zinkernagel
Email: Roland.Zinkernagel@malmo.se

Energy retrofit program for public buildings, Milan, Italy

Since 2011, Milan has been implementing a plan for the energy efficiency retrofit of public buildings due to increasing energy costs and air quality concerns. The means for completing this retrofit was yearly calls for tenders directed at energy service companies (ESCOs) for batches of buildings to be retrofitted. The activities covered include replacing heating and cooling plants, connecting buildings to district heating and adding thermal insulation. According to the works required and the foreseen payback period, buildings to be refurbished have been split into three categories, each batch containing a balanced mix of these three.

The first refurbishment has already commenced with a 24 buildings batch. 75% of the first year's cost has been covered through an EIB loan and funds from the ELENA facility; subsequent batches will be funded exclusively through the municipal budget, which may put the program in peril in the context of scarce local resources. However, energy savings are guaranteed through energy performance contracting: the contract with the ESCOs mentions an energy savings reduction target of 20%. If after the retrofit, the buildings underperform in respect to this target, the contractor receives proportionally lower payments; if the buildings over-perform, saving more than 20% of the energy, they receive higher payments, but the city saves even more in the long term.

Organisation: City of Milan
Contact person: Marta Papetti
Email: marta.papetti@amat-mi.it

Local actions for sustainable energy and climate, Warsaw, Poland

In spite of an increasing CO₂ absorption rate, Warsaw faces a 15% emissions/capita increase compared to 1990. To combat this effect, the city has established a Climate Protection Team which was tasked with developing the municipality's SEAP, reducing energy consumption and GHG emissions. The method adopted by the team for tackling this growing problem was to develop European projects to test and implement concepts and technologies that help fight CO₂ emissions.

Warsaw's current plans focus on energy efficiency and include activities in the ever-expanding transport sector, in awareness-raising and public engagement, in co-generation, waste-to-energy and biomass plants, as well as in ICT-enables energy efficiency in buildings. The city achieves this by cooperating with cities across Europe and various EU networks, such as the Covenant of Mayors and EUROCITIES.

Organisation: City of Warsaw

Contact person: Marcin Wróblewski

Email: mwroblewski@um.warszawa.pl