



Sustainable**NOW**

WAYS TO SUCCESSFUL  
SUSTAINABLE ENERGY  
ACTION PLANNING  
IN CITIES



*This brochure has been produced in the context of the Sustainable NOW project. During three years (2008 to 2011) the cities of Burgas (BG), Ludwigsburg (DE), Miskolc (HU), Rosignano Marittimo (IT) and the Mountain Community of Lake Trasimeno – Middle Tiber (IT) developed local sustainable energy action plans (SEAPs) and have now started their implementation. They received direct support from the experienced teams of the Municipality of Bologna, the City of Munich, the Province of Siena and Woking Borough Council. Expert partners offered additional specific support, as listed on the back cover.*

*The 'good ideas' described in this brochure are extracted from experiences of the above cities in the context of the Sustainable NOW project.*



## Point of departure

**Sustainable Energy Action Plans (SEAPs)** have become a powerful tool for cities and regions to plan, implement, monitor and evaluate climate and energy policies, and in doing so contribute to global mitigation and adaptation achievements. Through SEAPs cities can implement measures in a structured and integrated way, allowing them to systematically monitor their efforts in going beyond national legislation in these fields. A SEAP is also an instrument for cities to communicate to stakeholders – both locally and beyond – the importance of energy and climate protection, and to encourage citizens and other relevant actors to take a part in the city's ambitions.

At the European Union (EU) level, policies and initiatives in the last few years have contributed to the sustainable energy momentum that an increasing number of cities in Europe have decided to pursue. The EU climate and energy package “aims to combat climate change and increase the EU’s energy security while strengthening its competitiveness, [committing] Europe to transforming itself into a highly energy-efficient, low carbon economy.”<sup>1</sup> The Covenant of Mayors European initiative is in line with the climate and energy package and has an increasing number of signatories (more than 3.000 in the autumn of 2011). Its signatories commit to meeting and even exceeding the EU 20% CO<sub>2</sub> reduction objective by 2020 through increased energy efficiency and the development of sources of renewable energy<sup>2</sup>. The Europe 2020 strategy to build a smart, sustainable, inclusive economy by the year 2020 serves as a guiding light to the efforts on energy and climate that cities undertake by developing and implementing their SEAPs.

These developments towards increased sustainable energy and climate protection emerge as a reaction to an ever increasing demand for energy, its resulting green-

house gases (GHG) emissions, and their impact on humans, the environment and climate. Energy demand increases due to several factors, such as a growing population (mostly in cities) and higher levels of income coupled with more affluent lifestyles. These factors lead to a much greater demand for, and consumption of, resources – including energy, which threatens the sustainable development of our cities, and which has encouraged local governments and its citizens to act. Concentrating the overwhelming majority of the total European population (the urban/rural gap continues to widen), cities have a great potential to create change through local energy interventions, and thus drive the greening of their economy.

The efforts of a growing number of cities to set the example at national and international level not only show their commitment to sustainable development, but serve as an inspiration to other cities. They also encourage community-wide reflection and self-assessment. In engaged cities, stakeholders and regular citizens have been called upon to contribute their fair share in making the local transition to sustainable energy a reality. Cities, led by their local governments, have drawn attention to and collaborated intensively with local industry, businesses, schools, and other institutions to develop a vision and start materialising it. Citizens have been a cornerstone of this process, and their participation has contributed significantly to the positive results obtained so far.

Making institutions and individuals alike accountable for the decisions taken has the potential to dramatically change the way energy is generated, consumed and ultimately understood. It is with this frame of mind that the engaged cities – such as those that are signatories to the Covenant of Mayors, as well as many others that act ‘without affiliation’ - have approached the task.

In the next pages ‘good ideas’ for planning and implementing a SEAP are presented, aiming to inspire local governments across Europe and beyond to explore energy within a holistic, integrated perspective and to understand the wide-ranging implications of sustainable energy solutions. Ultimately, this brochure seeks to encourage cities and towns to engage in the sustainable energy future – now! This brochure has been written for a broad audience, including municipal energy experts, political leaders, policy makers, businesses not necessarily working directly with energy issues, high school and university students, interested citizens (who play a crucial role in local energy issues)... in short, anyone who uses energy!

We hope you enjoy these inspirational examples, and most importantly, we hope they encourage you to get involved and make a difference in your community!

<sup>1</sup> [http://ec.europa.eu/clima/policies/package/index\\_en.htm](http://ec.europa.eu/clima/policies/package/index_en.htm)

<sup>2</sup> [www.eumayors.eu](http://www.eumayors.eu)



## Directions to successful sustainable energy action planning in cities

**Preparing the ground for a SEAP** – as well as implementing it later – is a challenge. It will require dedication and cooperation from several local government departments and interaction with a number of external stakeholders. The SEAP coordinator will strive to put together the pieces of a rather complex puzzle, including channelling, satisfying and even at times rejecting demands generated in-house and by stakeholders, managing limited budget and resources, bringing together conflicting mandates and priorities of different actors, etc. The task must be conducted in a way that those contributing to the outcome of the SEAP remain interested, satisfied and involved, all the while ensuring the objectives of the SEAP – for example the 20-20-20 targets by year 2020 – remain in line with those of the city.

### So, who's up for taking the job?

Luckily, the Covenant of Mayors has come up with a detailed guidebook on how to develop a SEAP<sup>3</sup>, which will lead the new SEAP coordinator through the as yet uncharted waters. The experience of an increasing number of cities that are undertaking this challenge will also serve as incentive and as a source for good practices. Additionally, a network of **Covenant Coordinators** and **Covenant Supporters** in several European countries can further assist the efforts of the city and answer its questions.

But one point to always keep in mind, indeed a cornerstone for successfully developing and implementing a SEAP, is to follow a cyclic, integrated management system, which, repeated regularly, leads to continual learning and to the improvement of the city's processes. Its five steps are: Baseline review, Target setting, Political commitment, Implementation & Monitoring, and Evaluation & Reporting. They are described below<sup>4</sup>.

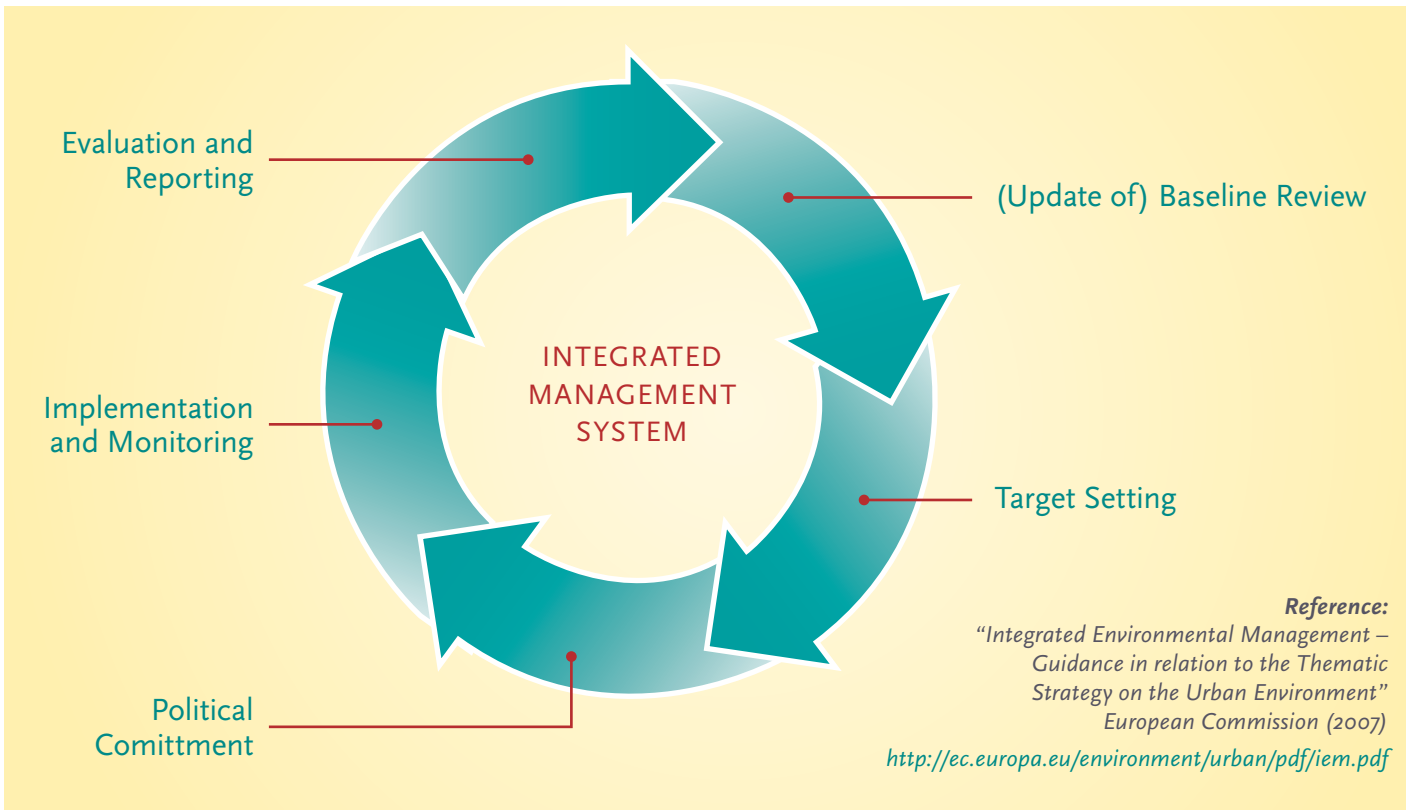
Before starting with step 1, however, the local government needs to identify the resources needed from the departments that will be involved in the SEAP process, and build a team. The strength of this organisational setup is crucial in building a SEAP that truly reflects the linkages of energy and climate issues across departments. The members of the team will normally dedicate just a fraction of their time to the SEAP work (except, perhaps, the coordinator and his/her assistants), but this will depend on the size of the city, its resources, and the priority given to this initiative.

The cycle begins with a **'Baseline review'**, which aims to analyse and document the present state of emissions and the status of energy efficiency (EE), energy consumption and renewable energy generation in the city territory. It is necessary to define the local situation by collecting historical data on energy production, distribution and use – ideally developing a GHG (or CO<sub>2</sub>) baseline emissions inventory to determine priority sectors for action.

The second step, **'Target setting'**, consists of revising or developing a strategy and plan to steer the energy work in the city – a SEAP. It describes the city's vision and explains how it will be attained by listing specific objectives, indicators, measurable targets, and actions for achieving them. It presents a plan of action and sets goals for the short, medium and long term. The exercise of setting targets must be based on the context and realities of the city and on the findings of the baseline review. It

***Covenant Coordinators** are provinces, regions and national authorities providing strategic guidance, financial and technical support.*

***Covenant Supporters** are networks of local authorities providing implementation and promotion, support and networking.*



should serve as a bridge to achieve the city's vision. In order to officialise the targets and the visionary road-map for the municipality on energy issues, the policies, programmes and plans that have been introduced or revised should be thoroughly discussed, agreed to and approved by the City Council, in what is called the **'Political commitment'** step.

In step four, **'Implementation and Monitoring'**, a set of measures have to be planned in detail and implemented in order to achieve the energy targets set in the plan approved by the City Council.

During the last step of the cycle, **'Evaluation and Reporting'**, an on-going assessment of the implementation of the measures and their effectiveness in reaching the set targets is conducted. This will show the extent to which the strategic objectives of the city have been attained. This step concludes the first round of the cycle and informs – and merges into – the baseline review of the next round.

Throughout the process, the SEAP team in the local government will need to cooperate closely with stakeholders. Appropriate and effective stakeholder involvement will help develop a SEAP that covers energy and climate areas comprehensively, and that is inclusive in terms of input from different societal groups. Furthermore, involving stakeholders in the development and implementation processes will facilitate the identification of the local realities and concern areas, and in doing so enable potential synergies. Communication with stakeholders will also contribute to identifying potential conflicts, and to avoiding or solving them. A feeling of ownership of the SEAP by a wide representation of stakeholders will prove a key factor in its success.

<sup>3</sup> [http://www.eumayors.eu/IMG/pdf/seap\\_guidelines\\_en.pdf](http://www.eumayors.eu/IMG/pdf/seap_guidelines_en.pdf)

<sup>4</sup> <http://ec.europa.eu/environment/urban/pdf/iem.pdf>

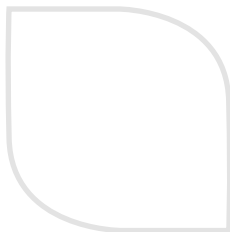




image: dreamstime.com

## Good ideas for SEAP development and implementation

As the SEAP process can seem a bit daunting, in the following pages we propose some **'good ideas'** on several development and implementation aspects, based on the experience of a number of cities and expert organisations to successfully implement a SEAP through an integrated energy management perspective.



*The highlighted step of the integrated management system links each 'good idea' to the relevant step(s) of the cycle*

### ≡ GATHERING AND ANALYSING DATA



image: dreamstime.com

In order to search for local data (electricity consumption, natural gas consumption, fossil fuels consumption, etc.) and to elaborate the baseline emission inventory, the City of Rosignano Marittimo (Italy) sought the Collaboration of the Energy Agency of the Province of Livorno (EALP). EALP has been supporting the city in its Renewable Energy Sources (RES) and Rational Use of Energy (RUE) efforts.

Sound data gathering has been a pillar of building a reliable baseline emissions inventory, which in turn determines how strong the foundations of the SEAP are. Rosignano Marittimo's SEAP contains sections dedicated to the calculation of the total primary energy consumption, the calculation of CO<sub>2</sub> emissions (due to energy consumption, the waste and agricultural sectors, and the forest's carbon capture & sequestration) and a section dedicated to the emission reduction objectives. In order to elaborate the trend in emissions, the calculations were carried out over three years: 2004, 2006 and 2008. The methodology for processing data in order to elaborate the baseline emission inventory was adapted to the territorial reality of Rosignano Marittimo from the method used by the Province of Siena, with direct support offered by Siena staff.

A clear picture of where a city, municipality or region stands in terms of local level energy production, energy consumption and GHG emissions requires that energy companies and other industries openly share energy data. This information will support an accurate progress monitoring process.



## DEVELOPING A PARTICIPATORY PROCESS



Image: Stefanie Lindenberg

Before sitting down to write its SEAP, the Municipality of Burgas (Bulgaria) sought ways for a wide public involvement, recognising the positive aspects of a participatory process with stakeholders in effectively identifying the energy needs of the region. In addition, greater stakeholder involvement makes policy-making a more transparent and democratic exercise, and enhances the level of knowledge and expertise available. Increased participation in planning also ensures long-term acceptance, viability and support of the strategy and measures.

Burgas aimed for the SEAP to serve not only the purposes of the municipal administration but to benefit society as a whole. To achieve this, citizens and stakeholders were offered the opportunity to take part in the key stages of the SEAP elaboration process, which included building a vision, defining objectives and targets, setting priorities, and so on.

Identifying the main stakeholders was the first step: actors whose interests are affected by the SEAP, whose activities have an effect on it, who possess information, resources and expertise needed for strategy formulation, and those whose participation is needed for successful implementation of the plan. This included several official bodies, large industrial companies in the region, such as the petrol refinery, the regional heat and energy suppliers, the municipal transport company, the local university, and NGOs, among others. They all declared their interest and support for this development.

Stakeholders' involvement is also the starting point for creating the behavioural changes needed to complement the technical actions embodied in the SEAP. This inclusive approach is the key to a concerted and co-ordinated way to implement the SEAP in Burgas.



*“Sharing experiences in delivering local climate change and sustainable energy solutions and activities is key to the long term success of a SEAP. Woking has benefitted greatly from valuable learning exchanges and opportunities through Sustainable NOW and looks forward to future possibilities of partnership working.”*

**Councillor Beryl Hunwicks,  
Chair of Woking Borough  
Council's Climate Change  
Working Group**

## APPLYING AN INTEGRATED, CYCLICAL MANAGEMENT APPROACH



Image: dreamstime.com

The City of Ludwigsburg (Germany) developed a SEAP with the aim of integrating it into its Sustainable Urban Development Strategy. In doing so, Ludwigsburg acknowledges the important and abundant relations existing between different systems that operate in a city – and that indeed enable the city to operate (e.g. the energy, the food supply, the health, and the water supply systems, among others).

Understanding these interactions will allow for a more efficient integration of activities and sustainable energy measures, and the development of synergies within the SEAP and the urban development strategy. Involving citizens, the local economy and a broad range of stakeholders has been essential for reaching relevant energy objectives - providing information and advice to citizens is as important as their participation in the strategy and SEAP development and implementation process.

These two pillar documents – the SEAP and the Sustainable Urban Development Strategy – outline the dynamic groundwork for a long-term development of Ludwigsburg that is fair for all generations. In the context of an integrated, cyclical management approach, it is continually adjusted, redeveloped and updated.



## MAKING A PROJECT 'BANKABLE'



In order for a sustainable energy project to attract funding, it needs to be presented in a realistic and positive light. Some words of advice are given here for cities looking to implement their SEAPs.

### The overall presentation of the project (measure)

Essential conditions to make a good impression to a bank are a clear identification of the investors and a clear idea of the project. For a financial institution it is important to know who exactly they will finance and to feel that the investor is well aware of the objective and potential risks of the proposed sustainable energy measure, as well as how to overcome potential problems.

### The investor

The preferable situation is to include in the investment team or consortium a strong industrial or business partner with specialised skills and know-how in the specific area of this project. Building a partnership of investors with experience in the area is important to counter potential negative events during the lifetime of the project.

A co-participation in the investment (presence of "equity") by the investor is preferable and is a sign of commitment to the measure's success.

### The investment

The precise evaluation of investment costs is an important activity that is usually underestimated, potentially leading to the erroneous exclusion of expenses that will, nonetheless, be incurred. For example, some expenses to be taken into account are: land, technology, electrical works, civil works, connection, dismantling costs, contingency and intangible assets (notary, advisors, taxes, bank fees, development, etc.)

### Which risks to consider?

A bad investment is a negative scenario for both the investor and the financing institution. The changes that can occur during the lifetime of a loan are usually more than we think: it is necessary that these possible changes are studied before they take place and not when they take place.

Possible mitigation options for the risks identified should always be considered, even though these may lead to a lower estimation of revenues, higher operational costs, possible delays in the project pipeline, etc.

The main idea under this type of analysis is that the investor and the financing institution are partners in business and must have shared control of all variables during the whole period of the loan.

Some examples of risks and mitigations are:

- the regulatory risk consisting of an uncertain legal framework (e.g. change in value of incentives) can be mitigated through a precautionary business plan
- the construction risk consisting of delays and rise of costs can be mitigated through an all-inclusive turn-key contract (e.g. with penalties for delays)

*"Sustainable development should be pursued through environmental protection: ethical finance supports sustainable practices and production processes, which protect common goods."*

**Mr. Ugo Biggeri,**  
**President of Banca Popolare Etica**



- the operational risk consisting of a rise in operational costs or accidents can be mitigated through all-inclusive Operation & Maintenance contracts (e.g. including the purchase of raw materials at set prices)
- the market risk consisting of changes in the price/volume of goods can be mitigated through precise purchasing contracts
- the technical risk consisting of changes of plant efficiency can be mitigated through performance bond contracts
- the financial risk consisting of the rise of the variable interest rate is mitigated by signing hedging contracts
- the environmental risk consisting of e.g. soil contamination should be analysed by and with experts, and involve the community

## The Business Plan

The economic and financial scenarios of the investment are presented in the business plan. It is important that all revenues (sale of goods and services, feed – in tariffs, other contributions), costs (maintenance, insurance, land lease/rent, administrative costs and personnel, connection and contingency) and other costs (financial costs and taxes) are taken into consideration.

The business plan should demonstrate the economic and financial viability of the investment; this means turning the possible risks (e.g. one month plant breakdown due to unreliable technology) into consequences (e.g. lower revenues).

One aspect the plan must address is the need for positive cash flows: these flows must always be sufficient to repay the due debts.

In summary, developing a solid and attractive partnership and business plan are cornerstones for securing necessary funding. Additionally, specific financial instruments to foster sustainable energy investments (including those on EE) should be made available to cities in order to support the further and widespread implementation of sustainable energy measures.



## SHARING KNOWLEDGE ACROSS CITY BOUNDARIES



A sharing of experiences between ‘advanced’ and ‘learning’ cities provides for mutual learning and exchange of knowledge on local sustainable energy planning and implementation issues, and paves the way for the development and implementation of a more holistic, integrated and effective SEAP.

These exchanges can take the form of various activities, such as a twinning approach (i.e. matching one ‘learning’ city with one ‘advanced’ city throughout the development and implementation of their SEAPs, respectively), training staff of a ‘learning’

city in an ‘advanced’ city, peer review sessions, and workshops on topics like CO<sub>2</sub> emission monitoring, financing sustainable energy projects, integrated energy management, stakeholder involvement processes, etc.

### ‘Learning’ cities benefit by:

- Obtaining tailor-made assistance and support for specific, local challenges
- Discussing barriers and steps forward for dealing with particular issues throughout the SEAP process
- Identifying replicable factors in areas where the ‘advanced’ city has attained particular success

At the other end, ‘advanced’ cities will also learn from direct contact with peers in ‘learning’ cities, and get ideas on improving their own processes. As experts from the ‘advanced’ city of Munich remarked on their exchanges with the ‘learning’ city of Burgas; “Every good teacher should always remain a good pupil!”

*“The knowledge and experience shared by the City of Munich had a significant impact on outlining long term energy policy in Burgas and we believe that the exchange established within the Sustainable NOW project has laid the foundations of a long term cooperation between these cities.”*

**Atanaska Nikolova,  
Deputy Mayor, Municipality of  
Burgas**

*“Even if our starting point and local context were completely different, our partnership and collaboration with the Municipality of Burgas was very fruitful! We aim to maintain this collaboration through regular exchanges.”*

**Hep Monatzeder,  
Deputy Mayor, City of Munich**



Another peer exchange was conducted between the ‘expert’ Woking Borough Council (UK) and the ‘learning’ city of Miskolc (Hungary). During one of the exchange activities, Woking facilitated a four day training programme for the City of Miskolc’s energy staff which included site visits to renewable energy installations and sustainable development projects around the Borough. The visit also incorporated learning about Woking’s energy services company (ESCO), the Thameswey Group, and a look at sustainable construction practices at the new Hoe Valley housing development. Time was also dedicated to learning about the Council’s monitoring and reporting requirements on carbon emissions and energy consumption.

Experience shows that these exchanges are well worth the time and resource dedication!



## SETTING AMBITIOUS – YET REALISTIC – TARGETS



A city's vision of the future should be an ambitious one. It also has to be attainable. Reaching that vision requires the achievement of short-, mid- and long-term targets, which generally represent a compromise or trade-off between what is envisioned and what is feasible. Targets will allow the city to keep track of its progress and realise which areas need further efforts, and which are developing as planned – or beyond expectations. Targets should be SMART: Specific, Measurable, Achievable, Realistic and Time-bound.

The Province of Siena is a good example of how targets are successfully leading to the achievement of the province's vision. Siena is making efforts to green its energy infrastructure, to consume less fossil fuels, and to manage energy in a more sustainable way. All of these endeavours aim towards the vision *Siena Carbon Free 2015*.

Specifically, the goal is to eliminate CO<sub>2</sub> emissions for the whole territory of the province of Siena by developing different coordinated actions, such as increasing energy production from renewable sources, saving energy, disseminating best practices, educating citizens on reducing air pollution, tackling climate change and preserving the existing natural resources. Through these actions Siena expects to be the first province in Europe with a certified zero emissions balance (CO<sub>2</sub> emission absorption by forests in the province are considered in the balance).

*Siena Carbon Free 2015* is a vision agreed by all of the 36 municipalities of the province, each of which implements sustainable energy measures, some independently and some jointly, to reach the set targets and stay on track toward their carbon-free vision.



## DELIVERING A MESSAGE MOST EFFICIENTLY



In the Municipality of Bologna the housing sector is responsible for 62 percent of overall GHG emissions. To reduce the municipality's energy demand and the impact of this sector on the environment and on the quality of life of its citizens, Bologna has come up with an innovative idea: The "Energy and Environment Showroom" is an exhibition centre located in a secondary technical school of the city which aims to inform and influence the energy behaviour and consumption habits of citizens.

### The main activities of the Energy and Environment Showroom are:

- A permanent interactive exhibition entitled "EnRi's home – Renewable Energy and Energy Saving" application at home, showing emission scenarios and indicating strategies to limit GHG emissions, save energy, and improve EE and RE implementation options.
- Daily training sessions on environmental and energy issues.
- Exhibition of new and innovative RES and RUE products.
- An info-point for citizens and families, providing information and facilitating the purchase of RES and RUE devices

Targeted dissemination is an effective way to raise awareness and deliver positive impacts to the SEAP objectives.



## IMPROVING ENERGY EFFICIENCY IN BUILDINGS



What is EE in buildings? EE is about achieving comfort with less effort. Typical EE measures in buildings are insulation of walls, roofs and floors, but also improving windows, and avoiding unwanted air leakages. EE is about providing a healthy indoor climate through the use of ventilation strategies whilst minimising energy losses, and using efficient technologies.

The most far reaching EE concept in buildings is the passive house (Passivhaus) concept, which secures such a good energy performance of a building that only a minimal amount of energy is needed to heat

it. Opaque elements are insulated to high levels, windows are triple glazed and therefore very comfortable. Ventilation losses are minimal because heat is recovered to the incoming fresh air. It is enough to only add low amounts of heat to this incoming fresh air. If this small amount of energy originates from a renewable energy source, one gets close to a perfectly sustainable solution.

EE is a precondition for an optimal use of renewable energy technologies. The biggest improvements in buildings have been and can be achieved by means of EE. The potential to reduce the energy demand in buildings is phenomenal. With the Passivhaus concept in both new and existing buildings it is possible to reduce the energy demand in buildings by up to 80 percent. If the remaining 20 percent is provided by renewable energy, almost zero impact results from it.



The other benefit of EE in buildings lies in the significantly lower energy costs for tenants, resulting from the high performance of buildings.

Cities demand vast amounts of energy, which result in an increasing number of emissions and environmental impacts. Shifting to renewable energy can contribute to reducing these negative impacts. If we want to achieve a high fraction of renewable energy we need to invest further in that field and, in parallel, reduce total energy demand by applying EE measures more widely.





## INSTITUTIONALISING SUSTAINABLE PROCESSES INTO LOCAL GOVERNMENT OPERATIONS



The Mountain Community – Association of “Trasimeno – Middle Tiber” Municipalities is a public authority which provides territorial management and planning services for the 13 municipalities it comprises. It is located in Italy, in the region of Umbria and has 110,000 inhabitants. Though energy demand and consumption was one of the main areas that the Mountain Community needed to tackle in order to reduce stress on natural resources, improve the air quality, and reduce its contribution to global GHG emissions, it possessed little knowledge about it.

The Mountain Community decided that it would deliver direct support to each of its 13 municipalities, so that each municipality would take ownership of their energy issues and develop their own sustainable energy strategies. The Mountain Community, which obtained assistance from experts on sustainable and integrated energy management, also helped the municipalities in identifying potential synergies between separate measures being planned by them. Efforts bore fruit and, at present, the municipalities of the Mountain Community have the tools necessary to further develop their sustainable energy vision.

### Some of the achievements so far include:

- The baseline CO<sub>2</sub> emission inventory for the entire territory was produced following the methodology developed by the Covenant of Mayors
- The territory’s SEAP was defined, including a list of actions to be implemented to achieve the 20-20-20 targets. Two municipalities have completed their SEAP.
- The regular implementation of dissemination and information events.
- The strategic governance of energy was achieved through the implementation of Agenda 21.

The main lessons learned are that territorial energy governance is possible by involving all stakeholders in the process, and by using the knowledge of cities across Europe and other expert organisations in supporting the efforts of ‘learning’ cities. It is critical to understand the importance of reducing energy consumption and managing energy sources sustainably, and the benefits of taking action.



*“At the beginning of the project, our Municipality had no experience in energy policy. After intense discussions with city partners on common challenges – such as how to include the transport sector in CO<sub>2</sub> calculations, or the possibility to install PV panels on residential buildings – we now feel ready to take the right actions.”*

**Louis Montagnoli,**  
Local Agenda 21 Manager,  
Comunita Montana – Lago  
Trasimeno Middle Tiber



## SELECTING A WIDE RANGE OF MEASURES



image: Municipality of Sattimo Bostaro

The importance of implementing EE measures is increasing by the day. The City of Miskolc (Hungary) became aware of this need several years ago, and since then has developed a set of measures which are greatly contributing to the city's sustainable energy management.

The example of Miskolc proves that measures need to be implemented on different fronts in order to cover both 'hard' (infrastructural) and 'soft' (behavioural, management) aspects. This approach

also supports the understanding that the energy system is more than the sum of all power plants and transmission lines in the city's territory, and looks at the links and impacts that measures in all city systems may have on the total energy picture.

One of the 'hard' measures recently implemented in Miskolc was the reconstruction program for prefabricated buildings, which is a success story at both local and national levels. After retrofitting measures were implemented (improved outside insulation, new windows, new heating panels and the reconstruction of the heating system) the energy used in these buildings was reduced by about 50 percent.

Another promising project is the use of geothermal energy in the municipal district heating system, which could help revitalise the old and inefficient system, making it sustainable and more economical in the long term.

Several behavioural change measures have also been implemented. They have helped citizens, stakeholders and politicians enhance their knowledge and shift their behaviour toward a more sustainable lifestyle. For example, EE groups have been set up in kindergartens, elementary and high schools, municipal public buildings and other areas to monitor energy consumption. Based on the data collected, ideas are discussed and recommendations made for possible future measures, thus enhancing the knowledge and interest of the participants.



*"Networking and peer-to-peer exchanges bring successful experiences to our Municipality that can be easily replicated. I would say it's the best, fastest and cheapest solution to boost your territory and foster local actions!"*

**Péter Pfiégler,**  
Deputy Mayor, City of Miskolc



image: Lucie Blondel

## SECURING LONG-TERM POLITICAL COMMITMENT



The successful implementation of a SEAP requires long-term political commitment and appropriate resource allocation by the local government. An increasing number of cities are understanding the importance of moving in this direction, regardless of changes in the ruling political party. Enhanced awareness of citizens also contributes to keeping the sustainable energy topic high on the agenda and pushes local government officials to deliver creative solutions (often as a result of a participatory consultation process).

The City of Ludwigsburg is a good example of long-standing political support to energy, environment and sustainability issues, which, for example, earned it the European Energy Award in 2011. Through Ludwigsburg's City Development Concept political decision-makers support and are accountable for the strategic objectives of the 11 thematic areas selected through a participatory process. Several of these areas are closely connected to energy issues. The local council has endorsed and is actively pursuing the sustainable management of energy in the city. An energy concept concerning the areas heating, electricity, mobility, RES and measures like public relations was established in 2010/2011 during the project "Sustainable NOW". It will be the guideline for the energy activities during the next years.



*"Energy is an important part of our integrated City Development Concept – for reaching our goals and guaranteeing a sustainable, secure and affordable energy supply, while saving energy and enhancing energy efficiency and RES. This is our foundation and all parts of city society are working together to achieve it."*

**Werner Spec,  
Lord Mayor, City of Ludwigsburg**

## ENGAGING BUSINESS IN THE PROCESS



For many years, the Munich region has been lucky to attract important economic players – large companies like Siemens, BMW, Munich Re, etc., but also small and medium-sized companies, which together contribute to economic growth. This situation results in a GDP per capita which is remarkably high compared to other European regions, and which allows the city of Munich to invest in numerous technologies and structures in the energy sector and beyond, which meet future climate and non-climate requirements.

Companies increasingly recognise that environmental and climate protection triggers economic profit. Local authorities should make use of this perception. This is one reason why the city of Munich founded the local alliance "Munich for Climate Protection" in 2007, which brings together local companies and other important stakeholders. Within this alliance, more than 30 CO<sub>2</sub> reduction projects have been developed. Every member is obliged to prepare an internal CO<sub>2</sub> balance and to engage in at least one of the CO<sub>2</sub> reduction projects developed by the alliance.

Another example of successful engagement with the business sector is found in Woking Borough Council. For around 20 years the Council has invested in EE and renewable / sustainable energy projects. This began with small scale projects financed through a fund dedicated to EE improvements across Council buildings. In 2000, the Council established its own ESCOs, Thameswey Ltd and Thameswey Energy Ltd (now known as Thameswey Group). This enabled investment in larger scale energy projects with the assistance of private finance and longer term business and financial plans. These projects contribute to the overarching aims of the Council's Climate Change Strategy. The Council's Climate Change Working Group meets on a quarterly basis to discuss the progress of the Strategy's action plan and to agree new initiatives. Importantly the Working Group is attended by a representative of Woking Chamber of Commerce. This forum provides a useful way to stay in touch with stakeholders around this agenda.





image: Anne-Claire Lofius

## Point of arrival

Now more than ever, the global energy and climate challenges require a solid commitment to find and enact innovative, progressive and sustainable responses. Local governments are in a position to steer change and generate considerable impact through effective awareness raising and through the implementation of more efficient and sustainable energy solutions.

**The energy and climate battle will be won in cities.** The paths that cities choose to take in the next years can lead the global transition to a green and sustainable economy. This process already shows impressive progress – over a period of three years the Covenant of Mayors has become a successful and well established initiative – and illustrates that cities are acknowledging their responsibility, as well as the great potential they have to affect and improve the environment and social conditions in their territories.

An increasing number of cities are **dedicating resources** to going beyond regulatory requirements in terms of energy and climate, again highlighting that it pays to be climate smart. These efforts go hand in hand with the objectives of the Europe 2020 strategy, such as the flagship initiative addressing a resource efficient Europe. A low carbon, efficient economy leads to sustainable, green and smart growth.



At the same time, it is necessary to closely monitor the **progress and effectiveness** of the implementation of SEAPs by cities, and to properly guide them in making these local energy transition processes relevant and efficient – avoiding that the SEAP process becomes merely a vehicle for self-advertisement. The Covenant of Mayors and its supporting structures need to assist cities to ensure that SEAPs truly become long-term commitments to sustainable energy management.

Through **interaction between cities** there is great potential to take advantage of the large and increasing number of players embracing sustainable energy practices. A strong learning and exchange component of the SEAP development and implementation processes can ensure that lessons learned are disseminated widely and that the energy discussion goes beyond the circle of ‘energy experts’ of local governments. Considering the strategic relevance of energy supply systems, which feed many other city systems, they need to be made efficient and reliable. Reliability will partly depend on a city’s ability to generate by itself – between the local government, businesses and citizens – a fair amount of the energy that the city consumes. RES offer great potential for achieving local energy security and energy independence.

Fostering the implementation of sustainable energy systems and managing them following sustainability criteria is a way to secure long-term energy supply and in parallel increase the quality of life of citizens, e.g. through improved air quality, or through the sustainable management of ecosystems. Stressors, such as climate change impacts and anthropogenic effects, including demographic changes and increasing per capita consumption, land use and urban spatial planning, may challenge the feasibility of fully sustainable energy systems. Innovative solutions, awareness-raising campaigns and an integrated, cyclical and adaptive management of the SEAP will be effective counter forces.



## PROJECT CO-ORDINATOR

**ICLEI** supports the capacity development of local governments, improving their decision-making processes and making them more sustainable. ICLEI helps to ensure that local governments' energy and climate actions are part of an integrated, holistic strategy that leads to the highest possible quality of life of citizens and is based on a resource-efficient delivery of services, preserving natural resources. ICLEI Europe is a Covenant of Mayors Supporter.

[www.iclei-europe.org](http://www.iclei-europe.org)



## NETWORK AND TECHNICAL PARTNERS

**Climate Alliance** supports local authorities from pioneers to beginners in developing CO<sub>2</sub> emissions inventories and sustainable energy action plans through tailored supporting tools and methods, capacity-building workshops and other experience-sharing platforms. Climate Alliance manages the Covenant of Mayors Office in partnership with several other local government networks and is a Covenant of Mayors Supporter.



[www.climatealliance.org](http://www.climatealliance.org)

**Banca Etica** is the first institution of ethical finance in Italy. The bank's roots are to be found in the world of the third sector organisations, of voluntary work and of international cooperation. Banca Etica grants financing to civilly oriented economic projects, like EE and use of renewable sources, with particular attention to innovation and involvement of local communities.



[www.bancaetica.com](http://www.bancaetica.com)

By offering practical knowledge on EE in buildings, **Trecodome** contributes to bridging the gap between project experience, city policies and global trends towards a low carbon society.



[www.trecodome.com](http://www.trecodome.com)

**Coordinamento Agende 21 Locali Italiane** facilitates the exchange of "inspirational examples" between local governments, spreads the knowledge and practice of these actions, favours new projects and acts within the Italian government and other national and European institutions to promote policies inspired by the principles of sustainability. Coordinamento is a Covenant of Mayors Supporter.



[www.a21italy.it](http://www.a21italy.it)

**Ecovision GmbH** contributes to the protection of the environment, both at home and abroad, by planning and operating plants that utilize renewable energies. By offering shares in jointly owned photovoltaic (PV) plants, Ecovision enables citizens to do the right thing, both economically and ecologically, as well as in a globally fair manner.



[www.ecovision-gmbh.de](http://www.ecovision-gmbh.de)

## COMMUNITY PARTNERS



Municipality of Burgas,  
Bulgaria\*



LUDWIGSBURG

City of Ludwigsburg,  
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Landeshauptstadt  
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City of Munich,  
Germany\*



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CITY OF  
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Municipality of Bologna,  
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Provincia di Siena

Province of Siena,  
Italy



Rosignano Marittimo  
Municipality, Italy

\* Signatories to the Covenant of Mayors



## GLOSSARY:

- a. **SEAP:** Sustainable Energy Action Plan
- b. **EE:** Energy Efficiency
- c. **RES:** Renewable Energy Sources
- d. **RUE:** Rational Use of Energy
- e. **ESCO:** Energy Service Company

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## FURTHER INFORMATION:

**We invite you to see all the results of the project online, which include:**

- the five SEAPs developed by the project's 'learning' cities,
- The SEAP development and implementation wizard with its process management landscape tool and decision support system,
- The web portal: an entry point for users interested in the development of sustainable energy practices, and
- A study on funding sustainable energy measures

The idea behind the development of these products and tools has been to create integrated, holistic thinking for local governments when assessing and re-assessing their energy systems and the changes needed to make them more sustainable. It supports an overarching understanding of the wide-ranging impacts of the energy sector and the ways it relates to other sectors.

All of these documents and tools are freely accessible at: [www.sustainable-now.eu](http://www.sustainable-now.eu)

The link to the EU initiative Covenant of Mayors is: [www.eumayors.eu](http://www.eumayors.eu)

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