Existing Methodologies and Tools for the Development and Implementation of Sustainable Energy Action Plans (SEAP)

Summary report I : Methodologies and Tools for the Development and Implementation of SEAPs

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Covenant of Mayors
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INTRODUCTION

The Covenant of Mayors (CoM) is the commitment by signatory towns and cites to go beyond the EU objectives in terms of CO_2 reduction, through the implementation of Sustainable Energy Action plans (SEAPs). Signatories commit to submitting their local SEAPs, with concrete measures aiming at reducing the city's CO_2 and emissions within the year following adhesion. The SEAP should include a baseline CO_2 emission inventory and the CO_2 reduction target.

The JRC carried out a study with the aim of providing an overview of:

- Existing methodologies/tools for the development and implementation of SEAPs by municipalities (Part I)
- Existing methodologies/tools for the elaboration of baseline CO_2 emission inventory at municipal level (Part II)

The present document is a short (summary) version of part I of the report. The full report is available on the JRC website[1].

The list of the reviewed tools does not have the pretention to be exhaustive. There certainly exist other tools that may be suitable as well.

The overview exercise is concluded by a signposting table allowing visualising the main characteristics of each of the most relevant methodologies.

The aim of this report is not to identify or impose one tool or methodology that should be followed by all cities, but to provide guidance/recommendations to help local authorities to select the tools that best suit them, according to their own needs and characteristics. It is possible that some cities may actually decide to use several tools, taking advantage of the strengths of each of them.

Although it appears that some tools may be closer than others to the rules and principles set out in the context of the CoM, it is up to the cities to decide which tool they want to use.

Based on the evaluation presented here, guidelines have been elaborated[2], providing detailed recommendations for SEAP elaboration and CO_2 baseline inventory. Following these guidelines will help local authorities to reach the commitments they have taken by signing the Covenant.

[1] http://re.jrc.ec.europa.eu/energyefficiency/pdf/CoM/Methodologies_and_tools_for_the_development_of_SEAP.pdf

[2] http://re.jrc.ec.europa.eu/energyefficiency/html/com.htm

1. REPORT'S OBJECTIVES

This report is aimed at providing an inventory of existing methodologies for the development and implementation of Sustainable Energy Action Plans (SEAP) by municipalities. Based on the methodologies collected, it is possible to identify key aspects and issues municipalities might consider for the development of SEAP.

The purpose of this document is not only to gather information on methodologies and identifying the common and specific aspects but also to collect information on tools to overcome barriers to action on energy efficiency such the lack of awareness and to start the process towards the development of SEAP and its implementation.

Moreover the main conclusions about methodologies for sustainable energy planning presented and discussed in the workshop held in Ispra in May 2009 are included in this report.

As some of the methodologies are quite long, in this report the main elements have been summarized. The whole methodologies can be downloaded from the web pages that have been included in this report. In addition, some tools have been included as "other instruments" as they only focus on some of the components of the development and implementation of SEAP.

2. NECESSITY TO DEVELOP/USE A METHODOLOGY

Before starting the analysis of the methodologies developed for SEAP, the main reasons to develop specific methodologies are presented and discussed.

Based on the views collected from the participants of the Ispra Workshop the more common mistakes made by cities during the development and implementation phases, what are the most difficult and crucial steps and what are the needs for specific methodologies have been collected.

On the question why a specific methodology for developing and implementing SEAP is necessary, their opinions can be summarised as follows:

- A tool aimed at making a common framework for inventory of GHG emissions, the establishment of climate goals, the development of an action and a follow-up strategy is need to reach positive and concrete results.
- A SEAP´s successful implementation is not only accomplished by proposing a list of sustainable energy measures. As a significant number of stakeholders must be included, the way to integrate them in the plan development must be specified by the methodology.
- The SEAP does not only include energy efficiency measures, but also measures feasible, understandable and accepted by the decision makers and communicated to the outside world. Moreover the measures have to be consistent with the general and specific objectives and contribute to the planned quantitative targets.
- A SEAP is not only a collection of measures but it is also a strategy that makes them coherent with the European, National and Local regulations.

Regarding the more common mistakes (bad practices) made during the development of plans, the opinions of the experts are:

- A very weak political commitment.
- The task is performed only by a person or a small group of persons instead of a broad working group composed by persons from different departments.
- It happens that effective plans have been developed and have failed because a reporting and monitoring procedure have not been included.
- During a round of interviews and research carried out in Sweden, the experts agreed that an unclear definition of responsibilities and the inexistence of dialogue with the stakeholders is a frequent mistake. They also mentioned the importance of adaptability of the process. Finally

different groups concluded that that some issues such as energy security were never brought up during the process.[3]

According to the sources, the most difficult steps are:

- One of the first difficulties is to submit the SEAP idea to the local government (elected and deputies) in a convincing way, and capture the enthusiasm of the Mayor, the best person to drive the general interest.
- Sometimes, the measures set by the City Council are not eligible for the application to national or regional funds. Prior to decide the measures to be implemented, an analysis of the national and regional framework will be necessary.
- To collect reliable data is often a task that experts identify as very difficult to fulfil with an acceptable level of accuracy. The data collection process is usually complex but cannot be a too long and tiresome procedure with the risk of paralysing all other activities.
- Monitoring is a very difficult task (missing data, ambiguous interpretation of results…) unless a good monitoring plan has been developed in advance.

Finally the experts identified some crucial steps during the process. These steps have been defined as those required to lead the plan to success are:

- Gaining the commitment of politicians and staff of the public administration. A recommendation is to invest all the required time to reach this objective before starting to develop the plan.
- Ensuring involvement of the rest of the stakeholders.
- It is critical to reach consensus on a general vision and on the consequent strategy. It is essential to overcome internal obstacles due to the lack of communication and collaboration among the different department of the Municipality.
- A good coordinator with project management skills is necessary. To have a good external consulting support could be recommended in order to obtain know-how.
- For municipalities that already have produced a SEAP the most important step is the follow up and retaining political interest for the climate issue.
- The definition of all the possible actions among which the municipal authority could select the priority and the assessment of results.
- The SEAP should be realistic and specially adapted to the local situation.

In addition, the experts consider that the specific situation of the municipality is the most important factor to decide how to implement the SEAP. Due to these specific situations, there is not a specific path or rules to follow to get success. The commitment and flexibility of the city council and the decision makers is critical.

3. CONCLUSIONS OF THE SEAP WORKSHOP

On May, 2009 18th and 19th, a workshop was held in Ispra with the objective to receive feedback from different municipalities, supporting structures, experts and national energy agencies. The conclusions and observations of the first session about the methodologies for the development and implementation of SEAP have been included in this chapter.

The aim of this session was to have an overview of the different methodologies developed by the participants that allow a successful design and implementation of Sustainable Energy Action Plans (SEAP). Here are the main outcomes of the presentations and discussions:

- SEAPs are composed at least by the following steps: Initiation within municipality (political decision), Inventory (Analysis of energy consumption and CO_2 emissions, saving potentials),

[3] Linköpig Studies in Science and technology. Municipal Energy planning – Scope and development method. Author: Jenny Ivner (2009)

Institutionalisation (structure, staff unit), involvement of the stakeholders, Action plan (targets, priorities, action sectors, financing) and monitoring (regularly). SEAP must contain specific targets in every field in which the energy consumption and CO_2 emissions can be reduced. Timing and priorities have to be clearly indicated in the SEAP.

- § As many departments and stakeholders as possible should be involved in the development of plans. This includes not only relevant departments of the public administration but also, energy companies, citizens and companies in general. Surveys, questionnaires and roundtables with the stakeholders have been used to obtain data for the preliminary diagnosis and for the decision procedures.
- § Agreements between municipalities and public or private organizations such as national/regional energy agencies or companies are a powerful way to integrate national/regional and local climate change targets.
- § Financing mechanisms are essential for the implementation of SEAPs. These include support/consulting for drafting the SEAP as well as the actual financing of sustainable energy measures. Moreover financing mechanisms aimed at covering staff costs and dissemination activities can support the establishment of a department responsible for the development and monitoring of SEAP.
- § The baseline or starting point should be preferably set in 1990 or the year when municipalities have reliable energy consumption data (first emissions inventory).
- § Approaches are different depending on the city's priorities and the specific leverages at the disposal of the municipality. In case of own assets and services, municipalities could act directly. In case of measures related to transport sector, many municipalities rely on measures related to promotion and education of citizens, traffic ban in certain areas and the reinforcement of public transport.
- § Some municipalities from The Netherlands that currently are developing a SEAP have established a zero CO_2 emissions (CO_2 neutral cities) target as long term objectives. This element represents a reliable indicator of the success reached by the strategy and a good example of how change is built on change (see Management of Change chapter).
- § Easy measures should be implemented as soon as possible in order to motivate the stakeholders. The level of difficulty has to be low at the beginning and higher afterwards as the experience is increasing. This strategy allows maintaining and improving the motivation of the working groups. CO_2 reduction potentials and their realistic level of achievement by sector should be estimated by means of tools like SWOT, brainstorming or Delphi analysis among others.
- § Lists of measures to be implemented in municipalities are available in very friendly formats (for instance www.climatemenu.com or the CLIMATE ALLIANCE "Compendium of measures"). The availability of measures, tools and "shining experiences" are not a problem due to the large amount of them.
- § A good choice of indicators that should be linked to specific technical and/or organisational measures is critical for monitoring the impact and effects of energy plans. There is a need to standardize indicators as it has been proved that every municipality or organization uses its own set of indicator that differs from the one chosen by others cities. These differences in indicators and criterions prevent suitable comparisons.
- § City councils should firstly undertake the proposed measures in their own buildings, transport, etc, in order to show them as an example. A leadership role assumed by the Public Administration is a crucial aspect to enable behavioural changes.
- § A dissemination/communication policy is crucial to ensure the SEAP will fulfil the initial objectives. In small municipality, due to the close contact between the players, the diffusion of the core messages is easier.
- § Small municipalities usually have less data about energy consumption. This fact makes the baseline estimation more difficult.

- Politician's roles are crucial for a successful implementation of energy plans. For this reason leadership, agreement and pacts between political parties are an important aspect to take into account before beginning with the practical implementation.
- As some municipalities are not experts, the level of realism and simplicity of plans should be as high as possible. A set of measures should be proposed to beginner municipalities in order to allow selection according to own framework conditions and priorities.
- Due to the close relationship and the possibility of synergies, waste and water management should be included in the same strategy that energy. Water and waste play an important role, both on the demand and supply side.
- Quality and energy management systems are efficient means to define a reliable baseline, to ensure a continuous control and the implementation of the targets.
- The total saving potential could be higher than the EU 20% targeting. From a team work point of view it is very important to have a realistic view of what they could achieve. Targets that are either too low or too high are not motivating.

4. SEAP METHODOLOGIES INVENTORY

A technical opinion on each methodology has been developed using a SW (Strengths/Weaknesses) analysis. This chapter analyses the following methodologies developed through various projects and initiatives:

- ENOVA
- PEPESEC
- BELIEF
- MODEL
- MOVING SUSTAINABLY
- SECURE
- MUSEC
- ICLEI / NATURAL CAPITALISM SOLUTIONS
- CLIMATE COMPASS
- MINNESOTA PROJECT
- EUROPEAN ENERGY AWARD

4.1. METHODOLOGY OF ENOVA

4.1.1. Contact details

Name of the Company:	ENOVA	Country:	NO
Contact name:	Nils Kristian Nakstad	e-mail:	post@enova.no
Web Address: www.enova.no http://www.ieeprojects.net/treenity.html			

4.1.2. SW[4] Analysis

STRENGTHS	WEAKNESSES
– The methodology contains example of tables allowing evaluating the CO_2 reduction potentials of the municipality. It assists in depth for example in the evaluation of the current situation and analysis of resources and subsequently in the development of measures. – The manual give an example of how the energy planning is integrated in the general strategy of the city. – The development of the SEAP is based on the general strategy of the municipalities (research of drivers). – The technical aspects of the methodology like the baseline assessment and the implementation of measures have been carefully detailed. – References to external resources (websites and tools)	– The key issue of reaching a political agreement between the main political parties is not developed. – The achievement of measures and the general implementation of the plan are not founded on the citizenship participation as, for example the partnership agreements are not foreseen. – A dissemination/communication plan to the stakeholders is not foreseen. Moreover, the procedure doesn't include aspects like benchmarking or collection of successful experiences. – The guide is in some aspects very focused on the specific situation of Norway. – Monitoring and reporting are touched superficially only.

[4] The Opportunities and Threatens analysis have not been achieved in this case

4.1.3. Approach and general opinion

The guidebook has been prepared by ENOVA in collaboration with the Norwegian Association of Local and Regional Authorities (KS), the Norwegian Pollution Control Authority, Institute for Energy and Technology (IFE) and New Energy Performance AS (NEPAS). This is a valuable guide that should be adapted to a wider geographical area.

4.2. METHODOLOGY OF PEPESEC PROJECT

4.2.1. Contact details

Name of the Project:	PEPESEC	Country:	UK, SE, GR, ES, IT, PO
Contact name:	Per-Johan Wik	e-mail:	Per-johan.wik@kfsk.se
	A. Slachter		A.Slatcher@manchesterdda.com
Web Address: www.pepesec.eu			

4.2.2. SW Analysis

STRENGTHS	WEAKNESSES
– The methodology has been used in the energy planning of nine cities in Sweden and been shared with European Partners in an IEE Project. – Every step includes an example of real application.	– The differences between the methodology to implement measures within the public and private sectors have not been distinguished. – The financial aspects like proposing an investment plan or the estimation of the available and needed resources have not been considered. – Benchmarking and share of experiences are not integrated in the procedure. – Technical steps have not been developed at all.

4.2.3. Approach and general opinion

Some aspect like how to estimate the financial budget, guidelines related to, data collection, the project management, the communication and the follow-up have not been detailed. Thus the methodology cannot be followed by non-experienced municipalities.

4.3. METHODOLOGY OF BELIEF PROJECT

4.3.1. Contact details

Name of the Project:	BELIEF project	Countries:	BG, DE, ES, FR, GB, GR, IT, NL, PT, RO, SI, SK,
Project Coordinator:	Energie-Cités	e-mail:	jean-pierre.vallar@energie-cites.eu
Project's Web Address: www.belief-europe.org			

4.3.2. SW Analysis

STRENGTHS	WEAKNESSES
– The guidebook contains a very detailed methods aimed at creating, running and organising successful local energy forums. – Large amount of shining examples that can be adapted to other municipalities. The guidebook includes many contact details. – The approach is very focused on how to gain support from the stakeholders.	– The methodology doesn't offer guidelines for gathering and monitoring data. – Market segmentation has not been included in order to differentiate the actors. – Some important aspects related to SEAP elaboration like financial and project management are not developed sufficiently.

4.3.3. Approach and general opinion

This methodology covers some of the main aspects of plan preparation but emphasizes the communication with the stakeholders and the dissemination of the results. There is a lack of details or explanation about some other aspects of energy planning.

4.4. Methodology of MODEL Project

4.4.1. Contact details

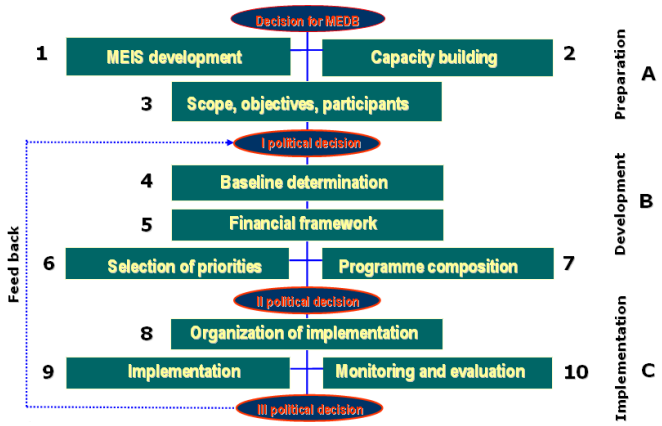
Name of the Project:	MODEL	Country:	7 New Member States + Croatia
Project Coordinator:	ENERGIE-CITES / Christophe Frering & Jana Cicmanova	e-mails:	christophe.frering@energie-cites.eu & jana.cicmanova@energie-cites.eu
Technical Coordinator (responsible of the methodology)	ENEFFECT / Zdravko Genchev	e-mails:	zgenchev@eneffect.bg
Project's Web Address: www.energymodel.eu			

4.4.2. SW Analysis

STRENGTHS	WEAKNESSES
– A detailed, well structured approach is proposed, with a lot of useful recommendations. – The guidebook includes a broad variety of successful experiences of European municipalities. – A powerful communication strategy is included in the procedure. – A detailed inventory of available funds at European level is provided.	– The share of experiences with other municipalities is not an element considered by the methodology. – The vision step is not required in the methodology proposed. – The study of the framework in which the SEAP is developed doesn't analyze the drivers that made previous experiences successful.

4.4.3. Approach and general opinion

The procedure developed by the MODEL project covers the main aspects of municipal energy planning. The communication strategy has been carefully studied. It takes into account the segmentation of the target groups, the different means of communication or the communication cycle. This method has been successfully tested during the project by 42 pilot cities in 8 Eastern European countries. The whole process has been laid out using a flow diagram:



The MODEL project will only be terminated in February 2010 and the publication of its Common Framework Methodology is foreseen.

4.5. Methodology of MOVING SUSTAINABLY PROJECT

4.5.1. Contact details

Name of the Project:	MOVING SUSTAINABLY	Country:	Consortium of Cities from NO, SE, FI, LI, RU, PO, GE, LV, EE
Project Coordinator:	Björn Grönholm	e-mail:	environment@ubc.net
Project's Web Address:	www.movingsustainably.net		

4.5.2. SW Analysis

STRENGTHS	WEAKNESSES
– Each step of the procedure has been carefully detailed in a guidebook, including instructions about the implementation. – A check-list is give for each step. – Numerous successful experiences show how to progress with the implementation of each step. – It covers on a very effective way the involvement of the main stakeholders of the municipality. – External references (websites with good practices)	– The communication strategy has not been detailed at all. – Benchmarking and share of experiences with other municipalities is not considered.

4.5.3. Approach and general opinion

Interesting strategy that covers widely all the aspects regarding the involvement of the stakeholders, political commitment, establish a vision and the calculation and allocation of financial resources. This method has introduced an innovative perspective that considers the differences of public transport usage by men and women. The methodology has specially been developed to start a sustainable transport plan but is easily adaptable to energy planning in general.

4.6. Methodology of SECURE PROJECT

4.6.1. Contact details

Name of the Project:	SECURE	Country:	DK, EE, IE, SE
Project Coordinator:	City of Malmö – Jon Andersson	e-mail:	Jon.andersson@malmo.se
Project's Web Address:	www.secureproject.org		

4.6.2. SW Analysis

STRENGTHS	WEAKNESSES
– The guide manual available online contains the SEAP designed by the cities participating in the project. – Due to the simplicity of the process, the methodology can be used as a first approach for SEAP elaboration.	– The monitoring and reporting aspects are not considered at all by the authors. – Important lack of details about all the aspects of the methodology.

4.6.3. Approach and general opinion

The guide developed by the SECURE project consortium include for each step proposed the experiences of each partner during the implementation of their own SEAP. This characteristic offer very interesting possibilities to know which sectors of energy consumption they had to choose, what kind of partnership has been created and how the communication strategy was implemented. The city of Dublin achieved a public consultation for designing the action plan. During this phase, several groups exposed their own ideas about what a SEAP should include. In brief, this methodology is interesting to have a general approach for non experienced small municipalities that are looking for information about what happens when the decision to implement a SEAP has been taken.

4.7. Methodology of MUSEC

4.7.1. Contact details

Name of the Project:	MUSEC	Country:	BG, DE, DK, IT, NL
Project Coordinator:	Italian Local Agenda 21 Eriuccio Nora	e-mail:	info@musecenergy.eu
Project's Web Address: www.musecenergy.eu			

4.7.2. SW Analysis

STRENGTHS	WEAKNESSES
– The guide collects tips and best practices that assist the implementation process. The tips are based on the practical experience of the developers. – The guidebook covers the main steps of the process from a very detailed point of view.	– The communication and dissemination aspects haven't been developed enough.

4.7.3. Approach and general opinion

This method collects the main steps to follow and should only be completed by communication and dissemination guidelines. This document can be easily followed by municipalities without any experience in energy planning. The guidebook available online has been structured very clearly. Each web page corresponds to a specific aspect of the methodology.

4.8. METHODOLOGY OF ICLEI / NATURAL CAPITALISM SOLUTIONS

4.8.1. Contact details

Name of the Author:	ICLEI & NATURAL CAPITALISM SOLUTIONS	Country:	USA
Project's Web Address:	www.natcapsolutions.org www.icleiusa.org	e-mail:	info@natcapsolutions.org iclei-usa@iclei.org

4.8.2. SW Analysis

STRENGTHS	WEAKNESSES
– The guidebook contains a very rich collection of previous experiences in diverse sectors that will help municipalities to identify the main barriers to overcome with certain measures. – A large amount of arguments to increase awareness among the stakeholders are proposed at the beginning. – The method has been used worldwide by ICLEI. – Numerous references to external resources	– The financial aspects are not considered. The guide doesn't contain basic instruction for this. – The communication aspect is not dealt in depth. The guide just contains some aspects of it. – Networking and benchmarking have not been included as important point to develop a SEAP.

4.8.3. Approach and general opinion

This methodology covers the main aspects of the plan but emphasizes the communication with the stakeholders and the dissemination of the results. It has been developed by Natural Capitalism Solutions using the 5 steps methodology of ICLEI.

The guide includes detailed examples of measures to implement in different sectors. Several experiences in the United States have been collected. Several tools aimed at estimating GHG emissions have been developed by ICLEI.

4.9. Methodology CLIMATE COMPASS

4.9.1. Contact details

Name of the Project:	CLIMATE COMPASS	Countries:	DE
Project Coordinator:	Ulrike Janssen	e-mail:	u.janssen@climatealliance.org
Project's Web Address:	www.climate-compass.net		

4.9.2. SW Analysis

STRENGTHS	WEAKNESSES
– The guide developed by CA contains a "compendium of measures" aimed at helping municipalities to make a choice among them and establishing their own level of ambition. This tool can be used by expert and non-expert municipalities as the lowest and highest levels are adapted to both situations.	– The communication and dissemination aspects have not been fully developed. – Some of the information is only available for the members of CLIMATE ALLIANCE. – Following the available information this methodology seems very focused and detailed on the measures to be implemented.

4.9.3. Approach and general opinion

The Climate Compass tool has been designed to help municipalities to start sustainable measures related to seven topics following different levels of ambition (from "getting started" to "taking the lead"). This instrument has been completed with "implementation instructions" included in the 5 steps table. The development of Climate Compass was based on the main roles of local authorities in local climate change policies.

4.10. METHODOLOGY OF THE MINNESOTA PROJECT & UNIVERSITY OF MINNESOTA

4.10.1. Contact details

Name of the Project:	MINNESOTA PROJECT	Countries:	USA
Project Coordinator:	Lola Schoenrich	e-mail:	lschoenrich@mnproject.org
Project's Web Address:			
http://www.state.mn.us/mn/externalDocs/Commerce/Resource_Manual_060404115637_CERTs2.pdf			

4.10.2. SW Analysis

STRENGTHS	WEAKNESSES
– General overview of the process to develop and implement a SEAP. – Very focused in the problematic aspect of getting support and awareness. – The guidebook includes interesting previous experiences. – A detailed description of the role of each stakeholder.	– The information available for each step is very scarce if the idea is to follow the instruction from the beginning to the end. – Some important aspect like financial issues of monitoring and reporting are not considered by the authors.

4.10.3. Approach and general opinion

The guidebook has been developed by the Minnesota project with the scientific support of the University of Minnesota. In this sense, it takes into account a social and scientific perspective. For a suitable use of the guidebook, the contents should include more details about the methodology.

4.11. EUROPEAN ENERGY AWARD Methodology

4.11.1. Contact details

Name of the Project:	EUROPEAN ENERGY AWARD®	Country:	more than 400 municipalities in DE, FR, IT, AT, IE, NL, CZ, LT, CH, LI
Project Coordinator:	Forum European Energy Award e. V Cornelia Brandes	e-mail:	info@european-energy-award.org
Project's Web Address: www.european-energy-award.org			

4.11.2. SW Analysis

STRENGTHS	WEAKNESSES
– Very focused on the success of the implementation phase, with annual review and subsequent adaptation of the plan – The process is supported by an experienced energy advisor – Good catalogue of measures with evaluation tool – Numerous tools/best practice examples available in different languages – Independent review of the success leading to an award – Continuous improvement of the tools and methodologies. This ensures the availability of tools and support in the future. – Existence of a forum where the participating cities are represented and which guarantees the quality management and standardisation on European level – Objective external evaluation is guaranteed by an external auditor	– Tools and guidance documents are not publicly available (members only) – Cities have to pay a licence fee to participate – The quality of the evaluation strongly depends on the skills of the energy advisors – The availability of some tools/best practice examples may depend on the country/language

4.11.3. Approach and general opinion

The European Energy Award®, existing for already more than 10 years, is a certification and quality management system for cities and communities in Europe willing to improve energy efficiency at the local level. It allows municipalities to identify strengths, weaknesses and potential for improvement and, above all, implement effectively energy efficient measures. A catalogue of measures and an evaluation tool allow evaluating and selecting appropriate measures for the SEAP. The success of a municipality's efforts is made visible by an award. The standardized assessment permits a benchmarking between communities. It allows member cities to share their experiences and expertise. It is an excellent implementation tool in the context of the CoM.

5. SUCCESSFUL EXAMPLES OF SEAP METHODOLOGIES

A. FREIBURG: The energy policy in Freiburg has been evolving since 1986 from an energy supply concept to a climate protection concept that was recently replaced by a new strategy. Regarding the energy supply concept, the ways to reach the objectives was energy saving, energy efficiency and the use of renewable energy sources. In 1996, the City of Freiburg set the target to reduce the emissions of CO_2 by 25% in 2010 using as baseline year 1992. The objective includes the emissions due to traffic. In 2007, the emissions had been cut by 14%. This year, a new strategy aimed at reducing the emissions by 40% in 2030 was approved. The reduction's potentials for each sector to reach these objectives are: commerce trade 30%, households 25%, industry 21%, traffic 20% and City of Freiburg 3%.

A Steering Committee composed by the City of Freiburg, City's companies, energy agency, Chamber of Industry and Trade and, in general, the main stakeholders, meets twice a year in order to revise progresses of the working groups and monitor the evolution of the plan. The long-term strategy must be underpinned by detailed and budgeted short term actions. According to the City, the most important steps to develop a SEAP are: analysis of the present situation (present and future energy and CO_2 balance and estimation reduction potentials), strategy to reach targets (definition of targets, measures and implementation plan) and a regular monitoring of the plan. Moreover, other aspects such as vision, political commitment, an implementation structure and financial resources are also required to attain the objectives. The commitment of national/EU is also crucial to succeed.
www.stadt.freiburg.de

B. HAMBURG: 3 goals of CO_2 emissions reduction since 1990. 20% in 2012, 40% in 2020 and 80% in 2050. The way to reach these objectives is through key instruments related to awareness (education), renewable energy sources (solar thermal heating, photovoltaic installations and an own energy supply company based on renewable energies), efficiency in production/engines and reduction in energy consumption (subsidies for thermal insulation, improvement of efficiency by companies and stakeholder's commitment to reduce their energy consumption). The city is investing 25 M€ per year (~13,8 €/inhabitant). The reduction between 1990 and 2004 was 12,5%. For installation of renewable energies Hamburg cooperates with the surroundings. International networking helps to improve the SEAP due to benchmarking experiences.
www.hamburg.de

C. LAUSANNE: many measures similar to the case of Hamburg have been undertaken to reduce energy consumption. Following ISO 9001 and 14001 labels, Lausanne use the European Energy Award instruments for energy management. The long term objectives on the Municipal territory are a reduction of 50% of the energy consumption and 50% of renewable energies in 2050.
www.lausanne.ch

D. **THE CLIMATE MUNICIPALITIES:** According to the climate coaching method, a climate strategy is based on four cornerstones:

- *inventory* of greenhouse gas emissions and energy use
- *climate goals* for how to decrease emissions and energy use within the municipality
- *action plan* for how to decrease emissions
- *follow up* of goals and action plan

An important part of an active climate work is that some employees within the municipality have time to work with the climate strategy. A common internal organisation is to have a *working team* composed of people from different departments, a *coordinator* that leads the group and coordinates the climate strategy work and, finally, a *leading group* of politicians that decide which actions will be carried out. The climate coach visited the coordinators in the municipalities in the beginning of the project and performed an initial requirement analysis. Thereafter, on basis of the needs and conditions in the municipality, the continuation of the work was structured. The municipalities had varying initial status and hence the support from the climate coach varied a lot. In some municipalities where the

political support was good but the know-how was lacking, the support was focused on the working process and how to get good involvement from employee in the action plan. In other municipalities the support was focus on climate statistics or identifying actions in the action plan. In contrast to the work of many external consultants, working alone and leaving a finished document (climate strategy or energy action plan), the core here is to create involvement among as many employees as possible by letting the municipality do most of the work. Two years after the project had started there were at least ten municipalities that had put together a climate strategy, furthermore seven had a remittance and the rest had started a climate process.

www.klimatkommunerna.se

E. **HELSINKI:** the City Council is committed with the national government in the implementation of the EU Energy Services Directive. The objective is a 9% reduction of energy consumption between 2008 and 2016 and 20% by 2020. Big efforts have been dedicated to low energy construction and energy audits because they are the most effective means for energy efficiency. The execution of measures is carried out by the municipality, Public Works Department, in accordance with the agreement. Measures are applied to new buildings and the renovation of old ones.

www.hel.fi

F. **ALMADA:** due to the initial analysis of situation, the SEAP of Almada has focused the measures in the reduction of energy consumption in transport and buildings. An inventory of GHG as first step of the process permitted an identification of priorities and the definition of a strategic framework with measures and policies. Since the beginning Almada has been in touch with other entities that allow making synergies, obtaining information from benchmarking and being present in discussion groups.

www.m-almada.pt

G. **SOFIA ENERGY AGENCY:** A local SEAP for a district of Sofia was developed under BELIEF Intelligent Energy- Europe Project co-financed by the EC. Local authorities found out “new opportunities to improve the environment, and the conditions in the public buildings and areas in Zona B5 via the use of local energy resources and energy efficient technologies”. A Local Intelligent Energy Forum was set up to involve stakeholders and citizens in defining and prioritizing projects for energy efficiency measures and RES for the area. During six forum sessions for a period of 9 months all technical and financial aspects were discussed and an implementation plan was adopted. The local forum has turned into a permanent body for monitoring of SEAP implementation.

www.sofena.com

H. **MÜNCHEN:** With the help of the Oeko Institut of Freiburg, the city has identified 10 fields with a large CO_2 emissions reduction potential. Behaviour changes of citizens and companies could avoid ~24% of the whole potential. The SEAP´s objectives are a reduction of 50% for the period 1990-2030. Every municipal department is involved in the implementation of SEAP and responsible for a set of measures implementation. The organization of SEAP implementation is headed by a Steering committee which takes decisions advised by the Project Committee that head 7 working groups responsible for the development and implementation of CO_2 reduction measures. These working groups are working on solutions regarding technical, financial, and legal barriers.

www.muenchen.de

6. OTHER INSTRUMENTS

In this chapter some interesting tools that couldn't be labelled as "methodology" have been gathered. These tools have been previously used with positive results by the authors during the development and implementation of SEAP in their own countries.

6.1. Methodology used by AGENCY NL (formerly Senternovem), The Netherlands

AGENCY NL is a governmental innovation and environmental agency based in The Netherlands. This entity has been working with municipalities as a supporting structure in the development of their own SEAP. The support offered by AGENCY NL is laid on a voluntary agreement (Climate Covenant) in which the municipalities acquire the commitment to intensify local climate policy.

The signature of the Covenant allows the cities to receive subsidies from the Central Government. These subsidies are calculated taking into account the number of inhabitants and the surface of the municipality. The money received from subsidy can be allocated in personal costs, communication and research.

6.1.1. Contact details

Name of the Entity:	AGENCY NL	Country:	NL
Project Coordinator:	Frank Mathissen	e-mail:	f.mathissen@AGENCY NL.nl
Project's Web Address: www.AGENCY NL.nl			

6.1.2. Process

The process proposed by AGENCY NL is composed by 5 steps in which they support the municipality during the implementation from a consulting company point of view:

1. **Stimulating the municipality:** some workshops and presentations are organised by AGENCY NL with the aim to show the risk of climate change and the possibilities offered by a low GHG emissions strategy. Moreover, one to one contact are established between the agency and the municipality where the specific aspect of each municipality. Each municipality is assisted by an advisor from the agency.
2. **Climate Scan:** The municipality set the starting point of emissions and energy consumption. At this stage a framework study is performed in order to consider specific measures to be applied. The previous ongoing or implemented measures and their progress are identified.
3. **Setting the ambition of the chosen themes:** a set of measures to implement is proposed from the ClimateMenu catalogue developed by AGENCY NL. Once the measures are accepted, the municipality can choose the level of ambition in each field. Four levels, from "preparation" to "innovative" are available. Moreover some measures are complemented with successful examples that include a general description, the outcome, contact details and the costs of the initiative.
4. **Implementation and project plan for a period of 4 years:** the chosen measures are carefully developed in a specific document.
5. **Monitoring:** municipalities are obliged by the Covenant signed with AGENCY NL to report every year on the progresses and at the end of the project plan period. The amount of subsidies is decided on the bases of the report.

6.2. OUR SOUTHWEST´S ENERGY MANAGEMENT GUIDE. UK

6.2.1. Contact details

Name of the project coordinator:	Our South West Energy Management Guide	Country:	UK
Contact Name:	Phil Harding	e-mail:	phil.harding@gosw.gsi.gov.uk

Project's Web Address: http://www.oursouthwest.com/SusBus/susbus9/eemguide.htm#step2

6.2.2. Oursouthwest tools

The UK Government office for the Southwest has developed a tool aimed at helping municipalities to implementing a SEAP on their own. A short method has been developed by this office.

Step 1. Commitment
Step 2. Understand (establish the facts)
Step 3. Plan and organise
Step 4. Act
Step 5. Control, monitor & review

The guidebook developed in the framework of this project contains a big amount of information focused on how to produce change in behaviour and getting support for the project. This document also contains a catalogue of worst practice for each step to achieve during the process. Reading this part of the document is highly recommended.

6.3. 3-NITY EUROPEAN PROJECT

6.3.1.Contact details

Name of the project coordinator:	NEPAS – Institute for Energy Technology	Country:	NO, SE, GR, BE, NL, PO, SL, PT
Contact Name:	Hans Jacob Mydske	e-mail:	mydske@nepas.no
Project's Web Address: www.ieeprojects.net/treenity.html			

6.3.2. 3-NITY tools

The project's partners have developed a simple inter-linked Excel sheet that collects several sustainable measures and activities. This table has been designed following a project management approach. For each measure, it requires a responsible person, the actors that will take part in the project and the start and stop dates. The mentioned tool considers topics like energy efficiency measures and Energy supply with district heating and renewable energies.

Moreover, the 3-NITY project, has adapted the EFQM (European Foundation for Quality Management) model to sustainable energy planning at a local level. This model allows the city council to know whether the stakeholders are focused on sustainability. The 9 EFQM criteria in municipalities, of SUSTAINABLE EXCELLENCE are:

- Leadership
- Policy and Strategy
- People
- Partnership and Resources
- Processes
- Customer/Citizen Results
- People Results
- Society Results
- Key Performance Results

This tool can be used by the signatories to monitor the progress of a sustainable culture in the city. In addition, one of the most relevant outputs of this project is the Regional Energy Analysing Model (REAM) software. This software is aimed at helping municipalities to simulate the behaviour of stationary (it doesn't include the transport sector) energy systems along different years considering the measures undertaken by the municipality. This software can be downloaded from www.reamsystem.eu/Ream1029.zip

7. CONCLUSIONS: MAIN ASPECTS OF THE METHODOLOGIES

As shown in the methodologies previously analysed, it exists a general consensus about the fact that some steps should be achieved to reach success with the SEAP. These points have been gathered in order to use them as a basis for the design of a "Standard Successful Methodology". Some original, innovative or well-detailed tools/ideas proposed by the experts consulted are included in the step by step process.

- Obtain political commitment and make it strong to prevent political changes
- Gain support from the main stakeholders
  - Reach an agreement with the local energy suppliers and establish strong partnerships
  - Build capacity of energy and project management
    - Steering Group
    - Reference Group
    - Working Groups
  - Create cooperation structure composed by representatives of the stakeholders and experts from diverse sectors
  - Make a segmentation of the stakeholders and define how to integrate them
  - Collect ideas from the citizens/companies
- Get commitment from the actor of the plan
  - Create a sense of common purpose
  - Give example by reducing the energy consumption in your own buildings
- Institutionalisation (structure, staff unit)
  - Creating a CoM department /office with appropriate competence and budget
  - Adjustment / optimisation of internal administrative structures and processes
  - Appoint a contact person and assign responsibilities
- Establish a Vision that points out the path to follow by the city
- Energy and climate data gathering from measures, surveys or statistics
- Baseline Assessment
  - Estimation of the present energy consumption and GHG emissions
  - Projection of future scenarios
- Analysis of the current framework
  - Collection of favourable and adverse regulations
  - Identification of success factors in previous experiences
  - Identification of local drivers
  - Consider other existing objectives
- Estimation of existing potentials for energy efficiency, local energy resources and reduction in the sectors the SEAP will be applied in
- Assessment of financial resources
  - Analysis of the financial framework
  - Elaborate an investment plan
  - Allocate financial resources according to the priorities
  - Identify possible external financial companies, ESCOs, EU funds…
- Implement the Sustainable Energy Action plan
  - Set objectives and targets
  - Make a prospective of best practices
  - Propose measures related to energy efficiency and renewable energies
  - Identify favourite action for the plan and select priorities
  - Appoint a contact person and assign responsibilities for each project
  - Organize the timing of each project

- Share experiences with other municipalities and stakeholders
  - Benchmarking
  - Climate Change or Energy Efficiency Associations
- Monitoring and reporting progresses of the plan
  - Choose an efficient set of indicators
  - Use a quality management tool
- Design a communication strategy and promote your activities

8. SEAP SIGNPOSTING SYSTEM

The purpose of the signposting system is to offer an overview of the most suitable SEAP methodologies, in order to allow the cities to identify the most appropriate ones considering their particular context.

The signposting system has been divided into four different parts:

- An appreciation concerning the quality of the guidance provided by the methodology with respect to the various steps in the overall SEAP elaboration process. For each step, the appreciation is given by a score, from " * * * * * " (excellent) To " – " (absent). See legend.
- An appreciation concerning the quality of the guidance with respect to the conception, selection and evaluation of appropriate measures, in the various sectors and fields of action potentially covered by the SEAPs. The score system is similar than for the previous topic. Not all methodologies and tools provide such guidance, some of them concentrating on the process only.
- Other relevant information (language(s) available, etc.).
- A synthesis with qualitative information about each methodology, which summarises the information presented in section 4 (inventory of methodologies) and in the first part of the signposting system.

Signposting of SEAP methodologies
Page 1 : overview

	MODEL	BELIEF	MOVING SUSTAINABLY	ENOVA / 3-NITY	ICLEI / NATURAL CAPITALISM	MUSEC	CLIMATE COMPASS	MINNESOTA PROJECT	PEPESEC	EUROPEAN ENERGY AWARD
1. Guidance provided for the overall SEAP elaboration process										
1.1 Preparing										
Political commitment and leadership	* * * *	* *	* * *	* *	* *	* *	*	-	* * *	*
Identification of key actors	*	* * *	* * *	*	* * *	*	* *	* * *	* * *	* *
Participation of stakeholders	*	* * * *	* * * *	* *	* * *	*	* *	* * * *	* * *	* * *
Collaborations, partnerships	* *	* * *	* *	*	* *	*	*	*	* * *	* * *
Adjustment / optimisation of internal administrative structures and processes	* *	* * *	* *	* *	* *	-	-	* *	* * *	* * *
1.2 Planning										
Data collection and modelling	* * * *	*	* *	* * *	* * *	* * *	*	*	* * *	* * *
Diagnosis (present situation, barriers to be removed)	* * * *	*	* * *	* *	-	-	-	* *	* *	* * *
Potential for improvement in terms of energy and CO2 emissions	*	-	*	* * *	*	* *	-	-	* *	* * *
Definition of priorities (strategy)	* * * *	*	* * *	* * *	* *	* * *	-	* *	*	* * *
Target setting	* *	* *	* * *	* * *	* * *	* * *	* * *	-	* *	* *
Evaluation of measures (cost, energy and CO2 savings)	* *	-	*	*	-	-	-	-	* *	* *
Elaboration of the plan (selection of the appropriate measures in order to reach the targets)	* *	*	*	* * *	* *	* * *	* * * *	* * *	-	* * * *
Risk management	-	-	-	-	*	-	-	-	* * *	-
Evaluation and allocation of human resourses	*	*	* * *	*	*	-	-	-	-	* *
Cost evaluation and budget	* *	*	* *	* * *	*	*	-	-	-	* *
Financing	* * * * *	*	* * *	*	*	* *	-	-	-	* *
1.3 Implementation and monitoring										
Implementation phase - project management	* *	*	* *	*	*	*	-	*	*	* * *
Training (project management, technical,..)	* *	*	* *	*	* *	-	* *	-	-	* * *
Communication	* * * *	* * *	-	*	* *	* *	* *	* * *	-	* * *
Production of indicators and monitoring	* *	*	* * *	*	* * *	* * * *	* * * *	-	-	* * * *
Follow-up (continuous improvement)	* *	*	* *	*	* *	-	-	*	* * *	* * * *
Assesment of actual energy/CO2 savings	*	-	* *	-	* *	* * *	* * *	-	-	* * *
Quality audit (internal / external)	-	-	-	-	-	-	-	-	-	* * * * *
2. Advise on conception, selection and evaluation of appropriate measures										
Buildings	-	-	-	* *	* * * *	-	* * *	-	-	* * * *
Industry	-	-	-	* *	* *	-	* * * +	-	-	* * *
Transport	-	-	* * *	* *	* * *	-	* * * *	-	-	* * * *
Renewables & CHP	-	-	-	* * *	* * *	-	* * *	* * *	-	* * * *
Land use planning	-	-	-	-	* *	-	* * *	-	-	* * *
Public procurement	-	-	-	-	-	-	* * * *	-	-	* * *
Working with the citizens and stakeholders	-	-	-	-	* * *	-	* * *	-	-	* * * *
Other	-	-	-	-	* * *	-	-	-	-	* * *
3. Other relevant information										
Support available	Yes, but only for the already participating cities	yes, for participating cities (20)	yes, possibility to ask questions	yes, ENOVA provides support and consultance (not free)	yes, possibility to ask questions	no	yes, but mainly for participating cities	no	no	yes, for members only
Languages available	EN, CS, LT, LV, PL, SL, BG, RO, HR	EN, FR, IT, summary available in other languages	EN, DE, SE, FI, PL, EE, LV, LT	EN	EN	EN	EN-DE-ES-FR, other (depending on the tools)	EN	EN	DE, FR, UK, IT, PL (CZ, SK being updated)
Status (ongoing, complete)	Ongoing	complete	complete	complete	complete	Complete	Complete but some documents still as "draft"	Complete	Ongoing	continuous improvement of the tools and methods

Legend :

* * * * * = Handled in great details (exhaustive methodology/tool or clear illustration by many examples). EXCELLENT
* * * * = Handled in details (methodology/tool or clear illustration by examples). VERY GOOD
* * * = relevant recommendations are provided, with some examples. GOOD
* * = some general recommendations are provided, with few or no practical examples. AVERAGE
* = just considered as a necessary/useful step. POOR
= not considered in this methodology. ABSENT

Signposting of SEAP methodologies
Page 2: Summary table

MODEL	The MODEL ("Management of Domains Related to Energy in Local Authorities") project has developed guidelines and recommendations which covers the main aspects of the SEAP elaboration process. A detailed, well structured approach is proposed, with a lot of useful recommendations. An elaborated communication strategy is provided. A separate quite detailed inventory of available funds at European level is available. Some elements are covered with less detail (establishment of a vision, search for drivers ...).
BELIEF	The belief project produced a guide "Involve stakeholders and citizens in your local energy Policy". It contains a detailed method aimed at creating, running and organizing successful forums allowing to actively involve the stakeholders and gain their support. Many examples are provided as well as contact details. Other aspects of the SEAP elaboration process are not covered in detail.
MOVING SUSTAINABLY	The "Moving sustainably" project has elaborated a web-based "Guide to Sustainable Urban Transport Plans", also available on paper. Each step of the plan elaboration procedure is well detailed, including instructions related to the implementation. A check-list is given for each step, as well as numerous examples. It covers on a very effective manner the involvement of the main stakeholders of the municipality. External references (websites with good practices) are given. This method has introduced an innovative perspective that considers the difference of public transport usage by men and women (gender approach). The methodology has specially been created to develop a sustainable transport plan can be adapted to energy planning in general.
ENOVA (3-NITY project)	The 3-Nity project has produced a guidebook for Municipal energy and climate planning. The manual covers well the evaluation of the current situation and analysis of city's resources and illustrates how to integrate the energy planning in the general strategy of the city (research of drivers). How to perform the baseline assessment and to implement the measures is well detailed. Some useful references to external resources are provided (websites and tools). The methodology contains example of tables allowing evaluating the CO_2 reduction potentials of the municipality. Some issues are only covered superficially (reaching a political commitment, monitoring and reporting ...). The guide is in some aspects very focused on the specific situation of Norway. The 3-nity project also provides other specific tools: - activity planning - municipal organisation evaluation ("sustainable excellence") - REAM, a simulation model that allows to identify a cost effective development of the energy system
ICLEI / NATURAL CAPITALISM	Based on the ICLEI methodology, Natural Capitalism Solutions has developed a Climate Protection Manual for cities. It covers the main aspects of SEAP elaboration process but emphasizes awareness raising, stakeholders commitment and the dissemination of the results, whereas some aspects are not covered (financing …). The guide includes many examples of different measures in various sectors and numerous references to external resources. Tools developed by ICLEI include Climate and Air Pollution Planning Assistant, Data Collection Tools, a Local Government Operations Protocol For the quantification and reporting of greenhouse gas emissions inventories, CAPC 2009 (emission management tool) etc.
MUSEC	The MUSEC project has developed detailed and well structured practical workbook for towns, regions or countries willing to develop a Sustainable Energy Community. It covers the main aspects of SEAP elaboration process and emphasises interesting aspects like potential assessment, targets setting, energy accounting, and monitoring. It provides tips and best practice examples. Communication and dissemination are not covered in detail.
CLIMATE COMPASS	Climate Alliance gives advice and support to its member cities and municipalities in order to fulfil their commitment to climate protection. This includes detailed advice on the SEAP elaboration process. Unfortunately, all existing documents related to SEAP elaboration process are not available on the website, as some of them are communicated to members only. The evaluation presented in the first page of the signposting system was performed using what was at our disposal. Climate Alliance has also developed the Climate Compass tool which is available on the website and contains a "compendium of measures". It is focused on helping the municipalities to select the appropriate measures according to their level of ambition (from "getting started" to "taking the lead"). It includes

	numerous case studies and references to external resources. Other tools are available as well.
MINNESOTA PROJECT	A manual for "Designing A Clean Energy Future" has been developed by the Minnesota project with the scientific support of the University of Minnesota. It provides a general overview of the SEAP elaboration process, and is focused on increasing awareness and getting support from stakeholders, with best practice examples. Several recommendations and case studies of measures in the field of renewable energy are given. Important aspects of the SEAP elaboration process are not covered enough like financial issues, or monitoring and reporting.
PEPESEC	An Energy Planning Guide is being produced under the PEPESEC project (ongoing). It covers well the first stages of SEAP elaboration (political commitment, stakeholders' involvement) but other aspects (financial plan, project management …) are not covered in depth. Practical examples are provided. The methodology has been used in the energy planning of nine (small) cities in Sweden.
EUROPEAN ENERGY AWARD	The European Energy Award® is a certification and quality management system for cities and communities in Europe willing to improve energy efficiency at the local level. It allows municipalities to identify strengths, weaknesses and potential for improvement and, above all, implement effectively energy efficient measures. A catalogue of measures and an evaluation tool allow evaluating and selecting appropriate measures for the SEAP. The success of a municipality's efforts is made visible by an award. The standardized assessment permits a benchmarking between communities. It allows member cities to share their experiences and expertise. It is an efficient implementation tool in the context of the CoM. Access to documents is conditioned to membership and payment of a licence fee.