

Review of Methodologies for the Development of Sustainable Energy Action Plans in the Frame of the Covenant of Mayors

*Ronald Piers de Raveschoot, Damian Bornás Cayuela, Paolo Bertoldi, and Suvi Monni,
European Commission, Joint Research Centre*

ABSTRACT

The Covenant of Mayors is a European initiative that seeks to encourage towns and cities to voluntarily commit to reducing their CO₂ emissions by more than 20% by 2020. The Joint Research Centre of the European Commission has been entrusted the mission of providing the scientific and technical support to the initiative. In this context, it has carried out a review of existing methodologies and tools for Sustainable Energy Action Plans (SEAP) and Baseline Emission Inventory (BEI) elaboration [Ber2010a]. The present paper presents the outcomes of this study and shows how some key issues that have been derived thereof have been included in a SEAP guidebook that has been elaborated to support the signatories in their SEAP preparation work [Ber2010b].

Introduction: The Covenant of Mayors Initiative

The European Union (EU) is leading the global fight against climate change, and has made it a top priority. Its ambitious targets are spelt out in the EU Climate Action and Energy Package which sets a series of demanding targets to be met by 2020, known as the 20-20-20 targets. These are:

- A reduction in EU Greenhouse Gas Emissions (GHG) of at least 20% below 1990 levels.
- 20% of EU final energy consumption to come from renewable resources.
- A 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

More than 50% of the world's population nowadays lives in cities, and urban areas represent around 70% of the energy consumption of the EU. Cities are therefore a major contributor to GHG emissions. The Covenant of Mayors (CoM) is an initiative of the European Commission that seeks to encourage towns and cities to voluntarily commit to reduce their CO₂ emissions beyond the objectives set by the EU for 2020.

The initiative is grounded on the conviction that local and regional governments share the responsibility of fighting global warming and that decentralized action at local level is essential in order to significantly curb GHG emissions and tackle the challenge posed by climate change. Towns and cities which share this belief and are willing to act are invited to join the Covenant. Towns and cities outside the EU are welcome to join as well.

CoM signatories commit to reduce the CO₂ emissions in their respective territories by at least 20% through the implementation of a Sustainable Energy Action Plan (SEAP). Other CoM commitments include:

- Preparation of a Baseline Emission Inventory (BEI) as a basis for the SEAP
- Submission of the SEAP within the year following signing up the Covenant
- Adaptation of local the authority's administrative structures, including allocation of sufficient human resources, in order to undertake the necessary actions.
- Mobilization of the civil society in the signatory's geographical area
- Elaboration of an implementation report every second year

Officially launched in January 2008, with about 100 towns and cities expressing their interest, the initiative has grown significantly, reaching 1680 signatories in May 2010 and covering a population of about 120 million people.

In this paper, we will first present the comprehensive set of measures the EU has taken to support the initiative, then we will describe the outcome of the study the JRC has carried out on the existing methodologies for SEAP elaboration and BEI inventories at local level, and finally we will show how key issues that have been derived from this study have been included in a SEAP guidebook that has been elaborated to support the signatories in their SEAP preparation work. We will conclude by outlining the importance of such scientific work for the success of the initiative.

Measures Being Taken to Support Initiative

To translate the CoM goals and principles into reality, the EU has taken a set of coherent and comprehensive measures that supports the initiative:

The Covenant of Mayors Office

This Office is funded by the EU and is operated by a consortium of local authorities networks. The missions of the Office include:

- Promotion of the CoM, through a number of means: website, annual event, promotional material, media activity, participation in events ...
- Support to interested cities in order to facilitate their enrolment
- Setting up and management of the member cities database
- Networking activities within the Covenant and liaison with other actors (including supporting structures, see below) and other relevant EU initiatives
- Operation of a technical helpdesk, jointly with the Joint Research Centre (see below)
- Monitoring the implementation of the Covenant, jointly with the Joint Research Centre (see below).

Scientific and Technical Support

The Joint Research Centre (JRC) of the European Commission has been entrusted with the mission of providing scientific and technical support to the initiative. The duties of the JRC include:

- Review of existing methodologies and tools for SEAP and BEI elaboration, object of the present paper

- Development of a SEAP guidebook
- Evaluation of submitted SEAPs, with feedback to Covenant cities
- Monitoring of the CoM implementation, including the development of specific monitoring guidelines
- Operation of the technical helpdesk service, jointly with the CoM Office

Supporting Structures

Supporting structures within the Covenant of Mayors are organisations that are in a position to provide strategic guidance, financial and technical support to municipalities that have the political will to sign up to the Covenant, but which lack the skills and/or resources to fulfil its requirements, namely the preparation and implementation of a SEAP. These Supporting Structures can be national and regional public bodies, counties, provinces, agglomerations, mentor cities, energy agencies etc. Alternatively, they may be networks of local and regional authorities that commit to improve the Covenants' impact. Presently, more than 60 Supporting Structures have been set up in the context of the Covenant.

Benchmarks of Excellence

The Covenant of Mayors provides visibility for the key actions of its signatories and supporting structures via the "Benchmarks of excellence". They constitute relevant examples of initiatives which Covenant signatories and supporting structures have carried out in their territories and feel particularly proud of, and moreover endorse as useful actions for other local authorities to replicate. The CoM website is now rich of a catalogue of more than 70 Benchmarks of Excellence. As the Covenant develops, it is expected that Covenant signatories will benefit from a high number of such good examples.

SEAP Template

The SEAP template was developed as an internet-based tool by both the CoM Office and the JRC. Its purpose is to allow signatories to summarise the results of their BEI as well as the key elements of their SEAP. The information and data are structured in a logical manner, facilitating SEAP assessment and feedback to the signatories. Moreover, the template is a valuable tool that provides visibility to the city's SEAP, since highlights of the information collected will be show through an on-line catalogue.

Financing

The EU is developing and supporting several funding schemes available to local authorities willing to take action in the field of climate change. One of these is the European Local ENergy Assistance (ELENA), a grant scheme recently launched by the European Investment Bank (EIB). ELENA aims at helping public entities lacking the technical and financial expertise to prepare investment programmes tapping the largely unexploited energy efficiency and renewable energy sources investment potential. Such programmes can then be further co-financed by the EIB. Eligible actions include public and private buildings, integration

of renewable energy sources into the built environment, district heating/cooling networks based on high efficient combined heat and power or renewable energy sources, urban transport, etc.

Other EU Initiatives

Several other EU initiatives directly or indirectly support the CoM. ManagEnergy aims to support the work of actors working on energy efficiency and renewable energies at the local and regional level. The Intelligent Energy Europe programme provides financial support to projects that contribute to a wider spread of energy efficiency practices and to a greater use of renewable energy sources. The Sustainable Energy Europe campaign and the EU Sustainable Energy Week provide support in raising awareness through the EU.

Review of the Existing Methodologies

One of the first tasks carried out by the JRC in the context of its scientific and technical support to the COM was to conduct a study on existing methodologies and tools for SEAP and BEI elaboration. This section describes the main outcomes of these investigations.

The work started with the organisation of a workshop that was held at the JRC in Ispra (Italy) in May 2009. This workshop gathered about 50 experts from city networks, cities or specialised consultants with the aim to review and evaluate existing methodologies and tools for SEAP elaboration as well as CO₂ emissions inventories at the local level¹. The workshop allowed to: 1) start creating a network of experts willing to share their knowledge and experience with the CoM, 2) have a first exchange with the experts about the key rules and principles that should be followed in the context of the CoM, and 3) lay out the basis for the study.

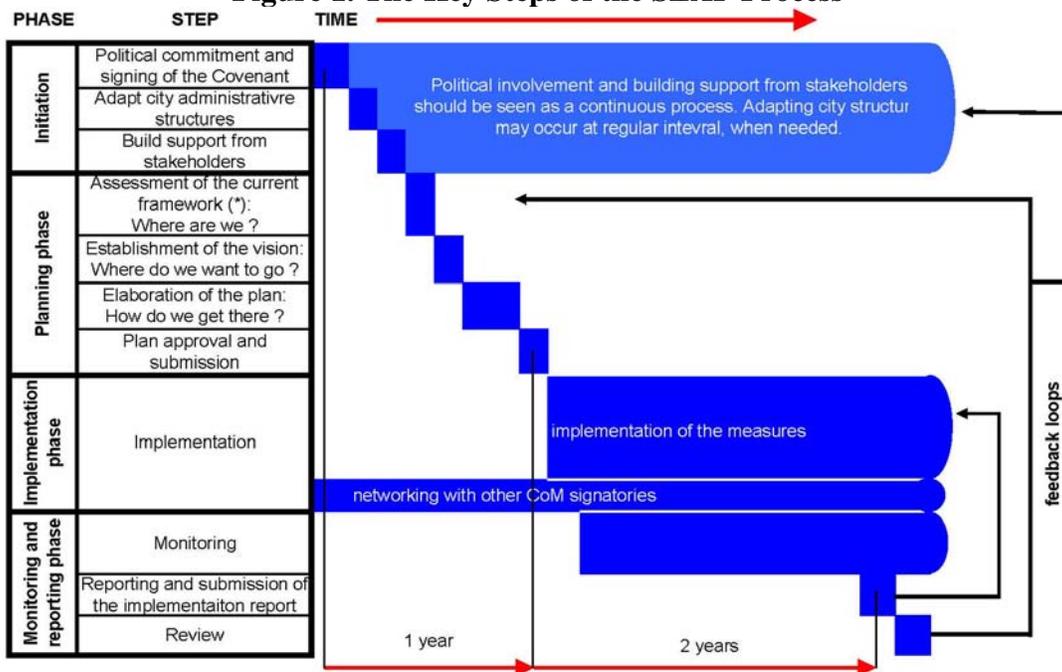
The study was completed at the end of August, but some adjustments were done till end 2009, since additional contacts with the developers of the methodologies allowed to refine the results. The research was compiled in a report, which includes a signposting system that allows comparing the various existing methodologies [Ber2010a].

SEAP Methodologies

The first objective of the study was to establish whether it was possible to determine a "common route" maximising the chances of SEAP success. Therefore, we identified which were the key aspects and issues that each of the studied methodologies would point as essential for a successful SEAP. Our conclusion is that SEAP elaboration and implementation is a continuous process that can be represented by a series of critical steps. These conclusions were then developed further in order to provide a clear picture of these steps, as well as determine the potential role of the various actors in each of them.

¹ All presentations made during the workshop are available on the JRC website http://re.jrc.ec.europa.eu/energyefficiency/html/Workshop_CoM_Ispra_18-1905-2009.htm

Figure 1. The Key Steps of the SEAP Process



(* Including the elaboration of the CO₂ baseline emission inventory

Source: [Ber2010b]

As can be seen in figure 1, the SEAP process is not a linear one: feedback loops create interactions between the various steps, and some steps may overlap with others. These conclusions were then used when elaborating the SEAP guidebook, in which each of the steps is described in detail. Figure 2 highlights the role of the main actors in the process.

Figure 2. The Role of the Actors in the SEAP Process

PHASE	STEP	ROLE OF THE ACTORS		
		Municipal council or equivalent body	Local administration	Stakeholders
Initiation	Political commitment and signing of the Covenant	Make the initial commitment. Sign the Covenant of Mayors. Provide the necessary impulse to the local administration to start the process.	Encourage the political authorities to take action. Inform them about the benefits (and about the necessary resources)	Make pressure on political authorities to take action (if necessary)
	Adapt city administrative structures	Allocate sufficient human resources and make sure adequate administrative structures are in place.		
	Build support from stakeholders	Provide the necessary impulse for stakeholders participation. Show that you consider their participation and support as important.	Identify the main stakeholders, decide what channels of communication/participation you want to use. Inform them about the process that is going to start, and collect their views	Express their views, explain their potential role in SEAPs
Planning phase	Assessment of the current framework : Where are we ?	Make sure the necessary resources are in place for the planning phase.	Conduct the initial assessment, collect the necessary data, and elaborate the CO2 baseline emission inventory. Make sure the stakeholders are properly involved.	Provide valuable inputs and data, share the knowledge
	Establishment of the vision: Where do we want to go ?	Support the elaboration of the vision. Make sure it is enough ambitious. Approve the vision (if applicable).	Establish a vision and objectives that support the vision. Make sure it is shared by the main stakeholders and by the political authorities.	Participate in the definition of the vision, express their view on the city's future
	Elaboration of the plan: How do we get there ?	Support the elaboration of the plan. Define the priorities, in line with the vision previously defined.	Elaborate the plan : define policies and measures in line with the vision and the objectives, establish budget and financing, timing, indicators, responsibilities. Keep the political authorities informed, and involve stakeholders. Make partnerships with key stakeholders (if necessary).	Participate in the elaboration of the plan. Provide input, feedback.
	Plan approval and submission	Approve the plan and the necessary budgets	Submit the SEAP via the CoMO website. Communicate about the plan.	Make pressure on political authorities to approve the plan (if necessary)
Implementation phase	Implementation	Provide long-term political support to the SEAP process	Coordinate the implementation the plan. Make sure each stakeholder is aware of its role in the implementation.	Each stakeholder implements the measures that are under its responsibility
		Make sure that the energy and climate policy is integrated in the everyday life of the local administration	Implement the measures that are under responsibility of the local authority. Be exemplary. Communicate about your actions.	Make pressure / encourage the local administration to implement the measures under its responsibility (if necessary)
		Show interest in the plan implementation, encourage stakeholders to act, show the example	Motivate the stakeholders to act (information campaigns). Inform them properly about the available resources for EE and RES	Changes in behaviour, EE and RES action, general support to SEAP implementation
		Networking with other CoM signatories, exchanging experience and best practices, establishing synergies and encouraging their involvement in the Covenant of Mayors.		Encourage other stakeholders to act
Monitoring and reporting phase	Monitoring	Ask to be informed regularly about the advancement of the plan.	Proceed to a regular monitoring of the plan: advancement of the actions and evaluation of their impact	Provide the necessary inputs and data
	Reporting and submission of the implementation report	Approve the report (if applicable)	Report periodically to the political authorities and to the stakeholders about the advancement of the plan. Communicate about the results. Every second year, submit an implementation report via the CoMO website.	Provide comments on the report and report on the measures under their responsibility
	Review	Ensure that plan updates occur at regular intervals	Periodically update the plan according to the experience and the results obtained. Involve political authorities and stakeholders.	Participate in plan update

Source: [Ber2010b]

The key success factors that have been identified are the following:

- Securing a strong and long-term political commitment
- Building support from stakeholders: if they support the SEAP, nothing should stop it! The leading and exemplary role of the local authority is seen as essential in this context. Conflicting stakeholders' interests deserve special attention.
- Reaching consensus on a general vision and on the consequent strategy
- Ensuring adequate financial resources
- Doing a proper CO2 emissions inventory: what is not measured will not change!
- Integrating the SEAP into day-to-day life and management of the municipality: it should not be just another nice document, but part of the corporate culture. Proper communication between the various departments is also essential.
- Ensuring proper management during implementation and learning to devise and implement projects over the long term
- Making sure that the involved staff has adequate skills (technical and financial competences, project managements skills etc) , and if necessary offering training
- Actively searching and taking advantage of experiences and lessons learned from other cities that are involved in the SEAP process.

The second objective of the study was to establish the key characteristics of each of the methodologies and then provide a basis for comparison. We concluded that it is not possible to provide a real benchmark of the methodologies, each having its specificities, with their weak and strong points. For instance one methodology may be quite good at providing guidance on how to conduct some of the critical steps identified above (e.g. involvement of the stakeholders) while an other may offer little guidance in this respect but may provide meaningful examples of actions and measures that can be taken at the local level.

Another conclusion is that the most appropriate methodology for one city may differ from one other, depending on the local circumstances, specific needs and current priorities. Actually, it appears that the combination of several methodologies or tools may be the best approach, in order to benefit from the strengths of each of them. Cities that enter in the SEAP process may select some tools/methodologies that are adapted to the first steps of the process while advanced cities will be interested by those focusing more on the implementation and monitoring phases.

For those reasons, we summarised our comparison exercise in a "signposting table" (figure 3) where all the key SEAP steps and ingredients are reported, giving an appreciation on how well each methodology handles each of them. The criteria are divided in 3 categories: 1° quality of the guidance provided for the various steps of the SEAP process; 2° advice on conception, selection and evaluation of appropriate measures; and 3° other relevant information, which include the availability of support, the languages in which the tool/methodology is available, and the status (ongoing, complete). The appreciations range goes from "handled in great details" (Excellent) to "not considered under this methodology".

Figure 3. Signposting Table Indicating the Key Characteristics of Each of the Studied Methodology / Tool

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 resources	*	*	***	*	**	**	**	-	**	
	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 consultancy (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											

Source: [Ber2010a]

Finally, the exercise was concluded by a summary table, with a qualitative description of the key features of each methodology.

One difficulty we faced during the analysis is that some of the methodologies are implemented in cities via the intervention of experts belonging to the organisation developing the methodology, and/or some documents are provided to members only, so that we could not access to the totality of the know-how behind such methodology. In such cases we carried out the analysis according to the documents at our disposal and via contacts with the developers. Since all developers have been contacted for comments, the tables should in principle provide a reasonable vision of the reality.

BEI Methodologies

A similar approach was adopted to analyse methodologies for the elaboration of CO₂ emission inventories. The key characteristics of 9 tools/methodologies were analysed and then summarised into a comparative table. In a second step, those methodologies were evaluated according to their suitability for compilation of BEI considering the specific definitions and methodological considerations that are applicable to the CoM.

The conclusion of this part of the study is that some tools and methodologies are closer than others to the rules and principles set out in the context of the CoM. However, since the Covenant is a voluntary commitment, there is no legal basis or any specific reason to impose or restrict the usage of any specific tool. Therefore, any of the tools analysed (and also other existing tools that are deemed to be suitable) may be used. However, local authorities are recommended to ensure that the results of the BEI compiled using such tools are in line with the CoM specifications that are provided in the various guidance documents.

As a result of this approach, some developers are now adapting their methodologies and tools to the specific requirements and considerations that are applicable to the CoM. This is a quite positive outcome, allowing cities already using such tools in the context of other initiatives to join the Covenant with reduced compliance work. This will also improve the compatibility and comparability of the various approaches. If this trend is confirmed, a unified standard framework may emerge in the future, which would be highly beneficial to the future developments of the Covenant and other relevant initiatives.

Elaboration of the SEAP Guidebook

As already explained in the previous sections, the SEAP guidebook that has been recently developed has integrated the key conclusions of the review of the methodologies: the critical steps and success factors and of the SEAP process have been identified, as well as the role of the various actors. In the guidebook, each of the steps of the process is detailed, making usage of external references whenever possible, as to avoid duplicating what already exists elsewhere.

The guidebook is meant to help CoM signatories to elaborate their SEAP and carry out their CO₂ emission inventory, and provide them with the key principles they should follow to ensure success. The underlying philosophy was not to impose one single approach, but to propose an open and flexible framework, in order to accommodate different situations and views, as well as allowing cities that already initiated a SEAP process to continue with their SEAP work with as little change as possible in their current approach.

The content of the guidebook was discussed with a panel of 30 experts and practitioners from cities in a second workshop that was held in Brussels (Belgium) in September 2009, and through various written consultations. The guidebook provides detailed step-by-step recommendations for the entire process of elaborating a local energy and climate strategy, from initial political commitment to implementation. It is divided into 3 parts:

- Part I relates to the description of the overall SEAP process and covers the strategic issues;
- Part II gives guidance on how to elaborate the Baseline Emission Inventory;
- Part III is dedicated to the description of technical measures that can be implemented at local level by the local authority in various sectors of activity;

The essence of this work has then been summarised in 10 essential principles that the signatories should keep in mind when elaborating their SEAP (see appendix). These principles are linked to the commitments taken by the Covenant signatories, and to the key ingredients of success identified during the review of methodologies. Failure to meet these principles may prevent SEAP validation.

Conclusion

The Covenant of Mayors initiative is generating enthusiasm, and 1680 signatories have joined to date. Many of them have limited experience in climate and energy action, and they need support for the elaboration of their SEAP and their BEI. Several tools and methodologies are available and it may not be easy for the signatories to make an informed choice between them. As an outcome of the review of methodologies presented in this article, signposting tables have been elaborated, allowing the signatories to figure out what are the important potential selection criteria, to identify the respective features of the analysed methodologies, in order to make a proper choice. One of our conclusions is that there is no single best methodology or tool, but that each signatory has to choose the one(s) that suit him, according to his own circumstances.

Moreover, the review of methodologies has allowed to identify what are the key SEAP success factors. SEAP elaboration and implementation is to be seen as a continuous process made of a series of critical steps with feedback loops and interactions between them.

The key principles we identified were fed as important contributions into the guidebook meant to help CoM signatories to elaborate their SEAP and carry out their CO₂ emission inventory. This guidebook is seen as essential element in guiding the signatories to a successful SEAP elaboration and implementation. Maintaining signatories' present enthusiasm over the long term and translating it into action and results is the major challenge ahead. Providing them with sound and clear scientific and technical guidance is certainly a vital contribution to this goal.

References

- [Ber2010a] P. Bertoldi, D. Bornás Cayuela, S. Monni, R. Piers de Raveschoot: "**Existing Methodologies and Tools for the Development and Implementation of Sustainable Energy Action Plans (SEAP)**", 2010, JRC Scientific and Technical Report (under publication) <http://re.jrc.ec.europa.eu/energyefficiency/html/com.htm>

- [Ber2010b] P. Bertoldi, D. Bornás Cayuela, S. Monni, R. Piers de Raveschoot: "**Guidebook: How to Develop a Sustainable Energy Action Plan (SEAP)**", 2010, JRC Scientific and Technical Report (under approval). <http://re.jrc.ec.europa.eu/energyefficiency/html/com.htm>
- [Cic2008] J. Cicmanova, M. Eisermann, S. Lacassagne, G. Magnin, I. Turner, J.-P. Vallar: "**Involve Stakeholders and Citizens in Your Local Energy**", 2008, produced in the context of the IEE Belief project http://belief-europe.org/IMG/pdf/belief_guide_final.pdf
- [CLI200] Climate Alliance: "**Climate Compass - The Roadmap for Local Climate Protection**", 2006, <http://www.climate-compass.net/>
- [ENE2008] Energies-Cités and other partners of the Model project: "**Common Framework Methodology for Municipal energy Planning**", 2008, produced in the context of the IEE Model project, <http://www.energymodel.eu/spip.php?rubrique100>
- [ENO2008] Enova SF: "**Municipal Energy and Climate Planning – A Guide to the Process**", 2008, deliverable of the IEE 3-Nity project. <http://www.enova.no/minas27/file.axd?ID=366&rand=3e238704-e076-4a70-ada9-e9ea1bd57aba>
- [Gre2007] J. Green, I. Kildsgaard, A. Jarnehammar, Å. Iverfeldt, J. Hayden, D. Gormsen, J. Lunding, T Rådgivning: "**Guidelines for Communities on How to Set an Energy Action Plan**", 2007, developed in the context of the IEE Secure project. <http://www.secureproject.org/download/18.6579ab6011d9b20740f8000315133/Final+Technical+guideline+EAP.pdf>
- [Kli2009] J. Klint, M. F. Madsen, M. Antinucci, C. Lazzari, R. Pasinetti, P. Parea, B. Hendriks-Punt, B. van der Ree, E. Simeonova, J. Fendrup: "**Multiplying Sustainable Energy Communities - A SEC Strategy Blueprint**", 2009, developed in the context of the Musec project. <http://www.musecenergy.eu/web/report.html>
- [Mal2009] Malin Norling: "**Energy Planning Guidance: An Introduction**", June 2009, deliverable 4.2 of the IEE Pepesec project, <http://www.pepesec.eu/archives/306>
- [NAT2007] Natural Capitalism Solutions, "**Climate Protection Manual for Cities**", 2007 http://www.climatemanual.org/Cities/downloads/ClimateProtectionManual_Cities.pdf
- [Paw2003] M. Pawlisch, C. Nelson, L. Schoenrich "**Communities and Local Energy. Designing a Clean Energy Future: a Resource Manual**", July 2003, developed in the context of The Minnesota Project. <http://www.cleanenergyresourceteams.org/files/CERTsManualEntire.pdf>
- [UNI2007] Union of the Baltic Cities Environment and Sustainable Development Secretariat, "**Moving Sustainably: Guide to Sustainable Urban Transport Plans**", 2007, <http://www.movingsustainably.net/index.php/movsus:mshome>

Appendix: The 10 Key Principles to be Followed by the Signatories When Elaborating Their SEAP in the Context of the Covenant of Mayors

1. SEAP Approval by the Municipal Council.

Strong political support is essential to ensure the success of the process, from SEAP design to implementation and monitoring. This is why the SEAP must be approved by the municipal council (or equivalent decision-making body).

2. Commitment for a Reduction of CO₂ Emissions by at Least 20% by 2020.

The SEAP must contain a clear reference to this core commitment taken by the local authority when signing the Covenant of Mayors. The recommended baseline year is 1990, but if the local authority does not have data to compile a CO₂ inventory for 1990, then it should choose the closest subsequent year for which the most comprehensive and reliable data can be collected. Local authorities having a longer term CO₂ reduction target should set an intermediary target by 2020 for the reasons of comparability.

3. CO₂ Baseline Emission Inventory (BEI)

The SEAP should be elaborated based on a sound knowledge of the local situation in terms of energy and greenhouse gas emissions. Therefore, an assessment of the current framework should be carried out. This includes the establishment of a CO₂ baseline emission inventory (BEI), which is a key CoM commitment. The BEI and subsequent inventories are essential instruments that allow the local authority to have a clear vision of the priorities for action, to evaluate the impact of the measures and determine the progress towards the objective. It allows to maintain the motivation of all parties involved, as they can see the result of their efforts. Here are some specific points of attention:

- The BEI has to be relevant to the local situation, i.e. based on data related to activities (e.g. fuel consumption) taking place within the territory of the local authority.
- The methodology and data sources should be consistent through the years.
- The BEI must cover at least the sectors in which the local authority intends to take action, i.e. all sectors that represent significant CO₂ emission sources.
- The BEI should be accurate, or at least represent a reasonable vision of the reality.
- The data collection process, sources and methodology should be well documented.

4. Comprehensive Measures that Cover the Key Sectors of Activity

The SEAP has to contain a coherent set of measures covering the key sectors of activity within the local authority's territory: not only the buildings and facilities that are managed by the local authority, but also the main sectors of activity in the territory of the local authority:

residential sector, tertiary sector, public and private transport, industry (optional) etc. Before starting the elaboration of actions and measures, the establishment of a long-term vision with clear objectives is highly recommended.

5. Strategies and Actions until 2020

The plan must contain a clear outline of the strategic actions that the local authority intends to take in order to reach its commitments in 2020. It has to contain long-term strategies and goals until 2020, including firm commitments in areas like land-use planning, transport and mobility, public procurement, standards for new/renovated buildings etc. In addition, the measures for the next 3-5 years which translate the long-term strategy and goals into actions should be described with sufficient details.

6. Adaptation of City Structures

One of the ingredients of success is that the SEAP process is not conceived by the different departments of the local administration as an external issue, but that it is be integrated in their everyday life. This is why “adapt city structures” is an other key CoM commitment. The SEAP should outline which structures are in place or will be organised in order to implement the actions and follow the results. It should also specify what resources (human, financial ...) are made available.

7 Mobilisation of the Civil Society

To implement and achieve the objectives of the plan, the adhesion and participation of the civil society is essential. The mobilisation of the civil society is part of the CoM commitments. The plan has to describe how the civil society has been involved in its elaboration, and how they will be involved in implementation and follow up.

8 Financing

A plan cannot be implemented without financial resources. The plan should identify the key financing resources that will be used to finance the actions.

9. Monitoring and Reporting

Regular monitoring followed by periodic revisions of the SEAP allows to evaluate whether the local authority is achieving its targets, and to adopt corrective measures if necessary. CoM signatories are therefore committed to submit an "Implementation Report" every second year. The SEAP should contain a brief outline on how the local authority intends to ensure the follow-up of the actions and monitor the results.

10. SEAP Submission and Filling the Template

The SEAPs must be submitted within the year following adhesion. Signatories are required, at the same time, to fill in an online SEAP template in English. The template has to be filled carefully with sufficient level of detail, and should reflect the content of the SEAP, which is a politically approved document.