Establishing and implementing a municipal energy and climate action plan

In a nutshell

SUMMARY
It is best practice to establish a municipal energy and climate action plan based on the inventory of energy use and emissions. The action plan includes science and evidence based short- and long-term targets which can be reached by implementing a number of defined actions (e.g. reduce the energy use of private buildings and businesses, reduce the energy use of municipal buildings and local public services, improve public transport).
Target group
Local authorities
Applicability
This best practice is applicable to all local authorities.
Environmental performance indicators
• A municipal energy and climate action plan, including targets and actions, is in place (y/n) • Total annual carbon emissions of the territory of the municipality: absolute (t CO_{2eq}) and per inhabitant (kg CO_{2eq}/inhabitant) • Annual energy use of the territory of the municipality per inhabitant, expressed as final energy (kWh/inhabitant)
Benchmarks of excellence
A municipal energy and climate action plan, including targets and actions and based on the inventory of energy use and emissions, is in place

Description

Once a municipality has established an inventory of energy use and emissions, the data can be analysed and used to identify the actions that can be taken to reduce CO_2 in the framework of the development of a municipal energy and climate action plan. These plans are sometimes referred to as plans for sustainable energy and in other instances as plans for climate change mitigation. Although there are conceptual differences (i.e. the first aims at reducing energy use and meeting energy demand with renewables; the second aims at reducing GHG emissions), these result in considerably different approaches only in municipalities with high non-energy related GHG emissions (e.g. because of large agricultural activities). In some cases, a climate action plan deals not only with climate change mitigation (i.e. reducing the local contribution to the causes of climate change, thus reducing GHG emissions) but also with climate change adaptation (i.e. increasing the resilience of the local territory, including its infrastructure and activities, to the changing climate and the foreseeable extreme weather events). As a climate adaptation strategy is quite different from climate mitigation and deserves special attention, the aspect is dealt with in a separate best practice.

The establishment of a municipal energy and climate action plan is very important to ensure consistency among the different measures implemented, including measures implemented by other actors (e.g. private companies) on the territory

of the municipality, but also to ensure that a strategic approach is taken towards sustainable energy and climate change mitigation which allows taking advantage of opportunities which may arise from efforts (e.g. investments) in these areas.

A key step in the development of the plan is determining its level of ambition by setting targets. In some cases these are political targets set a priori (often long term targets); in other cases they can be developed bottom-up starting from the inventory data and are often more short term. An example of the first kind are the targets set by local authorities signing up to the Covenant of Mayors (CoM), which requires that cities commit to go beyond the 20% reduction in CO_2 mandated by the Europe 2020 policy (Covenant of Mayors, 2010).

In order to reach the targets that the plan wishes to set, an appropriate set of actions, building on the priorities identified in the inventory, must be identified. Depending on the areas to be address, a number of different best practices have been developed that can provide inspiration; for those areas the most relevant best practices are:

- For actions to reduce the emissions of private buildings and businesses within the municipality:
- For actions to reduce the energy related emissions of municipal buildings and local public services (street lighting and social housing):
- For actions to reduce emissions from local transport/mobility:

The local action plan usually presents the actions to be implemented, using the inventory data to support the case for particular interventions.

It is very important that the actions are appropriate and the expected results are reasonable. A mechanism for monitoring the effectiveness of the measures applied and careful review of the progress made in view to eventually modify the plan is also needed.

Best practices in establishing and implementing a municipal action plan include:

- Political commitment

The plan needs to be supported by the political power and approved by the municipal council (or equivalent official body).

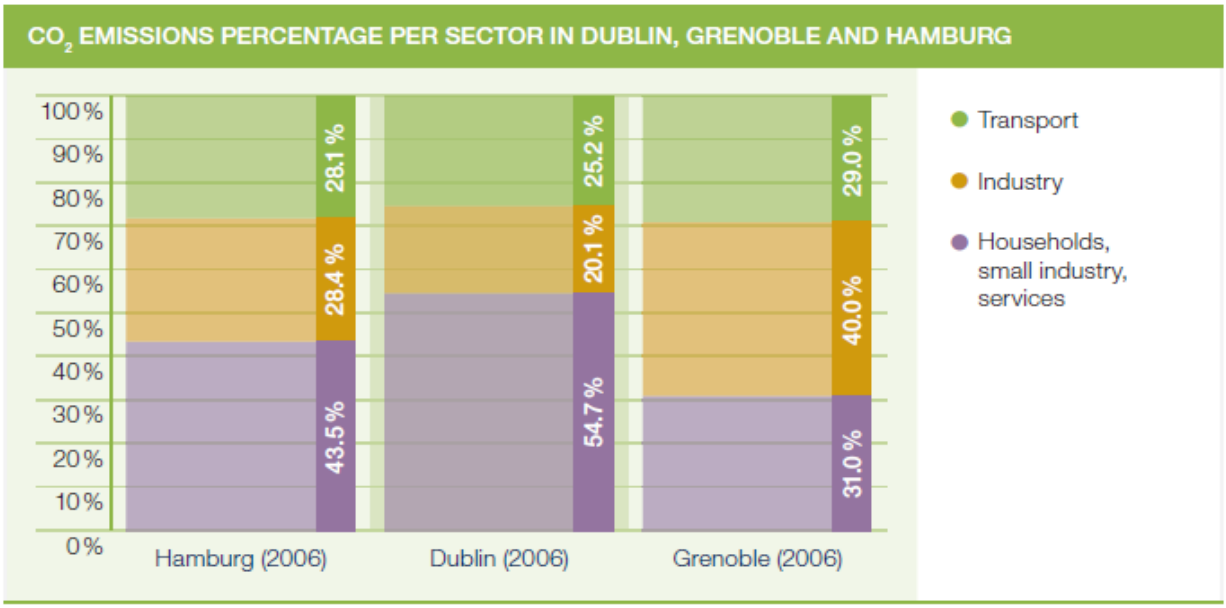
- Participatory approach

Public participation in planning ensures long-term acceptance, viability and support of the strategy and measures. It also ensures that the actions described in the plan are not just for the municipal administration but for society as a whole, which is a key dimension of this kind of policy instrument. Finally, stakeholders' involvement is also the starting point for creating the behavioural changes needed to complement the technical actions embodied in the plan (ICLEI, 2011).

- No one-size fit all

Planning the measures to be implemented on the basis of the specific data of the municipality is very important to select the correct measures. For instance, the share of emissions per sector can vary considerably from city to city.

Figure 1 presents the share of CO_2 emissions per sector in three different cities (CoM, 2010).



Source: information extracted from values of the climate Action Plan of Hamburg, Dublin and Grenoble.

Figure 1: Share of CO_2 emissions per sector in Hamburg, Dublin and Grenoble. Source: CoM, 2010.

- Thorough data analysis and understanding of drivers of changes in energy consumption

Efforts need to be put into a proper and thorough analysis of the data, aimed at understanding which is the main driver of energy consumption in order to tackle, as much as possible, the root causes and the areas with the most saving potential. Identifying external variables that influence energy consumption is also important for a more effective action plan.

- Broad set of actions

It is often the cumulative effect of a broad set of actions what allows achieving ambitious targets. Actions to decrease emissions in a single action plan can be as varied as changing public lighting lamps to LED technology or installing a co-generation power plant to “soft measures” such as energy auditing programmes to provide support to citizens, creating “green kindergartens” that run on renewable technologies and raising energy awareness through smart-metering.

- Scenario-based approach

Adopting a scenario-based approach to strategy development – considering the impact of a “do-nothing” scenario in which no action is taken and contrasting it with the projected consequences of a specific action plan - is a good way to judge the viability of different courses of action.

- Clear operational responsibilities

The plan must define who is responsible for what at the operational level (e.g. which department of the municipality or which other actor takes the lead in putting in place a specific measure).

- Planning the appropriate resources

For the implementation of concrete actions, the plan needs to include the allocation of dedicated human and financial resources. If financing is planned, the action plan should include a strong business plan that make the actions bankable (ICLEI, 2011).

- Publicly available and widely disseminated information

The environmental benefits of the implementation of such an action plan can be considerably increased by making it publicly available and widely disseminated. Not only it can motivate citizens to take action also beyond the plan, but can also serve of inspiration and guidance for other cities. Information on results and lesson learned should also be communicated publicly for specific measures.

In the specific case of the Covenant of Mayors' Sustainable Energy Action Plans (SEAPs), which are energy-focused action plans that are drawn according to a specific methodology and validated by the European Commission, specific guidelines for the development of the plan are provided (Covenant of Mayors, 2010). These can be helpful guidance both for municipalities willing to sign the Covenant of Mayors and enacting a SEAP as well as for all municipalities implementing an action plan for sustainable energy or climate change mitigation.

The development and implementation of a SEAP comprises four steps with sub-steps. These steps may overlap with one another, or may have previously been completed by the local authority. In order they are:

1. Initiation

- Political commitment and signing of the Covenant
- Adapting city administrative structures
- Building support from stakeholders

2. Planning phase
- Assessment of the current framework: Where are we?
- Establishment of the vision: Where do we want to go?
- Elaboration of the plan: How do we get there?
- Plan approval and submission

3. Implementation phase
- Providing long-term political support to the SEAP process
- Making sure that the energy and climate policy is integrated in the everyday life of the local administration
- Showing interest in the plan implementation, encouraging stakeholders to act, showing the example
- Networking with other CoM signatories, exchanging experience and best practices, establishing synergies and encouraging involvement in the Covenant of Mayors.

4. Monitoring and reporting phase
- Monitoring
- Reporting and submission of the implementation report
- Review

Environmental benefits

The environmental benefits from the establishment and implementation of an action plan are those linked to the measures planned and then implemented described in the plan.

Side effects

No side effects were identified from the implementation of this best practice.

Applicability

Municipalities of all types and sizes can establish and implement an energy and climate action plan.

For the plan to be effective, internal administrative structures and working processes/procedures need to reflect the programme. The development and implementation of the plan requires collaboration and coordination between various departments in the local administration, such as environmental protection, land use and spatial planning, economics and social affairs, buildings and infrastructure management, mobility and transport, budget and finance, procurement, etc. Often the set of a specific department with appropriate competencies is also recommended.

Economics

Two dimensions should be considered: the costs for the development and management of the action plan (mainly human resources at the local authority); the investment needed to implement the actions described in the plan.

For the first ones, guidelines suggest one employee per 100,000 citizens. Municipalities with limited in-house knowledge, may also require contracting experts to e.g. carry out the data analysis or evaluating different scenarios. Human resources and external contracts allocated to developing and managing the plan can be effective financially through saving on energy bills, increased access to funding schemes, etc.

As for the investments required to implement the actions described in the plan, financial resources should be identified prior to implementing the long-term strategy, and accommodated within the municipal budget. EU funding instruments, such as the European Regional Development Fund (ERDF), the European Social Fund (ESF), and the Cohesion Fund (CF) can also provide support both for the development of the plan and, more often, for the implementation of specific actions. Some EU instruments, such as the ELENA facility and European Energy Efficiency Facility, can support municipalities in the feasibility study of a certain action in order to turn it into a bankable project that can receive financing from other sources. Some municipalities manage also to obtain funding through public-private partnerships.

A good example of how the measures foreseen in a SEAP can be implemented in an economic advantageous way is represented by the case of Modena, Italy (Antinucci, 2011). The Municipality, in collaboration with the Province established an Agency for Energy and Sustainable Development (AESS – Agenzia per l'energia e lo sviluppo sostenibile) with technical and communication tasks. This agency is a not-for-profit organisation, offering consultancy to the public sector and private businesses. The agency is active in favouring the development of renewable energy on the territory of Modena and promoting energy efficiency and reducing pollution. The agency received initial funding from the European Union (30%) and by its associates (50 Municipalities, the University, the Chamber of Commerce and 3 NGOs), who are required to pay a membership fee. In order to be self-sufficient, the AESS offers services on a contractual basis. The creation of such an agency can also allow funding of actions under Public Private Partnerships. For instance, the AESS provided assistance to the province of Modena in preparing a tender to substitute thermal power plants without any additional costs for the public administration. As a result, 11 new plants were installed, guaranteeing 8% savings per year. The investment was funded by ESCO companies and a 7 years "sharing savings" contract was signed (under the ESCO model part of the savings pay back the company making the investment and managing the installation and the other part allow the public administration to save money).

Driving forces for implementation

The main reasons why local governments set up energy and climate action plans are:

- Making a public statement of commitment to CO_2 reduction
- Creating or reinforce the dynamic on CO_2 reduction in their territory
- Making their territory known as a pioneer in sustainable energy
- Ensuring consistency among actions implemented or promoted by different departments within the municipality and/or on the territory (e.g. private businesses)
- Ensuring that public money is used efficiently
- Taking fully advantage of the opportunities that (early) action in the field of climate change mitigation can bring, such as new jobs created at local level, lower energy bills for citizens, comfortable living conditions.

Reference organisations

Växjö, Sweden has set an ambitious target of 65% emissions reduction and implemented a robust action plan to work towards the target. The plan is available at: http://www.covenantofmayors.eu/about/signatories_en.html?city_id=317&seap

Modena, Italy has set up a local energy agency to develop and implement the action plans of the participating municipalities. It was able, inter alia, to implement actions under ESCO model contracting. Further information is available at: http://www.aess-modena.it/

Maranello, Italy has implemented a comprehensive sustainable energy action plan. It can be viewed at: http://www.covenantofmayors.eu/about/signatories_en.html?city_id=1162&seap

Berlin, Germany has implemented a comprehensive sustainable energy action plan, with a strong focus on energy efficiency renovation of buildings. It can be viewed at: http://www.berlin.de/imperia/md/content/sen-wirtschaft/energie/energiekonzept.pdf?start& ts=1302593601&file=energiekonzept.pdf

Literature

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