Methodologies and results of the Covenant of Mayors

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Outline

1. The SEAP target
2. Assessing the starting point: the BEI
3. The planning phase
4. Expected results from submitted SEAPs and implementation reports
1. The SEAP target
What we would like to see in signatories’ territories in 2020 and beyond

- Lower CO₂ emissions per capita (tCO₂ per capita/year) – possibly for each key Covenant sector
- Higher energy efficiency in buildings (kWh/m² year)
- Higher efficiency in transport (kWh/p km)
- Increased production of electricity and heat from renewable sources (MWh/year)
- Increased share of energy consumed in the territory coming from Local Energy production (%)  
  
- Economic savings and local reinvestments
- Better opportunities for local jobs
Example of Cities CoM objectives

**Riga:**
- 44% emission reduction by 2020

**Ghent:**
- 20% emission reduction by 2020
- Carbon neutral by 2050

**Glasgow:**
- 30% emission reduction by 2020

**Gothenburg:**
- 21% emission reduction by 2020
- <2 tons/capita by 2050
2. Assessing the starting point: the BEI
Guiding principles of the CoM approach

- **Scientific soundness** → knowledge of starting point (BEI)
- **Territorial approach**
- **Focus on FINAL energy consumption:**
  - In Buildings, equipment/facilities (and industries):
    - Municipal sector (exemplary role of the local authority)
    - Residential sector
    - Tertiary sector
  - Transport

### Actions on Energy Efficiency and Renewable Energies

<table>
<thead>
<tr>
<th>Other not energy-related emission sources (e.g. waste, wastewater)</th>
<th>Not mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local electricity generation</strong></td>
<td>Indirectly considered, if included in SEAP</td>
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A prerequisite to SEAP elaboration:

the BEI quantifies the amount of CO$_2$ emitted due to energy consumption in the municipality’s territory, and helps to select the appropriate actions.

Example: Venice
How to calculate the emissions?

Emissions = Activity data \times Emission factor

MWh of natural gas consumed

Value in t CO2 / MWh

**Data** relevant to the particular situation of the local authority need to be found

Most emission factors can be found in tables
**Flexibility and simplicity: choice of the approach and of emission reporting unit**

**IPCC (Intergovernmental Panel on Climate Change) approach:**

Based on the Carbon content of fuels.

**LCA (Life Cycle Analysis) approach:**

Includes embodied emissions that occur upstream (e.g. emissions required to extract, transform, transport the fuel up to the city).

**Possible to report in CO2 or CO2eq**
Some considerations on activity data

BUILDINGS:
Energy consumption data are generally easier to find (but differences across countries)

TRANSPORT:
Data are more difficult to gather. Methodologies to obtain data depend on cities' size.

OTHER SECTORS (not energy-related):
No guidance from the CoM (not a priority).
Data type can be very diverse (e.g. direct emissions vs. indirect emissions).

LOCAL ENERGY PRODUCTION:
Data may be hard to find when plants are privately operated
3. The planning phase
A threefold document

**Political document:** it shows how CoM signatories want to achieve their target: detailed measures and long term strategies

**Technical document:** based on the results of the BEI, it allows to identify the most appropriate actions

**Communication and promotion instrument:** a clear and structured document for citizens and stakeholders
Some examples from cities' Plans

Munich (1,4 million inh.): Energy saving concept

50 % of the city’s municipal buildings stock examined to identify potential for energy savings

Highest priority given to the renovation of properties in quadrant 1: high relative saving potential, but also a high absolute saving potential.
Some examples from cities' Plans

Sonderborg (27000 inh.): The ZEROhome program

**Concept:**
- easy, safe and economically viable for owners
- strengthen craftsmanship competencies
- secure financial support

**Impact:**
- 1,200 homes visited
- 65% have initiated retrofit generating €14 mio in craftsmen sales
- Energy savings up to 45% per household
Some examples from cities' Plans

**Riga (700000 inh.):** ICT solutions for smart and efficient regulation of heat supply and consumption

**Stockholm (830000 inh.):** 100% of newly registered private cars should be independent of fossil fuels by 2020
4. Expected results from submitted SEAPs and implementation reports
An unprecedented growth

Some figures from the initiative

5234 Sustainable Energy Action Plans (SEAPs) as of April 30°

SEAPs submitted over time

Dec/09 Aug/10 Apr/11 Dec/11 Aug/12 Apr/13 Dec/13 Aug/14 Apr/15 Dec/15
188
Mtonnes CO₂ eq. reduction, which means a 28% reduction target.

20%
Reduction of energy consumption as a result of energy savings in building and transport sectors.

133
TWh to be locally produced, which will contribute to meet 18% of future energy demand from local production.

44%
of the overall CO₂ reduction will derive from actions in buildings.

3421 SEAPs received as of mid-May 2014
As of September 2015, 122 signatories (3% of the signatories with an action plan) have submitted a monitoring report including a monitoring emission inventory for a total ca. 11 million inhabitants.

- **GHG emissions**: overall reduction of 23% between baseline and monitoring emission inventories;
- **Energy efficiency**: final energy consumption dropped by 14%;
- **Renewable energy**: the share of renewables on final energy consumption increased from 3% to 14%.
Thank you!

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