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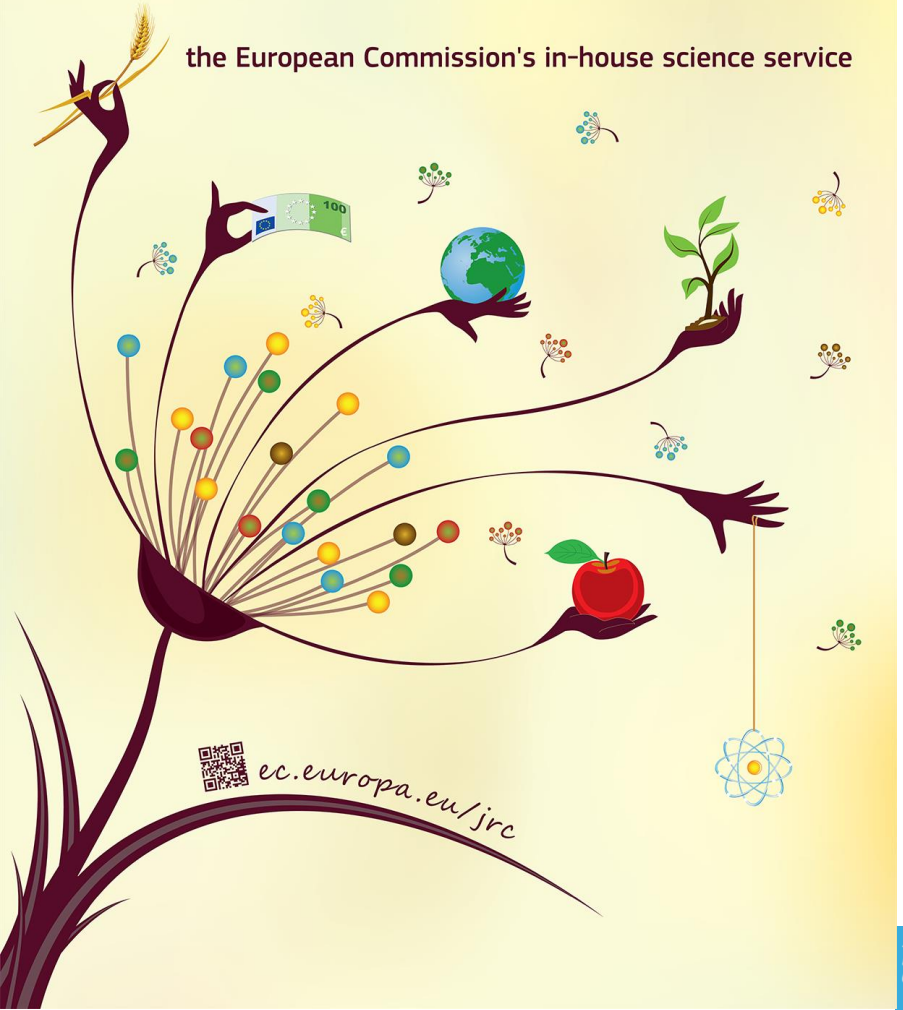

Methodologies and results of the Covenant of Mayors

Giulia Melica

Climate ACTION 2016 / Forum

MAY 4, 2016 / University of Maryland

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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**

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1. The SEAP target

What we would like to see in signatories' territories in 2020 and beyond

- Lower CO_2 emissions per capita (tCO_2 per capita/year) – possibly for each key Covenant sector
- Higher energy efficiency in buildings (kWh/m^2 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

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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

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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

Other not energy-related emission sources (e.g. waste, wastewater)	***Not mandatory***
Local electricity generation	***Indirectly considered, if included in SEAP***

Baseline emission inventory (BEI)

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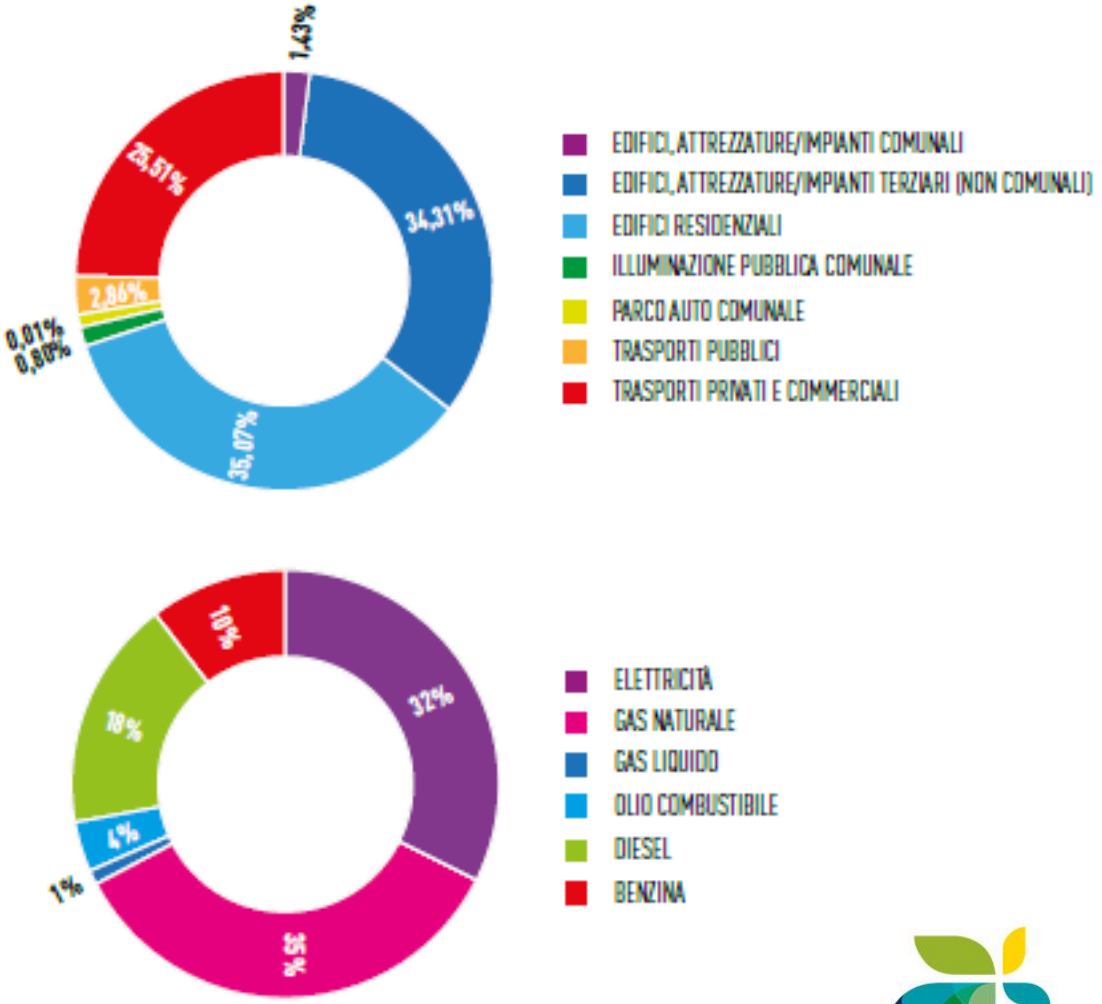
A prerequisite to SEAP elaboration:

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



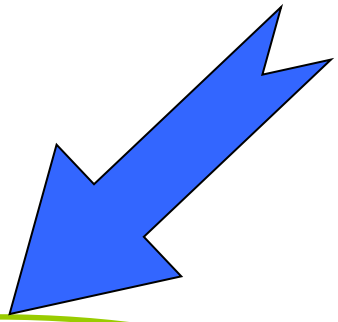
Example: Venice

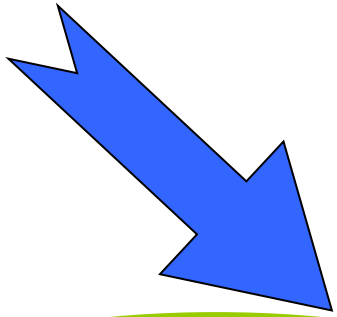
How to calculate the emissions?

Emissions = Activity data x 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

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Flexibility and simplicity: choice of the approach and of emission reporting unit

IPCC (Intergovernmental Panel on Climate Change) approach:

94% of BEIs

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).

6% of BEIs

Possible to report in CO2 or CO2eq

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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):

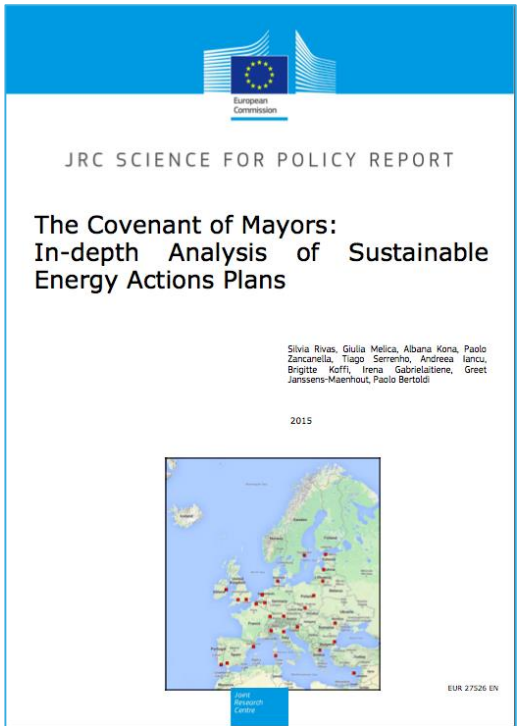
No guidance from the CoM (not a priority).

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



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A threefold document

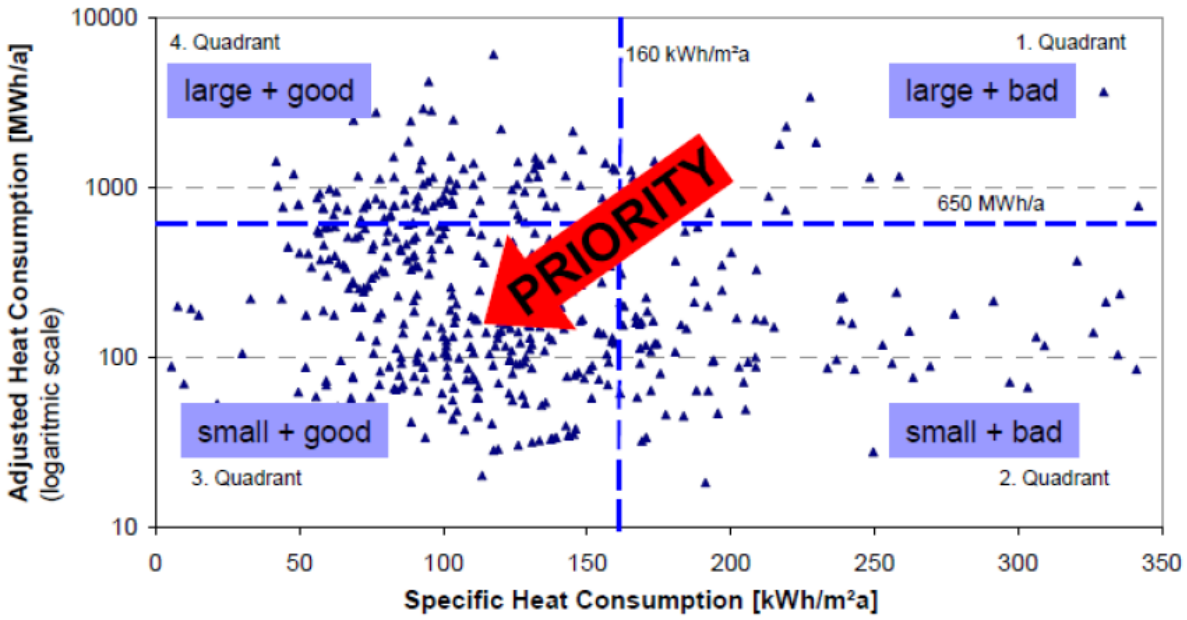
- **Political document: it shows how CoM signatories want to achieve their target: detailed measures and long term strategies**
- **Technical document: based on the results of the BEI, it allows to identify the most appropriate actions**
- **Communication and promotion instrument: a clear and structured document for citizens and stakeholders**

Some examples from cities' Plans

European Commission

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

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

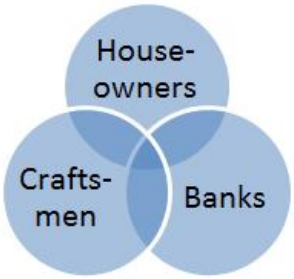


Highest priority given to the renovation of properties in quadrant 1: high relative saving potential, but also a high absolute saving potential.

Some examples from cities' Plans

European Commission

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

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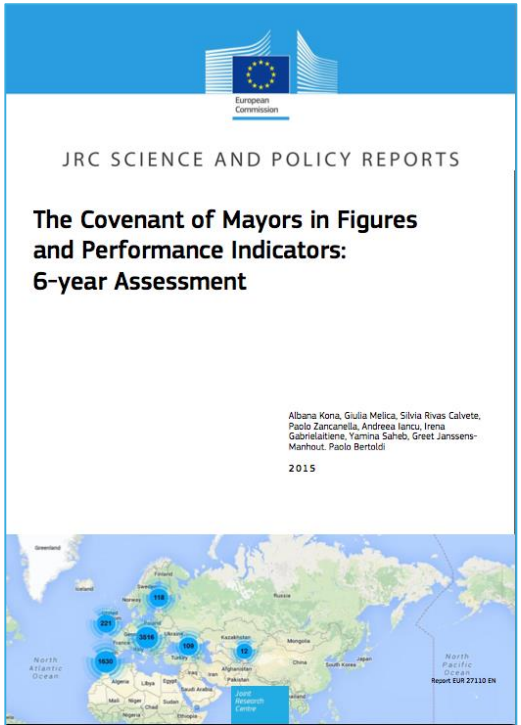
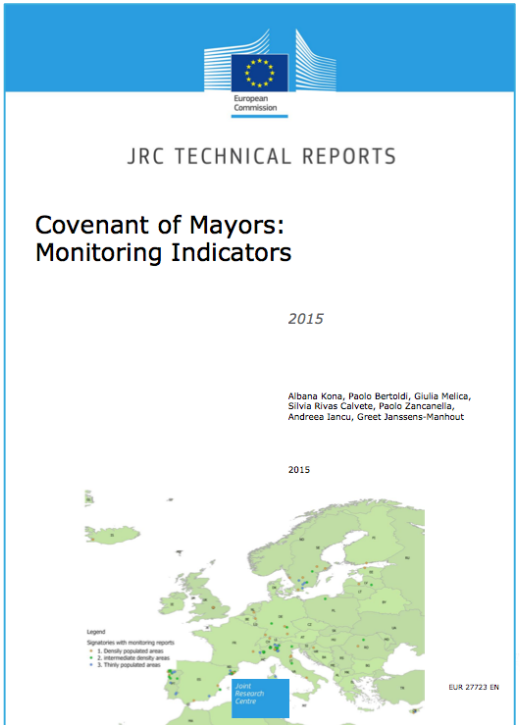
Some examples from cities' Plans

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





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An unprecedented growth

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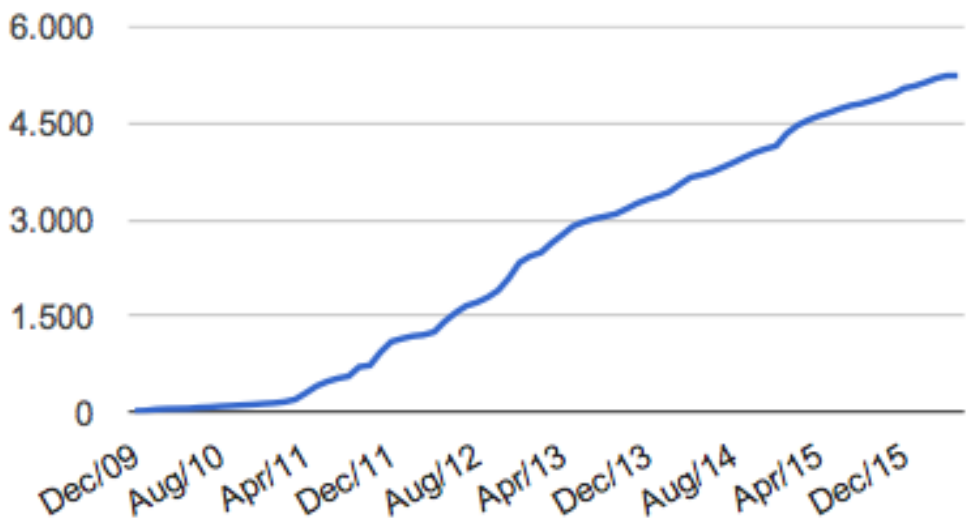
Some figures from the initiative

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

SEAPs submitted over time



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SEAP indicators

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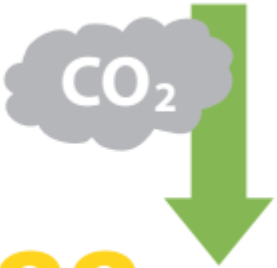

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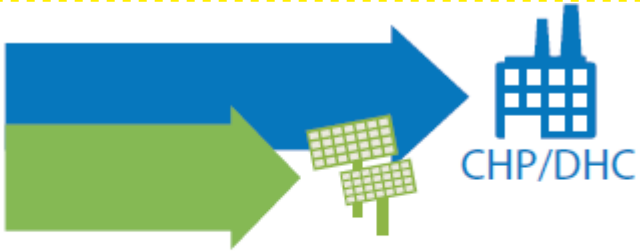
Mtonnes CO_2 eq. reduction, which means a 28% reduction target.

20%

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



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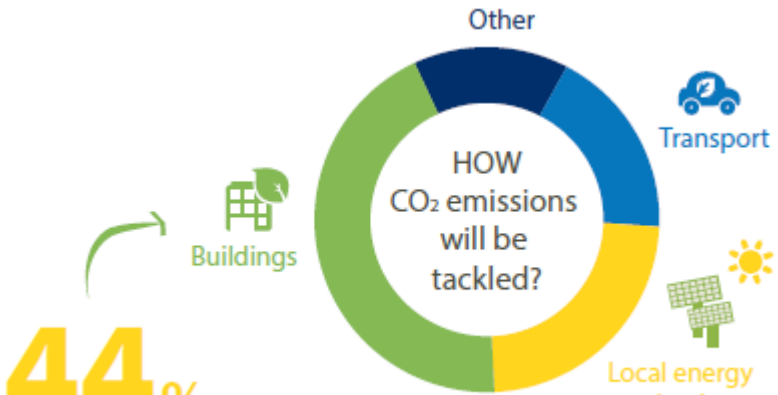
TWh to be locally produced, which will contribute to meet 18% of future energy demand from local production.



44%

of the overall CO_2 reduction will derive from actions in buildings.[19]

***3421 SEAPs** received as of mid-May 2014*

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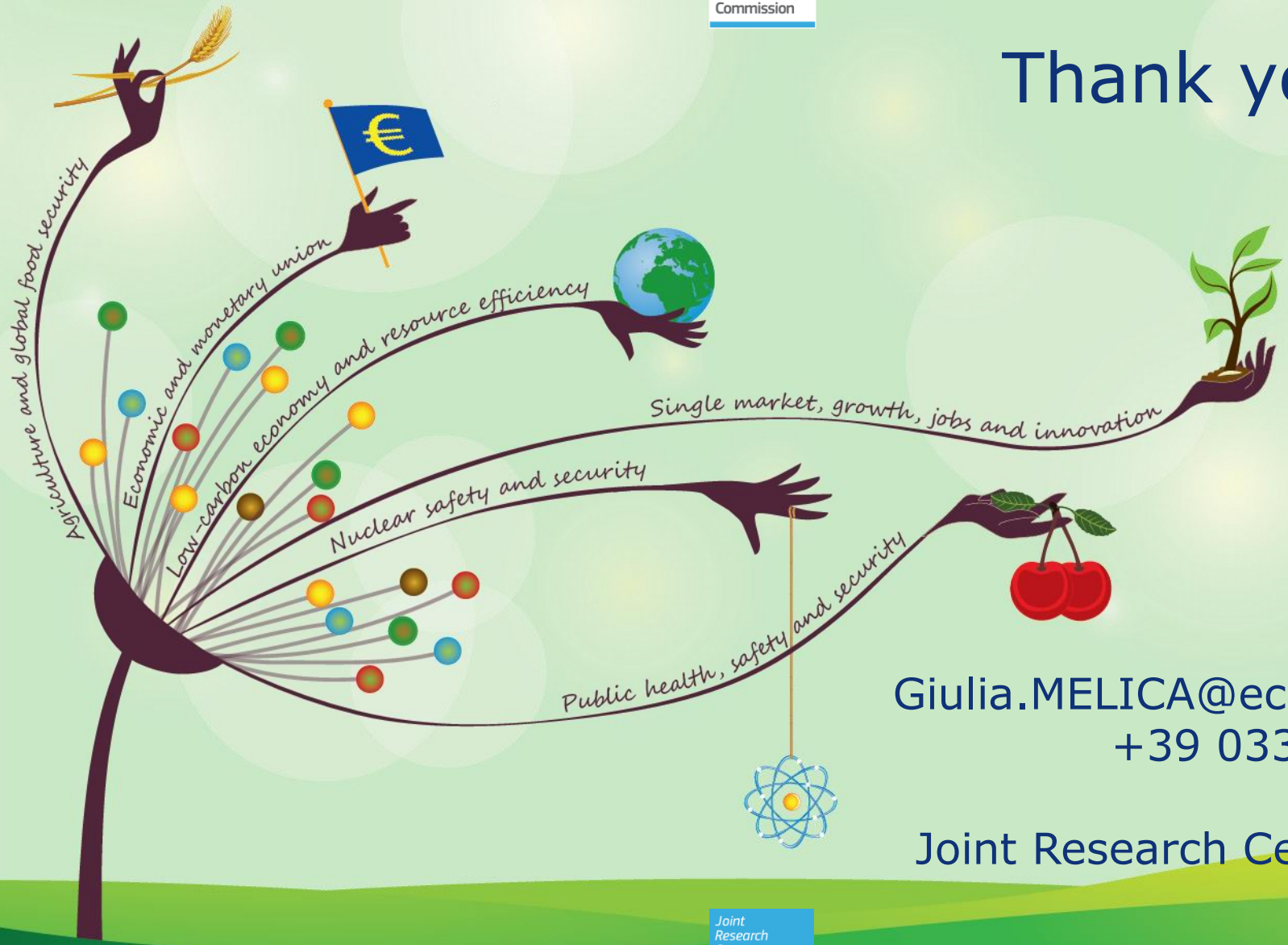
Monitoring indicators

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!



Giulia.MELICA@ec.europa.eu
+39 0332 78 3587

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