European Commission

Covenant of Mayors- Monitoring Phase: Benchmarking indicators and Tools

Albana Kona

Promoting Sustainable Energy: Data quality to support local actions

Torino, **19/11/2015**

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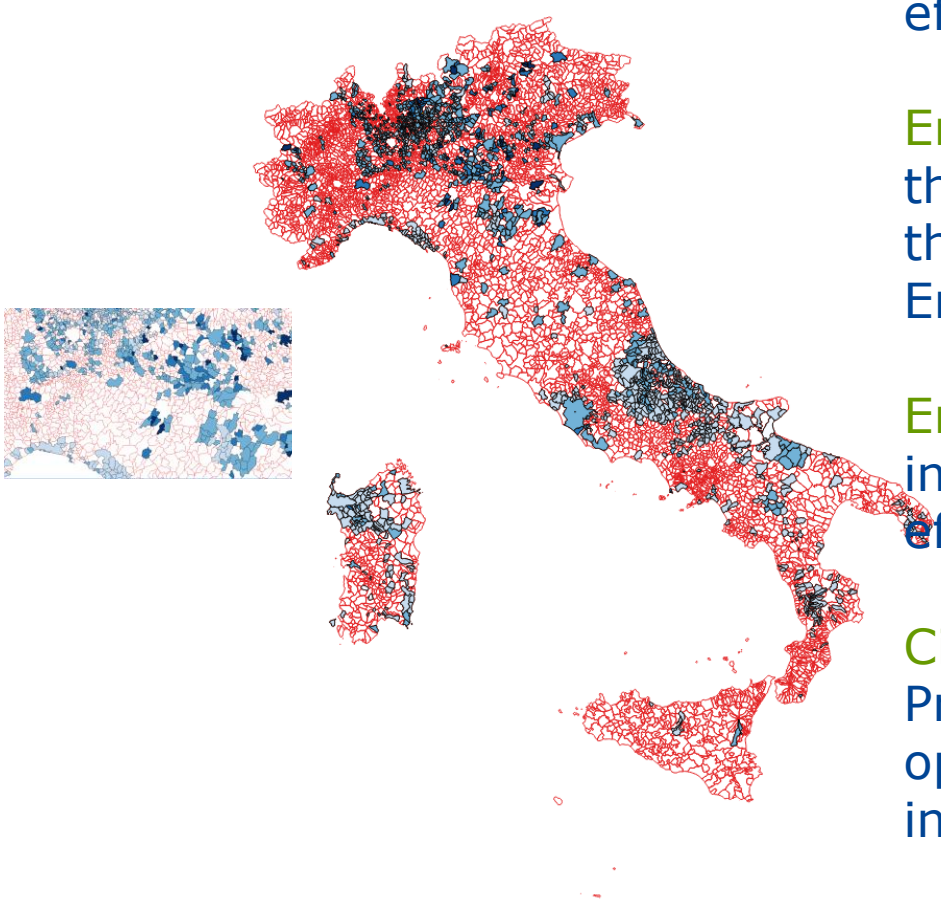
CoM as part of EU strategies

European Commission has given visibility to the role of local authorities:



Energy Union Package: CoM platform for achieving progress on energy efficiency

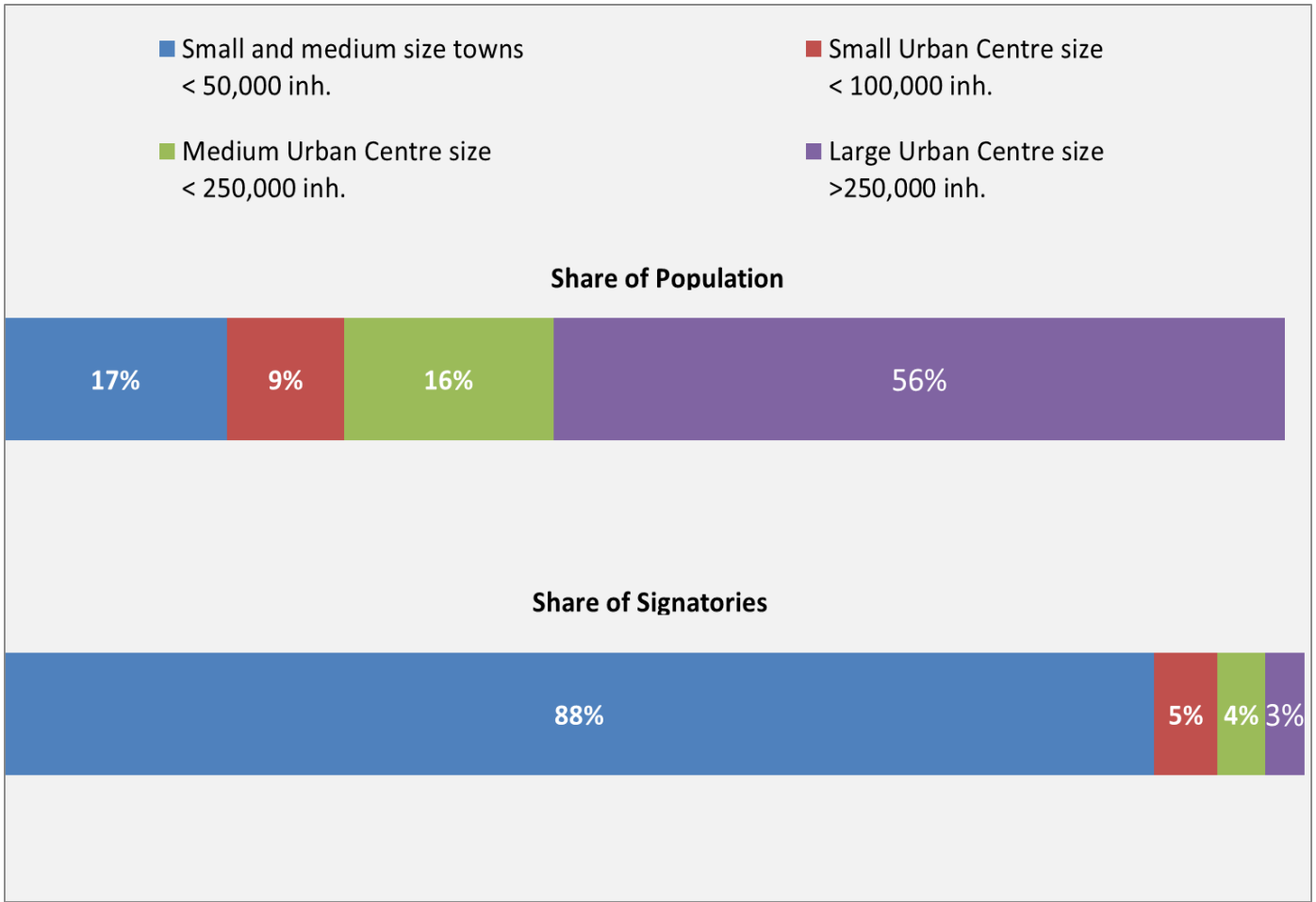
Energy Security Strategy: improve the Union's security of supply through the implementation of Sustainable Energy Action Plans (SEAPs)

Energy Efficiency Directive: to adopt integrated and sustainable energy efficiency plans (SEAPs).

Cities of the future: initiative of President Juncker is considered as an opportunity to harmonize city indicators.

Signatories' population

The majority of CoM signatories (88%) are small medium towns with less than 50,000 inhabitants and they often encounter many obstacles in getting data about energy consumption at the right level of detail



The importance of small and medium-sized cities

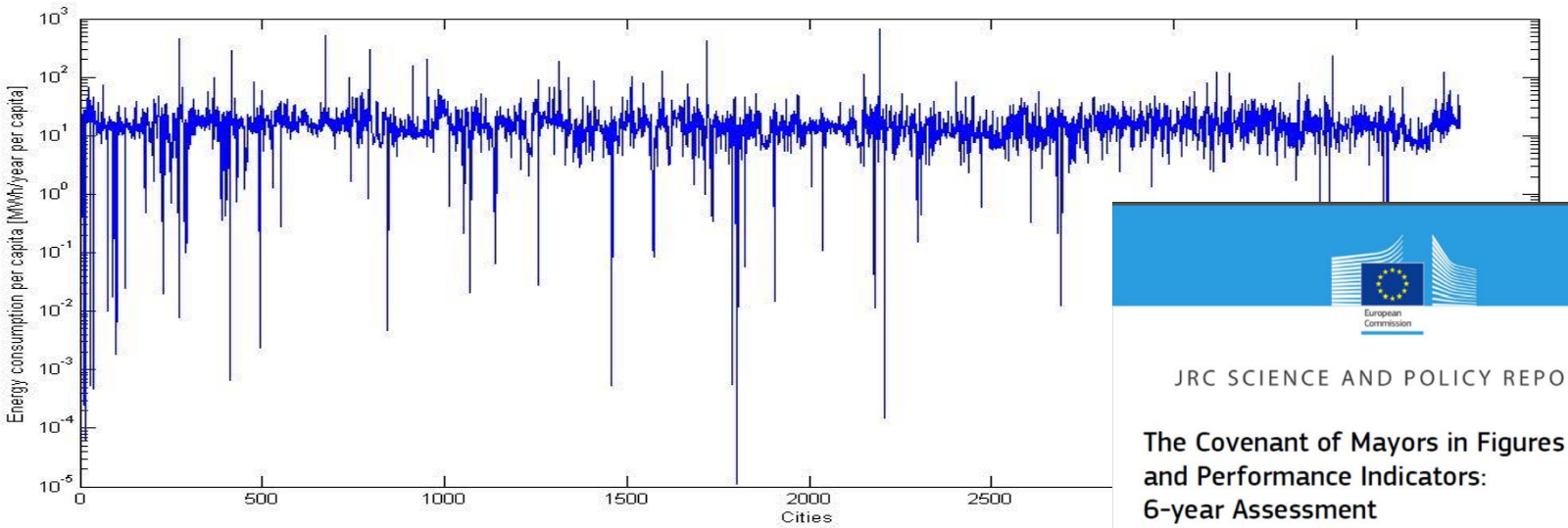
- Small and medium-sized cities constitute an ideal of sustainable urbanism(1): particularly their human scale, liveability, the conviviality of their neighbourhoods, and their geographical embeddedness and historical character

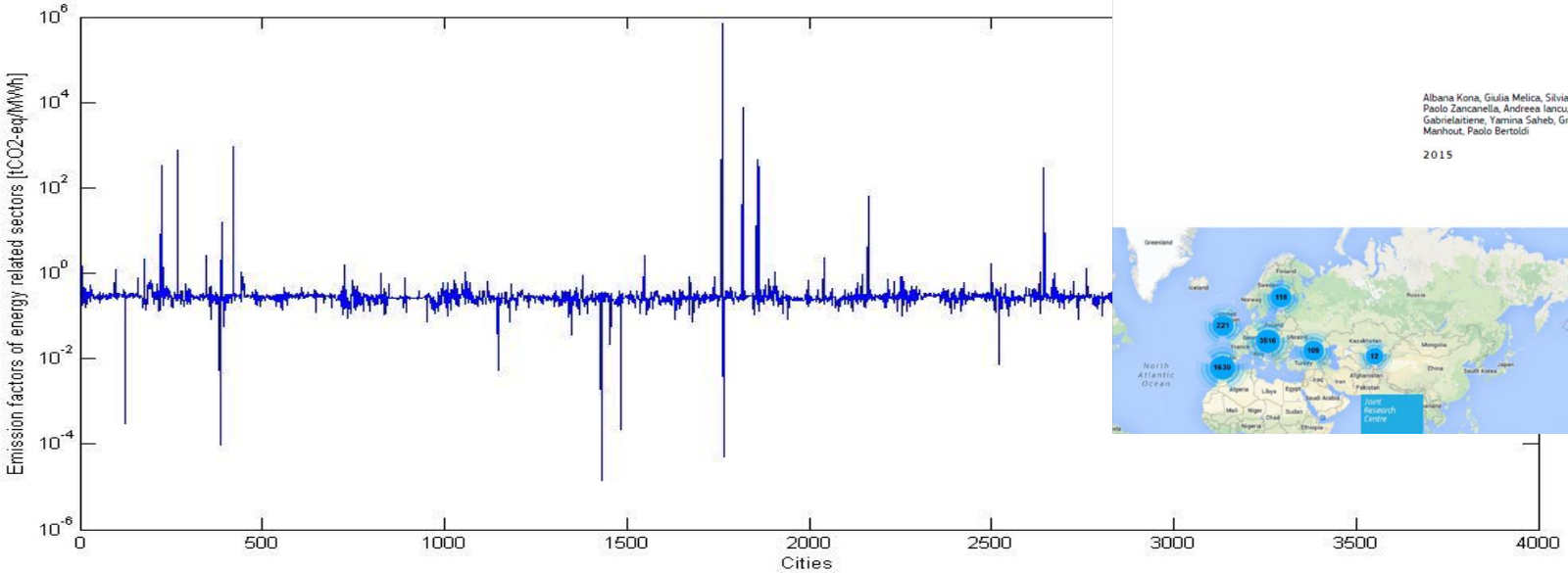
- Europe is characterised by a more polycentric and less concentrated urban structure(2): 56 % of the European urban population – around 38 % of the total European population – live in small and medium-sized cities and towns of between 5 000 and 100,000 inhabitants

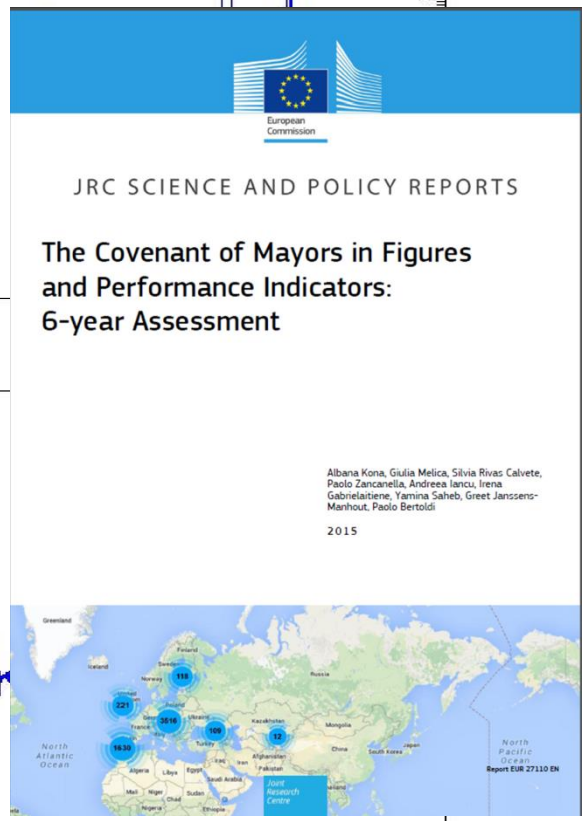
- the collection of reliable data with an acceptable level of accuracy is one of the most difficult tasks in designing, implementing and monitoring a SEAP.

1) *Farr, D., Sustainable Urbanism : Urban Design with Nature, John Wiley & Sons, New Jersey, 2008*
2) *Cities of tomorrow (2011): European Commission, Directorate General for Regional Policy: http://ec.europa.eu/regional_policy/conferences/citiesoftomorrow/index_en.cfm*

Overview of data in BEI

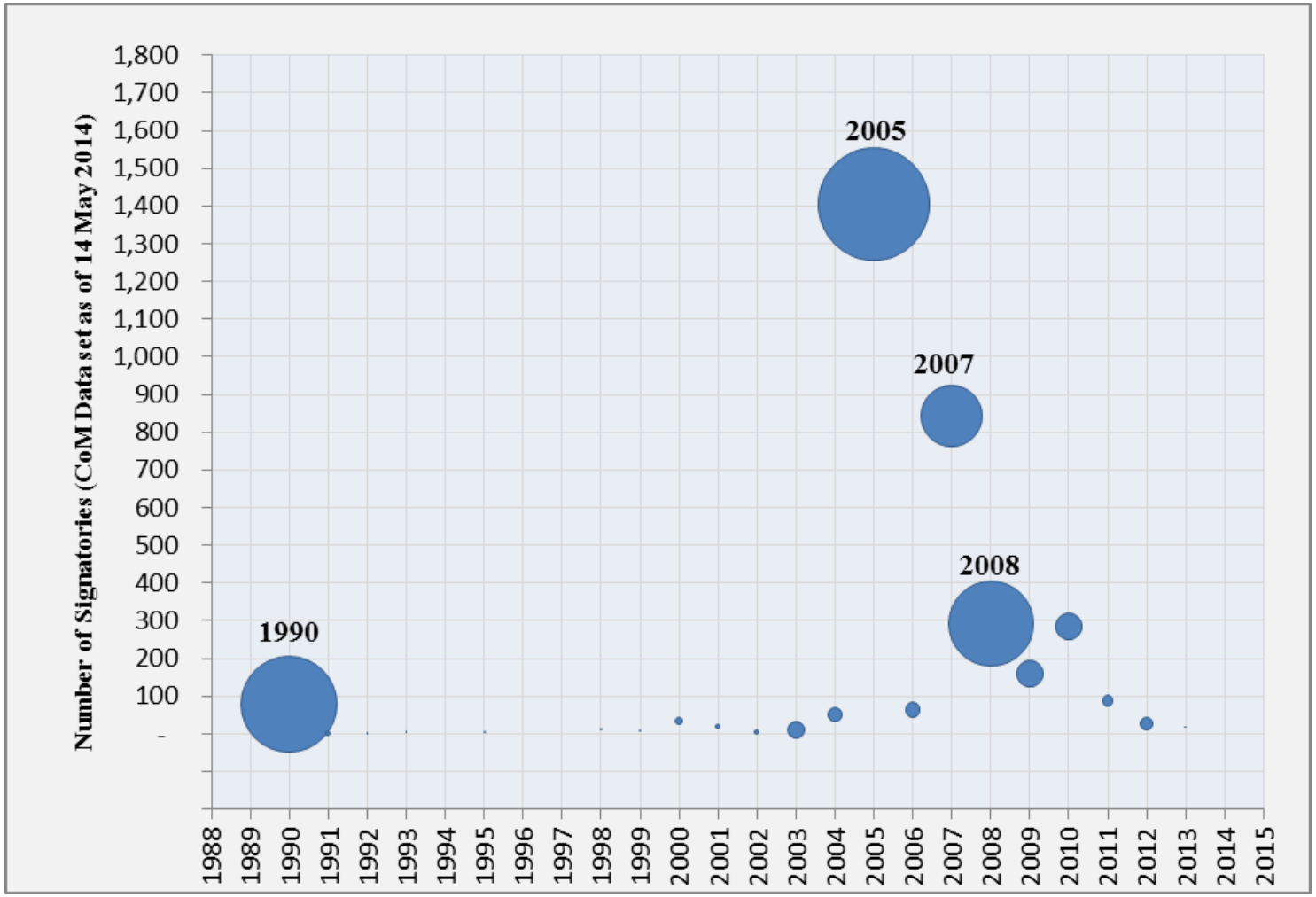






Source: JRC (2015), "The Covenant of Mayors in Figures – 6 Year Assessment" report.

Reference inventory year



CoM Indicators Inventories

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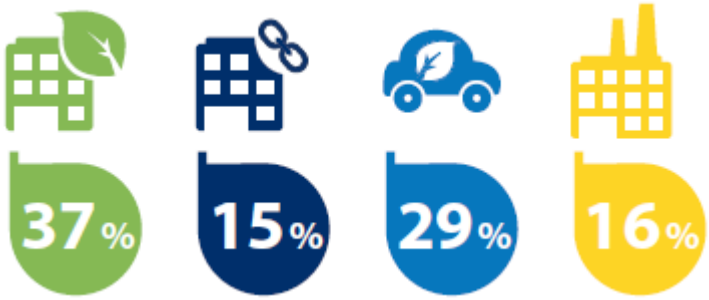
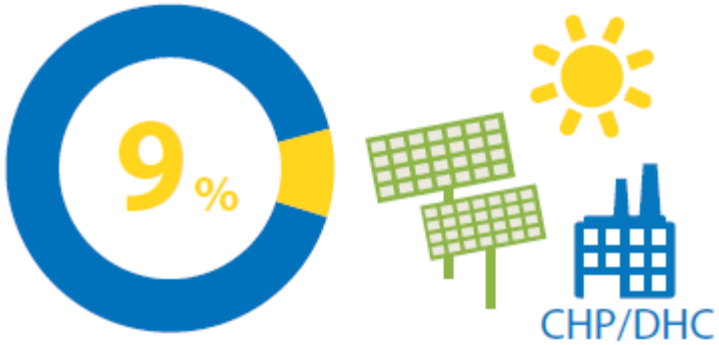
Tonnes CO_2 eq. per capita emitted in signatory cities.

MWh per capita of final energy consumed in signatory cities.



Buildings account for more than half of the energy consumed and transport close to one third.



Share of overall energy consumption satisfied by locally produced energy.

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.. Ambitious goals

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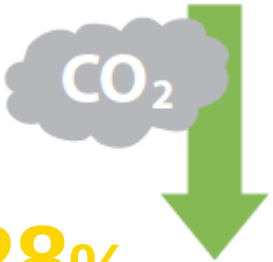


28%

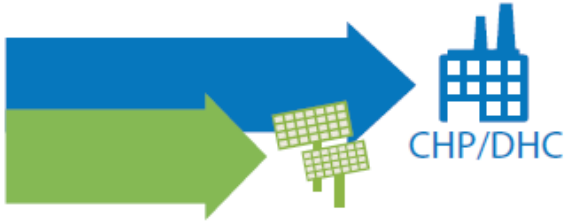
CO_2 reduction

Corresponding to 189 Mtonnes CO_2 eq. to be reduced, which is the equivalent of overall emissions of Belgium and Luxemburg combined.

20%

Energy savings

Corresponding to 479 TWh of estimated energy savings to be reached by 2020 as a result of measures in the buildings and transport sectors.



18%

Local energy production

Corresponding to 133 TWh of energy to be locally produced, mainly from CHP/DH, PV and wind power. This will contribute to meet 18% of signatories' future energy demand from local energy production.

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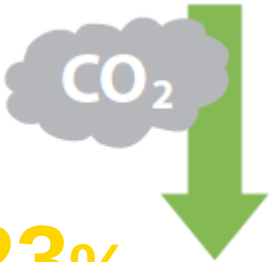
.. Monitoring



23%

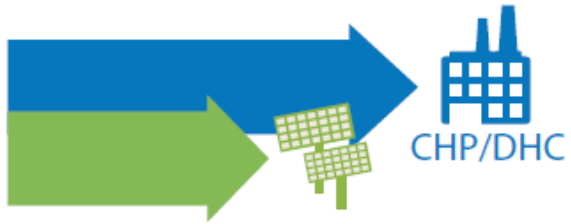
CO_2 reduction

Corresponding to 15 [Mt CO_2 eq]. to be reduced, corresponding to an average of 1 [tCO_2 eq/cap]

15%

Energy savings

Corresponding to 35 TWh of estimated energy savings to be reached by 2020 as a result of measures in the buildings and transport sectors, corresponding to an average of 3 [MWh/cap]



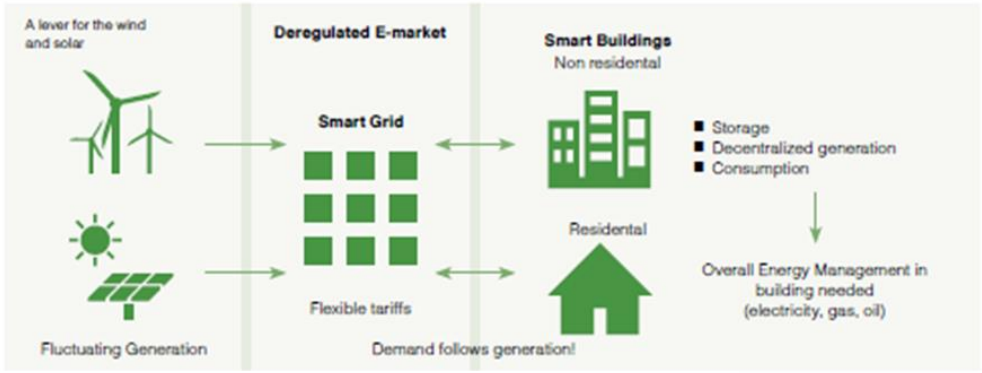
54%

Local energy production

Corresponding to 25 TWh of energy to be locally produced from RES. . This will contribute to meet 29% of signatories' energy demand from local energy production.

Source: JRC (2015), "The Covenant of Mayors: Monitoring Indicators . In progress.

Good examples from CoM



Source: SEAP Sonderborg (DK)

In 2020, the whole Sonderborg area is one big demonstratorium for new energy and climate solutions, related technologies, financing, involvement and learning platforms focusing on the big transition to "sustainable cities". Next step merges sustainable city development with Smart Energy and financing (ESCO).

- Ringkobing Skjern (DN): Energy atlas and heating model
- Amsterdam (NL): Data sharing for enabling low carbon projects - Energy Atlas plus
- Riga (LV): available online the annual heat consumption of over 2,500 residential buildings with DH.
- Vilnius (LT): online interactive building energy consumption map
- Ferrara (IT) : Heat density map Ferrara; Anzola dell'Emilia

Interoperability of Data

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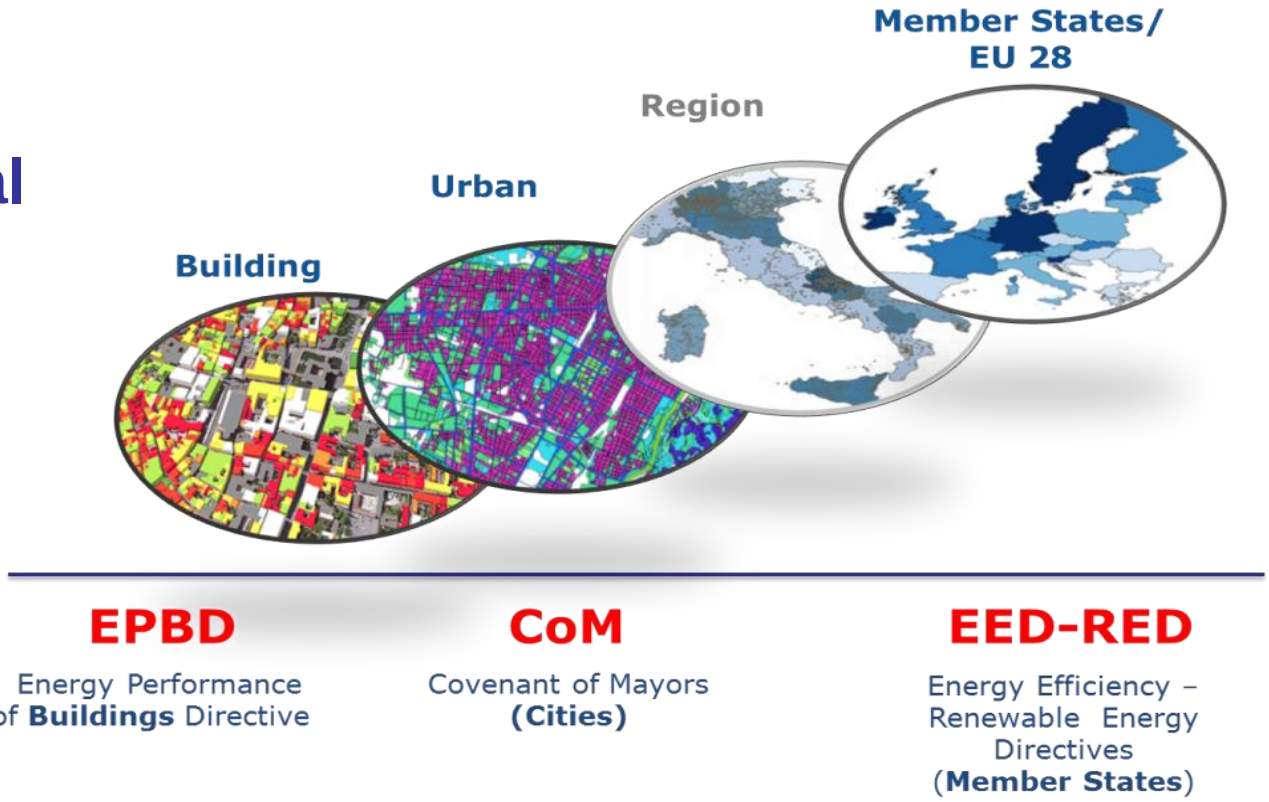
Reliable data, at national and at local level, in the policy life cycle from :

- **inventories,**
- **planning to**
- **Implementation**
- **monitoring.**



Source: JRC (2015), "Location Data for Building related Energy Efficiency policies.

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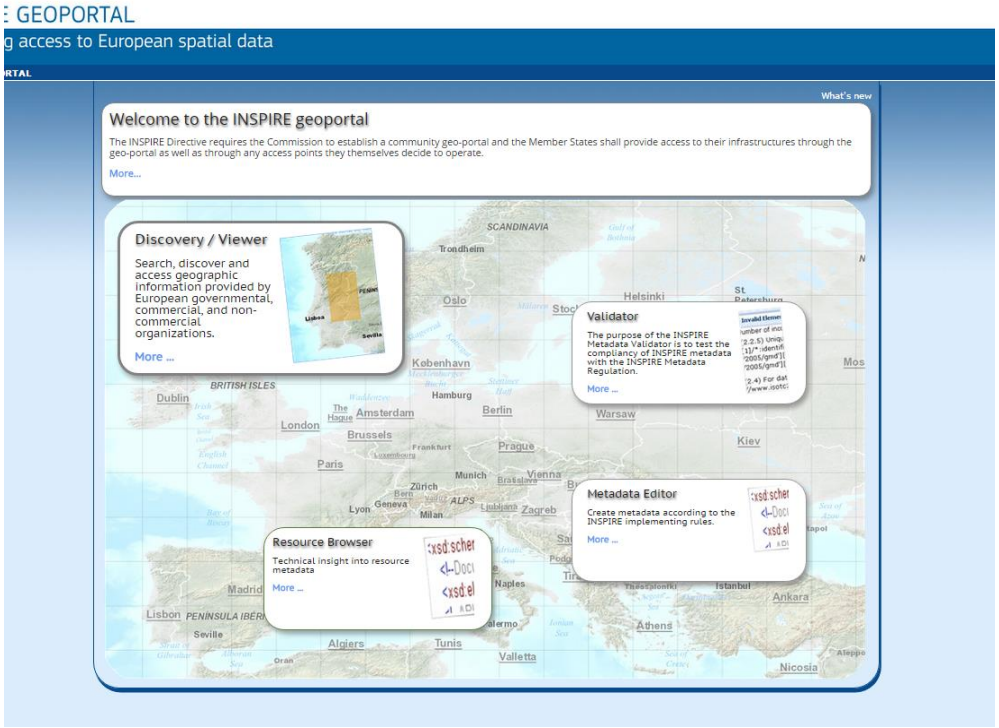
INSPIRE and Energy & Buildings

INSPIRE is the reference directive for spatial data, establishing an infrastructure for spatial information in Europe energy policies.

Cadaster: Administrative information on building stock: Age, type, location, construction, usage
Energy, systems,



http://inspire-geoportal.ec.europa.eu/

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reliable and available data

European Commission

Dataset ID	MS	Conformance to 1089	Region/area/coverage	Resource title	Resource abstract	Lineage
1	FR		Bretagne	Inventaire du patrimoine breton	The corpus brings together buildings and movable objects identified by the Service's inventory of heritage since 1997. It contains also some from scanned files of previous censuses. Folders have been created according to an XML format within the formalism of the DTD "CI", as it is advocated by the Ministry of Culture (http://www.inventaire.culture.gouv.fr/).	Given historically acquired on Scan 25 or leaves cadastral georeferenced by our care. Now, the acquisition from the digital cadastre provided by the Directorate General of taxes is the rule. Subsequently, conversion to the shape format resulted in the passage in type point all data (point or polygon).
2	IT		Provincial capitals	Built (edificato) of provincial capitals.	Built (edificato) of provincial capitals. The provincial capitals represented are those for the year 2003.	Data derived from the analysis and interpretation of technical cartography.
3	NL		Whole country	Buildings	This publication was created specifically to meet the theme INSPIRE guidelines for buildings. It concerns building contours, constructive elements and spatial barriers. This concerns non-harmonised data from the basic registration basic registration Addresses and buildings (BAG) and Topography (TOP10NL).	Data from BAG and TOP10NL

Source: JRC (2015), "Location Data for Building related Energy Efficiency policies.

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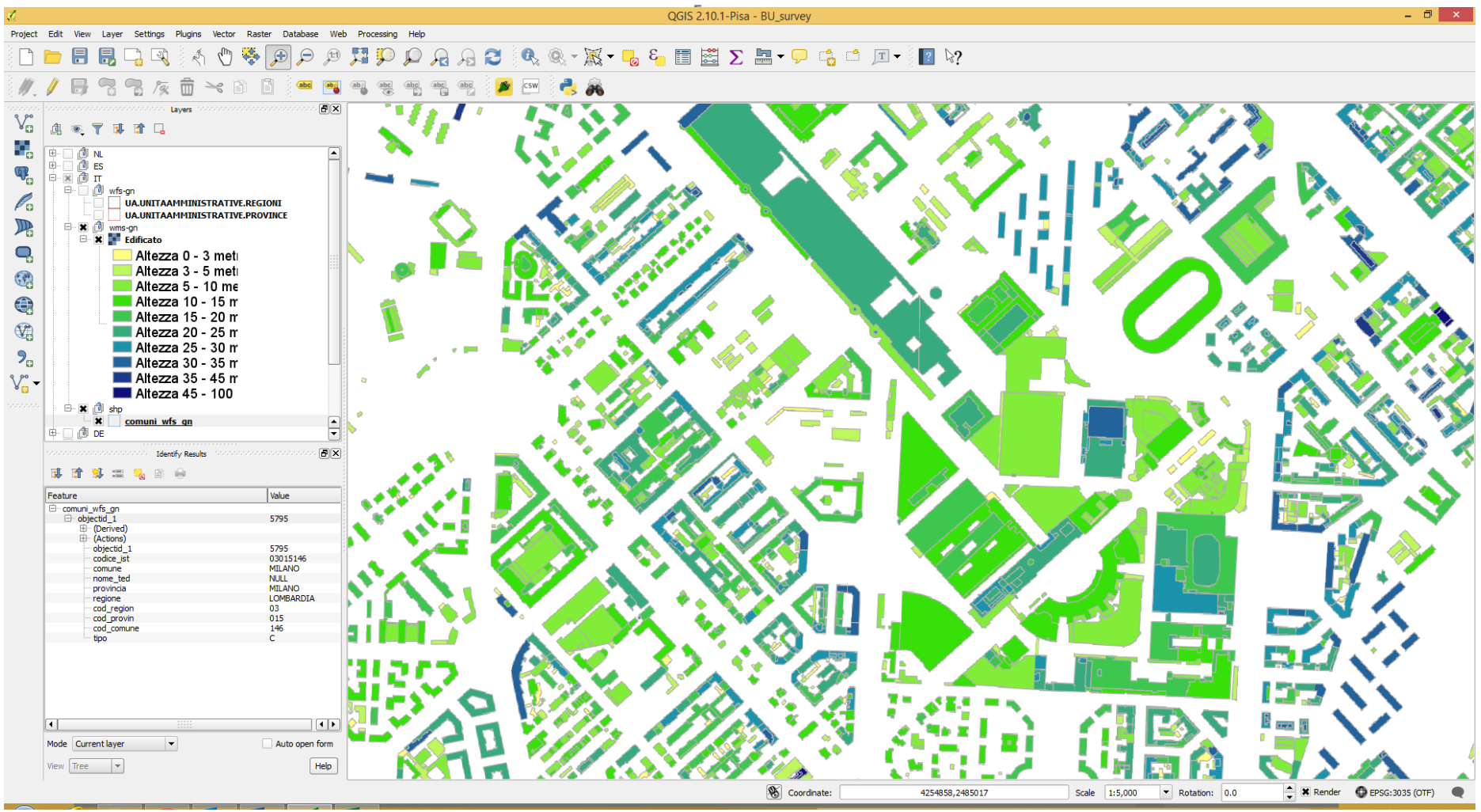
reliable and available data



Source: JRC (2015), "Location Data for Building related Energy Efficiency policies.

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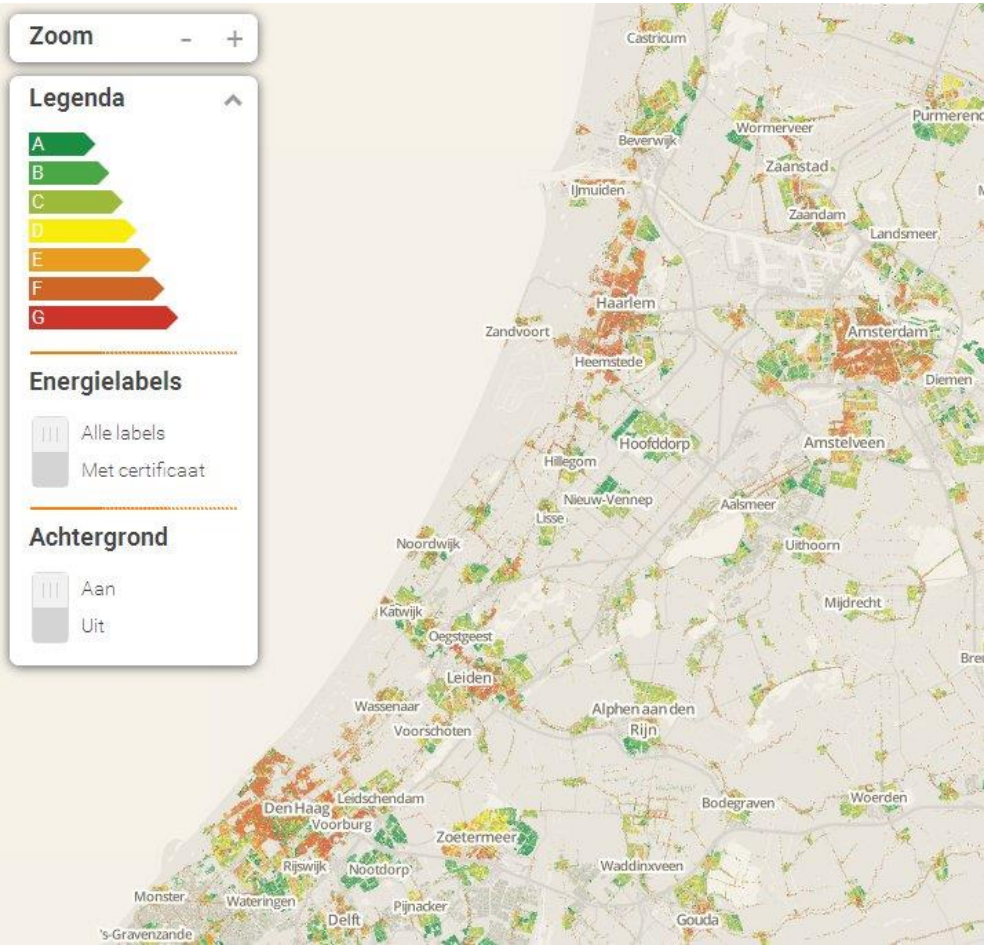
Modelling tools



The Energy labelling Atlas in the Netherlands .

The Atlas Energy uses three types of energy labels, which differ in completeness of housing data:

- 1 star: default energy labelling;
- 2 stars : renovation adjusted by the tenant
- 3 stars: Energy label by certified consultant.

http://www.energielabelatlas.nl/

Conclusions

- Small and medium sized local authorities need support from other bodies such as **regions and provinces** acting as **Covenant Territorial Coordinators**

- **Data Driven Sustainability**: Data availability and reliability at national and at local level, in the policy life cycle from : inventories; planning to implementation and monitoring.

- Next step: **A benchmarking system** needed for allowing cities to assess their performance on energy sustainability and be inspired from those that are performing better.

Thank you!

Albana.KONA@ec.europa.eu

Joint Research Centre (JRC)
IET - Institute for Energy and Transport
Petten - The Netherlands & Ispra - Italy
http://iet.jrc.ec.europa.eu/
https://ec.europa.eu/jrc/