

# Road to Paris 2015 climate talks

with cities  
thinking globally,  
acting locally

Contributions of  
European  
Commission  
support?



## The Anthropocene: a new geological epoch

The industrial revolution marked an increasing human influence on the Earth System



How did human beings alter the global natural ecosystems so far?

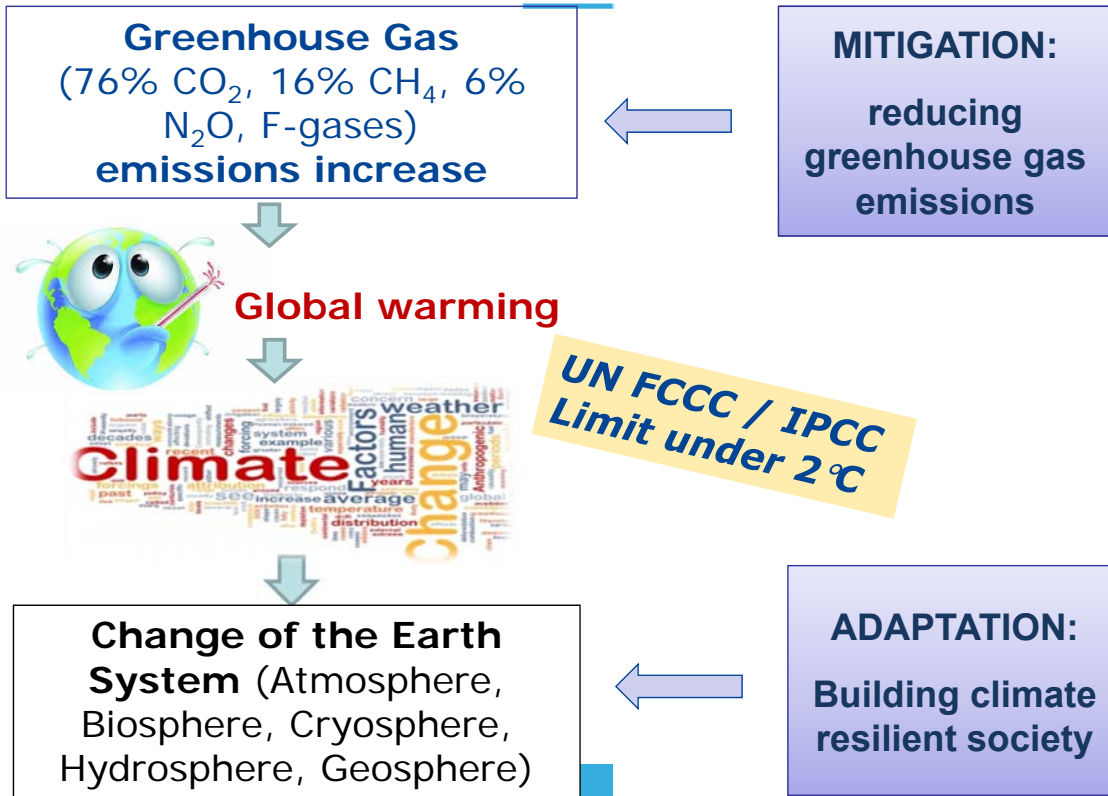


Anthropogenic greenhouse gas (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, F(g)) emissions: primary cause of global warming



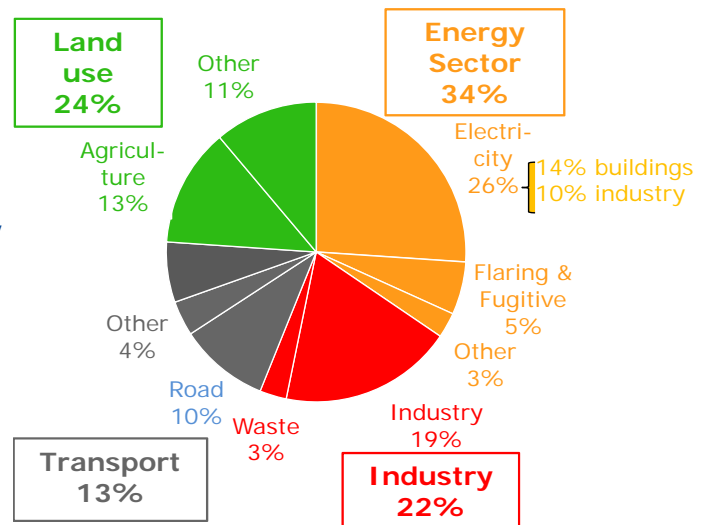
Paul Crutzen  
Nobel Prize-winning,  
atmospheric chemist





## MITIGATION: science / technology?

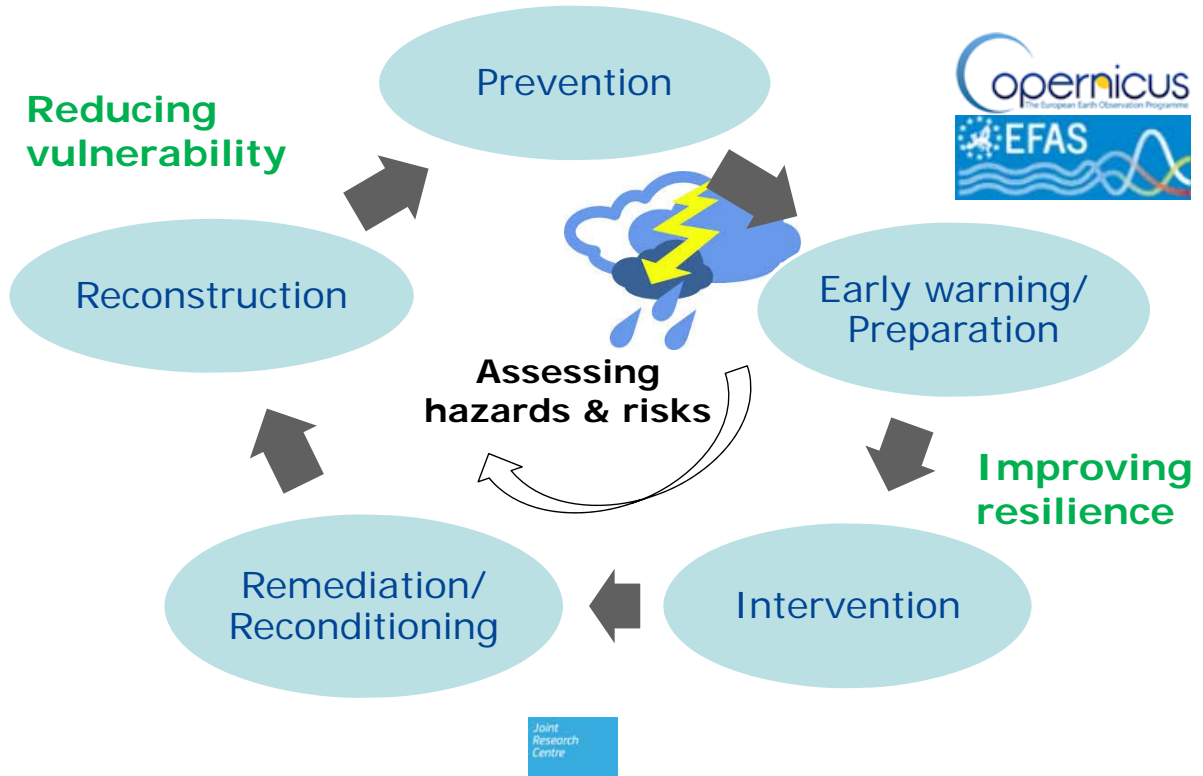
- Limit Energy demand in increase
- Increase energy efficiency
- Fuel shift: gas instead of coal, renewables, nuclear energy
- Carbon storage and capture



IPCC AR5 WGIII (2014)

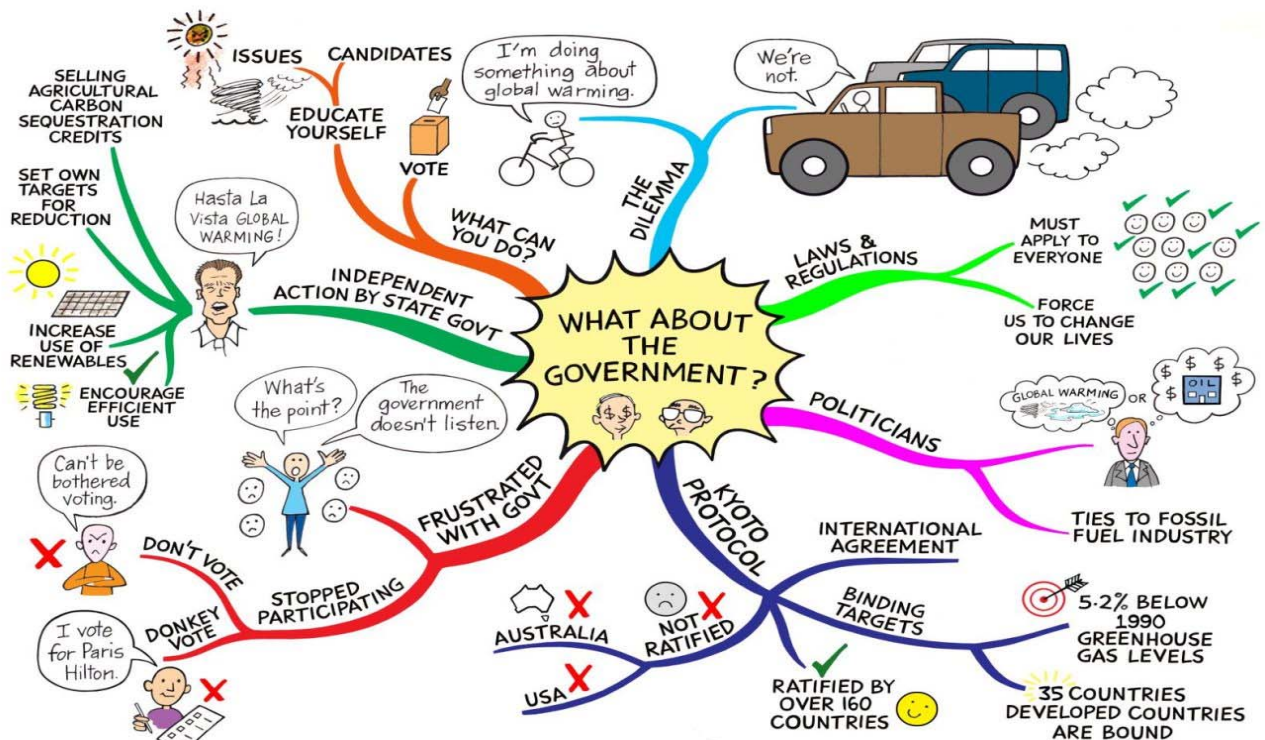


# ADAPTATION: science/technology ?

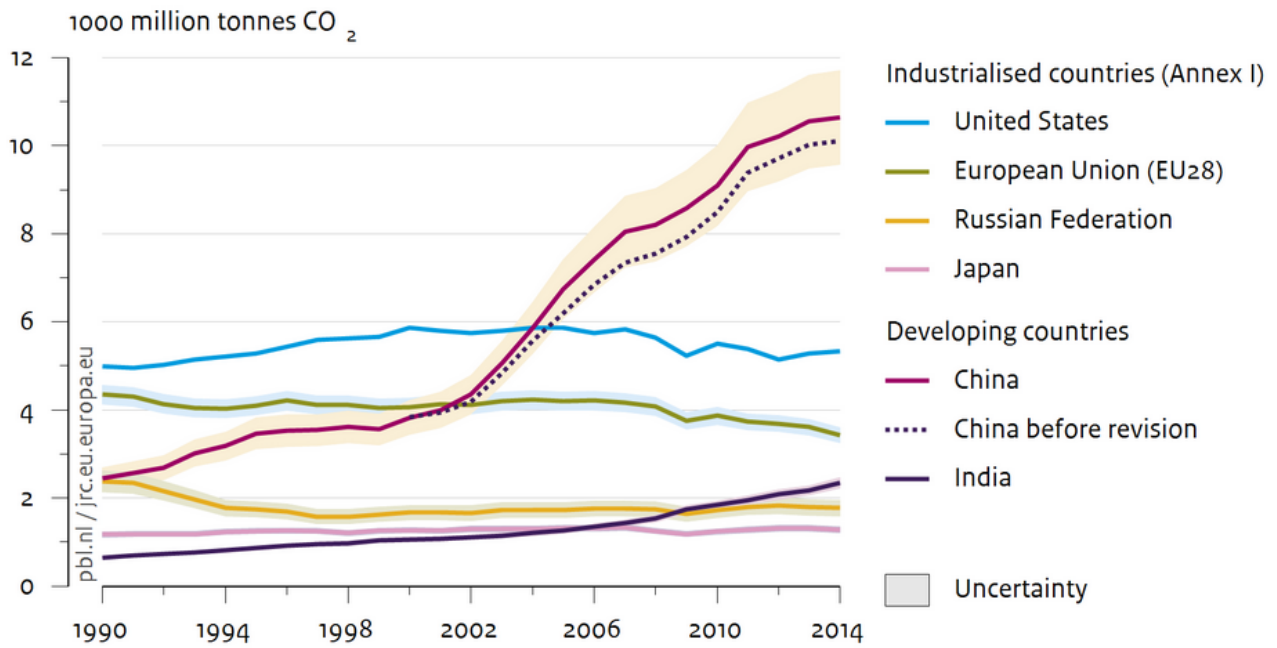


## Science !

## Political & Social ?

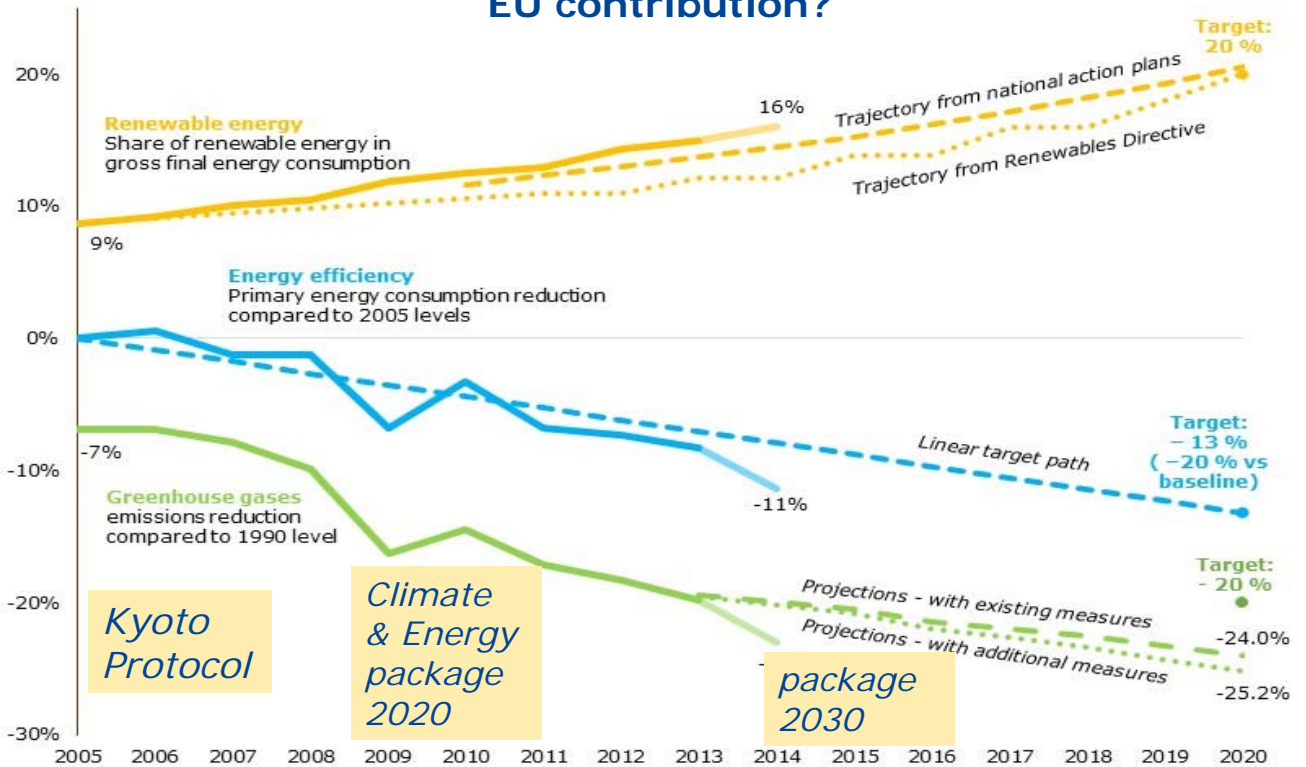


## GLOBAL achievements ?



CO2 report of Olivier, Janssens-Maenhout, Muntean, Peters (2015)

## EU contribution?



EEA Progress Report (2015)



# LOCAL initiatives?

The COVENANT of MAYORS is a mainstream European movement for the sustainable energy & climate protection: involving local and regional authorities

JRC SCIENCE AND POLICY REPORTS

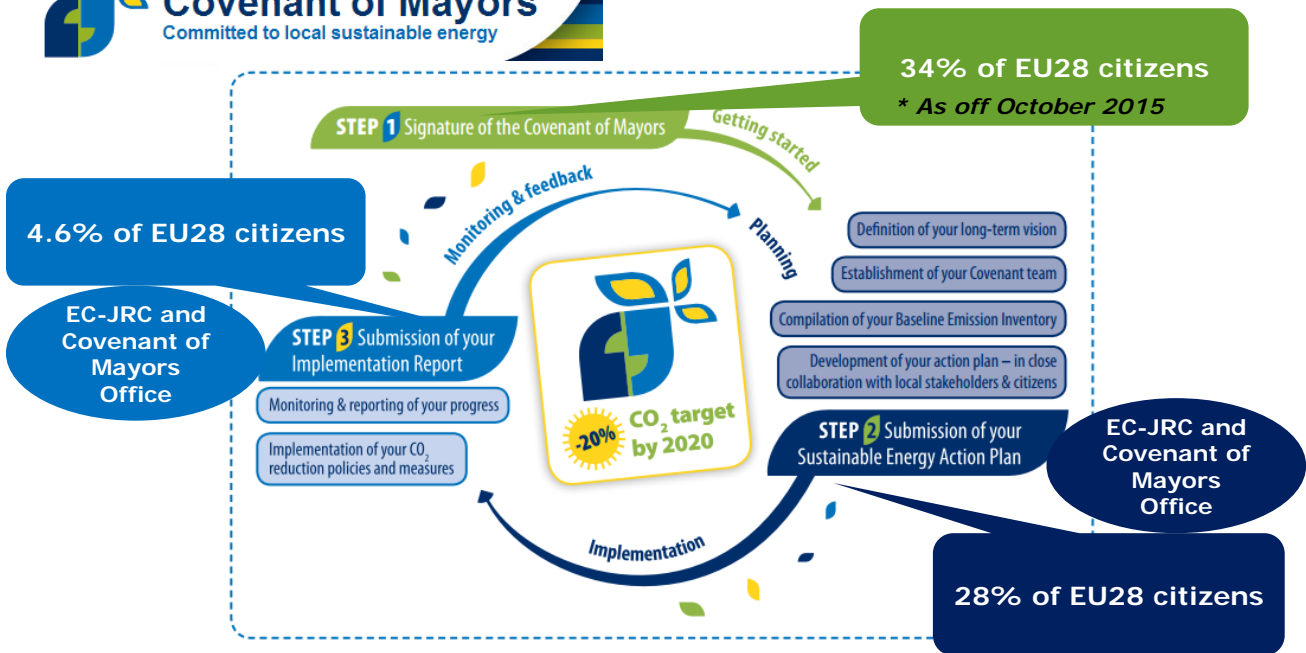
The Covenant of Mayors in Figures and Performance Indicators: 6-year Assessment

6,568 signatories

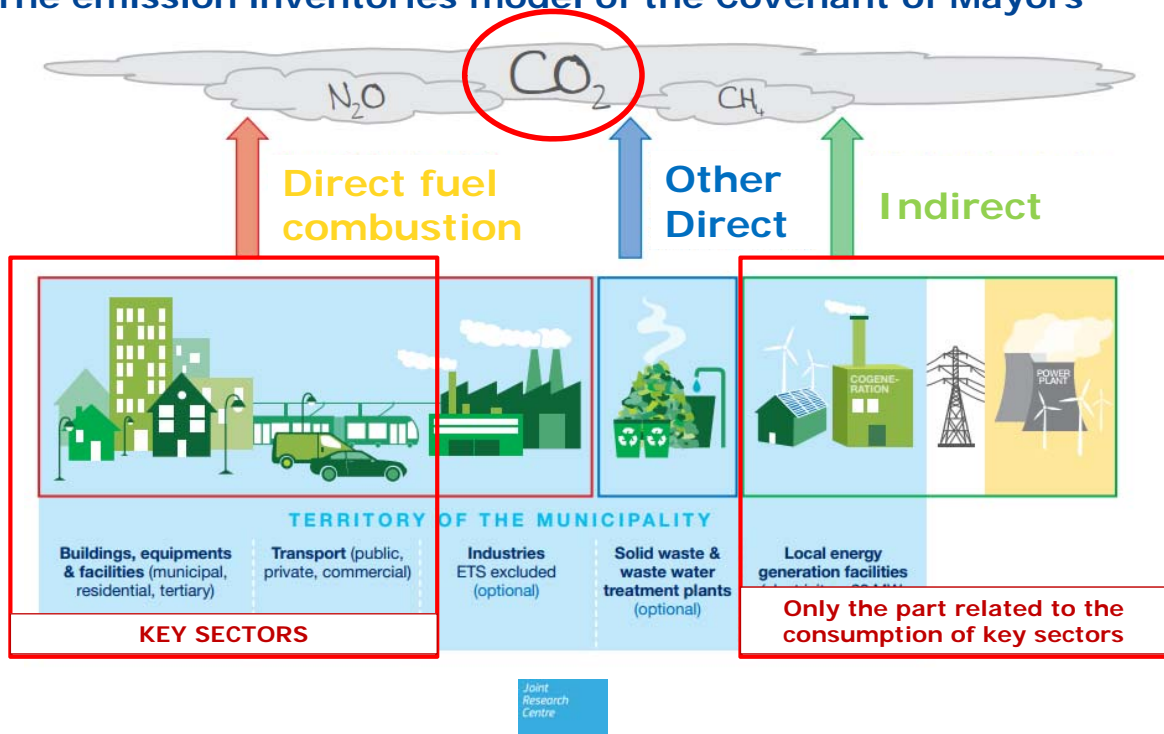
210,570,480 inhabitants

Albana Kina, Giulia Melica, Silvia Rivas Caballero, Paolo Zancanella, Andreana Iancu, Janssens-Maenhout, Vassiliki Sakelli, Vire Janssens-Maenhout, Paolo Bertoldi

CoM 6-year Assessment report of Albana, Melica, Rivas, Zancanella, Iancu, Janssens-Maenhout, Bertoldi (2015)



## The emission inventories model of the Covenant of Mayors

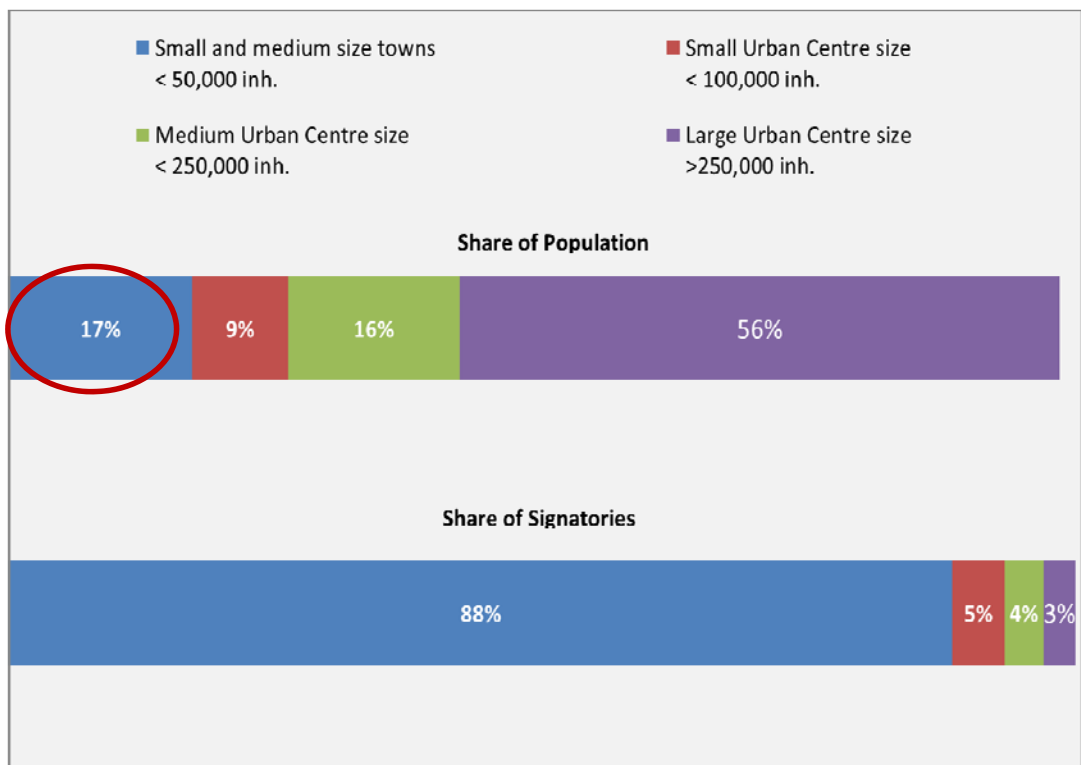


## Covenant of Mayors: is popular amongst rather small cities

Population size distribution

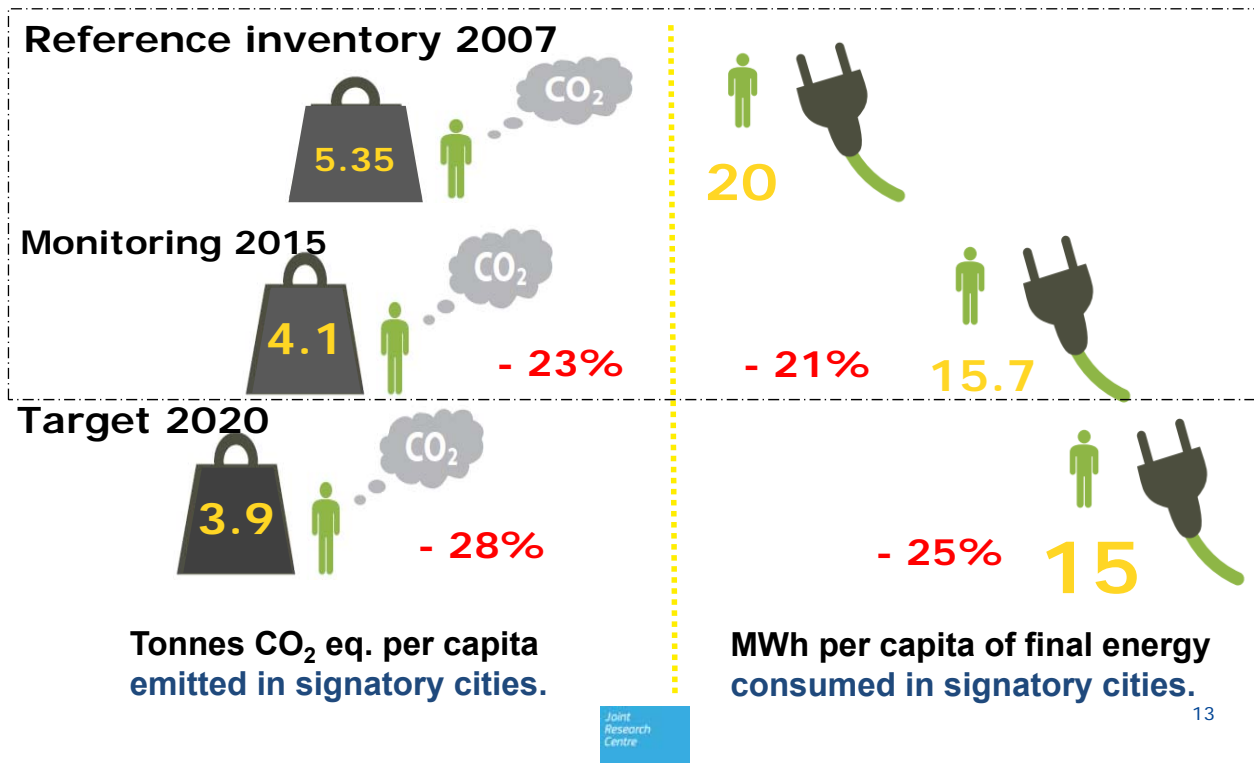
Of cities in EU28

Of signatories in CoM





## Covenant of Mayors performance indicators



13



## New developments in the Covenant Initiative

1. Covenant goes beyond 2020  
40% reduction until 2030
2. Extension towards countries outside EU28 (focus on developing countries: e.g. China)
3. Incorporation of adaptation measures



Biannual ceremony of the Covenant of Mayors  
Brussels, 15 October 2015



## Reporting, measuring, verifying ?

National inventory reporting (Kyoto)

Greening of cities, improved urban life quality

To monitor the emission reductions over time

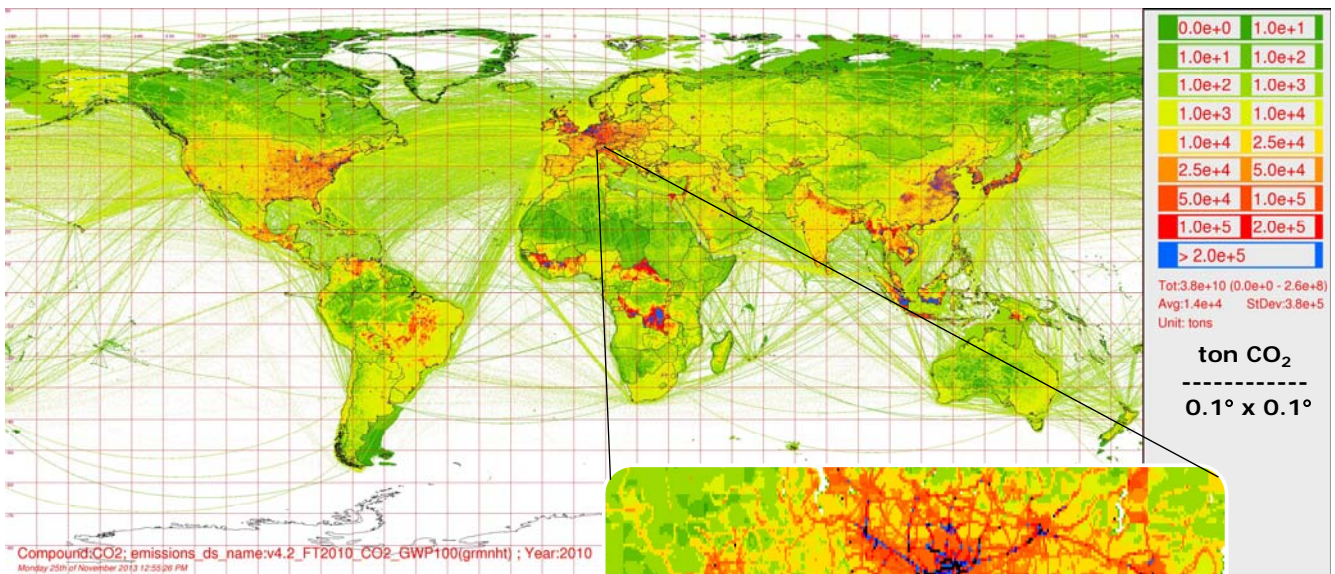
We need data, statistical infrastructure, emissions gridmaps.



US GHG information system (2015)

Resource Centre

## EDGAR CO2 emissions gridmap 2010



Downscaling to 700mx700m  
 Torino – Milano - Brescia

Resource Centre

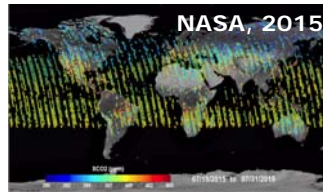


## Data assimilation helps assessing emissions trends



**United Nations**  
Framework Convention on  
Climate Change

Annual inventories of  
nations/ cities (sector-  
specific totals)



Satellite data  
(measured gas  
column  
concentrations)



Site measurements  
(e.g. flux towers,  
flask measurements)

**Data assimilation**

**Are we prepared to be assessed ?**

Joint  
Research  
Centre



## Conclusions

- **EC is party of UNFCCC and helps monitoring Kyoto Protocol targets of EU28 Member States**
- **The EU's Climate and Energy package: extension to 2030 (with 40% greenhouse gas reductions (27% renewables and 27% energy efficiency))**
- **EC's initiative of the Covenant of Mayors initiative helps cities establishing sustainable energy action plans, and also adaptation plans.**
- **With a united voice of the small cities, awareness is raising, even at global level**
- **We need reportable, measurable, verifiable data for monitoring the emissions reductions.**



**More info:**  
[Edgar.jrc.ec.europa.eu](http://Edgar.jrc.ec.europa.eu)

**Thank you for  
your attention**

