

# **Urban water indicators systems in Europe**

## **Urban Ecosystem Europe (UEE), an integrated assessment on the sustainability of 32 European cities**

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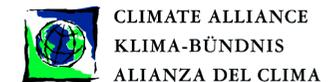
CLIMATE ALLIANCE  
KLIMA-BÜNDNIS  
ALIANZA DEL CLIMA

# Urban Ecosystem Europe

The report has been **worked out by Ambiente Italia** Research Institute and financed in 2006 and 2007 **by DEXIA Group**.



The survey is endorsed by the NGO **Legambiente**-Italy and by EU city networks such as **ICLEI, UBC, MEDCITIES, CLIMATE ALLIANCE**, the French **Comité 21**, the Italian **Coordinamento Agende 21 Locali** and **ANCI**.





## Urban Ecosystem Europe – Aims

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The Urban Ecosystem Europe Report provides an **integrated assessment (25 indicators)** of **32 main or bigger cities** in Europe and focuses on their local responses capacity and needs.

The report shows **strengths and weaknesses** and the **2007 update** provides a baseline review clearly addressed to the **environmental sustainability** dimension, with **climate change as core issue**.

The Report highlights city environmental performances in the framework of other **social and economic** patterns and trends.



# Urban Ecosystem Europe: a tool coherent with EU policies engagements

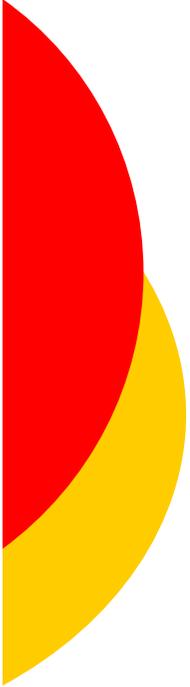
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**The 2005 EU reports “Cohesion Policy and Cities” and “Cities and the Lisbon Agenda”** state that *“Operational funding Programmes should include integrated plan for sustainable urban development and **clear description of urban priorities**”.*

**The 2006 EU - Thematic strategy on the urban environment** says that *“To monitor and up-date the effectiveness of the Strategy, **accessible urban data is needed**”* and the **EU Parliament** (2006) demands *“**common core indicators** to allow for comparisons and **benchmarking between European cities...**”*

**The 2004-07 Aalborg commitments** engage signatories *“to cooperate with the European Sustainable Cities & Towns Campaign and its networks to **monitor and evaluate progress** towards meeting sustainability targets”.*

**The 2007 EU Leipzig Chart for Sustainable Cities** says that *“**Indicators and Benchmarking** should become a relevant tool to drive European, national and local policies”.*



# The themes

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- **Local action for health - Natural common goods.**
- **Responsible consumption and lifestyle choices.**
- **Planning, design-Better mobility, less traffic.**
- **Local to global: Energy and Climate change.**
- **Vibrant, sustainable local economy and Social equity, justice and coesion.**
- **Local Management towards sustainability and Governance.**



# The 25 indicators

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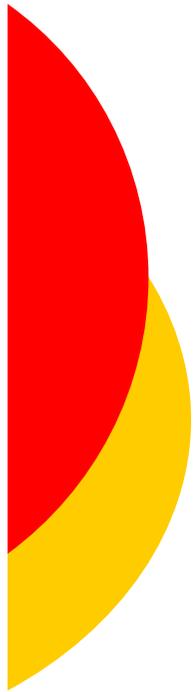
1. Air quality: **PM<sub>10</sub>** concentrations
2. Air quality: **NO<sub>2</sub>** concentrations
3. **Noise** map and noise reduction plan
4. Domestic **water consumption**
5. Inhabitants served by **water treatment** plants
6. **Electric consumption** variation
7. Amount of **municipal waste** produced
8. Municipal waste, **differentiated collection**
9. **Green public procurement**, procedures and purchasing
10. **Passengers** travelling on **public transport**
11. **Underground and tram** lines in the urban area
12. Number of registered **cars**



# The 25 indicators

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13. **Cycle** paths and lanes availability
14. Public **green areas** availability
15. Energy Balance and **CO<sub>2</sub> reduction target**
16. **Solar power** generation in public buildings
17. Inhabitants connected to **district heating** system
18. Climate and **Energy saving policies**
19. Demographic and **old age dependency**
20. **Female employment**
21. Population qualified at **highest level of education**
22. **Env. Certification of** public authorities
23. Level of mplementation of **Agenda 21** processes
24. **Electorate voting** in city elections
25. City **representatives** who are **women**



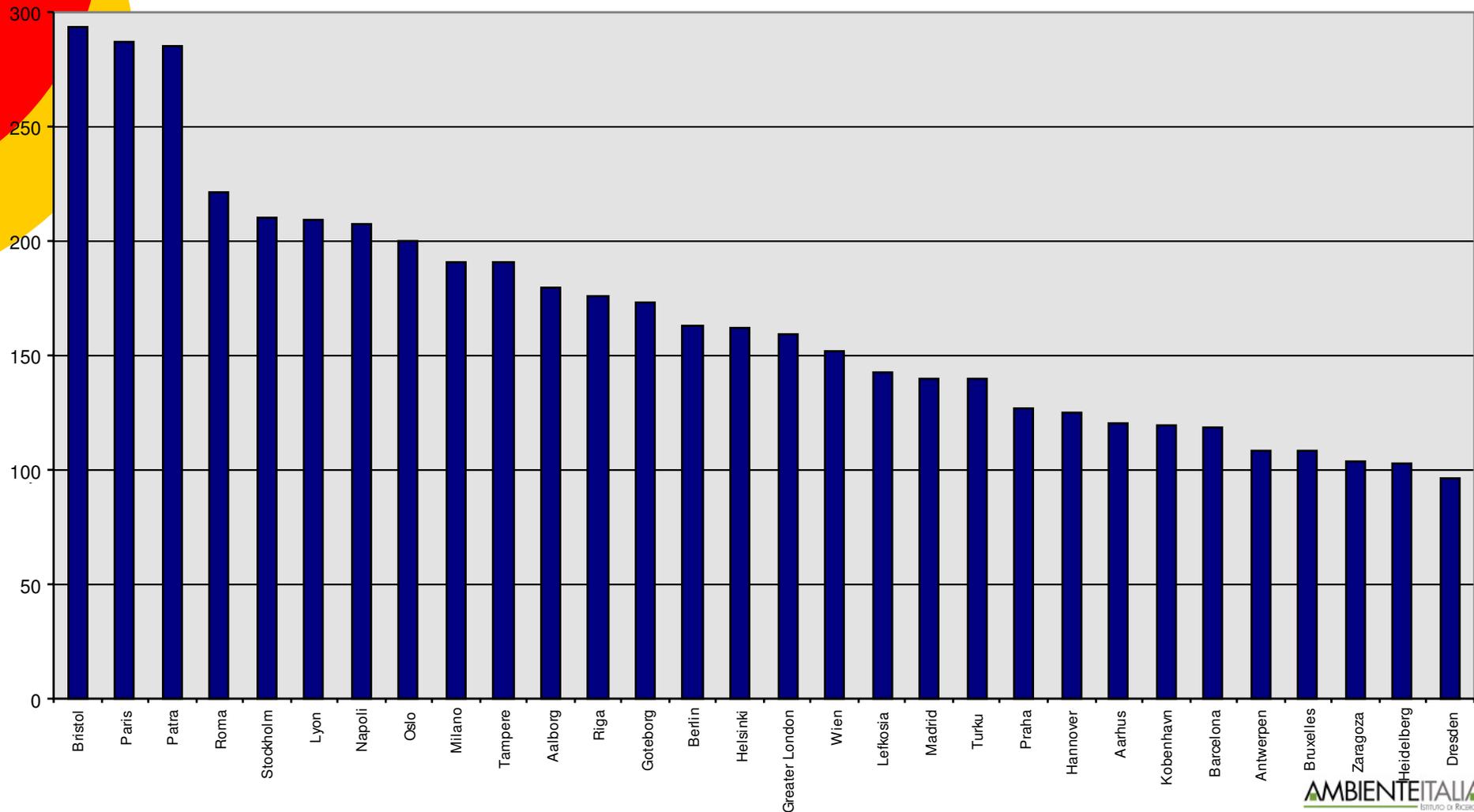
## 32 cities - 16 Countries

Metropol. areas	Big	Medium	Medium small
Berlin G. London G. Lyon Madrid Paris Roma	Barcelona Brussels Milano Napoli Praha Wien Munchen	Antwerpen Kobenh. Dresden Goteborg Helsinki Riga Stockholm <i>Zaragoza</i> Hannover Oslo	Bristol Aarhus Heidelberg Lefkosia Tampere Turku Patra Durres Aalborg

**10 northern; 10 central; 9 southern; 3 eastern**

# Domestic water consumption

Domestic water consumption (l/inh/day)





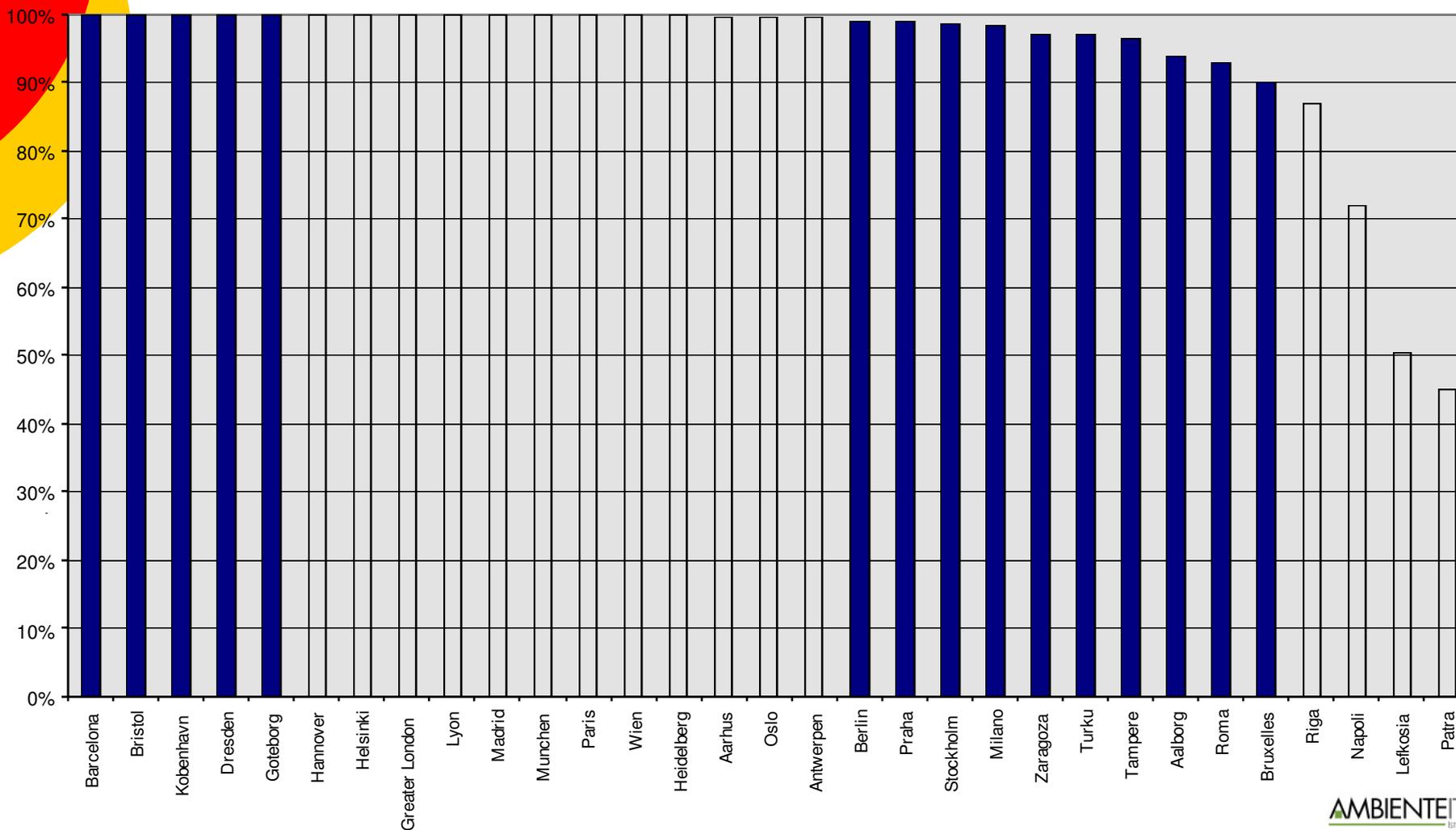
# Domestic water consumption

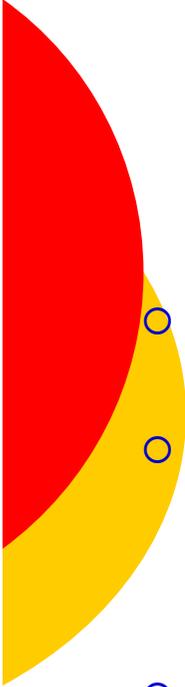
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- The per capita water consumption goes **from 100 litres** inhabitants per day recorded in Dresden, Heidelberg and Zaragoza, **to exceeding 280 litres** in Bristol, Paris and Patra.
- **Most of the cities (77%)** show values ranging **from 120 to 220** litres/inhabitant/day.
- Central Europe cities show average values (123, l/inh daily) which are lower than the northern ones (167, l/inh daily) and the southern ones (168, l/inh daily).
- The size factor seems not to be very important, even if smaller cities – on average - tend to record lower consumption (about 145 l/inh daily) than the bigger ones (about 160 l/inh daily).
- High water consumptions increase also energy consumptions due to water collection, pumping, treatment.
- **WHAT ABOUT GOOD POLICIES AND LIFE STYLES BEHIND THESE DATA ?**

# Inhabitants served by wastewater treatment plants

Inhabitants connected to a wastewater treatment plant (%)





# Inhabitants served by wastewater treatment plants

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- **Almost all the 31 cities inhabitants are connected to a wastewater treatment plant.**
- More than a half of the cities (17) have all the population connected and 7 more cities exceed 95%. The **three cities with lowest values are all from the south**: Napoli (72%), Lefkosia (50%) and Patra (45%).
- The treatment plants efficiency differentiate a lot depending on the treatment to which the sewage is subject: only plants with tertiary treatment provide a reduction in the load of nutrients, such as phosphorous and nitrogen, which contribute to the eutrophication of waters.
- Among the cities with more than 95% of population connected, **only 20 use exclusively or prevalingly tertiary** treatment plants and 6 use secondary treatment plants.
- **The re-use of treated water is not widespread yet**: only Milano (37%), Aalborg (1%), Madrid (1%) and Antwerpen use the waters coming out of treatment plants for agricultural or industrial purposes or to wash the streets.



# Is a sustainable city achievable?

## It could be if...

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- The **air quality standards are respected** as in Goteborg (and Helsinki).
- **Water consumptions are 100** liters/inhab, as in Dresden, Zaragoza and Heidelberg and **100% of inhabitants is served by water treatment** (as most european cities, but not all).
- **Waste production is under 334kg/inhab/year** as in Dresden or, at least, **not differentiated waste are under 250kg/inhabitants/year** as in Munchen and Antwerpen, thanks to **separate collection up to 62%** as in Aalborg or **up to 50%** as in Hannover and Helsinki.



# Is achievable a sustainable city?

## It could be if...

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- **Public procurements are extensively green** as in Kobenhavn and **electric consumptions** in the last 5 years **have been reduced**, as in Oslo (-26%).
- The **public transport is widely used** as in Prague, Stockholm and Wien (**58, 47 and 45% of home to work trips**) and **citizens are satisfied of its quality** as in Wien, Munchen and Berlin.
- **Car is used less than other means**, as in Barcelona and Madrid (**35% of the total home to work trips**) and **its ownership is a “past life style”** as in Kobenhavn and Riga (**20 cars/100 inhab.**) or as in Berlin, London, and Paris (30).

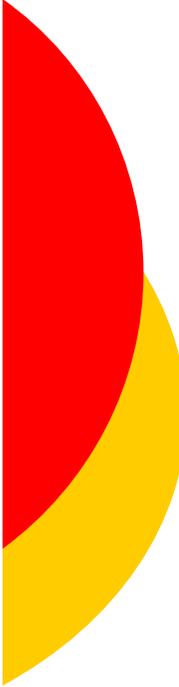


# Is achievable a sustainable city?

## It could be if...

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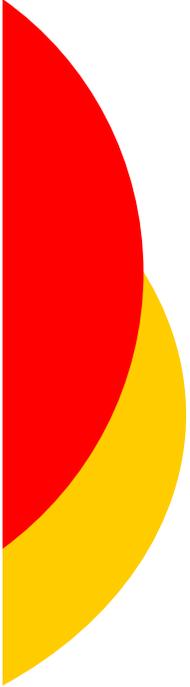
- **Bicycle** is the mean of transport **of the future** as in Kobenhavn (**29%**) also thanks to **a wide bike network** as in Helsinki (**1.500 km**), in Stockholm and in Hannover (about **750 km**).
- Citizens have **more then 200 sqm each of green areas** (of which more then **40 sqm/inhab of urban parks**), as in Oslo and in Goteborg.
- A large number of **public buildings use solar panels** to produce hot water or electricity as in Wien, Munchen and Barcelona and **have been audited and retrofitted to improve their energy efficiency** as the 80% of them in Helsinki



# Is achievable a sustainable city? It could be if...

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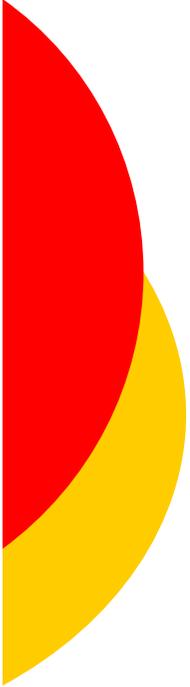
- **More than 93% of the population is served by district heating** as in Helsinki and in Kobenhavn and more than **25% of municipality's energy consumptions is "green"** as in Oslo and Heidelberg.
- **Integrated environmental management schemes (ISO or EMAS) have been applied** to improve the efficiency of the public administrations as in Kobenhavn, Bristol and Oslo and **Agenda 21 participated processes have been well developed** as in Aalborg, Hannover, Munchen and Stockholm.



# Is achievable a sustainable city? It could be if...

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- **Women role is promoted (> 70% activity rate in the labour market) as in all nordic and german cities and is recognised (>50% of elected representatives in the municipality) as in Stockholm.**
- The **city environment is friendly for children and attractive for young people**, as in Kobenhavn, Munchen, Berlin, and citizens have **very high educational level** as in Dresden, Praha and the other german cities.
- **Citizens participate to local election (>80%)** as in Riga and in all the Danish, Belgian and Italian cities.



# Urban Ecosystem Europe

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**Welcome to new participating cities, other endorsers and sponsors, to ensure the periodical maintenance of the reporting mechanism!**

***Thanks !***

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