

The European Green City Index Results

James Watson
Managing Editor
Economist Intelligence Unit



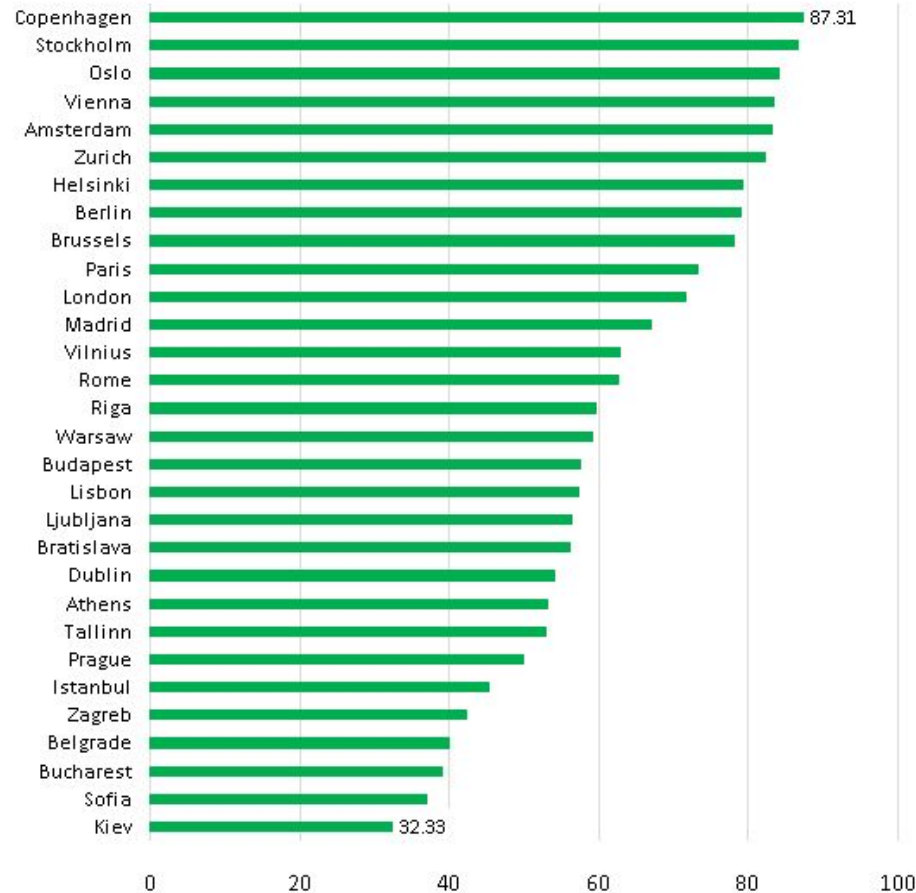
European Green City Index

Assessing the environmental impact of Europe's major cities

A research project conducted by the Economist Intelligence Unit, sponsored by Siemens

The European Green City Index

- Compares 30 major European cities in terms of their environmental performance and policies—giving a specific score to each.
- Allows key stakeholders to compare how their city performs in comparison with their peers.
- Scores cities across eight categories—CO2 emissions, energy, buildings, transport, water, waste and land use, air, and environmental governance.
- Is based on 30 individual indicators, including 16 quantitative measures and 14 qualitative ones.



The cities

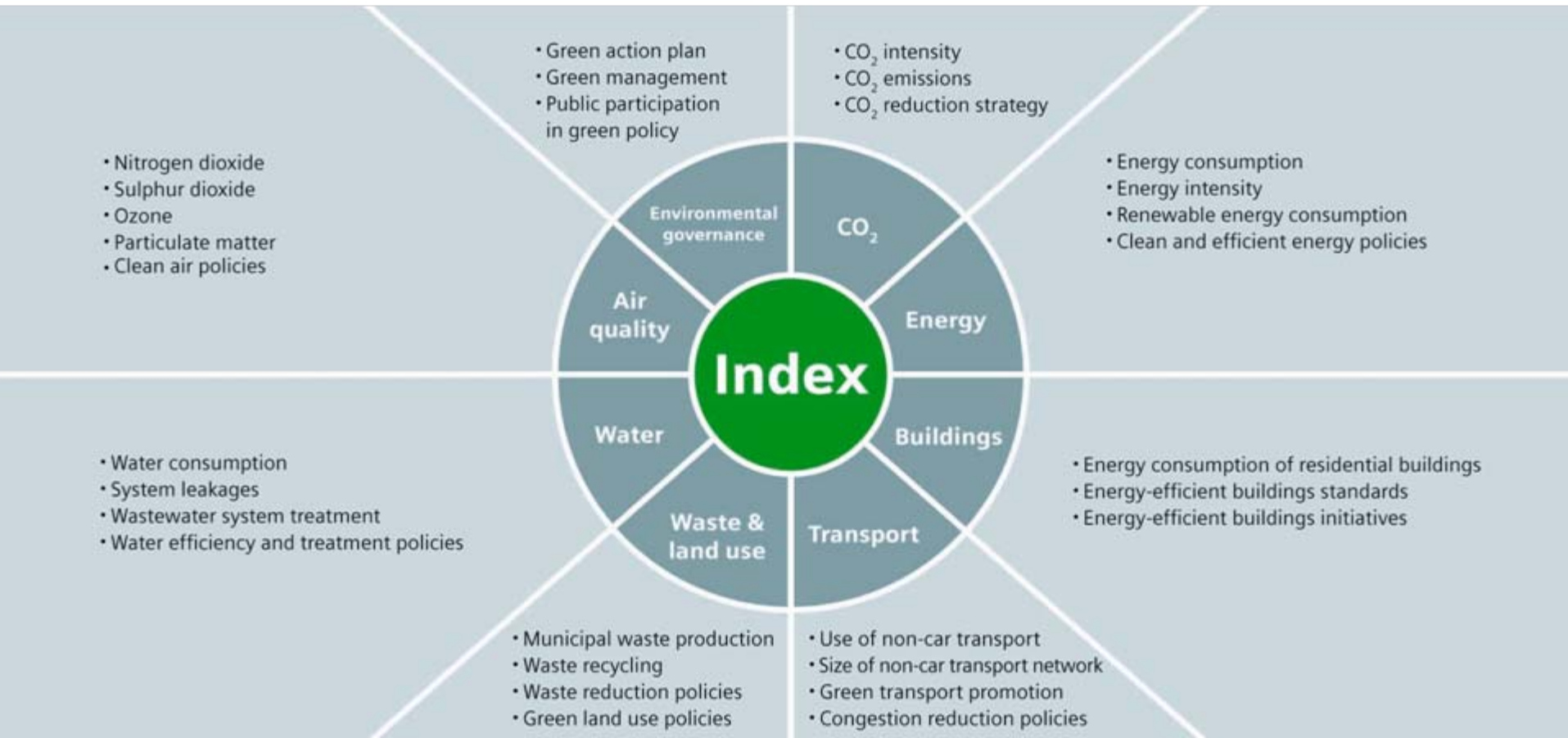
The European Green City Index measures and rates the environmental performance of 30 leading European cities from 30 European countries. It takes into account 30 individual indicators per city, touching on a wide range of environmental areas, from environmental governance and water consumption to waste management and greenhouse gas emissions.



A unique index

- Provides a complete set of 30 comparable indicators for all cities, with aggregated scores for each
- Based on transparent methodology

- Covers all main official or business capitals, rather than only on an opt-in basis
- Independently researched by Economist Intelligence Unit, with input from numerous sustainability experts



Key findings

Europe's cities: by no means average

- Nearly all cities have lower CO₂ emissions per head than the overall EU27 average of 8.46 tonnes. The 30-city average is also well below the average, at 5.21 tonnes.
- 23 out of 30 cities have a CO₂ reduction target of some kind, separate from any national target.
- Of these, 15 have a concrete, city-specific action plan in place to support this.
- The average CO₂ reduction target to 2020, across the 30 cities, is about 15%.
- Nearly all cities have signed up to participate in the Covenant of Mayors, an encouraging indication of the direction of travel. Cities have become a key part of the front-line of the battle against climate change

Europe's cities: by no means average

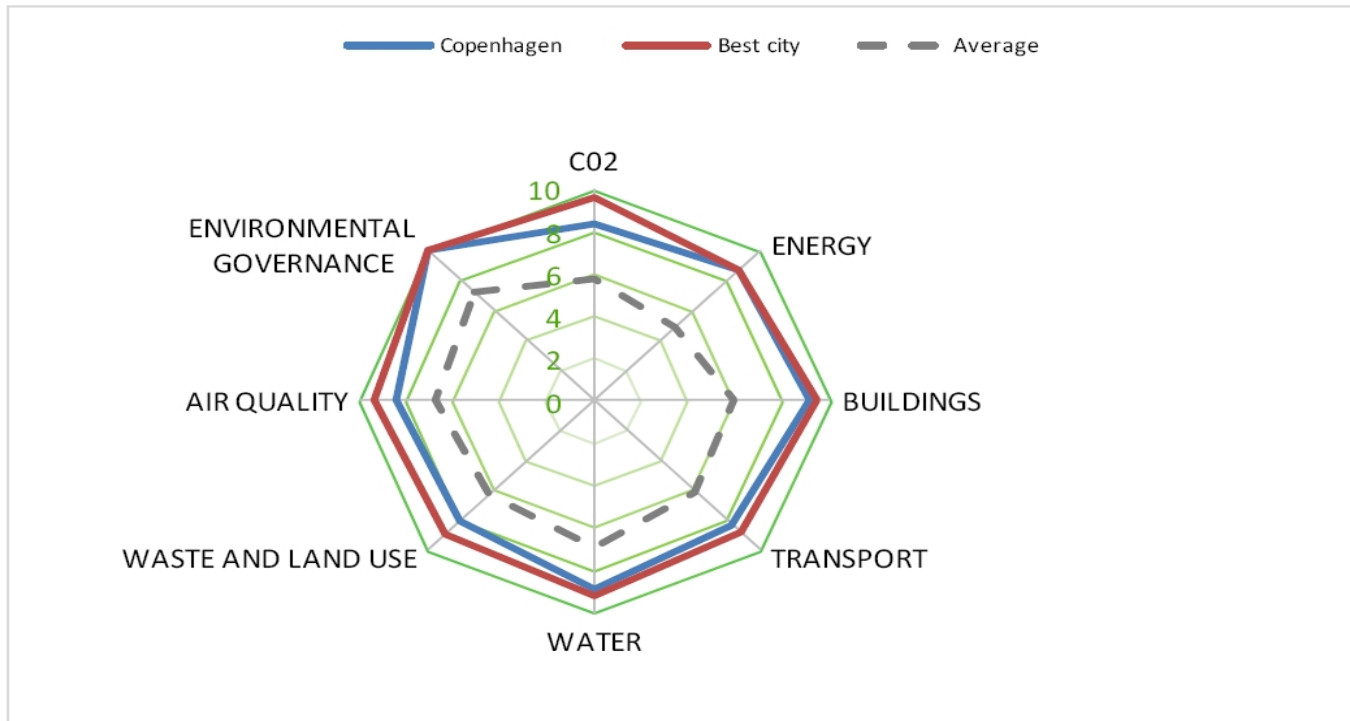
- More than half of all citizens in these cities (62.5%) either walk, cycle or take public transport to commute to work.
- Two thirds of all cities actively promote public awareness around green modes of transport.
- The average municipal waste per head generated each year across these cities is 511 kg, slightly better than the EU average of 522 kg. By contrast, the US average is 760 kg and Australia is 690 kg.
- 24 cities have implemented measures to reduce the amount of waste they produce.
- The average water consumption per head is 105 cubic metres.

But still work to be done

- An average of slightly more than one in three residents drive to work across these 30 cities, contributing to increased CO₂ emissions and general air pollution.
- The average proportion of renewable energy consumed is just 7.3%, a long way short of the EU's stated goal of increasing the share of renewable energy usage to 20% by 2020.
- Just 14 of the 30 cities actively promote green energy usage through low or no taxes, subsidies or regulations.
- Nearly one in four litres of water consumed by cities is lost through leakage.
- Less than one fifth of overall waste is currently recycled.

Lessons from the leaders

Ahead of the pack



- Nordic countries do best overall. Copenhagen is the overall leader, followed by Stockholm (2), Oslo (3), Vienna (4) and Amsterdam (5)
- Copenhagen leads as a strong all-rounder, but other cities excel in individual categories

Focus on Copenhagen

- **Copenhagen** leads through its all-round performance across all 8 categories (in the top 10 across all, and joint first on environmental governance).
 - 1970s oil crisis spurred development of district heating system and use of renewable energies.
 - The city's climate change plan sets ambitious targets for improvement, including its ambitious long-term goal of becoming carbon-neutral by 2025. Emissions were already cut by 20% from 1990 levels (by 2005).
 - At a national level, Denmark is a leader in wind energy, with plans to raise the share of renewable energies to 30% of total consumption by 2025. Copenhagen is reducing its reliance on coal in power stations and switching to biofuels.
 - Copenhagen's residential buildings energy consumption was the lowest in the index, with strong standards in place.
 - The city is aiming to become the "world's best cycle city", with a target of 50% of commuters using cycling by 2015.
 - Relatively high levels of water consumption, but performs extremely well on leakages and waste water treatment.
 - The municipality benchmarks the city's performance on a range of issues, from energy and water use to waste production.

Leading cities: standout statistics

- **Oslo** leads the *CO₂ emissions* and *Energy* categories. The city emits just 2.19 tonnes of CO₂ per inhabitant (less than half the average is 5.21 tonnes) and consumes just 0.87 MJ of energy per euro of GDP (average is 5.25 MJ).
 - Nearly two-thirds of city's energy consumption sourced from hydroelectric power-derived electricity. The city still aims to reduce emissions by 50% from 1990 levels by 2030 (or 37.5% down from today's levels).
 - Between 2000 and 2006, use of district heating rose by 36.2%. By 2015, this network will be doubled, based on renewable sources of energy.
 - The city's energy efficiency fund has helped reduce the use of electricity by 1 million mw over past 20 years

Leading cities: standout statistics

- **Berlin & Stockholm** jointly lead the *Buildings* category. Berlin's residential buildings use just 556.9 MJ of energy per square metre (the index average is about 909 MJ). Stockholm receives perfect scores for its energy efficient building standards and incentives.
 - Berlin has fully refurbished two-thirds of East Berlin's 273,000 apartments, and partly upgraded other 35%. Focus on saving heat energy (insulation, air tight windows, renovation of heating systems)—which reduce CO₂ emissions by 1 to 1.4 tonnes per flat.
 - Stockholm at forefront of energy efficient building standards. Has experience of building homes with total annual energy consumption below 2,000 kwh (by contrast, the UK's latest standard = 3,600 kwh).
 - Stockholm's Hammarby Sjostad district provides a high-profile case study in sustainable urban development, with buildings about twice as energy efficient as others in the city.

Leading cities: standout statistics

- **Stockholm** leads the *Transport* category. 68% of the city's workers commute via foot or bicycle, the greenest forms of transport (and more than three times the index average of about 21%). A further 25% use public transport.
 - For every square kilometre of area, Stockholm has over four kilometres of cycle lanes, the second best in the index overall. It's also helped by being a physically small city.
 - Stockholm has one of the world's largest fleets of ethanol-fuelled buses. The city aims to have half of its buses running on renewable fuels by 2011, and all of them by 2025.
- **Brussels, Copenhagen, Helsinki** and **Stockholm** all lead in the *Environmental governance* category, with perfect scores for their green action plans, management and public participation in green policy.
 - Stockholm is on its sixth consecutive environmental programme (2008-11), with 6 priority areas.
 - Helsinki's 2002-10 Sustainable Strategy and Action plan was one of the first completed in Europe, while annual environmental performance reports are presented to the city council.
 - Brussels has a "sustainable neighbourhood" programme, where residents form groups and identify projects, the best of which are then supported with technical expertise and subsidised.

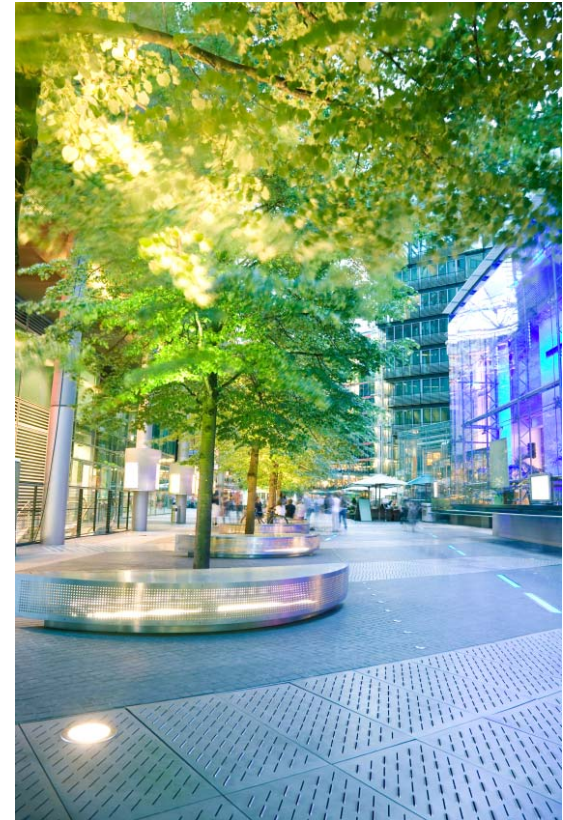
Leading cities: standout statistics

- **Amsterdam** leads the *Water* and *Waste and land use* categories. It recycles about 43% of its municipal waste, more than double the average of about 18%. Waste sorting is the norm, with recycling collection points are located on nearly all street corners.
 - More important is the city's use of waste: a new waste-to-energy plant powers more than three-quarters of Amsterdam's households. Only 1% of 1.4 million tonnes of waste entering the system goes to landfill.
 - Amsterdam consumes just 53.5 cubic metres of water per capita per year, about half the index average. Over half of all households have a water meter in place.
 - Crucially, it's leakage rate is just 3.5%, the best overall and far below the index average of about 23%.
- **Vilnius** leads the *Air quality* category, with most of its greenhouse gas emissions at about half the level of the index averages.
 - The city has low levels of nitrogen dioxide, sulphur dioxide and particulate matter, helped by a lack of heavy industry, its small size and the presence of large areas of forest nearby.
 - It has 20 square metres of green space per resident, with a goal of increasing this to 24 square metres.

City trends

Examples from the West

- West European cities dominate the top half of the index, due in part to their longer history of environmental awareness
- Western cities also have the advantage in terms of the financial resources they can devote to green efforts
- Citizens are by and large kept fairly well-informed about environmental matters, and are very involved on a civic level



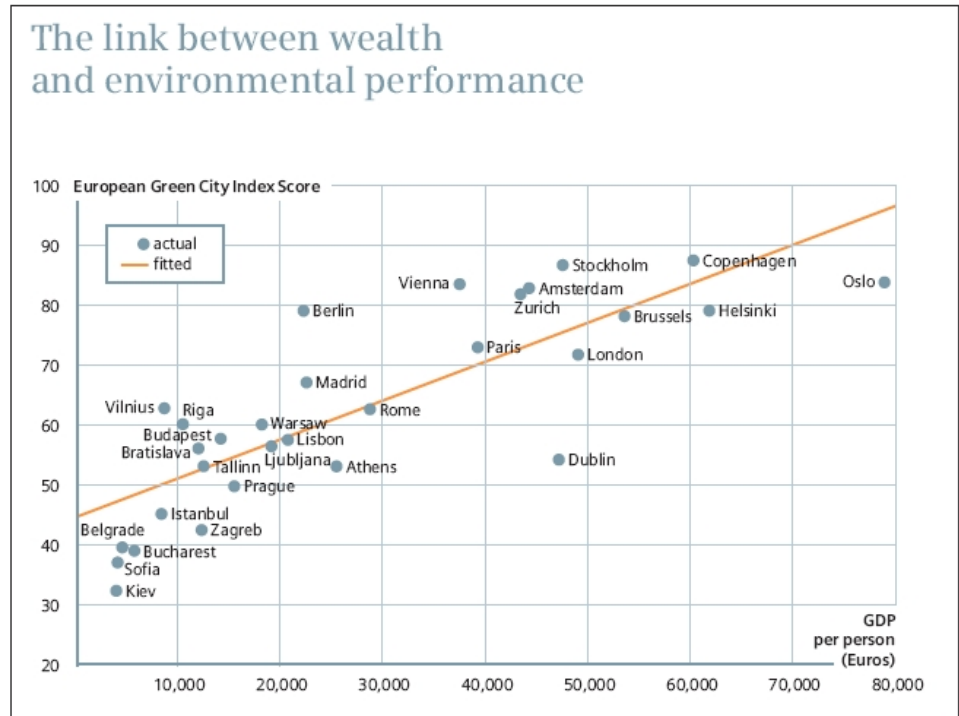
Promise from the East

- All east European cities have incomes of less than €21,000 per head, putting them at the bottom half of the index in terms of wealth
- East European cities face challenges of historical legacy, from poorly insulated mass housing to highly polluting heavy industry
- Citizens, understandably, also have significant pent-up aspirations, some of which cause conflict with green goals



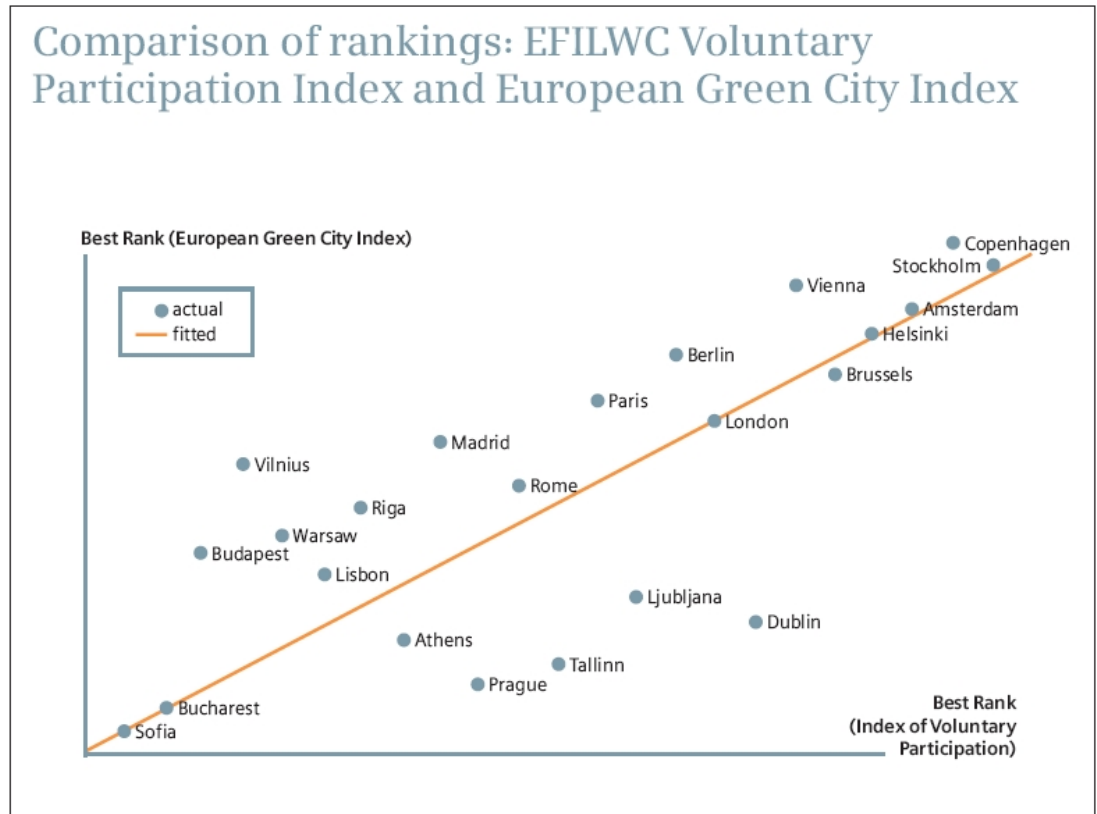
Big spenders

- Index shows a strong positive correlation between wealth and environmental performance
- Nine of the top 10 cities in index are “wealthy” (ie, have GDP per head above €31,000)
- There are some worthy exceptions though: middle-income Berlin still manages to come joint first in the buildings category



Civic duties make for greener cities

- Cities with an active civil society perform well in the index
- A comparison with other studies shows a strong correlation between voluntary civil participation and environmental performance
- Prior studies have confirmed this point (eg, installing insulation in old homes in London)



Thank you