Sustainable Cities

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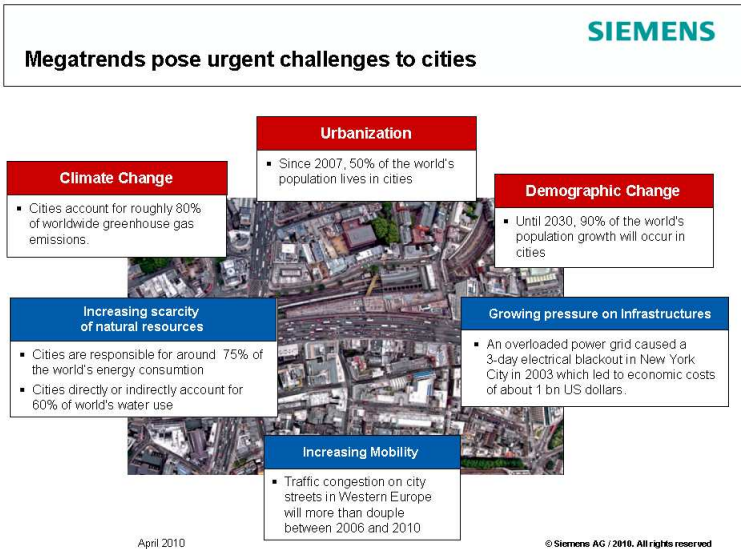

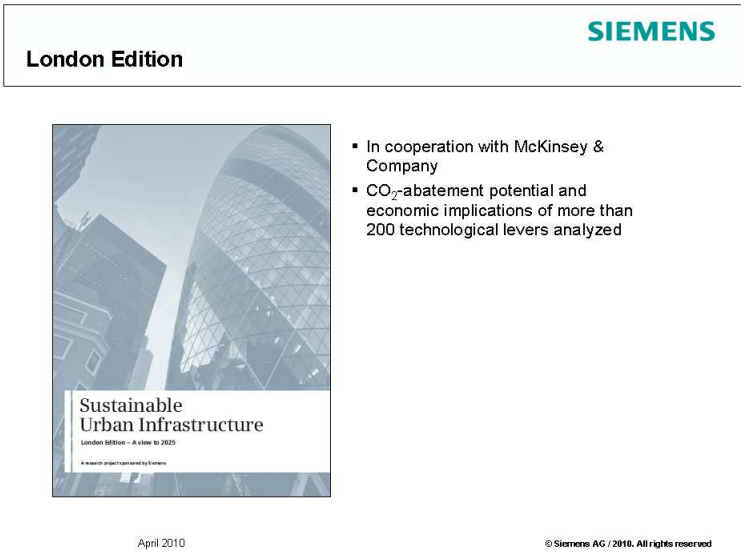

In London, international targets for greenhouse gas reduction are achievable through technological levers

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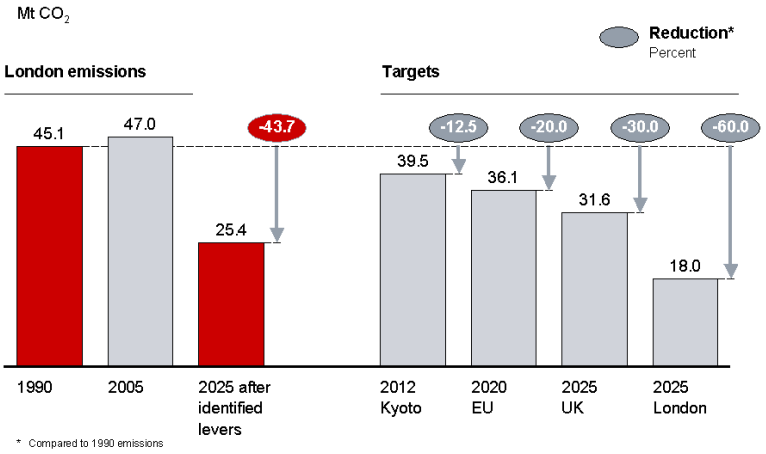

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The biggest contribution to London's abatement potential comes from buildings

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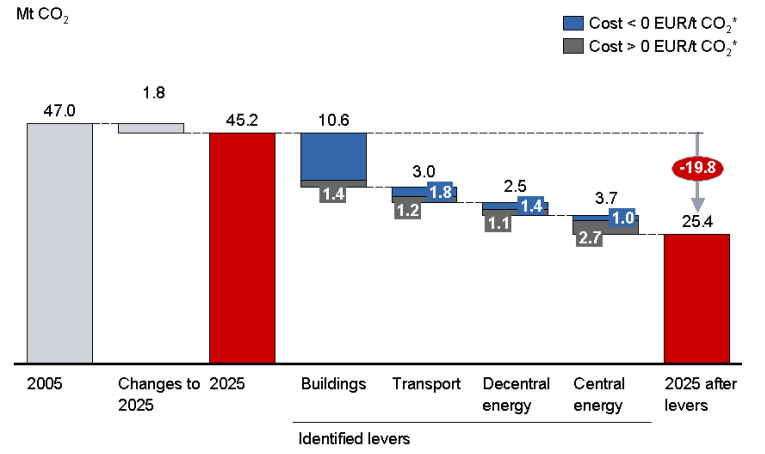

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The majority of technologies pay back the required up-front investment through energy savings

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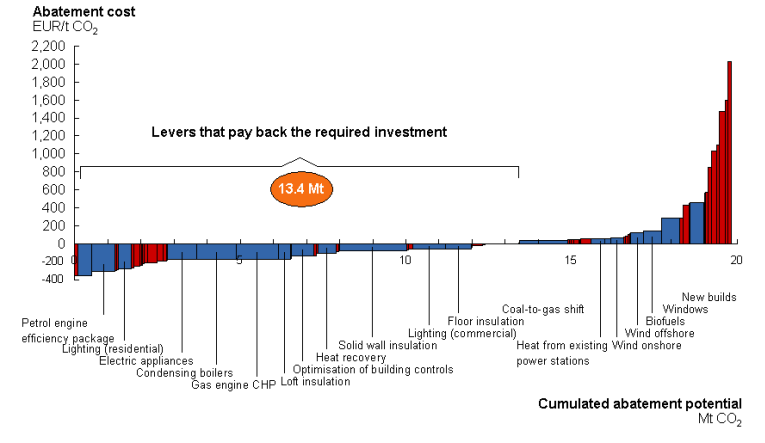
Greenhouse gas abatement cost curve for London 2025 (decision maker perspective)



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Around 75% of abatement potential lies in the hands of individuals or businesses who make technological choices

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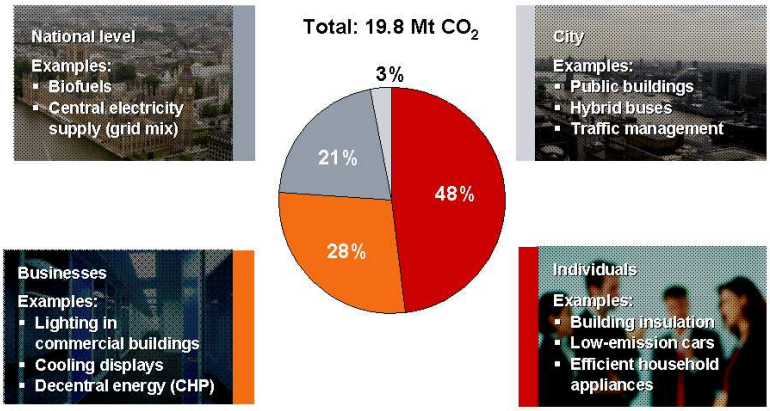

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The total investment required constitutes less than 1% of London's GVA

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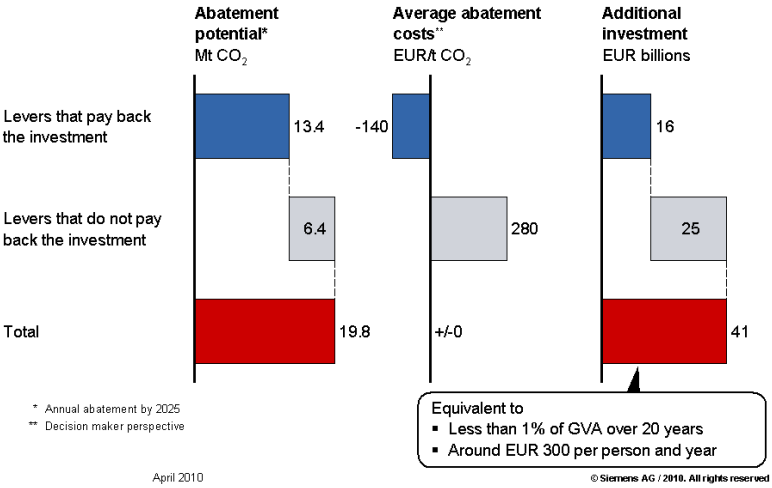

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European Green City Index

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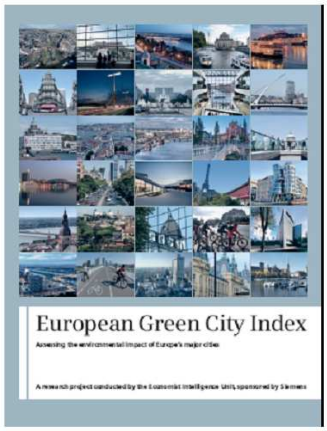

- In cooperation with Economist Intelligence Unit
- Assessing the environmental impact of Europe's major cities
- Published Dec 2009

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The European Green City Index assesses 30 major European cities from 30 European countries

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- Amsterdam, Netherlands
- Athens, Greece
- Belgrade, Serbia
- Berlin, Germany
- Bratislava, Slovakia
- Brussels, Belgium
- Bucharest, Romania
- Budapest, Hungary
- Copenhagen, Denmark
- Dublin, Ireland
- Helsinki, Finland
- Istanbul, Turkey
- Kiev, Ukraine
- Lisbon, Portugal
- Ljubljana, Slovenia
- London, UK
- Madrid, Spain
- Oslo, Norway
- Paris, France
- Prague, Czech Republic
- Riga, Latvia
- Rome, Italy
- Sofia, Bulgaria
- Stockholm, Sweden
- Tallinn, Estonia
- Vienna, Austria
- Vilnius, Lithuania
- Warsaw, Poland
- Zagreb, Croatia
- Zurich, Switzerland

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16 quantitative and 14 qualitative indicators in 8 categories were assessed

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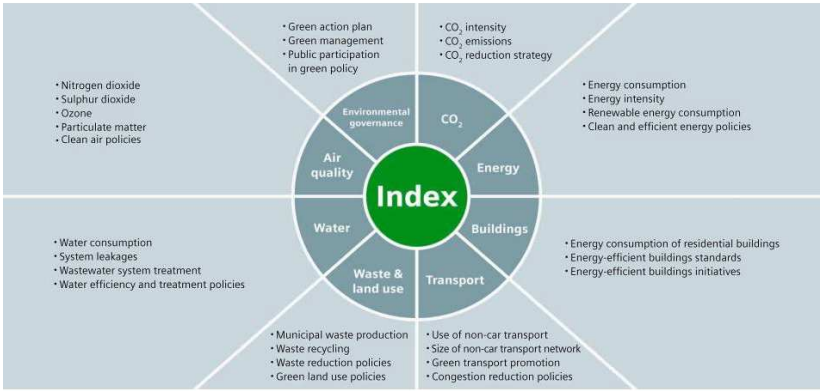

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Overall ranking: Scandinavian countries score best, Copenhagen comes in first overall

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Overall

	City	Score
1	Copenhagen	87,31
2	Stockholm	86,65
3	Oslo	83,98
4	Vienna	83,34
5	Amsterdam	83,03
6	Zurich	82,31
7	Helsinki	79,29
8	Berlin	79,01
9	Brussels	78,01
10	Paris	73,21
11	London	71,56
12	Madrid	67,08
13	Vilnius	62,77
14	Rome	62,58
15	Riga	59,57
16	Warsaw	59,04
17	Budapest	57,55
18	Lisbon	57,25
19	Ljubljana	56,39
20	Bratislava	56,09
21	Dublin	53,98
22	Athens	53,09
23	Tallinn	52,98
24	Prague	49,78
25	Istanbul	45,20
26	Zagreb	42,36
27	Belgrade	40,03
28	Bucharest	39,14
29	Sofia	36,85
30	Kiev	32,33

CO_2

	City	Score
1	Oslo	9,58
2	Stockholm	8,99
3	Zurich	8,48
4	Copenhagen	8,35
5	Brussels	8,32
6	Paris	7,81
7	Rome	7,57
8	Vienna	7,53
9	Madrid	7,51
10	London	7,34

Energy

	City	Score
1	Oslo	8,71
2	Copenhagen	8,69
3	Vienna	7,76
4	Stockholm	7,61
5	Amsterdam	7,08
6	Zurich	6,92
7	Rome	6,40
8	Brussels	6,19
9	Lisbon	5,77
10	London	5,64

Buildings

	City	Score
=1	Berlin	9,44
=1	Stockholm	9,44
3	Oslo	9,22
4	Copenhagen	9,17
5	Helsinki	9,11
6	Amsterdam	9,01
7	Paris	8,96
8	Vienna	8,62
9	Zurich	8,43
10	London	7,96

Transport

	City	Score
1	Stockholm	8,81
2	Amsterdam	8,44
3	Copenhagen	8,29
4	Vienna	8,00
5	Oslo	7,92
6	Zurich	7,83
7	Brussels	7,49
8	Bratislava	7,16
9	Helsinki	7,08
=10	Budapest	6,64
=10	Tallinn	6,64

Water

	City	Score
1	Amsterdam	9,21
2	Vienna	9,13
3	Berlin	9,12
4	Brussels	9,05
=5	Copenhagen	8,88
=5	Zurich	8,88
7	Madrid	8,59
8	London	8,58
9	Paris	8,55
10	Prague	8,39

Waste and land use

	City	Score
1	Amsterdam	8,98
2	Zurich	8,82
3	Helsinki	8,69
4	Berlin	8,63
5	Vienna	8,60
6	Oslo	8,23
7	Copenhagen	8,05
8	Stockholm	7,99
9	Vilnius	7,31
10	Brussels	7,26

Air quality

	City	Score
1	Vilnius	9,37
2	Stockholm	9,35
3	Helsinki	8,84
4	Dublin	8,62
5	Copenhagen	8,43
6	Tallinn	8,30
7	Riga	8,28
8	Berlin	7,86
9	Zurich	7,70
10	Vienna	7,59

Environmental governance

	City	Score
=1	Brussels	10,00
=1	Copenhagen	10,00
=1	Helsinki	10,00
=1	Stockholm	10,00
=5	Oslo	9,67
=5	Warsaw	9,67
=7	Paris	9,44
=7	Vienna	9,44
9	Berlin	9,33
10	Amsterdam	9,11

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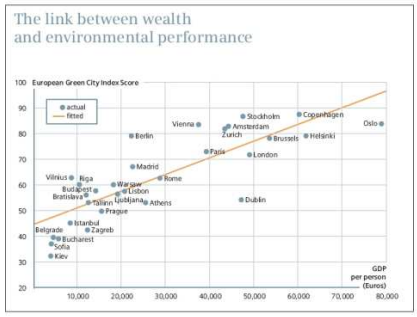
General trend: The wealthier, the better

- Index shows a strong positive correlation between wealth and environmental performance
- Nine of the top 10 cities in index are "wealthy" (above average GDP)
- Some worthy exceptions:
  Berlin ranks 8th overall and 1st for Buildings, despite the 9th lowest GDP;
  Vilnius ranks 13th overall and 1st for Air quality, despite the 6th lowest GDP



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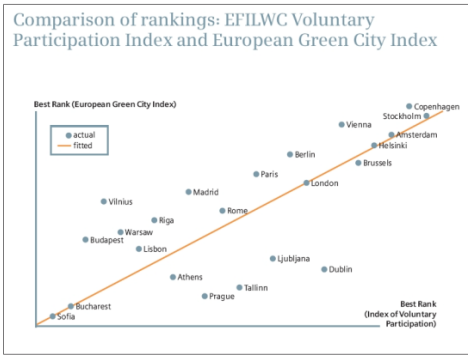
However, an active civil society can have a major positive impact on the environmental performance

- Cities with an active civil society perform well in the index
- Comparison with other studies shows a strong correlation between voluntary civil participation and environmental performance



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A lot has been achieved...

- Nearly all cities have **lower CO_2 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.

- 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.

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... but there's still work to be done.

- 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**.

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Siemens offers cities a broad range of energy efficient and sustainable products and solutions

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Solution:
Energy consumption – Huge potential for energy savings

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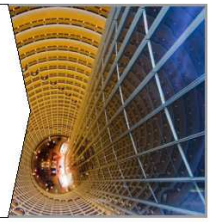
Buildings: Performance contracting models pay for them self

- New intelligent buildings systems help reduce energy costs and CO2 emissions by 20-30%
- The capital expenditure required to optimize the energy consumption is directly financed by the cost savings achieved
- Siemens has equipped a total of 6,500 buildings around the world, realizing guaranteed savings of more than one billion EUR and reducing CO2 emissions by about 2.4 million tons



Transport: New trains use 30% less energy than Oslo's current trains

- Less energy needed by feeding braking energy back into power grid and by using mostly aluminum for the lightweight body design
- Comprehensive disposal concept: 95% of each train can be utilized (85% through recycling, 10% through burning)
- Over their entire lifecycle the trains burden the environment with just 2.6 grams of CO_2 per kilometer traveled and per ton of vehicle weight – a very low value for metros

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CO_2 abatement of our products and solutions
more than 40 times greater than our own GHG footprint

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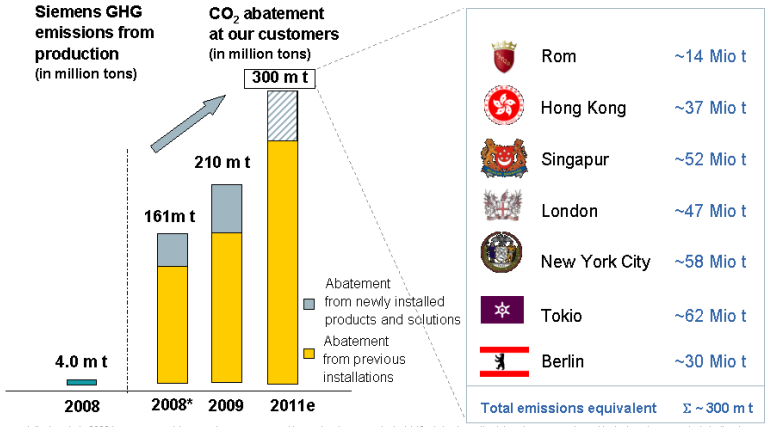

• Adjustments in 2008 to ensure consistency – changes compared to previously communicated 148 mt due to methodology improvements and inclusion of new products in fiscal 2009

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