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Congestion charges and cycling measures, a winning team for urban air quality

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Air Quality – EU context



400 000 premature deaths in Europe each year (WHO)
40 million citizens are exposed to high pollution levels

Air pollution?

Transport: major source of air pollution in cities

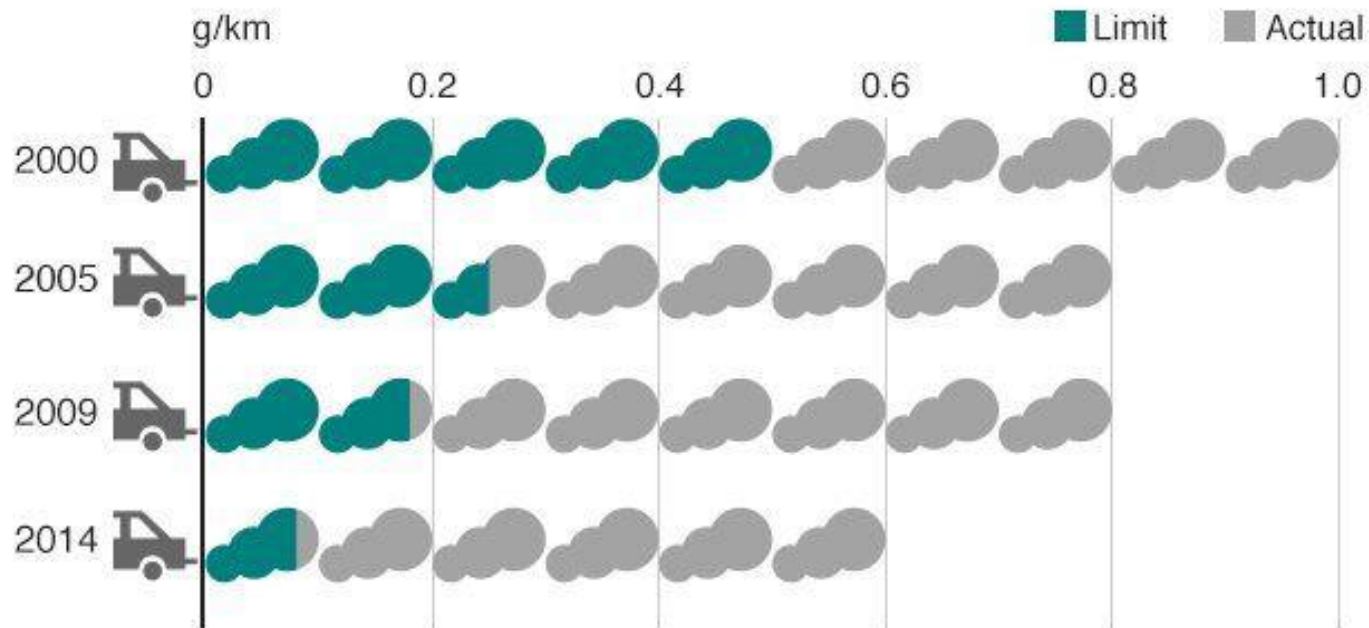
- **40% of NO_x:** damage to lung tissue, reduction lung function
- **64% of NO₂:** poisonous gas, irritation of airways
- **34% of PM₁₀:** particles, increased risk on lung cancer
- PM_{2,5} – CO – SO₂ – Lead – ...



Solution: cleaner cars

- EU National Emission Ceilings
- Standards for car emissions
- Real Driving Emissions

Diesel cars break nitrogen oxide emission limits



Source: ICCT

BBC

www.ect.com

Solution: cleaner cars

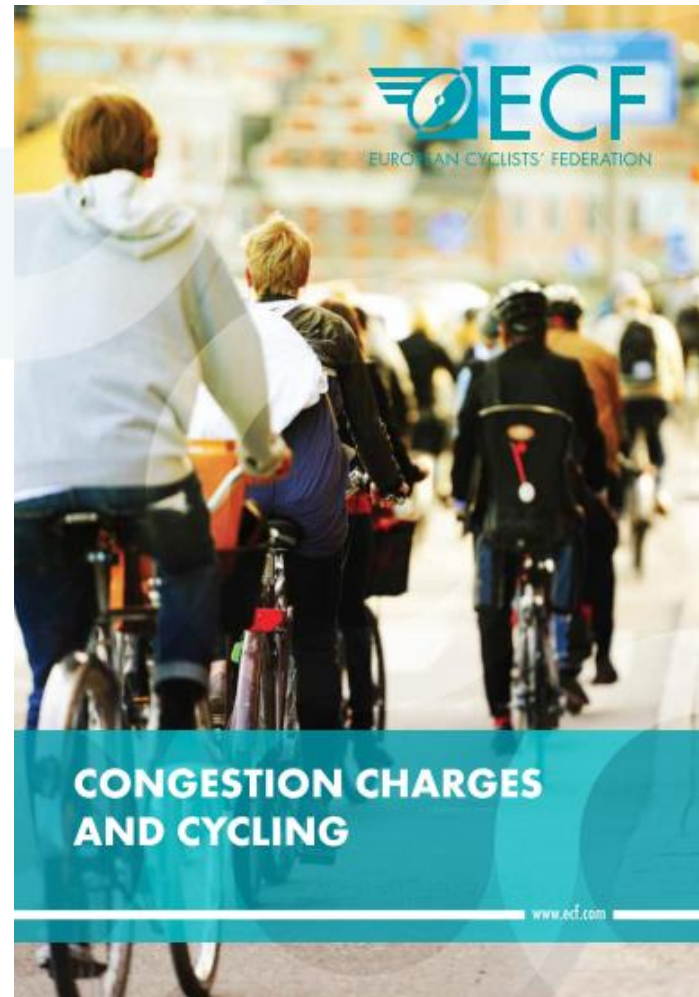
Vehicle emissions
in theory:

- 64% g/km Nox
- in reality...
- 20% g/km Nox

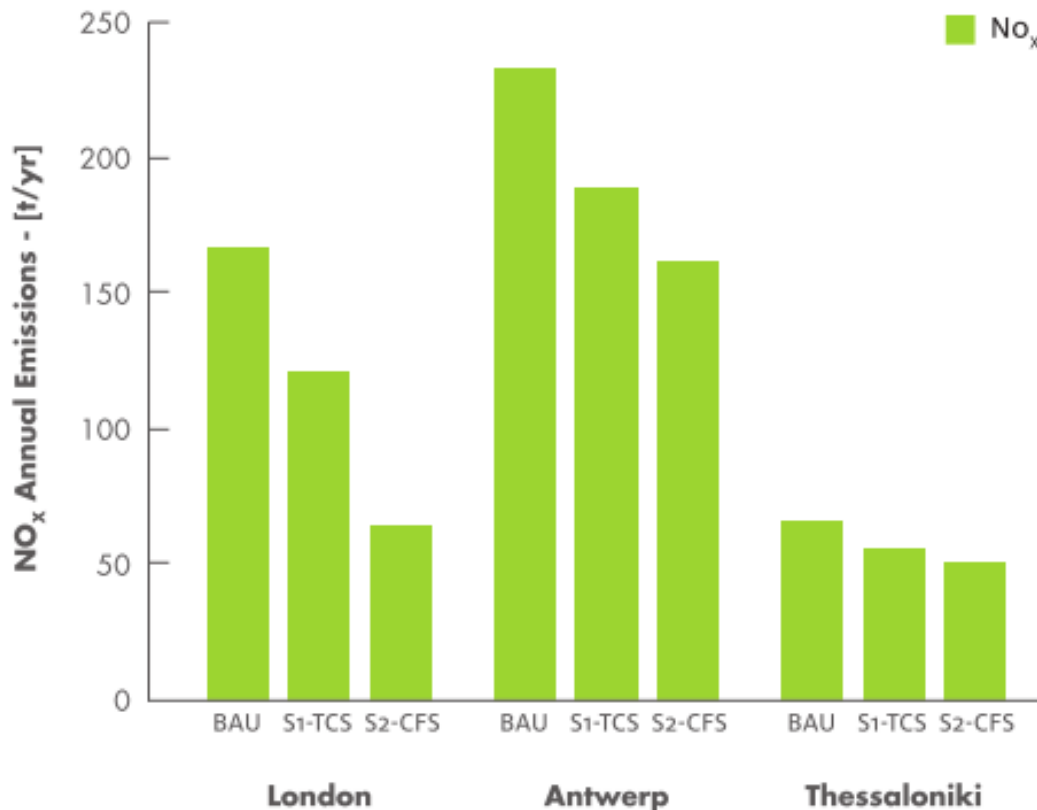


More (diesel) cars
More traffic
More km driven

ECF's idea: cleaner cities, fewer cars



Impacts of cycling on emission reductions



NO_x

(S1) +23% cycling

- London: -27%
- Antwerp: -18%
- Thessaloniki: -16%

(S2) Car-free street

- London: -61%
- Antwerp: -19%
- Thessaloniki: -15%

ECF's idea: cleaner cities (fewer cars)

Cycling measures

- Low-Emission-Zones
 - Parking restrictions
 - Space reallocation
 - Cycling infrastructure
 - Bike Share
 - ...
- Modal shift



Best Practice: Sevilla

- ✓ 40 million € cycling investments
- ✓ Measures:
 - ✓ Separate cycling infra
 - ✓ Restriction private cars
 - ✓ New car-free zones
 - ✓ Promotion active mobility
 - ✓ Improve public transport
- ✓ Cycling modal share
 - 2006: 0.5%
 - 2012: 7%
- ✓ - 33% motorized transport



Best Practice: Sevilla

Good results for EU Limit values in 2012

Air Quality Metric ^a	2006	2012	Limit Value
NO ₂ annual mean – [µg/m ³]	34	24	40 µg/m ³
NO ₂ hourly exceedances – [hours]	3	3	18h >200 µg/m ³
PM ₁₀ annual mean – [µg/m ³]	41	33	40 µg/m ³
PM ₁₀ daily exceedances – [days]	152	40	35d > 50 µg/m ³

NO₂: - 30% in 6 years
PM₁₀: - 20% in 6 years

Future ambitions: goal 2020

reduce more air pollution

with non-technical measures acting on road traffic

Best Practice: Antwerp

- ✓ 60 million € cycling investments
- ✓ Measures:
 - ✓ Regional cycling infra
 - ✓ Road pricing
 - ✓ Parking management
 - ✓ Promotion active mobility
 - ✓ Improve public transport
- ✓ Cycling modal share
 - 2008: 16%
 - 2010: 23%
- ✓ - 20% motorized transport



Best Practice: Antwerp

ANTWERP				
Air Quality Metric ^a	2008*	2010	2012	Limit Value
NO ₂ annual mean – [µg/m ³]	38	36	35	40 µg/m ³
NO ₂ hourly exceedances – [hours]	2	0	6	18h >200 µg/m ³
PM ₁₀ annual mean – [µg/m ³]	23	27	27	40 µg/m ³
PM ₁₀ daily exceedances – [days]	27	25	27	35d > 50 µg/m ³

Future ambitions (2014-2018):

- Low emission zone
- Traffic calming 30km/h
- More measuring stations
- Spatial planning in function of pollution

Best Practice: London & Milan

✓ Congestion charges invested in cycling

✓ London:

✓ Cycling infra

✓ 66% increase in cycling

✓ -12% of NO_x and PM₁₀
(2002 to 2003)

✓ Milan

✓ Bike share

✓ 100% more trips
(3.000 trips/day to 6.800 trips/day)

✓ -38% of PM (2010 to 2014)



Conclusion

ECF calls for a dramatic transformation of the transport system for cleaner air

- Large scale cycling investments
- Large car-free areas
- Congestion charges invested in cycling
- Cycling ensures access to vibrant city



Thank you for your attention !

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