

**The Life – Project PARFUM
for better air quality in Europe**

***Particulates, Freight and Heavy Duty Vehicles in
Urban Environments***

Michael Glotz Richter

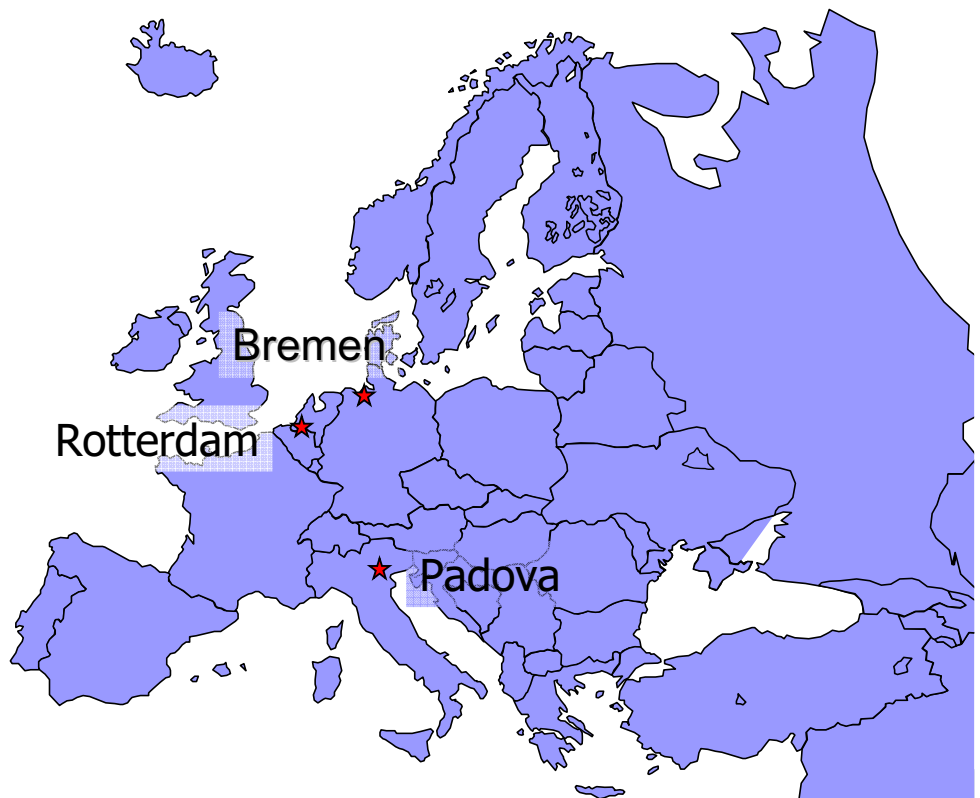
Free Hanseatic City of Bremen
Senator for Environment, Construction, Transport and European Affairs
Parfum Project Cordination



Funded under the EU-Life Programme



Project Partners



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Why PARFUM ?

The starting point...

Air Quality Problems



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In 1996,
the European
Council
adopted
[Framework Directive
96/62 EC](#)
on ambient air quality
assessment
and management

31996L0062

Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management
Official Journal L 296 , 21/11/1996 P. 0055 - 0063

[MORE INFO](#) [TEXT](#)

COUNCIL DIRECTIVE 96/62/EC of 27 September 1996 on ambient air quality assessment and management

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community,

in particular Article 130s (1) thereof;

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Acting in accordance with Article 189 of the Treaty,

Has adopted this Directive:

Article 7:
Actionplans ...in case of exceeding the values...
if necessary...restrict activities which cause air
quality problems -including transport

Member States shall take measures to existing recommendations to existing

Member States shall, as a whole and human health, recommendations should be avoided, prevented or reduced

Member States shall take into account the specific formation mechanisms of

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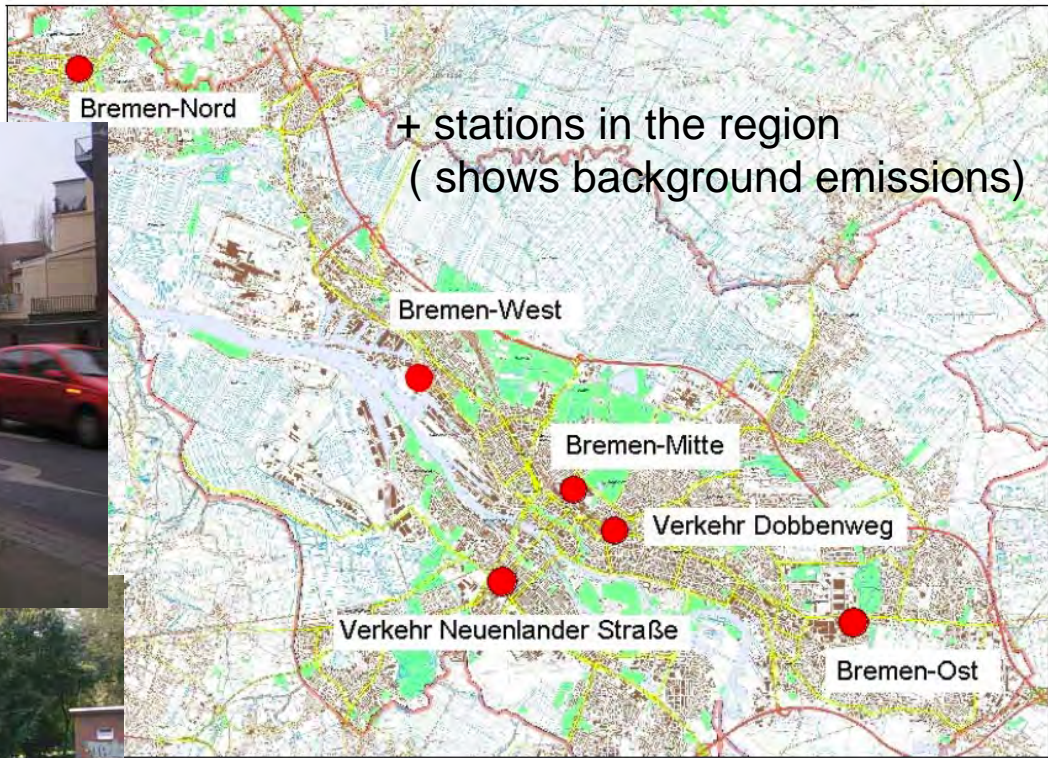
„Particulates
can kill..“



Feinstaub-Kläger Müller (an der Frankfurter Allee in Berlin): „Über zwei Drittel der Staubbelastung u

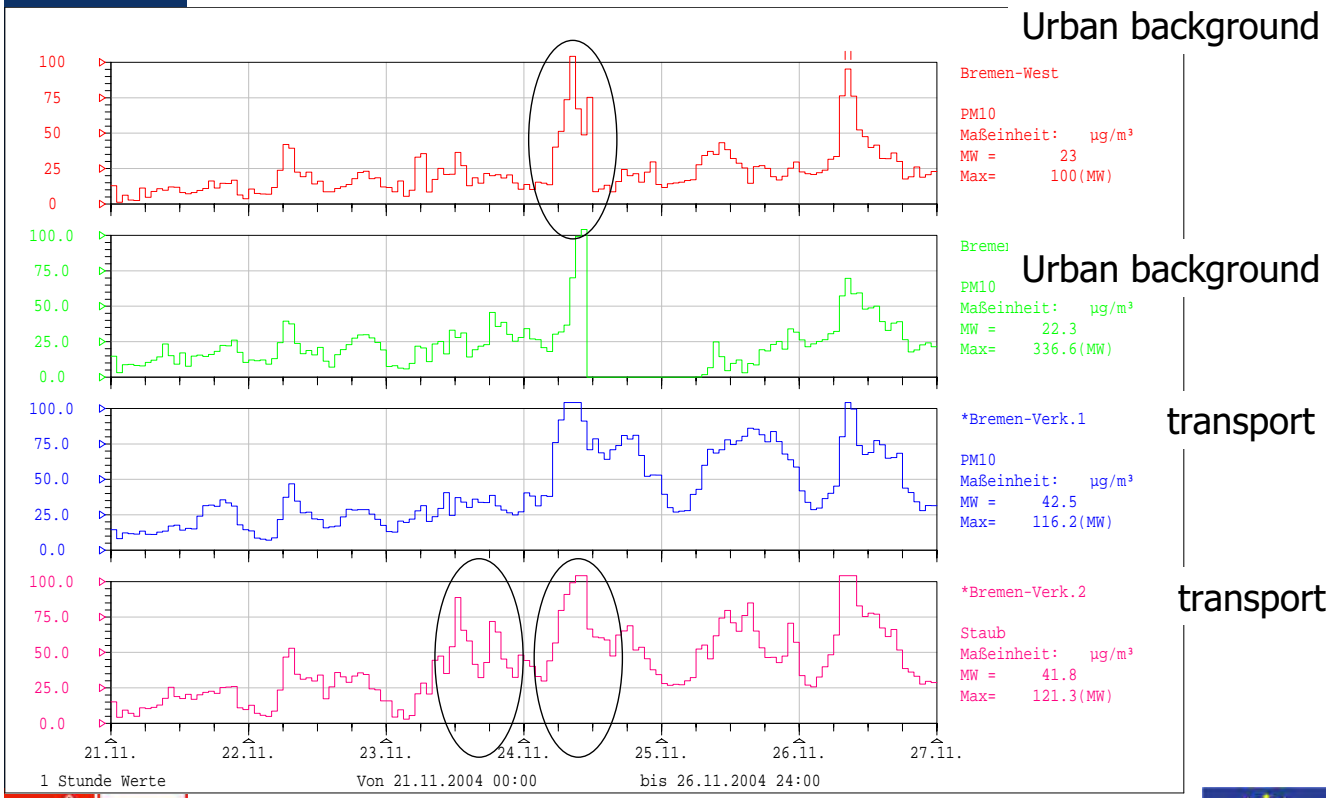


Monitoring



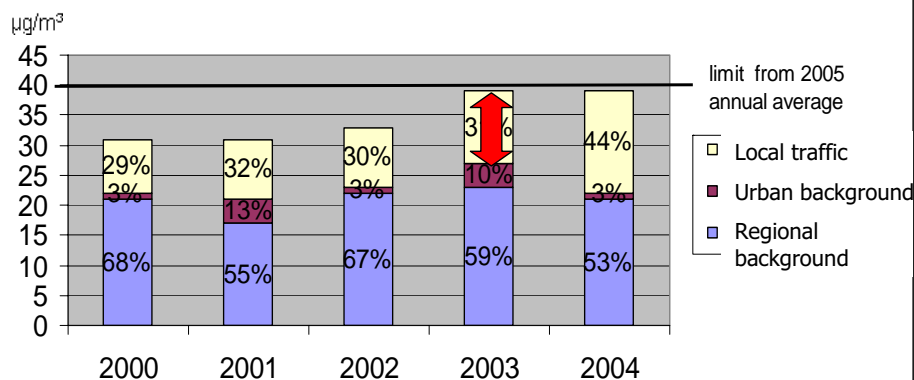
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Air Quality Monitoring



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Sources for PM₁₀ (local traffic / background)



Sources for PM₁₀:

About 30% local transport
(exhaust + particles from wheels, pavement, brakes, etc.)

Stationsname:	Ort	Anzahl der Überschreitungen
Bremerhaven	Hansastraße	2
Bremen - Mitte	Theodor-Heuss-Allee	3
Bremen - Ost *	Osterholzer Heerstraße 32	2
Bremen - West	Ortstraße	5
Bremen - Nord	Aumunder Feldstraße	2
Bremen - Verkehr 1	Dobbenweg 5	21
Bremen - Verkehr 2	Neuenlander Straße / Langemarckstraße	32
Bremen - Verkehr 3	Pappelstraße	19
Luftmesswagen	Osterdeich	15
Bremen - Verkehr 4	Bremerhaven Cherbourger Str.	16

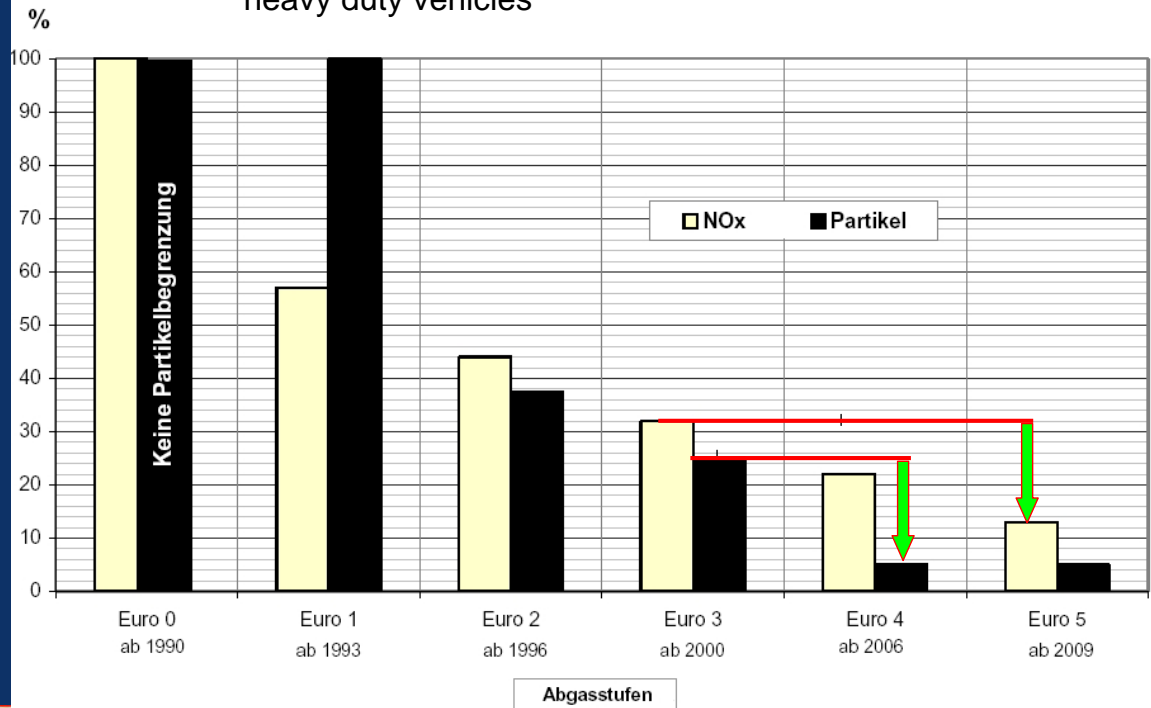
Stand: 30.08.2007

* Umstellung der PM10-Messung ab 01.06.2007 auf PM2,5

Wert der Überschreitungstage für Bremen-Ost gilt nur für PM10 Messungen bis 31.05.2007

Clean Zones Germany

Progress of Euro Emission standards for busses / heavy duty vehicles



Restrictions

Ban of heavy polluting vehicles



Clean Zone Bremen 2010



2006



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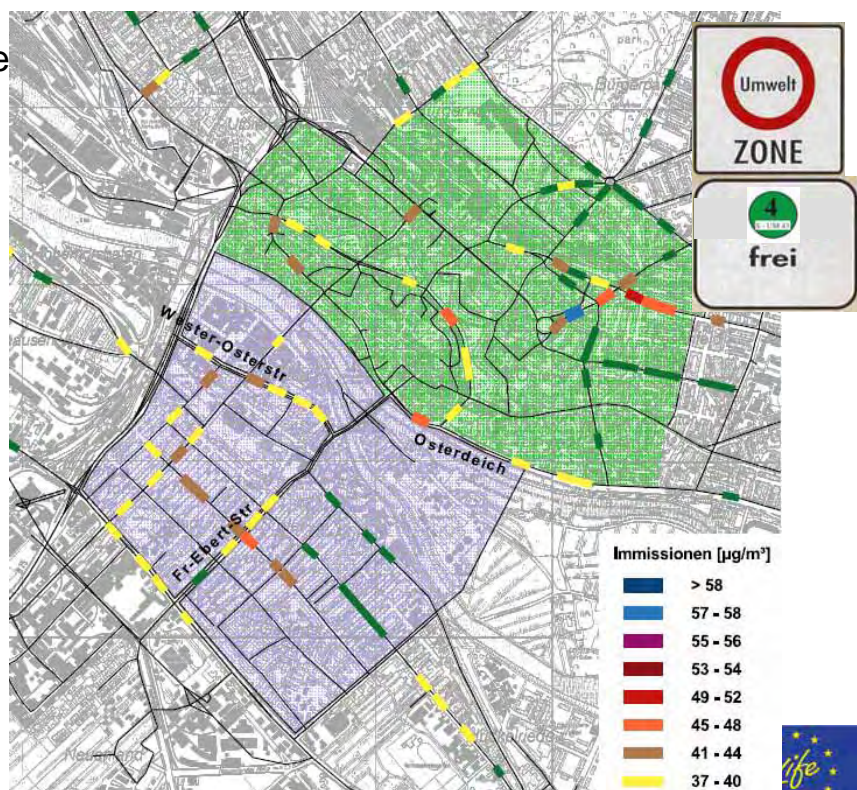


Clean Zone Bremen 2010



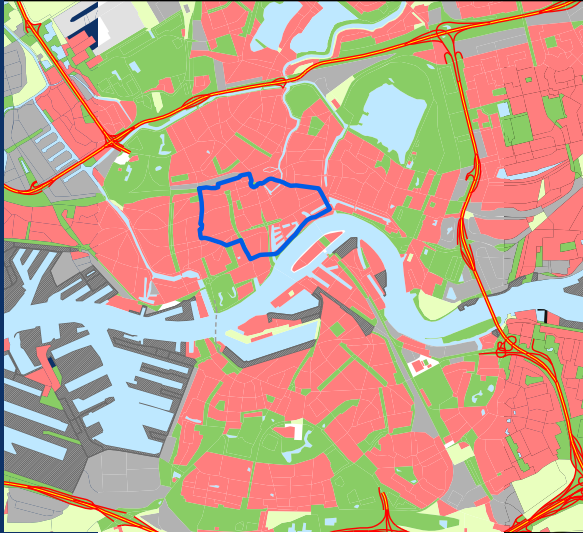
Exclusion of:

- Petrol vehicle below Euro I (without catalytic converters)
- Diesel below Euro IV (without particulate trap)



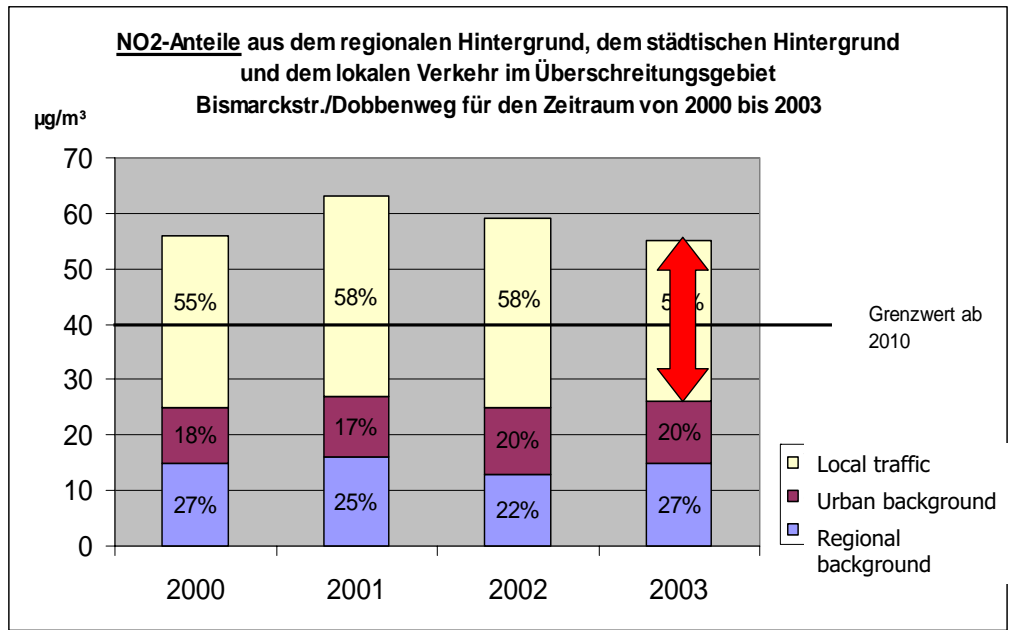
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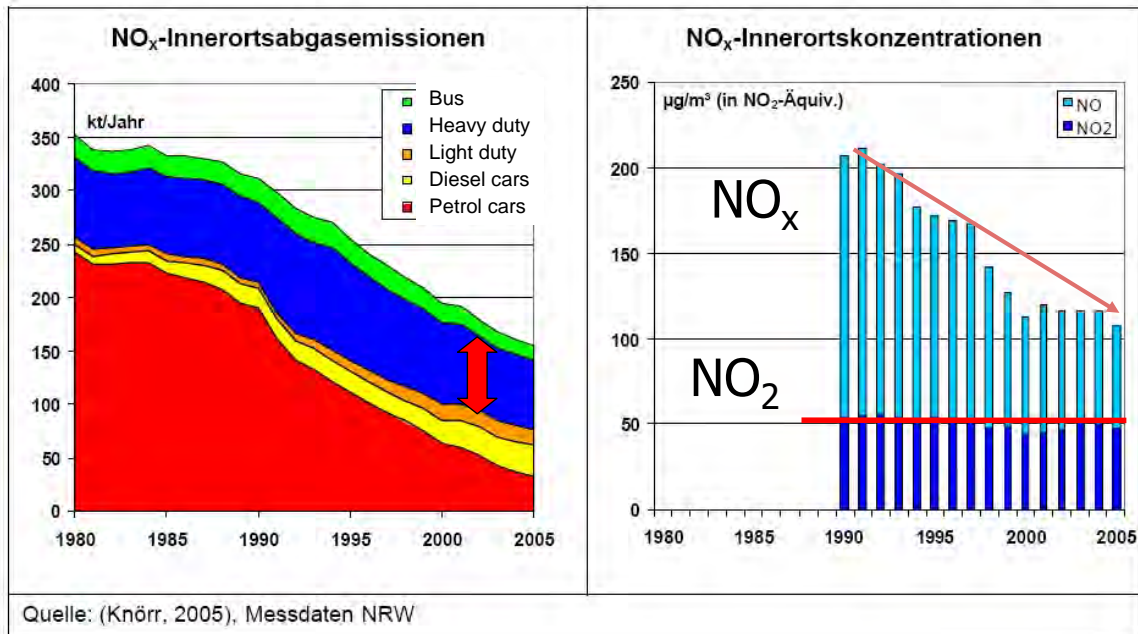
2005:
limits of PM_{10}
concentration level

2010:
limits of NO_2
concentration level



Sources of NO₂:

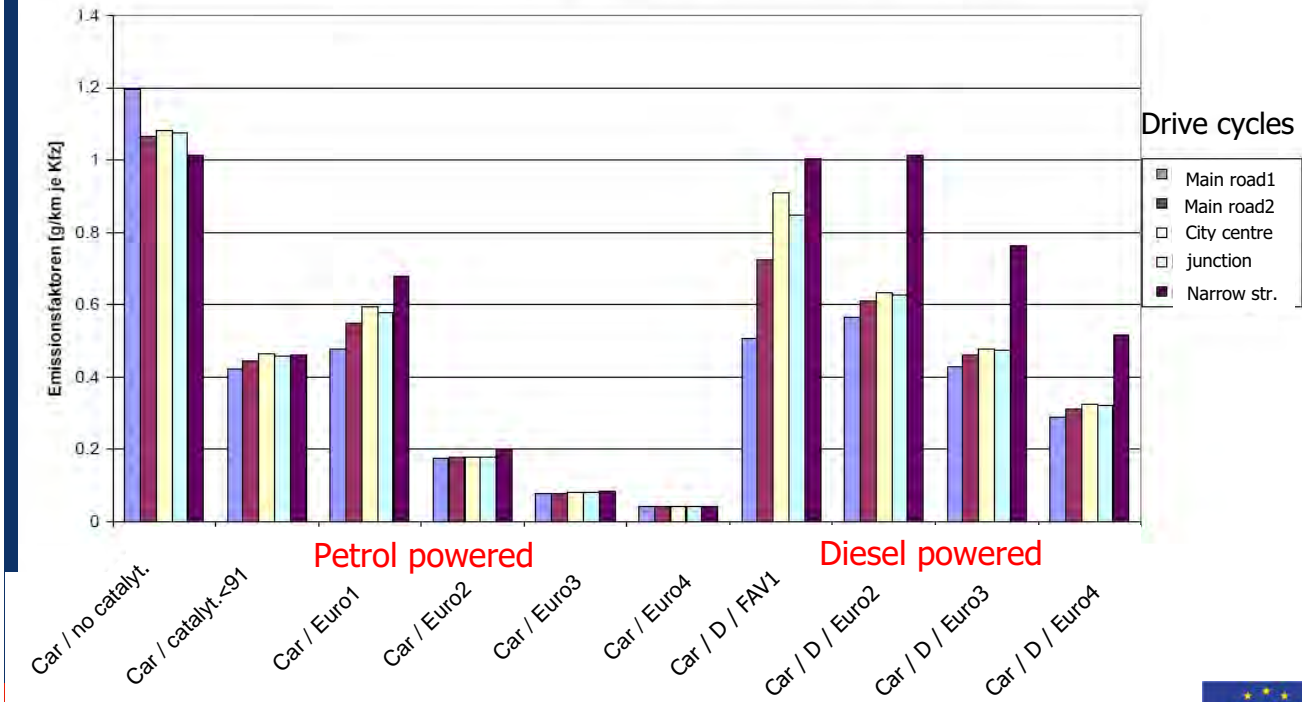
50 -60 % local traffic - especially Diesels



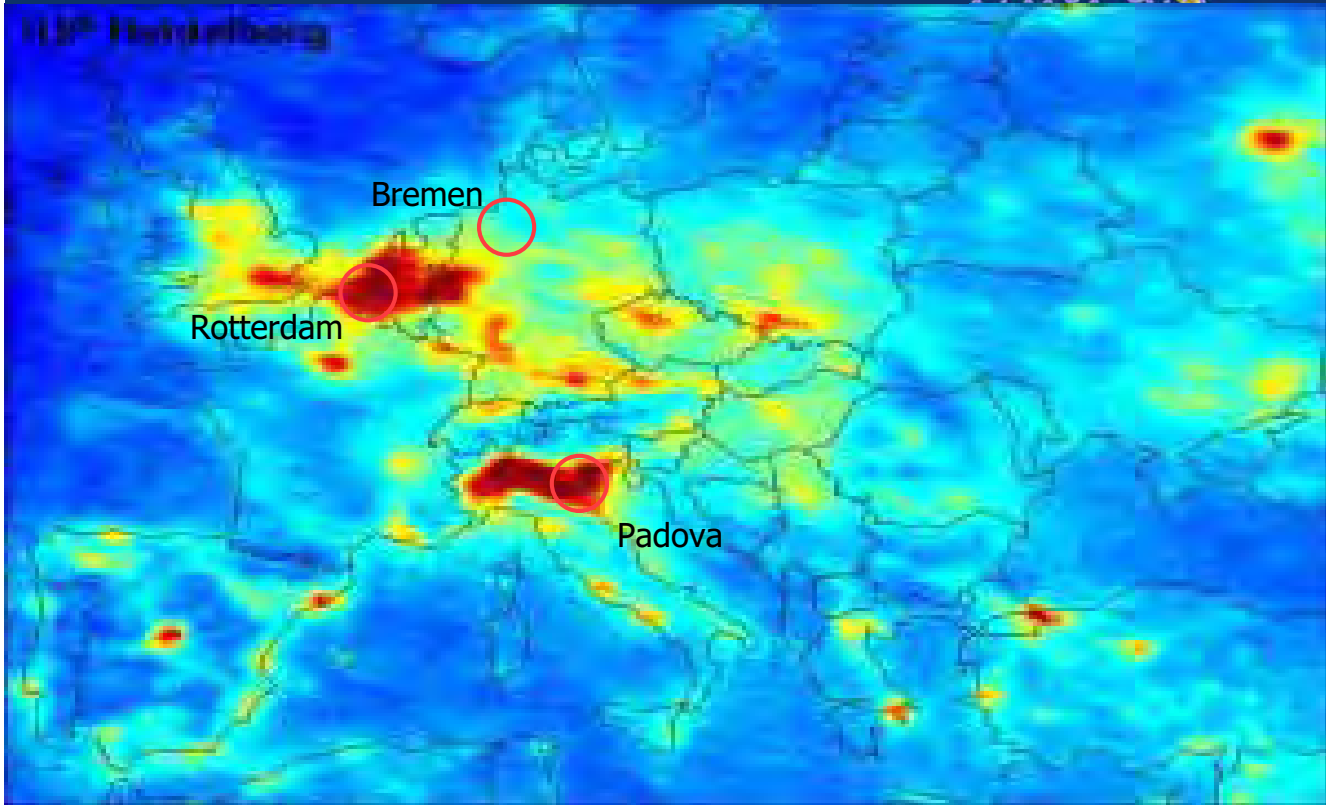
- a) NO_x emission of heavy duty vehicles remains on high level
- b) NO₂ concentration level remains (although NO_x is reduced)

Emission factors (NOx)

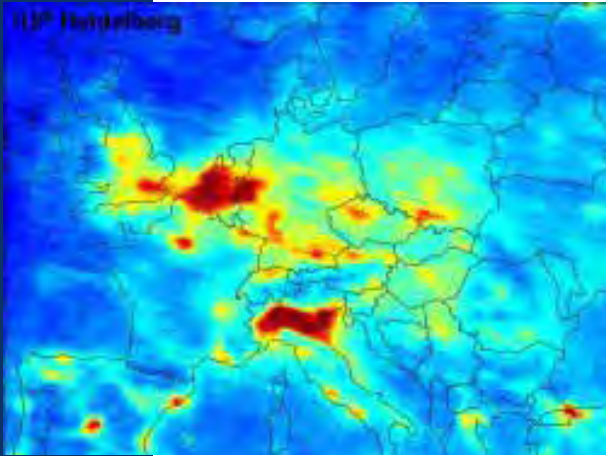
NOx-emission factors (g/km per vehicle)



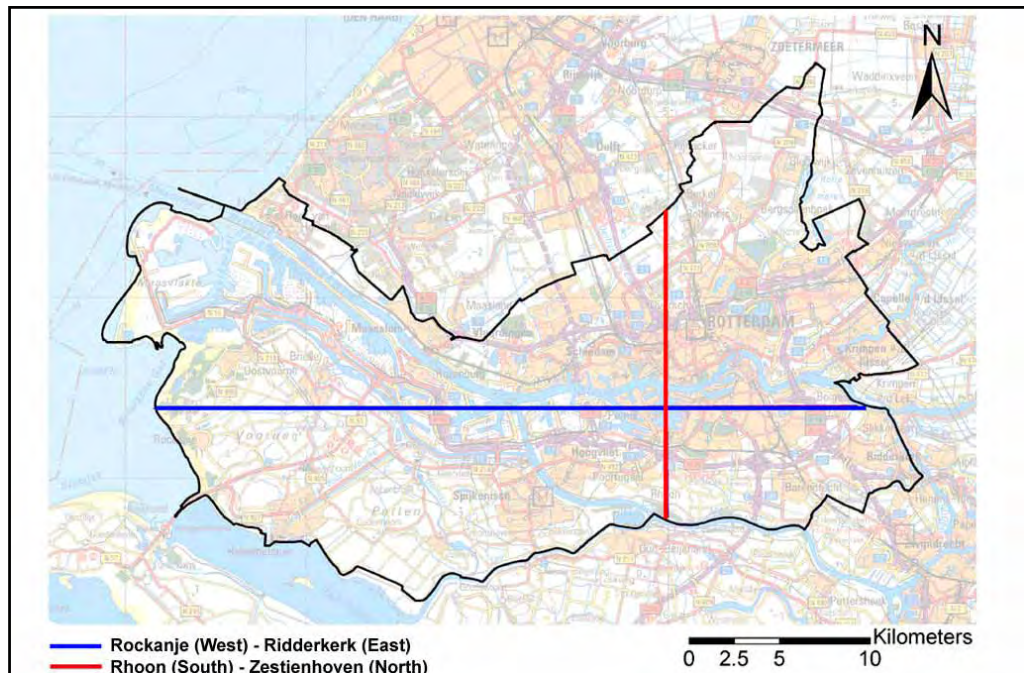
NOx in Europe

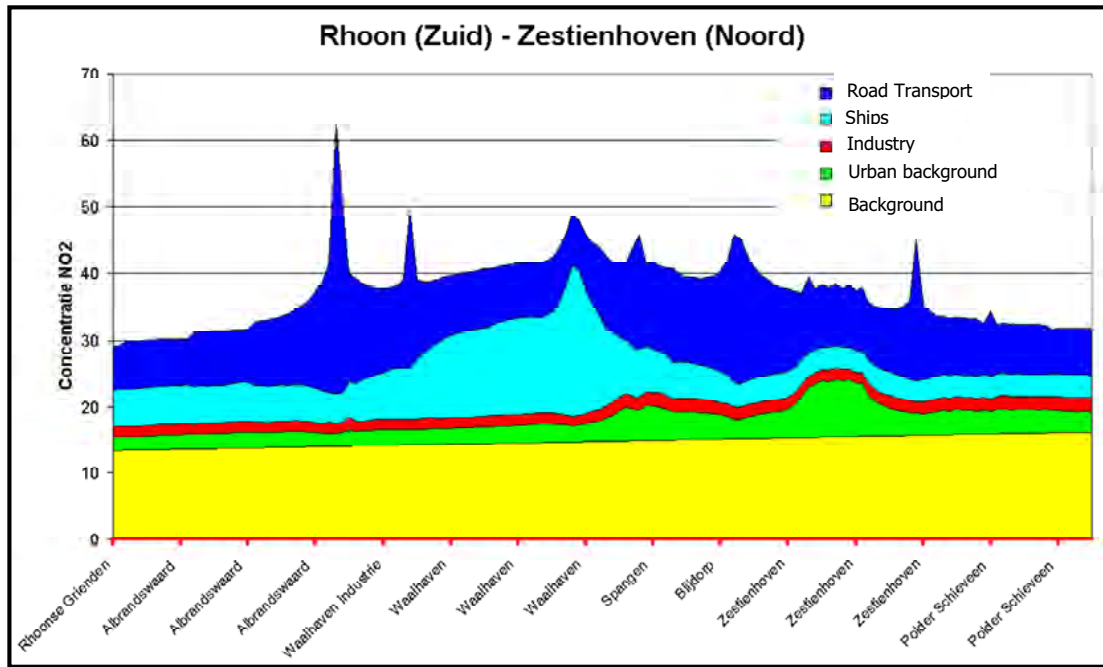


Air quality in Rotterdam



Air quality in Rotterdam





The „Diesel problem“

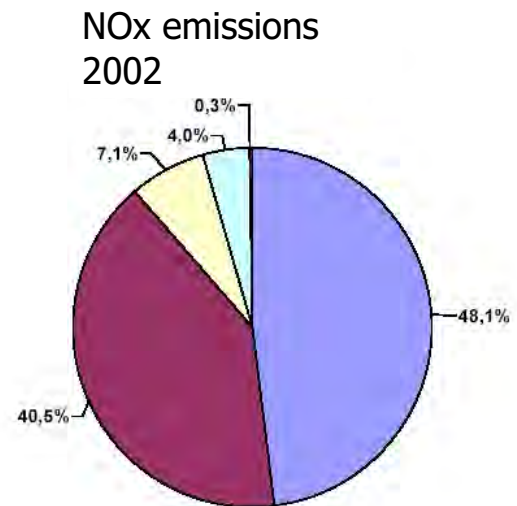
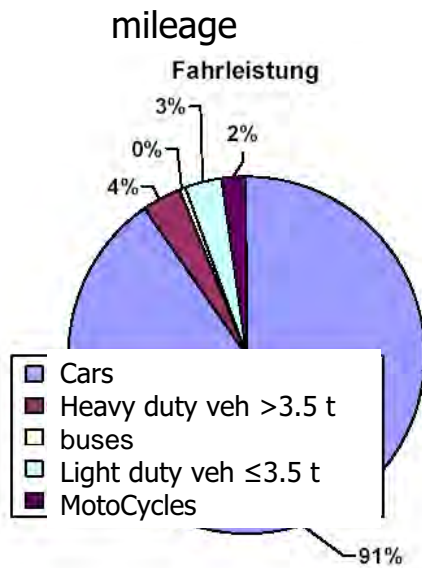
the „heavy smokers“

PARFUM



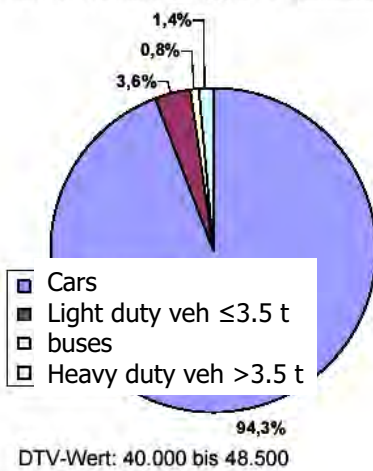
Diesel and NOx

PARFUM

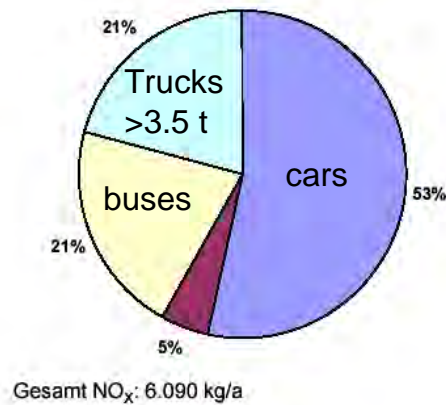


9 % of the vehicles cause 51% of NOx emissions

Anteile der Fahrzeuggruppen am Straßenverkehr



Expected NOx emissions 2010



5,6 % of the vehicles cause 47% of NOx emissions !!!

Strategies for

clean heavy duty vehicles in urban environments

new buses for Bremen



Clean buses: fulfilling EEV-standard



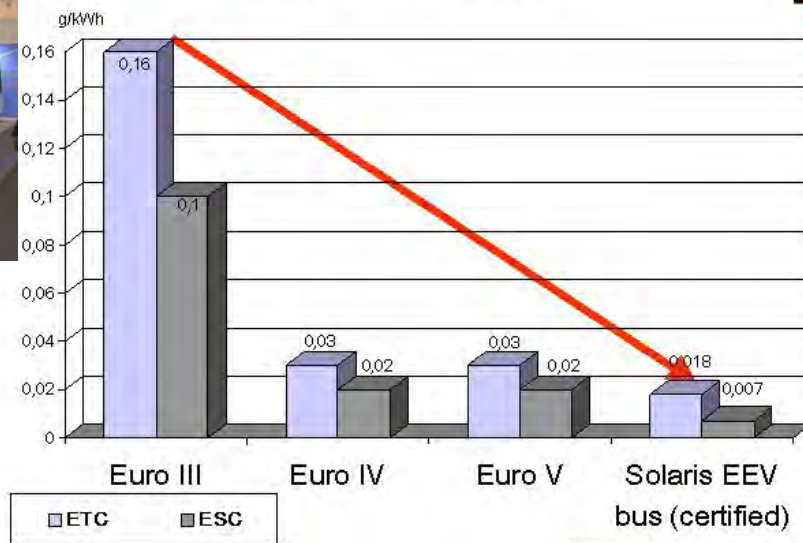
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new buses for Bremen



PM₁₀-emission



Clean buses: fulfilling EEV-standard



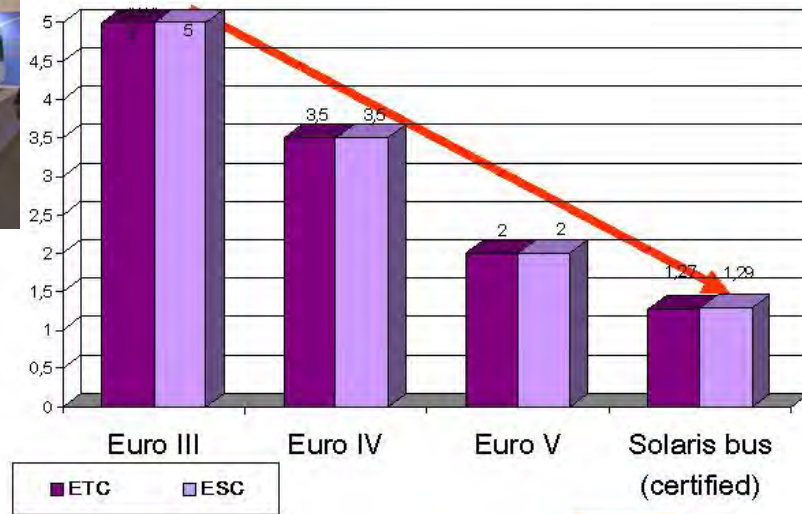
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new buses for Bremen



NO_x-emission



Clean buses: fulfilling EEV-standard



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Better Delivery Vehicles



- Reduction of emissions (Euro V / EEV)
- Reduction of Noise (Diesel – CNG)



PARFUM pilot measure Bremen



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Pedestrian Area Bremen



Pedestrian Zone

Loading only
workdays
20 – 11 hrs

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Environmental Loading Point



to give access
also after 11:00

Eco-Loading-Point

Access for **Euro-V-EEV** vehicles only

PARFUM pilot measure Bremen

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Environmental Loading Point



Vehicle Detection
(loops + RFID)



PARFUM pilot measure Bremen

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Environmental Loading Point



Vehicle Detection
(loops + RFID)

Euro V- vehicles
can get permission,
sticker and
transponder



PARFUM pilot measure Bremen

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Environmental Loading Point



Vehicle Detection (loops + RFID)

Euro V- vehicles can get permission, sticker and transponder

Non-authorized vehicle = red light starts



PARFUM pilot measure Bremen

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Environmental Loading Point



Vehicle Detection (loops + RFID)

Euro V- vehicles can get permission, sticker and transponder

authorized vehicle = no red light



PARFUM pilot measure Bremen

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Environmental Loading Point



Vehicle Detection
(loops + RFID)

Euro V- vehicles
can get permission,
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Environmental Loading Point



6.11.2007:
Inauguration
with Senator Loske,
Chamber of
Commerce and
DHL/Deutsche Post



PARFUM pilot measure Bremen

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6.11.2007:
Inauguration
with Senator Loske,
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Commerce and
DHL/Deutsche Post



PARFUM pilot measure Bremen

Conclusion



- Important role of clean heavy duty vehicles (Public Transport, trucks, delivery vehicles) to air quality management



- Politically sensitive issue

- Low level of interest from vehicle manufacturers



- Integration of measures (push-and-pull) will have highest level of impacts



Thank you for your attention
Grazie mille per vuestre attenzione

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