

Berlin's Air Quality Strategy:

measures and expected effects

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- **brief recap: problems, origin, sources**
- **expected benefit of a trend scenario**
- **additional measures and their impact**

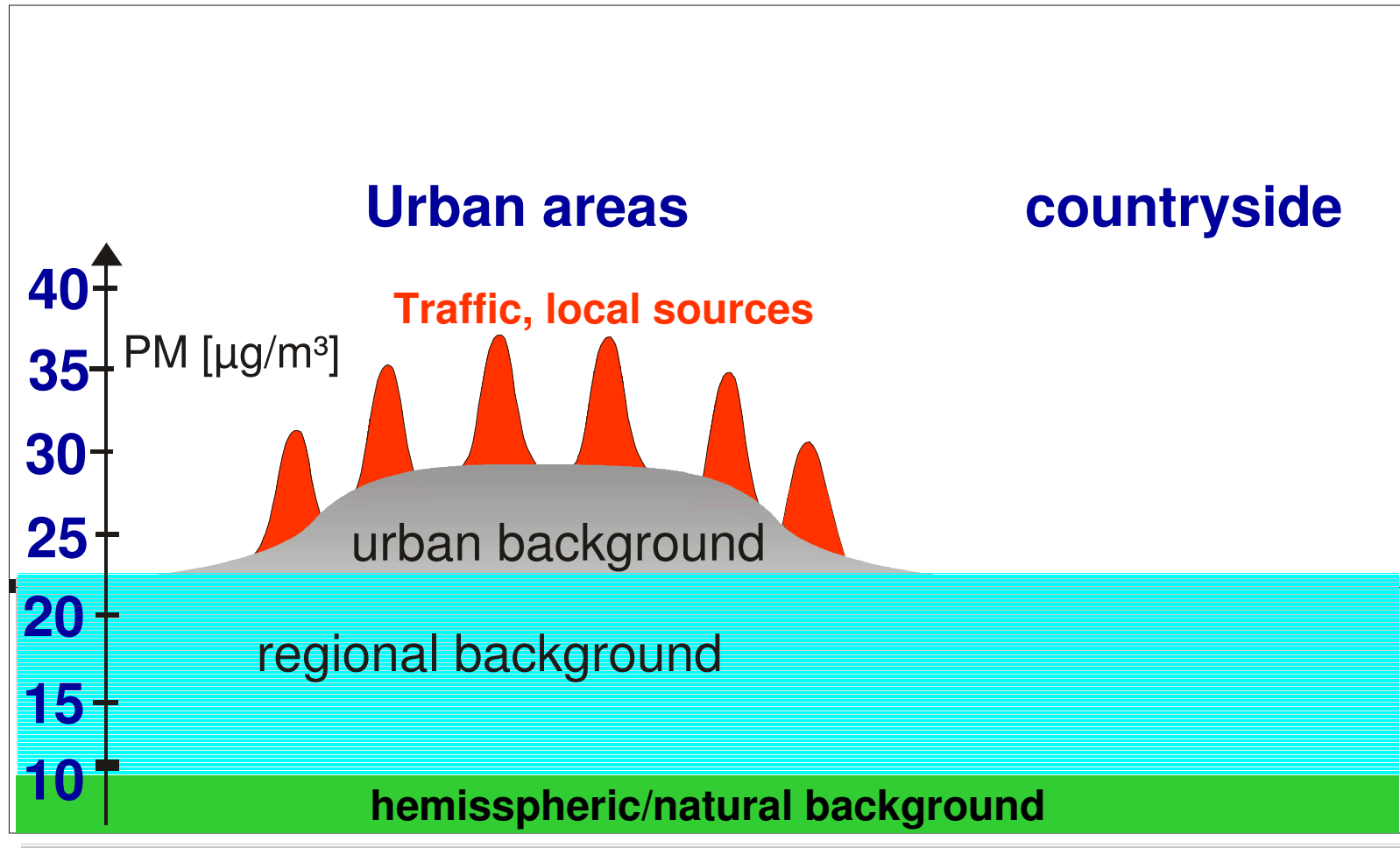
assessment of the air quality in Berlin

☞ summary

- on sulfur dioxide: ☺ no problem
- on lead: ☺ no problem
- on carbon monoxide ☺ no problem
- on benzene ☹ diminishing problem
- on nitrogen dioxide ☹ serious problem
- on PM₁₀ ☹ severe problem, to be tackled on local and European level
- on ozone ☹ serious problem, to be tackled mainly on a European level

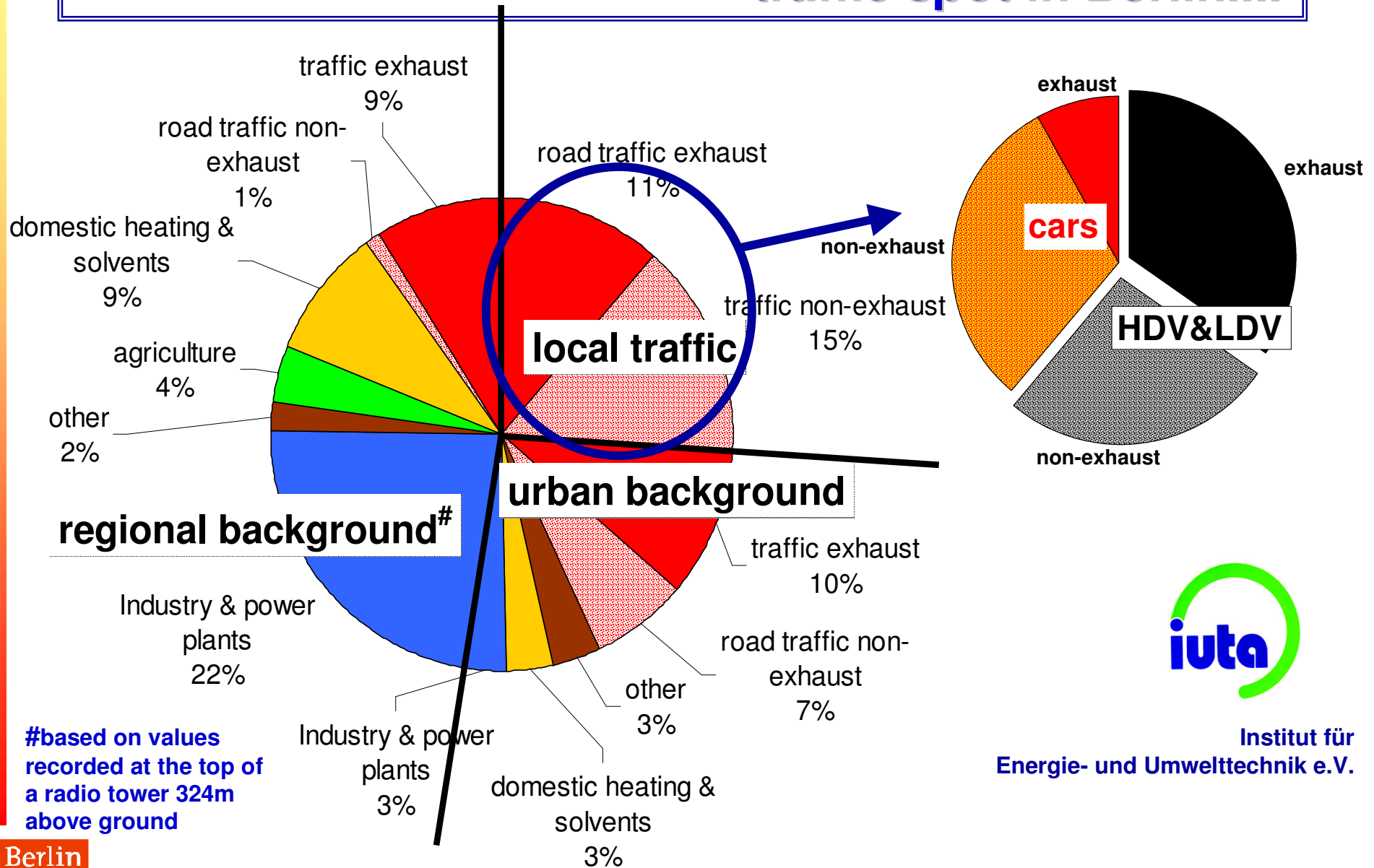
Source analysis

👉 Simplified schematic of the PM pollution



source attribution

👉 Sectors contributing to total **PM10** at a busy traffic spot in Berlin....



Institut für Energie- und Umwelttechnik e.V.

source analysis

interim conclusion

- **regional PM10 background is around half of kerbside levels**
- **motor traffic is the predominant source of PM pollution**
- **20% of regional PM10 background can be attributed to traffic exhaust emissions, but the bulk is secondary PM from industry & power plants**
- **more than half of traffic related PM10 stems from road&tire abrasion and resuspension of road dust**
- **HDV & LDV emissions of particular importance**
- **NO₂ regional background usually less than 10 %**

trend scenario 2010

☞ interim conclusion

- envisaged improvement through “business as usual” measures not sufficient to meet NO₂ limit values by 2010
- annual PM₁₀ limit value can be attained
- 24h-limit value for PM₁₀ won't be met by “business as usual” **even in 2010**
- ☞ **additional measures necessary to curb PM₁₀ und NO₂ – emissions!**
- ☞ **city-wide non-attainment needs city-wide action**

Air pollution control planning

☞ **additional measures planned**

■ stationary sources

☞ **BAT and more**

■ transport:

☞ **cleaner vehicles and fuels**

☞ **municipal car fleet (CRT retrofit & CNG)**

☞ **LEZ (low emission zone)**

☞ **less traffic through sustainable transport- and city planning (master plan transport, “StEP”), *inter alia*....**

☞ **re-routing through traffic on tangential roads**

☞ **extension of zones with parking fees**

☞ **expected effect: ~ 10% traffic reduction in Berlin’s centre**

☞ **Optimized traffic management at hot spots (☞ HEAVEN)**

☞ **linked with noise abatement**

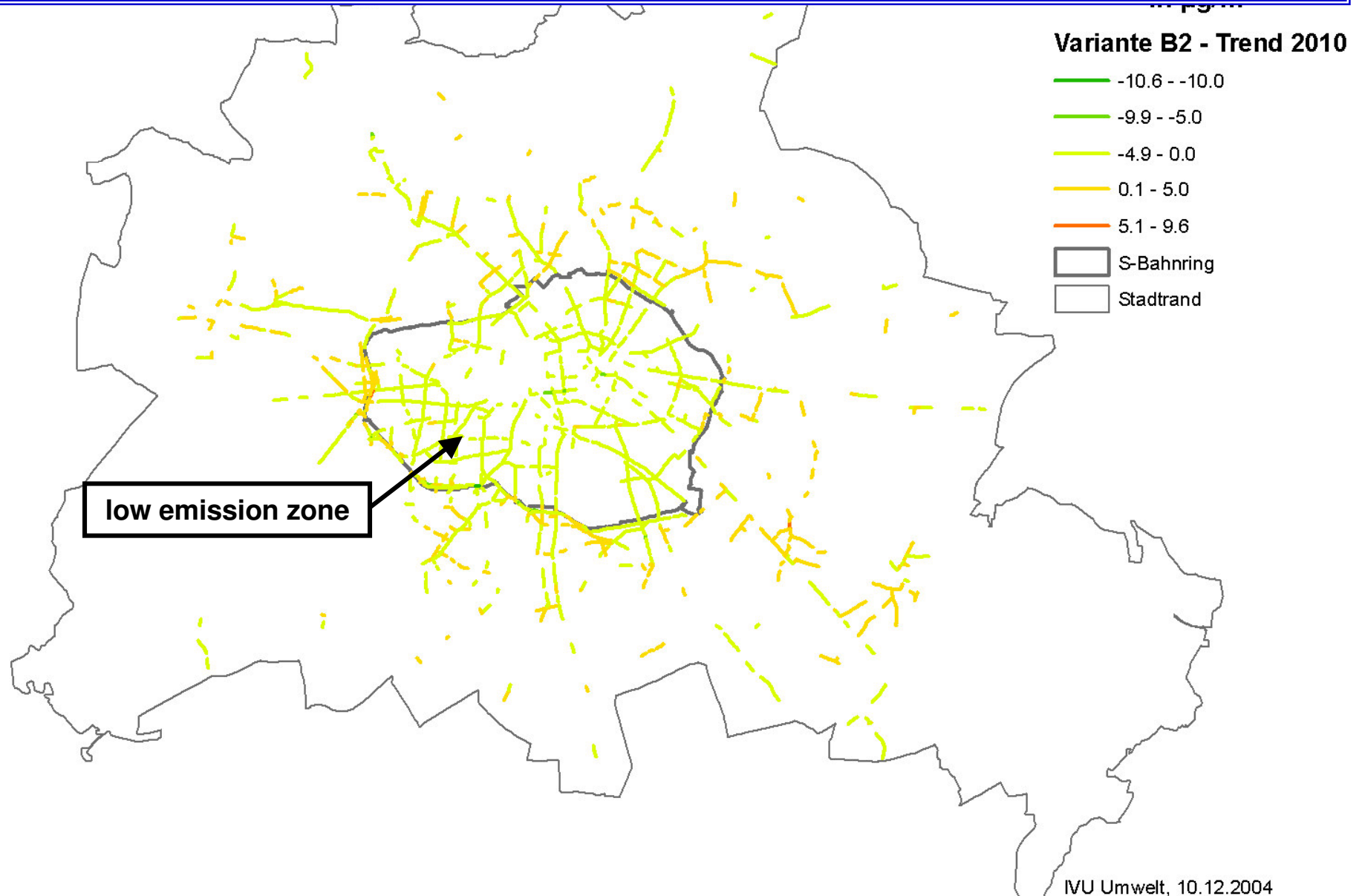
☞ **Speed limits**

☞ **big effect on noise and road safety**

☞ **little effect on air quality**

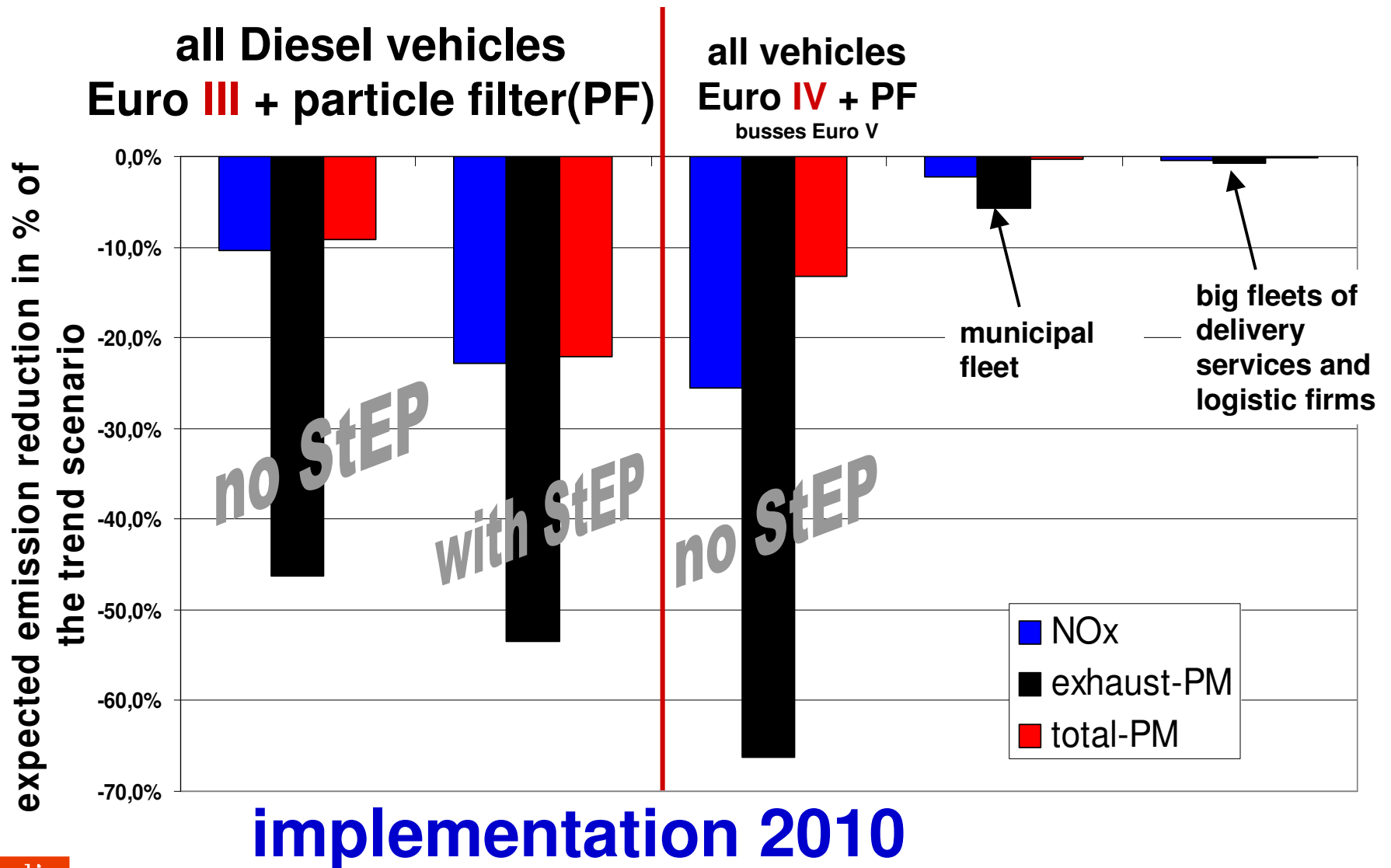
LEZ & "StEP" scenario 2010

☞ **PM10 reduction beyond the trend scenario 2010**



Options for LEZ: Emission reduction in relation to the trend scenario 2010

👉 impact of transport planning („StEP“) and vehicle technology



Air Pollution Control Planning

☞ **Core measure: low emission zone**

**traffic restriction for high emitting Diesel vehicles
in the central city area**

☞ **stage I:**

2008, minimum criteria EURO II

☞ **stage II:**

2010, minimum criteria EURO III & particle filter

☞ **scrutiny in 2006, whether retrofit with particle trap could be required already in stage I**

☹ **under preparation...**

☞ **national labelling scheme for clean vehicles**

☞ **Federal Government**

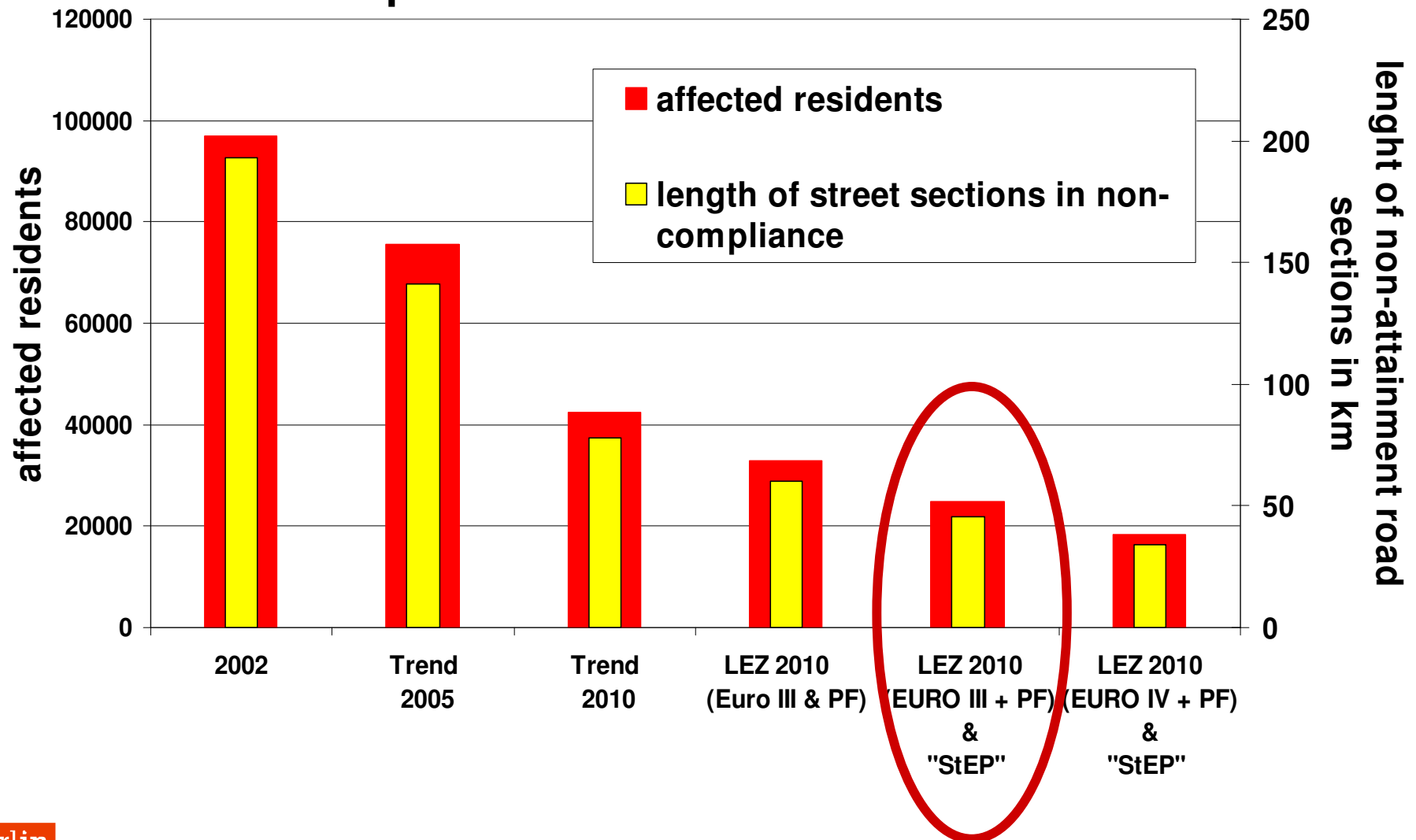
☞ **tax incentives, in particular for clean (or retrofitted) vans and lorries**

☞ **Federal Government**

Air Pollution Control Planning

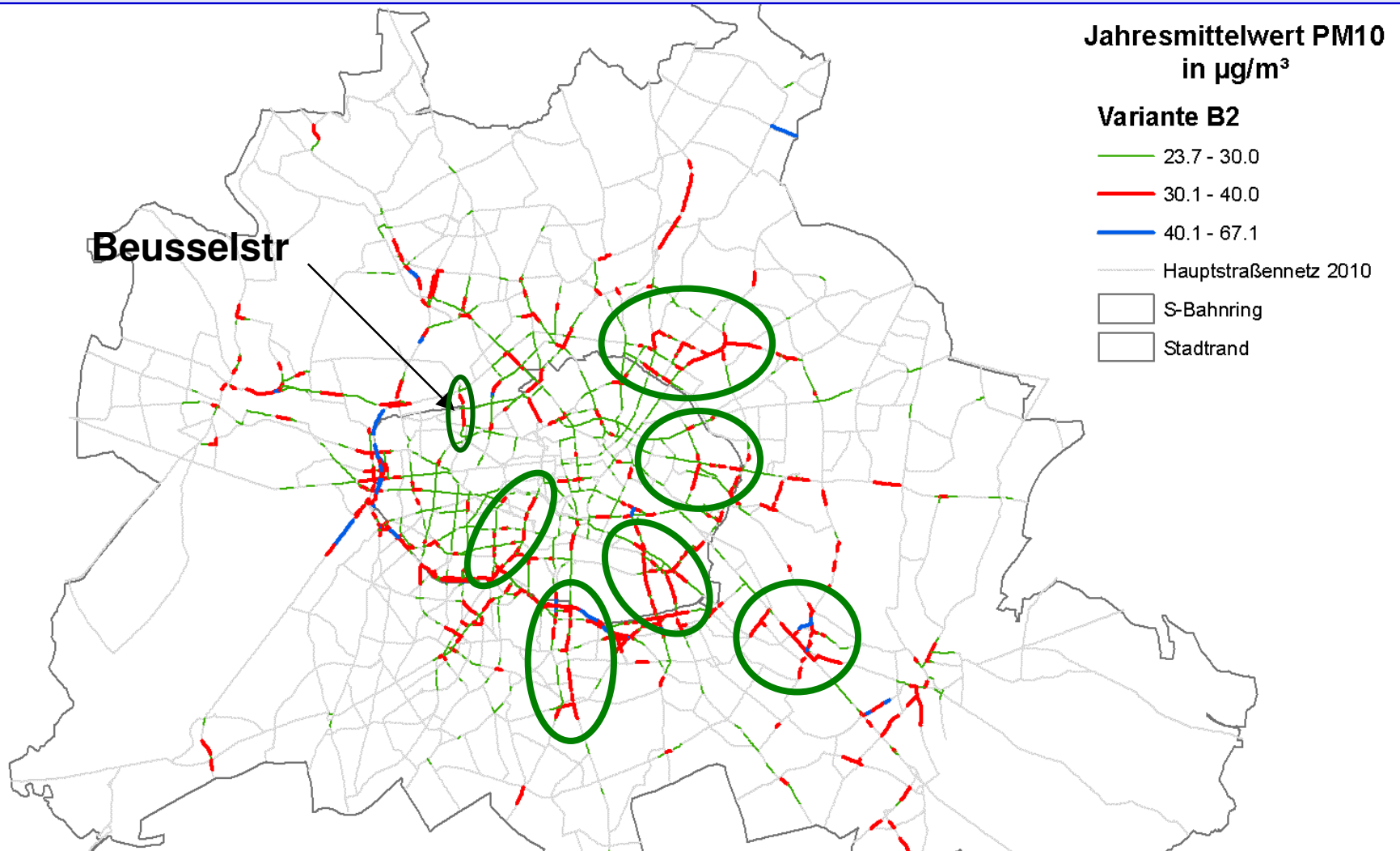
👉 impact of various control scenarios

exceedances of the **PM10** 24h-limit value
impacts of various control scenarios



LEZ & "StEP" scenario 2010

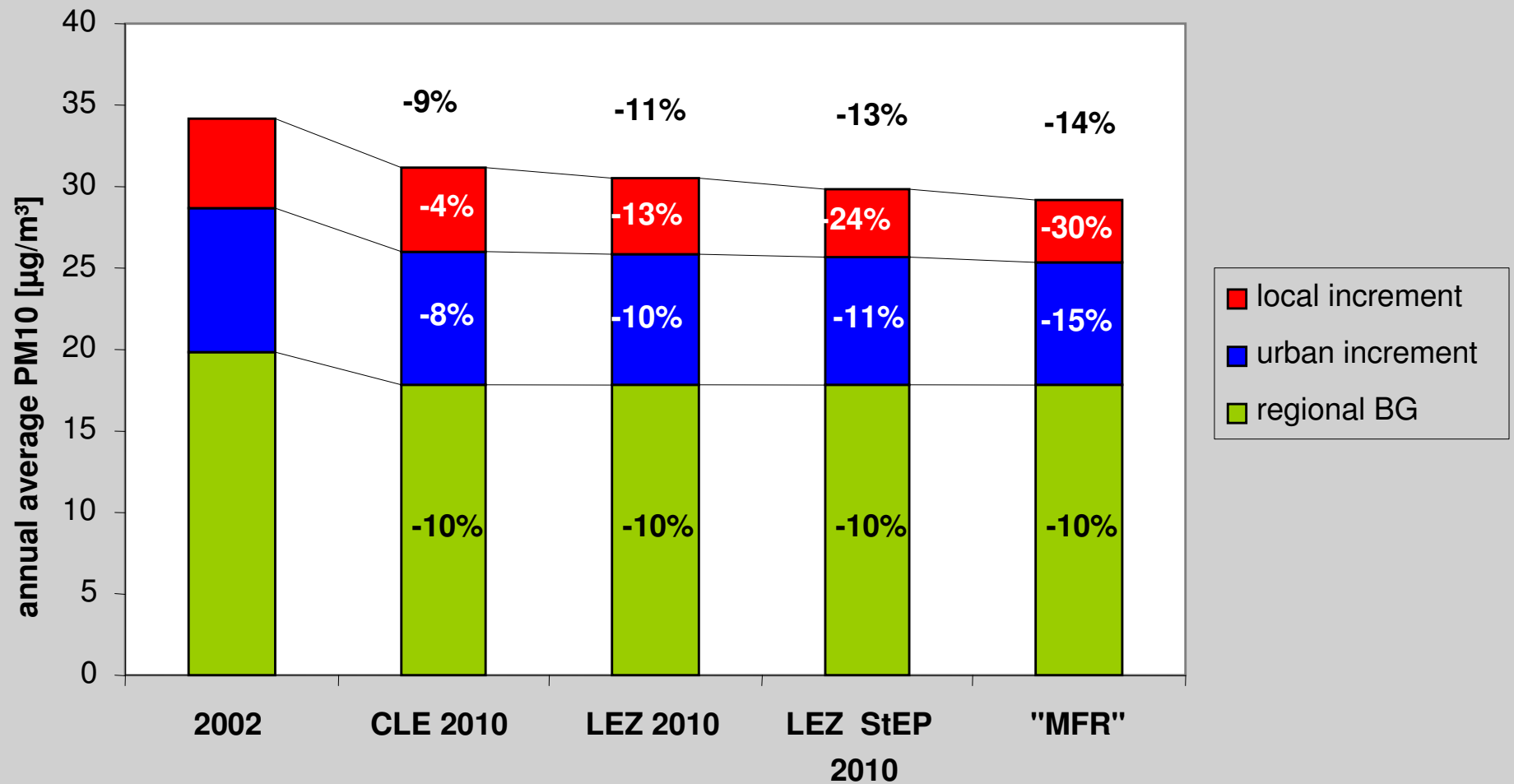
👉 predicted **PM10** concentration in main road network



remaining hot spots where local traffic management is an option

Results of scenario runs

Expected decrease of PM10 in Berlin



Air Pollution Control Planning

☞ **supplementary action**

Optimised **traffic management at hot spots**

☞ **HEAVEN**: potential for improvement up to 20% (NOx) and 7% (PM10) by truck ban

☞ limited scope for implementation

☞ needs thorough investigation to avoid disbenefits elsewhere

☞ **successive scrutiny of remaining hot spots**

■ **Speed limits**

☞ concept for imposing **30 km/h limits on main roads** where **noise & road safety & air pollution warrants**



Thank you !