



Federal Ministry for the  
Environment, Nature Conservation  
and Nuclear Safety

# Assessing and Enforcing Clean Air Regulations in Germany

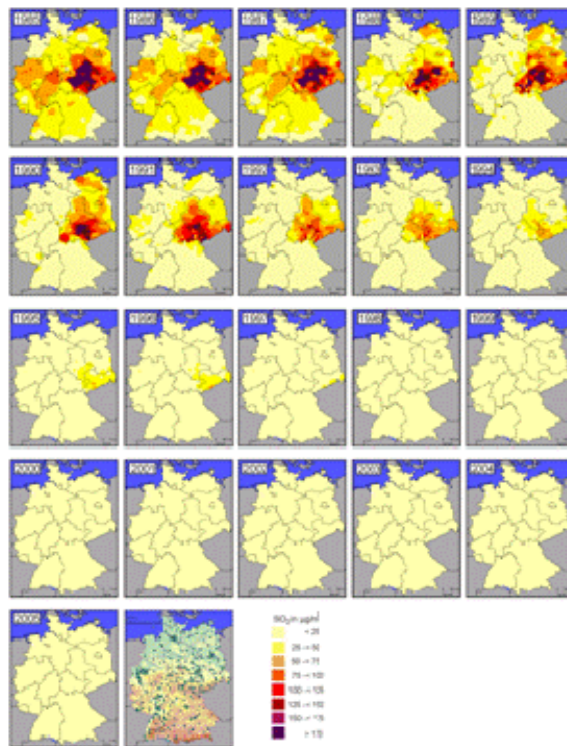
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**Head of Directorate-General**  
**Immission Control and Health**

Transatlantic Cooperation for Clean Air Brussels Workshop  
5 - 6 February 2007



# Development of SO<sub>2</sub> and PM10 pollution in Germany

SO<sub>2</sub> - Jahresmittelwerte

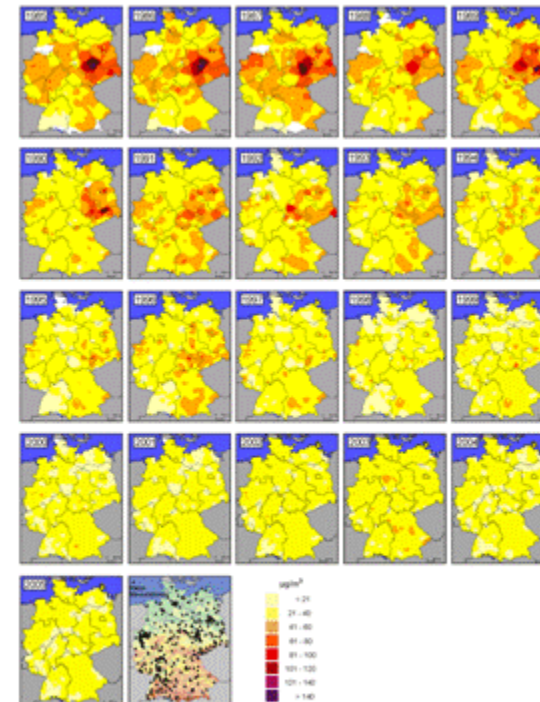


Aufgrund des verwendeten Interpolationsverfahrens ist eine kleinteilige Interpretation nicht zulässig

Quelle: Bundesländer, Umweltbundesamt, Messnetze der Bundesländer und des Umweltbundesamtes 2006

[Annual mean values; area resolution is limited in that values have been interpolated; Source: Länder, Federal Environmental Agency, measurement networks of the Länder and of the Federal Environmental Agency in 2006

PM10 - Jahresmittelwerte



Aufgrund des verwendeten Interpolationsverfahrens ist eine kleinteilige Interpretation nicht zulässig  
Für 1985 bis 1998 wurden die Schwefelstaubdaten (TSP) zu PM10-Daten umgerechnet (Faktor 0,83).  
Ab 1999 basierte über die Hälfte aller PM10-Daten aus Messungen. Der Rest wurde wie zuvor umgerechnet.  
Ab 2000 quasi flächendeckende Messungen.

Quelle: Bundesländer, Umweltbundesamt, Messnetze der Bundesländer und des Umweltbundesamtes 2006

for 1985 to 1998, suspended particle data (TSP) was converted into PM10 data (factor: 0.83); As of 1999, over half of all PM10 data based on measurements. Other measurements were converted, in keeping with the procedure used previously; As of 2000, measurements provide nearly complete coverage.]



# Instruments for dealing with the problem

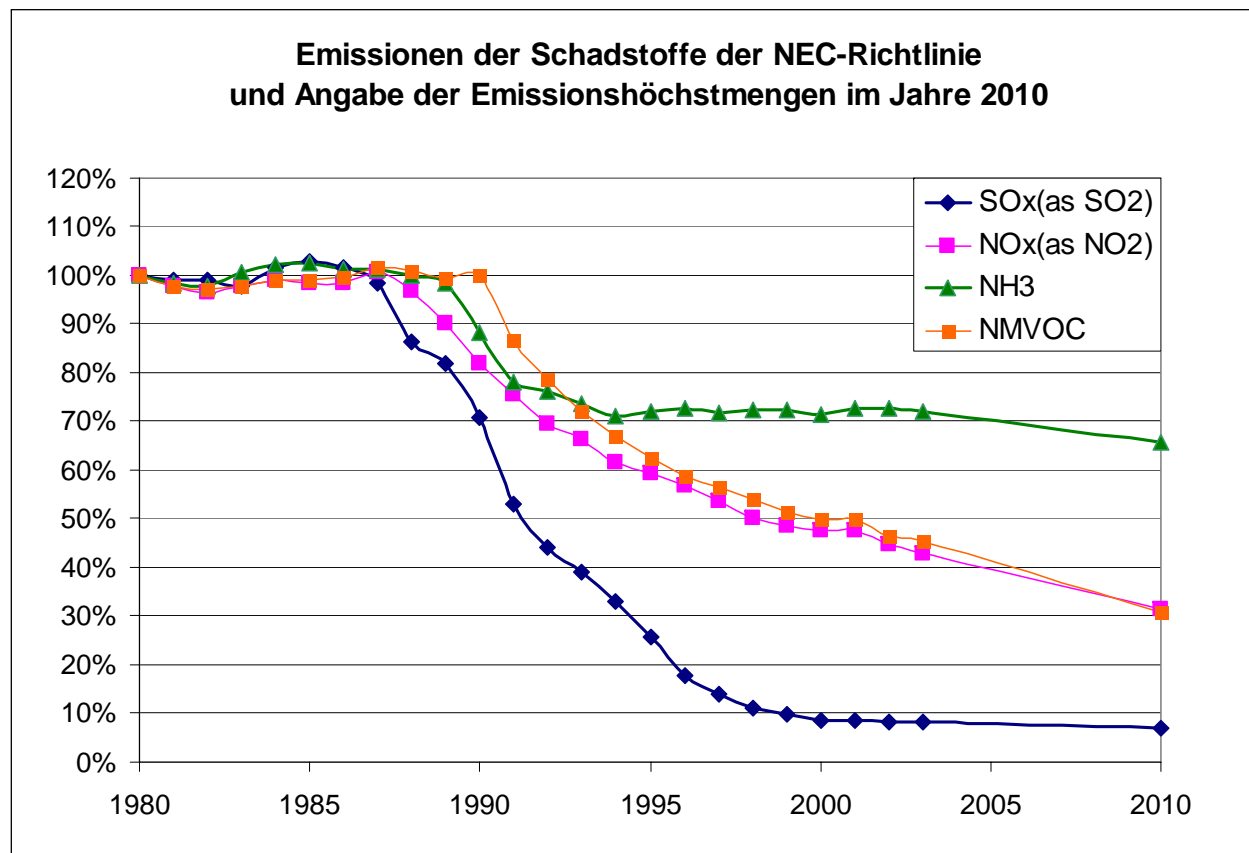
- **Air quality standards**
  - Maximum permitted levels, alarm thresholds and targets
- **Emissions ceilings and emissions standards**
  - Standards for plants / installations
  - Standards for motor vehicles
  - NEC Directive, with emissions ceilings for SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, NMVOC
  - UN-ECE protocols (SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, NMVOC, heavy metals)
  - Kyoto Protocol (greenhouse gases)
- **Requirements pertaining to products**
  - Limitations on pollutant concentrations (motor fuels, heating fuels, solvents)

**Legal basis:** Federal Immission Control Act (BImSchG)

**Execution:** Länder



# Emissions trends in Germany, and aims of the NEC Directive



*[Emissions of pollutants covered by the NEC Directive, and emissions ceilings for 2010]*



## Emissions standards for industrial plants, in keeping with the best available technology (BAT)

### EU regulations

- Large Combustion Plants Directive
- Waste Incineration Directive

Apply especially to plants requiring  
national permits

### National regulations

- Ordinance on large combustion plants (13th BImSchV)
- Ordinance on waste incineration (17th BImSchV)
- Technical Instructions on Air Quality Control (TA Luft)

- Some national regulations are (considerably) stricter than EU requirements
- Following a transition period, requirements for old installations will follow the principle of "**old installations like new installations**", taking the proportionality principle into account (technical performance and acceptable economic burdens)



# Emissions standards for small combustion plants

Scope of application: residential heating systems

Requirements for systems fired with solid fuels (such as wood) are being amended

**Aim of the amendment: help reduce fine-dust pollution**

## Key aspects of the amendment

### Tighten dust and CO emissions standards

Example: heating systems\*

Dust	20 mg/m <sup>3</sup>
CO	0,4 g/m <sup>3</sup>

Expanded monitoring of heating systems fired with solid fuels

Transition provisions for old heating systems fired with solid fuels (exchange programme)

\* As of 1 January 2015



# IMO – MARPOL Annex VI



*Reducing ship emissions*

Germany is among the countries that have initiated the process of revising Annex VI of MARPOL

Aim: significantly reducing emissions, especially those of sulphur dioxide, nitrogen oxides and particulates

We are hoping that other countries will support us strongly in this effort.



# Environmental zones

- Instrument for air quality control planning
- Individual cities, city areas, metropolitan areas
- For reduction of air pollution, especially in inner-city areas
- Provides incentives to modernise the motor-vehicle fleet
- Ordinance on marking of vehicles supports execution








# Ordinance on marking of vehicles

- Necessary basis for designation of environmental zones
- 35th BImSchV (promulgated on 16 October 2006)
- Entry into force on 1 March 2007
- Divides motor vehicles into four emissions groups
- Specifies the stickers to be used



## Stickers

	Emissions group 2	Emissions group 3	Emissions group 4
Sticker diameter: 80 mm			
Examples for diesel automobiles	Euro 2 Euro 1 vehicle with particle-filter retrofit	Euro 3 Euro 2 vehicle with particle-filter retrofit	Euro 4 Euro 3 vehicle with particle-filter retrofit
Automobiles with petrol engines			Petrol-engine automobile with catalytic converter
Trucks	Euro II Euro I vehicle with particle-filter retrofit	Euro III Euro I vehicle with particle-filter retrofit	Euro V Euro IV Euro III vehicle with particle-filter retrofit



## Ordinance on marking of vehicles

Sign 270.1



Beginning of area in which driving is prohibited, in order to reduce air pollution in a relevant zone

Sign 270.2



End of area in which driving is prohibited, in order to reduce air pollution in a relevant zone



Exempted area (no prohibition on driving) pursuant to Article 40 (1) Federal Immission Control Act



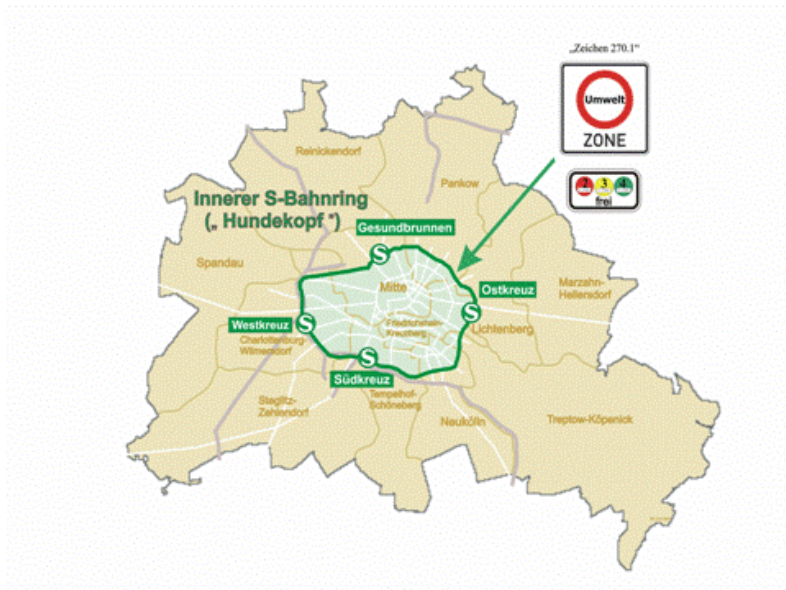
## Some German cities planning environmental zones by 1 January 2008

- Heidelberg
- Frankfurt
- Munich
- Düsseldorf
- Wuppertal
- Osnabrück
- Neuss
- Essen
- Berlin
- Dresden
- Augsburg
- Halle/Saale
- Freiburg
- Dortmund

Source: German Association of Cities and Towns / Nov. 2006



# Environmental zone: Berlin



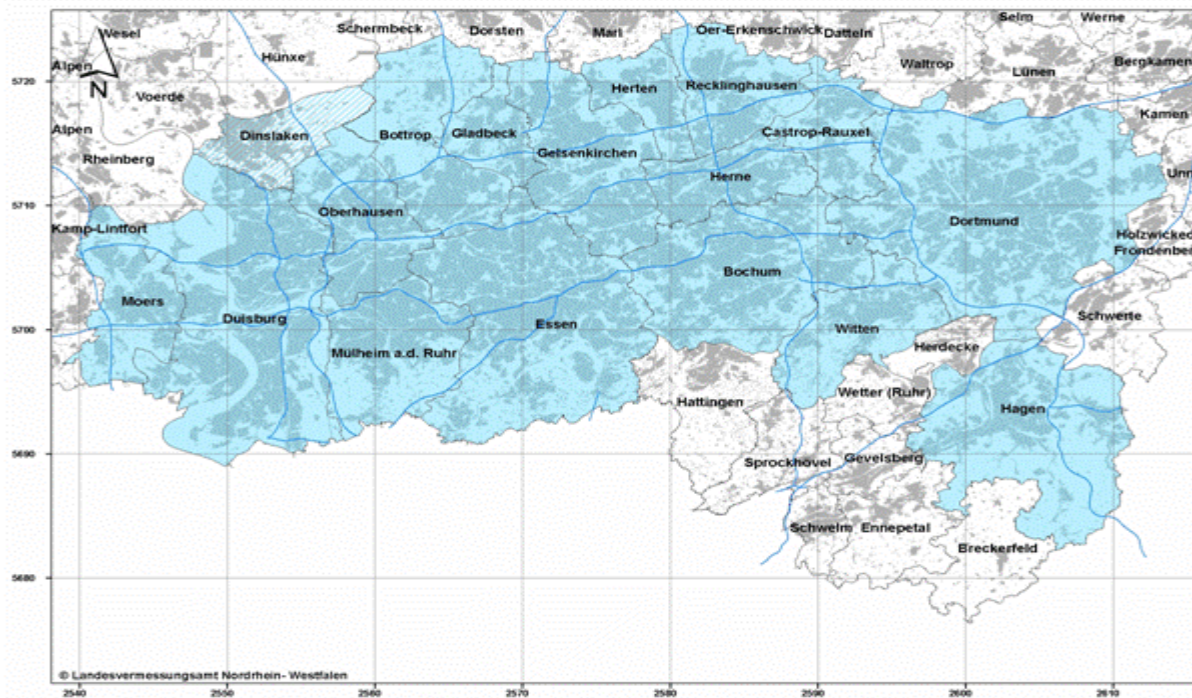
Source:  
Senate Administration for Urban Development, Berlin

**Area:** (S-Bahn Ring)

- **Entry into force** in 2 stages:
  - 2008 – diesel vehicles with at least EURO II
  - 2010 – diesel vehicles with at least EURO III + particle filter (petrol automobiles with at least EURO II)
- **Affected vehicles:**
  - Stage 1: 40,000 diesel automobiles, 15,000 trucks
  - Stage 2: 20,000 diesel automobiles, 10,000 trucks



# Project for a large environmental zone in the Ruhr Region



- *Project currently involves preparation of a feasibility study*
- *1st half of 2007 - discussion at the municipal level*
- *Then, political decision on implementation*





# Thank you very much!

## **Air Pollution Control / General Information:**

[http://www.bmu.de/english/air\\_pollution\\_control/current/aktuell/3857.php](http://www.bmu.de/english/air_pollution_control/current/aktuell/3857.php)

[http://www.bmu.de/english/air\\_pollution\\_control/ta\\_luft/doc/36958.php](http://www.bmu.de/english/air_pollution_control/ta_luft/doc/36958.php)

## **Air Quality:**

<http://www.env-it.de/umweltdaten/public/theme.do?nodeIdent=2374>

## **Emissions:**

<http://www.env-it.de/umweltdaten/public/theme.do?nodeIdent=2360>

## **Plans and Programs:**

<http://www.env-it.de/luftdaten/download/public/html/Luftreinhalteplaene/uballl.htm>

## **Measures / Regulations:**

[http://www.bmu.de/gesetze\\_verordnungen/aktuell/aktuell/1252.php](http://www.bmu.de/gesetze_verordnungen/aktuell/aktuell/1252.php)

<http://www.env-it.de/umweltdaten/public/theme.do?nodeIdent=2486>

<http://www.env-it.de/umweltdaten/public/theme.do?nodeIdent=2369>

<http://www.bmu.de/verkehr/aktuell/aktuell/1787.php>