



**Wirtschaftsförderung  
Region Stuttgart**

***Status of air pollution problems  
in the Stuttgart Region***

***POLIS - 31<sup>th</sup> May 2006***

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# Facts about Baden-Württemberg



Wirtschaftsförderung  
Region Stuttgart

- State of Baden-Württemberg founded in 1952
- 3rd biggest state in Germany after Bavaria and Lower Saxony with
  - 35,752 square kilometres and
  - 10.680 million inhabitants
- People in employment: 5 million
- Baden-Württemberg with lowest unemployment rate in Germany (6,9 %, German average: 11,5 %)
- Political structure within Baden-Württemberg:
  - 1,110 towns and municipalities
  - 44 counties
  - 13 regions (including Stuttgart Region with its own regional parliament)



# Stuttgart Region – In the middle of Europe



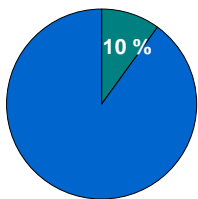
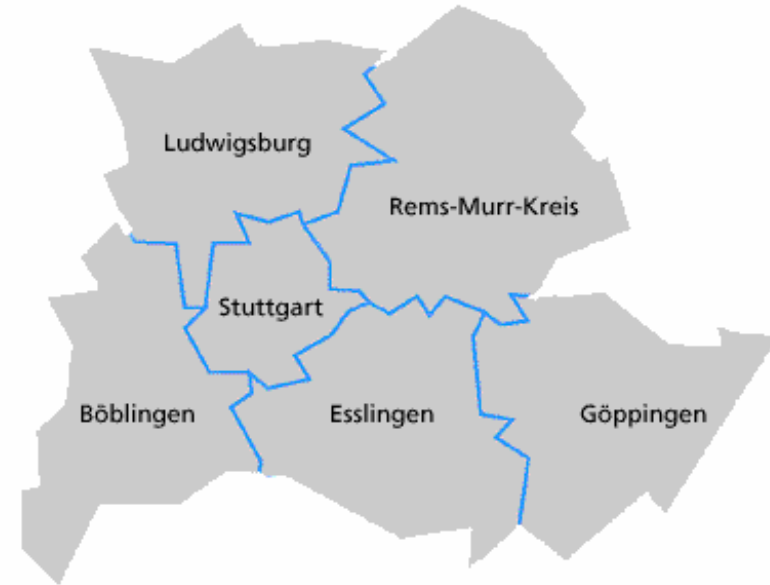
# Stuttgart Region – In the middle of Europe



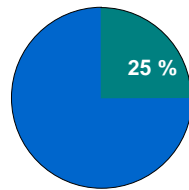
Wirtschaftsförderung  
Region Stuttgart

## The Stuttgart Region...

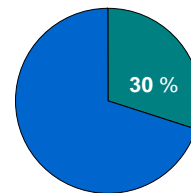
- the City of Stuttgart (State capital of Baden-Württemberg) and 5 surrounding counties (Ludwigsburg, Rems-Murr, Göppingen, Esslingen, Böblingen)
- 179 towns and municipalities
- 2.6 million inhabitants
- 3.654 square kilometres (State of Saarland: 2.570 km<sup>2</sup>)



Area



Inhabitants



Gross domestic product

■ Baden-Württemberg

■ Region Stuttgart

**On 10% of the area of Baden-Württemberg, 25% of the inhabitants make 30% of the gross domestic product**



The Award of Excellence  
for Innovative Regions  
by the European Commission

## *European and national law*

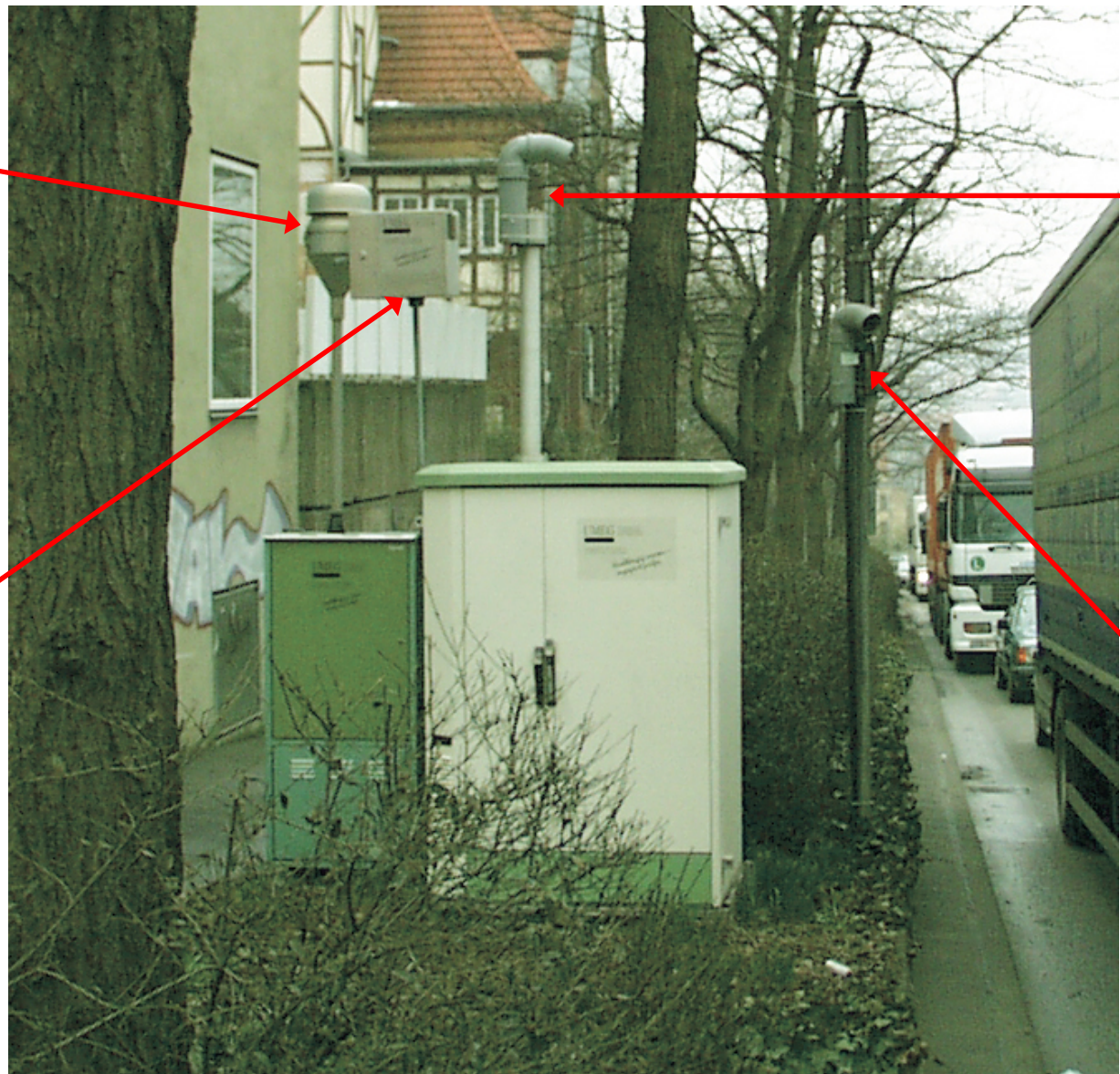
- **EU-policies for air quality (1996, 1999, 2000, 2002)**
- **Implementation in german law (2004)**
- **Consequently, binding legal limits are valid**
- **Transgression have to be avoid**

## *Situation*

- **Responsible is the Ministry of Environment of Baden-Württemberg which has delegated the task to the Regional Council of Stuttgart (Regierungspräsidium Stuttgart)**
- **On several points in the region measurements were executed**
- **The result was that the measurements were alarming high (in particular PM10 = fine particulate and NO<sub>2</sub> = nitrogendioxide)**
- **The Regional Council drew up an Air Protecting Plan (Luftreinhalteplan) in December 2005**
- **Further measurement results show that the legal limits described in the plan are not abided**



# Measurement technology



**PM10**

**NO<sub>2</sub>**

**benzene,  
soot**

**Passive  
collector**

# Table of transgressions and current measurements



Wirtschaftsförderung  
Region Stuttgart

Measuring stations	NO <sub>2</sub>					PM10	
	May 29, 2006		May 28, 2006	transgressions since January 1, 2006 until May 29, 2006*		transgressions*	
	current measurement	maximum value today	maximum value yesterday	number > 200 µg/m <sup>3</sup> (allowed 175 a year)	number > 240 µg/m <sup>3</sup> (allowed 18 a year)	date (2006)	number > 50 µg/m <sup>3</sup> (allowed 35 a year)
Freiburg Schwarzwaldstraße	110	110	64	0	0	May 1	34
Mannheim Luisenring	104	104	49	0	0	May 11	33
Schwäbisch Gmünd Lorcher Straße	123	131	59	14	0	May 9	37
Stuttgart Hohenheimer Straße	161	161	82	153	50	May 8	51
Stuttgart Am Neckartor	139	147	86	357	124	May 7	75
Stuttgart Siemensstraße	200	200	75	79	10	May 7	47
Leonberg Grabenstraße	57	84	28	0	0	May 9	32
Ludwigsburg Friedrichstraße	113	120	68	27	4	May 10	58
Pleidelsheim Beihinger Straße	96	115	31	43	7	May 10	49
Reutlingen Lederstraße	80	80	35	0	0	May 8	34
Heidelberg Karlsruher Straße	73	80	52	0	0	May 11	24
Mannheim Mitte	80	90	69	0	0	May 7	31
Karlsruhe Mitte	85	85	44	0	0	May 9	31
Stuttgart Mitte	112	136	82	25	3	May 8	32
Freiburg Mitte	42	42	57	1	0	May 1	31



## *Actions*

In the Air Protection Plan are 36 individual measures.

Actions in the following categories are possible:

- **Restriction on driving, ban on driving**
- **Routing of traffic**
- **Avoidance of traffic, displacement of traffic**
- **Promotion of public transport**
- **Integrated traffic concepts**
- **New automotive technology**
- **Continuous street cleaning**

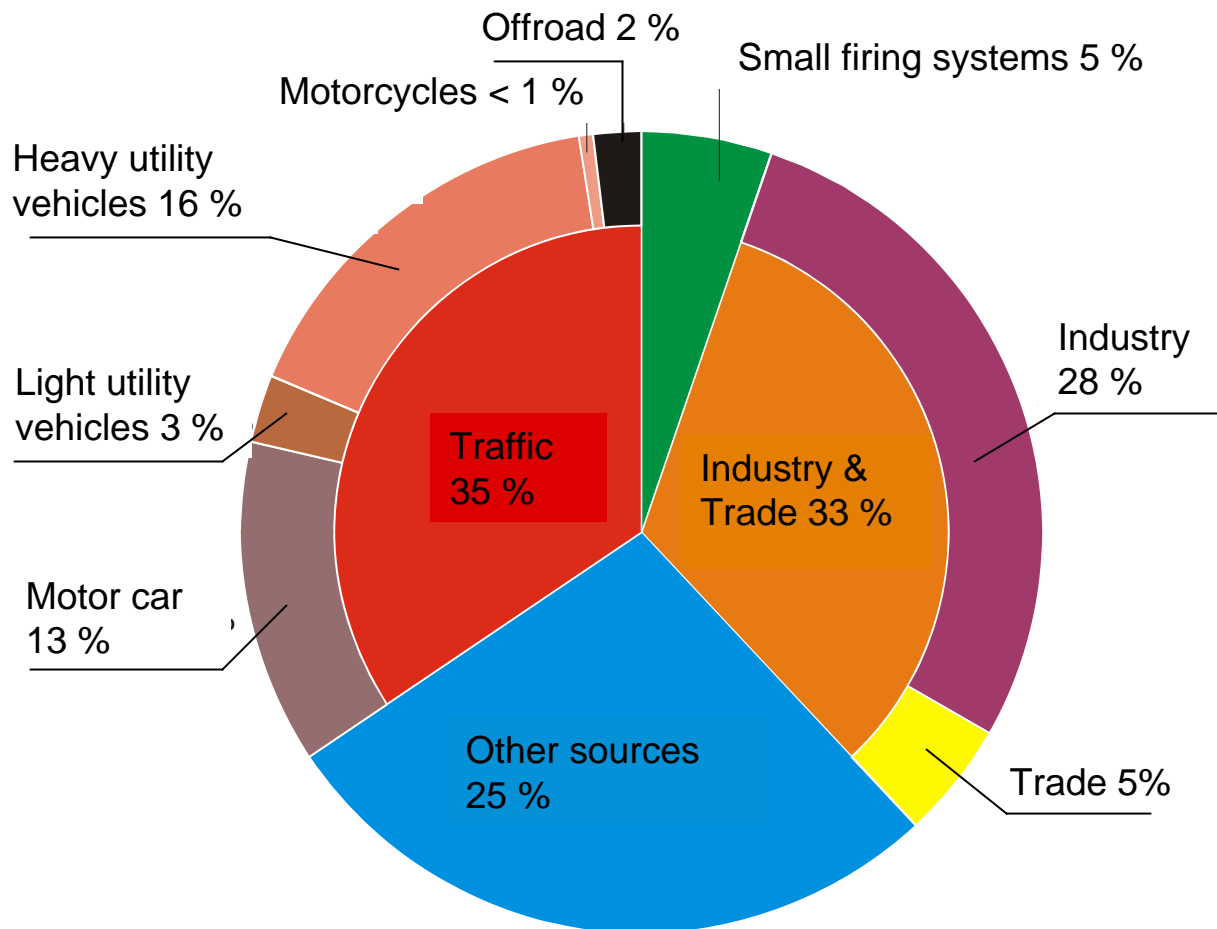
## *Restriction on driving, ban on driving*

- **Ban on driving for trucks in Stuttgart (since January 2006)**
- **Ban on driving for vehicles of several defined groups**
- **Toll for trucks on the interstate roads (Bundesstraßen) (currently on motorways only)**
- **Speed limits**
- **Areas of traffic calming (Verkehrsberuhigung)**

# The problem



# Contributions to PM10-Emissions



Offroad: shipping and air traffic, trains

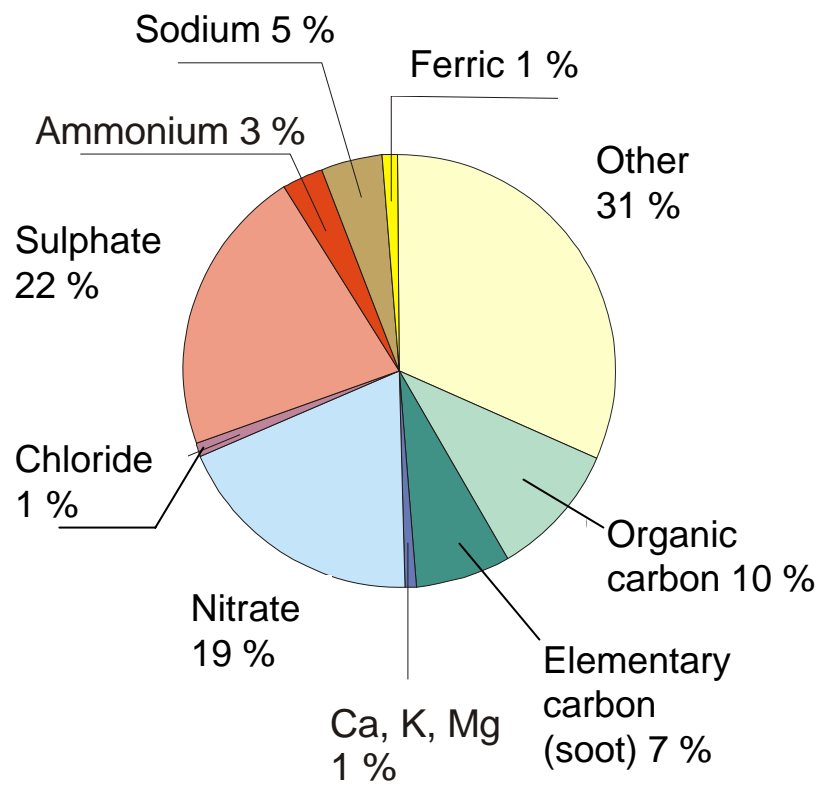
Other sources: devices, machines, other vehicles

## Natural and anthropogenic sources

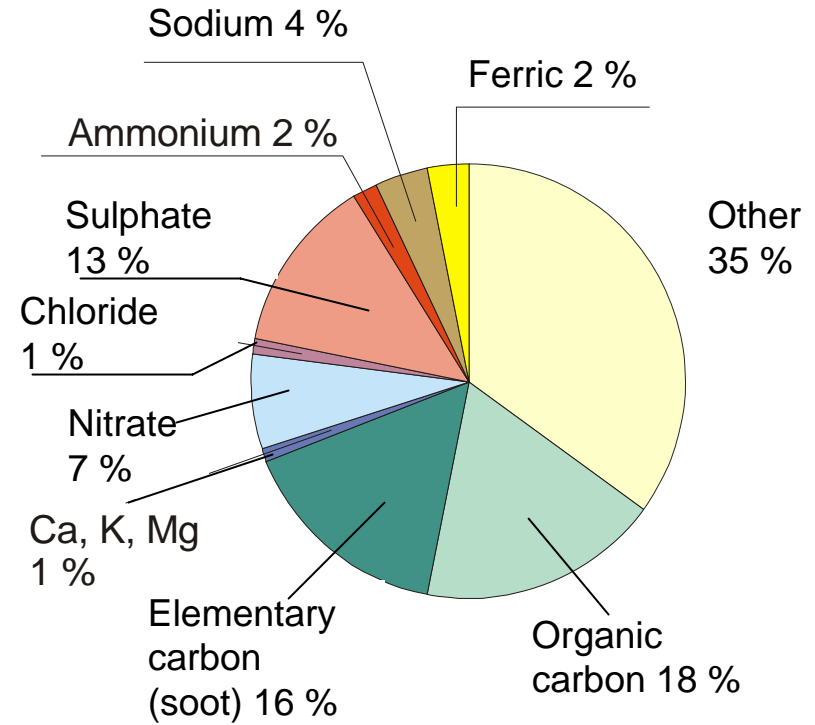
Source		Particle size
Natural sources	Soil erosion	1 – 150 $\mu\text{m}$
	Sandstorms	1 – 150 $\mu\text{m}$
	Volcanic ash	0,005 – 150 $\mu\text{m}$
	Sea salt	1 – 20 $\mu\text{m}$
	Ashes of forest fires	0,005 – 30 $\mu\text{m}$
	Biogenic dust (pollen, spores of mildews, excrements of mites)	2 – 50 $\mu\text{m}$
Anthropogenic sources	Stationary burning (heating, generation of energy)	0,005 – 2,5 $\mu\text{m}$
	Mobile burning (traffic)	0,005 – 2,5 $\mu\text{m}$
	Smelting	0,1 – 30 $\mu\text{m}$
	Industrial processes (metal working industry)	0,005 – 2,5 $\mu\text{m}$
	Bulk material (e.g. building sites)	10 – 150 $\mu\text{m}$
	Cigarette smoke	0,02 – 10 $\mu\text{m}$

# Contributions to PM10-Immission pollution

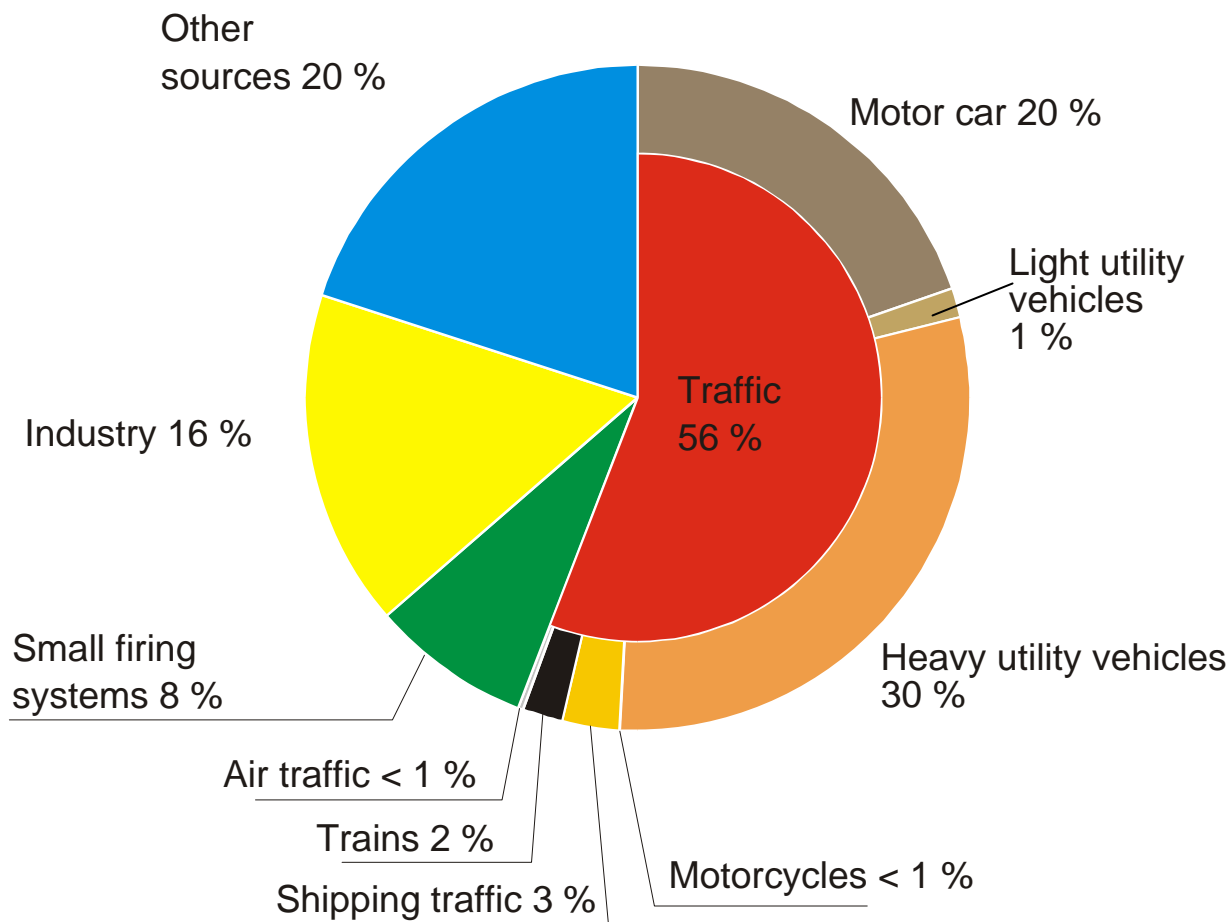
**PM10 dust contents  
Measuring station Swabian  
Mountains (few traffic)**



**PM10 dust contents  
Measuring station Stuttgart  
(much traffic)**



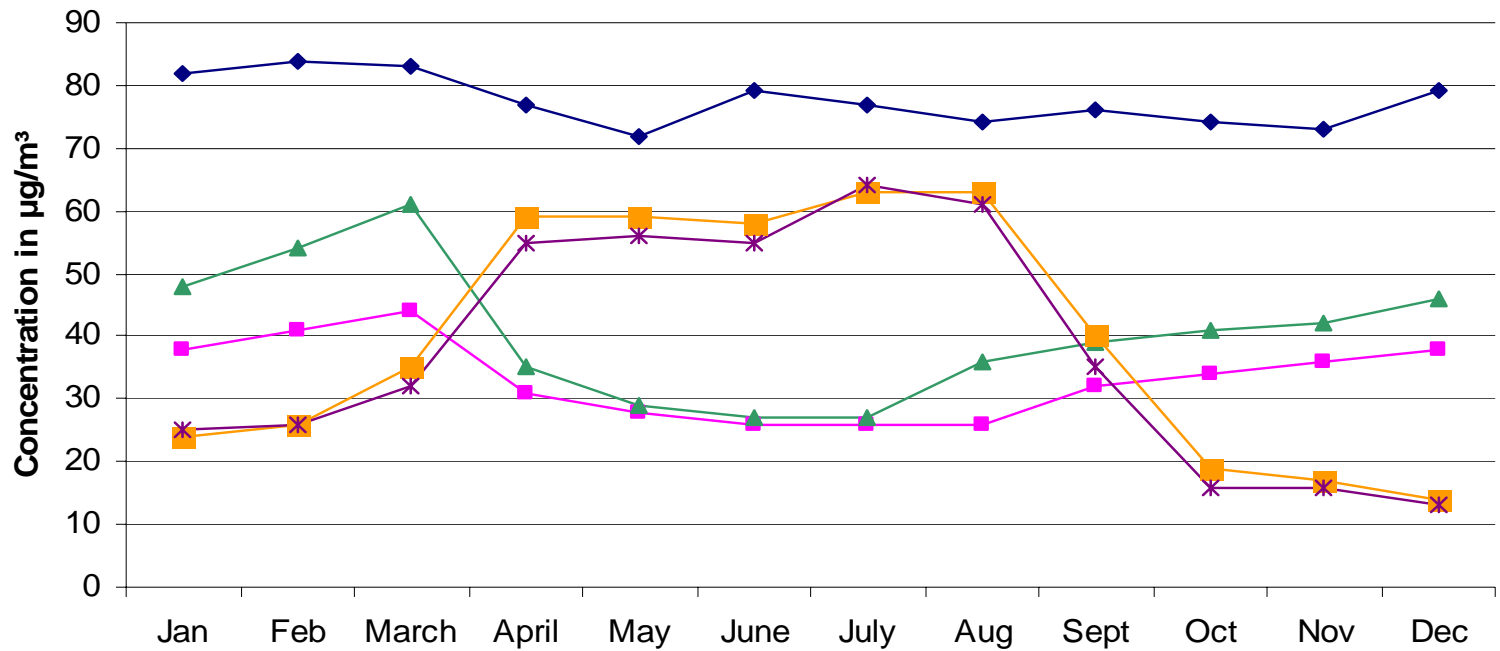
# Contributions of NO<sub>2</sub>-Emissions





# Comparison of the course of the year of “corresponding pollutants”

Course mean value of a month of ozone and nitrogendioxide  
of measuring stations in Stuttgart in 2004



◆ Stuttgart-Centre-Street NO2    ■ S-Bad-Cannstatt NO2    ▲ S-Zuffenhausen NO2  
■ S-Bad-Cannstatt Ozone    \* S-Zuffenhausen Ozone

## *Outlooks*

- In view of the legal limits of NO<sub>2</sub> which are valid in 2010 there will be draw up an another air protection plan especially for NO<sub>2</sub>.

- The Stuttgart Region will execute actions in partnership with the automotive industry to trim the pollution from vehicles

***Thank you for your attention!***

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