



European Union Network for the Implementation
and Enforcement of Environmental Law



STRATEGIES FOR VERIFICATION OF SELF-MONITORING AND REPORTING ON AIR EMISSIONS WORKSHOP

Monitoring of air emissions from industrial plants in Germany

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What I will talk about

- ▶ 1. 4 main sources of requirements for emission monitoring relevant for permits
- ▶ 2. Additional relevant regulations for emission monitoring
- ▶ 3. Emissions Remote Monitoring System

4 main sources of requirements for emission monitoring relevant for permits

1. Ordinance for large combustion plants (around 600 in Germany)
 2. Ordinance for medium combustion plants (around 40.000 in Germany)
 3. Ordinance for waste incineration (66 in Germany)
 4. "TA Luft" Technical Instructions on Air Quality Control (german administrative regulation ,f.ex . glass factories, paper production, metal factories, chemical plants, large animal farms etc.) around some tenthsousands in Germany; the revised version will come into force 1 December 21
- ▶ Around 10.000 IED-installations mostly under 1, 3 and 4 and in addition landfills, underground storage of waste ...

Single / continuous measurement

- ▶ Single measurements normally every 3 years by an external expert (who needs an approval of the authority) - they can also be carried out by the company's own immission control officer on request. Single measurements for substances who are “special”, or of which the emission quantity is not high enough for continuous measuring or where the authority has accepted it.
- ▶ Continuous measurements normally where it is prescribed by law or where certain thresholds are exceeded concerning the amount of pollutants emitted per time. F .Ex - according to TA Luft, the threshold for NO + NO₂ is 30 kg/h.

Continuous measurements

- ▶ The devices for continuous measurement of emissions must be suitability-tested (official list)
- ▶ The installation of the device must be carried out according to certain standards and must be certified by an approved external expert
- ▶ The devices must undergo a functional test once a year by an approved external expert - the result is checked by the authority
- ▶ The devices must undergo in addition a calibration every 3 years by an approved external expert - the result is checked by the authority

2. Additional relevant regulations for emission monitoring: E-PRTR and emission declaration

- ▶ **E-PRTR**
- ▶ Each PRTR facility must report the emitted pollutant amounts of the last year into air/water/ground for the entire site once per year via the internet application BUBE. But only if threshold values are exceeded.
- ▶ The data are checked for plausibility by a specialised environmental authority.

BUBE-Online

Betriebliche Umweltdatenberichterstattung

Reporting of industrial environmental data

... Sie haben sich erfolgreich ausgeloggt ...

Kennung*:

Passwort*:

[LINK: Erste Schritte](#)

[LINK: Tipps zum Anmelden](#)

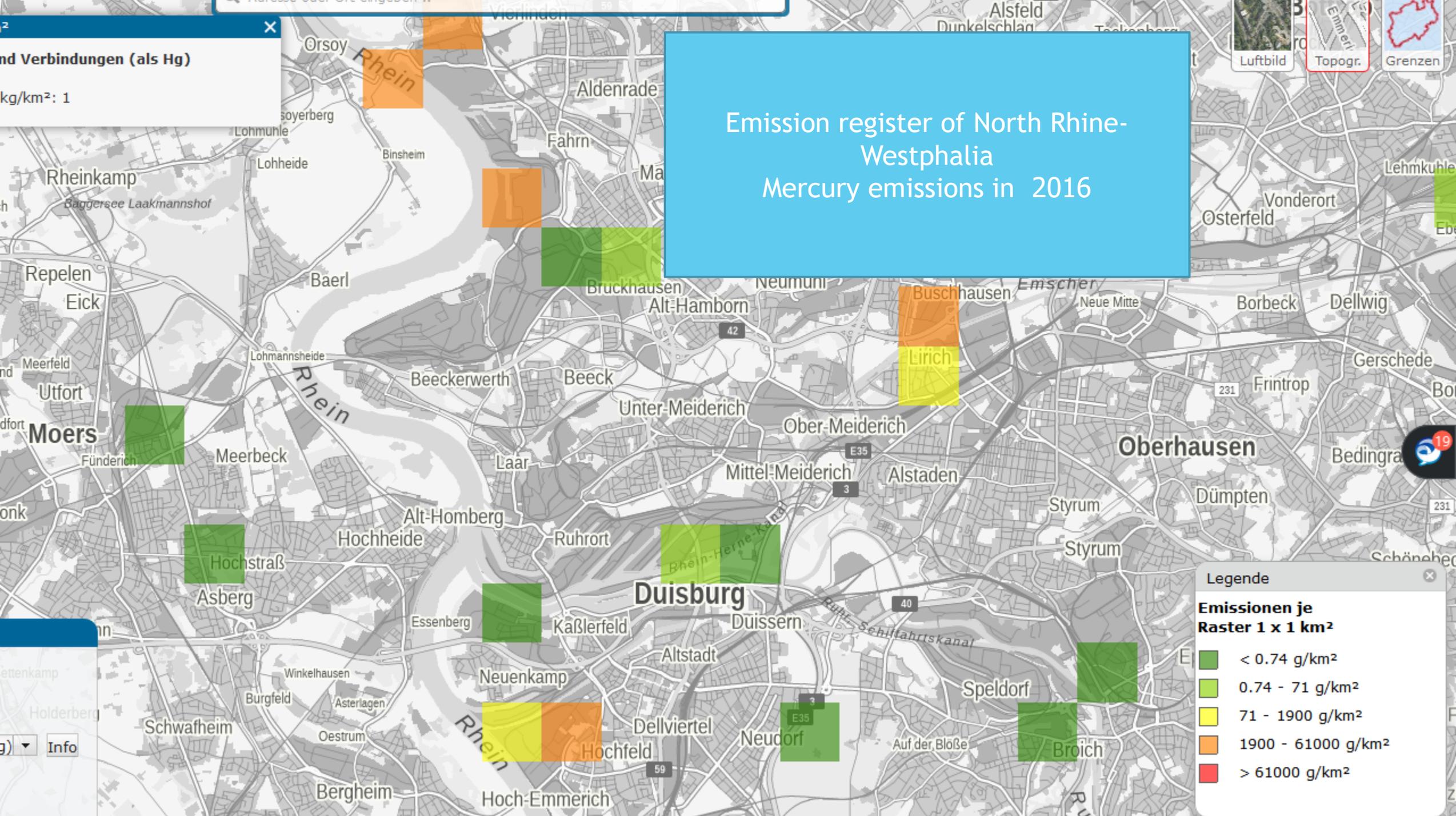
[LINK: Kontaktseite der Länderansprechpartner](#)



2. Additional relevant regulations for emission monitoring: E-PRTR and emission declaration

- ▶ **Emission declaration** (for the emission register)
- ▶ Each facility requiring a permit (according to the basic immission law) emitting a relevant amount of pollutants into the air must report via the internet application BUBE the amounts of pollutants emitted for the previous year for each individual installation every 4 years. The data are the basis for the North Rhine-Westphalia emission register "Emissionskataster"
- ▶ The data are checked for plausibility by a specialised environmental authority.

Emission register of North Rhine-Westphalia Mercury emissions in 2016



nd Verbindungen (als Hg)
kg/km²: 1

Luftbild Topogr. Grenzen

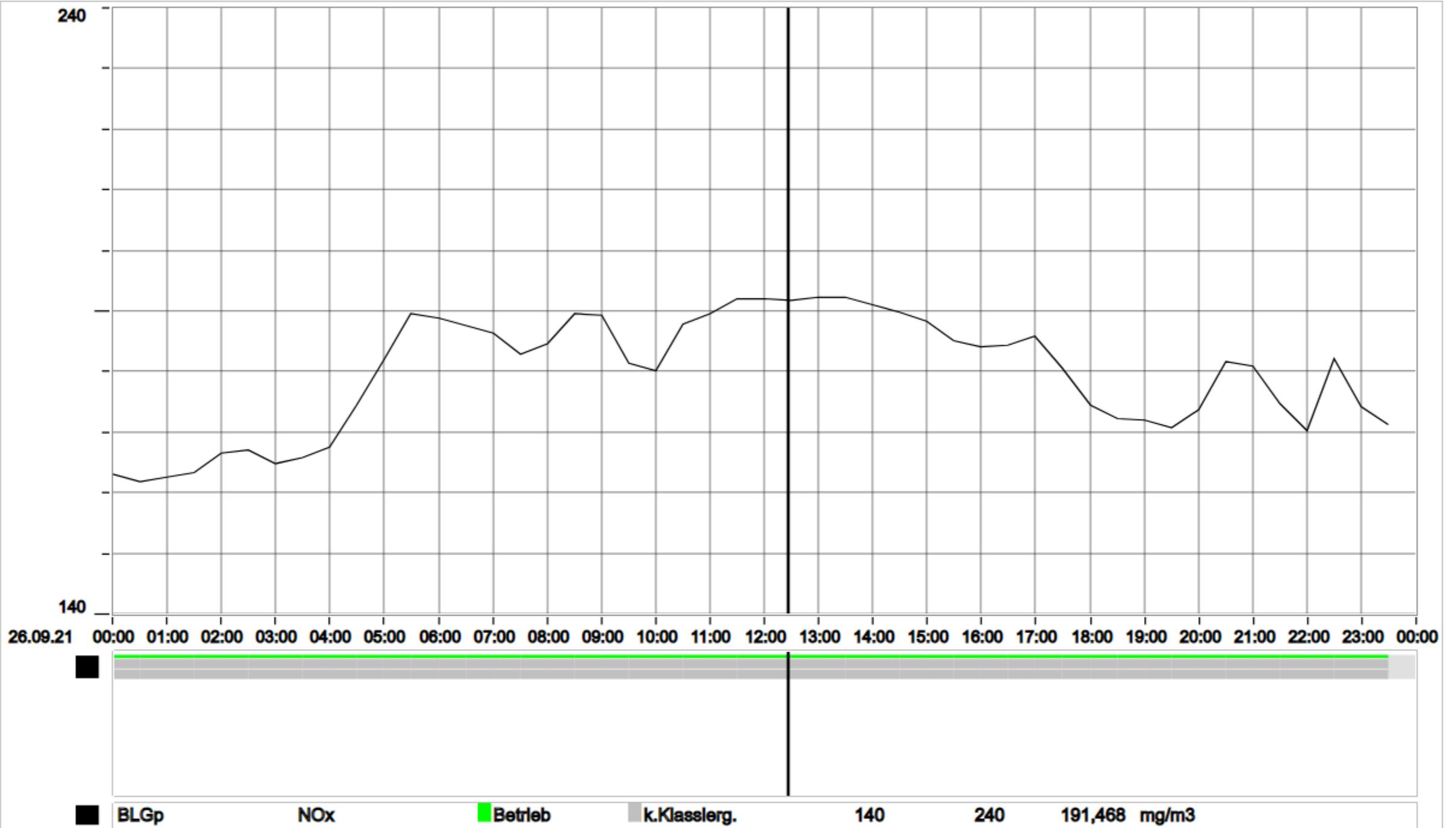
Legende

Emissionen je Raster 1 x 1 km²

- < 0.74 g/km²
- 0.74 - 71 g/km²
- 71 - 1900 g/km²
- 1900 - 61000 g/km²
- > 61000 g/km²

3. Emissions Remote Monitoring System

- ▶ **Basic idea**
- ▶ The authority has the possibility to see the data from the continuous monitoring of emissions on the computer in the office.
- ▶ Start in North Rhine-Westphalia in 1993 with a modem technology
- ▶ Currently, we still have a modem and parallel an Internet application- step by step, the existing connections will be converted to the Internet application.



BLGp

NOx

Betrieb

k.Klasslerg.

140

240

191,468 mg/m3



3. Emissions Remote Monitoring System

▶ Advantages

- ▶ It is a modern system that allows the authority and the operator to quickly see if the plant is operating in compliance or if there are any malfunctions
- ▶ It is a good argument for authorities and operators towards neighbors - the plant is transparent -we know what is happening

Conclusion and outlook

- ▶ The monitoring of emissions into the air from industrial plants in Germany works. It involves a great deal of effort for the authorities and industry.
- ▶ Parallel to the monitoring of emissions, it is also important to record the concrete concentrations of pollutants in the air. Regular measurements in Germany show that emissions from the industrial sector have been greatly reduced - this is not the case to the same extent for emissions from traffic, agriculture and residential furnaces.
- ▶ With single measurements there is always the risk that the plant is operating "cleaner" than normal at the time of the measurement. Therefore, continuous measurements are more trustworthy.
- ▶ It may be possible to reduce the effort by using operational parameters (e.g. from the process control system) instead of monitoring emissions in order to draw conclusions about emissions (Predictive Emissions Monitoring System (PEMS)).