

EU – Air Quality Standards

Target Value Pollutants

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ClientEarth
Prawnicy dla Ziemi

air pollution and human health

“Air pollution is the world’s largest single environmental health risk” (WHO, 2014)



Ambient Air Quality Directives

- [2004/107/EC](#) relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air
- [2008/50/EC](#) on ambient air quality and cleaner air for Europe

the right to clean air – the theory

Ambient Air Quality Directives

Substance

- Limit values
- Target values

Procedure

- Monitoring
- Reporting
- Air quality plans

limit and target values

- **limit value:** concentration level to be attained within a given period and **not to be exceeded** once attained; if exceeded, compliance must be achieved in **the shortest time possible**
- **target value:** concentration level to be attained **where possible** over a given period; Member States shall take all necessary measures **not entailing disproportionate costs**

Limit and target values

| POLLUTANT | Value |
|----------------------|--------------------------|
| PM 2.5 | Limit value (since 2015) |
| SO ₂ | Limit value |
| NO ₂ | Limit value |
| PM ₁₀ | Limit value |
| Lead (Pb) | Limit value |
| Carbon monoxide | Limit value |
| Benzene | Limit value |
| Ozone O ₃ | Target value |
| B(a)P | Target value |
| Arsenic (As) | Target value |
| Cadmium (Cd) | Target value |
| Nickel (Ni) | Target value |

1. Pollutants, their target values and WHO recommendations:

| POLLUTANT | CONCENTRATION – target value | WHO | |
|--|---------------------------------|--------------------------------|---|
| | | AQG [Air Quality Guideline] | An estimated reference level (where the WHO has not recommended a guideline value. |
| Ozone µg/m ³ maximum daily 8-hour mean | 120 | 100 | |
| Polycyclic Aromatic Hydrocarbons ng/m ³ (expressed as concentration of Benzo(a)pyrene) annual | 1 | | 0.12 |
| Arsenic (As) ng/m ³ annual | 6 | | 6.6 |
| Cadmium (Cd) ng/m ³ annual | 5 | 5 | |
| Nickel (Ni) ng/m ³ annual | 20 | | 25 |

target values exceeded in 2014

- **ozone:** 16 countries registered beyond target levels
- **B(a)P:** more than a third of the reported BaP measurement stations in Europe measured annual concentrations above 1 ng/m³. Predominantly Central and Eastern Europe; PL mean level: 4.8 ng/m³
- **As:** exceedance on 7 stations: BE (3); PL (3); FI (1)
- **Cd:** exceedance on 7 stations: BE (4); BG (2); CZ (1)
- **Ni:** exceedance on 5 stations: BE (1); NO (1); SP (1); UK (2)

pollutants and their contributors

- **ozone**: formed from chemical reactions in the presence of sunlight from precursor gases: NO_x and NMVOCs;.
- **B(a)P**: emitted from the incomplete combustion of fuels; particularly in domestic heating (71%); coke and steel production;
- **As**: metal smelters and fuel combustion; 61%: industry
- **Cd**: metal production, fossil-fuel combustion; 58% of the emissions from the industrial sector;
- **Ni**: Ni mining and primary production (36%), coal combustion (36% in the energy sector)

health and environmental impact

| Impact | | |
|----------------------|---|--|
| POLLUTANT | Health impact | Envi. impact |
| Ozone O ₃ | Chest pain, airway inflammation; Reduce lung function; can worsen asthma | Affects sensitive vegetation and ecosystems |
| B(a)P | May cause respiratory irritation, carcinogen | Accumulation in organisms, water, sediments |
| Arsenic (As) | Acutely toxic, cardiovascular and nervous system functions, chronic exposure: blackfoot disease | Accumulates in the environment |
| Cadmium (Cd) | Effect on kidneys, skeletal damage, carcinogenic | A non-essential heavy metal, not used by biological systems, accumulates |
| Nickel (Ni) | Increases the risk of lung and respiratory cancers, birth defects, allergic reactions | High concentrations can damage plants |

externalities

| European average damage cost per tonne (EUR) | |
|--|---------------|
| POLLUTANT | Health impact |
| Ozone O ₃ | No data |
| B(a)P | No data |
| Arsenic (As) | 349 000 |
| Cadmium (Cd) | 29 000 |
| Nickel (Ni) | 3 800 |

target values infringement complaints

- **Poland** - 10 February 2017 - Fundacja ClientEarth, Prawnicy dla Ziemi, Fundacja Akcja Demokracja, Fundacja Greenpeace Polska, Stowarzyszenie “Miasto Jest Nasze” – constant breaches of **benzo(a)pyrene** target values (98% measuring stations in 2015)
- **Spain** – 12 July 2017 - Ecologistas en Acción – lack of plans to improve air quality in the fifty areas which have breached **ozone** target values

target values and enforceability

- the breaches of limit values perceived as the primary problem to solve
- less strict binding rules: target values are not considered as binding
- failure to conduct tests on the disproportionate costs
- failure to take effective actions: adoption of inadequate/insufficient resources

thank you!

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