

Ranking indoor air health problems using health impact assessment

Service contract for the EC, DG ENVIRONMENT
VITO

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Objectives

1. the health impacts arising from the various contamination issues, including uncertainties, and to make recommendations for filling any information gaps;
2. the key indoor air pollutants in homes and key public spaces across the EU, with an indication of the potential for intervention;
3. and, based on the Member States' current practice, to inform the Commission on:
 - a) the risks associated with the exposure to indoor air pollutants in public spaces;
 - b) the existing surveillance monitoring schemes of public spaces and private homes;
 - c) the implementation of exposure limits.



Key messages

1. **Consensus on a cross-section of priority pollutants:** ETS, formaldehyde, CO, particles (PM2.5 and PM10), NO2, benzene, naphthalene, moulds and mites, dampness/moisture, CO2 (measure for ventilation) and radon.
2. **Participation** and consensus, EWGIA offers a good platform.
3. A **common framework**, supported by guidelines or limit values.
4. Consider the development of **European guideline values or limit values** for these pollutants.
5. **The basic tools and instruments should be harmonised** at EU level.
6. A **harmonized monitoring** approach
 1. for chemical pollution and ventilation (CO2) in **schools**.
 2. to monitor microbial contamination in **hospitals**, and care centres for the elderly.
 3. More knowledge on the acute exposure in different **transport** systems.
7. How to tackle indoor **moulds and dampness in existing private residences**.
8. **Reduce children's exposure to ETS in private residences**.
9. **European research**



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2. **Participation and consensus, EWG** **INTEGRATION**

3. **A common framework**, supported by guidelines or limit values.

4. Consider the development of **European guideline values or limit values** for these pollutants.

5. **The basic tools and instruments should be harmonised** at EU level.

6. **A harmonized monitoring approach** **HARMONIZATION**

1. for chemical pollution and ventilation (CO2) in **schools**.
2. to monitor microbial contamination in **hospitals**, and care centres for the elderly.
3. More knowledge on the acute exposure in different **transport** systems.

7. How to tackle indoor **moulds and dampness in existing private residences**.

TARGETTING the vulnerable

8. **Reduce children's exposure to ETS in private residences**.

9. **European research** **INNOVATION**



INTEGRATION of POLICIES

INTEGRATION OF POLICIES AT THE LEVEL OF GLOBAL SUSTAINABILITY

Climate & energy policies
Urban environment and public health
Socio-economic inequality - Sustainable housing – quality of life

INTEGRATION OF POLICIES AT THE LEVEL OF PUBLIC HEALTH

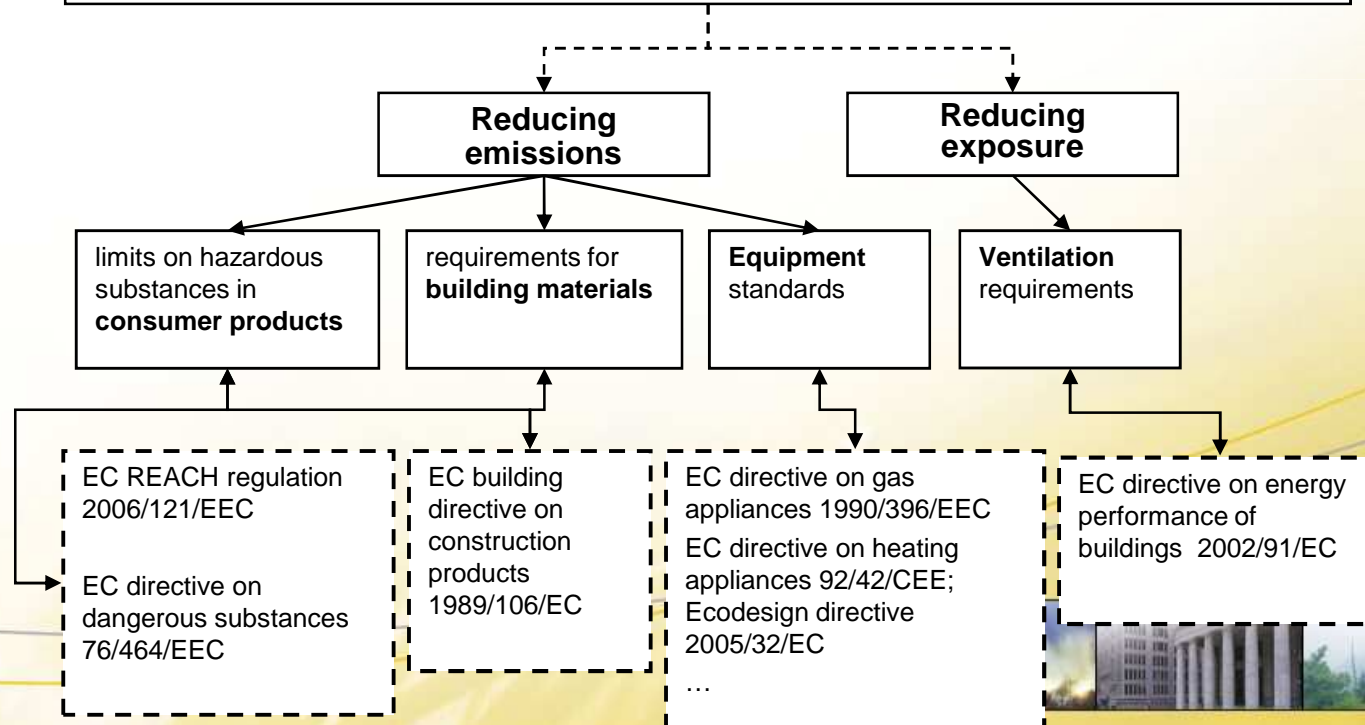
Environment (Ambient air quality guidelines directive 96/62/EC, CAFE...), Anti-tobacco legislation, Prevention policies (lifestyle and behaviour),

INTEGRATION OF POLICIES AT INDOOR LEVEL

*Indoor environment - indoor air quality guidelines
monitoring programmes
sanitation plans*

ALARA

CAUSES & SOURCES



POLICY INSTRUMENTS AT SECTORAL LEVEL



FOR WHICH POLLUTANTS?

- ***ETS, formaldehyde, CO, particles (PM2.5 and PM10), NO2, benzene, naphthalene, moulds and mites, dampness/moisture, CO2 (measure for ventilation) and radon.***
 - INDEX, THADE, SCHER opinion, WHO indoor air working group,
 - Consensus on a cross section
 - the opinion of workshop participants,
 - Current practice in MS
- This prioritization relies on the existing body of evidence, more than on a formal health impact assessment.
- A formal health impact assessment is however crucial to include the health impacts of indoor air pollution and the benefits of indoor air quality interventions in a cost-benefit assessment.



FOR WHICH INDOOR ENVIRONMENTS?

- For most of the priority pollutants, information on indoor air concentrations in various micro-environments is available.
 - However, different measurement techniques/periods,
 - Most studies are limited to a short period of time,
 - not necessarily representative for the EU, nor for a EU region.
- The most useful information in the **pan European studies** like EXPOLIS, MACBETH, PEOPLE and AIRMEX.
 - In these studies, the same methods and study-setup is applied across different EU cities.
- Specific selection of public spaces more based on national studies, consensus, common sense rather than EU-wide RA
 - Schools, hospitals/elderly homes, transport (?)



HOW?

- Expand existing instruments and methods (the sectoral policies)
- With a focus on health, via exposure limits
- Backed by a monitoring of implementation
- In a harmonized way
 - Of emission testing procedures
 - Of monitoring requirements
 - What, how, where and when to measure?
 - →ECA, CEN ...



HOW?

- Communicating benefits...
 - The succes of smoking ban as example
 - Passively exposed vs. Active ETS polluters
 - Children are always passively exposed
- ... And limitations
 - the majority of indoor problems requires a DIY solution,
 - with individuals understanding the risk, managing the risk and reducing the risk.
 - Policy makers role is to communicate and to enable this!



Gaps and uncertainty

- ERF from small panel studies
 - Extend the epi database through research (APHEA/expolis-like)
 - Review and meta-analysis in (WHO)working groups
 - Causality and transferability for use in HIA
- Country-specific exposure and prevalence data
- Exposure assessment is the challenge for indoor air
- Particles – house dust !
 - Excellent risk assessment in INDEX should continue
- Specify the inclusion of emerging pollutants in EU research.



Overall (and for EnVIE)

- Consensus based on evidence about health and exposure.
- There is progress in putting the indoor environment on the agenda,
 - integrated in the wider picture of the (built) environment, climate and health.
 - Use (sharpen) existing policies dealing with it;
- Missing link: exposure limits, IAQ guidelines to control combined exposures
- Technical problem of implementation of IAQ policies: logistics of monitoring compliance → this requires innovative solutions



FINALLY

- If you had a euro to spend...
- Socio-economic inequality and poor housing
- The exposure of children indoors to privacy related behaviour, lifestyle or through ignorance of risks



Thank you!

- Report available at EHAP website
- http://ec.europa.eu/environment/health/pdf/report_nov_2007.pdf
- Including annex on exposure data, exposure response relationships, country specific information
- http://ec.europa.eu/environment/health/pdf/report_annexes_nov_2007.pdf



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