

Health and Particles – Regulatory Aspects

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Scientist



Regulator

Open question

Scientist



Regulator

Open question

Health-relevant?

New research !

New funding !

Publications !



Open question

Health-relevant?

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Open question

Health-relevant?

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Health-relevant ?

New problem !

Action needed ?

Legal basis ?

Costs ?



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Health-relevant ?

New problem !

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Legal basis ?

Costs ?



PM and Health

Is there a problem?	Yes
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Is there a need for action?	Yes
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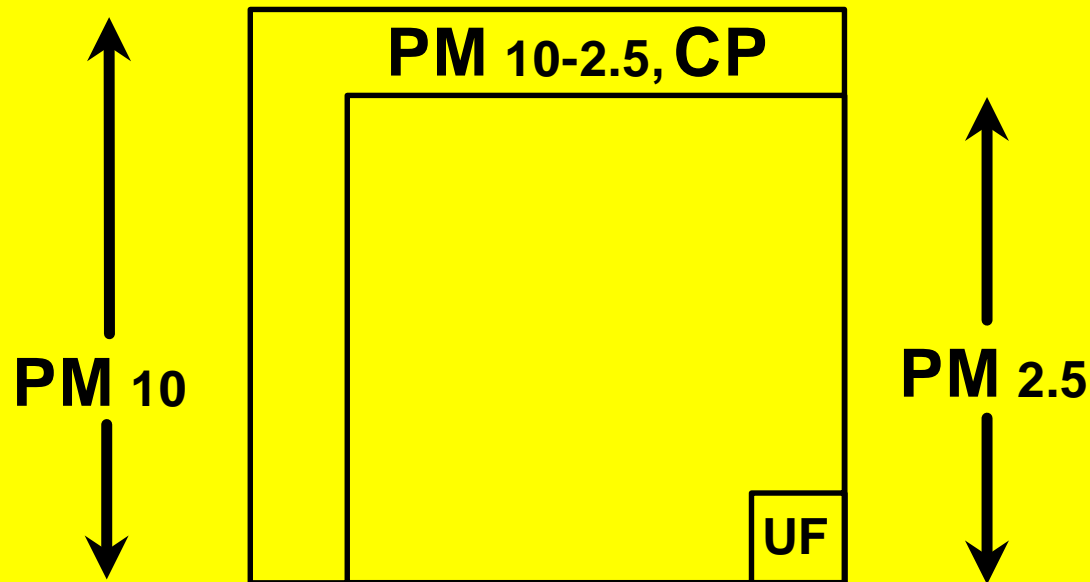
Which kind of action?	?
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Legislation / actions should be

- transparent
- simple
- proportional („limited to what is necessary“)

Which kind of particles (1)?

PM fractions



Which kind of particles (2)?

- **Relationship to health effects**
- **Measurement**
- **Costs and benefits**

Which kind of particles (3)?

..., there is sufficient concern to consider reducing exposure to coarse particles as well as to fine particles.

..., ultrafine particles ... their effect on human health has been insufficiently studied to permit a quantitative evaluation of the risks to health of exposure to such particles.

Systematic Review of Health Aspects of Air Pollution in Europe (WHO, 2004)

Which kind of particles (4)?

	PM ₁₀	CP	PM _{2.5}	UF
Relationship to health effects	✓	(✓)	✓	?
Measurement	✓	(✓)	(✓)	?

EC Legislation

COUNCIL DIRECTIVE of 15 July 1980 on air quality limit values and guide values for sulphur dioxide and suspended particulates (80/779/EEC) (black smoke, TSP)

COUNCIL DIRECTIVE 96/62/EC of 27 September 1996 on ambient air quality assessment and management (Framework Directive)

COUNCIL DIRECTIVE 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air (PM₁₀)

Current legislation

PM₁₀

PM₁₀ (= CP + PM_{2.5})

[„..., there is sufficient concern to consider reducing exposure to coarse particles as well as to fine particles.”]

“In any case, a set of limit values consisting of an **annual mean and a **maximum daily mean** with a low number of annual exceedances allowed should be **balanced**, i.e. the relation between these two limit values should reflect a “normal European situation” in the sense that control measures are more or less equally necessary to meet both limit values.”**

Technical Working Group Position Paper, 1997

Position Paper

24-h 50 $\mu\text{g}/\text{m}^3$ (7x)

year 20 $\mu\text{g}/\text{m}^3$

Position Paper

24-h 50 $\mu\text{g}/\text{m}^3$ (7x) → 50 $\mu\text{g}/\text{m}^3$ (35x)

year 20 $\mu\text{g}/\text{m}^3$ → 30 $\mu\text{g}/\text{m}^3$

Council Directive

24-h 50 $\mu\text{g}/\text{m}^3$ (7x) → 50 $\mu\text{g}/\text{m}^3$ (35x)

year 20 $\mu\text{g}/\text{m}^3$ → 30 $\mu\text{g}/\text{m}^3$

Council Directive 1999/30/EC of 22 April 1999

24-h	50 $\mu\text{g}/\text{m}^3$ (7x)	→	50 $\mu\text{g}/\text{m}^3$ (35x)
year	20 $\mu\text{g}/\text{m}^3$	→	30 $\mu\text{g}/\text{m}^3$ → 40 $\mu\text{g}/\text{m}^3$

Council Directive 1999/30/EC of 22 April 1999

Options

- waiting
- adapting limit values → 24-hour value
annual mean
change metric

Options

24-hour	annual mean	Health protection
50 (35+X)	40	↓
—	40	↓
50 (35)	30	=
—	30	=

Metrics

PM₁₀ ?

CP ?

PM_{2.5} ?

Options

PM₁₀	PM_{2.5}
yes	less stringent equivalent more stringent
no	less stringent equivalent more stringent

Political Agreement (Council) 10/2006

PM₁₀

No change, more flexibility

PM_{2.5}

- ***Limit Value 25 µg/m³ (year) to be met by 2015
(Should be met as a *Target Value* by 2010)***
- ***Exposure Reduction Target relative to 2010
(above 13 µg/m³ 20 % by 2020)***

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➔ Changes need good reasons

Thank you for your attention!