

Shaping the Air Quality and Health research of EU Framework Programme 7

CONCAWE's view

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'Focus on human health impacts'

- Levels in ambient air of most pollutants have been dropping as a result of a series of legislative initiatives on emissions and technological advances
- However, the Clean Air for Europe programme (CAFE) recently calculated hundreds of thousands of deaths caused by particulate matter in ambient air – major public health concern in the EU?
- Assumed effects even at very low levels, i.e. 'every particle can kill'
 - ❑ Goes against current toxicological knowledge
 - ❑ Leads to undifferentiated emission control initiatives
- New legislative proposals for emissions reductions, at extra cost of billions of € on top of already required investments through current legislation enacted
- Good scientific analysis is important
 - ❑ To guide policy makers
 - ❑ To target source measures
 - ◆ Combustion emissions: conflicting measures to reduce NO_x and particulate require resolution of whether NO_x is toxic in its own right or whether it is simply a marker

'Current scientific health data are not conclusive'

- Underlying scientific studies have important knowledge gaps
 - ❑ Mostly US studies (different – historical – pollution mix from the EU in 2006)
 - ❑ No individual cases identified – 'statistical deaths'
 - ❑ One study showed effects of ambient PM in males, not females
 - ❑ Another study showed no effects over period 1979-1999 for higher educated individuals (insufficient adjustment for smoking cessation?)
 - ❑ When re-analysed, the key study used for CAFE showed effects of PM strongly influenced by SO₂ – in the EU today much lower than in study period
 - ❑ Range of common diseases [such as cardiovascular disease], with possible multifactorial etiology, but entire effect attributed to air pollution
 - ❑ Attributed effects to single pollutant, i.e. PM even though always part of mix
 - ❑ No agreed mechanisms by which low levels of air pollution could cause serious health problems or which components of PM are most important
 - ❑ Issues with statistical analysis

- Not possible to improve existing studies
 - ❑ US moving forward with major new studies
 - ❑ EU needs the same

Focus on human health impacts' – FP7 opportunities

- Optimise future utility of FP7 research aiming at having the largest impact on human health in near future
- Focus on interplay between environmental stressors, lifestyle factors, socio-economic status, vulnerable populations, human biology and common disease that influence life expectancy and quality of life
- Identifying the complex factors in the environment that can increase risk of disease requires a shift in approach from 'single investigators' to 'integrated research teams'
- Focus on health impact of actions /interventions to improve air quality
 - evaluate concurrent changes that affect exposure and health effects
 - this relates especially to regulations implemented over long time periods

'EU needs cutting edge, integrative study designs'

- FP-7 should provide the opportunity to develop studies that can
 - ❑ Put air pollution in the wider context of overall health impact by environmental factors - Whilst accounting for other risk factors of the same health disorders
 - ❑ Seek to involve all relevant disciplines, i.e. exposure assessment, source apportionment, clinical, experimental and mechanistic data, as well as environmental epidemiology
 - ◆ Seek to advance scientific relevance of their approaches, e.g. measure exposures as biological activity (e.g. oxidative stress) in ambient air samples
 - ◆ Increase involvement of experts on main diseases
 - ❑ Develop robust test approaches to anticipate and evaluate health effects of policy interventions and technological change
 - ❑ Provide answers within a policy-relevant time frame

- CONCAWE asks:
 - ❑ the ability to comment on the scientific content of research proposals prior to taking any final decision by DG RTD, for example through the Commission's Consultative Forum on Environment and Health
 - ❑ a mechanism to continue to be informed on the progress of projects
 - ❑ communication and dialogue with stakeholders at key project milestones