EFCA Newsletter

European Federation of Clean Air and Environmental Protection Associations

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Clean Air for Europe: some questions left

We are presently witnessing an increasing list of Member States which are being warned by the Commission to comply with the 2010 deadline of air quality legislation without delay. Also some countries which continue to fail are already being taken to Court. Political priorities at national level could be responsible for this failure. But are they?

The Commission agreed earlier this year that under the present legislation air quality across Europe is unlikely to improve sufficiently to protect human health adequately within the next ten years. The conclusion that further action is needed had to be drawn in spite of the adoption of a revised Air Quality Directive (2008), the Euro 5/6 and EURO V/VI Regulations for mobile sources (2009) and the Industrial Pollution Directive (2010). Also, even under full compliance with this legislation and when its full impact will be visible (well after 2020) the conclusion still remains valid.

In response, Commissioner Janus Potocnik and his staff are now gradually revealing a number of new policy actions. These include a new National Emissions Ceilings (NEC) Directive, already expected as part of the Thematic Strategy on Air Pollution, as well as a revision of the Air Quality Directive. The development of the renewed policy is meant to take place within the next two years, making 2013 the "Year of Air".

With respect to the Air Quality Directive, EFCA's recent symposium on Ultrafine particles (UFP-3) brought together some new insights which are of interest for the way particulate matter could be addressed in this legislation. There is now epidemiological evidence that the present mass based approach for PM_{10} and $PM_{2.5}$ is certainly relevant though less than previously assumed. Therefore, its claim with respect to the reduction of health risks might be an overestimation. An approach addressing black carbon particles is likely to be more effective. At the symposium this 'Metrics' problem was discussed in depth including issues relating its translation into practical policy options. The Commission appeared to be aware of the relevance of the new insights.
UFP-3's Conference report in this Newsletter provides more detailed information.

Developments in EU policy

New policies on clean air

In a speech on 22 March in Brussels, Commissioner Janus Potocnik revealed the outlines of new policies aiming at the further improvement of air quality which are currently being developed for adoption over the next years. After the Clean Air for Europe program (CAFE, 2001-2005) and the Thematic Strategy on Air Pollution (TSAP, 2006-2011) he announced that 2013 will become the "Year of Air". Cornerstones for this initiative will be proposals for a revision of two major Directives: the Air Quality Directive and the National Emissions Ceiling (NEC) Directive.

In addition to more effective legislation - which will work on the longer term –action will also be taken in the short term to tackle present gaps in regulation.

- Diesel-powered vehicles have been reported to produce substantially higher emissions under real driving conditions than were expected on the basis of the type-approval standards. In order to remove these discrepancies, an improved test cycle will be established which will include portable systems for on-road emission measurements. Such systems are already part of the type-approval legislation for heavy-duty vehicles under EURO VI and are being developed for cars to apply from 2013
- A further restriction of the maximal sulphur content in bunker fuels will be enforced through an adapted Fuels Directive in the first half of 2011. This adaptation will effectively transpose the Marpol Annex VI of the International Maritime Organisation into EU legislation
- Co-benefits for air quality are expected to result from initiatives of the Climate Action, Transport and Energy Directorates of the Commission.

In a Staff Working Paper, also from March this year, details are provided on the intended comprehensive review of the EU's clean air policy. The process has already been started and includes as its main elements:

- a public online consultation (see below)
- the establishment of a stakeholder group which is to follow the review process
- dedicated workshops and events on particular themes
- the dialogue with international organisations, such as WHO, UNECE and others.

In addition to the short term measures already mentioned by Commissioner Potocnik, the document also recommends supporting the focus on the urban dimension and in particular the implementation of Sustainable Urban Mobility Plans. By launching EU-wide electro-mobility demonstration projects, the roll-out of clean and near zero carbon vehicles could be fostered. Also, promoting the upgrading of vehicles with retrofit technologies is mentioned.

Finally, the importance of creating co-benefits with climate change policy is being addressed. In this respect black carbon is mentioned as a pollutant which also has a high radiative forcing potential. The existence of trade-offs with climate change policy and the need for managing and minimising this is also acknowledged.

More information: Speech; Staff Working Paper

Consultation launched

On 30 June the Commission launched a public online consultation on Improving EU air quality policy which is to run until 22 September 2011. Details are to be found at Consultation.

Nano and Ultrafine particles

As part of the policy proposals which will be developed the Commission will consider whether a specific approach for nanomaterial (NM) and ultrafine particles (UFP) is to be included. While UFP already feature for some time in the scientific discussion on particulate matter (see the report on the UFP-3 symposium in this Newsletter), industrial applications of NM have more recently made a rapid development; the range of products which contain NM is diverse and numerous. The European Parliament has at several occasions expressed its concern for the health risks of NM.

In a presentation at EFCA's third symposium on UFP in May in Brussels *Andre Zuber* (DG Environment) reported on a current comprehensive study which had been committed by the Commission. The study aims at revealing the state of present knowledge on atmospheric releases (EU27), their dynamics and impact on human health and the environment and at providing recommendations on how to address identified gaps in knowledge. In addition, the study is to deliver a review and appraisal of EU legislation on industrial emissions of NMs and UFPs and to develop policy options when appropriate. He invited EFCA to send a representative to a Stakeholders meeting where a first draft of the report was to be discussed. *Dr Hanns-R. Paur* (KIT – ITC-TAB, Karlsruhe, Germany) was so kind to attend the meeting on 7 June in Brussels on behalf of EFCA and to report on what Stakeholders and authors of the study presently agree on.

Stakeholder meeting on Industrial emissions of nanomaterials and ultrafine particles

Ambient levels

Information on ambient levels of both UFP and NM is presently developing. Measurement techniques are available and typical background levels of 2 µg/m3 for UFP and 4 ng/m3 for NM have been reported.

Emissions

Techniques for emission measurements at the source are less advanced, in particular with respect to NM. A reliable measurement of both UFP and NM, however, will require the development of a sampling standard and fractionation profiles of PM 0.1 emission data have to be improved. The efforts by the automobile industry during the last 15 years to develop0 such a standard are seen as a role model. Nevertheless, the availability of reliable, low-cost on line instruments to determine particle number concentrations in off-gases under severe industrial conditions was largely questioned.

Toxicity

Information which would allow a reliable risk assessment of specific exposures of humans or other impacts in the environment is not available. While there is some epidemiological evidence for stronger effects from combustion-related UFP, toxicological studies have not been systematic due to the large number of cell systems and different endpoints. There is a need for their further development to support the relevance of physico-chemical measurements.

Abatement

While there is large number of abatement technologies for different industries there is a general lack of information on their effectiveness. While fabric filters are reported to provide the higher removal rates for UFP/NM, other technologies could be more when sticky and hygroscopic particles have to be removed reliably.

Legislation

The recently adopted Industrial Emissions Directive was found to cover UFP/NM emissions from the major sources adequately. However, industrial installations that fall below the capacity threshold of the IED (thermal input < 50 MW; other sectors) are not covered. As the technolgies are available it was recommended that the BREF review process should give specific consideration of UFP/NM. Furthermore, introduction of additional binding emission limits for UFP/NM in potentially significant sectors (e.g. waste incinerators) is to be considered.

Conclusion

The study provides a basis for gradual improvement of EU-legislation on industrial UFP/NM emissions. As significant uncertainties remain with respect to quantitative emission data, metrics, sampling standards and monitoring equipment as well as with the exposure risks more efforts to improve these tools is needed. Publication of the final report is expected in the autumn of 2011.

Free allowances in Emission Trading System

Commissioner Connie Hedegaard announced an initiative to review the present structure and functioning of the EU Emissions Trading System. It will start with a stakeholders consultation via the internet in the first half of this year and be followed by an impact assessment. Recent fraudulent attacks at the ETS which caused an interruption of its activities have to be considered in a decision on whether new legislation is required.
More information: Emissions trading

EU ETS emissions in 2010

After the exceptional drop in CO_2-emissions of 11.6% during 2009 due to the recession emissions have gone up again during 2010 by 3%. This increase is to be compared with a 6.7% increase in the average industrial production index in the same period and most probably reflects an increase in the fuel-efficiency of industrial production during 2010.

An analysis of the data revealed that about 5% of the allowances are accounted for by international emission reduction credits (ERCs; as defined e.g. under the flexible mechanisms of the Kyoto Protocol). The combined ERCs since 2008 amount to 21% of the approximately 1.4 billion credits that are allowed over the 2008-2012 trading period.
More information: ETS; Registry of ETS emissions by country

EP: No new climate position

On 5 July, the European Parliament voted against a conditional 30% greenhouse gas reductions target. A draft resolution prepared by EP Member Bas Eickhout and amended to remove concerns on its economic implications was rejected by a majority of 52% of votes. The rejection means that the position of Parliament remains the resolution of November 2010 which recommended an unconditional, unilateral 30% greenhouse gas reduction.
Commissioner Connie Hedegaard noted in response that a very large majority of the EP is in favour of going beyond 20%. Referring to the Roadmap 2050 she explained that delivering on its target of 20% improvement of energy efficiency in 2020 will result in a 25% emissions reduction.

Financing climate actions in developing countries

The commitment of developed countries in Cancun last year to raise an annual funding of $100 billion for reducing emissions and for adaptation to climate change in developing countries by 2020 has been found “challenging but feasible”. This judgement, based on the report by the UN Secretary-General’s High-level Advisory Group on Climate Change Financing (AGF), was confirmed in a Staff working document of the European Commission on 8 April of this year. It will require a coordinated effort which includes public funding, funding raised by international carbon markets and private funds in order to be achieved.
More information: Working document

Renewable energy demonstration projects

In November 2010 the Commission launched a Call for Proposals for innovative renewable energy and carbon capture and storage technologies for the so-called NER 300 Programme. The programme received its name because it is funded by the sale of 300 million emission allowances, presently held in the New Entrants Reserve (NER) of the ETS. At the current

carbon price these allowances are worth €4-5 billion.
By the deadline of 9 May, 78 proposals had passed the national check on eligibility and submitted to the European Investment Bank (EIB) which will manage the process of selection and ultimate award decisions. The Commission intends to issue its decisions in the second half of 2012. The EIB will also sell the allowances and manage the revenues for disbursement to the projects through the national agencies in Member States. A maximum of three projects per Member State will be funded with at least one project funded for each Member State.
More information: NER300.

Energy efficiency will become binding and more specific

On 22 June the Commission sent a proposal for a new **Energy Efficiency Directive** for co-decision by the European Parliament (EP) and the Energy Council for first reading to the EP**.**
Though Member States had committed themselves to a 20% efficiency gains through the Climate and Energy Package of 2009 there had been little guidance how to achieve this. The proposed Directive will change this through a number of simple obligations for each of the actors in the energy chain.

- *Energy distributors or retail energy sales companies* will be obliged to save 1.5% of their energy sales, by volume, every year through the implementation of energy efficiency measures among their final energy customers. Alternatively, Member States have also the possibility to propose other energy saving mechanisms, e.g. by funding programmes or through voluntary agreements that produce the same result.
- *The Public sector is to lead by example* through a legal obligation to purchase energy efficient buildings, products and services. They will also have to improve energy efficiency at their premises through renovation at a rate of 3% of their total floor area annually.
- *Consumers* must have access to data on their real time and historical energy consumption and receive support for better managing of their energy consumption
- *Industries* will have to be supported in undergoing energy audits and on best practices; the audit will become an obligation for large companies.
- *Energy generation* is to become more efficient through monitoring of efficiency levels of new generation capacity and by the establishment of national heat and cooling plans
- *Energy transmission and distribution* must become more efficient. National regulators should take energy efficiency criteria into account in their decisions, such as approving of networks tariffs.

The existing Directives on Co-generation and Energy Services will become part of the new Directive.
More information: Energy Efficiency Directive

Transport 2050: increased mobility and reduced emissions

On 28 March the Commission published Transport 2050, a comprehensive transport strategy for the year 2050. Key goals of the strategy are:

- No more conventionally fuelled cars in cities
- 40% sustainable low carbon fuels in aviation; 40% cut in shipping emissions
- A modal shift from road to rail or waterborne transport for medium distance intercity passenger and freight journeys (300 km and beyond) of 50%
- A 60% cut in transport emissions by the middle of the century

Important elements in the implementation vary for different modes and distances in transport.
Urban transport will face a big shift away from conventionally fuelled cars:A 50% reduction is already foreseen for 2030 followed by complete phase-out in 2050; in major urban centres movement of goods is to be CO_2 free by 2030.

The medium distance transport ambitions require a fully functional and EU-wide core network of transport corridors, ensuring facilities for efficient transfer between transport modes by 2030 which is to be further developed into a high-quality, high-capacity network by 2050 with a corresponding set of information services. It would include the connection of all core airports to the rail network. The strategy also recommends a move towards full application of "user pays" and "polluter pays" principles. The private sector should be involved to eliminate distortions, generate revenues and ensure financing for future investments.
More information: Transport 2050

Implementation of Transport 2050

In a speech on 26 May at the *European Electric Vehicles Conference 2011* Commission Vice-president Siim Kallas revealed his vision on how the decarbonisation of road transport should be reached. Not surprisingly, he saw a big role for the roll-out of electric vehicles across Europe. Ultra-clean and silent buses would improve the image of public transport and similar delivery vehicles would improve the quality of life in cities.
In order to pave the way for the market introduction of electric transport technologies he mentioned two initiatives by the Commission. The *Clean Transport Systems* initiative will address the infrastructure for the necessary sustainable alternative fuel strategy. The Europe-wide electromobility demonstration project *Green eMotion* is meant to exchange and develop know-how and experience and so facilitate the market roll-out of electric vehicles in Europe.

Road charging

On 7 June the European Parliament voted in favour of the revision of the current *Eurovignette Directive*. The revised will give Member States the option to charge heavy lorries not only for the costs of infrastructure which is currently the case, but also to levy an additional charge to cover the cost of air and noise pollution. In addition, the possibility has been introduced to vary tariffs in congested areas, charging up to 175% above the average tariff during peak hours. Tariffs will depend on the class of the vehicle and be set at roughly 3-4ct/km. The charge will be collected by electronic systems. Another change in comparison with the present situation is that the Eurovignette regulation will be applicable to all motorways across Europe.
More information: Eurovignette.

Biodiversity

On 3 May 2011 the Commission presented a new strategy to protect and improve the state of Europe's biodiversity over the coming decades. The Communication highlights the present rate of biodiversity losses worldwide as well as in Europe and its implications for vital ecosystem services. As an example insect pollination is mentioned, a process without which plants are not able to produce flowers and seeds, or our daily food: grains, fruits or vegetables. Its economic value is estimated at €15 billion per year in the EU. Insect pollination is heavily declining in Europe.

The strategy adopted features six priority targets and accompanying actions to greatly reduce the threats to biodiversity. The actions include:

- Full implementation of existing nature protection legislation and network of natural reserves, to ensure major improvements to the conservation status of habitats and species
- Improving and restoring ecosystems and ecosystem services wherever possible, notably by the increased use of green infrastructure
- Ensuring the sustainability of agriculture and forestry activities
- Safeguarding and protecting EU fish stocks
- Controlling invasive species, a growing cause of biodiversity loss in the EU
- Stepping up the EU's contribution to concerted global action to avert biodiversity loss.

More information: Communication

Short news

Information for citizens
Since the Aarhus Convention European citizens have a right on information with respect to the environmental quality within their territory. Since 2003 a separate Convention extended citizens right with information of emissions of pollutants. To that a European Pollutant Release and Transfer Register (E-PRTR) was created which entered into force in 2009 by providing emission data of industrial sources for a total of 85 pollutants. Since May the Register has been enlarged by adding emission data from diffuse sources, such as road traffic shipping, aviation, agriculture and households, starting with the year 2008. Data are provided on maps with a grid scale of 5 by 5 km.
More information: maps

CO_2-emissions and new cars
In 2010 the average CO_2–emission of new cars dropped by almost 4%. Taking this into account the average emission of all registered cars has dropped to 140g/km.
If the present rate of improving fuel efficiency is continued the target of 130g/km will be met earlier than the 2015 deadline. The drop was reached in spite of slightly increased engine capacity and a considerable increase of average car weight. Improved vehicle technology and fuel efficiency are responsible for the effect.
The monitoring study of the European Environment Agency also included numbers of alternative fuel vehicles. In 2010 13,000 flex-fuel vehicles and 700 electric cars were registered in the EU.
More information: CO_2 and cars

Reducing greenhouse gas emissions from ships
The Commission has been seeking support from the shipping industry to involve the international maritime transport sector in the fight against climate change. The International Maritime Organisation (IMO) has developed an Energy Efficient Design Index which provides technical requirements to improve the design of new ships, addressing fuel efficiency and emissions. The European shipping industry is expected to call for adoption of the Index; other countries are not in favour. In a meeting end of June the Commission evaluated with stakeholders the barriers that may prohibit adoption and discussed strategies to overcome these.
The Commission prefers an agreement within the IMO. If adoption would fail the Commission will have to answer the requests from the European Parliament and Member States and prepare a proposal for including relevant requirements for shipbuilding in EU-legislation.

Convention on Long Range Transboundary Air Pollution

Final negotiations revised Gothenburg Protocol

In December last year the Executive Body of the Convention on Long-range Transboundary Air Pollution decided that the revision of the Gothenburg Protocol was to be prepared for adoption by the end of 2011. The Working Group on Strategies and Review (WGSR) which serves as the negotiating body for the Convention subsequently met in April and agreed on a set of scenarios with differing levels of ambition. For each of these scenarios the technologies exist, including estimates of annual costs involved. These range from less than 0.1 % of GDP up to 0.3% in the most ambitious scenario. However, in each scenario the benefits for public health more than compensate for the costs.
Obviously, public health impacts have to compete with those for other national policy objectives and so priorities may therefore differ by country. The next step is now to agree on an ambition level that is acceptable for all Parties to the Convention and so define a basis for recommending new National Emission Ceilings for 2020 in a revised Protocol. Final negotiations are to be concluded in the next WGSR-meeting in September. The provisional agenda with annexes for that meeting is available.
More information: 49th session WGSR

EFCA Events in 2011

EFCA is sponsoring three symposia in 2011.

- 3rd symposium on Ultrafine Particles: Sources, Effects, Risks and Mitigation Strategies (UFP-3; 26-27 May 2011)
- Biodiversity, co-benefits and international cooperation (Paris, 29-30 September 2011)
- 6th symposium on Non-CO_2 Greenhouse Gases (Amsterdam, NCCG-6, 2-4 November 2011)

An update on each is found on the next pages.

Impressions from UFP-3

Under chairmanship of GUS president and KIT Program Director Karl-Friedrich Ziegahn EFCA's third symposium on Ultrafine particles was conducted on 26 and 27 May of this year in Brussels. The series now provides a very informative mix of contributions which add to the general body of knowledge as well as a number of review papers by experts who try to construct consistent pictures which explain all observations within one of the sub-themes.

A full Conference report is presently being prepared and will be available at EFCA's website within a few weeks. A CD-ROM with all presentations will be distributed later this year among participants. Copies may be ordered by sending an e-mail to Mrs Biserka Mathes at KIT (b.mathes@kit.edu). Below an account of the key messages of UFP-3.

Can we do without source-specific metrics for PM?

Professor *Martin Williams* (Kings College, London) as the first Keynote speaker set the tone by contrasting the increased understanding of air quality in general (and its improvement in Europe) during recent decades with the less favourable situation when PM is concerned. He pointed to the fact that in spite of existent policies on nearly all PM components we do not know which ones of these are not toxic. Therefore, these policies could, at least in part, be ineffective in improving public health. There is no full understanding of why PM levels did not continue to decrease during the last decade. There is some evidence that traffic-related primary PM is more toxic than other components; however, a corresponding legal target for ambient air has not been set (and Member States may not want another target with corresponding monitoring and reporting obligations).

The second keynote speaker, *Xavier Querol*, (IDAEA-CSIC, Barcelona) addressed the problem of what should be monitored. This was based on an in-depth analysis of correlations between the various components of air pollution and with the objective to identify a source specific component for traffic which is already monitored. The results of his team included the following conclusions:

- PM_{10} may sometimes correlate with a traffic component like black carbon (BC) but not at eery time and place
- CO, NO_2 and NO sometimes correlate with BC but this is not always the case

- Particle numbers sometimes correlate with BC but this is not always the case
- The correlation between particle numbers and traffic intensity varies considerably

He concludes that PM10 (mixture of source contributions) and BC (as a source tracer for traffic and biomass burning) offer a good combination for air quality monitoring, in particular because exceedances are usually in traffic hotspots.
A second approach he described was based on quantitative receptor modelling. When applied to data sets of PM speciation the possibility arises for setting limit values for PM contributions from road traffic. However, BC measurements yield similar information, with real time data, low operational cost and an easily standardized method.
Another conclusion from his work is that current limit values for PM_{10}/$PM_{2.5}$ and NO_2 do not protect against exposure to high UFP episodes and that separate UFP measurements (<45 nm) may be necessary, in addition to BC.

Both keynotes set the scene for the session addressing the Metrics of Particulate Matter. It started with a review paper by *Nicole Jansen* (RIVM, Bilthoven) in which she questioned the general mass-based regulation (PM_{10}, $PM_{2.5}$). She pointed to evidence that combustion related particles are more harmful than particles from other sources and expressed the need for an additional PM-indicator which could make the impact of traffic related measures visible; as such she proposed Black Carbon Particles (BCP).
An evaluation of BCP produced several arguments in favour:

- A set of optical measurement techniques (Black Smoke, BS; Black Carbon, BC; Absorption, Abs) is available which produce results that highly correlate. In addition, the thermal technique to measure Elemental Carbon (EC) has been used in relevant studies, though it produces more variance
- A summary of pooled acute effects from several studies showed significantly stronger effects for BCP than for PM on mortality as well as on hospital admission following cardiac complaints; for respiratory complaints the effect varied; the higher risk for BCP is more pronounced when evaluated by means of two-pollutant models for BS
- In a set of four pooled cohort studies (mortality) the Relative Risk for EC was 5 to 14 times higher when compared to $PM_{2.5}$
- Roadside increments of $PM_{2.5}$ are dominated by EC.

As an example a hypothetical traffic management plan which would reduce $PM_{2.5}$ by 1 µg/m^3 and EC by about 0.5 µg/m^3 was presented. It was estimated to result in an increased life expectancy of 21 days for the effect on $PM_{2.5}$; when considering the higher Relative Risk which was found in the cohort studies for EC the gain in life expectancy was estimated to amount at least 3 months.
Because pulmonary complaints may rather be caused by PM_{10}/$PM_{2.5}$ BCP is recommended as a valuable, additional air quality indicator in order to avoid the present serious underestimation of the benefits from traffic abatement measures.

These conclusions were supported by air quality data reported by *Sef van den Elshout* (Environmental Agency Rijnmond, Rotterdam). His measurements show that BCP has the strongest correlation with traffic density, with NO_x as second best; PM_{10}, $PM_{2.5}$ and NO_2 show different patterns. The correlation could be further improved by taking into account the atmospheric stability during the day.
A first evaluation of the effects of Rotterdam's Low Emission Zones revealed a 1% reduction in PM_{10}/$PM_{2.5}$ levels, while BCP was reduced by about 5%. His data also reveal that $PM_{2.5}$ is even inferior as an indicator of traffic when compared with PM10; this might be caused by traffic-induced re-suspension of particles. NO_x has a good correlation with traffic as well; however, the correlation is less certain because other sources contribute substantially to NO_x-levels. In conclusion, BCP is the preferred metric for evaluating traffic measures.

In a presentation by *Gaëlle Guillossou* (EDF DRH Group, Etudes Médicales, Paris) it was also argued that progressive increases in knowledge have now made the representation of particulate matter in present legislation inadequate. A consequence of this misrepresentation becomes apparent when considering the details of the

integrated assessment model RAINS/GAINS, developed and implemented by IIASA, which is the politically agreed tool for estimating benefits of clean air policies in the EU and in wider Europe. Present estimates by GAINS (and EMEP) are made for the mass-based parameters PM_{10}/$PM_{2.5}$. It means that in new policy development the projected benefits of policies are being realised by selecting measures for all sources which contribute to the mass of PM in the atmosphere. She then explained why such policies are not likely to deliver the reductions in health risk which are calculated.
PM is primarily composed of three classes of components:

- Secondary inorganic aerosols (SIA; sulphates, nitrates) which result from atmospheric oxidation of their precursors SO_2 and NO_x; SIA toxicity, however, is low at ambient levels; reported Relative Risks of sulfate may result from studies with less well defined particles and are generally lower than that of $PM_{2.5}$;
- Secondary organic aerosols (SOA); their precursors (NO_x, VOC) are not taken into account as a source term for PM within GAINS;
- Carbonaceous compounds (BCP, organics) which are predominantly emitted in the ultrafine size range and constitute a small percentage of the PM mass; in urban, dense-traffic areas their part in the mass of $PM_{2.5}$ is substantial. The ultrafines which have the higher penetration in the deeper regions of the lungs and also have the higher toxicity, possibly through associations with polycyclic aromatics and metals.

She concluded that the present representation of PM in GAINS will overestimate the benefits from reductions of SIA precursors and does not assess adequately the benefits of measures which target traffic emissions. In addition, the grid resolution (50 km) of GAINS prevents that higher RR in urban areas are being addressed in calculations of optimised reduction policies.

P. Vanderstraeten (Brussels Environment) had compared monitoring data of car-free Sundays with days with normal traffic. It was observed that while PM-values could remain high during car-free days BCP-levels dropped to near-zero, supporting policies which target traffic-emissions. He confirmed that PM and particle number counts correlated poorly with BCP; NO_x and NO did much better while CO had an intermediate score. He concluded with the observation that local traffic emissions reductions, which are thought to be most effective in protecting human health, are often inadequate to reach compliance with the PM_{10} limit value.

The role of aerosols including fine particles in the climate system, in particular their impact on cloud formation, precipitation and radiation, was discussed in a keynote speech by *Andrew Ferrone* (KIT). He explained the difficulties to represent these interactions in global climate models and the resulting uncertainties for projections of the future climate. The regional model system COSMO-ART can be used to fill this gap and gain important information on the interactions with aerosols and climate parameters. Some case studies were presented and in one case the model showed that high levels of aerosols may shift precipitation patterns. This might be explained by the fact that high concentrations of fine particles renders a surplus of small cloud droplets with insufficient mass to precipitate. The analogy with the natural process in which Aitken nuclei (typical size around 10 nm) induce the condensation of water vapour suggests that the finest fractions of anthropogenic aerosols could play a major role in such a suppressive effect. However, longer time series need to be analysed in order to quantify the effects of such interactions on climate time scales.

Mr Saathoff described novel results on the atmospheric chemistry of aerosols as simulated in the big AIDA reactor at KIT. He studied the formation and properties of secondary organic aerosols (SOA), produced upon a reaction between α-pinene and ozone. In the oxidative atmosphere with OH radicals the SOA are not broken down but take up 10-35% additional mass. Adding coagulated soot particles in the system makes the coagulates of soot fall apart again and results in the coating of the SOA with the ultrafine soot. This process changes SOA from being particles with a net cooling effect in the atmosphere through scattering of radiation into being absorbers of radiation and net climate forcers.

In the Closing session *Andre Zuber* provided the timepath of the Commission within which new

information will have to be fed in the policy process (see also the speech of Commissioner Janus Potocnik, page 2) and presented the Workplan for the Air Pollution Policy Review that should result in proposals by the Commission in 2013. Key elements therein are:

- Review of the current air quality legislation including reasons for non-compliance
- Review of the current air quality limits and targets
  - $PM_{2.5}$ as required by Directive
  - Latest scientific evidence of air pollution impacts for ozone, PM_{10},**UFP**, heavy metals, PAHs, others? (with involvement of CLRTAP/WHO)
  - new targets
  - long term objectives (2020 – 2030 – 2050?)
- Possible new measures
- Links to climate change
  - e.g. co-benefits, short lived climate species, BC, minimise trade-offs
- Integration into sectorwise policies
  - transport, energy, vehicle emissions,etc
  - already 2011 (White Paper and 2050 roadmaps)
- Simplification / smart regulation / streamlining

In a subsequent Panel discussion Congress chairman *Karl-Friedrich Ziegahn* offered the support of EFCA and its associations and partners in the policy process to follow and expressed their interest to tune the research agenda to policy needs. He was happy to announce that a fourth EFCA-symposium on Ultrafine particles is to take place in 2013.

Conclusions

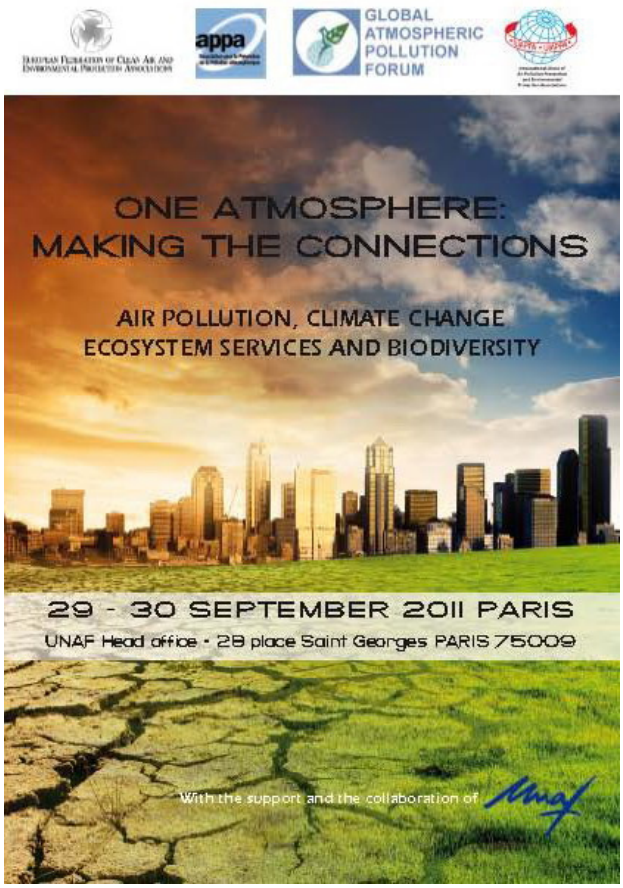
The key message of UFP-3 is that progressive knowledge has enabled scientists to provide a more robust basis for health protection against PM exposure. Various policies up to the present time have delivered major improvements with respect to particular matter. There is now convincing evidence that adequate protection of public health against exposure to fine particles requires limit values which are source-specific. The imperfection of present PM-regulation in the EU and elsewhere may be largely overcome by introducing regulation for an additional, traffic-specific component of PM. Considering health risk evaluations, implementation criteria and traffic-specificity, black carbon particles (BCP) seems to be the most suitable component. A long history of BCP-monitoring by several different methods makes implementation feasible. The recent focus on BC (or CB, Carbon Black) as a climate forcer supports its candidacy.

The shortcomings may also necessitate an evaluation of present methodologies for estimating benefits of air quality policies.

It is obvious that a new approach requires a thorough evaluation with respect to its policy implications. The organisers will be happy when the recommendations above have been made timely to be taken into account in the process towards

ONE ATMOSPHERE: MAKING THE CONNECTIONS

AIR POLLUTION, CLIMATE CHANGE, ECOSYSTEM SERVICES AND BIODIVERSITY



In its Final Declaration, the XVth World Clean Air Congress held in Vancouver, September 2010, concluded that global environmental challenges had in recent years become steadily more severe and pressing, and that in three principle areas **a paradigm shift in the approach to air quality policy and its relation to the wider global environment, was now necessary**, urgent and achievable.

It urged for a new focus on the impacts of air pollution on the health of eco-systems and biodiversity; a new approach to climate change which, through integrating climate and air pollution policies, would complement the current focus on long-term abatement of CO_2 with a wider initiative on other climate forcing gases - ozone, methane and black carbon - which could deliver both major health benefits and mitigate near-term climate change; and, underpinning these two, a new effort to strengthen the institutions and processes for international co-operation on air pollution.

The Conference, which is hosted by APPA and chaired by EFCA president Jean-Marie Rambaud, will address the questions of the Declaration in three sessions:

- **Air Pollution and Climate Change** – How can we link assessment, planning and policy at the local regional and international scales?
- **Bio-diversity, Eco-system Services and Crop Damage** – how can we help mitigate damage from air pollution, and contribute to protection of biodiversity?
- **International Co-operation on air Pollution** - How can we now build the hemispheric and global strategies now needed for Ozone, Methane and Black Carbon

Venue

PARIS- UNAF Head office
28 place saint Georges PARIS 75009

Urban transport access :

Saint-Georges station (METRO), line 12

Hotel reservation and travel accommodation

The Paris Convention and Visitors Bureau :
http://en.parisinfo.com

Costs and registration

The Registration fee amounts to €.60.
Online registration is open at : www.appa.asso.fr

Payment

Payment is by bank transfer only. Please transfer the required amount to the bank account indicated below, **mentioning the participant's name** or **invoice number** when available.
IBAN : FR76 3005 6007 5007 5002 2570 928
BIC code : CCFRFRPP
HSBC FR PARIS 4 SEPTEMBRE SUCC

PROGRAMME

Thursday 29 September

09.30 Greeting and Opening Ceremony Chair: Jean-Marie RAMBAUD

09.40 Keynote presentation

Markus AMANN, IIASA

Session 1

Linking Climate and Air Pollution Strategies

Delivering Health and Climate Benefits Together

10:10 Co-Benefits: Developing a More Coherent Framework for Assessment and Policy

Eric ZUSMAN Institute for Global Environmental Strategies (IGES), Japan

10:40 Developing Co-benefit Strategies at Urban and Regional Scales: Experience so far in France and the UK

Jean-Marie RAMBAUD, APPA and Ed DEARNLY, EPUK

11.10 COFFE BREAK

11.30 The 'Short-Lived Climate Forcers' The Scientific Background: Tropospheric Ozone, Methane and Black Carbon

Drew SCHINDELL, NASA's Goddard Institute for Space Studies, or Kevin HICKS

12.00 Towards an Intermediate Climate Policy?

Martin WILLIAMS, Executive Body, CLRTAP

Session 2

Air Pollution, Biodiversity and Ecosystem Services

Impacts and Management Strategies

14.00 Overview: Air pollution impacts on ecosystems and how these in turn impact biodiversity, how the reduction of biodiversity then impacts on the future flows of ecosystems services.

***Roland BOBBINK**, B-Ware, Research Centre. Radboud University. The Netherlands.*

14.30 Key issues: acidification and eutrophication, acid rain and the disruption of natural nitrogen cycles, and their consequences over the long term.

***Pierre CELLIER**, INRA, France (under confirmation).*

15.00 Techniques and Management: Current regimes and systems for managing air pollution impacts on ecosystems and biodiversity and the solutions available.

***Jon Willem ERISMAN**, Energy research Centre of the Netherlands.*

15.30 Priorities for future action: An assessment of the most cost effective routes for intervention, the role of the concerned international regimes and the part IUAPPA might play in developing a tighter partnership between the biodiversity and air pollution communities

***Mark SUTTON**, Centre for Ecology and Hydrology, United Kingdom.*

16.00 COFFEE BREAK

16.20 *Panel Discussion*

***Robert Hoft**, CBD secretariat*
***Jean-Michel SALLES**, CNRS*
***Odile GAUTHIER**, French ministry of Environment*

Friday 30 September

Session 3

Strengthening International Cooperation on Air Pollution

09:00 Transboundary Air Pollution: Recent Developments in Science and Policy

09:30 Next steps in Regional Co-operation in Asia, Latin America and Africa

***Mylvakanan, IYNGARARARASAN**, UNEP.*

10:00 Prospects for Co-operation at the Hemispheric Scale:
A LRTAP Convention Perspective. ***Terry KEATING***, ***Jeff CLARK***, *USEPA*
An Asian Perspective. ***Katsunori SUZUKI***, *Kanagawa University, Japan.*

11:00 COFFEE BREAK

11:20 Climate and Air Pollution Impacts in the Arctic: A Case for Urgent regional Action.
Pam PEARSON *and* ***Svante BODIN***, *International Cryosphere Climate Initiative.*

11:50 Options for Strengthening International Co-operation on Air Pollution: The Global Forum Assessment
Keith BULL, *Formerly Executive Secretary, UNECE LRTAP Convention.*

Session 4
Concluding Session

14.00 Presentation of reports form sessions
Session chairmen
General conclusions and implications for future action
Richard MILLS,, IUAPPA
Discussion
Summing-up and conference closure
Conference Chairman

Sixth International Symposium on Non-CO_2 Greenhouse Gases (NCGG6)

NCGG6

Sixth International Symposium on
Non-CO_2 Greenhouse Gases (NCGG-6)
Science, Policy and Integration

Amsterdam, the Netherlands
November 2-4, 2011

The Sixth International Symposium on science, implementation and policy aspects of non-CO_2 greenhouse gases (NCGG-6) will take place from 2-4th November 2011 in Amsterdam, The Netherlands. It will address both the role of non-CO_2 greenhouse gases and aerosols in human-induced climate forcing, and options for their reduction by industry and society. The symposium aims to overcome any barriers between policy, industry and science that might exist. It also fosters the dialogue between scientists, engineers and officials in industry and government working in this field from different perspectives. This multidisciplinary approach is expected to yield realistic and achievable mitigation solutions that might significantly lower NCGG emissions.

Registration is now open at www.ncgg.info and an early bird fee is available until 31 July. From August 1 fees will be higher. PhD students pay a reduced fee (50%). For MSc students we have a limited number of waivers. A programme with about 175 presentations is presently being developed and will be published at www.ncgg.info when ready.

For more information on the themes of NCGG6, please visit www.ncgg.info or send an email to NCGG6@ncgg.info

News on EFCA and its members

EFCA Assembly meeting

Last May the EFCA Assembly held its 20th meeting in Brussels in connection with the UFP-symposium. Delegates welcomed EFCA's well-filled conference agenda this year and discussed options for coming years.

It was noted that EFCA's Strategy 2006-2011 will expire by the end of this year and that its renewal required attention at the short term. A Task Force consisting of the president and Messrs Fumarola, Murlis and Reichert will prepare a draft in cooperation with the secretariat for adoption by the Assembly. It was decided to include a revision of the present Workplan within this process.

Calendar

CfP = Deadline Call for Papers

International Nordic Bioenergy Conference
5-9 September 2011, Jyväskylä, Finland
(www.nordicbioenergy.finbioenergy.fi)

Second Conference on Air Pollution and Control (CAPAC II 2011)
19 – 23 September 2011, Antalya, Turkey
(http://www.capac2011.org/)

Smart2Wheels - Tackling Europe's Urban Mobility Challenges: What can Cycling do for European Cities?
22nd September 2011, Brussels, Belgium
(www.smart2wheels.eu)

EFCA-conference One atmosphere: Making the Connections: Air Pollution, Climate Change, Ecosystem Services and Biodiversity
29-30 September 2011, Paris, France
(www.appa.asso.fr)

1st International 100% renewable energy conference and exhibition (IRENEC 2011)
6-8 October 2011, Istanbul, Turkey
(www.irenec2011.com)

6th International Symposium on Non-CO_2 Greenhouse Gases
2-4 November 2011, Amsterdam, Netherlands
(www.ncgg.info)

Planet Under Pressure 2012 - New Knowledge Towards Solutions
26-29 March 2012, London, UK
(www.planetunderpressure2012.net) CfP 09-08-2011

32nd NATO/SPS International Technical Meeting on Air Pollution Modelling and its Application
7-11 May 2012, Utrecht, Netherlands (www.int-tech-mtng.org) CfP: 31-07-2011

IIASA 40th Anniversary Conference
27-29 June 2012, Vienna/Laxenburg, Austria
(www.iiasa.ac.at/conference2012

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