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**Urgent and simple**

Several articles in this Newsletter address aspects of the future of our energy-resources-climate-environment system. Though the topics, the approach and the level of optimism is different for each they agree in one respect: there is an urgent need to increase the energy-efficiency and conserve as much as possible.

The European Climate Foundation's Roadmap 2050 towards 80% reduction in CO<sub>2</sub>-emissions within the next 40 years will fail without intensifying energy-efficiency policy and reducing demand in the immediate term.

In view of likely scarcities in world-wide metal market and the risk that essential metals for the innovative renewable energy-technologies will be in short supply in the foreseeable future - increased energy-efficiency is the most important measure. If global resources become depleted, constraints will arise for non-fossil energy options. Mining and production of metals are energy-intensive activities and will become even more intensive when the easy accessible reserves have been depleted. The chance of reducing fossil fuel use through increased renewable energy technologies will then diminish and frustrate the necessary transition process. And, obviously, the economic case for renewable energy will become less favourable.

The European Commission is aware of the need for, and big potential of, energy conservation measures. The Climate and Energy Package contains a target of 20% conservation in 2020. One may hope that this increased efficiency will be delivered. It is, however, up to each Member state how to meet it, amid constraints and in combination with other priorities. Investment incentives and innovative financial instruments have now been announced for the middle of next year, though the big money, notably from the sale of emission allowances, is likely to be allocated to CCS and renewable energy projects.

A multitude of energy conservation options is available and many of these are cost-effective now; energy conservation reduces emissions of conventional air pollutants and wastes; and the implementation of strong energy conservation policies will create many jobs across Europe. The case of energy conservation is simple - and it is urgent.

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# Convention on Long Range Transboundary Air Pollution

## CLRTAP: 30 year of the Convention

This year the Convention on Long-range Transboundary Air Pollution of the United Nations Economic Commission for Europe celebrates its 30<sup>th</sup> anniversary. This milestone deserves a well-meant congratulation! The Convention succeeded during these years, in spite of its small secretariat, to build a robust structure of Working Groups and supporting Centres for handling the various aspects of its policies for the control of air pollution. The support of its present 51 parties by providing expertise on a voluntary basis is key to its successful position in Europe.

The Convention, governed by an *Executive Body*, supervises two Task Forces and the *Monitoring and Evaluation Programme* (EMEP). EMEP introduced and maintains basics like emission inventories and monitoring of air quality at a European scale. It is seconded by a *Working Group on Effects* which assesses the impacts on health and ecosystems and introduced the concept of critical loads and levels.

The policies for the protection of human health and the environment are being developed within the *Working Group on Strategies and Review*. It prepares the drafts for the Protocols of which presently eight were agreed at the political level of the Executive Body. After the first one, the Protocol on EMEP (1984), it prepared a series of Protocols on emissions, in which the concept of National Emission Ceilings was introduced. In the period 1985-1998 Protocols were agreed on SO<sub>2</sub>, NO<sub>x</sub>, VOS, SO<sub>2</sub> again, Heavy Metals, POPs and finally the Gothenburg Protocol, a multi-effect, multi-pollutant Protocol which comprises stricter national emission ceilings for SO<sub>2</sub>, NO<sub>x</sub>, VOS and NH<sub>3</sub>.

When the Executive Body meets in December this year it will obviously mark its jubilee. It may not, however, spend too much time on it as there is much work still to be done.

### *Hemispheric transport of air pollution*

The Task Force on Hemispheric Transport of Air Pollution (HTAP) has produced an update of its earlier report in 2007 which is at the agenda in December. The draft is already available to the public, at the HTAP website: <http://www.htap.org/>

### *EGTEI*

The Expert Group on Techno-Economic Issues (EGTEI) also completed its state-of-the-art report on the technologies which are presently available for the control of emissions of air pollutants. The report will serve as reference for the design of policies which will be feasible and deliverable. Moreover, the report, as official document of the LRTAP Convention, includes the proposal of three different ambition level values (ELVs), in the revised Annexes to the Gothenburg Protocol, to be negotiated in 2011.

### *Revisions of Protocols*

The revised Gothenburg Protocol is meant to also address Particulate Matter emissions; in addition, there will be new values included for the National Emission Ceilings for the other components. It will be of interest to see whether the matter of co-benefits for climate change objectives will be considered, as this was suggested in the early discussions on possible modifications.

In the draft for a revised Heavy Metal Protocol the requirements for mercury are strengthened considerably, both with respect to process emissions, product requirements with maximum permissible levels and an obligation for recycling and a ban on export of mercury containing wastes. The proposal also introduces reporting requirements on mercury streams and storage at the national level. Stricter requirements for cadmium and lead are also being included. Economies in transition will, however, have longer terms to meet the targets in the Protocol.

The revisions of both the Gothenburg Protocol and the Heavy Metals Protocol are now being discussed at the Working Group level and the negotiations may be completed during 2011. Unfortunately, the economic situation is not favourable and new requirements unavoidably bring additional costs with them, so the outcome is still uncertain.

However, the Convention certainly deserves a present from the Parties at its 30<sup>th</sup> anniversary. The best option they might wish for would be the adoption of the Protocols next year.

More information: [www.unece.org](http://www.unece.org).

# Developments in EU policy

After a relatively quiet period since this summer in November the Commission published some new initiatives with relevance for the domains of climate change and clean air.

## Energy policy leads the way

If one has to rank the possible energy policy measures to reduce CO<sub>2</sub> emissions according to their overall benefits for consumers and environment, as well as considering energy security, energy conservation is the indisputable champion. In our fossil fuel society it is directly related with CO<sub>2</sub> reduction and at the same time reduces the noxious emissions which impair air quality. With still many cheap options available it is also cost-effective; and it may contribute to the reduction in the energy budgets of consumers and of the public and private sector.

At the same time it is the least sexy one. In the Energy Package of 2009, in which CO<sub>2</sub>-reduction, renewable energy and energy conservation received their targets of 20% for 2020, the latter had the lower exposure for obvious reasons: Renewables and CCS were both launched with new Directives. Renewables seem to represent more innovation and score better, while the challenges around Carbon Capture and Storage (CCS) may have the higher score among politicians..

### *Energy 2020*

However, in its new strategy “Energy 2020”, published on 10 November, the Commission made a successful attempt to correct this image. From a report of the International Energy Agency, Commissioner Günther Oettinger quoted a potential of 50% improvement in energy-efficiency in Europe. In the strategy a focus is announced on transport and buildings as the sectors with the biggest potential. The Commission will propose investment incentives and innovative financial instruments in the middle of 2011.

Energy 2020 obviously has a wider scope. A major element of the strategy document is the call

for a more unified Europe on energy matters. In the view of the Commission this means an integrated energy market and related infrastructure, and a coordinated energy policy vis-à-vis third countries. This is clearly logical and justified, though also politically sensitive. Other elements include the launch of four major technological projects which should increase Europe’s competitiveness, including topics such as intelligent networks and storage, second-generation biofuels, and the smart cities partnership to promote energy savings in urban areas.

More information:

[http://ec.europa.eu/energy/strategies/2010/2020\\_en.htm](http://ec.europa.eu/energy/strategies/2010/2020_en.htm)

## Climate change: NER300

On 9 November the Commission launched a major investment programme for innovative low-carbon technologies, NER300. It will provide substantial financial support to at least eight projects involving carbon capture and storage technologies, and at least 34 projects involving innovative renewable energy technologies. The aim is to drive low carbon economic development in Europe, creating new ‘green’ jobs and contributing to the achievement of the EU’s ambitious climate change goals. The call for proposals is open until 9 February 2011.

The programme, which will be implemented in cooperation with the European Investment Bank, refers in its name to the New Entrants Reserve of the EU Emissions Trading System. By selling 300 million emission allowances the initiative, at current market prices, will generate a fund of €4.5 billion. Commissioner for Climate Action, Connie Hedegaard, expected that contributions from project sponsors and Member States could more

than double that amount and so constitute the world's largest investment programme in low-carbon and renewable energy demonstration projects. An annex lists the technologies which will be eligible for support.

More information:

[http://ec.europa.eu/clima/funding/ner300/index\\_en.htm](http://ec.europa.eu/clima/funding/ner300/index_en.htm)

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## Resource efficiency

Resource efficiency, which obviously includes energy efficiency, is another keyword which defines the direction of new initiatives by the Commission. A strategy document has not been published yet. However, in a speech at a Green Alliance conference in London on 15 September ("Europe: looking ahead on climate change") Commissioner Janus Potocnik gave already some examples of what is at stake.

The central idea is obviously decoupling of the economy from our use of natural resources. Applying the consequences of this principle will have its impact in nearly every sector of society and affect policies on energy, transport, employment, agriculture and fisheries, innovation and taxation. The objectives, according to M. Potocnik, should as much as possible be delivered by the forces of the markets; he admits, however, that markets are not good at planning for the long-term - as the financial crisis taught us - nor is it easy to get them to quit their current business models and planned technology pathways.

Mr Potocnik mentioned three possible policy responses to achieve this:

1. Adjustment of the relative prices of resource and labour: if taxes on labour are higher than on resources, the tax system in fact promotes greater resource use in the economy, rather than greater employment.
2. Providing infrastructure which favours preferred developments; a network of recharging points for electric vehicles is an example.
3. Supporting the markets for greener products through public procurement and by influencing consumer behaviour.

Much of these policies come down to increasing energy-efficiency and the connection to limiting

climate change places energy in the foreground. In his speech M. Potocnik referred in this respect also to "Roadmap 2050" of the European Climate Foundation which outlines the scenarios for the necessary 80% reduction in fossil fuel use.

By looking in more detail at the drivers of energy use there is more to say, however. Reduction of material use appears to become one of the most effective ways to reduce energy use. Their production as well as their transport and subsequent use in construction or use as well as their recycling or safe disposal at the end of their lifetime all require energy, sometimes in considerable amounts. A green economy grows when it delivers more value, not more material. In other words: energy use, material use and transport become costs to the economy. Overturning of some traditional economic concepts will be a major challenge for the decades ahead.

(See also "Roadmap 2050" on page 7 and "Global Resource Depletion" on page 8 in this Newsletter)

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## Common Agricultural Policy from 2013

In a Communication on 18 November 2010 the Commission published a blueprint for the Common Agricultural Policy (CAP) for 2013 onwards. Earlier this year a debate confirmed the three major objectives for the revised CAP: Viable food production; Sustainable management of natural resources and climate action; and Maintaining the territorial balance and diversity of rural areas. To address these, the Commission – without indicating a preference - outlines three options for the allocation of EU funding to farmers, according to the "Two Pillars" of the CAP. The first Pillar is an instrument for direct payments to farmers and market measures along clearly defined lines; the second Pillar provides support for multi-annual rural development measures within a framework set by the EU, but with more freedom for Member states or regions. The three options range from simply adjusting the most pressing shortcomings in the present CAP, through to moving away from income support and market measures and focusing on environmental and climate change objectives. An option in between these two extremes includes



providing basic income support as well as extending the scheme for additional aid for 'greening' public goods.

More at: [http://ec.europa.eu/agriculture/cap-post-2013/communication/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/communication/index_en.htm)

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## Mobile sources

### *Aviation and CO<sub>2</sub>*

The revised Directive on the Emission Trading System of the EU, which came into force in 2009, was the first legislative document worldwide which addressed energy-efficiency in the aviation sector. However, the Directive placed European airlines in a less comfortable position and stressed the need for progress in the negotiations towards a worldwide agreement. In October this year the International Civil Aviation Organization (ICAO) of the United Nations made a first step towards the reduction of greenhouse gases emissions from aviation from 2020. The breakthrough was made after a decade of deadlock among the 190 contracting states of ICAO. The agreement includes a collective goal of capping emissions as well as a 2% increase in fuel efficiency per year from 2020.

More information:

<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/10/480&format=HTML&aged=0&language=EN&guiLanguage=en>

### *Regulation for motorbikes*

On 4 October the Commission proposed new regulation for motorcycles and a range of so-called L-category vehicles such as two- or three-wheeled powered cycles, mopeds, tricycles, on-road quad-bikes and minicars. The prime objective is the improvement of traffic safety, in particular for the drivers of such vehicles as fatalities and serious injuries in road accidents among them are relatively high.

In addition, projections had made clear that, with the reduction of exhaust emissions from cars and heavy vehicles, the share of L-category emissions would increase without appropriate measures and e.g. for hydrocarbons could rise to 62% in 2020; whilst for CO a share of 38% is projected.

The Commission has proposed three emissions steps (Euro 3-5 and Euro 6 for motorcycles) to be complied with by 2014, 2017 and 2020 respectively. In addition, reporting of CO<sub>2</sub>-emission measurement and fuel-efficiency in a global test cycle at type approval will become mandatory and pave the way for a possible energy efficiency labelling system at a later stage.

More information:

[http://ec.europa.eu/enterprise/sectors/automotive/documents/proposals/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/automotive/documents/proposals/index_en.htm)

### *Road charging for heavy lorries*

On 15 October ministers of Transport in the EU approved a proposal for a revision of the "Eurovignette" Directive. The Directive presently in force allows Member states to charge heavy lorries for the costs of infrastructure and is applied on tolled motorways. It is now intended to extend the regime to all motorways in Europe and to make additional levies possible for the 'external costs' of air pollution and noise. By also allowing a differentiation of toll rates Member states will be able to manage congestion by applying higher charges at peak hours. The proposal needs the vote of the European Parliament for becoming law. The full package is available at: [http://ec.europa.eu/transport/greening/index\\_en.htm](http://ec.europa.eu/transport/greening/index_en.htm).

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## Industrial emissions Directive adopted

The long debated Industrial Emissions Directive (the former IPPC Directive) was adopted by the Council on 8 November. Its entering into force, probably by the end of this year, will further reduce the emissions of the largest combustion plants in Europe. Furthermore, operators of industrial installations will have to apply Best Available Techniques in a more uniform way across Europe. The Directive further includes improved mechanisms to check and enforce compliance with the new legislation.

More information:

<http://ec.europa.eu/environment/air/pollutants/statutory/index.htm>

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## Short news

### *EU ahead of Kyoto target*

The pledge of the EU15 under the Kyoto Protocol to a reduction of 8% of the CO<sub>2</sub> emissions in 1990 in the period 2008-2012 is well within reach. Though primarily due to the economic situation, it is now estimated that emissions in 2009 will amount to 12.9% below their base year emissions. Also, ten of the twelve Member States with commitments under Kyoto (Malta and Cyprus do not have a target) which joined the EU after the agreement in Kyoto will overachieve their pledge (between 6 and 8%), resulting in a reduction of 17.9% for the EU27.

More information:

[http://ec.europa.eu/environment/climat/gge\\_progress.htm](http://ec.europa.eu/environment/climat/gge_progress.htm)

### *CO<sub>2</sub> from new cars*

The new passenger cars which entered the market in 2009 have on average CO<sub>2</sub>-emissions which are 5.1% lower than those in the previous year. The requirement of an average emission limit of 130g/km for the fleet of new cars, to be phased in from 2012 and to be binding in 2015 is likely to be

met by several of the major car producers well ahead of that year.

More information:

[http://ec.europa.eu/clima/policies/vehicules/index\\_en.htm](http://ec.europa.eu/clima/policies/vehicules/index_en.htm)

## *EEA Reports*

### **NEC Directive status report 2009**

This report documents the most recent emissions and projections information requested under the National Emission Ceilings Directive (NECD) by the end of 2009. The directive requires all 27 Member States of the European Union to report information annually concerning emissions and projections for four main air pollutants: sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), non-methane volatile organic compounds (NMVOCs) and ammonia (NH<sub>3</sub>). To help protect human health and the environment, the NECD sets pollutant-specific and legally binding emission ceilings for each of these pollutants and for each country, which must be met by 2010 and thereafter.

Technical report No 10/2010, published 24 September 2010

 [NEC Directive status report 2009.pdf](#) [1.4 MB]

## EFCA Policy Initiatives

### **EIA Directive**

In its recent meeting the EFCA Assembly considered the responses to its Policy Initiative earlier this year, on linking Air Pollution and Climate Change in Europe; in our July Newsletter we have already reported on these briefly. In particular, the Assembly welcomed the news that the Commission had started the revision procedure for the Environmental Impact Assessment Directive, which, due to its early conception, failed to adequately connect with the objectives of climate change policy. A Public Hearing launched by Commissioner Potocnik revealed that options

for the revision range from simple adjustments to complete overhauls, including possible mergers with (elements of) other Directives. As the questionnaire for the Hearing included several questions of a political nature, such as the relative positions of the initiator of an activity and the neighbouring population, the Assembly preferred that EFCA should not complete it. In a letter to Commissioner Potocnik EFCA conveyed its appreciation of the initiative while offering its assistance in a later stage of the process.

## EFCA session at World Clean Air Congress

The 15<sup>th</sup> World Clean Air Congress in September this year prompted IUAPPA to invite EFCA to jointly arrange a special session on the Co-benefits of Integrated Climate/Air Pollution Policies and Strategies. The session, coordinated and co-chaired by EFCA-president, Jean-Marie Rambaud, allowed EFCA to present current European activities in this area to a wider audience and compare these with initiatives in Asia, North America and Africa. Presentations on EFCA's current activities were given by EFCA's secretary-general and president on EFCA's Policy Initiative

and on the opportunities for co-benefits at local and regional level. For a more complete account of the session see page 10 in this Newsletter.

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## Law of the atmosphere

A Law of the atmosphere to provide the framework for legislation on the protection of the atmosphere was discussed in the session and arguments in favour were presented. In the near future EFCA will return to this topic.

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## European Climate Foundation: Roadmap 2050

The European Climate Foundation (ECF) aims to promote climate and energy policies that greatly reduce Europe's greenhouse gas emissions and help Europe play an even stronger international leadership role in mitigating climate change. The ECF has seven Funding partners which are charities which share a responsibility for global problems. It provides grants on a range of issues such as energy efficiency, renewable energy and clean transport to national and international NGOs and other organisations. It also organises collaborative studies on key climate policy issues. Recently, ECF published an authoritative report, Roadmap 2050, on a range of necessary transitions, including the transition of the European power sector towards zero-carbon electricity.

In 2009 the Heads of State and Government of the European Union set the climate and energy goals of reducing Europe's GHG emissions at 80-95% by 2050. [The Roadmap 2050 project](#) sets out the crucial role of a zero-carbon power sector to Europe's long-term climate commitments and shows different pathways that can make this a reality delivering economic and energy security goals.

The Roadmap examines several de-carbonization scenarios for the power sector and, based on a back-casting methodology, sets out the near-term implications of this long-term commitment. The analysis shows that in each of the scenarios the cost of zero carbon power stays in the range of the Business-as-Usual case. It also shows that an inter-regional European transmission grid can provide the level of reliability that users expect even in scenarios with high (60-100%) renewable shares. The necessary back-up generation capacity is also reduced significantly and is estimated at 10-15% of total capacity in 2050. The scenarios include all present renewable energy technologies, including second-generation biomass, as well as CCS for the remaining fossil fuel based capacity. An aggressive development of the electric vehicle market and a very ambitious energy efficiency policy are essential elements of the strategy.

*Action before 2015 is a prerequisite for de-carbonization by 2050.* Immediate policy development and implementation should therefore focus on:

- Energy efficiency measures, creating cost savings and reducing demand.

- Investments in regional grid inter-connection, minimizing back-up supply and load-balancing requirements.
- Market reform to ensure an effective investment climate.

The Roadmap 2050 shows that the benefits of the low-carbon transition by far outweigh the challenges and that a commitment now to a systemic low-carbon transformation of the energy sector is ultimately the winning economic strategy for competitiveness, jobs and low-carbon prosperity. Achieving the EU 80% GHG reductions target in 2050 based on zero carbon power generation in Europe is technically feasible

and makes compelling economic sense.

The full report can be downloaded from the Roadmap 2050 website:

<http://www.roadmap2050.eu/>

The Roadmap is based on extensive technical, economic and policy analyses conducted by five leading consultancies: Imperial College London, KEMA, McKinsey & Company, Oxford Economics, and the Office of Metropolitan Architecture, in addition to the involvement of utilities, transmission operators and NGOs.

## Global Resource Depletion

In 1970 the finite nature of natural resources was placed on the agenda by the Club of Rome's "Limits to growth", based on the work of Dennis Meadows. As knowledge was far from complete at that time, it was easy to challenge the message and, after some debate and the so-called first 'energy crisis' in 1973, the world resumed business as usual. 40 years have since passed and it is now a lot more difficult to ignore the fact that a number of constraints are fast approaching and some are already there.

Among these, energy is a pressing issue as the reservoirs of easily accessible fossil fuels are shrinking. However, the need to reduce CO<sub>2</sub>-emissions to mitigate climate change calls for a transition in our energy systems and the large scale introduction of renewable energy technologies. In Roadmap 2050 the Climate Change Foundation explains how Europe could reduce its CO<sub>2</sub>-emissions by 80-90% within the next 40 years (see preceding article). However, is it feasible?

In a recent monograph by André Diederer, a less discussed group of natural resources was brought into focus: metals <sup>\*</sup>). Apart from the three bulk metals: iron, aluminium and magnesium, the developed world is also highly dependent on the availability of a score of some 20 more metals of which many are likely to be in short supply within one or two decades. Their applications range from

additives for steel alloys, applications in conventional electricity production, transmission and control equipment, batteries, electronics, computers and servers, flat screen TVs, mobile phones and many other nice gadgets we are supposed to "need". However, a number of the same metals are essential in renewable energy technologies as well.

A silicon photovoltaic cell derives its unique property to mobilise electrons upon irradiation from being 'doped' with traces of metals like indium and others; some types benefit from a selenium coating. The alloys for electromagnets which generate electricity in modern wind turbines contain neodymium or dysprosium. Other metals are required for the new energy infrastructure with smart grids, storage provisions, electric vehicles, heat pumps, etc. and the connected IT-devices to control their operation.

As a major part of total production is already claimed, the obvious solution should be to increase mining of these metals. However, physical constraints make success unlikely here. Many of the concerned metals are only being found in low-quality reservoirs, mostly mined as by-products when mining bulkier metals. Production rates, therefore, are being controlled by the demand for bulk metals.

Separate mining is not an attractive option. Even if markets would pay for the additional costs the



energy requirements for their production would exceed the energy amount which they could produce during their lifetime: the option would then be counterproductive for climate change policy objectives.

It is clear that the situation is much different from 40 years ago. Diederer expects that business-as-usual is a certain recipe for system collapse. He advocates a policy of “managed austerity”: this could help to gradually prepare us for a future adapted to available resources which does not compromise the climate.

Managed austerity includes six adaptation directions. Not surprisingly, approaches like conservation of energy and materials, and recycling of scarce resources are among these. Others are increased product lifetime, substitution of scarce resources, a new product or process design philosophy and adapted inventory management.

For the substitution of scarce metals he refers to the “elements of hope”. Apart from the elements

which prevail in biomass the seven most abundant elements are sodium (Na), magnesium (Mg), aluminium (Al), silicon (Si), potassium (K), calcium (Ca) and iron (Fe) and a group of less abundant, but still plentiful elements, among which titanium (Ti), manganese (Mn), chromium (Cr) and copper (Cu). Wherever possible these elements should substitute the other, critical elements for which short-supply is likely to be unavoidable, in order to reserve them for essential applications.

The challenges of all adaptation directions are enormous and it requires strong leadership to even begin to work towards some. The alternative however may be system collapse.

\*) André Diederer, Global Resource Depletion, Managed Austerity and the Elements of Hope, Eburon 2010. ISBN 978-90-5972-425-9

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## EFCA events 2011

Third International EFCA-symposium on  
**Ultrafine Particles**  
Sources, Effects, Risks and Mitigation Strategies  
Brussels, 26-27 May 2011

### Announcement and Call for Papers

- Sponsors: European Federation of Clean Air and  
Environmental Protection Associations (EFCA)  
Karlsruhe Institute of Technology (KIT)  
Gesellschaft für Umweltsimulation e.V. (GUS)  
Confederation of European Environmental  
Engineering Societies (CEEES)
- Venue: Representation of the State Baden-Württemberg at the EU  
Rue Belliard 60–62, B-1040 Brussels
- Invited speakers: **Nicole Janssen**, RIVM, Bilthoven, Netherlands  
**Andreas Petzold**, DLR, Oberpfaffenhofen-Wessling, Germany  
**Xavier Querol**, Spanish National Research Council, Barcelona, Spain

## Call for Papers

Conference topics in ultrafine particles research and abatement strategies include:

**Emission sources:** Ambient ultra-fine particles and nano particles, emission inventories

**Characterization:** Particle size, volume, shape, particle size distribution, chemical composition, oxidative capacity

**Air quality:** Measurement and methods; modelling atmospheric behaviour of particles; monitoring approaches and data; equipment

**Climate Effects:** Role of ultra fine particles in cloud formation and stimulating climate effects; regional aspects

**Epidemiology:** epidemiological and human clinical studies with size differentiation of small particles

**Health effects and mechanisms:** in vivo and in vitro toxicity, transport in the body; relevant research techniques

**Abatement strategies and policies:** policy studies on UFP; cost-effective mitigation of PM

## Submission of Abstracts

Please send abstracts (max. 300 words) to Karlsruhe Institute of Technology, Mrs. Biserka Mathes, [b.mathes@kit.edu](mailto:b.mathes@kit.edu) not later than **January 31st, 2011**. The abstract should be a pdf-file, based upon a Powerpoint or a Word document. Authors will be informed about the acceptance of the paper by end of February 2011.

A flyer for the Call for Papers with additional information will become available by 1 December 2010 at [www.efca.net](http://www.efca.net).

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## Second International EFCA-symposium on **Co-benefits** Air Pollution and Climate Change Policies at Sub-national Levels September 2011, France

The project of second international conference on Co-benefits of climate change and air pollution policies, addressing the local and regional level in particular, which was announced in the last EFCA newsletter to take place in March 2011 in France has been postponed to September 2011. It was initially supposed to be merged with a major initiative of the French government for a “week of the atmosphere”, but it appeared from further

discussions about these projects that the two events should better be independent, to avoid possible confusions of authorship and sponsorship, to the detriment of the independence of the EFCA initiative. With the “week of the atmosphere” programmed in March or April, the EFCA event could no more be arranged in spring and had to be postponed to September. The initial tentative program is also being revised taking this new context into account.

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## News on EFCA and its members

### EFCA session at World Clean Air Congress

In the year of IUAPPA’s World Clean Air Congress EFCA traditionally reduces its activities in Europe and contributed in Vancouver, Canada.

It provided a welcome opportunity to confront its Policy Initiative on the Co-benefits of integrated Climate - Air Pollution Policies in Europe with developments worldwide. EFCA-president *Jean-Marie Rambaud* coordinated and chaired a Special session on the topic, arranged in cooperation with IUAPPA’s DG, *Richard Mills*.

EFCA's SG presented the recent Policy report on the "co-benefit content" of the EU legislation, focussing in more detail on the missing part in the legislative framework for the protection of the atmosphere: the argument for a Law of the atmosphere had been confirmed by the EFCA Assembly in Vancouver.

EFCA's president noted in his presentation that, while the need for integrated approaches was at the international and incidentally, the national agenda's now, the bottom-up initiatives on climate change at de-central levels too often still ignore their impact on air quality. EFCA will address this important question at a symposium in September 2011 in France.

The tools to assess the benefits of integrated approaches are now available. IIASA's GAINS model is well accepted and an application of GAINS Italy was reported on by *Tiziano Pignatelli*, which demonstrated the benefits for air quality of energy conservation measures (as well as the present economic crisis). *Bjarne Sivertsen* reported assessments with a comparable tool, applied in Norway and other countries. For the USA where institutional, policy and technical barriers for co-control approaches are comparable to the European situation *Chris James* provided a template for air quality and energy regulators who want to develop more cost-effective policies.

It was interesting to hear from *Katsunori Suzuki* that Asian countries have founded an Asian Co-benefits Partnership framework to develop comprehensive, integrated approaches.

In Africa a similar development is taking shape within the APINA-network as reported by *Sara Baisai Feresu*. While GHG-emissions in African countries are relatively low Africans are aware that their countries may suffer the worst effects of climate change. This motivates them to develop integrated approaches when addressing growing air pollution problems in African cities.

In California's Bay Area a comparable tool is already in place. *David Burch* presented the 2010 Clean Air Plan which addresses ozone, PM2.5, air toxics and greenhouse gases. The Plan proposes 55 control measures, designed to maximise co-benefits while minimising trade-offs.

EFCA may look back at a successful session, also in terms of attendance. The observation that the discussion onco-benefits takes place primarily within scientific and policymakers communities

and should be extended to industry and civil society was a valuable remark in the discussion.

List of presentations:

- Linking air pollution and climate change legislation in Europe: an EFCA perspective. *Joop van Ham, EFCA*
- Linking air pollution and climate change in local governments' action plans: an EFCA perspective. *Jean-Marie Rambaud, EFCA*
- Integrated assessment and co-control approaches. *Bjarne Sivertsen, Norwegian Institute for Air Research*
- Effects of global financial crisis on medium-long term emission scenarios, in the perspective of air pollution and climate change. *Tiziano Pignatelli, ENEA - Italian Agency for New Technology, Energy and Economic Sustainable Development, Rome, Italy*
- Implementing policies to reduce air pollution, improve energy security and protect climate: where models lead, will leaders follow? *Chris James, Regulatory Assistance Project, USA*
- Multi-pollutant air quality planning: The 2010 Bay Area Clean Air Plan. *D. B. Burch; Bay Area Air Quality Management District, San Francisco, CA, USA*
- Progress in promoting co-benefits approach in Asia. *Katsunori Suzuki, Kanazawa University, Japan*
- An air pollution information network for African (APINA) perspective on air pollution and climate change. *Sara Baisai Feresu, APINA Secretariat, Institute of Environmental Studies, University of Zimbabwe*

These presentations can be downloaded at:

<http://efca.net/index.php?page=past>

## EFCA Assembly

The Assembly held its 19<sup>th</sup> meeting in Vancouver where it considered the achievements of the past period and discussed future activities. For 2011 three symposia are presently being prepared:

- Third symposium on Ultrafine particles, 26-27 May, Brussels
- Symposium on Co-benefits at the local and regional level, September, France
- Sixth symposium on Non-CO<sub>2</sub> Greenhouse Gases, 2-4 November, Amsterdam

In 2012 EFCA will sponsor its Turkish member at their next Air Quality Management conference, which will address Mediterranean air pollution problems in particular..



*EFCA president Jean-Marie Hands the Award certificate to Giuseppe Fumarola*

A special item on the agenda was the election of EFCA's former president, Giuseppe Fumarola as Honorary member of the Assembly. In a small ceremony during the EFCA session at the Congress he was honoured with some presents, among which a recently designed paper knife with EFCA logo.



## IUAPPA and Vancouver Declaration

### *World Congress*

The 15<sup>th</sup> World Clean Air Congress in Vancouver displayed as usual a wealth of presentations on the full array of atmospheric phenomena and problems and the approaches of technical or policy nature to respond to them. Next to that a set of carefully composed plenary presentations and

discussions provided an appreciable added value. They ranged from Hemispheric Transport of Air Pollution, Interactions between Air Quality and Climate Change, the Short-term Climate Forcers, as well as the Entrepreneurial challenges for Long-term business it included the Biodiversity issue when calling to strengthen the International cooperation on Air Pollution and were condensed into the Congress Declaration of Vancouver. An abridged and edited version is presented below.

## ONE ATMOSPHERE

### Declaration of the 15<sup>th</sup> World Clean Air Congress

Vancouver, September 2010

(abridged and *edited* version)

World Clean Air Congresses provide a Forum for reviewing major trends and developments in atmospheric research and policy and for identifying the major challenges and opportunities that lie ahead and, *when appropriate condense the views into a Congress Declaration.*

*The XVth Congress in Vancouver in September 2010 provided the basis for a Declaration which “reflects a belief that global environmental challenges have 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, is now necessary, urgent and achievable.”*

### “THE MESSAGE OF VANCOUVER

The theme of the Congress – Achieving Environmental Sustainability in a Resource-Hungry World – captured the fundamental environmental issue of this decade and set the context for a wide ranging review of atmospheric science and policy. The choice of Vancouver as the Host City proved propitious in highlighting the underlying nature of the challenge now confronting environmental policy.“

*By contrasting Vancouver’s successes as one of the ‘environmental cities’ of the world with the big global environmental challenges the Declaration calls on:*

***“Acting locally and thinking globally is no longer enough. We must act globally. From its deliberations in Vancouver the Union has concluded that three paradigm shifts in air quality and wider atmospheric policy are necessary, timely and achievable: 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<sub>2</sub> 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.”***

*Each of the three shifts which are wanted is specified in more detail.*

#### **“AIR POLLUTION AND ECOSYSTEMS**

***Building on the statement of the Secretary to the Biodiversity Convention, the Air Quality community should promote a full and mutually-supportive partnership with scientists and policy makers addressing the issue of biodiversity. At the same time the Union urges Governments worldwide to take better account of the value of ecosystem services in assessing costs and benefits of changes in land use and in developments that might increase emissions of air pollution. The impacts of current levels of pollution on biodiversity should be continually assessed.”***

#### **“CLIMATE CHANGE AND AIR POLLUTION CONTROL**

***The Union ..... calls on Member States, acting through the United Nations, UNEP and its other relevant agencies and programmes, to promote a major international initiative to address short-term climate forcers as a basis for integration of climate and air pollution policies and the development of a ‘One Atmosphere’ policy. In the light of presentations at the Congress the Union believes that progress here is necessary, urgent and achievable.”***

#### **“INTERNATIONAL CO-OPERATION**

Neither of these challenges can be successfully tackled without a third paradigm shift – a fundamental strengthening of the framework for international co-operation on air pollution.

Air Quality Management has been one of the most successful areas of environmental policy, yet at the international scale it lags woefully behind what is needed. There have been important initiatives in recent years, particularly at the regional scale and on POPs and Stratospheric Ozone, but it remains the case that there is no effective international framework to tackle the most damaging transboundary pollutants – ozone and particulates; no effective links between climate and air pollution policy; no global voice for air pollution of the kind that IPCC offers the climate community; no ‘Law of the Atmosphere’ to parallel the UN Law of the Sea.

Presentations at the Congress – most notably on converging work by the Global Atmospheric Pollution Forum, the UNEP Assessment of Black Carbon and Ozone and the Task Force on Hemispheric Air Pollution – open the possibility of a step-change in the scope and effectiveness of international co-operation on air pollution . They have led the Union to the conclusion that we are potentially at a turning point in these matters.

A new Law of the Atmosphere is needed– or at least a new framework for international co-operation on air pollution and climate at regional, hemispheric and global scales. This need not require radical new legal instruments and institutions. It could be achieved by the effective integration of existing institutions and programmes – notably those of the two main international bodies in the field – the LRTAP Convention and UNEP.



*The Union has concluded that it is time for the LRTAP Convention and UNEP, with the support of WMO and other relevant bodies, jointly to map out a common pathway to a more effective global framework for air pollution, providing integrated and cost effective systems for monitoring atmospheric changes, assessing issues and negotiating abatements strategies. Such changes could provide a new and stronger platform for progress in rescuing the world's declining ecosystems and forestalling catastrophic climate change."*

The complete final version of the Declaration, which was published on 7 October 2010, is available at [www.iuappa.com](http://www.iuappa.com)

## Calendar

*CfP = Deadline Call for Papers*

Neue Entwicklungen bei der Messung und Beurteilung der Luftqualität. VDI-Fachtagung UMTK 2011

11-12 May 2011, Kongresshaus Baden-Baden, Germany ([www.krdl.de](http://www.krdl.de))

8<sup>th</sup> International Conference on Environmental Engineering

19-20 May 2010, Vilnius, Lithuania (<http://enviro.vgtu.lt>) CfP: 21-01-2011

3<sup>d</sup> International EFCA-symposium on Ultrafine Particles

26-27 May 2011, Brussels, Belgium ([www.efca.net](http://www.efca.net)) CfP: 31-01-2011

Indoor Air 2011

5-10 June 2011, Austin, Texas, USA (<http://lifelong.engr.utexas.edu/2011/>)

International Nordic Bioenergy Conference  
5-9 September 2011, Jyväskylä, Finland ([www.nordicbioenergy.finbioenergy.fi](http://www.nordicbioenergy.finbioenergy.fi))

EFCA-symposium on Air quality, energy and climate at local levels  
September 2011, France ([www.appa.asso.fr](http://www.appa.asso.fr))

6<sup>th</sup> International Symposium on Non-CO<sub>2</sub> Greenhouse Gases

2-4 November 2011, Amsterdam, Netherlands ([www.ncgg.info](http://www.ncgg.info)) CfP: 01-02-2011

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<b>Vice-presidents</b>	Thomas Reichert (GUS e.V., Germany), Vladimira Vadjic (CAPPa, Croatia)
<b>Past-president</b>	Giuseppe Fumarola (CSIA, Italy)
<b>Secretary-general</b>	Joop van Ham (VVM-CLAN, The Netherlands)

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