

Overlooked Pollutants and Climate Forcers: The Role of Soot, Ozone and Methane in Climate, Health and Economy

Background information for the Workshop

September 27th, 2012

Hotel Aquino in Berlin

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1. Background Information

Short-lived climate-forcing pollutants contribute considerably to global warming and cause ecological damages and health problems. Politically, these effects have barely been considered up to now. This workshop organized by “Soot-Free for the Climate” and the Institute for Advanced Sustainability Studies (IASS) highlights the respective scientific background, possible solutions and policy options.

Background

Although CO₂ is the strongest climate forcer, reducing this greenhouse gas alone will not be sufficient to keep the global warming to the internationally agreed upon goal of 2°C compared to pre-industrial times. Approximately 30% of the global warming is caused by so-called short-lived climate-forcing pollutants (SLCPs). These include among others soot, low level ozone and methane. In addition to their impact on climate, SLCPs also impair human health because of their negative impact on air quality. Experts estimate that in the year 2000, 350,000 deaths in the EU alone could be attributed directly to PM_{2.5} (particles with a diameter of less than 2.5 µm), which are part of SLCPs. In Germany, that amounts to 75,000 deaths – 10 times more than from car accidents. As an average, the reduction in life expectancy in Germany caused by PM_{2.5} was 10.2 months. Moreover, some SLCPs cause considerable environmental damages. For example, in 2000, low level ozone was responsible for crop losses of over 27 million tons of wheat. This has an estimated value of 3.2 billion Euros in Europe. In Germany alone, the damage amounted to over 600 million Euros in losses.

Possible Solutions and Co-Benefits

Current studies by the United Nations Environmental Program (UNEP) and the World Meteorology Organization (WMO) show that a significant reduction of SLCPs can be achieved by implementing 16 specific measures. The proposed measures are based on already available technologies, like particle filters, as well as the further development of existing regulatory frameworks and conventions. The financial

expense is predictable and, for most measures, can be paid off in a relatively short period of time.

The full implementation of these 16 measures would lead to a 38 % reduction of the global methane emissions and to a 77 % reduction of the global soot emissions. At the same time, the concentration of low level ozone would decrease. This would lead to a smaller increase of global temperature around 0.5°C less by 2050. Without these measures the internationally agreed upon goal of 2°C can most likely not be met. On the other hand, these measures alone will not be enough: Worldwide, the emissions of SLCPs as well as of CO₂ need to be reduced simultaneously.

Additionally, the implementation of the portfolio of measures will have positive effects on the environment, agricultural yields and health. Results of these measures will be noticed primarily on a local and regional level, near the emission sources like industrial areas and transportation hubs.

Coordinated and integrated measures are needed

To halt the advance of the climate change, fast action is needed: CO₂ and SLCPs need to be reduced simultaneously. But up to now, there have been very few national and international activities to reduce SLCPs aside from the context of establishing better air quality. Only recently, this year in February, the Climate and Clean Air Coalition (CCAC) was founded, whose goal is to reduce the emissions of SLCPs worldwide. So far, 17 countries, the United Nations Environmental Program, the European Commission, the Stockholm Environmental Institute (SEI) and the World Bank are part of the coalition. Germany officially joined in July of 2012. However, the young coalition has not been able to implement specific measures yet. On a national level in Germany, the political and public attention for SLCPs is still low. Therefore, there is a lack of integrated and sustainable measures for the reduction of SLCPs for climate, health and eco-system protection.

2. Workshop Agenda

- 9.00 am** Registration and Reception
- 9.20 am** Welcome
Jürgen Resch, Executive Manager, DUH
- 9.30 am** Opening Speech
Prof. Dr. Klaus Töpfer, Executive Director of the IASS
- 10.00 am** The Role of SLCPs in the Climate Change
PD Dr. Mark Lawrence, Scientific Director IASS
- 10.30 – 11.00 am** Coffee Break
- 11.00 am** Scenarios and Measures
Dr. Markus Amann, Leader Trans-boundary Air Pollution Program IIASA
- 11.30 am** Possible Solutions and Available Technologies
Dr. Axel Friedrich, International Traffic Advisor
- Noon** Panel Discussion: *PD Dr. Mark Lawrence* (IASS), *Dr. Markus Amann* (IIASA), *Dr. Axel Friedrich* (International Traffic Advisor), *Dr. Hermann Ott* (MdB Bündnis 90 / Die Grünen)
- On a national level, where is action required?
 - Which incentives have to be created?
 - What next steps should the German representation of the coalition take?
- 12.45 pm** Joint Lunch and Conclusion of the Event

Moderator: *Daniel Eckold*, Spokesperson of the DUH

3. Speakers

Jürgen Resch: Jürgen Resch has been Executive Manager of the German Environmental Aid e.V. (Deutsche Umwelthilfe e.V., DUH) since 1986. The DUH is a national nature, environmental and consumer protection organization. In addition to practical nature and environmental protection projects, the implementation of sulfur-free fuel, the formation of low emission zones as well as the introduction of diesel-soot-particle filters, are some of the well-known successes of DUH. For the achievement of the objectives, Jürgen Resch forges alliances with companies, politicians and other organizations.

Prof. Dr. Klaus Töpfer: Klaus Töpfer is the Founding Director (2009) and current Executive Director of the Institute for Advanced Sustainability Studies (IASS) in Potsdam. He is also the former Executive Director of the United Nations Environmental Program (UNEP) based in Nairobi and Under-Secretary-General of the United Nations (1998 – 2006). From 1987 until 1994, he was the Federal Minister for the Environment, Natural Conservation and Nuclear Safety in Germany.

PD Dr. Mark Lawrence: Mark Lawrence is Scientific Director at the Institute for Advanced Sustainability Studies (IASS) in Potsdam and leads the research cluster Sustainable Interactions with the Atmosphere. Prior to that, he led the atmospheric modeling group in the Atmospheric Chemistry department at the Max-Planck-Institute of Chemistry in Mainz since 2006 and served as an interim professor for Meteorology at the University of Mainz in 2009 and 2010.

Dr. Markus Amann: Markus Amann is the leader of the Trans-boundary Air Pollution Program and the Greenhouse Gas Initiative at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria. He also leads the Center for Integrated Assessment Modeling (CIAM) of the European Monitoring and Evaluation Program (EMEP) under the UN ECE Agreement about wide-range, border-crossing air pollution.

Dr. Axel Friedrich: Since 2008, Axel Friedrich has been an independent advisor for organizations including the World Bank, the GIZ, and the Asian Development Bank. For 28 years, he worked for the German Federal Environmental Agency and led the department of Environment, Traffic and Noise.

Dr. Hermann Ott: Hermann Ott (Bündnis 90/Die Grünen) is member of the German parliament and speaker for international climate politics of the Bundestagsfraktion. Since 1994, he has been working as an environmental researcher at the Wuppertal Institute for Climate, Environment and Energy. In 2001, he assumed the position of Institute Director and founded the Berlin office of the Wuppertal Institute in 2004 before transitioning from a political advisory position to active politics.

Daniel Eckold: Since fall 2011, Daniel Eckold has been spokesperson of the DUH.

4. Organizers

Soot-Free for the Climate:

In March 2009, the German environmental and consumer protection NGOs Naturschutzbund Deutschland (NABU), Bund für Umwelt und Naturschutz Deutschland (BUND), Verkehrsclub Deutschland (VCD) and Deutsche Umwelthilfe (DUH) started a joined campaign “Soot-Free for the Climate”. The campaign aims to get the topic of the significant climate impact of diesel soot onto the political agenda and into public discussions. The needed decisions should be named and their implementation be demanded. Together with partner organizations from eight other European countries, this campaign lobbies for a significant reduction of diesel soot emissions. Besides the immediate benefits for the climate protection, this also has a positive impact on public health especially for people living in the highly polluted inner cities.

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Institute for Advanced Sustainability Studies (IASS):

The founding of the IASS was inspired by a 2007 symposium of Nobel laureates “Global Sustainability – A Nobel Cause” held in Potsdam. The alliance of German scientific organizations created the concept for an interdisciplinary, international, knowledge exchange encouraging institute for sustainability studies. Today, the IASS in Potsdam is an international platform where experts from natural and social science, politics, the private sector and civil society collaborate on topics of sustainable development. As an institute for transdisciplinary sustainability studies, the IASS generates and communicates the needed knowledge to shape sustainable societies.

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