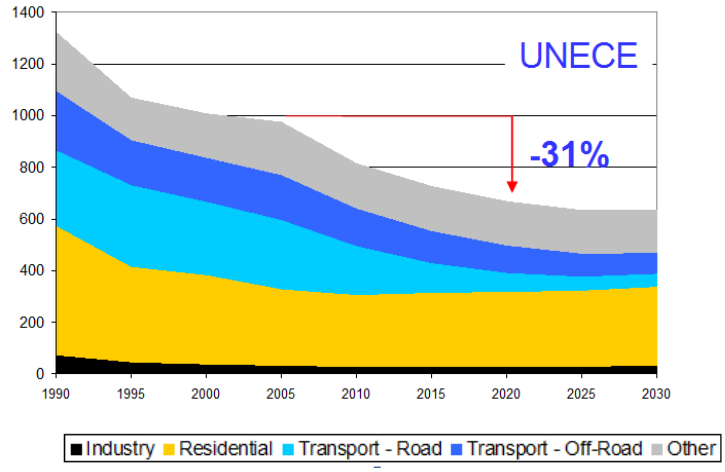
Working Group of Strategies and Review, 48th Session
11-15 April 2011, Geneva
Informal document No. 13
Agenda items 3 and 5

Proposal on key mitigation measures for BC in the revised Gothenburg Protocol

submitted by Switzerland

Introduction

As set out in the Report from the Ad-Hoc Expert Group on Black Carbon (EGBC), residential heating will become the dominating source of BC emissions in most countries by 2020 (see figure below).

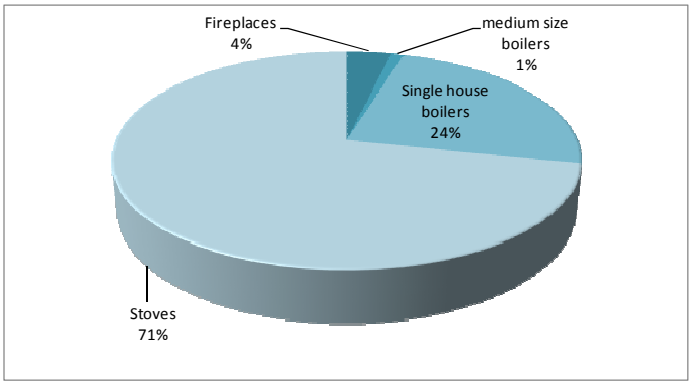


Sectoral structure and development of BC emissions [kt] in the GAINS UNECE area for the CLE scenario; the indicated reduction refers to the change between 2005 and 2020 (source: EGBC report)

Nearly 50% of the remaining mitigation potential in the UNECE region in 2020 is estimated to rest in this sector. Non-road machinery offers the second largest technical potential for reduction of BC emissions, namely nearly 20%. Thus, effective reduction strategies for BC must address these two sectors as a priority.

The necessity to address mitigation measures for small-scale residential heating

BC emissions from residential heating are mainly caused by single-room heating stoves and single-house boilers < 50 kW (see figure below), while medium size boilers with a thermal input > 50 kW are less relevant.



BC emissions from residential combustion in the GAINS UNECE area (2005); share of installation types (GAINS

data provided courtesy of IIASA)

Appropriate technology exists and is available on most markets. Emissions from **new** residential combustion stoves and boilers can be reduced through product standards and emission limit values that reflect state-of-the-art combustion technology. Switzerland therefore proposes to make mandatory use of option 2 - or still better option 1 - of the suggested emission limit values outlined in table 13 in paragraph V of document ECE/AIR/WG.5/2011/2.

The reduction of emissions from **existing** residential combustion installations is also very important because small-scale equipment may have a very long life-time. Switzerland therefore proposes to recommend to the Parties of the Protocol to carry out retrofit programs or public information and awareness programs promoting improved operation practices.

The necessity to address mitigation measures for non-road mobile machines

As set forth in draft revised technical annex VIII to the Gothenburg Protocol emissions from diesel engines for non-road mobile machines and agricultural and forestry tractors must meet the relevant requirements in accordance with EC Directives. In addition emissions could be further reduced through accelerated introduction of diesel particle filters (DPF) for new machinery and retrofitting of existing machinery with DPFs.

In order to tap the full reduction potential for BC/soot it is important to ensure the installation of high efficiency DPFs and not only lmit the mass of PM. Therefore Switzerland proposes to introduce an ELV for the particle count for diesel engines for non-road mobile machines and agricultural and forestry tractors in annex VIII in addition to the PM mass limit value:

> Exhaust emissions from non-road machinery may not exceed the particle count of 1×10^{12} 1/kWh for solid particles with a diameter greater than 23 nm, calculated on the basis of the current recognised status of technology, namely the UNECE particle measurement programme, and in accordance with the NRSC and NRTC test cycles specified in Directive 97/68/EC.

Draft proposal for the Protocol text

In informal document No. 5 on "Recommended Changes to Gothenburg Protocol to Address Black Carbon" the Expert Group on Black Carbon has proposed to add the following text to article 3 paragraph 1:

> To meet the ceiling for particulate matter, each party should seek reductions from those source categories known to emit high amounts of black carbon, to the extent possible.

Switzerland supports the intention of this text but feels that the context of paragraph 1 is not best suited for adding this text. As an alternative Switzerland proposes to add a new specific paragraph 8bis to article 3 (in analogy to the existing paragraph 7 on VOC control measures and paragraph 8 on ammonia control measures), making reference to a new chapter on BC control measures that would have to be added to the Guidance Document:

> Each party shall apply best available techniques for reducing black carbon emissions as listed in the Guidance Document adopted by the Executive Body at its [xxth] session and any amendments hereto. The Parties shall, no later than two years after the date of entry into force of the present Protocol, evaluate mitigation measures for black carbon with a view to amending the annexes [on dust] and VIII as well as the Guidance Document.