International Environmental Update

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Climate Change

- Kyoto Protocol
  - Entered into force on February 16, 2005
  - Worldwide differentiated target of 5.2% reduction in GHG emissions from 1990 levels between 2008-2012
  - CO_2, CH_4, N_20, HFCs, PFCs, SF_6
  - EU (-8%), Japan (-6%), U.S. (-7%)
  - No international policies and measures
  - Many countries not on schedule to meet their emission reduction targets

Climate Change

- Kyoto Protocol
  - "Bali roadmap" calls for negotiating new post-2012 climate treaty (second budget period) by COP 15 in December 2009
  - Major issues include long-term and mid-term targets, sectoral approaches, developing country participation/funding, deforestation, and binding commitments
  - Agreement on post-2012 treaty more likely in 2010 than 2009 - new US President

Climate Change

- Kyoto Protocol - Aviation
  - GHG emissions from aviation are about 3.5% of global GHG emissions and have grown about 65% from 1990-2005
  - GHG emissions from aviation are not currently covered by the Kyoto Protocol, but are handled by ICAO
  - Proposals by EU, Argentina, Norway and other countries to include aviation emissions in the post-2012 treaty
  - Opposition from some developing countries

Climate Change

- Kyoto Protocol - New Compounds
  - Discussion has begun on adding new compounds to the Kyoto Protocol or its successor, including:
    - Nitrogen trifluoride (NF_3)
    - Fluorinated ethers
    - Perfluoropolyethers
    - Hydrocarbons and other compounds including dimethyl ether, methyl chloroform, methylene chloride, methyl chloride, dibromomethane, bromodifluoromethane, iodotrifluoromethane (CF_3I)

Climate Change

- Europe
  - EU emissions trading scheme (ETS) is now in second phase (2008-2012)
  - Covers 10,500 facilities in 27 EU countries
  - Covered facilities have a cap on CO_2 emissions and can sell or purchase additional allowances
  - National Allocation Plans (NAP) are mostly complete for second phase
  - Allowance price is currently about 17 euros a ton, down from 29 euros on July 1

Climate Change

- Europe - Aviation
  - Agreement reached in October on inclusion of aviation in EU ETS starting in 2012
  - Covers all airlines flying in and out of EU airports
  - Likely to affect at least 87 major airlines, 35 of which are headquartered outside the EU
  - 2012 emissions cap = 97% of average 2004-06 EU airline emissions
  - Proposed cap of 95% for 2013 and beyond still under discussion

Climate Change

- United States
  - Legislation to create Federal GHG regulation likely to pass Congress in 2009 or 2010
  - Most of the current proposals have targets in the range of 5-20% below 2005 levels in 2020 and 60-80% below 2005 levels in 2050
  - All of the current proposals create an economy-wide cap-and-trade program covering about 85% of US GHG emissions
  - Most are a hybrid of upstream and downstream approaches

Climate Change

- United States
  - Trend in newer bills is to auction the majority of allowances
  - Current bills do not cover aviation emissions directly but instead regulate transportation fuels at point of production
  - If Congress does not act in a timely fashion, possibility that new administration may move to regulate specific sectors like utilities under the existing Clean Air Act

Climate Change

- United States - HFCs
  - Current proposals cover HFCs at the point of production, which means that users would not need allowances for HFC emissions
  - Some of the bills create a separate HFC cap-and-trade program and include an excise tax
  - HFC reduction schedules based on new low-GWP refrigerants and are intended to provide an adequate supply of HFCs
  - House discussion draft includes exemption for HFCs in aviation safety

Climate Change

- Impact on Halons
  - Ozone-depleting substances like CFCs and halons have high GWPs, similar or higher than the HFCs that have replaced them
    - Halon 1301 = 7,140
    - Halon 1211 = 1,890
    - HFC-125 = 3,500
  - Providing GHG credits for destruction of ODS is already allowed on the CCX and could be included in a future US regulation or international climate treaty

Climate Change

- Impact on Halons
  - The cost of recycled halon in the US is currently in the range of $15 per pound, which is = $33,000 a ton
  - If GHG credits are priced at $20 a ton of CO2 equivalent, a ton of Halon 1301 would be worth $142,800 to destroy
  - Within a few years, users of halons may be competing in the marketplace with companies that are looking to buy the gas for GHG destruction credits

EU ODS Regulations

- Objective is to simplify the amended EC 2037 to reflect the near complete phase-out of ODS, reduce the administrative burden, ensure compliance with the 2007 amendments to Montreal Protocol, and address future challenges
- A draft proposal has been circulated to EU member states and will be voted on in early December
- No change to requirement that non-critical systems must be decommissioned and the halons recovered

EU ODS Regulations

- No change to halon critical use list but EC chaired regulatory committee given authority to change the list and/or set time limits
- DG Environment proposal contains the following end dates for aviation critical uses
  - Cargo compartment fixed systems - cannot be installed on new aircraft after 2015, end of critical use exemption is 2030
  - Cabin/crew compartment portables - 2010, 2015
  - Engine nacelles and APU - 2010, 2030
  - Lavatory (potty bottles) - 2008, 2015
  - Dry bays - 2010, 2030; Inert fuel tanks - 2008, 2030

EU ODS Regulations

- Exports of products containing or relying on halons would be allowed as long as the halons are intended for one of the critical uses listed in the regulation
- Exports of recovered, recycled, or reclaimed halon stored in transportation or storage containers is allowed beyond 2009
- Some of the changes go against previous policy, e.g. halon exports beyond 2009, and may not survive Member State review