
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
 - CO₂, CH₄, N₂O, HFCs, PFCs, SF₆
 - 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
 - New post-2012 treaty being negotiated at COP 15 in December in Copenhagen
 - Wide gap between US (1990 levels in 2020) and EU (20-40% below 1990 levels in 2020)
 - Commitments from large developing countries like China and India key issue
 - Funding for developing countries key issue
 - Likely to be some type of political agreement or framework, to be followed by negotiation of details of full fledged treaty next year

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 Kyoto Protocol, instead are handled by ICAO
 - Proposals being discussed to include aviation emissions in the post-2012 treaty
 - Current EU position is to include aviation in new treaty and cut emissions 10% by 2020

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 CO₂ emissions and can sell or purchase additional allowances
 - Aviation will be included starting in 2012
 - Covers all airlines flying in/out EU airports
 - One allowance for every ton of CO₂ emitted

Climate Change

- United States
 - Legislation to create Federal GHG regulation has passed House (H.R. 2454) and is currently being considered in Senate (S. 1733)
 - Targets are 17-20% below 2005 levels in 2020, 83% below 2005 levels in 2050
 - Both bills create an economy-wide cap-and-trade program covering 85% of US GHGs
 - Bills do not cover aviation emissions directly, instead regulate transportation fuels at the point of production (refinery)

Climate Change

- United States - HFC Provisions
 - Hydrofluorocarbons (HFCs) are covered separately from other GHGs by amending Title VI of the CAA (ODS regulations)
 - Class II substances would be split into two groups, with group I containing the HCFCs and group II containing the HFCs
 - Overall production of HFCs is phased down beginning in 2012 and ending in 2032

Climate Change

HFC Reduction Schedule

| | | | | | |
|------|---|-----------------|------------|---|-----|
| 2012 | - | 90% of baseline | 2023 | - | 54% |
| 2013 | - | 87.5% | 2024 | - | 50% |
| 2014 | - | 85% | 2025 | - | 46% |
| 2015 | - | 82.5% | 2026 | - | 42% |
| 2016 | - | 80% | 2027 | - | 38% |
| 2017 | - | 77.5% | 2028 | - | 34% |
| 2018 | - | 75% | 2029 | - | 30% |
| 2019 | - | 71% | 2030 | - | 25% |
| 2020 | - | 67% | 2031 | - | 21% |
| 2021 | - | 63% | 2032 | - | 17% |
| 2022 | - | 59% | after 2032 | - | 15% |

Climate Change

- United States - HFC Provisions
 - Allowances are required to produce/import HFCs, or import products containing HFCs
 - The minimum auction price and non-auction sales price for allowances are set in the early years of the program as follows:
 - \$1.00 per MT in 2012, \$1.20 in 2013, \$1.40 in 2014
 - Minimum auction price rises to \$1.60 in 2015, \$1.80 in 2016, \$2.00 in 2017, and then increases with inflation for the rest of the program

Climate Change

- HFC Provisions - Allowance Cost
 - At \$1.00 per metric ton (2012):
 - HFC-227ea = \$1.46 per pound (GWP = 3,220)
 - HFC-125 = \$1.59 per pound (GWP = 3,500)
 - HFC-236fa = \$4.46 per pound (GWP = 9,810)
 - HFC-23 = \$6.73 per pound (GWP = 14,800)
 - At \$2.00 per metric ton (2017):
 - HFC-227ea = \$2.93 per pound
 - HFC-125 = \$3.18 per pound
 - HFC-236fa = \$8.92 per pound
 - HFC-23 = \$13.45 per pound

Climate Change

- United States - HFC Provisions
 - Essential use, labeling, nonessential product, safe alternatives, and other provisions of Title VI would be extended to HFCs
 - Products containing or made with HFCs would be required to be labeled with the phrase “contributing to global warming”
 - Provides possible funding to manufacturers of products containing HFCs, including fire protection systems, to facilitate the transition to low-carbon alternatives

Climate Change

- United States - HFC Provisions
 - Essential use provisions would allow EPA to withhold allowances from under the cap and allocate them specifically to produce HFCs for medical devices, aviation and space flight safety, fire suppression, and national security
 - Essential use provisions would also allow EPA to approve additional HFC production above the cap for developing countries, national security, and fire suppression

Climate Change

- United States - HFC Provisions
 - Offset credits are provided at a 20% discount for destruction of CFCs after 2011 in the US
 - EPA can add other class I or class II ODS
 - EPA can add ODS destruction to list of offset projects that receive credit in main program
 - Halons have high GWPs, if allowed to be destroyed for GHG credit, could have impact on future price and supply
 - Halon 1301 = 7,140; Halon 1211 = 1,890

Climate Change

- United States - Prospects for Passage
 - Extremely unlikely that Senate climate bill can pass this year
 - Senators Kerry (D-MA), Graham (R-SC) and Lieberman (I-CT) are currently working on the framework of a compromise that could get bipartisan support and the 60 votes needed to pass the Senate
 - Must still be reconciled with House bill
 - If not done by mid-2010, could be difficult to pass in an election year

Montreal Protocol

- Proposed Amendments on HFCs
 - Proposals were considered at recent Meeting of Parties that would have added HFCs to the Montreal Protocol and phased down their production by 85-90% by 2030-2033
 - Proposals were not expected to be approved this year, but US and EU supported carrying them over to next year for consideration
 - Instead they were killed due to opposition from China and India among others
 - Will have to be re-proposed by April 2010

EU ODS Regulations

- Successor to European Union ODS regulations (EC 2037/2000) is still planned to be effective from beginning of 2010
- Draft new Annex VI on halon critical uses is undergoing revisions following comments from the Member States
- Main area of contention is end dates for civil aviation
- Revised draft likely to be completed by the end of the year and voted on in March 2010

EU ODS Regulations

- Most recent proposal (10/6/09) contains the following end dates for aviation critical uses
 - Cargo compartment fixed systems - cannot be installed on new aircraft after 2016, end of critical use exemption is 2035
 - Cabin/crew compartment portables - 2012, 2025
 - Engine nacelles and APU - 2012, 2035
 - Lavatory (potty bottles) - 2011, 2020
 - Dry bays - 2011, 2035
 - Inerting of fuel tanks - 2011, 2035