

6 air quality

Volatile Organic Compounds Emissions

Although the efforts of member countries of the Organisation for Economic Cooperation and Development (OECD) during recent years have led to reductions in carbon monoxide, lead and sulphur dioxide, emissions of nitrogen oxides, volatile organic compounds and dust have not been reduced at the same scale. This is mainly due to traffic, but also to industry. In many OECD countries critical loads of these emissions, that contribute to smog, acid rain and eutrophication, are still exceeded and are likely to be exceeded in the coming years. Measures will be taken to focus on reduction of vehicle emissions. This issue was the object of the Protocol to the Convention on Long-range Transboundary Air Pollution on the Control of Emissions of Volatile Organic Compounds (VOCs) or Their Transboundary Fluxes, which entered into force on 29 September 1997. Most of the signatory countries agreed to a 30% reduction in emissions of VOCs by 1999 using a year between 1984 and 1990 as a basis.

In Europe, the issue has been addressed via the European Directive 1999/13/EC on the limitation of emissions of VOCs due to the use of organic solvents in certain activities and installations. Industrial sectors covered by the Directive as well as national implementation measures (printing, surface cleaning, coating of metallic, wooden and plastic surfaces, pharmaceutical manufacture, dry cleaning, etc.) are presently preparing for the implementation of the Directive via national laws and regulations. Existing installations must comply with the established VOC emission limits and with the emission monitoring requirements, eg. a specific solvent management plan by October 2007 or earlier if the installation undergoes a substantial change. In addition, the EU has issued a proposal for a Directive to limit the VOC content of products such as paints and varnishes.

Air quality in Asia

Air quality in Asia, and especially air quality in major Asian cities, is a matter of serious concern, particularly the concentrations of dust. Governments in a majority of Asian countries intend to handle air pollution as their top priority over the next few years, and are beginning to take serious measures at all levels of administration. China, for example, is striving to reduce emissions of major pollutants by 6% during the course of 2003 compared to 2000. In order to reach this target, China plans to close down its most heavily-polluting factories, according to Xie Zhenhua of the China State Environmental Protection Administration (SEPA). While such drastic measures are not on the agenda everywhere, most governments are nonetheless actively implementing increasingly demanding requirements: Malaysia has proposed regulations to control air pollution at construction sites; Japan is planning to ban the use of diesel trucks without particulate filters; and South Korea is looking at the introduction of eco-taxes on fossil fuels.

Many major Asian cities have taken steps to control vehicular emissions by implementing the EURO I and II emission standards for vehicles and by setting standards for the fuels used. Other measures taken include the prohibition of the use of vehicles during smog periods, the introduction of park & ride obligations, as well as emission tests for vehicles. In the fight against air pollution, Hong Kong has begun to involve the community. Complaints about smoky vehicles or polluting industries can be raised by a 24-hour pollution complaint hotline service number or via the internet to the Environmental Protection Department of the Hong Kong Government.

While the impact to businesses will vary depending on their air pollution performance, it is certain that all businesses will be confronted with restrictions in order to improve air quality.



Emissions Trading

Emissions trading will take on growing importance worldwide since the political hurdles have largely been overcome by measures undertaken in some 56 countries to tackle the global climate change issue. International skepticism of emissions trading schemes, that were first introduced in the USA in the early 1990s with the Clean Air Act Amendments, has given way to growing enthusiasm as such schemes are increasingly seen as a cost-effective manner to meet Kyoto Protocol obligations. It is likely that such schemes will expand from their current focus on carbon dioxide and other greenhouse gas (GHG) emissions to other air pollutants, such as SO₂ and NO_x emissions, as is presently the case in the USA, Canada, China and the Netherlands.

Public Reporting

An increasingly important issue in the area of air quality policies is the public reporting of air quality data. Governments throughout the world are increasingly

informing citizens about concentrations of dust, nitrogen oxides, carbon monoxide, sulphur dioxide and ozone in their neighborhoods. Depending on the country, the system used to provide the data is more or less user friendly, and provides data for the previous year, data for each day and/or a forecast for the following day. The concentration levels are often indicated with a color-coding system in order to easily identify existing health risks. In the United States, the state of Texas and some Australian states ozone alerts are even sent by email.

Certain governments have already taken measures to ensure that this general ambient air quality data reporting will be completed by public reporting of (air) emission data of specific industries. The United States, for example, took such measures nearly a decade and a half ago with SARA Title III. Similar measures have been taken by Canada (NPRTR), Japan, Mexico and Europe (PRTR). In countries where there is no tradition of publicly accessible environmental performance data, industry will see a growing movement in this direction. The more citizens have access to air quality data and the more they are informed of industry pollutant emissions in their neighborhood, the more public pressure will increase on governments to take more strident measures to ensure good air quality and to take appropriate measures against polluting industries.

2002-2003 Regulatory Developments

The following is a list of regulatory developments related to air pollution control, and particularly urban air pollution control that occurred in 2002 and the first half of 2003. The overview is taken from the EPC-Update. The ID-number preceding each reference refers to the corresponding database record of the EPC-Update. For more details on any of these developments one can subscribe to the "EPC-Update" which provides an abstract of each development. A more detailed two-page summary and analysis of each initiative is also available via this service.

European Union: IPPC reference document for large volume organic chemical industry adopted [\[ID 5527\]](#)

European Union: Proposed Directive on reduction of VOC emissions from paints, varnishes and vehicle refinishing products [\[ID 5172\]](#)

European Union: Amended Directive on air emission limits from non-road mobile machinery adopted [\[ID 4143\]](#)

European Union: Proposed Directive on reduction of VOCs emission from paints, varnishes and vehicle refinishing products [\[ID 5172\]](#)

European Union: Directive on National Ceilings for Certain Atmospheric Pollutants to Ambient Air adopted [\[ID 2802\]](#)

European Union: IPPC reference document for large volume organic chemical industry adopted [\[ID 5723\]](#)

European Union: IPPC reference document for textile industry finalized [\[ID 5529\]](#)

European Union: IPPC reference document on general monitoring principles finalized [\[ID 5530\]](#)

European Union: Proposed Directive for a greenhouse gas emissions trading scheme within the EU [\[ID 3207\]](#)

Czech Republic: Decree on emissions of volatile organic compounds adopted [\[ID 5482\]](#)

Denmark: Statutory Order on emission ceilings for certain atmospheric pollutants adopted [\[ID 5630\]](#)

France: Concentration on the control of greenhouse gases [\[ID 4850\]](#)

Spain: Adopted VOC restrictions from solvent use in certain industries [\[ID 5669\]](#)

Spain: Adopted VOC emission restrictions from solvent use in certain industrial activities [\[ID 5669\]](#)

United Kingdom: Adopted UK Emission Trading Scheme [\[ID 5583\]](#)

India: India accesses to Kyoto Protocol on Climate Change [\[ID 5476\]](#)

India: Noise emission limits and air emission limits for diesel engines adopted [\[ID 5266\]](#)

Japan: Revision of the Enforcement Order on the Special Law for Reducing Emissions of Nitrogen Oxides from Automobiles [\[ID 5091 + 4895\]](#)

Japan: Revisions of PRTR related regulations [\[ID 5092\]](#)

Japan: Amendment to the Enforcement Order on the Special Law for Reducing Emissions of Nitrogen Oxides from Automobiles [\[ID 4895\]](#)

Malaysia: Proposed New Regulations on Controlling Air Pollution at Construction Sites [\[ID 4997\]](#)

South Korea: Proposed special act on the improvement of air quality in the capital area [\[ID 5613\]](#)

South Korea: Proposed directive on integrated inspection for facilities emitting air, water, waste, or hazardous substances [\[ID 5635\]](#)

South Korea: Proposed special act on the improvement air quality in the capital area [\[ID 5613\]](#)

Taiwan: Greenhouse gas Control Act is being drafted [\[ID 3832\]](#)

Thailand: Adopted amendment to Notification on Emission Standards of Benzene vapor from Fuel Tank Farms [\[ID 4729\]](#)

Canada: Canada ratifies Kyoto Protocol [\[ID 5533\]](#)

Quebec: Proposal to amend Regulations respecting the quality of the atmosphere with regards to VOCs [\[ID 5414\]](#)



On the web

The quantity of interesting information that is being made available on the internet is growing every day. For the EHS Professional the internet has become an important tool for finding more information on the issues of concern. The following overview of interesting websites is not intended to be exhaustive. It is however intended to point at some of the more interesting websites on air pollution.

UNECE: Convention on Long-range Transboundary Air Pollution

<http://www.unece.org/env/lrtap/>

The United Nations Economic Commission for Europe (UNECE) site on the Geneva Convention on Long-Range Transboundary Air Pollution provides background information on how the Convention is being implemented, the text of the Convention and its eight protocols (SO₂, NO_x, VOC, POPs, heavy metals, acidification, ground level ozone, etc.), as well as air pollution data.

French-German Institute for Environmental Research: VOC - Directive

<http://www.voc-infoex.uni-karlsruhe.de/en/index.html>

The French-German Institute for Environmental Research (DFIU) developed this website on behalf of the European Commission in order to provide an information platform on the VOC-Directive. The website is available in three languages and provides background information, guidance documents, national implementation measures, etc.

European Integrated Pollution and Prevention Control Bureau (EIPPCB) in Sevilla

<http://eippcb.jrc.es/pages/FActivities.htm>

The EIPPCB provides the texts of the best available techniques reference documents (BREFs) already adopted as well as the status of the BREFs that are still to in the adoption process. It also provides references to background information used by the working groups when fixing the BREFs.

Clean Air Asia

<http://www.clean-air-asia.com/index.html>

The Clean Air Asia site is an Asian Network of 21 Major Cities. It aims to promote more effective and appropriate measures for controlling emissions through information sharing. It shows the situation of air pollution in major Asian cities, measures taken by each city to control air emissions as well as reports on technology for controlling vehicle emission.

Ambient Urban Air Quality - UK

<http://www.airquality.co.uk/archive/index.php>

The website of the UK National Air Quality Information Archive is prepared on behalf of the UK Department for Environment, Food & Rural Affairs and provides latest air pollution levels and a 24 hour forecast as well as information related to air pollution.

Ambient Urban Air Quality - France

<http://194.250.150.138/buldair/index.htm>

The website is part of the Agence de l'environnement et de la Maîtrise de l'énergie (ADEME) and provides latest air pollution levels and a 24 hour forecast as well as information related to air pollution.

Ambient Urban Air Quality - Canterbury, New Zealand

<http://www.ecan.govt.nz/Air/Forecast/forecastwinter.html>

The website is part of Environment Canterbury and provides an air pollution forecast during the winter months May - August and information related to air pollution.

Ambient Urban Air Quality - Hong Kong

<http://www.epd-asg.gov.hk/e/api/forecast/forecastf.htm>

The website is part of the Environmental Protection Department of Hong Kong and provides latest air pollution levels and a 24 hour forecast as well as information related to air pollution.

UNEP: Global Environmental Outlook 2002

<http://www.unep.org/geo2000/aps-asiapacific/>

This link shows the Alternative Policy Study: Reducing Air Pollution in Asia and the Pacific carried out for the Global Environmental Outlook 2002 of the United Nations Environmental Programme

European Auto-Oil Programme II

<http://www.europa.eu.int/comm/environment/autooil/index.htm>

This site provides an overview of the European Auto-Oil Programme which sets emission standards for vehicles.

European Commission: Air quality website

<http://www.europa.eu.int/comm/environment/air/index.htm>

Web-site of the European Commission DG Environment on air quality issues with links to air quality programmes such as AUTO- OIL PROGRAMME, CLEAN AIR FOR EUROPE (CAFÉ) PROGRAMME, as well as useful links to EU national authorities.

National Roundtable on the Environment and the Economy

<http://www.nrtee-trnee.ca/EmissionsTrading/en/index.htm>

On behalf of the Prime Minister of Canada, the National Round Table is an initiative to broaden awareness and understanding of the concept of greenhouse gas emissions trading among key opinion leaders. It gives an overview of various emissions trading schemes worldwide.

International Emissions Trading Association

<http://www.ieta.org/index.htm>

The International Emissions Trading Association (IETA) is a non-profit organization created in June 1999 to establish a functional international framework for trading greenhouse gas emission reductions. Members include leading international companies from across the carbon trading cycle.

UK DEFRA Emissions Trading Scheme

<http://www.defra.gov.uk/environment/climatechange/trading/index.htm>

UK Department of the Environment, Food and Rural Affairs web-site on a voluntary UK emissions trading scheme which started in April 2002. So far, 46 companies across many sectors have signed up to the UK emissions trading scheme, including British Airways, Caterpillar, Shell, etc.

CO2e.com Web-site

<http://www.co2e.com/default.asp>

E-business marketplace (owned by Cantor Fitzgerald Brokerage and created in participation with PriceWaterhouseCoopers) that empowers companies to participate in greenhouse gas emissions (GHG) trading, anticipated to become one of the fastest growing commodity markets in the world.