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Options for emission control in European legislation in response to the requirements of the Water Framework Directive

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Rapport in het kort

Mogelijkheden in de Europese wetgeving voor het nemen van emissie-reducerende maatregelen zoals die geëist worden door de Kaderrichtlijn Water

De praktische uitvoerbaarheid van de Kaderrichtlijn water kan verbeterd worden. Er zouden bijvoorbeeld meer expliciete verbanden gelegd kunnen worden tussen de Kaderrichtlijn en overige Europese wetgeving. Er is op dit moment namelijk geen overzicht van de mogelijkheden die Europese wetgeving biedt voor het nemen van emissiereducerende maatregelen. Daarom is er een selectie gemaakt van Europese wetgeving die daarvoor van belang kan zijn. Er wordt aanbevolen een Europese handreiking te ontwikkelen met verwijzingen naar wetgeving die ingezet kan worden voor het nemen van maatregelen. Lidstaten kunnen zo beter aan hun Europese verplichtingen voor de Kaderrichtlijn Water voldoen. Het ontwikkelen van nieuwe of aanpassen van bestaande wetgeving kan leiden tot specifieke maatregelen. Voor een actieve rol daarin is inzicht in de achtergrond van de verschillende betrokken partijen essentieel.

Trefwoorden: Kaderrichtlijn Water, emissiereducerende maatregelen, vervuiling, Europese wetgeving, oppervlaktewater

Abstract

Options for emission control in European legislation in response to the requirements of the Water Framework Directive

European legislation was summarised and then evaluated for its usefulness in carrying out measures required under the Water Framework Directive. This directive refers to a limited number of relevant directives and regulations, and further, to ‘any other relevant Community legislation’. To prevent similar work being carried out in various member states, development of a guidance document is recommended. This should describe which European directives and regulations would be useful in supporting the implementation of the required pollution reduction measures. Member states willing to play a role in getting measures implemented can contribute at various stages in the process of developing the new legislation; however, knowledge on the background of the various players in the field will be indispensable here.

Key words: Water Framework Directive, emission control measures, pollution, European legislation, surface water

Preface

This report is part of the project ‘Supporting the setting of Environmental Quality Standards for Priority Substances within the Water Framework Directive’ (RIVM-project 601300). We want to acknowledge Trudie Crommentuijn (Ministry of Housing, Spatial Planning and Environment, The Hague, the Netherlands) for supporting this RIVM-project.

Several experts have reviewed the present report and have discussed the applicability of various European regulations and directives in the context of the aim of this study. These experts are Anja Boersma (SEC-RIVM) for regulation 793/93/EEC, Jan Teekens (VROM) for directive 96/61/EC, Martine van der Weiden (VWS-VGP), Arnold van der Wielen (VROM-SAS) and Steef Josephus Jitta (VROM) for 76/769/EEC, Trudie Crommentuijn (VROM-BWL) for 76/464/EEC, Hans Mensink and Jan Linders (SEC-RIVM) for directives 98/8/EC en 91/414/EEC, Arnold van der Wielen (VROM-SAS) and Dick Sijm (SEC-RIVM) for REACH and Dick Nagelhout (MNP/NMD) for 75/442/EEC. Jeanette Plokker (V&W-RIZA), and Theo Traas (RIVM-SEC) are acknowledged for answering specific questions. Dick Sijm and Charles Bodar (both from RIVM-SEC) are acknowledged for reviewing the report. We are greatly indebted to Lolo Heijkenskjöld (National Chemicals Inspectorate, Sweden) for granting our request to make extensive use of the paper ‘Overview of some important directives relating to community level risk reduction of chemicals’ which resulted from a project financed by the Nordic Council of Ministers (NordRiskRed, 2001).

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Samenvatting

De Kaderrichtlijn Water (2000/60/EG) verplicht lidstaten tot het implementeren van maatregelen voor het terugdringen van watervervuiling. Maatregelen voor prioritaire stoffen worden gedefiniëerd op Europees niveau en maatregelen voor gevaarlijke, niet-prioritaire stoffen moeten worden gedefiniëerd binnen de stroomgebiedsplannen. Het implementeren van maatregelen voor beide stofcategorieën is de verantwoordelijkheid van de lidstaten zelf.
Maatregelen worden genoemd in verschillende artikelen van de Kaderrichtlijn Water onder verwijzing naar specifieke EU regelgeving. In enkele artikelen wordt echter ook gevraagd om implementatie van ‘alle relevante communautaire richtlijnen’. Dit rapport geeft een overzicht van Europese richtlijnen en verordeningen die ingezet kunnen worden voor het terugdringen van vervuiling om aan de eisen van de Kaderrichtlijn Water te voldoen. Het rapport beperkt zich tot oppervlaktewater en waterkwaliteit en laat grondwater en waterkwantiteit buiten beschouwing.

Een aantal documenten, waaronder de Kaderrichtlijn Water zelf en twee van haar concept dochterrichtlijnen, werd doorgenomen op het voorkomen van expliciet genoemde richtlijnen en verordeningen. Daarnaast werd tijdens een workshop een lijst met richtlijnen en verordeningen besproken en werd er een aantal richtlijnen en verordeningen aangewezen, waarvan werd gedacht dat ze van potentieel belang zouden kunnen zijn voor het terugdringen van watervervuiling. Uiteindelijk zijn negen richtlijnen en verordeningen geselecteerd, die zijn samengevat. De toepasbaarheid op het gebied van vervuilingbeheersing is bepaald aan de hand van internetonderzoek, een aantal rapporten en advies van experts van de desbetreffende richtlijnen en verordeningen.
De geselecteerde richtlijnen en verordeningen zijn:

- Bestaande Stoffen Verordening (793/93/EEG);
- Richtlijn Geïntegreerde Preventie en Bestrijding van Vervuiling (IPPC, 96/61/EG);
- Verbodsrichtlijn (76/769/EEG);
- Gevaarlijke Stoffen Richtlijn (76/464/EEG);
- Bestrijdingsmiddelen Richtlijn (91/414/EEG);
- Biociden Richtlijn (98/8/EG);
- concept Verordening REACH (COM(2003)644);
- POPs Richtlijn (850/2004/EG);
- Afvalstoffen Richtlijn (75/442/EEG).

De negen richtlijnen en verordeningen verschillen onderling sterk, maar hebben met elkaar gemeen dat ze een range van stoffen en maatregelen betreffen. Sommige richtlijnen en verordeningen omvatten een breed spectrum van emissie-controle zoals de IPPC richtlijn (96/61/EG) en de Gevaarlijke Stoffen richtlijn (76/464/EEG). Andere

wetgeving is gericht op handel en gebruik (793/93/EEG), het op de markt brengen (91/414/EEG en 98/8/EG) en het verbieden van stoffen (850/2004/EG).

Terugkerend thema tijdens de evaluatie van de geselecteerde Europese wetgeving was het ontbreken van afstemming tussen de verschillende wetgeving. Niet alleen wordt regelmatig gerefereerd aan ‘andere relevante Europese wetgeving’, maar ook worden relaties tussen wetgeving slechts indirect gelegd. Een voorbeeld hiervan is de Notificatie Richtlijn (98/34/EG), die de Verbodsrichtlijn (76/769/EEG) met de Richtlijnen voor Nieuwe (67/548/EEG) en Bestaande Stoffen (793/93/EG) verbindt. Andere verwarrende factoren zijn bijvoorbeeld het voorkomen van prioriteitslijsten ontwikkeld in verschillende kaders en het bestaan van gelijksoortige richtlijnen die afwijkend van invulling zijn (bijvoorbeeld de Bestrijdingsmiddelen (91/414/EEG) en de Biociden Richtlijnen (98/8/EG)).
Voor het afleiden van normen wordt in de Kaderrichtlijn Water, de Richtlijn Geïntegreerde Preventie en Bestrijding van Vervuiling (96/61/EG) en de Gevaarlijke Stoffen Richtlijn (76/464/EEG) verwezen naar risicobeoordelingen onder andere Europese wetgeving. De relatie tussen risicobeoordelingen en normafleiding kan verduidelijkt en verstevigd worden door concentraties, die niet tot nadelige effecten leiden (PNECs), zoals afgeleid binnen Europese risicobeoordelingen, te gebruiken als normen binnen andere Europese wetgeving. Op dit moment bestaan er geen handreikingen hoe de resultaten van risicobeoordelingen moeten worden gebruikt voor normafleiding. De Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE) heeft daar in haar commentaar op de dochterrichtlijn ook op gewezen en heeft benadrukt dat er in een handreiking ook oog moet zijn voor de verschillen tussen PNECs en milieukwaliteitsnormen (Scientific Committee on Toxicity, Ecotoxicity and the Environment, 2004).

De toepasbaarheid van Europese wetgeving voor het nemen van emissiereducerende maatregelen hangt geheel af van de stof en de omvang en aard van de vervuiling. Het huidige rapport evalueert slechts negen richtlijnen en verordeningen, die geselecteerd zijn, omdat ze potentieel krachtig leken op het gebied van emissieregulerende maatregelen. Europese wetgeving met een minder groot bereik zou echter ook goed toepasbaar kunnen zijn in bepaalde gevallen, maar dit moet per stof bekeken worden. Een conclusie van het rapport is dat het momenteel niet duidelijkheid is welke Europese wetgeving inzetbaar is voor het implementeren van emissie reducerende maatregelen. Het wordt aanbevolen een handreiking te ontwikkelen, waarin wordt beschreven welke specifieke richtlijnen en verordeningen ingezet kunnen worden om aan de verplichtingen van de Kaderrichtlijn Water te voldoen zodat dubbel werk door de lidstaten wordt voorkomen. Inzicht in de achtergrond van de verschillende partijen die een rol spelen bij het tot stand komen van maatregelen, bijvoorbeeld door middel van regelgeving, is noodzakelijk om tot goede resultaten te komen. Verder wordt geconstateerd dat de lidstaten zich ten aanzien van diffuse bronnen in een spagaat bevinden tussen enerzijds

de eis van de Commissie een duidelijke link tussen bron en effecten te leggen en anderzijds te voldoen aan milieukwaliteitseisen.

Summary

The Water Framework Directive (2000/60/EC) requests Member States to establish risk reduction measures to protect the aquatic environment. Measures for Priority Substances are defined by the European Commission at community level and measures for hazardous non-priority substances have to be defined within river basin plans by the Member States. Member States are responsible for the implementation of measures for both categories of substances.
The Water Framework Directive refers to specific directives and regulations for different aims, but also to ‘other relevant Community legislation’ in several articles. The present report aims to gain overview of the European legislation that could be used in developing risk reduction measures for emission control. This report is confined to surface water and water quality and leaves groundwater and water quantity aside.

The Water Framework Directive and two of its daughter directives were used as sources for other relevant European legislation. In addition, during a workshop attended by experts from different Dutch ministries and governmental institutes, a list with directives and regulations was evaluated to identify legislation potentially of importance for risk reduction of pollution. Finally, nine directives and regulations were selected, summarized and evaluated. Their potential use for emission reduction was further investigated through internet search and literature searches and with help of experts in the field of the legislation concerned.
The selected directives and regulations are:

- Existing Substances Regulation (793/93/EEC);
- Directive for Integrated Pollution Prevention Control (IPPC, 96/61/EC);
- Marketing and Use Directive (76/769/EEC);
- Dangerous Substances Directive (76/464/EEC);
- Pesticides Directive (91/414/EEC);
- Biocides Directive (98/8/EC);
- draft REACH Regulation (COM(2003)644);
- POPs Regulation (850/2004/EC);
- Waste Directive (75/442/EEC).

The nine regulations and directives were of different nature, but most have in common that they cover a range of substances or measures. Some directives or regulations encompass a very broad field of emission control, such as the IPPC (96/61/EC) and the Dangerous Substances Directive (76/464/EEC). Others focus on marketing and use (793/93/EEC), placing products on the market (91/414/EEC and 98/8/EC) and the prohibition of substances (850/2004/EC).

During the evaluation of the selected European legislation, it became clear that regularly European legislation is not attuned among each other. Frequently, it is referred to ‘other relevant European legislation’. Additionally, at times links between legislation are established only indirectly. For instance, the Notification directive (98/34/EC) links the Marketing and Use Directive (76/769/EEC) indirectly with the New (67/548/EEC) and Existing Substances Legislation (793/93/EEC). Other confusing factors are the priority lists established under different legislation serving different purposes.
For the derivation of quality standards under the Water Framework Directive, the IPPC (96/61/EC) and the Dangerous Substances Directive refer to risk assessment performed for other European legislation. Predicted No Effect Concentrations (PNECs), derived for European risk assessment, could be used as environmental quality standard, hereby elucidating the relation between risk assessment and setting environmental quality standard. At present, there is no guidance how to use risk assessment results in the derivation of environmental quality standards. The Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE) had a similar comment, but also indicated that there are important distinctions between PNECs and environmental quality standards which should be made more explicit in a guidance (Scientific Committee on Toxicity, Ecotoxicity and the Environment, 2004).

The applicability of European legislation for the implementation of measures to reduce water pollution depends on the substance and the extent and nature of the pollution. The present report only evaluates nine directives and regulations. European legislation not highlighted here and with a smaller scope, may be more useful and appropriate in certain cases. Therefore, the applicability of the European legislation has to be evaluated on a case-by-case basis.
It was concluded that it is not completely clear yet which European legislation has to be considered in which cases, in order to fulfil obligations for emission control measures enforced by the Water Framework Directive. It is recommended to develop guidance for the Member States, describing which European directives and regulations are useful to support implementation of pollution reduction measures as requested by the Water Framework Directive to prevent similar work carried out by various Member States. Member States willing to play a role in the process to get measures implemented can act in various stages of the process of development of new legislation, but knowledge on the background of the various players within the field is indispensable in doing so. Especially in the case of diffuse sources the requirement of the Commission to identify the sources on one hand and the obligation to reach the EQS on the opposite may cause serious problems for the Member States in implementing effective measures.

1. Introduction

The Water Framework Directive (WFD, 2000/60/EC) was adopted by the European Parliament and the Council in 23 October 2000 and aims at maintaining and improving the aquatic environment in the Community. This aim is further described in article 1 of the WFD as to establish a Framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater and is concerned with water quality rather than with water quantity.

The WFD makes an important distinction between surface waters and groundwater, which is reflected for instance in articles 4(1) and 4(5) of the WFD and by the fact that the two daughter directives, presently available as drafts, focus on priority substances for surface waters and on groundwater, respectively. This report will primarily focus on the environmental objectives for surface waters. The WFD and the draft daughter directive on priority substances (draft; EC, 2004a), which was released for discussion in June 2004, were used as primary references for this report.

The environmental objectives for surface water are described in article 4 of the WFD. Here, the aim of the WFD concerning chemical substances is defined. A distinction is made between the approach for priority substances (including the priority hazardous substances) and for hazardous substances in general. This distinction is related to the distinct responsibilities for the European Commission (EC) and the Member States. The EC proposes substances to be added to the priority list (Annex X of WFD) and the measures to be taken for these substances and the Member States propose hazardous substances to be incorporated in the river basin plans and the necessary measures. However, implementation of the measures for both types of substances in national legislation is the responsibility of the individual Member States. A special part of article 4 is dedicated to this task: ‘Member States shall implement the necessary measures in accordance with Article 16(1) and (8), with the aim of progressively reducing pollution from priority substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances.’ The paragraphs 16(1) and 16(8) are dedicated to strategies or measures and to emission controls and environmental quality standards for priority substances to be proposed by the EC.

Various articles of the WFD are dedicated to environmental quality standards (EQSs), which are meant to safeguard the environmental objectives as laid down in article 4. Paragraph ‘40’ of the introduction states: ‘With regard to pollution prevention and control, Community water policy should be based on a combined approach using control of pollution at the source through the setting of emission limit values and of environmental quality standards.’ In article 10(3) it is indicated that where a quality

objective or quality standard requires stricter conditions than those which would result from the application of paragraph 2, more stringent emission controls shall be set accordingly.

Measures are mentioned in various parts of the WFD. Articles 10 (combined approach for point and diffuse sources), 11 (programme of measures), and 16 (strategies against pollution of water) are fully dedicated to measures although under different names. Surprisingly, ‘measures’ nor ‘combined approach’ nor ‘strategies against pollution’ are mentioned in the list of definitions of the WFD. Article 16 describes the responsibilities of the EC concerning the priority substances, whereas articles 10 and 11 focus on the responsibilities of the Member States.
Article 16 specifies that the EC shall come with proposals for substances to be added to the priority list (articles 16(2)-16(4)), shall submit proposals for quality standards for the priority substances in surface water, sediments or biota (article 16(7)) and shall submit proposals for controls (article 16(6)). The scope of article 16 has been set out in a document for the Expert Advisory Forum (2004) which indicates that the Commission shall ‘identify the appropriate cost-effective and proportionate level and combination of product and process controls for both point and diffuse sources’. According to article 16(9), the Commission may also prepare strategies against pollution of water by any other pollutant or group of pollutants, including any pollution which occurs as the result of an accident. Thus, the scope for action in accordance with article 16 is broad. Strategies against pollution can include specific legislative measures but also a more broad strategy, with the aim of identifying of an appropriate combination of product and process controls, requiring careful consideration (Expert Advisory Forum, 2004).
According to article 10, the Member States must ensure that all relevant discharges into surface waters are controlled according to a combined approach. ‘Combined approach’ refers to tackling the problems from point and diffuse sources (ESC/2000/801). Therefore, they will use emission controls based on the best available techniques, relevant emission limit values and best environmental practice set out in various European directives mentioned in article 10(2), the directives adopted pursuant to article 16, the directives listed in Annex IX, and any other relevant Community legislation.
Article 11 focusses on the programme of measures to be taken by each Member State for each river basin district or part of river basin district within its territory. Article 11(3) provides the basic measures as minimum requirements to be complied with for both point and diffuse sources in paragraphs g and h. These measures may take the form of a requirement for prior regulation, such as a prohibition on the entry of pollutants into water, prior authorisation or registration based on general binding rules where such a requirement is not otherwise provided for under Community legislation and should in the case of point sources include controls in accordance with articles 10 and 16.

The priority substances mentioned in articles 16(2) and 16(3) of the WFD were adopted through Community Directive 2455/2001/EC and were added to the WFD as annex X (article 16(11)). Environmental quality standards have been proposed in draft daughter directive EQS and emission controls[1] (EC, 2004) and have been discussed in the Expert Advisory Forum in 2004 (article 16(7)).

From articles 10 and 11 it appears that the Member States have responsibility in proposing measures for the hazardous substances and in implementing measures for emission control in the river basin plans. For this, information from the various European directives might be helpful.
Proposals for measures for the priority substances as mentioned in article 16(6) may provide a good starting point for the Member States in defining measures for the hazardous substances, However, the EC has not yet submitted a proposal for control measures of the priority substances in the daughter directive and it is not clear if the Commission will come with such proposals in due time. In case of non-agreement at Community level in December 2006, the Member States shall establish EQSs for the priority substances, and controls on the principal sources of such discharges, based on consideration of all technical reduction options according to article 16(8).

Therefore, the aim of this study was to provide information on European directives, which can be useful in controlling discharges of hazardous substances to surface water in the future.
Most of the measures discussed in this report take the form of prohibition of the production or use of the substance or limiting the emissions by means of emission limit values. Other measures, such as promotion by ecomonic incentives or voluntarily measures, were omitted from the present study. Examples of such measures are given in a report on urban waste water (European Commission, 2001c).

Four questions ensued from the obligation of the WFD to define measures to control emissions of hazardous substances, taking relevant European legislation into consideration:

1. Does the WFD or its daughter directives provide information on European legislation which can be used for taking measures?
2. Are there other sources which may provide information on relevant directives and regulations in taking measures on pollution control?
3. What are the (theoretical) possibilities these directives and regulations provide and what is the feasibility of this legislation politically or otherwise?
4. What are the experiences in transferring European legislation into national legislation?

[1] This daughter directive is also denoted as daughter directive on priority substances. The proposal is also known as 2003/ENV/37, to be adopted 4th quarter 2005.

This report will first describe the methods in chapter 2 and then discuss the most important European legislation in chapter 3. Chapter 4 will discuss the possibilities of the various legislation in establishing control measures.

2. Methods

First step in the search for European legislation, useful as tools and complementing the WFD in the field of emission control, was to investigate which legislation are mentioned in the WFD and the draft daughter directives on EQSs and emission controls[2] (EC, 2004a) and on groundwater (EC, 2003c). Also scope and aim of this legislation were investigated. An overview of the legislation referred to in the WFD and the two daughter directives is given in Appendix I. Additionally, legislation referring to the WFD was examined. For this purpose, use was made of EUR-LEX, 'the portal to European Union Law' (http://europa.eu.int/eur-lex/). Legislation referring to the WFD is listed in Appendix II.
On the 4th of November 2004, the ministry of Ministries of Housing, Spatial Planning and the Environment (VROM) organised a workshop on measures within the framework of the WFD in The Hague, The Netherlands, This workshop was attended by experts from different Dutch ministries and governmental institutes working in the field of pollution control. During this workshop the lists of legislation presented in Appendixes I and II were discussed and the most relevant directives and regulations according to the workshop attendants were appointed. The report of the workshop is presented in Appendix III. Finally, several reports discussing different European directives and regulations, were analysed. The most consulted reports were a document of the Nordic Council of Ministers (NordRiskRed, 2001), a report from the Expert Advisory Forum (Expert Advisory Forum, 2004), a European Commission-document on risks to the aquatic environment, discussing Regulation 793/93/EEC (ES/04/2004; EC, 2004b) and a report written on behalf of the German Environmental Protection Agency about interface problems between EC-chemicals law and sector specific environmental law (Führ, 2004).

The selected legislation was summarised on basis of the text of the laws. Applicability in the area of pollution control was assessed with assistance of experts from the ministries of VROM, of Health, Welfare and Sport (VWS), and of Transport, Public Works and Water Management (V&W) and the National Institute for Public Health and the Environment (RIVM). At least one expert per directive or regulation evaluated the legislation's applicability. Moreover, the document of the Nordic Council of Ministers (NordRiskRed, 2001) gave very valuable information about the applicability of a number of directives and regulations in reducing the risks from chemicals. This document was written with EU directive 793/93/EEC as starting point, but was useful for measures within the WFD framework as well. The internet was consulted to obtain additional information about the pros and cons of the selected European legislation.

[2] This daughter directive is also denoted as daughter directive on priority substances. The proposal is also known as 2003/ENV/37, to be adopted 4th quarter 2005.

3. Directives and regulations identified as strong instruments for pollution prevention

Nine directives and regulations, which were thought to have potential to reduce risks of chemicals, were selected for further examination on the basis of the methods described in Chapter 2 (Methods). Generally, the same directives and regulations selected during the workshop on the 4th of November 2004, were also mentioned as potentially strong legislation by the other consulted media (WFD and daughter directives; NordRiskRed, 2001; Expert Advisory Forum (2004); EC (2004b) and Führ, 2004). See Appendix IV for an overview of the directives occurring in these documents.

3.1 Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community, referred to as the Dangerous Substances Directive

The aim of the Dangerous Substances Directive is to eliminate or to reduce pollution of waters by dangerous substances listed in the Annex. It applies to inland surface waters, territorial waters, and internal coastal waters. The Dangerous Substances Directive covered groundwater as well, but groundwater is currently regulated through Directive 80/68/EEC (Article 4(4) of 76/464/EEC). The Dangerous Substances Directive covers both diffuse and point source discharges.
Dangerous substances in List I of the Annex should be eliminated and substances in List II of the Annex have to be reduced through pollution reduction programmes (Article 2 of 76/464/EEC). List I substances are selected on basis of persistency, toxicity and bioaccumulation. List II contains:
‘— substances belonging to the families and groups of substances in List I for which the limit values referred to in Article 6 of the Directive have not been determined,
— certain individual substances and categories of substances belonging to the families and groups of substances listed below,
and which have a deleterious effect on the aquatic environment, which can, however, be confined to a given area and which depend on the characteristics and location of the water into which they are discharged’ (Annex of 76/464/EEC).’
No methodology to identify List I or List II substances is given in the Dangerous Substances Directive. In Article 14 of the Dangerous Substances Directive it is stated:
‘The Council, acting on a proposal from the Commission, which shall act on its own initiative or at the request of a Member State, shall revise and, where necessary, supplement Lists I and II on the basis of experience, if appropriate, by transferring certain substances from List II to List I.’

The Dangerous Substances Directive requires Member States to control all emissions of List I substances by a permit or authorisation system. The authorisation should contain emission standards (Article 3 of 76/464/EEC). Article 7 of the Dangerous Substances

Directive sets obligations to the Member States to reduce pollution of waters by the substances within list II. Authorisation of List II substances should contain pollution reduction programmes and emission standards, based on quality objectives. The quality objectives are to be determined by the Member States, unless a directive sets an objective. Authorisation of List II substances may also include specific provisions governing the composition and use of substances or on groups of substances and products, taking into account the latest economically feasible technical developments (Article 7 of 76/464/EEC).
The daughter directives of the Dangerous Substances Directive are oriented on individual dangerous substances or groups of substances in List I. Daughter Directives have so far covered 18 substances[3] at a Community level and contain Environmental Quality Objectives and emission limit values, which have to be established in each Member State.

Daughter directives of the Dangerous Substances Directive

Council Directive 82/176/EEC on Limit Values and Quality Objectives for Mercury Discharges by the Chlor-alkali Electrolysis Industry, as amended by Directive 91/692/EEC

Council Directive 83/513/EEC on Limit Values and Quality Objectives for Cadmium Discharges, as amended by Directive 91/692/EEC

Council Directive 84/156/EEC on Limit Values and Quality Objectives for Mercury Discharges by Sectors other than the Chlor-Alkali Electrolysis Industry, as amended by Directive 91/692/EEC

Council Directive 84/491/EEC on Limit Values and Quality Objectives for Discharges of Hexachlorocyclohexane, as amended by Directive 91/692/EEC

Council Directive 86/280/ EEC on Limit Values and Quality Objectives for Discharges of Certain Dangerous Substances included in List I of the Annex to Directive 76/464/EEC, as amended by Directive 88/347/EEC, Directive 90/415/EEC and Directive 91/692

Council Directive 88/347/EEC of 16 June 1988 amending Annex II to Directive 86/280/EEC on limit values and quality objectives for discharges of certain dangerous substances included in List I of the Annex to Directive 76/464/EEC

Council Directive 90/415/EEC of 27 July 1990 amending Annex II to Directive 86/280/EEC on limit values and quality objectives for discharges of certain dangerous substances included in list I of the Annex to Directive 76/464/EEC

Water Framework Directive

Paragraph 52 of the introduction of the WFD:

‘The provisions of this Directive take over the framework for control of pollution by dangerous substances established under Directive 76/464/EEC. That Directive should therefore be repealed once the relevant provisions of this Directive have been fully implemented.’

Article 22 of the WFD, Repeals and transitional provisions:

‘(…)

2) The following shall be repealed with effect from 13 years after the date of entry into force of this Directive:

(…)

[3] The 18 substances regulated by the daughter directives of Directive 76/464/EEC are mercury, cadmium, hexachlorocychlohexane, DDT, aldrin, dieldrin, endrin, isodrin, tetrachloromethane, trichloromethane (chloroform), trichloroethylene (TRI), tetrachloroethylene (PER), 1,2-dichloroethane (EDC), hexachlorobenzene (HCB), hexachlorobutadiene, (HCBd), trichlorobenzene (TCB, 3 isomers). For comparison with WFD directve substances, see Appendix VI.

Directive 76/464/EEC, with the exception of Article 6, which shall be repealed with effect from the entry into force of this Directive.
3) The following transitional provisions shall apply for Directive 76/464/EEC:
(a) the list of priority substances adopted under Article 16 of this Directive shall replace the list of substances prioritised in the Commission communication to the Council of 22 June 1982;
(b) for the purposes of Article 7 of Directive 76/464/EEC, Member States may apply the principles for the identification of pollution problems and the substances causing them, the establishment of quality standards, and the adoption of measures, laid down in this Directive.
(…)
6) For bodies of surface water, environmental objectives established under the first river basin management plan required by this Directive shall, as a minimum, give effect to quality standards at least as stringent as those required to implement Directive 76/464/EEC.'

Annex IX of WFD:
'The 'limit values' and 'quality objectives' established under the re Directives of Directive 76/464/EEC shall be considered emission limit values and environmental quality standards, respectively, for the purposes of this Directive.'

The quality objectives and emission limits under the Dangerous Substances Directive will be repealed, but the quality standards under the WFD will be at least as stringent as the ones under the Dangerous Substances Directive (see Table 1 below). The WFD is appointed as replacement of the Dangerous Substances Directive for the reduction of water pollution caused by List II substances, by obliging Member States to establish programmes for hazardous substances.

Example: toluene
In Commission Recommendation 2004/394/EC, it is recommended that the European Commission should consider the inclusion of toluene in the priority list of Annex X to Directive 2000/60/EC (Water Framework Directive) during the next review of this Annex. In the meantime, toluene should be considered as a relevant List II substance in Council Directive 76/464/EEC, thus requiring the establishment of national quality objectives, monitoring and eventual reduction measures, as to ensure that concentrations in surface water systems do not exceed the quality objective.

Applicability in reducing the risks from chemicals

- The Dangerous Substances Directive obliges Member States to eliminate or reduce pollution of waters by certain dangerous substances, but the directive does not carry any penalties. The WFD is developed to support similar aims, but demands extra effort from the Member States compared to the Dangerous Substances Directive, obliging Member States to reach the aims.
- Division of responsibilities between the Community and Member States are not clear under the Dangerous Substances Directive. Also, the Dangerous Substances Directive lacks deadlines of any kind. This may have hampered effective implementation (EC, 2003b). The WFD describes responsibilities of EC, Council and of Member States and gives clear timeframes for several actions and products. Therefore, it is expected that the WFD is more effective to reduce pollution of waters.

- The Dangerous Substances Directive leaves it to a large extent to the national authorities to decide for which substances programmes are made. This has lead to great variation among Member States of substances listed as of national concern. Furthermore, it is up to the national authorities to decide on the pollution reduction targets, measures taken and their implementation. The use of article 7 of the Dangerous Substances Directive may lead to varying levels of protection in different Member States (NordRiskRed, 2001 and EC, 2003a and b), but in practice it appears that the methodologies used are similar to that laid down in Annex V of the WFD or to those applied by the Scientific Committee on Toxicity and Ecotoxicity (EC, 2003a). Under the WFD, selection procedure of hazardous substances is defined in more detail, and therefore, it is expected that selection of these substances is more synchronised compared to the procedure under the Dangerous Substances Directive. Moreover, the obligation to create river basin management plans, which are evaluated by the EC, is also expected to lead to similar protection targets and lists of hazardous substances among Member States.
- Emission limit values under the daughter directives of the Dangerous Substance Directive are mandatory for installations covered by the IPPC. Moreover, the WFD will establish the water quality standards under the daughter directives as mandatory as well. The requirements to establish permit or authorisation procedures for industrial waste water discharges are coherent with the IPPC Directive and the WFD.

Table 1. EQSs (annual average) of substances in the daughter directives of the Dangerous Substances Directive and compared with the EQSs under the WFD for inland waters (µg/l)

substance	CAS number	daughter directives of 76/464/EEC	WFD
cadmium and its compounds	7440-43-9	1	(D, E)
1,2-dichloroethane	107-06-2	10	10
hexachlorobenzene	118-74-1	0.03	0.0004
hexachlorobutadiene	87-68-3	0.1	0.003
hexachlorocyclohexane (HCH)		0.1	0.02
mercury and its compounds	7439-97-6	1	(E)
pentachlorophenol	87-86-5	2	0.2
trichlorobenzenes		0.4	0.4
trichloromethane	67-66-3	12	12
DDT total	50-29-3	25	0.025
para-para-DDT		10	0.010
aldrin	309-00-2	0.01	0.010
dieldrin	60-57-1	0.01	0.010
endrin	72-20-8	0.005	0.005
isodrin	465-73-6	0.005	0.005
carbontetrachloride	56-23-5	12	12
tetrachloroethylene	127-18-4	10	10
trichloroethylene	79-01-6	10	10

(D) The EQS/MPA to be applied for this metal depends on the water hardness
(E) AA-MPA
A complete list of Priority Substances of the WFD is presented in Appendix V.

3.2 Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control (IPPC)[4]

The aim of the directive is to achieve integrated prevention and control of pollution. Pollution is defined broadly, as 'direct or indirect introduction as a result of human activity, of substances, vibrations, heat or noise into the air, water or land which may be harmful to human health or the quality of the environment, result in damage to material property, or impair or interfere with amenities and other legitimate uses of the environment' (article 2 of IPPC).
The IPPC integrates provisions and measures dealing with emissions to air, water and land, including measures concerning waste. To achieve this, 'intervention at the source' and the 'polluter pays' principles are leading. Waste production is avoided in accordance with Council Directive 75/442/EEC.
Sources covered by the directive are medium-sized and large industrial installations, waste management installations and installations for the intensive rearing of poultry and pigs (Annex I of IPPC). For some of the industrial branches, installations with low production capacity are left out of the scope of the directive (e.g., iron and steel mills with capacity less than 2.5 tonnes per day or paper and board mills with capacity less than 20 tonnes per day).
The IPPC requires the publication of an EC inventory of principal emissions and their sources, commonly known as the 'European Pollutant Emissions Register' (EPER). Directive 2000/479/EC concerns the implementation of EPER. In Annex A1 to the EPER Directive, the 50 pollutants and their threshold values (kg/yr), selected for reporting are listed for both air and water (see Appendix VI for this list). In the near future, EPER will be replaced by the Pollutant Release and Transfer Registers (PRTR) which will be established by a Regulation (COM(2004) 634 final). All information in EPER will be merged into the new PRTR, but will include more pollutants, more activities, releases to land, releases from diffuse sources and off-site transfers.

The Member States have to take the necessary measures to ensure that the competent authorities grant permits in accordance with IPPC (articles 4, 5 and 6 of IPPC) and to ensure that the conditions of the permit are complied with by the operator (article 14 of IPPC). Member States shall also determine at what stage decisions, acts or omissions may be challenged (article 15a of IPPC).

Permits
In Annex I of the IPPC, categories of industrial activities that need to have a permit are listed. New installations have to apply for a permit before they are put into operation.

[4] This chapter is partly based on NordRiskRed (2001) and a consultation paper of the Department of the Environment of Ireland. Some paragraphs are literally copied from NordRiskRed (2001).

Existing installations (in operation before October 2000) are obliged to have a permit in accordance with the IPPC at the latest 2007 (article 4 and 5 of IPPC).
The applicant has to include descriptions of raw and auxiliary materials, sources of emissions from the installation, nature and quantities of foreseeable emissions into each medium in the application. Furthermore, identification of significant effects of the emissions on the environment, proposed technology or other techniques for preventing or reducing emissions, and, where necessary measures for the prevention and recovery of waste and measures planned to monitor emissions have to be included as well. The amendment by Directive 2003/35/EC adds that the main alternatives studied by the applicant should be outlined in the permit application (article 6 of IPPC).
The permit has to include emission limit values for pollutants likely to be emitted from the installations in significant quantities to water, air and land. The permit may contain other specific conditions from the Member State or competent authority (article 9 of IPPC). Necessary measures have to be taken up in the permit to return the site of operation to a satisfactory state upon definitive cessation of activities. Permit conditions have to be reconsidered and updated periodically (article 13 of IPPC).
Annex III of the IPPC includes an indicative list of main polluting substances to be taken into account when considering emission limits (see Appendix VII). The list includes some specific substances, such as dioxins, but also large groups of substances, such as ‘persistent and bioaccumulative organic toxic substances’ and ‘metals and their compounds’. Emission limit values have to be based on best available techniques (BAT)(article 9.4 of IPPC). Where an EQSs requires stricter conditions than those achievable by BAT, additional measures shall be required in the permit (article 10 of IPPC).

Best available techniques (BAT)
Annex IV of the IPPC includes issues to be taken into account when determining BAT. BAT is defined as ‘the most effective and advanced stage in the development of activities and their methods of operation’ (definition 11 of IPPC). Examples of issues to be included in BAT are the use of low-waste technology, less hazardous substances, recovery and recycling of substances, the nature, effects and volume of the emissions concerned, and the consumption and nature of raw materials.
The Commission shall organise an exchange of information between Member States and the industries on BAT (article 16 of IPPC). The results of this information exchange are published as IPPC BAT Reference Documents (BREFs). The BREFs aim at providing reference information for the permitting authority to be taken into account when determining emission limit values.

Community emission limit values

The Council can set common emission limit values for the categories of installations listed in Annex I and for the substances referred to in Annex III, if the need for Community action has been identified. If no Community emission limit values are defined, relevant emission limit values in other Community legislation are applied (article 18 of IPPC). In Annex II, the most relevant directives containing emission limit values are listed. See below for this list of directives.

Annex II of the IPPC
List of the directives referred to in articles 18(2) and 20 of the IPPC

Directive 87/217/EEC on the prevention and reduction of environmental pollution by asbestos
Directive 82/176/EEC on limit values and quality objectives for mercury discharges by the chlor-alkali electrolysis industry
Directive 83/513/EEC on limit values and quality objectives for cadmium discharges
Directive 84/156/EEC on limit values and quality objectives for mercury discharges by sectors other than the chlor-alkali electrolysis industry
Directive 84/491/EEC on limit values and quality objectives for discharges of hexachlorocyclohexane
Directive 86/280/EEC on limit values and quality objectives for discharges of certain dangerous substances included in List 1 of the Annex to Directive 76/464/EEC, subsequently amended by Directives 88/347/EEC and 90/415/EEC amending Annex II to Directive 86/280/EEC
Directive 89/369/EEC on the prevention of air pollution from new municipal waste-incineration plants
Directive 89/429/EEC on the reduction of air pollution from existing municipal waste-incineration plants
Directive 94/67/EC on the incineration of hazardous waste
Directive 92/112/EEC on procedures for harmonizing the programmes for the reduction and eventual elimination of pollution caused by waste from the titanium oxide industry
Directive 88/609/EEC on the limitation of emissions of certain pollutants into the air from large combustion plants,as last amended by Directive 94/66/EC
Directive 76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community
Directive 75/442/EEC on waste,as amended by Directive 91/156/EEC
Directive 75/439/EEC on the disposal of waste oils
Directive 91/689/EEC on hazardous waste

Water Framework Directive

- In article 10 of the WFD, the Member States are obliged to establish and/or implement the controls, in case of diffuse impacts, including the best environmental practices set out in the IPPC.
- In article 22(4) of WFD is written that the environmental objectives and EQSs established in the WFD have to be regarded as EQSs of the IPPC.
- In article 22(5) of WFD is stated that if substances adopted under article 16 of the WFD are not included in the indicative list of the main pollutants (Annex VIII of WFD) and not in Annex III to the IPPC, they should be added thereto.
- In Annex II, 1.4 of WFD, the Member States are obliged to collect and maintain information on significant anthropogenic pressures to which the surface water bodies in each river basin district are liable to be subject. The information to be gathered should include information gathered under Articles 9 and 15 of the IPPC. Article 9 of the IPPC focuses on the conditions of the permit (inclusion of measures, emission limits, us of

BAT etcetera) and article 15 of the IPPC on which information should be accessible to the public.

Draft directive on environmental quality standards and emission controls in the field of water policy and amending Directive 2000/60/EC and 96/61/EC (EC, 2004a)
The draft directive on EQSs and emission controls (EC, 2004a) specifically refers to the IPPC in its title.

Applicability in reducing the risks from chemicals

- The IPPC is directed to a broad range of pollution, including substances, vibrations, heat and noise. Also, the IPPC includes a requirement that IPPC installations use energy efficiently.
- The IPPC subjects whole installations to control. The Directive's definition of installation is:
  '(a) a stationary technical unit where one or more activities listed in Annex 1 {to the Directive} are carried out; and
  (b) any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution.'
  Hence, activities carried out by an operator on the same site as an IPPC activity may become subject to control IPPC (Department of the Environment, Ireland, 2001).
- The IPPC does not cover all industrial activities, and, for certain sectors, installations with low production capacity are left out of the scope of the IPPC. The lower limit of installations falling under IPPC may possibly be adjusted for certain sectors. For this a proposal for adjustment could be developed. This may be a sensitive case within the European Commission, but probably a number of Member States want to support this action. Otherwise, at national level useful instruments are present. It has to be considered case by case whether production capacity limits set in Annex I will hinder the use of the IPPC and how to overcome any difficulties.
- No capacity threshold is applied to the production of substances by chemical processing. Precondition alone is production on an industrial scale. However, a remarkable fraction of downstream uses are not covered by the IPPC (Führ, 2004).
- Article 15(3) of the IPPC requires the publication of an EC inventory of principal emissions and their sources, commonly known as the 'European Pollutant Emissions Register' (EPER). This provides information to the public, help enforcing authorities to assess the effectiveness of IPPC and identify priority area for attention (Department of the Environment, Ireland, 2001).
- The requirements set in the IPPC-permits are very efficient and proportionate risk reduction measures in case of emissions from a limited number of industry installations (EC, 2004b).

- A priority substance within the WFD is automatically a substance of concern for the IPPC (article 22(5) of WFD). Environmental objectives and EQSs established in certain parts of the WFD have to be regarded as EQSs of the IPPC.
- Community emission limit values could be given to the relevant industrial branches if they are mentioned in Annex I of IPPC. Also, the production capacity limits would apply to such general limit values. Setting such standards requires expert knowledge on emission levels achievable by the BAT and predicted non-effect concentrations (PNECs) from risk assessment reports.
- The IPPC requires that 'the necessary measures are taken upon definitive cessation of operations to avoid any pollution risk and to return the site to a satisfactory state' (article 3 of IPPC). To give effect to this principle, in the consultation paper of Department of the Environment of Ireland (2001) is suggested to require the operator to include a site report with an IPPC application. This report should describe the condition of the site and must identify any substance in, on or under the land which may constitute a pollution risk.
- BREFs have to cover at least the most important emission which has to be taken into account in the permitting process. Also achievable emission limit values as well as means to reduce emissions have to be described in BREFs. It is important to bear in mind that BREFs are not prescriptive and they do not propose emission limit values but contain information facilitating the permitting procedure of industrial installations. It should also be noted that so far BREFs have not included much information on chemicals but focussed on 'traditional' emission parameters (e.g., BOD, SO_2, etcetera)(NordRiskRed, 2000).
- BREFs are an important source of information on the need and possibilities to reduce risks of a certain industrial branch. Such risk reduction possibilities include both substitution of the chemical in question and processing of measures on or outside the plants to prevent or reduce the emissions to non harmful levels. If risk reduction measures suitable to efficiently reduce pollution are available, these can be applied. If there are no sufficiently effective measures to apply, substitution of the substance can be considered or replacement of the process technique. Less extreme measures, such as the possibilities to improve the efficiency of the applied measures should be considered and the possibilities for marketing and use (NordRiskRed and pers. comm. dr. Heijkenskjöld).
- It may take time before a BREF is updated with regard to a certain chemical especially if the BREF in question is new or newly revised. If there are several industrial branches for which the selected risk reduction measure would be information through BREFs, the total amount of work and time required before all BREFs include sufficient information may be considerable.
- No demands are laid down for how to include a substance in a BREF-document and no time limit is prescribed.

- Permits are granted plant by plant. These permits are reviewed periodically but in practise it will take several years before the emission limit values for the chemical are in place for all relevant industrial installations throughout the EU.
- If no need to reduce emissions of the chemical is mentioned in the relevant BREFs, expert knowledge is needed on where the chemical is likely to be emitted in significant quantities. In other words, the risk reduction need has to be communicated to national authorities by other means than through BREFs.
- Community emission limit values require monitoring and supervising as do the plant-by-plant emission limits. Monitoring requirements for industrial branches could be set in plant-by-plant permits or as general requirements according to national legislation. Depending on the substance and industrial branch, this may be costly.

3.3 Council Regulation (EEC) No 793/93 of 23 March 1993 on the evaluation and control of the risks of existing substances, referred to as Existing Substances Regulation

In Europe, the potential risks of industrial chemicals with high production volumes are assessed under the Existing Substances Regulation. The Existing Substances Regulation aims at the protection of man and the environment from exposure to dangerous substances via all possible routes. The Existing Substances Regulation foresees that the evaluation and control of the risks posed by existing chemicals will be carried out in four steps: (1) data collection, (2) priority setting, (3) risk assessment, and (4) risk reduction.

Producers and importers of existing substances are obliged to submit data to the Commission (step 1). The data is collected in the IUCLID-database. The data are available on the ECB-website (http://ecb.jrc.it) in the ESIS-database (Chemical Data Sheet). For High Production Volume Chemicals (HPVC's; production of import >1000 ton/year) information is included on physico-chemical properties, on use and exposure routes, on environmental fate, on ecotoxicity of the substance, on carcinogenicity, mutagenicity and/or toxicity for reproduction and 'any other indication relevant to the risk evaluation of the substance'. For Low Production Volume Chemicals (10-1000 ton/year) a more limited set of information has to be provided.

The Commission and Member States utilise the information collected during step 1 as a basis for selecting priority substances (step 2). On the basis of the information submitted by manufacturers and importers and on the basis of national lists of priority substances, the Commission, in consultation with Member States, draws up lists of Existing Priority Substances requiring immediate attention because of their potential effects on man or the environment. For the selection of Priority Substances under the Existing Substances Regulation, first, the IUCLID databank is searched using the EU Risk rAnking Method

(EURAM). The EURAM is a tool for chemical ranking and scoring chemicals on basis of risk assessment principles. Human health and environment scores are calculated, each based on an exposure and an effects score. The results of the EURAM form the basis for the discussions of selecting substances of high priority for further work. Then, Member States, industry and NGOs comment on the ranking of the substances. During this commenting and ranking stage, national priority substances can be nominated as Existing Priority Substance, summarising the reasons for concern. Hereafter, a working list of substances is formed. Substances from the working list are selected as Priority Substances on basis of expert judgement. The Priority List of the Existing Substances Regulation has been established under Commission Regulations No. 1179/94, 2268/95, 143/97 and 2364/2000 (Appendix VIII) and contains 141 substances in total.

Substances on the Existing Substances priority lists must undergo an in-depth risk assessment covering the risks posed by the chemical to man and to the environment (step 3). The principles for the assessment of risks to man and the environment are outlined in Commission Regulation (EC) No. 1488/94. Detailed methodology is laid down in the Technical Guidance Document (EC, 2003e). The risk assessment is carried out by a Member State rapporteur, which acts on behalf of the Community. The rapporteur issues a draft risk assessment report on which may be commented. After the comments are discussed, the rapporteur generally issues a second draft, which is sent to the European Chemical Bureau (ECB). The ECB distributes the risk assessment report to all Member States, which discuss the issue during Technical Meetings of an EU Commission working group under the name ‘Technical Committee on New and Existing Substances’ (TCNES).

If the risk is not adequately managed, the rapporteur is required to propose a strategy to reduce the risks (step 4) (ECB, 2005). On the basis of the risk evaluation and the recommended risk reduction strategy, the Commission may decide to propose Community measures or demand national measures. Thus, the Existing Substances Regulation does not contain risk reduction measures itself.
The strategy of limiting the risks might involve proposed measures related to:

- manufacture, industrial and professional use
- packaging, distribution and storage
- domestic and consumer use
- waste management.

The strategy may include proposals for restrictions on marketing and use of dangerous substances and preparations, control measures and/or surveillance programmes or other relevant existing Community instruments. Also, other tools for risk reduction may be used, such as voluntary agreements or economic instruments (NordRiskRed, articles 8 and 10 of 793/93/EEC, article 16(2) of WFD).
Article 11 of the Existing Substances Regulations:

'On basis of the risk evaluation and measures recommended by the rapporteur, the Commission shall submit to the Committee a proposal concerning the results of the risk evaluation of the priority substances and, if necessary, a recommendation for an appropriate strategy for limiting those risks.'

The Committee has to deliver its opinion on the draft within a time limit. The Commission adopts the measures if they are in accordance with the opinion of the Committee (article 5 of 1999/468/EC). The adoption of proposed methods is laid down in Commission Recommendations. The Commission shall also propose Community measures in the framework of the Marketing and Use Directive (76/769/EEC) or in the framework of other relevant existing Community instruments, where necessary (article 11(3) of 793/93/EEC).

Water Framework Directive

The WFD refers to the Existing Substances Regulation twice in article 16:

'The Commission shall submit a proposal setting out a list of priority substances selected amongst those which present a significant risk to or via the aquatic environment. Substances shall be prioritised for action on the basis of risk to or via the aquatic environment, identified by:
(a) risk assessment carried out under Council Regulation (EEC) No 793/93, Council Directive 91/414/EEC, and Directive 98/8/EC of the European Parliament and of the Council, or
(b) targeted risk-based assessment (following the methodology of Regulation (EEC) No 793/93) focusing solely on aquatic ecotoxicity and on human toxicity via the aquatic environment.'

Example: acetonitril, acrylic acid, methyl methacrylate and toluene
Risk assessment under the Existing Substances Regulation can lead to placement of a substance on the priority list of the WFD. For example, acetonitril, acrylic acid, methyl methacrylate and toluene are identified as hazardous substances for the aquatic environment. It is recommended in Commission Recommendation 2004/394/EC that the European Commission should consider the inclusion of acrylic acid in the priority substances list of the Water Framework Directive as strategy to limit risks.

Applicability in reducing the risks from chemicals

- Only substances which are produced or imported in volumes of >10 tonnes per year are regulated by the Existing Substances Regulation.
- In the Commission Recommendations for Risk Reduction Strategy, substances can be proposed for consideration as Priority List Substance of the WFD. Also, during the composition of the Priority Substances List of the WFD, Priority Substances and their risk assessment results under the Existing Substances Regulation can be considered.
- If the risk assessment reveals risks to human health or environment, a strategy to reduce the risk has to be developed by the rapporteur. The rapporteur may be approached by Member States with relevant information to put together an adequate risk reduction strategy. The rapporteur may also request for more relevant information, if more information is needed. During meetings of the TCNES the proposed measures are discussed. Through its representative, a Member States can put forward its point of view and can try to create support among the other Member States.

- Substances of national concern can be brought forward by the Member States to be nominated as priority substances (step 2 of risk evaluation and control under the Existing Substances Regulation).
- There is no guarantee that the risk reduction measures defined in the framework of the Existing Substances Regulation are actually implemented, because the Commission Recommendations are not legally binding (Führ, 2004; article I-33 of the Treaty establishing the European Union). The risk reduction measures may take various forms. For instance, risk reduction measures may be implemented at the national (national legislation, WFD) or international level (under IPPC, Marketing and Use Directive or Dangerous Substances Directive (2004b).
- The Existing Substances Regulation will be taken over by REACH.

3.4 Council Directive 76/769/EEC of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations, referred to as the Marketing and Use Directive

The Marketing and Use Directive consists of only 4 articles, explaining aim, focus and some obligations for the Member States. The directive was introduced in 1976 to deal with situations where classification and labelling of chemicals were not sufficient to protect health and the environment. Member States were introducing national restrictions of the marketing and use of chemicals, thereby creating barriers to trade. The directive creates a framework for bans or restrictions by means of an Annex, where the controlled substances, preparations and products are listed. In order to add restrictions on marketing and use of certain substances and preparations, the Marketing and Use Directive needs to be amended. Up to now, 47 classes of substances or preparations have been listed in the Annex for which the Marketing and Use Directive has been amended 39 times. The substances listed in the Annex can only be placed on the market subject to the conditions specified. The list of substances and the descriptions of the restrictions are extensive and therefore are not taken up in an Appendix of this report. The directive focuses on existing substances.

Two general concepts of restrictions on marketing and use exist, which can be designated as ‘ban with exemptions’ and ‘controlled use’. A ban with exemptions means that marketing and use of the substances are prohibited except for applications that are explicitly allowed. Controlled use means that marketing and use of a substance and the preparations and products are allowed, except those which are specifically forbidden. The absolute majority of the restrictions are designed as controlled use, i.e. a ban limited to e.g. the general public (e.g. benzidine, chlorinated hydrocarbons) and/or certain

applications (e.g. cadmium). The provisions may be related to concentration limits for the substance in a preparation or a product (e.g. emission limit for nickel in jewellery). There are also requirements for specific labelling and other safety measures (e.g. asbestos). The only existing total ban is the one for PCB and some substitutes to PCB.
Substances classified as carcinogenic, mutagenic or toxic to reproduction (category 1 and 2 in Annex I of Directive 67/548/EEC, new substances) may be banned for consumer use. More than 850 such CMR substances are currently restricted in this way (among these are several hundred complex substances derived from coal and oil) (NordRiskRed, 2001).

Origin of amendments
Each additional substance has to be included in an amendment of the directive. Proposals for amendments can originate from several directions. Proposals for most of the amendments of Directive 76/769/EEC have resulted from notifications from the Member States under Directive 98/34/EC, i.e. of the intention to unilaterally introduce limitations at a national level. Simultaneously, Member States ask attention for problematic substances, productions or uses (Tallineau, 2003).

Example: HA oils in automotive tyres
Sweden and Germany collaborate to ban the use of HA oils in automotive tyres. The notification which is sent to the Commission contains available alternatives and a risk assessment report according to the Existing Substances Regulation (Swedish National Chemicals Inspectorate, 2003).

Council resolutions have been the major driving force for the restrictions of CMR-substances and cadmium. Work of OSPARCOM has also been the reason for the proposition and adoption of two amendments. New substances notification under 67/548/EEC has led to the restriction of a family of PCB-substitutes. Also, a safeguard clause in the Aerosols Directive (75/324/EEC) has been the origin for one amendment. Short chain chlorinated paraffins (SCCP) was the first example of an amendment initiated by a risk assessment from the Existing Substances Regulation (793/93/EEC), followed for instance by restrictions on nonylphenol, nonylphenol ethoxylate and cement (2003/53/EC).
The restrictions described in the Marketing and Use directive are based on the results of a risk assessment, for instance under the New and Existing substances legislation[5]. Before an issue is put on the agenda, often a report on advantages and drawbacks is produced by

[5] Article 11(3) of Existing Substances Regulation (793/93/EEC): 'On the basis of the risk evaluation and the recommended strategy referred to in paragraph 2, the Commission shall decide, where necessary, to propose Community measures in the framework of Council Directive 76/769/EEC of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations or in the framework of other relevant existing Community instruments.'
Directive 98/34/EC (notification directive), article 8(1): proposals for national measures have to contain risk assessment following the principles laid down in 793/93/EEC in case of existing substances and in 67/548/EEC for new substances.

independent consultants. The work has to be done in a transparent way and include all stakeholders. Proposals for amending Directive 76/769/EEC are adopted according to the co-decision procedure between the European Parliament and Council[6].

A committee procedure to adapt the directive to technical progress has been introduced to take account of new scientific knowledge on risks of restricted substances or on development of less dangerous substitutes. According to this procedure, restrictions on substances already included in the Annex can be changed by Commission Directives. This procedure is considerably quicker and simpler than the co-decision procedure. The proposals are approved by Member States on the basis of a qualified majority followed by formal adoption of the Commission (partially copied from NordRiskRed, 2001).

Water Framework Directive
The Water Framework Directive does not directly refer to the Marketing and Use Directive.

Applicability in reducing the risks from chemicals

- The Marketing and Use Directive is used as an effective and flexible instrument for risk reduction measures. Measures are aimed at the marketing and use of chemicals and thereby affect the direct exposure of consumers, workers but also the environment.
- The results from the Marketing and Use Directive (e.g. previously carried out risk assessments, adopted measures or previously taken decisions concerning priority compounds) could be used in taking measures within the WFD. Also, recommendations for measures from WFD could be used to amend the Marketing and Use Directive.
- Part of the Marketing and Use Directive treats measures affecting point sources as well as diffuse sources of emissions, on local as well as national level. It includes all sorts of manufactured articles containing certain substances.
- In a comparison between the two concepts for restrictions identified above, a ‘ban with exemptions’ may theoretically be preferable to ‘controlled use’ in situations where both risks and uses are widespread. This is because the ban effectively reduces all risks and at the same time is resource saving for the authority, as no excessive investigation is needed. Monitoring measures should also be less costly for the authorities, as the monitoring efforts may be focused to a great extent on a limited number of suppliers and to a lesser extent on the numerous users. However, in situations where the risk appears to be limited to certain applications and/or users, ‘controlled use’ is a more natural choice (NordRiskRed, 2001).
- A disadvantage of ‘controlled use’ concerns the lack of transparency to users and the public. The restrictions for the marketing and use of cadmium for plating and

[6] OJ C 148, 28-5-1999, p. 1.

in polymers as pigment and stabiliser are an example of poor transparency resulting from the ‘controlled use’ approach. In this case, the list of exemptions consists of some 40 application areas (NordRiskRed, 2001).

- For industry, the ‘ban with exemptions’ approach may result in larger differences in risk reduction costs between the different application areas, and larger overall costs, than what would have been the result with the ‘controlled use’ approach. Such drawbacks are always weighed against the advantages for society of a ‘ban with exemptions’, i.e. a more effective risk reduction and lower administrative costs. (copied from NordRiskRed, 2001).
- In 2003 the European Parliament and the Council adopted Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment. The substances concerned were lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE). The equipment considered is specified in Annex 1A of Directive 2002/96/EC on the waste of electrical and electronic equipment and applications exempted are specified in the Annex of Directive 2002/95/EC. The Directive aimed to approximate the Laws of the Member States on the use of hazardous substances in electrical and electronic equipment. In the Annex the Directive is linked to the Marketing and Use Directive. It was agreed that the Commission should evaluate the applications for DecaBDE, and mercury and lead in certain applications. At present (June 2005) the exemption of deca-BDA is under discussion. ‘Six environment ministers have reiterated their opposition to a proposal to exempt the brominated flame retardant deca-BDE from an EU ban on hazardous substances in electronics manufacture due to enter force next year. The issue is to be discussed at next week's EU environment council. In a letter sent on Thursday to environment commissioner Stavros Dimas, ministers from Belgium, Denmark, Finland, Norway, Portugal and Sweden say uncertainty still surrounds deca-BDE. Alternatives exist but have not been considered in the Commission's proposal to exempt the chemical, they complain. Swedish officials say the letter is aimed at persuading the Commission to reconsider its position if the council fails to reach a qualified majority for or against exemption. EU comitology rules state that the Commission must adopt its proposal unilaterally if the council fails to act. Deca's opponents hope it can still use a margin of discretion and withdraw the plan. Stalemate in the council is in fact the most likely outcome at present. A committee of national experts failed to agree on deca in April. More recent discussions have revealed that member state positions are still ‘more or less’ the same, a Luxembourg presidency official told Environment Daily. (Environment Daily, 2005).’
- From an industries strategy document on the draft WEEE directive ((2002/96/EC) it appears that this directive is prepared by the Commission’s waste unit of DG Environment instead of the Commission’s chemicals unit of DG Enterprise, which is responsible for the implementation of the Marketing and Use directive (Wavra, 2000). The strategy document also enlighten on the industries view on the directive: ‘Commission’s chemicals unit [of DG Enterprise], not the waste unit [of DG Environment], should be responsible for reviewing, pursuant to the directive on restrictions and use of dangerous substances, whether any of the substances as used in the economy as a whole merit regulation. In reviewing the use of such substances, it would be necessary to conduct a risk assessment of intrinsic hazards, exposure routes and exposure levels, as well as risks from feasible

alternatives. If these analyses suggest need for focused regulation of certain applications, the Commission would then need to evaluate the benefits and costs of imposing such restrictions. A deliberate approach would likely result in a sound legal framework, both environmentally and economically, and avoid the trade law problems of the current draft directive.' (Wavra, 2000).

The American Coalition Electronic Industrie (ACEI) mainly opposed against the ban on lead in solder in this document and comparing the exemptions in the draft WEEE directive with the present exemptions, which are now incorporated in Directive 2002/95/EC, shows that industry succeeded to get exemptions for this application.

3.5 REACH: Proposal for a Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restrictions of Chemicals (REACH), establishing a European Chemicals Agency and amending Directive 1999/45/EC and Regulation (EC) {on Persistent Organic Pollutants} from 29 October 2003, COM(2003) 644

On February 13th 2001, the European Commission adopted a White Paper (COM (2001) 88) setting out the strategy for future Community Policy for Chemicals. Existing and new chemicals should in the future be subject to the same procedure under a single system called REACH (Registration, Evaluation, Authorisation and Restrictions of CHhemicals). The REACH proposal replaces the system of about 40 existing Community directives and Regulations on chemicals with different rules for existing and new substances, by a single regulation with one consistent approach.

The new strategy aims to ensure protection of human health and the environment, while at the same time, efficient functioning of the EU-market is ensured. An alteration of EU-legislation by REACH is the shift for the responsibility of data generation and risk assessment of chemicals from authorities to industry. Under REACH, enterprises have to demonstrate that 'their' chemicals are safely used and managed in the European Union by placing an increased responsibility upon industry to provide information on the properties and uses of chemicals and to take the consequences in risk management from the collected information. Up to now, predominantly under the Existing Substances Regulation (793/93/EEC), authorities prepare the risk assessments and risk management proposals, but under REACH it will be the industry to fulfil these tasks. Increased responsibility will also be passed to users in the manufacturing chain (formulators and downstream users) who will have to supply data on the particular uses they make of a substance. Public authorities have to examine the data provided by the industry (EC, 2005a, b, c, d).

A new European Chemicals Agency will be created to manage the technical, scientific and administrative aspects of the REACH system. The European Chemicals Agency will

be responsible for receiving registration dossiers and developing guidance to assist producers, importers and the competent authorities in implementing these provisions. The new European Chemicals Agency facilitates the sharing of animal test data at the pre-registration stage by putting registrants in contact with each other and provides a database listing what information are available to members of substance information exchange forums (SIEF).

The REACH system consists of the following elements:
The Registration step requires a manufacturer or importer to notify the authorities of the intention to produce or import a substance. The registration dossier should be interpreted as the tool of the industry to show that it has fulfilled its responsibility. Registration is obligatory for chemicals produced or imported in volumes greater than 1 t/y (about 30,000 substances). This is an increase in the threshold that currently applies to new substances (10 kg) and is a decrease in the threshold for existing substances. If a substance is not registered, it is in principle not allowed to be manufactured or imported. The registration dossier will include e.g. a registration number and information on the (eco)toxicological properties, and may include a preliminary risk assessment covering the identified uses, proposed risk management measures and a safety data sheet (SDS). The information requirements partly depend on the tonnages in which the substance is manufactured or imported. A limited registration is required for certain types of intermediates. Intermediate is defined as a substance that is solely manufactured for and consumed in or used for chemical processing in order to be transformed into another substance (article 3 of REACH). REACH makes a distinction between transported intermediates and on-site intermediates. Both categories have different requirements. From the registration dossier, the chemical safety for the identified uses has to be assessed (required for substances beyond 10 t/y). For dangerous substances a SDS has to be developed, which summarises information on substance properties and the safe means of using the substance. The SDS is meant to be transmitted down the supply chain. The SDS is used by the industry to communicate which risk management measures and which operational conditions are recommended to be implemented downstream for protecting human health and the environment.
A strict timetable is proposed for the submission of the expected number of 30,000 substances. Deadlines for registration depend on production volume and intrinsic properties (article 21 of REACH).
Evaluation of the registered information for all substances exceeding a production or import volume of 100 t/y and for lower volume substances of high concern is carried out by the Agency and the national authorities. Evaluation will include consideration of the information and the strategy for substance-tailored vertebrate animal testing submitted by industry in case of substances produced in volumes greater than 100 t/y. For substances produced in quantities below 100 t/y, spot checks and computerised screening will be undertaken.

There are two types of evaluation, i.e. dossier and substance evaluation. Both evaluations will be performed by competent authorities in the Member States. Dossier evaluation is conducted by the authorities to examine proposals by the industry for testing on animals and ensure that unnecessary animal testing is avoided. Dossier evaluation is also performed to examine if registration dossiers comply with the registration requirements. Substance evaluations can be performed when there is reason for concern that a substance may present a Community-wide risk to human health or the environment (for example, because of its structural similarity to another substance or for other reasons). Therefore, substance evaluations will look at all the registration dossiers submitted for the same substance and take into account any other available information.
The outcome of an evaluation may be that the registrant(s) have to provide additional information, either to bring their registration into compliance with the requirements or to help clarify risks. Evaluation may lead competent authorities to the conclusion that action should be taken under the restrictions or authorisation procedures in REACH, or that information should be passed to other authorities responsible for other relevant legislation. The European Chemicals Agency will develop risk-based criteria to assist with the prioritisation of substance evaluation.
Authorisation applies only to substances that have hazardous properties giving rise to very high concern. Hazardous substances are substances having the CMR-characteristics (carcinogenic, mutagenic or toxic to reproduction), the persistent organic pollutants (POPs), persistent, bioaccumulative and toxic substances (PBTs), very persistent and very bioaccumulative substances (vPvBs) and sensitizers. The applicant has to demonstrate that the risk from the use of the substance is adequately controlled. If risks to human health and environment are not adequately controlled, an authorisation may be still be granted if it is shown that socio-economic benefits outweigh the risk to human health or the environment, arising from the use of the substance and if there are no suitable alternative substances or technologies.
There is also a restriction procedure to regulate that manufacture, import, placing on the market or use of certain dangerous substances shall be subjected to strict conditions or are prohibited. The restrictions procedure is a safety net for substances posing an unacceptable risk to human health or the environment. Restrictions will only be applied where the authorisation procedure is not applicable (substances other than CMR, PBT, vPvBs and substances causing serious and irreversible effects) or has not yet been applied to that substance. Member States and the Commission can initiate a restrictions procedure. Any substance on its own, in a preparation or in an article may be subject to Community-wide restrictions (RPA and BRE Environment, 2003; SPORT, 2004; EC, 2005a, b, c, d). If it is demonstrated that action on a Community wide basis is necessary, beyond any measures already in place, the Agency suggests restrictions, in order to initiate the restrictions process.

Directives 76/769/EEC, 91/157/EEC, 93/67/EEC, 93/105/EEC and 2000/21/EC, and

Regulations (EEC) No 793/93 and (EC) No 1488/94 are repealed by REACH (article 134 of REACH, 2003). Rules for notification of new chemicals in Directive 67/548/EEC also are repealed but relevant parts of Directive 67/548/EEC will continue to apply. REACH (2003) includes a proposal for the amendment of Directive 67/548/EEC, describing which articles remain active and which do not. Directive 67/548/EEC contains several Annexes related to information requirements and testing methods to be used. The content of these annexes will be taken over by the Annexes to the REACH legislation and thus they have to be repealed from the Directive. Directive 1999/45/EC on the classification, packaging and labelling of dangerous preparations will continue to apply for the classification, packaging and labelling of dangerous preparations. It is the intention of the Commission to propose the implementation of the Global Harmonised System (GHS) for classification and labelling. The GHS will replace the remaining part of Directive 67/548/EEC.

Applicability in reducing the risks from chemicals

Although there is no practical experience with REACH yet and REACH is still in development, certain advantages and disadvantages of REACH over the present legislation already have been brought forward.

- Emissions to air and water are considered to be adequately regulated through WFD and IPPC. Obligations created under IPPC and WFD are not taken over by REACH, although this is still under discussion. Obligations under REACH should be harmonised with obligations under IPPC and WFD.
- Pesticides and biocides are considered as registered and adequately managed through 91/414/EEC and 98/8/EEC, respectively. In the database of the Agency, these substances are marked as authorised pesticides and biocides.
- REACH increases the information about non-priority substances. The registrant is stimulated to put effort into a registration dossier, because potential downstream users will prefer to buy products from a supplier where his use is covered by the exposure scenario in the safety data sheet. Also, experience have learned that the more information is available, the less conservative the exposure scenarios will be, which may be of advantage for the registrants (RPA and BRE Environment, 2003; EC, 2005a).
- By making information available more quickly, REACH has the potential to identify a hazard before damage occurs, rather than waiting for monitoring to provide evidence of harm (RPA and BRE Environment, 2003).
- REACH promotes the responsibility of industry. Under REACH, the communication in the supply chain will be intensified, in which also the downstream users have obligations to contact the supplier.
- REACH promotes substitution of dangerous substances by less dangerous substances or technologies only indirectly. Because REACH will require testing and risk assessment of all existing chemicals, this means that full dossiers for the substitutes and associated toxicological and fate data are available. The increased

availability of hazard information and safety assessments for downstream users and the general public should stimulate manufactures and importers to replace the substances or uses of higher concern with less risky alternatives. Alternatives can be discussed on voluntary basis during the Authorisation step. During the Restriction step, alternatives or substitutes can be brought forward, but for this no strict procedure is laid down.

- Former new chemicals at low tonnage level (<1 t/a) fall outside the scope of REACH.

3.6 Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market, referred to as the Pesticides Directive

The Pesticides Directive was adopted by the Council of Ministers on 15 July 1991 and since then has been amended 43 times. Currently, the Directive is being extensively revised, including the Annexes. It is expected that at the end of this year the new Directive is adopted.

The Pesticides Directive is adopted and implemented to harmonise the overall arrangements for authorisation of the active substances in plant protection products (PPPs) within the European Union and to assure the free movement on the market of PPPs. Also, the Pesticide Directive aims to protect human and animal health, groundwater and the environment from PPP impact. This is achieved by harmonising the process for considering the safety of active substances at European level by establishing agreed criteria.
If active ingredients are allowed at European level, they are placed on a positive list of active substances that may be used (Annex I of the Pesticides Directive). At present (January 2005), 71 substances are listed in Annex I. Before an active substance can be considered for inclusion in Annex I of the Pesticides Directive, companies must submit a complete data package on both the active substance and at least one PPP containing that active substance (article 5(3) of 91/414/EEC). These data are submitted to one or more Member States for evaluation and reporting. The report of the evaluation is submitted to the European Food Safety Authority (EFSA). The EFSA makes a recommendation to the EC on whether Annex I inclusion of the active substance is acceptable. This recommendation is then discussed by the Standing Committee on the Food Chain and Animal Health (SCFA). Substances in Annex I have to be evaluated at least every 10 years (article 5(5) of 91/414/EEC).
Product authorisation is the responsibility of the individual Member States. In the Netherlands, product authorisation takes place through the Dutch pesticide legislation. Authorisations may be reviewed at any time if there are indications that any of the requirements for authorisation are no longer satisfied (article 4(5) of 91/414/EEC).

For products containing only active substances included in Annex I and authorised by another Member State, the directive also allows for a system of Mutual Recognition (article 10 of 91/414/EEC). This allows authorising the product without the submission of further data, subject to certain conditions. These are designed to take account of differences such as climate and agricultural practice. However, article 11(1) states that:
'Where a Member State has valid reasons to consider that a product which it has authorised or is bound to authorise under Article 10 constitutes a risk to human or animal health or the environment, it may provisionally restrict or prohibit the use and/or sale of that product on its territory. … '

Member States have to take necessary arrangements for PPPs which have been placed on the market and for their use to be officially checked to see whether they comply with the requirements of the Pesticides Directive and the authorisation requirements in particular (article 17 of 91/414/EEC). Member States may continue to apply previous national rules concerning data requirements for active substances already on the market 2 years after notification of the Pesticides Directive, as long as these substances are not included in Annex I (article 13(6) of 91/414/EEC).

Water Framework Directive

The WFD refers to the Pesticides Directive in article 16 and in Annex II.

Article 16(2) of WFD:

'The Commission shall submit a proposal setting out a list of priority substances selected amongst those, which present a significant risk to or via the aquatic environment. Substances shall be prioritised for action on the basis of risk to or via the aquatic environment, identified by:
(a) risk assessment carried out under Council Regulation (EEC) No 793/93, Council Directive 91/414/EEC, and Directive 98/8/EC of the European Parliament and of the Council , or
(b) …'

Article 16(6) of WFD:

'Where product controls include a review of the relevant authorisations issued under Directive 91/414/EEC and Directive 98/8/EC, such reviews shall be carried out in accordance with the provisions of those Directives.'

Annex II, 1.4 of WFD:

'Member States shall collect and maintain information on the type and magnitude of the significant anthropogenic pressures to which the surface water bodies in each river basin district are liable to be subject, in particular the following.
(…)
Estimation and identification of significant diffuse source pollution, in particular by substances listed in Annex VIII, from urban, industrial, agricultural and other installations and activities; based, inter alia, on information gathered under:
(i) Articles 7 and 17 of Directive 91/414/EEC;
(…)'

Applicability in reducing the risks from chemicals

- Substances shall be prioritised under the WFD for action on the basis of risk to or via the aquatic environment as identified by the Pesticides Directive.

- Authorisations are not to be granted if values fixed in directive 75/440/EEC (water quality intended for abstraction of drinking water) and in directive 80/778/EEC (water quality intended for human consumption) are expected to be exceeded.
- In the considerations of 91/414/EEC, obligations of directive 80/68/EC (groundwater quality) are recognised.
- General demand is that no unacceptable effects on the environment are allowed. This is a general provision, which does not take into account specific conditions such as specific water functions.
- Authorisations may be reviewed at any time if there are indications that any of the requirements for authorisation are no longer satisfied (article 4(5) of 91/414/EEC).
- Similarly, for products which have been authorized or are bound to be authorised, Member States may provisionally restrict or prohibit the use and/or sale of that product if there are valid reasons to believe that risk to human or animal health or to the environment may occur. The ‘valid reasons’ are not further defined in the directive.
- Additives are not part of the Pesticides Directive. Therefore, every Member State is free to decide on risk reduction measures aimed at such substances (NordRiskRed, 2001).
- For risk assessment of products, the Uniform Principles have to be followed by the Member States. Member States are allowed to formulate their own risk assessment procedures for areas which are not yet covered by the existing EU-legislation.
- For the authorisation of products, thus at the national level, Member States are able to influence use of the products through the determination of ‘good agricultural practice’.
- The Pesticides Directive does not contain a principle of substitution in contrast with the Biocides Directive, treated in the next chapter (Nordic Working Group on Pesticides, 2003). Implementation of a substitution principle in the Pesticides Directive may have to be considered.
- The Pesticides Directive does not give the possibility to ban an active substance or PPP from future use. Some effects of PPPs on human health or the environment are so severe that humans or the environment should not be exposed to these PPPs at all (Nordic Working Group on Pesticides, 2003). The annex contains a positive list of active substances, but no negative list. PBT-identification occurs under the Pesticides Directive, but has no direct consequences. PBT-identification under the Existing Substances Directive is another possible route. In fact, a number of pesticides is placed on the priority list of the Existing Substances Directive. The Nordic Working Group on Pesticides (2003) recommends considering the POPs Directive to prohibit or restrict production, placing on the market and use of these PPPs.
- Article 8(4) on transitional measures and derogations of the Pesticides Directive:

> ‘By way of further derogation from Article 4, in special circumstances a Member State may authorize for a period not exceeding 120 days the placing on the market of plant protection products not complying with Article 4 for a limited and controlled use if such a measure appears necessary because of an unforeseeable danger which cannot be contained by other means. In this case, the Member State concerned shall immediately inform the other Member States and the Commission of its action.’

This article seems to be interpreted in different ways in the different Member States. An EU-wide interpretation has been recommended by the Nordic Working Group on Pesticides (2003).

3.7 Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market, referred to as the Biocides Directive

The scope according to article 1(1) of the Biocides Directive is:
‘(a) the authorisation and the placing on the market for use of biocidal products within the Member States;
(b) the mutual recognition of authorisations within the Community;
(c) the establishment at Community level of a positive list of active substances which may be used in biocidal products.…’
Similar to the Pesticides Directive (91/414/EEC), the Biocides Directive is also a marketing and use directive. The Biocides Directive regulates the authorisation and usage of biocides, following prescribed safety requirements. Conditions for issue of an authorisation are given in Article 5 of the Biocides Directive and include protection of surface waters, groundwater and drinking water, of non-target organisms and human and animal health. Authorisations are granted for a maximum period of 10 years.

The directive results in three community lists, which permit the inclusion of active substances in biocidal products (Annex I, IA and IB). In addition to the list of active substances (Annex I), there is a list of low-risk products (Annex IA) and basic substances (Annex IB)(NordRiskRed, 2001). Annex IA contains low-risk biocidal products defined in Article 2(1) of the Biocides Directive as:
‘A biocidal product which contains as active substance(s) only one or more of those listed in Annex IA and which does not contain any substance(s) of concern. Under the conditions of use, the biocidal product shall pose only a low risk to humans, animals and the environment.’
An active substance cannot be included in Annex IA if it is classified as carcinogenic, mutagenic, toxic for reproduction, sensitising or bioaccumulates according to directive 67/548/EEC (new substances) and does not readily degrade (Article 10 of 98/8/EC). Annex IB contains basis substances. Basic substances are defined as a substance ‘whose major use is non-pesticidal but which has some minor use as biocide either directly or in a product consisting of the substance and a simple diluent which itself is not a substance of concern and which is not directly marketed for this biocidal use.’ Examples of basic substances are carbon dioxide,

nitrogen, ethanol, 2-propanol, acetic acid and kieselguhr (Article 2(1) of 98/8/EC). The substances will be included in the lists after the evaluation procedure.
The inclusion of an active substance to the lists may be refused or removed, if the evaluation shows that risks to health or the environment may occur. Moreover, an active substance is also refused for inclusion or removed from the positive lists, if there is another active substance permitted for the same product type, which presents less risk to health or the environment (Article 10(5) of 98/8/EC).
After this assessment at EU level, admittance by the Member States takes place.
Common principles for the evaluation of dossiers for biocidal products are presented in Annex VI of the Biocides Directive.

Water Framework Directive
The WFD refers to the Biocides Directive in article 16 and in Annex II, in similar manner as is referred to the Pesticides Directive.
Article 16(2) of WFD:
'The Commission shall submit a proposal setting out a list of priority substances selected amongst those, which present a significant risk to or via the aquatic environment. Substances shall be prioritised for action on the basis of risk to or via the aquatic environment, identified by:
(a) risk assessment carried out under Council Regulation (EEC) No 793/93, Council Directive 91/414/EEC, and Directive 98/8/EC of the European Parliament and of the Council , or
(b)…'
Article 16(6) of WFD:
'Where product controls include a review of the relevant authorisations issued under Directive 91/414/EEC and Directive 98/8/EC, such reviews shall be carried out in accordance with the provisions of those Directives.'
Annex II, 1.4 of WFD:
'Member States shall collect and maintain information on the type and magnitude of the significant anthropogenic pressures to which the surface water bodies in each river basin district are liable to be subject, in particular the following.
(…)
Estimation and identification of significant diffuse source pollution, in particular by substances listed in Annex VIII, from urban, industrial, agricultural and other installations and activities; based, inter alia, on information gathered under:
(…)
(iii) Directive 98/8/EC;'

Applicability in reducing the risks from chemicals

- Substances shall be prioritised under the WFD for action on the basis of risk to or via the aquatic environment as identified by the Biocides Directive.
- Authorisations are not to be granted if values fixed in directive 75/440/EEC (water quality intended for abstraction of drinking water) and in directive 80/778/EEC (water quality intended for human consumption) are expected to be exceeded.
- In the considerations of 91/414/EEC, obligations of directive 80/68/EC (groundwater quality) are recognised.

- General demand is that no unacceptable effects on the environment are allowed. This is a general provision, which does not take into account specific conditions such as specific water functions.
- Authorisations may be reviewed at any time if there are indications that any of the requirements for authorisation are no longer satisfied. In such instances, the Member States may require the authorisation holder to submit further information necessary for the review (article 6 of 98/8/EC). An authorisation must be cancelled if the requirements for authorisation are no longer satisfied (article 7 and 14 of 98/8/EC).
- For risk assessment of products, Member States have to follow the Common Principles. Member States are allowed to formulate their own risk assessment procedures for areas which are not yet covered by the existing EU-legislation.
- The Biocides Directive contains a principle of substitution, in contrast with the Pesticides Directive. The alternative product should represent significantly less risk to health and/or the environment and should be sufficient efficacious on the target organism (Nordic Working Group on Pesticides, 2003).
- Article 15(1) derogation from the requirements of the Biocides Directive:
- 'By way of derogating from Articles 3 and 5,a Member State may authorise temporarily for a period not exceeding 120 days, the placing on the market of biocidal products not complying with the provisions of this Directive for a limited and controlled use if such a measure appears necessary because of an unforeseen danger which cannot be contained by other means. In this case, the Member State concerned shall immediately inform the other Member States and the Commission of its action and the justification for it. The Commission shall make a proposal and it shall be decided without delay, in accordance with the procedure laid down in Article 28(2), whether, and, if so, under what conditions, the action taken by the Member State may be extended for a period to be determined, be repeated, or be revoked.'

This article is very similar to Article 8(4) on transitional measures and derogations of the Pesticide Directive. During the Nordic Working Group on Pesticides (2003), it was noted that Article 8(4) of the Pesticides Directive seems to be interpreted in different ways in the different Member States. An EU-wide interpretation has been recommended by the Nordic Working Group on Pesticides (2003).

3.8 Regulation (EC) No. 850/2004 of the European Parliament and of the Council of 29 April 2004 on persisting organic pollutants and amending Directive 79/117/EEC, referred to as the POPs Regulation

The European POPs Regulation (850/2004/EC) resulted from the Stockholm Convention on Persistent Organic Pollutants (POPs) ('the Convention'; UNEP, 2001) and the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants (LRTAP) ('the Protocol'; UNECE, 1998) (see Table 2). The Regulation entered into force on 20 May 2004 and is developed to implement the

remaining provisions of the Convention and the Protocol which were not covered by existing Community legislation. The proposed REACH Regulation is considered to be an appropriate instrument to implement the necessary control measures on POPs, but the POPs Regulation is still developed and entered into force in order to implement the control measures on POPs as soon as possible. Its objective is the protection of human health and the environment by prohibiting, phasing out or restricting the production, placing on the market and use of substances subject to the Convention or the Protocol. In addition, it establishes provisions regarding waste containing any of these substances (article 1 of 850/2004/EC).

Table 2. The origin of the various substances in Directive 850/2004 and the relationship with the UNECE POP protocol under the LRTAP convention and the UNEP Convention (Stockholm)

Substance	CAS no.	Annex	Annex	Annex
		LR TAP	UNEP	850/2004
		UNECE		
Aldrin	309-00-2	I	1	1
Chlordane	57-74-9	I	1	1
Chlordecone	143-50-0	I		1
DDT	50-29-3	I + II	2	1
Dieldrin	60-51-1	I	1	1
Endrin	72-20-8	I	1	1
Heptachlor	76-44-8	I	1	1
Hexabromobiphenyl	36355-01-8	I		1
Hexachlorobenzene	118-74-1	I + III	1 + 3	1 + 3
Mirex	2385-85-5	I	1	1
PCB		I + II	1 + 3	1 + 3
Toxaphene	8001-35-2	I	1	1
HCH	608-73-1	II		1
PAHs		III		3
Dioxins/furans		III	3	3

Annex 1. Substances subject to prohibitions
Annex 2. Substances subject to restrictions
Annex 3. Substances subject to release reduction provisions

Article 3 of the POPs Regulation prohibits the production, placing on the market and use of substances listed in Annex I. Production, placing on the market and use of substances listed in Annex II are restricted in accordance with the conditions set out in that Annex. Within the assessment and authorisation schemes for existing and new chemicals and pesticides under the relevant Community legislation, Member States and the Commission have to take into consideration criteria set out in an Annex to the Convention (Annex D containing POP characteristics). Appropriate measures have to be taken to control existing chemicals and pesticides and to prevent production, placing on the market and use of new chemicals and pesticides when these substances exhibit POP characteristics. Stockpiles of prohibited substances must be treated as waste, while stockpiles of substances of which the production or use is still allowed must be notified to the

authorities and properly supervised. In particular, existing stockpiles which contain banned POPs must be managed as waste as soon as possible. Waste containing substances listed in Annex IV may be disposed of or recovered if concentration limits for the substances in waste are established before 31 December 2005.

Member States must draw up release inventories for the substances listed in Annex III into air, water and land within two years of the date of entry into force of the Regulation. The Member States have to develop an action plan including measures to promote the development and, where appropriate, use of substitutes or modified materials, products and processes to prevent formation and release of substances listed in Annex III. Also, priority consideration should be given to alternative processes, techniques or practices that have similar usefulness but which avoid formation and release of Annex III-substances (article 6 of 850/2004/EC). Substances can be added to the POPs lists of the POPs Regulation if the substances are listed in the Convention or the Protocol.

The obligations of the Regulation are partly related to that in other directives and regulations such as 67/548/EEC, 75/442/EEC, 96/62/EC, 2000/60/EC, the PAH directive, and the PCB directive (96/59/EC) (Kwisthout, 2005).

Applicability in reducing the risks from chemicals

- The POPs Regulation is developed to prohibit or restrict the production, placing on the market and use of substances with specific characteristics, i.e. concerning persistency, bioaccumulation, potential for long-range environmental transport and adverse effects on human health and the environment. Thus, the directive embraces a limited range of substances, but does not apply to specific emission routes.
- The production and use of hexachlorocyclohexane (HCH), including lindane, is subject to restrictions under the Protocol but is not totally prohibited. That substance is still used in some Member States and therefore it is not possible to immediately prohibit all existing uses. However, in view of the harmful properties of HCH and the possible risks related to its release into the environment, its production and uses must be confined to a minimum and ultimately phased out by the end of 2007 at the latest. HCH is an example of incompatibility of Member States' interests with Community legislation.
- Quite a number of substances are scheduled for elimination under conditions. For PCBs these conditions do not have a final date at which these will expire. For other substances, however, the specific exemption on use or other specification is into force until a specific date (e.g. 1st of January 2014 for use and production of DDT as a closed-system site-limited intermediate for the production of dicofol).
- To add a substance to the Convention or the Protocol, a substance dossier has to be created and judged by the Persistent Organic Pollutants Review Committee. After the review has been finalised, the Conference of Parties (COP) or the Executive

Body (EB) decides on whether or not a substnance fulfils the criteria for being a POP and which measures for that substance need to be taken. Decisions within the Executive Body of the UNECE LRTAP Convention are taken by consensus, which ensures that all Parties remain in step and that the wishes, concerns and needs of the Parties to the Protocol are accommodated. Therefore, it may take a long time before substances are added to the POPs lists. More information on the decision making process within the LRTAP Convention can be found in chapter 8 of Sliggers and Kakebeeke (2004).

- Early 2004 there were dossiers of about 10 substances (PBDE, PFOS, PCP, dicofol, SCCPs, endosulfan, pentachlorobenzene, pentachlorobutadiene and polychlorinated naphtalenes) potentially available for submission to the UNECE POP protocol. Only two substances were submitted; PFOS was submitted by Sweden and PBDE by Norway (UNECE, 2005). Although the European Council had made a decision on the nomination of substances to the Protocol and to the Convention in 2004 (COM (2004)537), no substances have been submitted yet. At present (May 2005) there is discussion between the European Commission and various Member States on the competence of submission of 'European' nominations to the protocol. The Commission put forward that the nominated substances will be regulated at European level, which leads automatically to a Community competence and a nomination by the European Commission. In contrast, the Member States state that the Commission represents the Community in international Treaties, but not the individual Member States. At the first Conference of Parties (COP) meeting of the UNEP Convention in May 2005 a tentative solution was found by the submission letter being signed by a member of the Commission delegation 'for and on behalf of the European Community and the United Kingdom as acting presidency of the European Union at the first Conference of the Parties'. The problem of mixed competence will be forwarded to the Communities Legal Service to find a solution for the dispute between the Commission and the Member States.
- For quite a number of substances there is agreement at Community level. There are indications that the European Commission would not object the Member States to submit these substances, as submission would not affect Community legislation. Main problem are the substances which are not agreed on at European level such as dicofol, PCP and endosulfan. These substances are still being used and/or produced in some Member States and the POP characteristics of these substances are disputed. The European Commission has requested the PBT[7] working group to give their opinion on these substances in advance of submission by the Commission. The position of the Commission is clear from a Community point of view, but hampers submission of substances by the individual Member States. As Sliggers and Kakebeeke (2004) state: 'In the EU, States do not 'ratify' directives.

[7] Persistance, Bioaccumulation and Toxicity

Obligations take effect for all members on a specified date. It could be argued that national input to the content of directives is smaller than to the content of protocols to the Convention, and that the subsequent control of compliance by the Commission is tougher than under the Convention.'

- The UNEP Stockholm Convention requests the Parties to the convention to prepare National Implementation Plans (NIPs). These NIPs should contain information on the production, use, and release of the POPs listed and on existing stockpiles as well as measures to be taken to fulfil the requirements of the convention. The NIPs may contain valuable information for taking measures on substances incorporated in the river basin plans. Priority substances which will be incorporated in the NIPs are the drins, DDT and hexachlorobenzene. Information can be downloaded from the UNEP website on POPs (UNEP, 2005).
- The European Commission and the Member States met on 8 March 2005 to discuss the implementation of Regulation 850/2004/EC. Several countries plead at this meeting for a contribution of the Commission in writing a Community Implementation Plan (CIP) to prevent similar work being done several times by the various Member States. From the report of the meeting it is not clear if the Commission will provide such a contribution. The Commission indicated that it will initiate an analysis of all existing emission measures within the EU legislation considering POPs and the necessity for further actions resulting from the POP Regulation. In autumn 2005, there will be a second meeting discussing the need for further actions (Kwisthout, 2005).

3.9 Council Directive 75/442/EEC of 15 July 1975 on waste, referred to as Waste Framework Directive

The Waste Directive lays down general rules applying to waste management, in order to protect human health and the environment. It is explicitly mentioned that risk to water, air, soil, plants and animals should be minimised, that nuisance through noise or odours should be prevented and that the countryside or places of special interests should not be adversely affected by waste (article 4 of 75/442/EEC). Waste covered by the Waste Directive are listed in Annex I of the directive.
Some categories of waste are excluded from the scope of the Waste Directive, such as gaseous effluents emitted into the atmosphere and waste already covered by other legislation. Also, specific rules on the management of particular categories of waste may be laid down by means of individual directives (article 2 of 75/442/EEC). The Directive on waste has regularly been amended, latest by Regulation (EC) No. 1882/2003. Below, directives related to waste are listed. However, this document was not directed to gain full overview of all waste-related directives and therefore, the list below may not be complete.

Waste related directives and Council Regulations

Directive 75/439/EEC: disposal of waste oils[8] as amended by 87/101/EEC and 91/692/EEC
Directive 78/176/EEC: titanium dioxide industrial waste as amended by 82/883/EEC, 83/29/EEC and 91/692/EEC
Directive 78/319/EEC: toxic and dangerous waste
Directive 84/360/EEC: air pollutants from industrial plants as amended by 91/692/EEC
Directive 86/278/EEC: use of sewage sludge in agriculture as amended by 91/692/EEC and Regulation No. 807/2003
Directive 88/609/EEC: air pollutants from large combustion plants[7]
Directive 89/369/EEC: prevention of air pollution from new municipal waste-incineration plants[7]
Directive 89/429/EEC: reduction of pollution from existing waste-incineration plants
Directive 91/156/EEC: amending 75/442/EEC
Directive 91/157/EEC: batteries and accumulators as amended by 98/101/EC
Directive 91/271/EEC: urban waste water treatment as amended by 98/15/EC and Regulation No. 1882/2003
Directive 91/689/EEC: hazardous waste; amended by 94/31/EC
Directive 92/112/EEC: reduction of pollution caused by waste from the titanium dioxide industry
Directive 93/98/EEC: transboundary movements of hazardous waste
Council Regulation 259/93/EEC: shipment of waste, amended 7 times
Decision 94/4/EEC: list of waste; amended by 2000/532/EC; replaced by 2001/118/EC
Directive 94/67/EEC: incineration of hazardous waste[7] as amended by Regulation No. 1882/2003
Directive 94/62/EC: packaging and packaging waste as amended by Regulation No. 1882/2003 and 2004/12/EC
Directive 94/904/EEC: list of hazardous waste, replaced by 2001/118/EC
Directive 96/59/EC: disposal of PCBs and PCTs
Directive 96/61/EC: integrated pollution prevention and control (IPPC, paragraph 2.2)
Directive 1999/31/EC: landfill of waste as amended by Regulation No. 1882/2003
Directive 2000/76/EC: incineration of waste
Directive 2000/53/EC: end of life vehicles as amended by Decision 2002/525/EC
Directive 2001/80/EC: emission of specific pollutants (NO_x, SO_2) from large combustion plants
Directive 2002/95/EC: restriction of hazardous substances in electrical and electronic equipment
Directive 2002/96/EC: waste electrical and electronic equipment as amended by 2003/108/EC

The Waste Directive requires the Member States to encourage prevention or reduction of waste production by development of clean technologies sparing use of natural sources, by development and marketing of products making the smallest contribution possible to waste and pollution hazard and by development of techniques for disposal of dangerous substances contained in waste destined for recovery. The Waste Directive also encourages material recycling and energy recovery from waste (article 3 of 75/442/EEC). Industry carrying out the disposal operations listed in Annex IIA or the recovery operations listed in Annex IIB need to obtain a permit from the competent authority. The permit for disposal operations has to consider type and quantity of waste, technical requirements, security precautions, site of disposal and the treatment method (article 9 of

[8] These directives will be repealed, except for 75/439/EEC which will be repealed partly as from 28 December 2005 by directive 2000/76/EC

75/442/EEC). The Waste Directive does not give any permit requirements for recovery operations (article 10 of 75/442/EEC).
Reports on the implementation of Community waste regulation under the Directives 75/445/EEC, 91/689/EEC, 75/439EEC and 86/278/EEC and on implementation of Council Directive 91/271/EEC concerning urban waste water treatment as amended by Commission Directive 98/15/EC were published by the Commission in 2000 and 2001(European Commission, 2000; 2001a). These reports provide information on the implementation of these directives in the various Member States. A good overview of waste related topics is given by the European Commission on http://europa.eu.int/comm/environment/waste/waste_topics.htm.

Water Framework Directive
The WFD does not refer to the Waste Directive. However, annex VI of the WFD does refer to the Directive on the use of sewage sludge in agriculture (86/278/EEC). The WFD also refers to the Urban Waste Water Treatment Directive (91/271/EEC) in article 10(1), annex II and annex VI. The daughter directive on priority substances refers to this directive (91/271/EEC) in article 11(3). In the WFD, there are no references to Directives dedicated to emissions to air (e.g. 2000/76/EC).

Applicability in reducing the risks from chemicals

- The IPPC refers to the Waste Directive a number of times for the approach of waste management.
- The Waste Directive provides an overall structure for waste management within the EU. The daughter directives of the Waste Directive lay down specific rules for categories of waste management. Because these daughter directives generally are directed to specific categories of waste or waste management, most of the daughter directives are not general, powerful tools for pollution risk reduction (NordRiskRed, 2001). However, specific daughter directives address specific categories of waste management or specific waste and define specific measures and emission limits and therefore may be of use to reduce emission in these specific cases.
- Directive 91/689/EEC of 12 December 1991 on hazardous waste as amended by 94/31/EC was identified as a more powerful tool for emission control by NordRiskRed (2001). This directive is developed to regulate hazardous waste, hazardous waste being defined in article 1 of the Hazardous Waste Directive as:
  - ‘wastes featuring on a list to be drawn up in accordance with the procedure laid down in Article 18 of Directive 75/442/EEC on the basis of Annexes I and II to this Directive, not later than six months before the date of implementation of this Directive. These wastes must have one or more of the properties listed in Annex III. The list shall take into account the origin and composition of the waste and, where necessary, limit values of concentration. This list shall be periodically reviewed and if necessary by the same procedure,
  - any other waste which is considered by a Member State to display any of the properties listed in Annex III. Such cases shall be notified to the Commission and reviewed in accordance with

the procedure laid down in Article 18 of Directive 75/442/EEC with a view to adaptation of the list.'

The aim of the Hazardous Waste Directive is to improve the management of hazardous waste and to ensure that disposal and recovery of hazardous waste is monitored in the fullest manner possible. The Hazardous Waste Directive targets to approximate Member States' legislation on the control and management of hazardous waste. The directive also requires that Member States take necessary measures to monitor where tipping of hazardous waste takes place and to ensure that mixing of different categories of waste does not take place. Annex I of the directive lists categories of hazardous waste, Annex II consists of constituents of waste categorising waste as hazardous waste and Annex III contains properties of waste rendering waste as hazardous waste.

- The EC (2001b) states that although several directives have an influence on sludge management, the Directives on urban waste water (91/271/EEC) and the one on the use of sludge in agriculture (86/278/EEC) have the strongest impact on sludge production, disposal and recycling. The former has effect on the input, the latter is crucial in the management of currently produced sludge in the Member States. Both directives are, together with the Nitrate directive (91/676/EEC), mentioned as the most important Directives concerning the reduction of water pollution by a special report on water pollution (Special report 3/98, 98C 191/02).
- The directive on the use of sewage sludge in agriculture (86/278/EEC) lays down mandatory limit values for some heavy metals in sewage sludge and soils. The use of sludge should be prohibited when the concentrations of the metals exceed the limit values. The Directive 86/278/EEC refers to the directives on abstraction of drinking water (75/440/EEC) and groundwater (80/68/EEC) as the sludge should be used under conditions which ensure that soil, surface water and groundwater are protected. As a result of the implementation of the WFD, the two latter directives will be repealed in 2007 and 2013, respectively.

Article 3 of the Directive on the use of sewage sludge in agriculture (86/278/EEC) states that the sludge may be used subject to any conditions that the Member State concerned may deem necessary for the protection of human health and the environment and only if its use is regulated by that Member State. In practice, national regulations, which have been based on directive 86/278/EEC, have often introduced provisions that go beyond the requirements of directive 86/278/EEC. In most Member States, the limit values for heavy metals in sludge are lower than the limit values set in directive 86/278/EEC. National legislation may differ slightly among each other concerning the type of sludge covered, the terms of obligations for treatment and the information requirements. Some national regulations have prohibited the use of sewage sludge in specific land uses (e.g. silviculture, natural forest, and non-agricultural soil), whereas in other Member States its use in these land uses is explicitly addressed. An overview of the national requirements compared to the European requirements is given in European Commission (2001b)

as well as an overview of relevant EU directives on sewage sludge (chapter 3 of 2001b) and the competence and legal structure in various European countries (chapter 4 of 2001b).
The EC (2001b) and the Economic and Social Committee (2001/C 14/26) gave their opinion on the revision of the Directive on sewage sludge in agriculture (86/278/EEC). In the report by the EC (2001b) it is indicated that the revision may lead to the implementation of more stringent limit values, thus leading to problems in countries in which the present limit values are identical to the ones in the present version of 86/278/EEC. The Economic and Social Committee propose a heavily reduction of heavy metal content in sewage sludge permitted for agricultural use. The Committee also shows the limitations of the present approach (paragraph 3(4)), propose measures regarding metals and hazardous organic substances in sewage sludge (paragraph 5) and focus on the regulatory aspects of a new approach (paragraph 10).

- Council Directive 91/271/EEC concerns the collection, treatment and discharge of urban waste water and the treatment and discharge of waste water from certain industrial sectors (article 1 of 91/271/EEC). The Directive aims to protect the environment from the adverse effects of these discharges (article 1) and the disposed sludges (annex I). The industrial sectors are not further specified. Requirements for discharges from the waste water treatment plants mention the biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids and additional for sensitive areas total phosphorus and total nitrogen. The report ‘Pollutants in urban waste water and sewage sludge’ provides a thorough literature review of pollutants in waste water and identifies the main sources for various substances (EC, 2001c). In chapter 5 of the report, examples of various EU and national measures in reducing dangerous substances in waste water and sludge are given, such as a charge on cadmium in fertilisers in Sweden (see also Commission Decision 2002/399/EC), and the prohibition of mercury clinical thermometers in France. Some of these measures have a pure legal basis, others an economic or voluntary background.
- The Directive on the incineration of waste (2000/76/EC) aims at preventing or limiting the negative effects of incineration on the environment. The directive refers in the introduction to legally binding limit values within the framework of the UNECE Long-range transboundary air pollution Convention (LRTAP), which also covers the POP protocol discussed under Directive 850/2004/EC. Directive 2000/76/EC contains emission limit values for discharges of waste water from the cleaning of exhaust gases for suspended solids, nine different metals and for dioxins and furans (Annex IV of the Incineration of Waste Directive). Member States may set emission limit values for polycyclic aromatic hydrocarbons (PAHs) or other pollutants according to article 8(8) of directive 2000/76/EC. Monitoring requirements are given in article 11.

Table 3. Annex IV of 2000/76/EC: Emission limit values for discharges of waste water from the cleaning of exhaust gases.

	Polluting substances	Emission limit values [1]	
		95%	100%
1	Total suspended solids as defined by Directive 91/271/EEC	30 mg/l	45 mg/l
2	Mercury and its compounds, expressed as mercury (Hg)	0.03 mg/l	
3	Cadmium and its compounds, expressed as cadmium (Cd)	0.05 mg/l	
4	Thallium and its compounds, expressed as thallium (Tl)	0.05 mg/l	
5	Arsenic and its compounds, expressed as arsenic (As)	0.15 mg/l	
6	Lead and its compounds, expressed as lead (Pb)	0.2 mg/l	
7	Chromium and its compounds, expressed as chromium (Cr)	0.5 mg/l	
8	Copper and its compounds, expressed as copper (Cu)	0.5 mg/l	
9	Nickel and its compounds, expressed as nickel (Ni)	0.5 mg/l	
10	Zinc and its compounds, expressed as zinc (Zn)	1.5 mg/l	
11	Dioxins and furans, defined as the sum of the individual dioxins and furans evaluated in accordance with Annex I	0.3 mg/l	

[1] expressed in mass concentrations for unfiltered samples
Until 1 January 2008, exemptions for total suspended solids may be authorised by the competent authority for existing incineration plants provided the permit foresees that 80 % of the measured values do not exceed 30 mg/l and none of them exceed 45 mg/l.

- Directive 2000/76/EC refers to a Communication from the Commission on the review of the Community Strategy for waste management, which assigns prevention of waste the first priority. This was also reiterated by the Council (see introduction paragraph 8 of 2000/76/EC). The waste management strategy itself was published in 1997 (97/C76/01) and a Council resolution on waste policy with a similar message was published in 1990 (90/C 122/02).
- A special Directive (2002/96/EC) is dedicated to the waste of electrical and electronic equipment. The Parliament and the Council have adopted this Directive because the amount of waste from electrical and electronic equipment is growing rapidly and because the content of hazardous substances in this equipment is a major concern, which cannot be achieved effectively by each Member State acting individually (introduction). In the introduction it is stated that Directive 75/442/EEC ‘provides that specific rules for particular instances or supplementing those of Directive 75/442/EEC on the management of particular categories of waste may be laid down by means of individual Directives’. The applications considered are summarised in Annex IA and IB to directive 2002/96/EC. Some specific substances, preparations and components, which as a minimum have to be removed from any separately collected item are mentioned in Annex II. The directive is closely connected to directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment, which is discussed in chapter 3.4.

4. Discussion and conclusion

European legislation to be used for taking measures
The WFD and its two draft daughter directives contain 39 references to European directives and regulations which are presented in Appendix II of this report. Especially article 10 (measures for diffuse sources), article 16 (prioritising of substances on basis of risk assessment), article 22 (repealed legislation and transitional provisions) and Annex IX (emission limit values and environmental quality standards) of the WFD contain references to legislation to be used for taking measures. Rather broad reference is made to 'any other relevant Community legislation' in article 10 of the WFD, hereby obliging Member States to take into account all existing legislation related to measures. Other articles of the WFD also refer to 'other relevant Community legislation', such as in article 2(24) for the definition of good chemical status in surface water and in article 4 (1, 8, 9) for environmental objectives to be taken into account in the river basin management plans. Therefore, it was necessary to gain overview of the 'other relevant Community legislation' by consulting other sources.

The search for relevant legislation lead to various European directives and regulations that were thought to support emission control under the WFD, nine of which were selected as most valuable and which are discussed in chapter 3. Although the selected legislation was found to be of different nature, most have in common that they cover a broad range of substances or measures. Some directives or regulations encompass a very broad field of emission control, such as the IPPC (96/61/EC) and the Dangerous Substances Directive (76/464/EEC). Others focus on marketing and use (793/93/EEC), placing products on the market (91/414/EEC and 98/8/EC) and the prohibition of substances (850/2004/EC). A good overview of all European legislation on the environment can be attained through the chapter on environmental legislation in the 'Directory of Community legislation in force' at the EUR-LEX site (http://europa.eu.int/eur-lex/lex/en/repert/index_15.htm).

Commission Recommendations resulting from the Existing Substances Directive (793/93/EEC)
There are similarities between measures proposed within the framework of the Existing Substance Directive (793/93/EEC) and measures to be proposed within the WFD. Therefore, the process of risk evaluation under the Existing Substances Regulation will be described shortly as well as the recommendations resulting from these risk evaluations.
Under the Existing Substances Directive, risk assessments of priority substances are carried out by a Member State (Rapporteur) and focus on risks for human health and for the environment. The risk assessment for the environment is divided in conclusions for the aquatic and the terrestrial ecosystem, the atmosphere, for micro-organisms in sewage

treatment plants and for secondary poisoning. If the risk assessment shows that risk is not adequately managed, the Rapporteur has to propose a strategy to reduce the risks. The proposed strategies are adopted in Commission Recommendations, such as 1999/721/EC, 2001/194/EC, 2001/838/EC, 2002/575/EC, 2002/576/EC, 2002/755/EC and 2004/394/EC.

The recommendations for limiting risks to the environment are often divided in recommendations at Community level and recommendations at national level. We will focus here on recommendations at Community level, which depend on the substance, the compartment at stake and the risk considered.

For a limited number of substances it is recommended to include them in the Priority List of the WFD. In these cases there may be exposure of the aquatic compartment by diffuse sources such as the use in the pharmaceutical industry (acetonitril), use at downstream user sites (methyl methacrylate), and the use in a diversity of processes and applications (toluene) (see for further details Commission Recommendation 2004/394/EC). The Marketing and Use Directive is often put forward as an effective means to reduce risks of substances with a wide spread risk throughout the Community. It may be limited to specific products containing the substance or to specific activities, for example the recommendations to reduce the risks of acrylamide propose to restrict the use of acrylamide in grouts for small and large-scale applications at Community level.

Repeatedly, it is recommended to include a substance in the ongoing work to develop guidance on 'Best Available Techniques' (BAT) in order to facilitate permitting under the IPPC (96/61/EC): 'It is recommended that Member States should carefully monitor the implementation of BAT by permitting and report any important developments to the Commission in the framework of the exchange of information on BAT' (e.g. Commission Recommendation 2004/394/EC for acetonitril, acrylonitril, hydrogen fluoride, hydrogen perioxide, methyl methacrylate and toluene).

For the reduction of risks of nonylphenol for the environment, it is referred to the Pesticides Directive: 'For use in pesticides as an active substance, within the legislative framework currently in force at Community level for plant protection products, national authorities when granting authorisation decisions and in particular in cases where significant environmental impact is already experienced at local level should take into due consideration the results of the risk assessment. In such cases encouragement should be given to the development and use of alternatives to nonylphenol and nonylphenol ethoxylates' (Commission Recommendation 2001/838/EC).

The recommendations do not always refer to other European legislation, but may also provide other means to manage the risks. To manage the risks of acrylic acid, it is recommended to regulate general conditions for use at EU level, including requirements on comprehensive training of planners and field personnel and to establish a harmonised European testing and assessment scheme for chemical grouts. In the case of acrylamide, it was indicated in the recommendations that further work may be necessary to determine if derogations can be justified. For nonylphenol, the results of the proposed measures should be monitored and, if necessary, additional measures should be considered, including other Community instruments. This last part of the recommendation is

formulated broadly and gives room for various directed measures. Examples of other measures are also given in the EC report on waste water and sewage sludge (EC, 2001c).

Cross references in European legislation

During the evaluation of the directives and regulations, lack of cross references in legislation came forward. At times, these references are made explicitly, but in other cases reference is only made indirectly or inexplicitly. In the discussion above, the references in the WFD to 'other relevant legislation' is already contemplated upon. Although it is clear that 'other relevant legislation' is taken aboard for liability reasons, transparency of European legislation would be greatly improved by avoiding general descriptions when referring to other European legislation. In the case of the Water Framework Directive, an overview of cross links in secondary sources, e.g. a guidance document, would greatly enhance the applicability of legislation for implementing measures. It would also prevent similar work carried out in various Member States.

For risk reduction and emission control, several directives and regulations are of relevance, but most of them cope with a limited range of substances, applying dissimilar rules. The need for similar procedures under different directives and regulations is visualised by the occurrence of several substance lists, e.g. the priority lists of the WFD, and the Existing Substances Regulation, and the lists of the POPs Directive and the Dangerous Substances Directive (see Appendixes V, VIII and chapter 3.8). These lists have been created under directives serving different purposes and therefore, may contain different limits and values.

Führ (2004) came up with a suggestion to improve and clarify connections between various directives. At the moment, no legal links and no administrative guidelines exist how to use risk assessment results from the Existing Substances Directive, the Plant Protection Products Directive and the Biocide Directive, within the framework of the WFD, the IPPC and the Dangerous Substances Directive. So called Predicted No Effect Concentrations (PNEC values) generated within the risk assessments can be considered as Environmental Quality Standards (EQSs) for the WFD, IPPC and the Dangerous Substances Directive (Führ, 2004), hereby establishing clear and binding connections between legislation covering risk assessment and legislation defining quality standards. Although this practice has been applied in the proposals for the environmental quality standards in the daughter directive of the WFD it has not been formalised in the guidance for deriving these environmental quality standards. The Scientific Committee on toxicity, ecotoxicity and the Environment (CSTEE) had a similar comment, but also indicated that there are important distinctions between PNECs and environmental quality standards which should be made more explicit in a guidance (Scientific Committee on toxicity, ecotoxicity and the Environment, 2004). Some of the differences between the guidance for risk assessment under the Existing Substances Directive (TGD) and the guidance for the derivation of environmental quality standards for the WFD have been elucidated in Vos and Janssen (2005).

Previously, the Commission recognised the need for harmonisation of data and the need for consistency in terminology used in Directives and Regulations. The special Commission report on water pollution (98/C 191/02) stated that 'Considerable differences exist between the terminology used by the Commission and that used by other organisations for certain definitions in the Directives and Regulations. Use of a uniform terminology is essential, not only for scientific purposes, but also for the preparation of inventories of water pollution which are required by almost all important Directives.'

Figure 1 gives a simplified overview of the relations between the European legislation as far as discussed in this report.

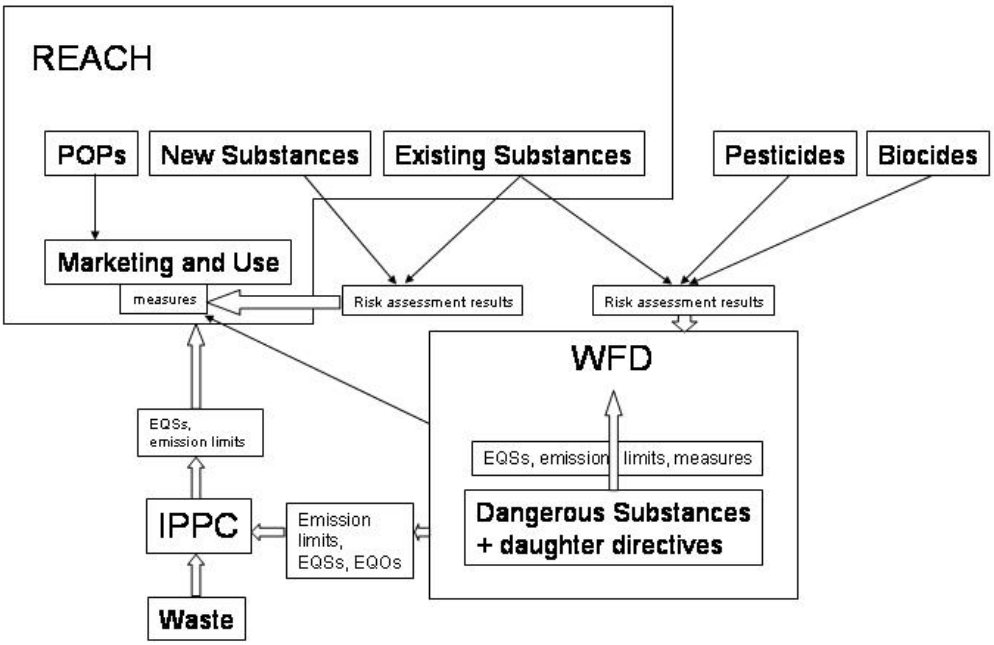

Figure 1 Coherence of the legislation as far as discussed in this report.
POPs = New POPs Directive 850/2004/EC, New Substances = 67/548/EEC and 93/67/EEC, Existing Substances = Regulation 793/93/EEC, Marketing and Use = Marketing and Use Directive 76/769/EEC, Pesticides = Pesticides Directive 91/414/EEC, Biocides = Biocides Directive 98/8/EC, Waste = Waste Directive 75/442/EEC, Dangerous Substances = Dangerous Substances Directive 76/464/EEC. REACH takes over the New POPs Directive, the New Substances Directives, the Existing Substances Regulation and the Marketing and Use Directive. The New POPs Directive supplements the Marketing and Use Directive. Risk assessment results performed under the New Substances Directives and the Existing Substances Regulation are taken into account during the formulation of measures under the Marketing and Use Directive. The results of risk assessment under the Plant Protection Products and Biocides Directives and the Existing Substances Regulation are used for the selection of the Priority substances and for the formulation of measures. The Dangerous Substances Directive is repealed phase-wise by and is implemented in the WFD. The Waste Directive and the Dangerous Substances Directive with their EQSs are taken into account by the IPPC. The EQSs and measures of the IPPC are implemented in the WFD. Demands of the WFD may result in measures under the Marketing and Use Directive or the IPPC.

A substance based approach

One limitation of the approach followed in this report has already been mentioned in this discussion. The study focuses on European legislation and only a number of generic directives and regulations applicable to a large range of different substances and measures are selected. However, among the European directives and regulations, which are thought to be useful in taking measures, there are quite a number confined to only one substance or a group of substances and/or specific applications of the substances considered. Examples are directives related to mercury discharges by the chlor-alkali electrolysis industry (82/176/EEC), to cadmium, mercury and lead in batteries (91/157/EEC), to various substances in electric and electronic equipment (2002/95/EC) and to the disposal of PCBs and PCTs (76/403/EEC).

For a correct implementation of the WFD, Member States should carry out a risk analysis on the substance considered, define the most important pollution sources and transfer routes and than continue with finding the most relevant legislation for taking measures. This should include the legislation referred to in the WFD as well as 'other relevant legislation'. However, the number of relevant directives and regulations can be numerous and are not always easy to trace back. Screening of the legislation in EUR-LEX on four different substances showed a large variation in the amount of legislation in which these substances are mentioned, in the amount of legislation, which can be useful for taking measures and in the disciplines (e.g. water protection, waste management) (Table 4). For instance, for PCBs the various waste directives and the POP regulation are important, but they are not for trichloromethane. See the table below for an overview of EUR-LEX hits per substance. Substances are only mentioned in legislation, if the legislation contains specific measures, quality standards or emission limit values for these substances. More generic legislation, not mentioning the various substances, are not identified by this search on EUR-LEX. The presence of specific legislation and the lack of overview of the various directives and regulations for each substance hampers taking the right measures.

Table 4. Number of regulations and directives mentioned in EUR-LEX for four different substances

	EUR-LEX hits on substance name	Total relevant for measures
Mercury	277	98
Cadmium	158	52
PCBs	54	46
trichloromethane	3	19

The European Commission have proposed strategies or action programmes to limit the environmental pollution by certain substances which are considered to be a problem at Community level. Examples are the Community Strategy for Dioxins, Furans and Polychlorinated Biphenyls (COM (2001) 593 final) and the Community Action Programme to combat environmental Pollution by cadmium. (OJ C 30, 4.2.1988, p. 1.).

'The Council Resolution of 25 January 1988 on a Community action programme to combat environmental pollution by cadmium(5) invites the Commission to pursue without delay the development of specific measures for such a programme. Human health also has to be protected and an overall strategy that in

particular restricts the use of cadmium and stimulates research into substitutes should therefore be implemented. The Resolution stresses that the use of cadmium should be limited to cases where suitable and safer alternatives do not exist.'

Directives may be related to these action programmes, such as the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, which refer to the Action Programme for cadmium. Member States may use these action programmes to find relevant directives and regulations or to support their argumentation for certain measures. Action programmes are available for a limited number of substances. The Marketing and Use Directive (CONSLEG version) may be a good additional source of measures for various substances which have been agreed on on European level.

European versus national measures

The choice between European versus national measures depends on the size and seriousness of the problem and the ease to solve the problem on European scale in order to prevent competition on the internal market. The European Commission generally advocates that large problems should be solved on European level and that local emissions to the environment should, where necessary, be controlled by national rules to ensure that no risk for the environment is expected (EC, 2004b).

In the introduction, the WFD proposes measures for the priority hazardous substances at European level. 'Pollution through the discharge, emission or loss of priority hazardous substances must cease or be phased out. The European Parliament and the Council should, on a proposal from the Commission, agree on the substances to be considered for action as a priority and on specific measures to be taken against pollution of water by those substances, taking into account all significant sources and identifying the cost-effective and proportionate level and combination of controls.' For hazardous substances in general a local or national approach incorporated in the river basin plans is proposed according to article 11 of the WFD.

The reason for a Community wide approach may be the fact that the pollution by a substance is a Community wide problem, which can only be solved by Community measures or it may result from the fact that different national policies hamper the effectiveness of measures. Examples of the first are measures taken within the framework of the Existing Substances Regulations for trichlorobenzene and acrylamide (see European Commission, 2004b). Examples of the latter are given in the introduction of the Directive on waste electrical and electronic equipment (2002/96/EC) and in introduction of the Directive on the incineration of waste (2000/76/EC) where it is stated that there is a need to take action at the level of the Community because of the principles of subsidiarity and proportionality, making reference to Article 5 of the Treaty.

Member States often advocate a community wide approach in taking measures as it prevents similar work to be carried out in various Member States and because they may fear that without any control there would be great differences in the level of implementation of the risk reduction measures in the various Member States. Also, national or local measures in one or more Member States may neglect unknown sites and

potential new sites and ignore potential risks in new Member States (EC, 2004b; Kwisthout, 2005). On the other hand, Member States may regard measures at Community level to be disproportionate if pollution only occurs from a few point sources. Practice shows that Member States are not always on one line considering the measures to be taken (EC, 2004b).

‘Toluene was identified as a risk due to both production and downstream use and has been found to have a wide spread occurrence in the European aquatic environment. Therefore, it was found proportionate to recommend that this substance should be considered for inclusion in Annex X of the WFD (2004/394/EC). A number of Member States have argued that adding substances to the Annex X of the WFD is disproportionate if pollution only occurs from a few point sources and contended that the process of adding a substance to the WFD Annex takes too long as it is only updated every 4 years’ (EC, 2004b).

National provisions

European Regulations have to be implemented directly, without a translation to the national situation (Van Rijswick, 2001). Community directives oblige Member States to translate community legislation into national legislation. National legislation is not allowed to be less strict than the European legislation, but may lay down more stringent demands, although demands have to be reasonable. In any case, the national measures may not lead to distortion of competition between the Member States (article 95 of the Treaty establishing the European Community). Examples of stricter legislation laid down by individual Member States are the national provisions establishing more restrictions to the marketing and use of creosote treated wood in the Netherlands (Commission Decision 2002/59/EC) and to the cadmium level in fertilisers in Sweden (Commission Decision 2002/399/EC). In the case of provisions on short chained chlorinated paraffins (SCCPs) the Netherlands pointed out that the provisions it requested were necessary in order to comply with its international obligations under the PARCOM Convention (2003/549/EC). Sometimes provisions are also reason for measures at Community level. In the latter case reference is made to article 95(7) of the Treaty that states: ‘When pursuant to paragraph 6, a Member State is authorised to maintain or introduce national provisions derogating from a harmonisation measure, the Commission shall immediately examine whether to propose an adaptation to that measure.’

The Notification Directive 98/34/EC (laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services) constrains Member States to inform the Commission of new subjects for which the national bodies have decided. These new subjects encompass transposition of international legislation and new national legislation. Article 8(1) of the Notification Directive: ‘Where, in particular, the draft seeks to limit the marketing or use of a chemical substance, preparation or product on grounds of public health or of the protection of consumers or the environment, Member States shall also forward either a summary or the references of all relevant data relating to the substance, preparation or product concerned and to known and available substitutes, where such information may be available, and communicate the anticipated effects of the measure on public health and the protection of the consumer and the environment, together with an analysis of the risk carried out as appropriate in accordance with the general principles for the risk evaluation of chemical substances as

referred to in Article 10(4)of Regulation (EEC) No 793/93 in the case of an existing substance or in Article 3(2) of Directive 67/548/EEC, in the case of a new substance.' Thus, deviations of European legislation have to be notified to the Commission and are restricted to certain conditions. The Notification Directive aims to evaluate if Community measures have to be taken on basis of the proposed national measures and can be brought into action to bring specific hazardous substances or measures to the attention of the European Commission. A first evaluation has to reveal if these substances are a local or a European-wide problem. If the problem is only local, the substance will not be forwarded for regulation at European level. Nevertheless, the evaluation performed under the Notification Directive information may still be useful, e.g. for the IPPC and for Member States considering national measures for river basin specific pollutants under the WFD (EC, 2004b).

Diffuse source pollution

The WFD specifically refers to diffuse sources (article 10 of WFD), but no specific approach for measures for diffuse sources is recommended or proposed. The WFD even lacks a definition of diffuse source pollution. Nevertheless, the WFD demands the establishment of EQSs for Priority Substances and for substances to be regulated in the River Management Plans. EQSs may reduce diffuse pollution by acting as safeguard, assuring that diffuse pollution is not neglected when regulating pollution by certain substances.

The European Commission requires a clear link between the pollution source and the effects on the environment before measures are specified. However, such a link is hard to establish in the case of diffuse sources. Therefore, it is to be foreseen that certain Member States may not be able to reach concentrations below the EQSs for substances with large diffuse sources and thus can not fulfil the obligations of the European Commission.

There are tight legislative controls over point source pollution, but contamination from diffuse sources is much more difficult to regulate. Diffuse source pollution cannot be attributed to a clearly identifiable, specific physical location, complicating the formation of effective measures. 'Diffuse pollution is generally associated with atmospheric deposition, certain farming practices and inadequate waste and wastewater recycling and treatment' (EC, 2002; COM(2002)179). Passing on of pollution from one to the other compartment complicates the identification of the pollution sources further. A search on EUR-LEX learned that 'diffuse sources' were mostly mentioned for air pollution and some for groundwater pollution (nitrates). Also, the daughter directives of the Dangerous Substances Directive came forward, which prescribe limit values and quality objectives for certain hazardous substances. However, actual additional European legislation specifically aiming to regulate diffuse source pollution of water and proposing measures and controls were not found.

The most relevant compartments which may pass substances to the water compartment by diffuse pollution are air and soil. Council Directive 96/62/EC is commonly known as the Framework Directive of Air. It lists a number of atmospheric pollutants for which the

Commission proposes limit values. The air limit values are laid down in separate daughter directives (e.g. 1999/30/EC for sulphur dioxide, oxides of nitrogen, particulate matter and lead, 2000/69/EC for benzene and carbon monoxide, 2002/3/EC for ozone and 2004/107/EC for arsenic, cadmium, mercury, nickel and PAHs). These limit values take into account eventual harmful effects on human health and the environment as a whole. Thus, also effects on other environmental compartments have to be considered while establishing the air limit values. The Framework Directive for Air obliges Member States to take the necessary measures to comply with the limit values. The legislation under the Framework Directive for Air is connected with Council Decision on the approval, on behalf of the European Community, of the Protocol to the 1979 Convention on Long-range Transboundary Air Pollution on Heavy Metals (2001/379/EC). Best available techniques for air emissions of various industries have been described in the proposal for this decision (2000/0082 CNS, COM(2000) 177 final).
There are no directives directly dedicated to the protection of the soil compartment. Threats to the soil compartment are covered by a wide range of directives and regulations such as the Directive on the use of sewage sludge in agriculture (86/278/EEC), which even contains limit values for concentrations of heavy metals in soils, the Landfill Directive (1999/31/EC) and the Fertiliser Directive (2003/2003/EC). In 2002 a Communication entitled ‘Towards a thematic strategy for soil protection’ (COM(2002) 179 final) was published by the Commission as there was a need coordinate the activities under various European legislation. Although several parties would favour a Directive covering all kinds of threats to the soil compartment it is very doubtful if such a Soil Framework Directive will appear in due time. As indicated by the European Soil Bureau in there future perspectives: ‘The development of a coherent approach to soil protection within the EU will take time. In the long term, a 'soil framework directive' may be the appropriate instrument to achieve fully the goals outlined in the soil protection strategy. Nevertheless, some initial steps are already possible within the existing legislative framework.’ (European Soil Bureau, 2005).
In order to promote measures for specific substances, Member States may propose substances to be incorporated in directives and regulations that focus on the fate of the substances considered and that require a risk assessment. Examples of such directives and regulations have been given in chapter 3. The measures proposed in these risk assessments may include measures to reduce diffuse source pollution. Even in these cases the requirement of the Commission to identify the sources on one hand and the obligation to reach the EQS on the opposite may cause serious problems.

Routes to bring substances and measures to the attention of the EC
The notification procedure has already been discussed above. Other routes for Member States to bring substances and measures to the attention of the EC are proposing substances for the inclusion in the priority lists of the Existing Substances Regulation, as outlined in chapter 3.3 of the present report. In article 16(2) of the WFD, it is stated that the EC proposes substances for the inclusion in the Priority List of the WFD. Substances

are prioritised on basis of risk assessment under the Existing Substances Regulation, the Pesticides and Biocides Directives. In article 16(5) of the WFD it is added that: 'In preparing its proposal [for Priority Substances], the Commission shall take account of recommendations from the Scientific Committee on Toxicity, Ecotoxicity and the Environment, Member States, the European Parliament, the European Environment Agency, Community research programmes, international organisations to which the Community is a party, European business organisations including those representing small and medium-sized enterprises, European environmental organisations, and of other relevant information which comes to its attention.' This suggests that various players can propose or oppose hazardous substances for inclusion in the WFD Priority Lists and that routes to bring substances to the attention of the European Commission are varied.
In article 12 of the WFD, 'Issues that can not be dealt with at Member States level' are discussed:

'1. Where a Member State identifies an issue which has an impact on the management of its water but cannot be resolved by that Member State, it may report the issue to the Commission and any other Member State concerned and may make recommendations for the resolution of it.
2. The Commission shall respond to any report or recommendations from Member States within a period of six months.'

According to van Rijswick (2001), the WFD pursuits with this article integration of water management with other policy areas. The integration of other policy areas has as aim to reach the environmental goals of the WFD; good quality of surface and groundwater. If a Member State is not able to take adequate measures to reach the WFD aims, it can ask the Commission to take measures. This might be the case when instruments from other policy areas are necessary to meet up with the requirements of the WFD.

The preparation and implementation of European legislation is a long term process of which the outcome is often uncertain. There is a variety of players within and outside the Commission that may affect this process in various ways. Information on this process can be gained through formal documents in the procedure tracking service in Oeil under EUR-LEX. (http://www2.europarl.eu.int/oeil/search.jsp?form=/reference/legislativeacts).
The process to get to implementation of measures for reducing the risks of substances following a risk assessment within the Existing Substances Directive (793/93/EEC) bare a lot of similarities to the abovementioned process. Key players are the various DGs within the Commission, the Member States and representatives of industry. Member States willing to play a role in this process can act in various stages of this process, but knowledge on the players and their background is indispensable in doing the right thing.
One example of role of different European directorates can be derived from a 2001 advice by the Economic and Social Committee (ESC) on waste: 'The Economic and Social Committee wishes to see evidence of an integrated approach' and indicates that the area of waste management is of particular importance. Implementation may be hindered by the initiatives of other DGs on related directives. The ESC is aware that DG SANCO is going to submit an own legislative proposal which may interfere with an initiative to renew 86/278/EEC [paragraph 10.2, Opinion of the ESC 2001/C14/26].
Examples in which the aim of the Commission conflict that of one or more Member States are provided in the chapter on POPs (chapter 3.8) and in the discussion on national

provisions. These conflicts may rise from mixed competence between the European Commission and the individual Member States considering international treaties.
An analysis on the efforts of the Electronic Industry to change the content of the draft Directive on Waste from Electrical and Electronic Equipment (2002/95/EC) is provided in Wavra (2000). A short impression of this document is given at the end of chapter 3.4.

Conclusions and recommendations
This study aimed to elucidate the scope, extent, possibilities and limitations of some directives and regulations related to measures demanded by the WFD. It gives an overview of directives and regulations to be used as tool for emission control. This report only analysed nine of the more extensive directives and regulations. Elaborating the legislation on a few selected substances showed that many of the smaller directives may also offer possibilities in specific cases. Thus, it was concluded that suitability of a directive and regulation has to be judged on a case-by-case basis (substance by substance), and that this may be laborious as guidance is lacking. Before implementing measures, the pollution sources have to be identified and emission has to be quantified. Then, suitable legislation at national and European level has to be sought and judged for applicability. Among suitable measures may be economical and voluntary measures, but these categories of measures are not considered and assessed in the present report.
Even though the WFD is developed to integrate Community policy on water, the WFD lacks clarity on which specific Community legislation should be considered by Member States when defining national water legislation. Guidance, such as a decision tree, is considered to be appropriate and desirable to facilitate Member States to fulfil their responsibilities formulated in Community legislation, since the Member States are the ones that have to admit liability for the implementation and execution of duties enforced at Community level. Although it is not possible to refer to all relations between relevant directives and regulations, it would be recommendable to minimise general descriptions of European legislation. Establishment of risk assessment results within the procedure of quality standards derivation would elucidate the relation between risk assessment legislation and legislation formulating quality standards. Member States willing to play a role in the process to get measures implemented can act in various stages of the process of development of new legislation, but knowledge on the players and their background is indispensable in doing the right thing. Especially in the case of diffuse sources the requirement of the Commission to identify the sources on one hand and the obligation to reach the EQS on the opposite may cause serious problems for the Member States in implementing effective measures.

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Appendix I Legislation referred to in WFD, draft daughter directive for EQSs and emission controls and draft daughter directive for groundwater

This Appendix is the result of scanning the WFD and its daughter directives on EQSs and emission controls (EC, 2004a) and on groundwater (EC, 2003c) for directive and regulation numbers. If legislation was relevant for measures or emissions, they were included in the list below, in order of occurrence.

Legislation number	Title	WFD	daughter on EQSs and emission control[9]	daughter on groundwater[10]
80/68/EEC	Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances	introduction (3): has to be revised 22 (2): repealed 13 years after entry into force of WFD		introduction: repealed by WFD, article 7: until 2013 measures of 2000/0210 have to be implemented in granting permits
94/157/EC	Council Decision of 21 February 1994 on the conclusion, on behalf of the Community, of the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention as revised in 1992)	introduction (21): WFD contributes to enable to meet obligation of this directive		
98/249/EC	Council Decision of 7 October 1997 on the conclusion of the Convention for the protection of the marine environment of the north-east Atlantic	introduction (21): WFD contributes to enable to meet obligation of this directive		
77/585/EEC	Council Decision of 25 July 1977 concluding the Convention for the protection of the Mediterranean Sea against pollution and the Protocol for the prevention of the pollution of the Mediterranean Sea by dumping from ships and aircraft	introduction (21): WFD contributes to enable to meet obligation of this directive		
83/101/EEC	Council Decision of 28 February 1983 concluding the Protocol for the protection of the Mediterranean Sea against pollution from land-based sources	introduction (21): WFD contributes to enable to meet obligation of this directive		
95/308/EC	Council Decision of 24 July 1995 on the conclusion, on behalf of the Community, of the Convention on the protection and use of transboundary watercourses and international lakes	introduction (35): WFD is to contribute to the implementation of this directive		
80/778/EEC	Council Directive 80/778/EEC of 15 July 1980 relating to the quality of water intended for human consumption No longer in force	introduction (37) and article 7(2), Annex VI: WFD is to comply with this directive;		

[9] European Commission (2004a). Draft directive of the European Parliament and of the Council on environmental quality standards and emission controls in the field of water policy and amending Directive 2000/60/EC and 96/61/EC.
[10] European Commission (2003c). Proposal for a directive of the European Parliament and of the Council on the protection of groundwater against pollution.

		in list of measures to be included		
1999/468/EC	1999/468/EC: Council Decision of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission	introduction (50) and article 21 (2): measures of WFD should be adopted according to procedures described in 1999/468/EC		introduction: measures of 2000/0210 should be adopted according to procedures described in 1999/468/EC
76/464/EEC	Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community	introduction (52), article 22 (2) and article 22 (3) and (6), Annex II 1.4, Annex IX: repealed 13 years after entry into force of WFD; priority substances of directive 76/464/EEC are replaced by WFD; methodology of WFD may be used for 76/464/EEC; WFD QS should be ≤ QS 76/464/EEC		
98/83/EC	Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption	article 2 and 7, Annex VI: resulting water has to meet requirements of directive 98/83/EC; in list of measures to be included		
96/61/EC	Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control	article 10 (2), article 22 (4) and (5), Annex II, 1.4, Annex VI: WFD demands implementation of this Directive[11], estimation and identification of significant point source pollution according to 96/91/EC; in list of measures to be included in WFD	article 10, article 11(1, 2): inclusion of 96/61/EC measures for installations following under 96/61/EC article 15 : amendment of permit conditions	
91/271/EEC	Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment	article 10 (2), Annex II 1.4, Annex VI: WFD demands implementation of this Directive	article 11 (3): waste water treatments established under 91/271/EEC have to help	

[11] p. 5 of EC (2004b): EU-wide emission limit values for single substances under IPPC is not supported by the Commission (communication Commission of 19.06.2003)

			achieve WFD objectives	
91/676/EEC	Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources	article 10 (2), Annex II 1.4, Annex IV.1, Annex VI: WFD demands implementation of this Directive, implementation of designated habitats by 92/43/EEC; in list of measures to be included		
793/93/EEC	Council Regulation (EEC) No 793/93 of 23 March 1993 on the evaluation and control of the risks of existing substances	article 16 (2): prioritising of substances identified by this directive		
91/414/EEC	Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market	article 16 (2) and article 16 (6), Annex II 1.4, Annex VI: prioritising of substances identified by this directive; in list of measures to be included	Article 7(4a): Member States review national authorisation	
98/8/EC	Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market	article 16 (2) and (6), Annex II 1.4: prioritising of substances identified by this directive	Article 7(4a): Member States review national authorisation	
75/440/EEC	Directive 75/440/EEC of 16 June 1975 concerning the quality required of surface water intended for the abstraction of drinking water in the Member States	article 22 (1), Annex II 1.4: repealed 7 years after entry into force of WFD, incorporation of information gathered under 75/440/EEC		
77/795/EEC	Council Decision 77/795/EEC of 12 December 1977 establishing a common procedure for the exchange of information on the quality of surface freshwater in the Community	article 22 (1), Annex V 1.3.1: repealed 7 years after entry into force of WFD; monitoring points from 77/795/EEC should be considered		
79/869/EEC	Council Directive 79/869/EEC of 9 October 1979 concerning the methods of measurement and frequencies of sampling and analysis of surface water intended for the abstraction of drinking water in the Member States	article 22 (1): repealed 7 years after entry into force of WFD		
78/659/EEC	Council Directive 78/659/EEC of 18 July 1978	article 22 (2),		

	on the quality of fresh waters needing protection or improvement in order to support fish life	Annex II 1.4: repealed 13 years after entry into force of WFD; incorporation of information		
79/923/EEC	Council Directive 79/923/EEC of 30 October 1979 on the quality required of shellfish waters	article 22 (2), Annex II 1.4: repealed 13 years after entry into force of WFD, incorporation of information		
80/68/EEC	Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances	article 22 (2): repealed 13 years after entry into force of WFD		
76/160/EEC	Council Directive 76/160/EEC of 8 December 1975 concerning the quality of bathing water	Annex II 1.4, Annex IV.1, Annex VI: continuation of collection of information for river basin management plan; implementation of water bodies designated by 76/160-EEC; in list of measures to be included		
92/43/EEC	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora	Annex IV.1, Annex VI: implementation of habitats designated by 92/43/EEC; in list of measures to be included		
79/409/EEC	Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds	Annex IV.1, Annex VI: implementation of habitats designated by 92/43/EEC; in list of measures to be included		
96/82/EC	Council Directive 96/82/EC of 9 December 1996 on the control of major-accident hazards involving dangerous substances	Annex VI: in list of measures to be included		
85/337/EEC	Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment	Annex VI: in list of measures to be included		
86/278/EEC	Council Directive 86/278/EEC of 12 June 1986 on the protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture	Annex VI: in list of measures to be included		
82/176/EEC	Council Directive 82/176/EEC of 22 March 1982 on limit values and quality objectives for mercury discharges by the chlor-alkali electrolysis industry	Annex IX: limit values and quality objectives used as emission limit	Article 1(d), Article 16: shall be repealed	

		values and environmental quality standards		
83/513/EEC	Council Directive 83/513/EEC of 26 September 1983 on limit values and quality objectives for cadmium discharges	Annex IX: limit values and quality objectives used as emission limit values and environmental quality standards	Article 1(d), Article 16: shall be repealed	
84/156/EEC	Council Directive 84/156/EEC of 8 March 1984 on limit values and quality objectives for mercury discharges by sectors other than the chlor-alkali electrolysis industry	Annex IX: limit values and quality objectives used as emission limit values and environmental quality standards		
84/491/EEC	Council Directive of 9 October 1984 on limit values and quality objectives for discharges of hexachlorocyclohexane	Annex IX: limit values and quality objectives used as emission limit values and environmental quality standards	Article 1(d), Article 16: shall be repealed	
86/280/EEC	Council Directive of 12 June 1986 on limit values and quality objectives for discharges of certain dangerous substances included in List I of the Annex to Directive 76/464/EEC	Annex IX: limit values and quality objectives used as emission limit values and environmental quality standards	Article 1(d),; Article 2(3), Article 16: repealed, establishing measures for substances of 86/280/EEC	
REACH [COM 2003 0644 (03) final]	Proposal for a Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency and amending Directive 1999/45/EC and Regulation (EC) {on Persistent Organic Pollutants}		Article 12: pollutants under REACH for which point sources are not considered are regulated through non-paper and WFD	
84/156/EEC[12]	on limit values and quality objectives for mercury discharges by sectors other than the chlor-alkali electrolysis industry		Article 1(d), article 16: repealed	
88/347/EEC	Council Directive 88/347/EEC of 16 June 1988 amending Annex II to Directive 86/280/EEC on limit values and quality objectives for discharges of certain dangerous substances included in List I of the Annex to Directive 76/464/EEC		Article 16: shall be repealed	
90/415/EEC	Council Directive 90/415/EEC of 27 July 1990 amending Annex II to Directive 86/280/EEC on limit values and quality objectives for discharges of certain dangerous substances included in list I of the Annex to Directive 76/464/EEC		Article 16: shall be repealed	
89/106/EEC	Council Directive 89/106/EEC on the approximation of laws, regulations and administrative provisions of the member states relating to construction products			
1600/2002/EC				introduction

12 wrongly indexed in the daughter directive as 84/456/EEC

Appendix II Legislation referring to the WFD

This Appendix is the result of scanning EUR-LEX for reference to the WFD (2000/60/EC) ranked by legislation number.

Legislation number	Title	compounds
2004/394/EC	Corrigendum to Commission Recommendation 2004/394/EC of 29 April 2004 on the results of the risk evaluation and the risk reduction strategies for the substances: acetonitrile; acrylamide; acrylonitrile; acrylic acid; butadiene; hydrogen fluoride; hydrogen peroxide; methacrylic acid; methyl methacrylate; toluene; trichlorobenzene (Official Journal of the European Union L 144 of 30 April 2004)	acetonitrile; acryl-amide; acrylonitrile; acrylic acid; butadiene; hydrogen fluoride; hydrogen peroxide; methacrylic acid; methyl meth-acrylate; toluene; trichlorobenzene
2004/35/CE	Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage	
2003/549/EC	2003/549/EC: Commission Decision of 17 July 2003 extending the period referred to in Article 95(6) of the EC Treaty in relation to the national provisions on the use of short-chain chlorinated paraffins notified by the Netherlands under Article 95(4) (Text with EEA relevance) (notified under document number C(2003) 2539)	
2003/53/EC	Directive 2003/53/EC of the European Parliament and of the Council of 18 June 2003 amending for the 26th time Council Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations (nonylphenol, nonylphenol ethoxylate and cement)	nonylphenol, nonylphenol ethoxylate and cement
2003/35/EC	Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC - Statement by the Commission	
807/2003/EC	Council Regulation (EC) No 807/2003 of 14 April 2003 adapting to Decision 1999/468/EC the provisions relating to committees which assist the Commission in the exercise of its implementing powers laid down in Council instruments adopted in accordance with the consultation procedure (unanimity)	
2003/33/EC	Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC	
1600/2002/EC	Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme	
2002/272/EC	Commission Decision of 25 March 2002 establishing the ecological criteria for the award of the Community eco-label to hard floor-coverings (Text with EEA relevance) (notified under document number C(2002) 1174)	
2455/2001/EC	Decision No 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive 2000/60/EC (Text with EEA relevance)	
C(2001) 3380	Commission Recommendation of 7 November 2001 on the results of the risk evaluation and the risk reduction strategies for the substances: acrylaldehyde; dimethyl sulphate; nonylphenol phenol, 4-nonyl-, branched; tert-butyl methyl ether (Text with EEA relevance.) (notified under document number C(2001) 3380)	acrylaldehyde; dimethyl sulphate; nonylphenol phenol, 4-nonyl-, branched; tert-butyl methyl ether
2001/42/EC	Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment	
2000/60/EC	Commission Decision of 21 December 1999 approving the plan for the monitoring and control of salmonella in fowl presented by Austria (notified under document number C(1999) 4691) (Only the German text is authentic)	

Appendix III Report of the workshop on the 4th of November 2004: 'Horizontal tuning in of the Water Framework Directive with other EU-legislation in relation to substances'

Attendants: Ger Ardon (VROM/BWL, chairman), Trudie Crommentuijn (VROM/BWL), Jeanette Plokker (V&W/RIZA), Harm Oterdoom (V&W/DGW), Gerrit Niebeek (V&W/DGW), Arnold van der Wielen (VROM/SAS), Martine van der Weiden (VWS), Wieke Tas (VWS), Jan de Rijk (VROM/BWL), Rein Eikelboom (VROM/BWL), Ton Breure (RIVM/LER), Ton Bresser (MNP/DMN), Bob Dekker (V&W/DGW), Murk de Roos (VROM/BWL), Kaj Locher (VROM/SAS), Mario Adams (VROM/SAS), José Vos (RIVM/SEC, report), Martien Janssen (RIVM/SEC, report), Just Heldring (Heldring advies), Martin Keve (V&W/DWW), Janine van Aalst (V&W/CEND), Edwin Koning (VROM/IMZ)

Ger Ardon was chairman for the day and opened the workshop after which Trudie Crommentuijn gave a short introduction. She sketched the extensiveness of the scope of the Water Framework Directive (WFD). The daughter Directive Priority Substances is an extended part of the WFD. Trudie Crommentuijn indicated that there is no full overview yet of directives related to the WFD, playing a role or having potential to play a role in emission control. Also, there is no insight yet how to create support for Dutch ideas at European level. Aim of the present workshop was to gain more insight in the abovementioned topics through discussion of representatives of different parties. It was decided to lay down the discussions during the workshop, as well as possible links between the WFD and other EU-legislation, considering measures to be taken on priority substances, in a RIVM report.
Arnold van de Wielen gave an introduction on REACH, Martine van der Weiden on the Marketing and Use Directive (76/769/EEC), Wieke Tas on Biocides (98/8/EC) and Pesticides (91/414/EEC), Rein Eikelboom on substances in construction material (89/106/EEC) and Jeanette Plokker on EMR/OSPAR.

REACH focuses on risk assessment of substances that are brought onto the market. The industry is responsible for the greatest part of the risk assessment, whereas the public authorities have an auditing function. REACH is meant to increase the consciousness of the industry, knowledge and assertiveness of NGO's and to create an auditing function at the public authorities. Substances are prioritised according to volume of production and marketing extent and their CMR-characteristics. Arnold van der Wielen described that getting to a finalised REACH Directive is as a complex process. Tuning in to the WFD is difficult. REACH is mentioned in one paragraph of the draft daughter Directive on Priority Substances. This is only to cover for the fact that measures for water are explicitly kept out of REACH.

The Marketing and Use Directive (76/769/EEC) is focussed on existing substances. Use of CMR- and PBT-substances and POPs can be discouraged by total prohibition or by

restrictive measures. In many cases, such measures are the result of risk assessment of a substance standing on one of the four priority lists of Regulation 793/93/EEC (existing substances).

The Plant Protection Directive (91/414/EEC) and the Biocide Directive (98/8/EC) are both marketing directives. Substances are allowed to be marketed if they meet the safety requirements. Substance assessment takes place every 10 years. The directives result in a European list of active substances that may be marketed. After this assessment at EU level, admittance by the Member States takes place. In the Netherlands, this takes place through the Dutch pesticide legislation. Jan de Rijk described that in certain cases, admitted substances exceed the environmental quality standards. An example is isoproturon, which levels in the river Rhine resulted in the interruption of the intake for drinking water for a period of time. The risk assessment is based on certain assumptions of exposure (extent of use, dispersion and exposure routes) which do not always represent the actual situation well. It is suggested that this problem might not be solved though legislation, but can be solved through permit provision. Jeanette Plokker indicates that it might also be possible to achieve safe environmental levels of these substances through an explanation with best environmental practice.

Rein Eikelboom described the process around the Construction Products Directive (89/106/EEC). Aim of this Directive is to harmonise the common market and to prevent trade barriers. An important means to achieve this is uniform selection of relevant parameters and measuring techniques.
The number of relevant laws and directives related to substances in building material has been underestimated by most of the EU countries. In the Netherlands, there are about 40 relevant regulations and directives, whereas at EU level about 60 regulations and directives are relevant.
Generally, producers and traders have hardly any knowledge of and interest in substances in building materials. Producers and traders do not feel obliged to deal with substances in building material, if there is no legislation regulating these substances. Also at DG Environment, there is limited interest. Firstly, because building materials is not their main expertise, but probably also due to shortage of personnel. The Construction Products Directive is relevant for water in relation to e.g. lixiviation.

Jeanette Plokker elucidated the possibilities that the European marine strategy (EMR) and OSPAR offer to the WFD. The EMR aims to end emissions. The proposed marine quality standards in the daughter Directive on Priority Substances are only seen as intermediate aims. OSPAR used to function as try out or as pushers of own measures. Now, OSPAR mostly asks attention for their wishes at the EU (BAT and permit granting). However, there is a tension field between the two frameworks. OSPAR obligates to certain efforts, whereas the WFD obligates to specific results. Moreover, the priority substance lists of OSPAR and WFD are not the same. Jeanette Plokker gave the

problem around short-chained chloroparaffines as an example. The Netherlands came into conflict with the EU, because the Netherlands followed the stricter rules of the OSPAR Convention.

Bob Dekker first gave an historical overview. Then he addressed the possibilities how to get the Dutch points of view under the attention of the EC. A first possibility is addressing the responsible file keepers in Brussels. Before doing so, it would be helpful to find partners in other Member States. Lobbying via other DG's would be advisable, but it is hard to estimate accessibility beforehand. Lobbying through the industry in Brussels (CEFIC, Eurochlor) is thought to be more successful when, besides the Dutch branch (VNO/NCW, VNCI), foreign organisations (e.g. Germany) are involved. VNO/NCW mostly leaves the lobbying to the VNCI. For lobbying through environmental organisations, EEB and WWF are chanceful organisations. Other chances are thought to be found at civil/public level (Water Directors and EAF) and on political level (EU-parliament).

Directives explicitly mentioned in the WFD (2000/60/EC)
The directives mentioned in the WFD are discussed one by one to evaluate the possibilities they offer for substance policy.

76/769/EEC, Marketing and Use Directive – Martine van der Weiden indicated that this directive produces recommendations for measures. The directive gives the possibility for total prohibition and for prohibition through restrictive measures for production and use. The recommendations coming from 76/769/EEC should be implemented in the WFD. Jeannette mentioned that the WFD can also give recommendations in the direction of 76/769/EEC. Arnold, however, thought that the latter is a difficult process, because a complete dossier has to be turned in. Ger postulated that the process may be slow, but also may be successful at times. The prohibitions now carried out through 76/769/EEC, will be taken over by authorisation via REACH (going from 'no, unless' to the 'yes, if'-principle. Especially emission of the PBT substances would be most resentful. Also a number of other directives will be taken over by REACH (e.g. Existing Substances Directive, Dangerous Substances Directive).
Arnold van der Wielen mentioned that the paragraph on REACH in daughter directive Priority Substances is about giving permits. For the IPPC Directive the same accounts. Authorisation under REACH does not take into account emission to water. Emission to water should be regulated nationally. Emission to air (IPPC) and water (WFD) and medical appliances are not regulated by REACH.
Rein Eikelboom indicated that the Waste Directives should also be kept in sight and probably other directives, which do not primarily focus on substances, as well. Jeannette indicates that the Commission has a draft paper listing directives relevant for taking measures in the field of water pollution policy which is longer than the list that the RIVM

has provided for this workshop. The list of the Commission mentions directives related to e.g. waste, air, consumers and manure.

75/440/EEC – will be implemented in the WFD and repealed 7 years after entry into force of WFD.
76/169/EEC – not relevant for dangerous substances
76/464/EEC and daughter directives are to be implemented in the WFD
77/585/EEC – i.e. 94/157/EC
77/795/EEC – to be repealed
78/659/EEC – to be repealed, incorporation of information in WFD. Economically directed.
79/409/EEC – not relevant for dangerous substances
79/869/EEC – to be repealed
79/923/EEC – to be repealed, incorporation of information in WFD. Economically directed.
80/68/EEC – will be implemented in the WFD and to be repealed after implementation
80/778/EEC – no longer in force, not relevant
82/176/EEC – daughter of 76/464/EEC, to be repealed
83/101/EEC – i.e. 94/157/EC
83/153/EEC – daughter of 76/464/EEC, to be repealed
84/156/EEC – daughter of 76/464/EEC, to be repealed
84/491/EEC – daughter of 76/464/EEC, to be repealed
85/337/EEC – not aimed at specific substances
86/278/EEC – there is an amendment to this Directive on its way, but it is unclear when it will be on the agenda of the EC. Limit values of priority substances may be at stake. Also important for soil strategy. An European lobby may be necessary to get this amendment on the table. Continuous attention is necessary.
86/280/EEC – daughter of 76/464/EEC, to be repealed
88/347/EEC – daughter of 76/464/EEC, to be repealed
89/106/EEC – construction products. Not in WFD but considered to be important by Trudie Crommentuijn.
90/415/EEC – daughter of 76/464/EEC, to be repealed
91/271/EEC – It was marked that a source-directed approach is preferred before an end-of-pipe solution. End-of-pipe is expensive. Only in a small number of Member States this directive has been implemented completely. The EAF favours more intensive waste-water treatments an option, but does not proceed to develop further obligations. Only the Netherlands have reacted to the more intensive waste-water treatments. There are some signals that also other Member States want to apply membrane filtration. (Germany, Italy).
Possibilities to make adjustments to this directive are limited. However, this directive has some important aims in common with WFD and it is believed that discussion around Directive 91/271/EEC has to be stimulated.
91/414/EEC and 98/8/EC – drinking water and surface water criteria are part of the risk assessment. Pesticides do not make part of REACH. These directives may offer some chances at the level of granting permits. Also, it should be investigated what is possible at the national level.
91/676/EEC – not useful for measures in the field of the WFD
92/43/EC – not relevant for dangerous substances
793/93/EC - at times substances are recommended by directive 793/93 to be included in the Priority Substance list of the WFD. Very important.
94/157/EC – Jeanette Plokker informed that the aim of the WFD is de same as the aims of the marine conventions.
95/308/EC – rendered out
96/61/EC (IPPC) – this directive gives some starting points. The lower limit of installations falling under IPPC may possibly be adjusted for certain sectors. For this a proposal for adjustment should be developed. This may be a sensitive case within the European Commission, but probably a few Member States want to support this action. Otherwise, at national level useful instruments are present. This directive may be important in establishing measures resulting from the WFD.

96/82/EC – not aimed at specific substances
98/8/EC – See 91/414/EEC
98/83/EC – not relevant (water intended for human consumption)
98/249/EC – i.e. 94/157/EC
1999/468/EC – procedural directive
1600/2002/EC – not relevant
REACH – complementary, of importance

Conclusions, Ger Ardon; How to proceed?

Trudie Crommentuijn started with remarking that the first few speeches sounded discouraging. However, also directives with common grounds are as starting points are identified, such as the IPPC Directive, the Pesticides Directive (91/414/EEC), the Biocides Directive (98/8/EC), the Existing Substances Regulation (793/93/EEC), the Marketing and Use Directive (76/769/EEC) and a number of more specific directives. It is necessary to prioritise the attention that should be given to these directives.

It is difficult to judge how to reach the European Commission and other Member States effectively. Trudie Crommentuijn referred to the supportive plan of Bob Dekker. To facilitate measures in the field of water policy, it is important to establish at least contacts outside this field and with other players within. An example of the first is to get measures on substances incorporated in the Building Materials Directive or in the implementation thereof. It will cost a lot of brainwork and energy to explore various networks. Eyes and ears have to be kept op for what happens elsewhere within Europe. Furthermore, it should be determined when to start with which actions.

Harm Oterdoom stated that it is going to cost blood, sweat and tears. We have to work towards concrete ambitions, concrete substances and concrete plans. What do we, in the Netherlands, actually want? We have to go into Europe and face the EC. We have to carry out our opinions and plans. For this, we could use the experiences other parties. The industry has different interests, angle of view and insight compared to the policy makers. Several persons at the workshop have indicated that the WFD can be supportive for carrying out their work (Rein Eikelboom, Arnold van der Wielen, Martine van der Weiden). At the moment, only few people have the general view of more than one dossier.

Rein Eikelboom plead for the admission of substances to the list of Priority Substances that cause no problems anymore. This may be necessary, because in the near future, these substances will be allowed onto the market via other routes. It is possible to reach a goal for building materials via the European building material legislation, which is not possible in the framework of the WFD alone.

Ton Bresser pointed out the time schedule given in the WFD that is important for prioritising of activities. What do we want to achieve, what is possible, when we start what activity and when is it sensible to start a revision. We have to count on that we have to fall back onto national policy. Ton Bresser added that it’s all about details. Through the details you know what has to happen where. Rein Eikelboom indicated that he is able to point out from his own working field which specific cases have overlap with other

directives. From this, Ton Bresser postulated that it would be worthwhile to bring together people from different working areas. This would also enable to get an overview of the available network. Jeannette pointed out that Anja Boersma has already made such an overview. Martien will find out about it and get back to Trudie Crommentuijn with more information.
Murk de Roos wondered if it would be possible to link emission directives with the WFD before the EAF. Measures and phasing out of substances should be approached step by step. It will be enquired about the possibility to approach the other Member States before March 2005. Quality standards have to be put on the agenda for the EAF meeting in March 2005. Question is if this is attainable on this short notice. It would be wise to create support at the national level as well.
Jeanette Plokker indicated that different representatives at the EAF are experts in different policy fields (Existing Substances Directive, Marketing and Use Directive, Pesticides Directive) who are informed about each others working area. However, this does not always bring about the right effect. The different representatives globally know about each others dossiers, but this insight stays at global level. It is suggested that the insight should be brought into the EAF from a lower level and that the EAF should be supplied with some homework in order to reach consensus for certain topics.

Ger Ardon concluded that a number of parties will be approached to discuss further on. Then tasks should be appointed and worked out in smaller groups after which the results should be discussed further. A number of participants showed their interest in the follow-up of the workshop.

Conclusions
- V&W/VROM will formulate a strategy in which specific actions will be formulated and prioritised.
-Especially the links of WFD with IPPC, Marketing and Use Directive, Plant Protection Products and Biocides Directives and CPD are considered to be useful and have to be explored further. Besides links with EU-legislation, also links with national policy could be useful and should be explored.
-Many feel that appointing the actual links and common grounds of various directives and offering these to the EC is without prospect.
-It would be useful to be informed of the opinion and visions of Member States that are in a similar situation as the Netherlands (downstreams, in several river basins). This information should be part of the strategy.

Appendix IV Overview of legislation in consulted documents for the selection of directives and regulation for the present report

The table below shows the legislation found in the consulted documents for selection of directives and regulations bearing potential to take measures under for pollution control. WFD: legislation mentioned in WFD, ->WFD: legislation referring to the WFD, EAF: legislation referred to in Expert Advisory Forum (2004), NRR: legislation referred to in NordRiskRed (2001)

Legislation number	WFD	->WFD	EAF	NRR	Legislation number	WFD	->WFD	EAF	NRR	Legislation number	EAF	NRR
793/93	*		#	%	83/101	*				96/82	#	
91/414	*		#	%	80/778	*				2001/42	#	
98/8	*		#	%	1999/468	*				91/115 >93/112		%
96/61	*		#	%	91/676	*				89/391	#	%
2003/0256(COM)	*		#		78/659	*		#		89/24	#	%
76/769			#	%	79/923	*		#		90/394	#	%
75/442			#		76/160	*		#		92/85	#	%
850/2004			#		92/43	*		#		89/656		%
76/464	*			%	79/409	*				315/93		%
67/548			#	%	96/82	*				76/768		%
75/440	*		#		85/337	*				91/442		%
93/98			#		82/176	*				88/378		%
2000/479			#		83/513	*				93/42		%
79/117			#		84/156	*				98/79		%
88/347	*				84/491	*				73/404		%
90/415	*				1600/2002	*				73/405		%
96/62			#		2004/394		@			82/243		%
98/83	*		#	%	2003/549		@			82/242		%
86/280	*				2003/53		@			86/94		%
89/106			#	%	2003/35		@			89/542		%
1999/31			#		807/2003		@					
89/369			#	%	2003/33		@					
94/67			#	%	2455/2001		@					
91/689			#	%	C(2001)3380		@					
85/337	*		#		2001/42		@					
88/379				%	COM (2003) 550			#				
2003/36					COM (2003) 581			#				
80/68	*		#	%	1999/30			#				
2000/76			#	%	2000/69			#				
91/271	*		#		98/70			#				
86/278	*		#		COM (2003) 423 final			#				
2001/80			#		1991/13			#	%			
88/609>94/66				%	76/116			#				
89/429				%	2000/1980			#				
2001/81					1992/59			#	%			
89/107				%	91/157			#				
94/157	*				1994/62			#				
98/249	*				2000/53			#				

Appendix V Lists of hazardous substances in WFD and in the Dangerous Substances Directive

CAS number		WFD*	76/464/EEC and daughter directives
15972-60-8	alachlor	PS	
309-00-2	aldrin	[13]	86/280/EEC amended by 88/347/EEC
120-12-7	anthracene	(PHS)	
1912-24-9	atrazine	(PHS)	
71-43-2	benzene	PS	
	brominated diphenylethers	PHS	
7440-43-9	cadmium and its compounds	PHS	83/513/EEC amended by 91/692/EEC
56-23-5	carbon tetrachloride		86/280/EEC
85535-84-8	C_{10-13}-chloroalkanes	PHS	
470-90-6	chlorfenvinphos	PS	
2921-88-2	chlorpyrifos	(PHS)	
107-06-2	1,2-dichloroethane	PS	86/280/EEC amended by 90/415/EEC
75-09-2	dichloromethane	PS	
50-29-3	DDT		86/280/EEC
60-57-1	dieldrin		86/280/EEC amended by 88/347/EEC
117-81-7	di(2-ethylhexyl)phthalate (DEHP)	(PHS)	
330-54-1	diuron	(PHS)	
115-29-7	endosulfan	(PHS)	
72-20-8	endrin		86/280/EEC amended by 88/347/EEC
206-44-0	fluoranthene	PS	
118-74-1	hexachlorobenzene	PHS	86/280/EEC amended by 88/347/EEC
87-68-3	hexachlorobutadiene	PHS	86/280/EEC amended by 88/347/EEC
308-73-1	hexachlorocyclohexane	PHS	84/491/EEC amended by 91/692/EEC
465-73-6	isodrin		86/280/EEC amended by 88/347/EEC
34123-59-6	isoproturon	(PHS)	
7439-92-1	lead and its compounds	(PHS)	
7439-97-6	mercury and its compounds	PHS	82/176/EEC, 84/156/EEC amended by 91/692/EEC
91-20-3	naphthalene	(PHS)	
7440-02-0	nickel and its compounds	PS	
25154-52-3	nonylphenols	PHS	

13 Some substances are mentioned in part II of annex I of the draft daughter directive on priority substances. These substances originate from list I of the dangerous substances directive (76/464/EEC) and environmental quality standards for these substances have been laid down in daughter directives of 76/464/EEC. The emission values proposed in the daughter directive of the WFD are identical to those in the daughter directives of 76/464/EEC. The WFD state in the introduction that: “The provisions of this Directive take over the framework for control of pollution by dangerous substances established under Directive 76/464/EEC (2). That Directive should therefore be repealed once the relevant provisions of this Directive have been fully implemented.”
However, these substances have not been proposed to the list of priority substances in annex X of the WFD (2455/2001/EC). Therefore, the status of these substances in terms of priority or priority hazardous is unclear.

1806-26-4	octylphenols	(PHS)	
608-93-5	pentachlorobenzene	PHS	
87-86-5	pentachlorophenol	(PHS)	86/280/EEC
	polyaromatic hydrocarbons	PHS	
122-34-9	simazine	(PHS)	
127-18-4	tetrachloroethylene		86/280/EEC amended by 90/415/EEC
688-73-3	tributyltin compounds	PHS	
	trichlorobenzenes	(PHS)	86/280/EEC amended by 90/415/EEC
79-01-6	trichloroethylene		86/280/EEC amended by 90/415/EEC
67-66-3	trichloromethane (chloroform)	PS	86/280/EEC amended by 88/347/EEC
1582-09-8	trifluralin	(PHS)	

In the context of WFD: PS = Priority Substances, PHS=Priority Hazardous Substances, (PHS) = Priority Substances subject to a review for identification as possible PHS.
In the context of 76/464/EEC: List I substances regulated in daughter directives, codes of daughter directives given.
*: adjusted from Annex X of Decision No. 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive 2000/60/EC.

List II substances listed in the Annex of 76/464/EEC:

—substances belonging to the families and groups of substances in List I for which the limit values referred to in Article 6 of the Directive have not been determined,
—certain individual substances and categories of substances belonging to the families and groups of substances listed below,
and which have a deleterious effect on the aquatic environment, which can, however, be confined to a given area and which depend on the characteristics and location of the water into which they are discharged.

Families and groups of substances referred to in the second indent

1.The following metalloids and metals and their compounds:
    1.zinc
    2.copper
    3.nickel
    4.chromium
    5.lead
    6.selenium
    7.arsenic
    8.antimony
    9.molybdenum
    10.titanium
    11.tin
    12.barium
    13.beryllium
    14.boron
    15.uranium
    16.vanadium
    17.cobalt
    18.thalium
    19.tellurium
    20.silver
2.Biocides and their derivatives not appearing in List I.
3.Substances which have a deleterious effect on the taste and/or smell of the products for human consumption derived from the aquatic environment,
and compounds liable to give rise to such substances in water.
4.Toxic or persistent organic compounds of silicon, and substances which may give rise to such compounds in water, excluding those which are biologically harmless or are rapidly converted in water into harmless substances.
5.Inorganic compounds of phosphorus and elemental phosphorus.
6.Non persistent mineral oils and hydrocarbons of petroleum origin.
7.Cyanides, fluorides.
8.Substances which have an adverse effect on the oxygen balance, particularly: ammonia, nitrites.

Appendix VI IPPC substances as listed in EPER (2000/479/EC)

List of pollutants to be reported if threshold value is exceeded. Adapted from Annex A1 of 2000/479/EC.

Pollutants / Substances	Identification	Air	Water	Thresholds air in kg/yr	Thresholds water in kg/yr
1. Environmental Themes	(13)	(11)	(2)		
CH_4		x		100000	
CO		x		500000	
CO_2		x		100000000	
HFCs		x		100	
N_2O		x		10000	
NH_3		x		10000	
NMVOC		x		100000	
NO_x	as NO_2	x		100000	
PFCs		x		100	
SF_6		x		50	
SO_x	as SO_2	x		150000	
Total - Nitrogen	as N		x		50000
Total - Phosphorus	as P		x		5000
2. Metals and compounds	(8)	(8)	(8)		
As and compounds	total, as As	x	x	20	5
Cd and compounds	total, as Cd	x	x	10	5
Cr and compounds	total, as Cr	x	x	100	50
Cu and compounds	total, as Cu	x	x	100	50
Hg and compounds	total, as Hg	x	x	10	1
Ni and compounds	total, as Ni	x	x	50	20
Pb and compounds	total, as Pb	x	x	200	20
Zn and compounds	total, as Zn	x	x	200	100
3. Chlorinated organic substances	(15)	(12)	(7)		
Dichloroethane-1,2 (DCE)		x	x	1000	10
Dichloromethane (DCM)		x	x	1000	10
Chloro-alkanes (C10-13)			x		1
Hexachlorobenzene (HCB)		x	x	10	1
Hexachlorobutadiene (HCBD)			x		1
Hexachlorocyclohexane(HCH)		x	x	10	1
Halogenated organic compounds	as AOX		x		1000
PCDD+PCDF (dioxins+furans)	as Teq	x		0.001	
Pentachlorophenol (PCP)		x		10	
Tetrachloroethylene (PER)		x		2000	
Tetrachloromethane (TCM)		x		100	
Trichlorobenzenes (TCB)		x		10	
Trichloroethane-1,1,1 (TCE)		x		100	
Trichloroethylene (TRI)		x		2000	

Trichloromethane		x		500	
4. Other organic compounds	(7)	(2)	(6)		
Benzene		x		1000	
Benzene, toluene, ethylbenzene, xylenes	as BTEX		x		200
Brominated diphenylether			x		1
Organotin compounds	as total Sn		x		50
Polycyclic Aromatic Hydrocarbons		x	x	50	5
Phenols	as total C		x		20
Total organic carbon (TOC)	as total C or COD/3		x		50000
5. Other compounds	(7)	(4)	(3)		
Chlorides	as total Cl		x		2000000
Chlorine and inorganic compounds	as HCl	x		10000	
Cyanides	as total CN		x		50
Fluorides	as total F		x		2000
Fluorine and inorganic compounds	as HF	x		5000	
HCN		x		200	
PM10		x		50000	
Number of pollutants	50	37	26		

Appendix VII Indicative list of main polluting substances of the IPPC to be taken into account if they are relevant for fixing emission limit values

Annex III of the IPPC:

AIR

1. Sulphur dioxide and other sulphur compounds
2. Oxides of nitrogen and other nitrogen compounds
3. Carbon monoxide
4. Volatile organic compounds
5. Metals and their compounds
6. Dust
7. Asbestos (suspended particulates,fibres)
8. Chlorine and its compounds
9. Fluorine and its compounds
10. Arsenic and its compounds
11. Cyanides
12. Substances and preparations which have been proved to possess carcinogenic or mutagenic properties or properties which may affect reproduction via the air
13. Polychlorinated dibenzodioxins and polychlorinated dibenzofurans

WATER

1. Organohalogen compounds and substances which may form such compounds in the aquatic environment
2. Organophosphorus compounds
3. Organotin compounds
4. Substances and preparations which have been proved to possess carcinogenic or mutagenic properties or properties which may affect reproduction in or via the aquatic environment
5. Persistent hydrocarbons and persistent and bioaccumulable organic toxic substances
6. Cyanides
7. Metals and their compounds
8. Arsenic and its compounds
9. Biocides and plant health products
10. Materials in suspension
11. Substances which contribute to eutrophication (in particular,nitrates and phosphates)
12. Substances which have an unfavourable influence on the oxygen balance (and can be measured using parameters such as BOD,COD,etcetera).

Appendix VIII Priority lists under the Existing Substances Regulation and Rapporteurs

First priority list established under Commission Regulation (EC) No 1179/94 of 25 May 1994 concerning the first list of priority substances as foreseen under Council Regulation (EEC) No 793/93.

CAS number	Chemical Name	Rapporteur
60-00-4	edetic acid	D
62-53-3	aniline	D
64-02-8	tetrasodium ethylenediaminetetraacetate	D
71-43-2	benzene	D
75-05-8	acetonitrile	E
79-01-6	trichloroethylene	UK
79-06-1	acrylamide	UK
79-10-7	acrylic acid	D
79-20-9	methyl acetate	D
79-41-4	methacrylic acid	D
80-62-6	methyl methacrylate	D
84-74-2	dibutyl phtalate	NL
91-20-3	naphthalene	UK
95-76-1	3,4-dichloroaniline	D
95-80-7	4-methyl-m-phenylenediamine	D
98-82-8	cumene	E
100-41-4	ethylbenzene	D
100-42-5	styrene	UK
101-77-9	4,4& prime;-methylenedianiline	D
103-11-7	2-ethylhexyl acrylate	D
106-46-7	1,4-dichlorobenzene	F
106-99-0	buta-1,3-diene	UK
107-02-8	acrylaldehyde	NL
107-13-1	acrylonitrile	IRL
107-64-2	dimethyldioctadecylammonium chloride	D
108-05-4	vinyl acetate	D
108-95-2	phenol	D
110-49-6	2-methoxyehtyl acetate	NL
110-65-6	but-2-yne-1,4-diol	D
110-82-7	cyclohexane	F
111-77-3	2-(2-methoxyethoxy)ethanol	NL
112-34-5	2-(2-butoxyethoxy)ethanol	NL
117-84-0	dioctyl phthalate	NL
127-18-4	tetrachloroethylene	UK
141-97-9	ethyl acetoacetate	D
1163-19-5	bis(pentabromophenyl)ether	F/UK
1570-64-5	4-chloro-o-cresol	DK
7664-39-3	hydrogen fluoride	NL
32536-52-0	diphenyl ether, octabromo derivative	F/UK
65996-92-1	Distillates (coal tar)	NL

67774-74-7	Benzene, C10-13 -alkyl derivs.	I
85535-84-8	Alkanes, C10-13, chloro	UK

Second priority list established by Commission Regulation (EC) No 2268/95 of 27 September 1995 concerning the second list of priority substances as foreseen under Council Regulation (EEC) No 793/93.

CAS number	Chemical Name	Rapporteur
67-66-3	chloroform	F
71-23-8	propan-1-ol	D
75-45-6	chlorodifluoromethane	I
75-56-9	methyloxirane	UK
77-78-1	dimethyl sulphate	NL
88-12-0	1-vinyl-2-pyrrolidone	UK
90-04-0	o-anisidine	A
95-33-0	N-cyclohexylbenzothiazole-2-sulphenamide	D
98-01-1	2-furaldehyde	NL
100-97-0	methenamine	D
108-88-3	toluene	DK
109-66-0	pentane	N
110-80-5	2-ethoxyethanol	D
111-15-9	2-ethoxyethyl acetate	D
115-96-8	tris(2-chloroethyl) phosphate	D
117-81-7	bis(2-ethylhexyl) phthalate	S
120-82-1	1,2,4-trichlorobenzene	DK
123-91-1	1,4-dioxane	NL
557-05-1	zinc distearate	NL
1314-13-2	zinc oxide	NL
7440-66-6	zinc	NL
7646-85-7	zinc chloride	NL
7681-52-9	sodium hypochlorite	I
7722-84-1	hydrogen peroxide	FIN
7733-02-0	zinc sulphate	NL
7779-90-0	trizinc bis(orthophosphate)	NL
25154-52-3	nonylphenol	UK
25167-70-8	2,4,4-trimethylpentene	D
25637-99-4	hexabromocyclododecane	S
26761-40-0	di-"isodecyl" phthalate	F
28553-12-0	di-"isononyl" phthalate	F
32534-81-9	diphenyl ether, pentabromo derivative	UK
61790-33-8	Amines, tallow alkyl	D
68515-48-0	1,2-Benzenedicarboxylic acid, di-C8-10-branched alkyl esters, C9-rich	F
68515-49-1	1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich	F
84852-15-3	Phenol, 4-nonyl-, branched	UK

Third priority list established by Commission Regulation (EC) No 143/97 of 27 January 1997 concerning the third list of priority substances as foreseen under Council Regulation (EEC) No 793/93.

CAS number	Chemical Name	Rapporteur
75-91-2	tert-butyl hydroperoxide	NL
79-11-8	chloroacetic acid	NL
80-05-7	4,4'-isopropylidenediphenol	UK
81-14-1	4'-tert-butyl-2',6'-dimethyl-3',5'-dinitroacetophenone	NL
81-15-2	5-tert-butyl-2,4,6-trinitro-m-xylene	NL
85-68-7	benzyl butyl phthalate	N
98-95-3	nitrobenzene	D
110-85-0	piperazine	S
120-12-7	anthracene	EL
122-39-4	diphenylamine	D
1306-19-0	cadmium oxide	B
1333-82-0	chromium trioxide	UK
1634-04-4	tert-butyl methyl ether	FIN
3033-77-0	2,3-epoxypropyltrimethylammonium chloride	FIN
3327-22-8	(3-chloro-2-hydroxypropyl) trimethylammonium chloride	FIN
5064-31-3	trisodium nitrilotriacetate	D
7440-02-0	nickel	DK
7440-43-9	cadmium	B
7775-11-3	sodium chromate	UK
7778-50-9	potassium dichromate	UK
7782-50-5	chlorine	I
7786-81-4	nickel sulphate	DK
7789-09-5	ammonium dichromate	UK
10039-54-0	bis(hydroxylammonium) sulphate	D
10588-01-9	sodium dichromate	UK
11138-47-9	Perboric acid, sodium salt	A
13775-53-6	trisodium hexafluoroaluminate	D
15096-52-3	trisodium hexafluoroaluminate	D
26447-40-5	methylenediphenyl diisocyanate	B
30899-19-5	pentanol	D
65996-93-2	Pitch, coal tar, high-temp.	NL
85535-85-9	Alkanes, C14-17, chloro	UK

Fourth priority list established by Commission Regulation (EC) No 2364/2000 of 25 October 2000 concerning the fourth list of priority substances as foreseen under Council Regulation (EEC) No 793/93.

CAS number	Chemical Name	Rapporteur
77-47-4	Hexachlorocyclopentadiene	NL
79-94-7	2,2 - 6,6- tetrabromo-4,4-isopropylidenediphenol	UK
88-72-2	2-nitrotoluene	E
98-54-4	4-tert-butylphenol	N
98-73-7	4-tert-butylbenzoic acid	D
107-98-2	1-methoxypropan-2-ol	F
108-65-6	2-methoxy-1-methylethyl acetate	F
111-76-2	2-butoxyethanol	F
112-07-2	2-butoxyethyl acetate	F
112-90-3	(Z)-octadec-9-enylamine	D
121-14-2	2,4-dinitrotoluene	E
124-30-1	Octadecylamine	D
994-05-8	2-methoxy-2-methylbutane	FIN
1222-05-5	1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethylin-deno [5,6-c]pyran	NL
1309-64-4	Diantimony trioxide	S
1310-73-2	Sodium hydroxide	P
1330-43-4	Disodium tetraborate,anhydrous	A
1506-02-1	1-(5,6,7,8-tetrahydro-3,5,5,6,8,8-hexamethyl-2-naph-thyl)ethan-1-one	NL
3333-67-3	Nickel carbonate	DK
7718-54-9	Nickel dichloride	DK
7784-18-1	Aluminium fluoride	NL
7789-75-5	Calcium fluoride	NL
10043-35-3	Boric acid,crude natural	A
11113-50-1	Boric acid	A
13138-45-9	Nickel dinitrate	DK
13674-84-5	Tris(2-chloro-1-methylethyl)phosphate	IRL/UK
13674-87-8	Tris [2-chloro-1-(chloromethyl)ethyl]phosphate	IRL/UK
26523-78-4	Tris(nonylphenyl)phosphite	F
38051-10-4	2,2-bis(chloromethyl)trimethylene bis(bis(2-chloroethyl)phosphate)	IRL/UK
61788-45-2	Amines,hydrogenated tallow alkyl	D
61788-46-3	Amines,coco alkyl	D