

EXECUTIVE BODY FOR THE CONVENTION ON
LONG-RANGE TRANSBOUNDARY AIR POLLUTION

**THE 2000 REVIEW ON STRATEGIES AND POLICIES
FOR AIR POLLUTION ABATEMENT**

**The 1998 PROTOCOL ON PERSISTENT ORGANIC POLLUTANTS
REPLIES TO QUESTIONS 37 – 49 OF THE 2000 QUESTIONNAIRE**

Prepared by the secretariat from submissions by the Parties

Introduction

1. This document is the basis for part of the 2000 Review of Policies and Strategies requested by the Executive Body at its seventeenth session in December 1999. It provides the answers as received from Parties in response to the questionnaire circulated in January 2000. It is in English only, non-English submissions were passed to the UN translation services, and are incorporated as translated. Answers have been reformatted for the document but have been subjected to minimal editing. Indication is given where responses have been altered, e.g. moved where an answer appears to be for a different question.
2. The document is intended as a reference for the summary to be found in the 2000 Review of Strategies and Policies (EB.AIR/2000/1/Add.1) and will be provided to the Executive Body, the Implementation Committee and will be made available through the Executive Body document Web site. The document groups questions in accordance with the sections of the questionnaire.
3. This section summarizes the answers received to questions 37 to 49 of the questionnaire. The Protocol on Persistent Organic Pollutants is not yet in force. Consequently, all the questions in the section are optional. The signatories are: Armenia, Austria, Belgium, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States, and European Community. In addition, the Russian Federation has replied to question 37.
4. **Question 37 Provide information, as required by article 9, on the national strategies, policies and programmes developed in accordance to article 7, paragraph 1, to implement the Protocol on POPs to control, reduce or eliminate discharges, emissions and losses of persistent organic pollutants. Please include information on measures such as those listed in article 7, paragraph 2. If applicable or relevant, include a description of measures taken for other POPs not yet listed in this Protocol.**
5. **Armenia.** In 1999, the Republic of Armenia ratified the Basel Convention. At the current time, steps are being taken to improve the national system for monitoring the transboundary movements of hazardous wastes and their disposal, to set up a register of hazardous wastes, including persistent organic pollutants, and to elaborate and to ratify environmentally sound

methods for their disposal, as well as the corresponding regulatory instruments.

6. **Austria.** Austria has not yet ratified the Protocol on POPs. Nevertheless in Austria early measures for the reduction of POPs and their emissions have been taken. They comprise measures concerning products (see Q.38–42) and emissions from stationary sources (see Q.44) as well as mobile sources (see Q.45).

7. **Belgium.** Walloon region: Standards have been set for dioxin discharges from household waste incinerators and are currently being established for hazardous waste incinerators (see Q44). Similarly, there are strict provisions for PCBs (see Q42).

8. **Flemish region:** In 1997 the Flemish Government adopted the Environmental Policy and Nature Development Plan for the period 1997 to 2001 (Mina-2 plan). This document includes the following actions to control, eliminate or reduce discharges, emissions and losses of persistent organic pollutants :

(a) Action 28 : to make a program to implement the agreements of the Fourth North Sea Conference and implement the program : these agreements concern some POPs of the Protocol : PAH, dioxins/furan, hexachlorobenzene and some pesticides; for these substances inventories containing annual loads per source categorie towards air, water and, if relevant, waste are being made. These inventories are based on emission measurements at the sources and on estimations of the emissions by using emission factors and production or consumer statistics. They also bring into account monitoring data. Substance specific reduction programs are being made on the base of these substance inventories. The next step is to implement these programs;

(b) Action 29 : to make a reduction program for PAH and implement it (and other); part of action 28,

(c) Action 30 : to make a program to reduce the emission of dioxins and implement it; part of action 28;

(d) Action 31 : to develop a strategy to destroy PCB;

(e) Action 32 : to make reduction programs for pesticides and implement it

(f) Action 38 : to develop a coherent strategy to prevent, reduce and control the pollution of the environment by POPs; a more general action concentrating on long-term options.

9. In order to meet the emission reduction commitments made in the framework of the Third North Sea Conference (1990), the Flemish Government has made substance inventories for the relevant pesticides of the POPs protocol (only HCH since others are prohibited) and for dioxins/furans. For HCH the inventory calculated a total emission reduction percentage to air and water for Belgium of 50 % in 1995 with 1985 taken as a reference year which means that the commitment of the Third North Sea Conference was met. No separate reduction results for the region of Flanders are available. For dioxins/furans the inventory calculated an emission reduction percentage to air of 32 % for the region of Flanders in 1995 with 1985 taken as a reference year. Since the goal for dioxins/furans was set 70 % reduction of the total load via all possible entry routes, the commitment of the Third North Sea Conference was not met. More recent information for the year 1997 gives a total emission reduction percentage of 36 % towards air and water for the region of Flanders with 1985 as a reference year (MIRA-T 1999, Environment and Nature Report of the region of Flanders). It is expected that the emissions will be further reduced in the near future by the implementation of the emission limit values as set by the Flemish Environmental Legislation (VLAREM). For more information on this measures see Q.44.

10. **Brussels capital region:** There are few major industrial installations in the territory of Brussels capital region and no chemical production facilities. There are a couple of storage, processing and research facilities. Environmental permit regulations already apply to all enterprises whose activities fall under the Protocol. Certain aspects of the Protocol relate to the management of wastes containing POPs: the framework order on waste management would appear to contain the necessary provisions. Implementation of the Protocol will, however, require the setting of quantitative targets and the imposition of new emissions standards based on the environmental permit regulations. It might be necessary to enact some new sectoral orders to regulate or prohibit the use of certain products, but these will only apply to a very small number of Brussels enterprises. Implementation of the Protocol will also require the keeping and updating of inventories. An air pollution control plan is under preparation for Brussels capital region and should be finalized between now and the end of 2000.

11. **Federal Government:** Belgium has signed up to the provisions of the European Commission regulation on eco-labelling and the criteria established and applied by the States members (e.g., for textiles that qualify for eco-labelling because of their use of plant fibres grown with environmentally friendly pesticides).

12. **Bulgaria.** Bulgaria is a signatory to the Protocol in Orhus, Denmark, and drafted a National strategy.

13. **Canada.** Canada will implement the requirements of this article through existing strategies, policies, programmes and measures addressing Persistent Organic Pollutants (POPs). These include:

(a) the federal Toxic Substances Management Policy (TSMP) and the Canadian Council of Ministers of the Environment (CCME) Policy for the Management of Toxic Substances (PMTS) whose management objectives are the virtual elimination from the environment of toxic substances that result predominantly from human activity and are persistent and bioaccumulative (Track 1);

(b) the Canada-Wide Standards (CWS) process under the Canada-Wide Accord on Environmental Harmonization establishes a common vision, objectives and principles to inform the partnership of environmental management between the federal, provincial-territorial governments. In particular, the Canada-Wide Environmental Standards Sub-Agreement will allow for the development of national standards and guidelines for Hazardous Air Pollutants;

(c) federal legislation and regulations such as the Canadian Environmental Protection Act (CEPA), the Pest Control Products Act (PCPA) and the Fisheries Act which regulate toxics and pesticides in Canada and are intended to protect people and the environment from risks posed by these substances;

(d) the Strategic Options Process (SOP) which is a multistakeholder initiative under CEPA to determine the most appropriate pollution prevention or control mechanisms to address relevant sources of toxic pollutants;

(e) provincial-territorial legislation and regulations which regulated the release of toxics to air, water and soil in their jurisdictions.

(f) regional and ecosystem strategies, including the Northern Contaminants Programme (NCP), the North American Regional Action Plans (NARAPs), the Great Lakes Water Quality

Agreement, the Great Lakes Binational Toxics Strategy (GLBTS), the Canada-Ontario Agreement (COA), the Fraser River Action Plan (FRAP) and St-Laurent Vision 2000 (SLV-2000).

14. **Croatia.** POPs emission inventory in Croatia. POPs emission inventory is maintained in the Republic of Croatia since 1996, in line with the international EMEP/CORINAIR methodology, officially accepted by the Executive Body to the Long-range Transboundary Air Pollution Convention. This report presents emission inventory for selected persistent organic pollutants for 1990 and 1998. and all emissions data are calculated by the emission factors available from the official literature.

15. The observed persistent organic pollutants can be classified into three groups: pesticides, polycyclic aromatic hydrocarbons (PAHs), and dioxins and furans.

16. Persistent organic pollutants

Group	POPs
Pesticides	HCH – hexachlorcyclohexane (lindan)
	HCB – hexachlorbenzene
Polyaromatic hydrocarbons (PAHs)	Benzo(b)fluorantene
	Benzo(k)fluorantene
	Benzo(a)pyrene
	Indeno(123-cd)pyrene
Dioxins and furans (DIOX/F)	PCDD – polychlorinated dibenzo-dioxins
	PCDF – polychlorinated dibenzofurans

17. Pesticide emissions. Emission occurs in the application of plant protection agents in agricultural practice (pesticide emission in the synthesis and formulation processes is negligible). The new List of Toxins which may be put on the market in the Republic of Croatia permits use and sale of four pesticides of the listed substances - hexachlorcyclohexane, or lindane, DDT, endrin and toxaphene (but only Lindane has been using). According to the poll carried out among the pesticide producers, hexachlorcyclohexane was used as an active substance in the production of insecticides in the amount of 13.2 tonnes in 1990, and. in 1998 the amount was 7 tonnes. Assuming that approximately 5 percent remained unused, the hexachlorcyclohexane emissions in 1990 amounted to 9.4 tonnes, whereas it decreased to 5 tonnes in 1998. The tables present pesticide emissions as per reference years.

Pesticide emissions in 1990

Emission	HCH	HCB
t/year	9.4	0

Pesticide emissions in 1998

Emission	HCH	HCB
t/year	5.0	0

18. Emissions of polycyclic aromatic hydrocarbons. There are over 100 different polycyclic

aromatic hydrocarbons. Four polycyclic aromatic hydrocarbons have been used for emission quotas purposes, in line with the Protocol recommendations: benzo(a)pyrene, benzo(b)fluorantene, benzo(k)fluorantene, indeno(1,2,3-cd)pyrene. The most significant emission sources are fuel combustion processes in households, coke production and aluminium smelting using Söderberg anodes. The tables below show polycyclic aromatic hydrocarbons emissions in 1990 and 1998 per sectors.

PAH emissions per sectors in 1990

Emission of PAH kg/year	benzo(a) pyrene	Benzo(b) Fluorantene	benzo(k) fluorantene	indeno(1,2,3-cd) pyrene
Combustion in energy production and energy transformation	420.2	153.0	141.7	172.0
Combustion in commercial, institutional and residential sectors and agriculture, forestry, fishing	4015.7	5292.8	1811.4	3053.5
Combustion in industry	2.4	16.0	16.6	11.5
Road transport	0.1	0.2	0.1	0.1
Total	4438.4	5462.0	1969.8	3237.1

PAH emissions per sectors in 1998

Emission of PAH kg/year	benzo(a) pyrene	benzo(b) fluorantene	Benzo(k) Fluorantene	indeno(1,2,3-cd) pyrene
Combustion in energy production and energy transformation	4.4	18.9	3.7	7.0
Combustion in commercial, institutional and residential sectors and agriculture, forestry, fishing	2461.7	3235.3	1077.3	1764.3
Combustion in industry	1.3	7.6	8.0	4.3
Road transport	0.2	0.2	0.1	0.2
Total	2467.6	3262.0	1089.1	1775.8

19. The following table gives total emissions of the observed polycyclic aromatic hydrocarbons in separate years.

Emission PAH	1990	1998
t/year	15.1	8.6

Compared to 1990, in 1998 there was a significant decrease of emission values (approximately 43 percent), caused by the decrease in the consumption of fuelwood, which is the largest PAH emission source, and by the termination of operation of the coke oven plant in Bakar.

20. Emissions of dioxins and furans Dioxins and furans are persistent organic compounds produced in the low-temperature (250-400°C) combustion of chlorine-containing organic substances. The highest dioxins and furans emissions in Croatia are produced in the combustion of household fuelwood and in the thermal waste treatment installations (municipal, industrial and hospital waste). Other significant sources are steel production processes in electric arc furnaces, road transport and fuel combustion processes in energy output facilities (thermal power plants, co-generation plants). Tables 7 and 8 show emissions per sectors in Croatia, for 1990 and 1998.

Dioxins and furans emissions per sectors in 1990

Sector	Emission gTEQ/y
Combustion in energy production and energy transformation	0.12
Combustion in commercial, institutional and residential sectors and agriculture, forestry, fishing	149.33
Combustion in industry	0.17
Production processes	28.66
Road transport	0.36
Other mobile sources and machinery	0.0008
Waste treatment and disposal	-
Total	178.64

Dioxins and furans emissions per sectors in 1998

Sector	Emission gTEQ/y
Combustion in energy production and energy transformation	0.13
Combustion in commercial, institutional and residential sectors and agriculture, forestry, fishing	88.18
Combustion in industry	14.76
Production processes	7.34
Road transport	0.18
Other mobile sources and machinery	$< 1 \times 10^{-4}$
Waste treatment and disposal	0.17
Total	110.77

Compared to 1997, there was a 17-percent increase in emissions of dioxins and furans, due to the increased production of steel in electric arc furnaces and larger quantities of thermally treated industrial waste; however, the emissions are considerably lower (38 percent) than the 1990 ones.

21. Pesticide use in Croatia. Croatia annually consumes between 8-11,000 tonnes of various plant protection preparations (hereinafter referred to as: pesticides): this consumption rate, in comparison with other countries, is approximately 2.5 times lower than, for example, in France, and 5-6 times lower than in the Netherlands. Croatia expects a minor growth in consumption of pesticides, with the permanent necessity of their maximally rational application and orientation towards environmentally soundest preparations.

22. In 1997, there were 580 pesticides based on 255 different active substances with the usage permits in Croatia., and this number consisted of 197 preparations for the group of zoocides

(predominantly insecticides), 171 fungicides, 189 herbicides and 23 other preparation types. Among 580 licensed pesticides there are 56 pesticides containing the following 11 POPs as active substances: Atrazin, Bentozone, Chlорpicrin, Dichlorvos, 2,4-D; Endosulfan, Fetion, Lindane, Malathion, Parathion and Simazine. In Croatia, four firms produce, import and distribute pesticides: CHROMOS AGRO, d.d Zagreb, HERBOS, d.d. Sisak, PLIVA, d.d. Zagreb and SAPONIA, d.d. Osijek. According to the available data of the Ministry of Agriculture and Forestry, the average annual use of pesticides is the following: 7,600 tonnes – preparations and 3,500 tonnes – active substance. Approximately 7 tonnes of lindane is produced annually in Croatia. Crop pests decrease yields by 29.2 percent (the level of damage for Europe is 28 percent). In the past decade, the use of pesticides has decreased, not for ecological but exclusively for economic reasons. Farmers simply cannot afford them.

23. Legislation. The use of pesticides (they are treated as toxins) in the Republic of Croatia is governed by the following main regulations:

- (a) Law on Plant Protection (1994);
- (b) Law on Toxins (1999) and its;
- (c) List of Toxins Which May be Put on the Market (1999).

Only pesticides with the approval of the Ministry of Agriculture and Forestry may be applied and put on the market. The approvals are issued by the Ministry of Agriculture and Forestry upon proposal of its Plant Protection Commission. Issuance of approval requires prior decision on adequacy of application of the pesticide and its classification according to groups defined by the Ministry of Health.

24. Apart from the above laws, plant protection area is governed by other regulations as well:

- (a) Law on Environmental Protection;
- (b) Law on Waste;
- (c) Law on Occupational Safety and Health;
- (d) Law on Forests;
- (e) Law on Financial Incentives and Charges in Agriculture and Fisheries;
- (f) By-Law on Soil Protection from Contamination with Noxious Substances;
- (g) By-Law on the Amounts of pesticides, Toxins, Microtoxins, metals; Histamines and

Similar Substances that May be Found in Foodstuffs and on other Conditions Concerning Health Appropriateness of Foodsuffs and Mass Consumption Use;

(h) By-Law on Maximum Allowed Concentrations of Hazardous Substances in Waters and Territorial and Internal Sea.

25. Republic of Croatia is a Party to the Convention on Long-range Transboundary Air Pollution (1991) and also signed its Protocol on Persistent Organic Pollutants in 1998. As concerns pesticides, the subject of UN ECE Protocol on Persistent Organic Pollutants to the Convention on Long-Range Transboundary Air Pollution (Annex I and Annex II), application and sales of the following pesticides are prohibited in the Republic of Croatia: aldrin, chlordane, chlordecone, dieldrin, endrin, heptachlor, mirex and DDT. The use of lindane is very limited, whereas pesticides endrin, DDT and toksaphene are permitted in use and sales according to the List of Toxins Which May be Put on the Market, but not for agricultural purposes. DDT is not permitted in agriculture since 1972, and in forestry from a later date. In the past ten years, no permit for the import of endrin or toxaphene has been requested.

26. Environmental concerns in agriculture. Basic environmental problems in agriculture in Croatia can be classified into three groups:

(a) Solid quality and degradation: Intensive crop production, particularly, too much intensive crop rotation, use of agro-chemicals and heavy machines, industrial processes, waste disposal and use of fossil fuel damage land in some parts of the country with intensive agricultural production;

(b) Water use and water pollution: Water pollution are mainly due to agricultural activities and wastewater effluents from cattle farms and fishponds;

(c) Wastes: The main sources of wastes in agriculture are fluid manure and waste water from intensive livestock breeding and fattening, as well as waste from land cultivation.

27. According to available data, it could be concluded that agricultural activities have not caused serious soil or environmental pollution as the consumption of pesticides and fertilisers in the private sector is fairly (25 percent of the west European mean). In the former public agro-businesses, consumption was similar to that in the developed countries. However, the absence of a soil inventory and of regular soil monitoring is a severe obstacle to taking soil protection and sustainable management measures, as the true condition of the soil is practically unknown. The pesticide content in water or soil has not been monitored on a regular basis. The level of atrazine in water, for example, sometimes exceeds 100 mg/l, which is the Croatian and the European's MAC for a single pesticide in water intended for human consumption.

28. Activities needed to be undertaken:

(a) Develop, adopt and enforce a law on soil, and enact land use programmes and strategy, together with measures on environmentally friendly use of pesticides;

(b) enact rules of good agricultural practice;

(c) establish permanent soil quality monitoring, together with the system of information on soils;

(d) develop a land register;

(e) employ various measures to encourage alternative agricultural production;

(f) encourage family-farm orientation to the development of various forms of rural and eco-tourism;

(g) encourage the use of biological and other pesticides that are not harmful for the environment.

29. PCBs use in Croatia. Prohibition of PCBs production and use turned vast quantities of capacitors and energy transformers charged with this dielectric into hazardous waste that everyone wants to "get rid of" as soon as possible. As it is hazardous waste, all these facilities need to be adequately handled, i.e. destroyed following especially strict, environmentally harmless procedures and under close surveillance. Handling of PCB- containing devices is a costly procedure, which can be quickly done only by economically developed countries. The Republic of Croatia, primarily due to severe war damage, and a long-lasting economic crisis, is not in the position to handle its PCB-containing devices in a short period, and install adequate environmentally harmless devices instead, as it requires large investment. Croatia is therefore forced to keep using major part of such devices, until the expiry date or the first damage, after which they need to be properly handled – destroyed.

30. Due to a largely distributed and at the same time uncontrolled industrial application of

PCBs in the past (before 1991), no systematised data exist on their usage numbers or the quantities of transformers imported into Croatia. Many industrial and electricity production plants have significant quantities of PCB-containing transformers of medium and high nominal power installed. PCBs are not produced in the Republic of Croatia and there are no accurate records on annual imports of such substances. Beginning with 1992, no PCB-containing transformers or capacitors are imported or produced.

31. Existing data on PCB-containing equipment. In compliance with the regulations of the Republic of Croatia waste PCBs or waste contaminated with them are classified into the category of hazardous waste and its management falls within the State authority. By the special authorisation granted by the authorised ministries, in 1992 APO (Waste Management Agency) d.o.o. of Zagreb was nominated institution for keeping records, supervision of waste management and elaboration of the strategy relating to the substitution of all installed and spare devices filled up with PCBs/PCTs. Since in the Republic of Croatia there has not been any database (inventory of hazardous waste), activities relating to the management of equipment containing PCBs should have started by collecting data on the existing devices and equipment containing PCBs. In compliance with authorisation and demands the following activities were performed in the period from 1993 to 1999:

(a) Database for Croatia as per counties was created;

(b) Plan relating to the substitution of equipment and devices containing PCBs was made;

(c) The organised management / destruction of PCBs was started.

32. The data on equipment containing PCBs were collected by the poll. At first, the poll covered the biggest industrial and production facilities, as well as power supply utilities. Afterwards the database was being extended and updated and the whole country was included into the database. The following data were required by the poll: power, weight, year and place of installed device containing PCBs, status of device (in operation/spare/out of order), and level of danger (is the device damaged, and to what extent).

33. In accordance with the Law on Waste, handling hazardous waste is entrusted to companies authorised to do it by the Ministry of Environmental Protection and Physical Planning. Hazardous waste such as PCBs not yet being handled in an environmentally sound manner in the Republic of Croatia, the valid permit allows for PCBs to be handled in the Western Europe. According to the existing records, in the period 1994-1999 it was handled defective transformers and capacitors as follows: 23 tonnes in 1994, 60 tonnes in 1995, 60 tonnes in 1996, 16 tonnes in 1997, 42 tonnes in 1998 and 16 tonnes in 1999 in such a manner. According to preliminary estimation only 10-15 percent of the total installed equipment in Croatia has been handled so far.

34. The Croatian Electricity Company in conjunction with the Hazardous Waste Management Agency (APO) started in 1993 the Project of Replacement of PCBs in Cooling Oils in Capacitors and Transformers by Environmentally Harmless Alternatives. In the framework of this Project (Figure 1), approximately 30 percent of such devices in the electricity sector were systematically replaced until 1999, and they are handled abroad, in an environmentally sound manner (incineration at the hazardous waste incinerator). For the time being, devices in working order keep working until a damage occurs. The devices are properly marked to warn the personnel of the presence of PCBs, and they are located in closed, locked areas within transformer stations

which can be accessed only by authorised, trained personnel of the Croatian Electricity Company.

35. PCBs - Legislation. There is no regulation in Croatia prohibiting the use of PCBs nor is there any deadline to handle all existing PCB quantities in an environmentally sound manner. However, handling PCBs, PCB-containing devices and hazardous waste is governed by a number of regulations. The main regulations are as follows:

(a) Basel Convention on the Control of Transboundary Movements of Hazardous Waste;

(b) Law on Environmental Protection (1994);

(c) Law on Waste (1995);

(d) By-Law on Waste Categories (1996);

(e) By-Law on the Conditions for Handling Hazardous Waste (1998);

(f) By-Law on Safe Handling of Substances Containing Polychlorinated Biphenyles, Polychlorinated Naphtalene and Polychlorinated terphenyles (1991);

(g) Law on Transport of Hazardous Waste (1993);

(h) Law on Air Quality Protection (1995);

(i) By-Law on Recommended and Limit Ambient Air Quality Values (1996);

(j) Rule Book on Environmental Pollutants Inventory (1996) etc.

36. The Law on waste is the basic legal instrument concerning the management of non-radioactive solid waste. It classifies waste according to its origin as municipal waste or industrial waste, and according to its characteristics as hazardous waste or inert waste. The basic goals of waste management are to avoid and minimize the generation of waste, particularly hazardous waste. wastes should be managed in a controlled way. If possible, they should be reused for material and energy recovery prior to disposal. Waste should be disposed of in controlled landfills and areas contaminated by waste should be remedied. The Law also defines what should figure on the registers of industrial and hazardous waste. All imports, exports and transits are under the control of the Ministry of Environmental Protection and Physical Planning. The import of hazardous waste is prohibited.

37. The Regulation on the conditions for handling hazardous waste determines the technical specifications of installations for the storage, treatment and disposal of hazardous waste. For thermal waste treatment utilities, the temperature of burning gases in the most unfavourable conditions must reach at least 850 °C. If the waste contains more than 1 percent halogenated organic compounds, the combustion temperature must be at least 1100 °C. There are no special air emission limits, apart from the regular ones.

38. Existing problems:

(a) Non-compliance legislation;

(b) Instruments for financing waste management by enterprises not established;

(c) Uncontrolled landfills pollute surrounding soil and groundwater;

(d) No incentives for clean technologies;

(e) Lack of environmental awareness among citizens and enterprises.

39. Policy priorities:

(a) Adopt a waste management strategy;

- (b) Organise a system of waste management which clearly defines the stakeholders, their obligations and rights, a system of institutional support and an information system;
- (c) Establish a waste cadastre;
- (d) Identify waste devastated areas, define priorities for remedial actions;
- (e) Remediate areas devastated by waste according to the priorities defined in the framework of remediation programmes.

40. **Czech Republic.** In the present time the principal document on the national policies is The State Environmental Policy approved by Government of the Czech Republic on April 14, 1999. This document includes national policies and strategies, and selected targets and measures for reduction of major air pollutants inclusive POPs with the respect to the obligations under the Protocol to the CLRTAP. Law No. 309/1991 Coll., on protection of the air against pollutants (the Clean Air Law), as amended, and implementing Decree 117/1997 Coll., including the prepared amendment, will provide to a considerable degree for the requirements of the Protocol on Persistent organic pollutants. Full provision through suitable legislation will be achieved when the new Law on air protection and protection of the ozone layer of the Earth and the pertinent regulations for implementation are passed and when the new Law on integrated pollution prevention and control is passed, which are expected to come into effect by November 1, 2001 (air) and January 1, 2003 (IPPC).

41. **Denmark.**

(a) The use of Annex I substances has been forbidden since December 1995 in accordance with Act No. 438, June 1994.

(b) Annex II substances: The use of HCH and DDT has been forbidden since December 1995 in accordance with Act No. 438. And at least since 1997 emissions of HCH and DDT have been zero. According to a statutory order sale and import of PCB have been forbidden since October 1986 and since December 1998 the prohibition also includes instruments etc. containing PCB. Since 1995 it has been prohibitive to use PCB's in capacitors and transformers heavier than 1 kg or with an effect above 2kVAr. Emissions of PCB's from other sources, e.g. glue or joint filler, may occur theoretically, but the total emissions of PCB are assumed to be negligible.

(c) Annex III substances: The emissions from waste incineration plants – the only significant source of dioxins/furans in Denmark – are regulated by Air Pollution Control Guidelines for waste incineration plants. The guidelines contain provisions on construction, maintenance and operation of the plants and the provisions secure that the emissions of dioxins/furans are minimised. Before 2004 all Danish waste incineration plants are to be equipped with flue gas treatment installations which will retain all emissions of dioxins/furans. For HCB's the main source is assumed to be incineration plants. However, HCB emissions are not quantified but estimated to be negligible. The Industrial Air Pollution Control Guidelines regulate PAH compounds. PAH compounds are Main group 1 compounds in this respect. Main group 1 compounds are those chemicals that are known to be especially harmful to health or especially dangerous for the environment. Main group 1 PAH compounds: Acnaphthen, Benz [a] anthracen, Benz [b] fluoranthen, Benz [j] fluoranthen, Benz [k] fluoranthen, Benz [b] fluoren, Benz [a] pyren, Chrysen, Dibenz [a,h] anthracen, Inden [1,2,3-c,d] pyren. Recommended emission limit for the total amount of PAH compounds is 0,1 – 0,5 mg/normal m³ at 10 % O₂, dry air, 0 °C 101.3 Pa.

(d) Other substances: The only identifiable theoretical source of PCP emissions is burning of wood products containing PCP. Since 1986 it has been forbidden to use PCP for preservation

of wood products. And after April 1996 it has been forbidden to use wood products containing PCP. So, theoretically, emissions of PCP cannot be excluded, but are assumed to be negligible. As to short-chained chlorinated paraffins, the consumption in Denmark in 1998 could be estimated to 24 tons. Assessments of the emissions of short-chained chlorinated paraffins to the air are not available, but emissions are assumed to be very limited.

42. **Germany.** The prevention or reduction of discharges, emissions and losses of POPs is regulated as follows: Prohibitions and use restrictions pursuant to the Ordinance on the Prohibition of Chemicals (under the Chemicals Act) and the Ordinance on Bans on the Placing on the Market and the Use of Plant Protecting Agents Containing Particular Active Substances (under the Plant Protection Act). Emission control requirements reflecting the state of the art for emissions of POPs from stationary sources. The relevant installations are subject to licensing under the Federal Immission Control Act.

43. **Greece.** Both the production and use of substances contained in annex I are banned. Community Regulation 259/93 is applied. In addition, special measures apply whenever dangerous wastes are involved.

44. **Netherlands.** The Netherlands have implemented the EU-directive 96/59/EG concerning PCBs and PCTs. The production and use of all compounds listed in Annex I are forbidden in the Netherlands. Filters and emission limits are applied for waste combustion plants to eliminate the emission of compounds listed in Annex III.

45. **Poland.** An “Analysis of the possibilities for signing by Poland the protocols on persistent organic pollutants and on heavy metals to the Convention on Long-range Transboundary Air Pollution” was prepared prior to signing both protocols by Poland in 1998. It includes an evaluation of the possibilities of implementation of the basic obligations by Poland. This document was the basis for the draft “National strategy for the reduction of persistent organic pollutant emissions” which was elaborated at the end of 1999 and is now awaiting approval. At the same time a framework draft document the new National Environmental Policy covering overall environmental issues, including persistent organic pollutant emissions, is under discussion and waiting to be approved by the Council of Ministers and the Parliament this year. Within its short-, medium- and long term priorities the need for, inter alia, undertaking activities leading to persistent organic pollutant emission reduction and for preparation and implementation of a persistent organic pollutant emission reduction programme, is underlined. Wider use of emission standards in the industry, energy and transport sectors, the use of product control measures, elimination of devices containing PCB, elimination of old pesticide waste sites, introduction of BAT and emission standards for 12 source categories to the Polish legislation – are only some of the hot issues mentioned in the new environmental policy. The need for the reduction of POPs through changes in the structure of fuel consumption with an increase in the use of natural gas, liquid fuels and renewable sources of energy, introduction of strict product control measures, installation of emission reduction devices, etc. is also stressed in the draft governmental document “Principles for Poland’s national energy policy until 2020” which was approved by the Council of Ministers in February 2000.

46. **Republic of Moldova.** In conformity with art.7 (1) of the Protocol on Persistent Organic Pollutants: “Each party shall, no later than six months after the date on which this Protocol enters

into force for it, develop strategies, policies and programs in order to discharge its obligations under the present Protocol". As the Republic of Moldova hasn't ratify yet this Protocol, it didn't enter into force for us. At the same time the main activities for atmospheric air pollution prevention are included in the range of laws, prepared and entered in force after the Republic of Moldova became independent. The following legislative acts were developed and introduced: see Annex n...

47. **Russian Federation.** In 1999 the State Environmental Committee issued a decree on conducting an inventory in the Russian Federation of plants, equipment and materials using or containing polychlorinated biphenils (PCBs) and of PCB-containing waste. A decision of the Inter-Parliamentary Assembly of the CIS States on a model law for the safe handling of pesticides and other agricultural chemicals was adopted in 1998.

48. **Switzerland.** The principles of the air pollution control policy are set out in the 1985 Federal Law relating to the Protection of the Environment. Its objective is to protect human beings, animals and plants, their biological communities and habitats against harmful effects or nuisances and to maintain the fertility of the soil. Both a source-oriented (through emission standards) and an effect-oriented (through ambient air quality standards) approach are followed. Irrespective of existing environmental pollution, as a precautionary measure, emissions are to be limited as much as technology and operating conditions allow, provided this is economically feasible. Emissions shall be limited more stringently if harmful effects are found or expected, taking into consideration the existing level of environmental pollution.

49. The Ordinance relating to Environmentally Hazardous Substances (Ordinance on Substances, Osubst) of 9 June 1986 regulates the import, the production, the supply, the use and the export of substances that may present a hazard to the environment, including requirements for the environmental impact assessment of new and existing substances and products as well as notification and licensing schemes. In addition to the general regulations, annexes to this ordinance contain special regulations for particular groups of chemicals. Among them, several are of special interest regarding the emissions of hazardous substances into the atmosphere which may occur during production and use or during waste treatment (e.g. halogenated pesticides, PCBs, etc.). Many important commitments of the POPs protocol are implemented in Switzerland through the Ordinance on Substances (see questions 38 to 48 below).

50. **Ukraine.** Information was sent to the secretariat in a letter dated 4 April 2000.

51. **United Kingdom.** Please refer to the answer given in question 71

Note: When answering questions 38 to 42, please take into account article 3, paragraph 4, and article 4 (Exemptions). Whenever article 4 applies, explain the exemption and specify the paragraph of article 4 to which it refers.

52. **Question 38 Provide information, as required by article 3, paragraph 1 (a), on measures taken to eliminate the production and use of substances listed in annex I.**

53. **Austria.** The use and production of Aldrin, Chlordane, Chlordecone, DDT, Dieldrin,

	Use	None	Never available on market	Never approved
Heptachlor	Production Use	None None, except by approved personnel for control of Solenopsis ants in industrial packaging. This use will be reassessed under the Protocol no later than two years after its entry into force.	Never available on market	Banned 15.5.1976 ⁴
Hexachloro benzene	Production Use	None, except for production for limited use as stipulated in a declaration lodged by a transition-economy country at the time of signature or accession None, except for limited use as stipulated in a declaration lodged by a transition-economy country at the time of signature or accession	Never available on the market	Banned 22.11.1974
Mirex	Production Use	None None	Never available on the market	Never available on the market
Toxaphene	Production Use	None None	Never available on the market	Banned 22.11.1974
PCB	Production Use	None, except for economic-transition countries which must phase out production as soon as possible and no later than 31 December 2005 and which have stated their intention of so doing in a declaration lodged with their instrument of ratification, acceptance, approval or accession None, except those specified in annex II	Banned 09.07.1986 ⁵ Banned in new applications as of date of Royal decree (1986)	
Hexabromo biphenyl	Production Use	None None	None None	

¹ Moniteur Belge 14/11/1975² Moniteur Belge 15/01/1981³ Moniteur Belge 12.06.1974⁴ Moniteur Belge 14/11/1975⁵ Royal decree 09/07/1986 regulating PCB and PCT-containing substances

55. Walloon region: See response under Federal Government

56. Flemish region: As was stated in the answer of the federal government, the production and the bringing on the market of PCB's and of equipment containing PCB's have already been prohibited in 1986 (Royal decree of 7. July 1986). Concerning the use of PCB containing equipment, the phasing out plan for the Flemish Region has been approved by the Flemish government on 17. March 2000 and has been published in the Belgian law gazette of 17. May 2000. The Flemish Waste Legislation (VLAREA) makes a reference to the phasing out plan by the article 5.4.2.3. The phasing out plan foresees in a total phasing out of the registered equipment (Directive 96/59/EG of 16. September 1996) by the end of the year 2005. In some cases, the use until the end of the year 2010 can be allowed.

57. **Bulgaria.** None of the substances listed in annex I are produced in Bulgaria, and their use was banned before 1990.

58. **Canada.**

(a) All of the pesticides listed in Annex 1 of the Protocol (aldrin, chlordane, chlordecone, DDT, dieldrin, endrin, heptachlor and toxaphene) are pesticides whose sale and use has been discontinued in Canada under the Pest Control Products Act (PCPA).

(b) The remaining four substances (hexabromobiphenyl, hexachlorobenzene, mirex and PCBs) are industrial chemicals that are regulated under the Canadian Environmental Protection Act (CEPA).

(c) CEPA regulations - the *Prohibition of Certain Toxic Substance Regulations* (April, 1996), prohibits the manufacture, use, processing, sale, offering for sale or import, of hexabromobiphenyl.

(d) The sale or use of Hexachlorobenzene as a pesticide in Canada represents a violation of the PCPA. Hexachlorobenzene exists in the form of unintentional by-products and micropollutants of combustion and industrial processes and is considered toxic under CEPA. It has been designated as a Track 1 substance under the federal Toxic Substances Management Policy (TSMP) and scheduled for virtual elimination from the environment.

(e) The sale or use of mirex as a pesticide in Canada represents a violation of the PCPA. CEPA regulations - the *Prohibition of Certain Toxic Substance Regulations* (April, 1996), prohibits the manufacture, use, processing, sale, offering for sale or import, of mirex.

(f) PCB production and new uses are banned under CEPA. Existing uses comply with the requirements of the Protocol and are subject to joint federal/provincial/territorial management schedules. The phase out of PCBs is also being addressed in a number of fora (e.g. PCB North American Regional Action Plan and amendments to federal PCB regulations).

59. **Croatia.** In compliance with the regulations of the Republic of Croatia waste PCBs or waste contaminated with them are classified into the category of hazardous waste and its management falls within the State authority. By the special authorisation granted by the authorised ministries, in 1992 APO (Waste Management Agency) d.o.o. of Zagreb was nominated institution for keeping records, supervision of waste management and elaboration of the strategy relating to the substitution of all installed and spare devices filled up with PCBs/PCTs. Since in the Republic of Croatia there has not been any database (inventory of hazardous waste), activities relating to the management of equipment containing PCBs should have started by collecting data

on the existing devices and equipment containing PCBs.

60. In compliance with authorisation and demands the following activities were performed in the period from 1993 to 1999:

- (a) database for Croatia as per counties was created;
- (b) plan relating to the substitution of equipment and devices containing PCBs was made;
- (c) the organised management / destruction of PCBs was started.

61. **Czech Republic.** Persistent organic pollutants listed in annex 1 are not produced and not used in the CR. Transformers with POP fillings are employed, that have a special regime and are stored as specially hazardous waste following the end of their lifetimes.

62. **Denmark.** See answer Q 37.

63. **Germany.** Aldrin, dieldrin, endrin, chlordane, hexachlorobenzene and heptachlor are subject to prohibitions pursuant to the Ordinance on the Placing on the Market and the Use of Plant Protecting Agents Containing Particular Active Substances (Pflanzenschutz-Anwendungsverordnung), and PCBs are subject to prohibitions pursuant to the Chemicals Prohibition Ordinance (Chemikalien-Verbotsverordnung). None of these substances is a component or active ingredient of a registered pesticide in Germany, nor are mirex or toxaphene.

64. **Greece.** Activities in connection with the production and use of substances listed in annex I are governed by the provisions of the environmental licence for the plant in question.

65. **Latvia.** POPs are not produced in Latvia. There was permission to use two substances listed in annex I in Latvia:
DDT (CAS: 50-29-3) till the year 1967 and Heptachlor (CAS: 76-44-8) till the year 1980.

66. **Netherlands.** The production and use of the substances in Annex I is forbidden by law.

67. **Poland.** The State Institute of Hygiene established in 1991 a list of plant protection products that were prohibited to use. It includes:

1. Aldrin
2. Chlordane
3. Chlorodecone
4. DDT
5. Dieldrine
6. Endrin
7. HCH
8. Hexachlorobenzene
9. Lindane
10. Toxaphene

It should be noticed, that endrin, heptachlor, hexabromobiphenyl and mirex have never been permitted to be used or imported to Poland.

68. **Republic of Moldova.** As there was noticed by the answer to the question 37, certain POPs pesticides, listed in Annex I and that are settled by the POPs Protocol and other acting international agreements were prohibited in the USSR and of course it was in force also on the whole territory of the Moldavian Soviet Socialist Republic and the ban has the same value still now. Mentioned POPs pesticides are not included in the 1997 official register of permitted substances. In this context the Republic of Moldova plans to adopt a new normative act that will ban production, import, export, sales and use of POPs pesticides, listed in Annex I of the POPs Protocol. At present in the Republic of Moldova the substances included in Annex I are not produced. In conformity with data of State Ecological Inspection: POPs pesticides – aldrin and mirex were never used in our country. Though, inventory of hexabromobiphenil and PCB use wasn't undertaken. At the same time in the draft that is under development now of the National Strategy on Reduction and Elimination of POPs releases will be foreseen the main directions of resolving problems on PCB, PBB and PCT.

69. **Switzerland.** Already in 1971 the use of most substances was severely restricted in Switzerland. In 1986 the restrictions were tightened. For the intentionally produced substances listed in Annex 1 and Annex 2 of the POP protocol as well as for preparations containing such substances the manufacture, supply, import and use were prohibited. The import of textiles and leather goods which contain these substances is also prohibited. The only general exemptions that still exist are:

- (a) The use for laboratory scale research purposes;
- (b) Products which contain such substances only as an unavoidable impurity;
- (c) The import and export of waste containing such substances for the sound destruction in accordance with the Basel Convention.

(d) The only substance in Annex 1 and 2 of the POP Protocol which is not officially banned until now is Mirex. It is, however, not licensed as a pesticide and it is also not registered for any other use. HCH is banned. The use of gamma Isomer Lindane is only permitted in seed dressings and pharmaceuticals.

70. **Question 39. Provide information, as required by article 3, paragraph 1 (b) (i), on measures taken to ensure that the destruction or disposal of substances listed in annex I is undertaken in an environmentally sound manner, taking into consideration relevant subregional, regional and global regimes governing the management of hazardous waste, in particular the Basel Convention.**

71. **Austria.** Austria has strict regulations on the handling and transport of hazardous waste including obligations for bookkeeping and reporting to the authorities. Installations for the disposal and destruction of hazardous waste must be constructed and operated according to best available technology; strict emission limit values apply. Austria has stipulated regulations for import and export of hazardous waste according to the Basel Convention.

72. **Belgium.** Walloon region. All annex I substances scheduled for elimination are considered to be hazardous wastes under Belgian law and are treated as such in the application of the European directive on hazardous wastes and Belgian regional legislation. They are also subject to the procedure for the international transport of wastes provided under Council Regulation (EEC) No 259/93 on the supervision and control of shipments of waste within, into

and out of the European Community, which incorporates the Basel Convention for European Union countries.

73. Flemish region: All the annex I substances are considered dangerous waste in Belgium. Therefore they are treated as such in application of the European Directive on dangerous waste and of Flemish regional legislation.

74. The Flemish Environmental Legislation (VLAREM) stipulates that PCB containing equipment can be either decontaminated and/or removed. Decontamination is a way of decontamination which has been described in legislation (VLAREM II article 4.8.0.1, 6°). It stipulates that, in the Flemish Region, the decontamination and/or the disposal of the PCB containing equipment has to happen in fully permitted installations. The equipment has to be decontaminated and the PCB liquids and other PCB containing materials have to be disposed of by high temperature incineration in an incinerator permitted for the incineration of hazardous waste (VLAREM II, article 4.8.0.1, 4° states that used PCBs have to be removed in the way described above; other techniques for removing PCBs are not legally permitted; recycling is not allowed). The landfilling of PCB containing equipment or materials is not allowed since PCBs do not meet the criteria of acceptance for landfilling as set up in the VLAREM legislation.

75. Transfrontier shipments of PCB containing equipment are possible, but the conditions of the Council Regulation (EEC) N° 259/93 of 1. February 1993 have to be fulfilled (red list procedure). This regulation has been translated in Flemish Waste Legislation (VLAREA) in chapter 6 on 'Import and export of wastes'.

76. In application of the proximity principle (Council Regulation (EEC) N° 259/93, article 4,3) by which foreign countries can refuse the import of dangerous waste that has to be removed in their country, these wastes have to be removed on the national territory unless there is insufficient capacity to remove certain substances like PCBs. In that case the export of PCB containing equipment out of the Flemish Region can only be granted if the foreign installation meets at least the same decontamination quality of our domestic installations. Export of PCB containing equipment for disposal (landfilling or incineration) is prohibited. The import of PCB containing equipment is allowed as long as our decontamination plant has capacity available.

77. For the pesticides of annex I, old stocks (overdue stocks and leftovers in small quantities) and forbidden products and their packages are considered as industrial waste and hazardous waste (Decree of the 2. of July 1981 concerning prevention and management of wastes, art.3,§2,2° and art.3§3,1° and 2°). Therefore the Flemish Waste Legislation (VLAREA) imposes an appropriate collection and treatment (VLAREA, art. 2.4.1. and annex 2.4.1.2.). A collection of old stocks and forbidden products was organised the first time in 1997 (December) and will be repeated very soon (2000-2001). These collected wastes are then incinerated in specially adapted incineration facilities. There is also a collection twice a year (May-June and November-December) of the empty packages of pesticides. In 1999 a successful sensibilisation campaign by which the users were earned to rinse the packages after use was organised. Unrinsed packages and rinsed packages of the most ecotoxic products are considered as hazardous waste and thus incinerated as hazardous waste. Rinsed packages of the less ecotoxic pesticides are considered as non-hazardous waste and thus incinerated as non-hazardous waste or as fuel in industrial installations like cement kilns.

78. **Bulgaria.** Bulgaria is Party to the Basel Convention. An Act on mitigating the harmful effect of wastes on the environment and a Regulation on industrial and hazardous wastes handling and transportation were adopted by Decree of the Council of Ministers No. 53/99, the Regulation being in compliance with both Basel Convention and Directive 94/67/EC provisions.

79. **Canada.** The Basel Convention on the Transboundary Movements of Hazardous Wastes and their Disposal contains general obligations for parties to minimize, ensure adequate disposal facilities for, and ensure the environmentally sound management of wastes covered by the Convention, while as far as possible reducing transboundary movements of these wastes to a minimum. Of the substances listed in Annex I to the POPs Protocol, PCBs, furans and dioxins are specifically mentioned in both Annex I and Annex VIII of the Basel Convention, although the remaining POPs substances would be controlled for transboundary movements through either Basel Annex I or Canada's domestic definition of hazardous waste.

80. In Canada, the authorization of waste disposal facilities is a provincial responsibility. Facilities that either dispose of domestic or imported hazardous wastes receive operating permits from the province in which they are located. For proposed imports of hazardous wastes, provincial consent is necessary before the shipments can commence.

81. CEPA 1999 contains the authority to define terms including environmentally sound management (ESM). At the international level, work towards defining and operationalizing ESM is ongoing within the OECD as well as the Basel Convention. The Regional Training Centres established under the Basel Convention will be one tool used to diffuse ESM information.

82. **Croatia.** In accordance with the Law on Waste, handling hazardous waste is entrusted to companies authorised to do it by the Ministry of Environmental Protection and Physical Planning. Hazardous waste such as PCBs not yet being handled in an environmentally sound manner in the Republic of Croatia, the valid permit allows for PCBs to be handled in the Western Europe. According to the existing records, in the period 1994-1999 it was handled defective transformers and capacitors as follows: 23 tonnes in 1994, 60 tonnes in 1995, 60 tonnes in 1996, 16 tonnes in 1997, 42 tonnes in 1998 and 16 tonnes in 1999 in such a manner. According to preliminary estimation only 10-15 percent of the total installed equipment in Croatia has been handled so far.

83. **Czech Republic.** An amendment to the Decree of the Ministry of the Environment to Law No. 157/1998 Coll., on chemical substances and chemical preparations, has been prepared to provide for inventories of installations containing PCBs. The new Law on Waste will deal with management of waste containing PCBs in a separate chapter on management of selected waste.

84. **Germany.** Remaining stocks of the substances aldrin, dieldrin, DDT, endrin, chlordane, mirex, toxaphene, heptachlor and hexachlorobenzene in Germany are of negligible quantities. The destruction of POPs or their environmentally sound disposal are regulated by the Act on Closed Substance Cycle Management and Waste Disposal and the Federal Immission Control Act as well as by the respective sets of implementing regulations, notably the Technical Instructions on the Management of Hazardous Wastes.

85. **Greece.** Management of hazardous waste is governed by the provisions of the

environmental licence for the plants in question. Currently, pending the setting of the relevant national policy, such wastes are held in temporary storage (under conditions closely controlled by the competent authorities) and are destroyed outside Greece. All the Community rules concerning the transboundary carriage of such wastes are applied.

86. **Latvia.** Regulations on Classification and Criteria of Hazardous Waste, approved by Cabinet of Ministers in 12.08.1997, include: establishment of separate waste collection systems, waste reuse, waste minimisation in landfills, biological treatment of waste, clean-up of old landfills, development of waste management infrastructure.

87. **Netherlands.** The Netherlands have signed, implemented and ratified the Basel Convention.

88. **Poland.** According to the Act on waste (1997) and its executive acts producers of hazardous waste must obtain a permit for the generation of it (specifying the types and amounts of waste as well as presenting a waste management programme covering methods of waste treatment). Specialised waste treatment plants or transportation companies that take over the obligations of the waste producer also must submit for a permit for waste disposal. Depending on the scale of the problem, these permits are issued either by the local or national authorities. Selected treatment methods are considered mandatory and forced by a special regulation. Apart from these obligations fees for waste disposal on landfills are set in a regulation which is updated every year. They depend on the type of waste, its amount and the duration of landfilling. Fines for non-compliance are also imposed. A new Act on waste with a set of regulations complying with the EU requirements is expected to come into force soon.

89. Poland is a Party to the Basel Convention and as such fulfills its obligations following very strict rules set in the legal acts mentioned above on import, export and transit of hazardous waste. Import of hazardous waste is forbidden. An exporter of hazardous waste must apply for a permit to the Chief Inspector for Environmental Protection. The same applies as far as transit of hazardous waste is concerned. Such permits are granted only on certain conditions.

90. **Republic of Moldova.** The Republic of Moldova is the party of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. According to this, appropriate decisions regarding destruction or disposal of the substances listed in annex I will be taken considering the requirements for implementation of these activities in environmentally sound manner. At the same time a range of provisions of the Law on wastes of production and consumption notes the obligatory character of procedures realization for waste management, including their destruction or disposal, environmental risk minimization or exception of any risk. At the same time the concept of terminology "Disposal" and "environmentally sound manner" are not explicitly stated in our legislation.

91. **Switzerland.** As early as in 1987, Switzerland introduced a strict legislation to control the export of special waste. Today, a well-developed domestic disposal infrastructure consisting of special waste incinerators and landfills for stabilised residues is established. At the same time, Switzerland has pressed for improvements in international control and for world-wide transfer of administrative and technical know-how.

92. On 1 April 1987, the Swiss Federal Council issued the Ordinance on Movements of Special Wastes, a consistent control system for the disposal of special wastes. Under these regulations, only those in possession of a permit issued by the cantonal authorities may accept special wastes for disposal. Furthermore, the Swiss Agency for the Environment, Forests and Landscape regulates the import and export of special wastes. All movements of special wastes are accompanied by documentation permitting waste transport routes to be traced in detail should doubts arise. The official control procedures ensure accountability and are a precaution against misuse. Osubst: Annex 3.1 Figure 4 Registration requirement for waste disposal concerns. "Waste disposal firms which accept waste containing halogenated biphenyls, terphenyls or naphthalenes must notify the Federal Office each year by 30 June of the amounts which, during the previous year:

- (a) They have accepted (together with the name of the supplier);
- (b) They have supplied for research purposes;
- (c) They have disposed in Switzerland;
- (d) They have exported."

93. **Question: 40 Provide information, as required by article 3, paragraph 1 (b) (ii), on measures taken to endeavour to ensure that the disposal of substances listed in annex I is carried out domestically.**

94. **Austria.** Any export (and import) of waste has to be licensed. A license for the export of substances listed in Annex I would require that domestic treatment is not possible and that treatment in the import country is carried out in an environmentally sound manner.

95. **Belgium** Walloon region: Applying the proximity principle (art.4.3 of regulation 259/93), hazardous wastes intended for disposal are, by and large, processed on Belgian territory except where the capacity is lacking for certain substances (e.g., PCBs). In such cases the wastes are exported, with all the safeguards provided under Council regulation 259/93 referred to above, to a neighbouring European Union country (France or Germany) which has undertaken to ensure sound environmental management of the wastes. In applying this regulation, the exporting country must ensure that the wastes are treated in approved installations for hazardous wastes in the recipient countries. Transport may only take place with the approval of the authorities of the recipient country. In addition, it is prohibited to transport wastes for disposal to non-OECD countries and to ACP countries.

96. Flemish region: See answer on Q.39.

97. **Bulgaria.** There are no installations for the domestic disposal of annex I and annex II substances, for which reason Bulgaria and Holland are studying options for co-operation in this respect.

98. **Canada.** As described in Question 38, many if not all of the Annex I POPs are addressed in Canadian legislation. Export of PCB wastes are governed by the 1997 PCB Waste Export Regulations which permit such exports only to the United States. However, in effect there are no exports of PCBs from Canada as the US border is closed to PCB imports. Exports of hazardous wastes from Canada during 1998 included some in the general category "pesticide wastes". As in most years, all exports from Canada during 1998 were to the United States, generally to take

advantage of the nearest appropriate disposal facility. CEPA 1999 contains authority to request from waste exporters waste reduction plans. These plans are intended to reduce or phase out exports of both hazardous and prescribed non-hazardous wastes destined for final disposal.

99. **Czech Republic.** At the present time, there are no facilities in the Czech Republic for disposal of wastes containing PCBs and these wastes are currently exported. In the framework of the prepared complex waste management plans for the Czech Republic and the regions, a proposal will be made on management of these wastes.

100. **Germany.** The disposal of aldrin, dieldrin, DDT, endrin, chlordane, mirex, toxaphene, heptachlor and hexachlorobenzene is carried out domestically in accordance with the regulations specified under Q.39.

101. **Greece.** A national plan and the accompanying regulations are under preparation.

102. **Netherlands.** The Netherlands have signed, implemented and ratified the Basel Convention.

103. **Poland.** According to the rules set by the existing Act on waste (1997) all produced waste, especially hazardous waste should be treated and disposed of nearest to its source to avoid unnecessary movement of waste. For many years pesticide waste was collected and placed in concrete containers, the so called "tombs" all over Poland. A Programme for the Elimination of Pesticide Waste has been prepared a few years ago on the basis of the carried out inventory.

104. **Republic of Moldova.** Existing environmental legislation of the Republic of Moldova prohibits import of any wastes and residues with the objective of their recovery, temporary accumulation, storage, disposal, burring or any type of destruction. Nowadays necessary measures are undertaken for introducing amendments into appropriate articles of the national legislation concerning permission of import of wastes on the territory of the republic, that are secondary material resources (metal scrap, paper, etc.) Existing legislation doesn't have concrete stipulations, that disposal of regulated substances should be made inside the country.

105. **Switzerland.** The objective of disposal autonomy has largely been achieved. Municipal waste, sewage sludge, the greater part of construction demolition wastes and almost 90% of the special wastes are now disposed of within Switzerland. Principally in the incineration sector, but also for the disposal of special wastes such as batteries, fluorescent tubes, refrigerators and solvents, the necessary plant and equipment had to be built or extended. For the remaining 10%, firms may only export special wastes from Switzerland if they can demonstrate that environmentally sound treatment abroad is assured. In case of doubt, an expert report must be submitted.

106. **Question 41 Provide information, as required by article 3, paragraph 1 (b) (iii), on measures taken to ensure that the transboundary movement of substances listed in annex I is conducted in an environmentally sound manner, taking into consideration applicable subregional, regional and global regimes governing the transboundary movement of hazardous waste, in particular the Basel Convention.**

107. **Austria.** See Q.39 and Q.40.
108. **Belgium.** Walloon region: See responses to Q39 and Q40.
109. Flemish region: See answer on Q.39.
110. **Bulgaria:** See the answers to Q. 39 and Q. 40.
111. **Canada.** Canada is a Party to the Basel Convention, and as such already has legislation in place to deal with the transportation, disposal and destruction of hazardous wastes, including POPs substances, when wastes. The Convention contains a definition of environmentally sound management. The prior informed consent procedure and tracking of shipments both contribute to environmentally sound management of transboundary movements of hazardous wastes. Canada also recognizes the importance of environmentally sound management of hazardous wastes through the OECD Council Decisions on wastes destined for recovery operations, and the Canada-USA Agreement on the Transboundary Movement of Hazardous Wastes. These international obligations are operationalized in Canada through the 1992 Export and Import of Hazardous Wastes Regulations. With the exception of PCBs, there are no stockpiles of the targeted substances in Canada. PCB disposal is subject to various federal and provincial requirements. Furthermore, most provinces and territories have programs to address industrial, commercial and domestic hazardous wastes, including POPs in products.
112. **Croatia.** Croatia is a party to the Basel Convention and its legislation concerning the import, export and disposal of hazardous waste is harmonised with the obligation arising from the Basel Convention.
113. **Czech Republic.** The export of equipment and wastes containing PCBs is subject to approval by the Ministry of the Environment and the consent of the country to which the waste is exported. In the issued decision, the Ministry of the Environment requires that the exporter ensure that export is carried out in an environmentally sound manner.
114. **Germany.** The Basel Convention has been implemented by Council Regulation (EEC) No. 259/93 (supervision and control of shipments of waste within, into and out of the European Community) as well as by the Waste Movement Act. According to these regulations, the export of waste for final disposal to non-EU and non-EFTA countries is prohibited, as are all exports of waste for recovery/recycling (according to Annex V) from EU countries to non-OECD countries.
115. **Greece.** See R 39.
116. **Netherlands.** The Netherlands have signed, implemented and ratified the Basel Convention.
117. **Poland.** Poland is a Party to the Basel Convention since 1992 and fully complies with its provisions and obligations. For more information see Q.39.
118. **Republic of Moldova.** In conformity with national legislative acts and normative documents import and export of harmful products and substances is undertaken in the base of

license, given by competent authorities with accord of the environmental protection authorities. In conformity with the Law on Regime on Harmful Products and Substances physical and juridical persons are obliged to take into consideration sanitary requirements and technical norms managing harmful products and substances, including transportation, import and export, and should undertake measures in order to prevent and liquidate harmful impacts on human health and environment.

119. **Switzerland.** Among its activities, Switzerland played an important part in the establishment of the Eastern European Centre in Bratislava (Slovakia). Commissioned by the Swiss Confederation, the "Fachhochschule beider Basel" (FHBB) has so far held eight courses of instructions on the management of hazardous waste, with about 150 participants from 19 countries of central and eastern Europe. The FHBB in MuttENZ (Canton of Basel-Landschaft) offers developing countries and countries with economies in transition international workshops of several weeks' duration on the theme of "cleaner production" comprising integral operational environmental protection in manufacturing firms, and provides technical support for the international UNIDO "Cleaner Production Centres" in Latin America and south-east Asia.

120. **Question: 42 Provide information, as required by article 3, paragraph 1 (c), on measures taken to restrict the substances listed in annex II to the uses described.**

121. **Austria.**

- (a) The use of DDT as plant-protective agent and pesticide is prohibited;
- (b) The use of HCH as plant-protective agent and pesticide is prohibited, only gamma-HCH (at least 99.5 per cent) may be used for seed treatment;
- (c) The production and sale of PCB and materials containing PCB and their use in hydraulic fluids is prohibited; the use of electric equipment containing PCB is being phased out (starting with 1996; timescale according to PCB content).

122. **Belgium.** Walloon region: For HCH and DDT, see the response under Federal Government. PCBs:

- (a) Banned on market since 1986;
- (b) equipment > 500 ppm, in operation before 1972, and substances contained therein must be removed before the end of 2001;
- (c) equipment > 500 ppm, in operation after 1972, and substances contained therein must be removed before the end of 2005;
- (d) certain exceptions are possible under specific conditions. The refilling of operating equipment is no longer authorized;
- (e) equipment between 50 and 500 ppm may be used until the end of its operating life. If PCB escapes, refilling is not authorized.

123. **Flemish region:** Concerning the PCBs, the following measures have been taken :

- (a) The production and the bringing on the market of PCB's and of equipment containing PCB's have already been prohibited in 1986 (Royal decree of 7. July 1986);
- (b) The adding of extra PCBs in transformers is prohibited by the Flemish Environmental Legislation (VLAREM II, art. 5.12.0.2, §2,5°);

(c) Equipment with a PCB content between 50 and 500 ppm can be used until the end of the use-by date (VLAREM II, art. 4.8.0.2,§2);

(d) The phasing out plan for PCB containing equipment and its PCBs (Conclusion of the Flemish government on 17. March 2000, publication in the Belgian Law Gazette of 17. May 2000) for the Flemish Region foresees in a total phasing out of the registered equipment (Directive 96/59/EG of 16. September 1996) by the end of the year 2005. The registration duty of Directive 96/59/EG was translated in the Flemish Environmental Legislation (VLAREM II, art. 2.7.0.2,§1) for all equipment containing more than 1 litre of PCBs. This registration duty had to be fulfilled on the first of January 1999.

124. The phasing out plan imposes the following dead-lines (art. 2 of the plan) :

(a) Registered equipment with unknown date of construction or constructed before 1971 has to be decontaminated and/or removed before 31. December 2000;

(b) Registered equipment constructed before 1972 has to be decontaminated and/or removed before 31. December 2001;

(c) Registered equipment constructed before 1973 has to be decontaminated and/or removed before 31. December 2002;

(d) Registered equipment constructed before 1974 has to be decontaminated and/or removed before 31. December 2003;

(e) Registered equipment constructed before 1975 has to be decontaminated and/or removed before 31. December 2004;

(f) All other registered equipment has to be decontaminated and/or removed before 31. December 2005;

(g) In some cases, the use until the end of the year 2010 can be allowed (for criteria see art. 8 of the plan), except in some economic sectors producing food, drinks and pharmaceutical products and in restaurants and hotels and in some relevant social sectors.

125. Federal Government:

POPs Protocol Substance	Annex II Application conditions Reserved for use as provided below	Conditions	Belgian federal instruments	
			Non-agricultural use	Agricultural use
DDT CAS : 50-29-3	1. For protection of public health against such diseases as malaria and encephalitis 2. As feedstock in the production of Dicofol	Use only authorized as part of integrated pest control strategy and only in the necessary quantities and for a period of 12 months from the production phase-out date in accordance with annex I This use will be reassessed at the latest two years following the entry into force		

<p>HCH CAS : 608-73-1</p>	<p>1. Technical HCH (i.e., HCH composed of a combination of isomers) may only be used as feedstock in the chemical industry Products in which the gamma isomer of HCH constitutes at least 99% (i.e., lindane CAS : 58-89-9) may only be used for the following purposes: Treatment of seeds; Application to the soil which is then immediately mixed into the topsoil; Curative treatment administered by professionals and industrial treatment of timber and logs; Topical insecticides used for public health and veterinary purposes; Application to young plants by means other than aerial spraying, small-scale use for lawns, for seedlings in plant nurseries and for indoor and outdoor ornamental plants; Indoor uses in industry and homes</p>	<p>of the Protocol</p>	
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126. **Bulgaria.** None of the substances DDT, PCBS, HCH are produced in Bulgaria, and their use is banned. There are some minor left-over quantities from the past to be disposed of, when the matter, discussed in A. 40 is resolved.

127. **Canada.**

(a) DDT is not registered for use in Canada under the Pest Control Products Act (PCPA);
(b) The registered use pattern for lindane in Canada, under the PCPA, complies with the requirements of the Protocol;

(c) PCB production and new uses are banned under the Canadian Environmental Protection Act (CEPA). Existing uses comply with the allowed uses under the Protocol and are subject to joint federal/provincial/territorial regulatory management schedules. The phase out of PCBs is also being addressed in a number of fora (e.g. North American Regional Action Plan on PCBs and amendments to federal PCB regulations).

128. **Croatia.** See Q. 39.

129. **Czech Republic.** The use of substances listed in the annex II is restricted to all uses at the present time.

130. **Denmark.** See answer question 37.

131. **Germany.** The Ordinance on the Prohibition of Chemicals prohibits the manufacture and use of DDT and PCBs.

132. **Latvia.** Substances listed in annex II: DDT (CAS: 50-29-3) and HCH (CAS: 608-73-1)

were restricted for use from the year 1967.

133. **Netherlands.** See Q. 38.

134. **Poland.** The use of lindane, technical HCH and DDT is forbidden in Poland. A decrease in the use of equipment containing PCB is expected as at present the devices are filled with mineral oil. The production of capacitors containing PCBs was stopped in 1991. Their expiry period should not exceed 20 years. The University of Science and Technology in Wroclaw carried out a general estimation of the amount of PCBs in industrial energy equipment. An initial inventory of PCBs was made by State Inspectorate for Environmental Protection.

135. Within the medium-term priorities until 2005 of the draft new National Environmental Policy work should be completed on legal acts concerning:

(a) Restrictions regarding production, marketing, use, import, export of products containing persistent organic pollutants taking into consideration appropriate EU directives and international agreements (Conventions and their protocols);

(b) voluntary agreements between the government and the industry.

136. The draft new environmental policy stresses the need for introducing product control measures, such as:

(a) Lists of forbidden substance;

(b) lists of substances restricted in production, use, import and export;

(c) limit values for heavy metal and POP contents in certain products (product standards);

(d) licensing and permit granting procedures and notification schemes;

(e) effective monitoring methods for the production, marketing and use of the controlled substances or products.

137. **Republic of Moldova.** Data not available. Republic of Moldova plans the elaboration of the draft National Strategy on reduction and elimination of POPs releases. In this context, in the draft of the National Strategy on Reduction and Elimination of POPs releases that is under development now will be foreseen the main directions of resolving problems on measures taken to restrict the substances listed in annex II to the uses described.

138. **Switzerland:** See Q. 38.

139. **Question 43** Please report, as required by article 3, paragraph 3, on progress made to develop strategies for identifying articles still in use and wastes containing substances listed in annex I, II or III to the Protocol. Also provide information on measures taken or to be taken to ensure that such wastes and such articles, upon becoming wastes, are destroyed or disposed of in an environmentally sound manner.

140. **Armenia.** See Q.37

141. **Austria:** Electric equipment containing PCB had to be labelled; location and amount had

to be reported to the ministry for environment. Most other substances have been prohibited / not in use for years; the existence of relevant amounts in articles still in use seems unlikely.

142. **Belgium.** Walloon region: See response under Federal Government

143. Flemish region: Some research has been done towards the PCB containing components in kitchen articles and office articles. As result of this research, the phasing out plan stipulates that capacitors which may contain PCB's have to be considered as PCB containing capacitors (phasing out plan, art.13). Towards the mineral oil filled transformers, the phasing out plan stipulates that the transformer oil has to be checked on PCB's as soon as the transformer in case is moved, repaired, sold, ... (phasing out plan, art.5,§1). If the mineral oil contains more than 0.005 weight percentage of PCB's the transformer has to be considered a PCB containing transformer (phasing out plan, art.5,§2).

144. Concerning PAHs and dioxins/furans the inventarisations done in the framework of action 28 of the Environmental Policy and Nature Development Plan for the period 1997 to 2001 (Mina-2 plan, 1997) are an import element of the strategy for identifying articles still in use and wastes containing PAHs and dioxins/furans (for general explanation see Q.37). For PAHs, progress has been made concerning their identification in tar containing asphalt. Methods have been developed to separate tar containing from tar free asphalt. The use of tar containing asphalt in the region of Flanders has been stopped since 1999. Recycled asphalt containing tar can only be used in cold applications. Creosote and carbolineum are still in use, as are the one and two component tar containing shipcoating.

145. For dioxins/furans an emission reduction plan is being made in the framework of action 30 of the Environmental Policy and Nature Development Plan for the period 1997 to 2001 (Mina-2 plan, 1997). An aspect of this action is the set up of a study to make an inventarisation of the emission of dioxins towards wastes of industrial installations and waste incineration and to trace the pathway of this dioxin containing waste from source to destination. These situations which possibly cause spread out of dioxins towards the environment or possibly threaten human health, will be identified. Measures will be proposed.

146. **Bulgaria.** See A. 39 and A. 40

147. **Canada:** Canada is a Party to the Basel Convention, and as such already has legislation in place to deal with the transportation, disposal and destruction of these substances. With the exception of PCBs, there are no stockpiles of the targeted substances in Canada. PCB disposal is subject to various federal and provincial requirements. Furthermore, most provinces and territories have programs to address industrial, commercial and domestic hazardous wastes, including POPs in products.

148. **Croatia.** The Waste Management Strategy is currently under preparation within the framework of Environmental protection Strategy and it is expected to be finalised by the end of the year 2000.

149. **Czech Republic.** Not used.

150. **Germany.** Regulations under the Act on Closed Substance Cycle Waste Management and Waste Disposal of remaining stocks of PCBs from their use in condensers, transformers and as hydraulic fluids by the year 2005.

151. **Greece.** See R.39.

152. **Netherlands.** The Netherlands have signed, implemented and ratified the Basel Convention. See also Q. 38.

153. **Poland:** The Act on waste, the Act on the protection and management of the environment with their numerous executive acts formulate a set of rules for environmentally sound waste management. At present new draft acts (on waste, on environmental protection, on packaging and packaging waste, on product charges and deposit fees) are being prepared identifying specific methods and measures for selected types of waste including products, articles and waste containing persistent organic pollutants (e.g. PCBs, pesticides).

154. **Republic of Moldova.** Republic of Moldova plans the elaboration of the draft National Strategy on reduction and elimination of POPs releases, in which requirements of p.3 of art.3 of Protocol will be included. The Republic of Moldova is the party of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. According to this, appropriate decisions regarding destruction or disposal of the wastes will be taken considering the requirements for implementation of these activities in environmentally sound manner. At the same time a range of provisions of the Law on Wastes of Production and Consumption notes the obligatory character of procedures realization for waste management, including their destruction or disposal, environmental risk minimization or exception of any risk. Presently National Programme on Production and Municipal Wastes Management is under development.

155. **Switzerland.** Osubst: annex 4.8 Figure 2 Supply and import: “The supply or import of capacitors and transformers containing pollutants shall be prohibited. Supply or import for disposal in accordance with Figure 4 shall be exempt from the above.”

156. Figure 3 Appliances in operation:

(a) 31 Warning label: “Owners of transformers containing pollutants must ensure that the appliances carry a warning label. The warning label must contain:

(b) A hazard warning (e.g. “Danger! Contains environmentally hazardous PCB”);

(ii) the instructions that the Cantonal authorities must be informed in case of leakage or overheating or if taken out of operation.”

(c) 32 General notification of the Cantonal Authorities: “Owners of capacitors containing pollutants, with a total weight exceeding 1 kg, and owners of transformers containing pollutants must notify the Cantonal authorities by 31 August 1987 of the following:

(i) The location of the appliances;

(ii) the type and number of appliances;

(iii) the nature and quantity of the contents, and;

(iv) the expected date for taking out of operation and disposal.”

a) 33 Checking and procedure in cases of damage

“Owners of transformers containing pollutants must check at least once a year that the appliances are not leaking. If the owner discovers a leak or overheating, he must inform the Cantonal authorities.”

157. Figure 4 Taking appliances out of operation and disposal: “Owners of capacitors containing pollutants, with a total weight exceeding 1 kg and owners of transformer containing pollutants must ensure that these appliances are taken out of operation and disposed of by 31 August 1998. The Cantonal authorities may set the owner a deadline within this period, if this necessary in order to avoid congestion in disposal. The owners of appliances must inform the Cantonal authorities of the date when appliances are taken out of operation and of the type of disposal. Capacitors and transformers containing pollutants and liquids from such appliances must be disposed of in accordance with the regulations governing dangerous waste (Art. 30 Para. 4 of the Federal Law relating to the Protection of the Environment). Capacitors with a total weight of less than 1 kg may in small quantities also be returned to a collection point for toxic substances. Figure 3 shall not apply to small capacitors in radios and television, light tubes or in domestic and similar appliances.”

158. Figure 5 Special responsibilities of the Cantons: “The cantons shall ensure that Figures 3 and 4 are complied with.”

159. Question 44 Report, as required by article 3, paragraphs 5 (b) (iii) and (iv), on progress made towards applying best available techniques (BAT), taking into consideration annex V, and limit values as stringent as those specified in annex IV to existing stationary sources. In your reply, list the source categories in your country that are considered to be major stationary source categories under the Protocol, taking into account its article 1 (Definitions) and annexes V and VIII. For each source category, state the limit values applied or to be applied, the units and statistical treatment, and the pollution control measures applied. For limit values to be applied, please indicate when they will come into effect. You may wish to use the table format suggested below to respond. A Party may, as an alternative, apply different emission reduction strategies that achieve equivalent overall emission reductions. Should this be the case, please document the strategies applied and their compliance with article 3, paragraph 5 (b) (iv). When answering this question, you should also consider article 3, paragraph 6, of the Protocol.

Source category	Limit values 1/	Units & statistical treatment 2/	Pollution control measures applied 3/

1/ Refer to limit values specified in annex IV to the protocol.

2/ The statistical treatment can be a percentile (e.g. 95 percentile), a daily average, a monthly average, etc.

3/ Refer to annex V to the Protocol concerning the control techniques.

160. **Austria.** Without prejudice to the future determination of the reference year it may be assumed that most of the categories of Annex VIII, except 10–12, are major source categories. According to the Industrial Code and the Clean Air Act for Steam Boilers, a license for each new or modified installation is required. The determination of emission limit values and/or measures according to best available technology is carried out in the licensing procedure; these provisions

have been introduced in the 80ies. For several categories of (new and existing) stationary emission sources explicit emission limit values and BAT requirements have been set by ordinance:

(a) For PCDD/F: Combustion of waste and hazardous waste, sinter plants, production of iron and steel, (values ranging from 0.1 to 0.4 ng/m³);

(b) for PAH (BaP) or soot: Steam boilers, industrial boilers except steam boilers, casting of metals, production of non ferrous metals.

Limit values for CO, HC and particulate matter are set for these sectors as well (and for several other sectors). Regarding residential combustion, only stoves and heaters with type approval may be installed. Limit values (CO and HC) for the type approval exist.

161. **Belgium.** Walloon Region:

Source cError! No bookmark name given.ategory	Limit values 1/	Units and statistical treatment 2/	Pollution control measures applied 3/
Incineration of household wastes	- before 31.12.2000 : varies with operating conditions - after 31.12.2000 : 0.1 ng TE/m ³	Continuous measures; maximum value	BAT
Incineration of hazardous wastes and co-incineration (Walloon government order under preparation)	- Before 01.07.2000 : varies with operating conditions - after 01.07.2000 : 0.1 ng TE/m ³	Continuous measures ; maximum value	BAT

1/ Refer to limit values specified in annex IV to the protocol.

2/ The statistical treatment can be a percentile (e.g. 95 percentile), a daily average, a monthly average, etc.

3/ Refer to annex V to the Protocol concerning the control techniques.

162. Flemish region: Annex III contains the substances PAHs, dioxins/furans and hexachlorobenzene, which is forbidden in Belgium.

163. PAHs : major sources for PAH in the Flemish Region (Ranking in order of importance)

Source	
Traffic	Diffuse
Wood preservation	Stationary + diffuse
Road construction	Diffuse
Shipcoating	Stationary + diffuse
Residential combustion	Diffuse
Industrial combustion	Stationary
Cokes + sinter	Stationary
Waste incineration	Stationary

Power generation	Stationary
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164. Limit value in the Flemish Legislation

Two emission limit values are foreseen for PAHs in case of exceeding a threshold value of 0.5 g/h as total emission load :

- (a) Benz(a) pyrene : 0,1 mg/m³ ;
- (b) Dibenzo(a,h) anthracene : 0,1mg/m³ .

There are no specific limit values for each individual source category. These limit values count under standard conditions (273.15 K, 101.3 kPa and dry gas). They have to be respected for all new installations and from the first of January 1999 for installations authorised before the first of January 1993 or for which an authorisation was demanded before the first of September 1991. A monthly measurement is required.

165. Statistical Treatment:

Measuring frequency	Compliance
Discontinuous measurements, frequency > or = monthly	a) any measured value < or = emission limit value, or b) i) any daily average from hour values < or = emission limit value and ii) not more than about 5% exceedings of hour values in function of the number of samples**, and iii) any hour average < 2 times emission limit value

**The allowed number of samples not meeting the emission limiting values - as a function of the number of samples - is prescribed in art. 4.4.4 of Vlarem II.

166. Implementation of Control Techniques for the reduction of PAH emissions: Coke Production. In the Flanders there is only one coke production plant. Following measures are implemented at the plant

"52 (a) Charging of the coke oven

Flemish legislation : implemented (art.5.20.3.2)

Plant :Charging from the bunker into charging cars : particular matter emission reduction by wetting the coal.

Filling in the cokes oven :90 % of the filling is done with a "smokeless" charging car.(BAT IPPC Bref Iron and Steel)

10 % of the filling is done with an older "sequential" charging car.

52 (b) Emissions at charging hole lids

Flemish legislation : implemented (art.5.20.3.3)

Plant : all measures implemented.

52 (c) Ascension pipe lids should be equipped with water seal

Flemish legislation : implemented (art.5.20.3.4)

Plant : implemented

52 (d) Coke oven machinery equipped with systems for cleaning the seals surfaces

Flemish legislation : implemented (art.5.20.3.5)

At plant : implemented.

52 (e) Coke oven doors

Flemish legislation : implemented (art 5.20.3.6)

At the plant : spring loaded sealing doors type Dr. C.Otto

Emission level : 1998 : 4,5%; 1999 : 3,5%

52 (f) Coke transfer machine should be equipped with an integrated hood, stationary duct and stationary gas cleaning system.

Flemish legislation : implemented (art.50.20.3.7)

At the plant : use of “Minister Stein System” This system is indicated as BAT in the IPPC Bref “Iron and Steel”.

52 (g) Low emission procedures for coke cooling, e.g. dry coke cooling.

Flemish legislation : implemented (art.50.20.3.8)

For dry quenching : dust emission level < 20mg/m³

For wet quenching : dust emission level < 60g/ton coke.

At the plant : use of “Emission minimised wet quenching”. This system is indicated as BAT in the IPPC Bref “Iron and Steel”.

53 “Non-recovery coke making”

Not possible for existing plants.

51. Reduction in coke production, for instance by injecting high-value coal in steel production.

Legislation : none

At the plant : injection of 185kg/ ton iron.

Pilot project smelting reduction (SR) (IPPC Bref Iron and Steel)

54. An effective monitoring programme for leakages

Flemish legislation : monitoring not explicitly mentioned, but a manual with guidelines to reduce emission is obligatory.

At the plant : the Flemish plant is mentioned as reference plant for good maintenance in the IPPC Bref Iron and Steel.

57. Dry coke cooling : Idem pt. 52

(g)"

167. Anode Production: Not present in Flanders

168. Aluminum Production: Not present in Flanders

169. Wood Preservations Installation: In the Flanders region, there is only one industrial wood preservation plant.

"75. (a) Requirements on storage conditions to prevent pollution to soil and surface water (storage sites impermeable to rainwater, roof cover, reuse of contaminated water)

The reductions measures are not yet implemented in Flemish legislation.

The control techniques are not yet implemented at the plant.

75. (b) Use of pressure steam under vacuum conditions

In Flanders, creosote is only applicated by a pressure treatment process in closed reactors.

The process consist of three steps : a pre vacuum step, an impregnating step when warm creosote oil is pressed in the timber and a final vacuum step when the remaining creosote is sucked from the timber to avoid leakage.

However, the technique is not yet mandatory by Flemish legislation.

75. (c) Optimum loading of wood preservative

Since creosote is not homologated in Flanders, there are no specifications concerning optimum loading.

75 (d) Using wood preservation products with a lower content of PAH

The use of modified creosote is not mandatory in Flanders.

The plant has developed a modified type of creosote but the product is not yet in production.

76 Burning of impregnated wood in installations with adequate abatement techniques

The burning of impregnated wood can only take place in installations with adequate abatement techniques (see regulation on wood combustion below). "

170. Dioxins/furans : only the relevant major stationary source categories of Annex VIII were taken

Source category	limit values	units & statistical treatment	pollution control measures applied
Incineration of municipal, hazardous or medical waste, or of sewage sludge	<p>Flanders : The limit value 0,1 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 11 % O₂ concentration in flue gas applies from 1 January 1997 to all incinerators burning municipal waste (> 6 ton / h), hazardous or medical waste. It will apply from 1 January 2001 to incinerators burning municipal waste with a capacity < 6 ton/h. Until then a limit value of 4 ng TEQ / m³ applies. The limit value 0,1 ng TEQ / m³ applies to sewage sludge incineration from 1 January 2000.</p>	<p>Flanders : following the EN standards of sampling and analysis measurements required yearly limit value has to be reached for all mean values measured during a sampling time of minimum 6 hours and maximum 8 hours continuous dioxin sampling and analysis at least every two weeks applies from 1 may 1999 for municipal waste incineration and for sewage sludge incineration.</p>	<p>optimize combustion conditions start/stop procedure - burners to keep T high enough - stop flow of waste when a set minimum T gas cleaning measures - injection of activated carbon or lignite - optimised fabric filter operation - catalytic filter sleeves - deNOx (catalytic), also as a final step for dioxin removal</p>

sinter plants	<p>The limit value 2,5 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 January 2002 to sinter plants authorised before 1 January 1993. (guide level : 0,4 ng TEQ / m³)</p> <p>The limit value 0,5 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 may 1999 to sinter plants authorised after 1 January 1993. (guide level : 0,1 ng TEQ / m³)</p>	<p>following the EN standards of sampling and analysis</p> <p>measurements required yearly</p> <p>limit value has to be reached for all mean values measured during a sampling time of minimum 6 hours and maximum 8 hours</p>	<p>primary measures</p> <ul style="list-style-type: none"> - input of limestone - restriction of the input of particles with small diameter <p>electrostatic filters</p> <p>injection of active coal</p>
primary and secondary production of copper	<p>The limit value 1 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 January 2003 to sinter plants authorised before 1 January 1993. (guide level : 0,4 ng TEQ / m³)</p> <p>The limit value 0,5 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 may 1999 to sinter plants authorised after 1 January 1993. (guide level : 0,1 ng TEQ / m³)</p>	<p>following the EN standards of sampling and analysis</p> <p>measurements required yearly</p> <p>limit value has to be reached for all mean values measured during a sampling time of minimum 6 hours and maximum 8 hours</p>	<p>restriction of the input of scrap</p> <p>fabric filter</p> <p>injection of active coal</p>
production of steel	<p>same as primary and secondary production of copper</p>	<p>same as primary and secondary production of copper</p>	<p>gas cleaning measures</p>

<p>smelting plants in the secondary aluminium industry</p> <p>combustion of fossil fuels in utility and industrial boilers with a thermal capacity above 50 MW_{th}</p>	<p>same as primary and secondary production of copper</p> <p>limit values are set only for the combustion of wood in installations with a capacity of > 1 ton / hour or > 5 MW.</p> <p>When the wood is :</p> <ol style="list-style-type: none"> 1. dangerous treated wood : with preservation or flame retardant <p>The limit value 0,1 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 January 1997</p>	<p>same as primary and secondary production of copper</p> <p>following the EN standards of sampling and analysis</p> <p>measurements required yearly</p> <p>limit value has to be reached for all mean values measured during a sampling time of minimum 6 hours and maximum 8 hours</p>	<p>phase out of use of hexachloroethane in the aluminium industry</p> <p>Process and Combustion modifications: a.o. OFA=Oven Fire Air, Adaptation of the feed system, burners out of service.</p> <p>Flue gas treatment, deNOx</p>
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	<p>2. not dangerous treated wood : without preservation or flame retardant but painted, varnished, laked</p> <p>The limit value 0,1 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 January 1997 for installations with a capacity of > 6 ton/h. It will apply from 1 January 2001 to all wood combustion installations. Until then a limit value of 4 ng TEQ / m³ applies.</p> <p>3. untreated wood : natural wood or wood stuck together with glue</p> <p>The limit value 0,1 ng TEQ / m³ under standard conditions (273,15 K, 101,3 kPa and dry gas) and referred to 16 % O₂ concentration in flue gas applies from 1 January 2003 for installations with a capacity of > 1 ton/h or 5 MW</p>		
firing installations for wood with a thermal capacity below 50 MW _{th}	same as combustion of fossil fuels in utility and industrial boilers with a thermal capacity above 50 MW _{th}	same as combustion of fossil fuels in utility and industrial boilers with a thermal capacity above 50 MW _{th}	
residential combustion	no limit values except when burning untreated wood in an installation with a capacity of > 1 ton/h (in that case : see above)		public information

171. **Bulgaria.** In Bulgaria there are no existing incinerators for solid household and hazardous wastes. After 2001.12.31 emission limit values for existing hospital waste incinerators shall be identical to ELV for new stationary sources. Emission Limit Values for existing and new stationary sources in T.E./m³ are:

Source category	Emission Limit Values	Comments
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Solid household wastes incinerators	0,1	T.E. B Toxic Equivalent
Hazardous wastes incinerators	0,1	
Hospital wastes incinerators	0,1	

172. **Croatia.** Available technologies and facilities for POPs destruction in Croatia. In Croatia there is only one specialized public installation exclusively treating hazardous waste PUTO (Croatia acronym for “mobile installation for thermal waste treatment”). It is a mobile waste incinerator installed in Zagreb in 1997. It started operating commercially after obtaining a permit in 1998. The main investor is the City of Zagreb, together with the companies “Hafner”, Bolzano, Italy and IRS, Mannheim, Germany. The modular installation make it possible to reuse the material and energetic content of input waste, at the same time respecting German, EU and Croatian environmental regulations. Flue gas retention is 99.9 percent, and no liquid waste is produced. Incinerator’s capacity of this incinerator is 1 200-1 500 kg per hour or up to 10 000 t per year. This capacity is physically far too small to handle all hazardous waste in Croatia, but it could easily handle all obsolete pharmaceutical waste.

173. According to the Croatian regulation all thermal power installation with a capacity above 3MW (there are more than 20 in Croatia) can potentially be used to incinerate waste oils. This occurs in the INA refinery plants of Sisak and Rijeka. Because of their high operating temperatures, cement kilns (there are 6 cement plants in Croatia) could also be used to incinerate waste oils, various sludge, obsolete pharmaceuticals, etc. A few companies possess waste incinerators of limited capacity for their own use, e.g. Regeneracija Zabok, Herbos Sisak, Chromos zagreb, INA-refineries in Rijeka and in Sisak. The Dubrava Hospital in Zagreb also has a pyrolytic incinerator, which complies with EU standards. Incineration services are only exceptionally provided to other customers.

Source category	Limit values 1/	Units & statistical treatment 2/	Pollution control measures applied 3/
waste incinerator	dioxins/furans: 0.1 ngET/m ³	measurement: twice a year	activated carbon injection, wet scrubber
	vapourous or gaseous organic substances indicated as total carbon: 10 mg/m ³	continuous measurements	
other relevant stationary sources	PAHs: 20 mg/m ³	periodical measurements	

1/ Refer to limit values specified in annex IV to the protocol.

2/ The statistical treatment can be a percentile (e.g. 95 percentile), a daily average, a monthly average, etc.

3/ Refer to annex V to the Protocol concerning the control techniques.

All new stationary sources had to comply with prescribed ELVs by By-Law since January 1, 1998 and all existing stationary sources should be complied with prescribed ELVs by July 1, 2004.

174. **Czech Republic.** The list of pollutants explicitly includes BCB, PCDD and PCDF in Annex 1 to Decree No. 117/1997 Coll. Emission limits are not laid down for the individual POPs. Specific emission limits are laid down for organic compounds expressed as total carbon for incineration of municipal and hazardous waste. In the amendment to the Decree, which is expected to come into effect on May 1, 2000, specific emission limits for PCDD and PCDF are added to Annex No. 2 for incinerators of municipal waste and hazardous waste, equal to a total content of 0.1 ng TEQ/m³. Accord with the requirements of the Protocol will also be included in the prepared new Law on protection of the air and protection of the ozone layer of the Earth, which is expected to come into effect by November 1, 2001, along with the pertinent regulations for implementation. The aspect of the best available technology (BAT) is dealt with in connection with the introduction of EU Directive 96/91 EC of September 1996.

175. **Denmark.**

Source category	Limit values 1/	Units & statistical treatment 2/	Pollution control measures applied 3/
Municipal, hazardous and medical waste incineration	0.1 ng TE/m ³	Daily average	Fluegas treatment: Active coal absorbant.

1/ Refer to limit values specified in annex IV to the protocol.

2/ The statistical treatment can be a percentile (e.g. 95 percentile), a daily average, a monthly average, etc.

3/ Refer to annex V to the Protocol concerning the control techniques.

176. **Germany.** For emissions of PCDD/Fs, PAHs and HCB from stationary sources, emission control requirements reflecting the state of the art are laid down in the Federal Immission Control Act and the regulations issued for its implementation. A limit value of 0.1 ng TE/m³ applies to emissions of PCDD/Fs from:

- (a) waste incineration plants (Ordinance on Incinerators for Waste and similar Combustion Material - 17th BImSchV);
- (b) crematories (Ordinance on Crematories - 27th BImSchV).

177. **Netherlands.**

Source category	Limit values 1/	Units & statistical treatment 2/	Pollution control measures applied 3/
1. Municipal waste 2. Hazardous waste 3. Medical waste	0,1 ng TEQ/m ³	Reduction > 99% 8 hour average	Primary measures and activated coal

1/ Refer to the limit values specified in annex V to the Protocol.

2/ The statistical treatment can be a percentile (e.g. 95 percentile), a daily average, a monthly average, etc.

3/ Refer to annex III to the Protocol concerning the control techniques.

178. **Poland.** There is a number of analyses carried out recently to provide the government with a sound basis for setting up strategies of POPs emission reduction. It includes in particular the following documents prepared in 2000 year for the Ministry of Environment:

- (a) National strategy for emission reduction of POPs, and

(b) Estimation of costs, necessary to implement the provisions of the Protocols on Heavy Metals and POPs.

179. The document (a) addresses both the identification of the main sources of POP emission in Poland and recommended technologies for reducing emissions in various branches covered by the Protocol on POPs. The costs related with prohibition of producing and use of articles containing POPs and destruction of their residues have been estimated in the document (b). It includes:

- (a) Incineration of outdated and prohibited pesticides;
- (b) Incineration of materials/elements containing PCB;
- (c) Elimination of PCDD/F from the flue gases.

180. **Republic of Moldova.** Presently limit values for POPs for existing stationary sources weren't established in the Republic of Moldova. In our state hygienic standards of maximum permitted concentrations (MPCs) of harmful substances, polluting air for residential areas were established. In our state were established hygienic standards of maximum permissible concentrations of Dioxins and Furans, Benzo(a)pyrene polluting air of residential areas. Also, standards relating to maximum permissible emissions (MPEs) are set in accordance with current legislation in order to protect the ambient air. Maximum permissible emissions (MPEs) are established for each sources in such a way that the emissions of harmful substances from a given source and the totality of sources in the city or population settlements, taking into account forecast development of industrial enterprises and the spread of harmful substances in the atmosphere, will not create a ground-level concentration which exceeds their maximum permissible concentrations for the population and plant and animal life. This requirements must be observed for all enterprises, whether they are existing, new or undergoing reconstruction. The general rules for the establishment of MPEs are governed by State standard 17.2.3.02 – 78 “Protection of air quality. Atmosphere. Rules for the establishment of permissible emissions of harmful substances from industrial enterprises”, which entered into force in 1980. In cases where objective factors prevent the establishment of maximum permissible emissions for the moment, provision is made for the step-by-step reduction of emissions and the setting of provisionally agreed emissions in the light of what is technically feasible at present and subject to the eventual setting of MPEs.

181. In conformity with article 1 “Definitions” and annex VIII “Major stationary source categories” in the Republic of Moldova there are major stationary sources of the certain categories:

- (a) Category 4: Production of steel;
- (b) Category 6: Combustion of fossil fuels in utility and industrial boilers with a thermal capacity above 50 MWth;
- (c) Category 7: Residential combustion.

182. In the Republic of Moldova weren't identified the stationary sources of the POPs emissions of the categories 1, 3, 5, 8, 12. At the same time, we suppose that certain installations of listed categories in a range of plants can have place.

183. In the draft of the National Strategy on Reduction and Elimination of POPs releases that is under development now the main directions of resolving limit values for POPs to existing stationary sources will be foreseen. Also, in conformity with Indicative Plan of Activities in

Energetic Sector of the Energetical Strategy of the Republic of Moldova for 2000-2010 elaboration of standards and norms of emissions in the environment was included for 2000-2005 in section VI "Protection of the environment". Also, the National Plan of Activities for Health in relation with environment was developed in the Republic of Moldova in 1999, which includes a range of provisions for 2001 and next years regarding protection of environment from POPs, establishment of POPs control systems in environment, elaboration of norms and standards for POPs and other provisions.

184. According to the report regarding national annual anthropogenic emissions for 1998 presented by us, the emissions of all toxic substances, including POPs, in comparison with the reference year were diminished because of economic decrease in all of the branches of national economy and stopping of industrial enterprises activity.

185. In conformity with article 3, par.5b)iii) regarding the best available techniques, taking into consideration annex V, we would like to inform you, that in the Republic of Moldova the following is foreseen:

(a) In conformity with p.40 (section C) of the annex V: Certain measures for emissions reduction of toxic substances, including POPs, were effectuated:

- (i) Increasing the consumption of natural gas in utility and industrial boilers and residential sector;
- (ii) Licensing of all productions, import and use of the fuels and harmful substances and products. In conformity with the Law on Licensing Certain Tips of Activities and other national legislative acts and normative documents production, import and export, sales and use of harmful products and substances is undertaken in the base of license, given by competent authorities with accord of the environmental protection authorities. In conformity with the Law on Regime on Harmful Products and Substances physical and juridical persons are obliged to take into consideration sanitary requirements and technical norms managing harmful products and substances, including transportation, import and export, and should undertake measures in order to prevent and liquidate harmful impacts on human health and environment.
- (iii) Low-NOx burners are used.
- (iv) Installations of vehicle refueling vapor recovery equipment at petrol stations.
- (v) A range of normative and legislative acts concerning payment for air pollution was introduced in our country since 1998. The taxes for pollutant emissions into environment, including ambient air, and waste depositing are established by the Law on the Payment for Pollution of the Environment of the Republic of Moldova. Annex 1 of this Law includes activities for protection of environment, and their costs are taken into consideration when the tax for environmental pollution is estimated. The economic agents pay for air emissions from stationary sources in two cases:
 - In established pollutants' limits
 - In limits that are higher than those established

Each economic agent pays for the pollutants that are enclosed in the license given by State Ecological Inspection of the Ministry of Environment and Territorial Development. The payment for pollution is made for the concrete emissions of pollutants. The payment is increased in 5 times when the emissions into air from stationary sources are higher than the established limits. When the accidental emissions from stationary sources are having place then it's going to be increased in 50 times.

(b) (i) In quality principal strategic goals of the energetic policy of the Energetic Strategy of the Republic of Moldova for 2000-2010:

- Increasing of the energy efficiency and energy conservation;
- Support of the energetic safety;
- Protection of the environment, - and other goals.

(ii)* In mentioned Indicative Plan of Activities in Energetic Sector (Section V “Energy conservation”) of the National Strategy of the Republic of Moldova for 2000-2010 restrictions for 2000-2001 were included:

- Establishment of the National Fund on energy conservation;
- Elaboration and implementation of the national programs on management of the energy consumption and his monitoring;
- Increasing of the efficiency of the activity of the National Agency on Energy Conservation, - and other restrictions.

(iii)* The following was included in the mentioned plan for 2000-2005:

- Elaboration of the standards of the energy consumption in the buildings, traffic, for appliances of house use and for one unit production etc.
- Elaboration of the programs on energetic education and awareness of population.

186. Presently previous proposals on modifications of the Law on the Payment for Pollution of the Environment of the Republic of Moldova are prepared having as a goal implementation of economic instruments for regulation of products containing toxic substances and stimulation of import and use of clean technologies and products.

187. Switzerland.

Regulation of the pollutants emission	Limit values 1/	Units & statistical treatment 2/	Pollution control measures applied 3/
Benzo(a)pyrene	0.1 mg/m ³	At a mass flow of 0,5 g/h or more	Regulated indirectly through: (a) Emission limit values for CO and total carbon requesting efficient combustion; (b) particulates and heavy metals for efficient precipitation of organic particulates and (c) DeNOx Particles filter
Dibenzo(a,h)-anthracene	0.1 mg/m ³		
Diesel soots	5 mg/m ³	At a mass flow of 25 g/h or more	Regulated indirectly through the DeNOx system (SCR or SNCR as mention in annex V, figure 18) required for incinerating plants
PCDD	none		
PCDF	none		

1/ Refer to limit values specified in annex IV to the protocol.

2/ The statistical treatment can be a percentile (e.g. 95 percentile), a daily average, a monthly average, etc.

3/ Refer to annex V to the Protocol concerning the control techniques.

188. **Question 45 Describe, as required by article 3, paragraph 5 (b) (v), the measures taken or to be taken to control emissions from mobile sources, taking into account annex VII**

to the Protocol.

189. **Austria.** Emission standards for mobile sources and fuel quality standards according to EC legislation are applied.

190. **Belgium.** Walloon region: See response under Federal Government. Flemish region: See response under Federal Government.

191. Federal Government: The emission of dioxins/furans by mobile sources is related to the use of leaded fuels. Leaded fuels contain scavengers and other halogenated additives, which are transformed to dioxins/furans when burned in the engine. The amount of additives depends on the amount of lead. By a Royal Decree of 1987 the lead concentration in petrol was reduced from 0.4 to 0.15 gram per litre. The Royal Decree of 29. December 1992 installed a lower price for petrol without lead. Since then, less lead containing fuel was consumed. From the first of April 1999 on, the petrol distributing sector in Belgium brought on the market a fuel containing a substitute for lead. From this date on, practically no lead containing fuel was sold anymore. Conform to the European Guideline 98/70/EG, the commercialization of lead containing fuel is prohibited in Belgium from the first of January 2000.

192. The emission of PAHs by mobile sources is related with the emission of particles. PAHs adsorb on these particles which are emitted mainly by diesel consuming vehicles. All PAHs concerning objectives and reduction targets from the POPs protocol can be reached by implementation of the appropriate European Guidelines :

(a) 98/69/EG on emission limit values (a.o. for hydrocarbons and particulates) for vehicles and light-duty trucks

(b) 97/98/EG on emission limit values (a.o. for hydrocarbons and particulates) for off-roads

(c) 99/96/EG on emission limit values (a.o. for hydrocarbons and particulates) for heavy-duty vehicles

(d) 98/70/EG on fuel parameters (a.o. 11 weight percentage of PAHs) in diesel fuel

(e) 96/96/EG on inspection (a.o. limits for opacity)

The emission limit values on new mobile sources from European legislation are implemented in Belgium.

193. **Bulgaria.** All measures address the production of fuels, meeting provisions of EC Directives.

Diesel fuel

Parameters	Measuring unit	Standards	
		From 2004.01.01	from 2008.01.01
Octane No.		51	51
Density at 15 ⁰ C	kg/m ³	845	845
95% evaporation	⁰ C	360	360
Polycyclic aromatic hydrocarbons	% weight	-	11
Sulphur	%	0,05	0,035

194. **Canada.** Canadian information on existing strategies and regulatory initiatives on (i) new vehicles and (ii) fuels demonstrate reduction in emissions from mobile sources. In 1997, Transport Canada published comprehensive new emission regulations in the Canada Gazette, Part II. The new regulations require more stringent exhaust emission, evaporative emissions and refueling emissions controls from 1998 and later model years. The new regulations include tighter emission control requirements for light-duty vehicles, light-duty trucks, heavy-duty engines and motorcycles operating on gasoline, diesel and other fuels. Canada's new vehicle emission standards are fully harmonized with those applicable in the United States and are consistent with the recommendations of the CCME Task Force on Cleaner Vehicles and Fuels. Transport Canada has initiated a public process to develop low-emission vehicle standards for the 2001 model year.

195. Memoranda of Understanding are being developed, in consultation with industry, to ensure that Canada benefits from the latest clean technology engines currently available in the United States for heavy-duty off-road diesel engine applications and for gasoline recreational marine and utility engines. Setting standards for off-road uses of fuels is in line with Canada's intent to harmonize with U.S. vehicle emission standards and fulfills the intent of the CCME Task Force on Cleaner Vehicles and Fuels.

196. Halogenated scavengers and additives are associated with leaded gasoline. In 1989, Environment Canada published the Gasoline Regulations which prohibit the use of leaded additives in gasoline. In 1997, Environment Canada published the Diesel Fuel Regulations under CEPA. These regulations ensure that the sulphur content of diesel fuels does not exceed 50 parts per million. New low sulphur standards for diesel fuel for on-road vehicles are being considered to accompany new diesel fuel vehicle standards for the 2004 year.

197. **Czech Republic.** The following measures are implemented to control emissions of POPs (PAH, PCDD, PCDF) from mobile sources:

- (a) elimination of scavengers containing PCDD and PCDF from leaded petrol
- (b) setting of emission limits for hydrocarbons for spark-ignition and diesel motors and particulate matter for diesel motors (hydrocarbons and particulate matter containing polycyclic aromatic hydrocarbons)
- (c) regular controls of the emissions of hydrocarbons in the framework of regular technical inspections.

Emission limits for passenger cars with diesel motors are:

Year	weight	limiting value [g/km] for	
		hydrocarbons and NO _x	particulate matter
Jan. 1, 2000	all	0.56	0.05
Jan. 1, 2005	all	0.3	0.025

Emission limits for trucks and buses are:

testing cycle	limiting value [g/kWh] for	
	hydrocarbons	particulate matter
Jan. 1, 2000/ESC cycle	0.66	0.1

Jan 1, 2000/ETC cycle	0.85	0.16
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198. Measures being prepared:

- a) Decreasing the limit for the content of benzene in petrol (cut from the present 5% to 1%);
- b) Aa further decrease of the sulfur content in diesel fuel, in accordance with EU Directive 98/70, annex IV (down to 50 mg/kg from year 2005).

199. **Germany.** Emissions of pollutants including POPs are regulated by EU Directive 97/68/EC, which has been transposed into national law. There are plans to extend the scope of the Directive to include spark-ignition engines.

200. **Greece.** Greece applies or will apply the provisions of all Community Directives concerning mobile sources or fuels. Petrol- and diesel-engined road vehicles are subject to inspection once or twice a year, as the case may be. The inspection covers particulate emissions for diesel-engined vehicles and VOCs/CO for petrol-engined vehicles.

201. **Netherlands.** The Netherlands has implemented the EU directive (97/68) concerning NO_x and particulates emitted from mobile sources.

202. **Poland.** The emission of dioxins from mobile sources will be eliminated since 2005 year after introducing prohibition to use of the leaded petrol.

203. **Republic of Moldova.** In conformity with p.5 b)v) for the limitation of the emissions from mobile sources and according to the restrictions of the annex VII in the Republic of Moldova there were implemented the following measures:

- (a) Romanian standard SR - 176; 1977”Benzines with lead for auto vehicle” was prohibited in 1998 by Decision of the Department of the Technical Control, Standards and Metrology on the territory of the Republic of Moldova because of the discordance in physico-chemical indexes of European standard EN 228 and State standard 2984 – 77;
- (b) prohibition of use of leaded petrol was introduced as obligatory requirement for the construction of petrol stations in the cities of Chisinau, Balti and Cahul as a result of examination of projects by State Ecological Expertise;
- (c) the import of the auto vehicles with period of exploitation more than 10 years is prohibited;
- (d) in goals of the protection of the environment, including air protection, was increased the consumption of gas fuels for mobile sources;
- (e) the taxes for pollutant emissions into environment are established by the Law on Payment for Pollution of the Environment of the Republic of Moldova. Annex 1 of this Law includes activities for protection of environment, and their costs are taken into consideration when the tax for environmental pollution is estimated. Economic instruments are introduced by the provisions of the same Law, that stimulates import and use of unleaded fuel;
- (f) (i) Payment for air pollution by mobile sources, using petrol as fuel (leaded, unleaded) and diesel fuel, is established for juridical and physic persons, importing this kind of fuel;
- (ii) the payment for the emissions into atmospheric air is established for the mobile sources (auto vehicles) in our republic that use liquefied natural gas and pressed

hydrocarbon gas as fuel (excluding the owners of private transport, that don't carry business activities);

(iii) State Ecological Inspection developed the Programme for emissions reduction from mobile sources. According to this Programme a range of measures for reduction of toxic emissions into air is foreseen:

- total exclusion of use of leaded petrol;
- supplying the auto vehicles with neutralizers and catalysts;
- reduction of sulphur in fuel;
- hance the usage of gaseous fuel for transport.

This program is under development and in the nearest future will be presented in the Government of the Republic of Moldova.

(iv) In conformity with the Energetic Strategy of the Republic of Moldova for 2000-2010 Republic of Moldova plans:

- Elaboration of standards and norms of emissions into environment;
- Increasing of consumption of gaseous fuels in traffic;
- Elaboration and implementation of economic mechanisms for protection of environment.

(v) Ministry of Environment and Territorial Development plans in the nearest future elaboration of proposals for:

- Modification of the fuel quality standards in goals emissions reduction;
- Modifications of the Law on the Payment for Pollution of the Environment of the Republic of Moldova having as a goal implementation of economic instruments for regulation of products containing toxic substances and stimulation of import and use of clean technologies and products (fuels, lead accumulators and etc).

204. **Switzerland.** The emission of polyaromatic hydrocarbons from mobile sources are regulated through the exhaust gas emission limitation of particles and the newly adopted emission limit value for smoke of heavy duty vehicles following the new European directive 99/96/EC and the directive 97/68/EC for off-road vehicles and machines.

205. **Question 46 Provide information, as required by article 3, paragraph 8, relating to the production and sales of substances listed in annexes I and II to the Protocol. You may wish to use the table below to respond.**

Substance	Sales	Production

206. **Armenia.** We provide below a list of substances, indicating the years from which their production, sale and use in the Republic of Armenia have been prohibited: aldrin (1970), DDT (1970), heptachlor (1986), pentachlorophenol (1986), dildrin (1985).

207. **Austria.** The sale of Lindane (gamma HCH) has declined to zero in 1998. As the production and use of the other substances – at least regarding significant purposes – is abolished, their sale is expected to be zero.

208. **Belgium.** Federal Government: Royal decrees of 24 May 1982 and 25 June 1995 and their amendments govern the environmental tax arrangements for the marketing of pesticides. The pesticide inventories are currently being updated.

209. For HCH (lindane) only one figure is available for production or sales in Belgium : < 50 000 kg / year (ref. 1995, 4 NSCF rapportation).

210. **Bulgaria.** Neither produced, nor sold

211. **Croatia.**

Substance	Production	Sales
Lindane	about 7 tonnes per year	about 6 tonnes per year

212. **Czech Republic.** Information relating to production and sales of substances listed in annex I and II to the protocol is provided in Annex -Table Q.46.

213. **Germany.** The substances listed in Annexes I and II are not produced in Germany. Nor have lindane-containing products been registered for use in agriculture. It cannot be ruled out, however, that lindane is contained in other biocidal products as an ingredient. We have no information available about this.

214. **Greece.**

Substance	Production	Sales
All substances listed in annex I	Prohibited	Prohibited

215. Latvia. POPs are not produced in Latvia.

216. Netherlands. See Question 38.

217. Poland.

Substance	Year of introduction of prohibition to produce/ use
Aldrin	1968/69
Chlordane	1968/69
Chlordecone	On the list of prohibited plant protection products since 1991.
DDT	1975/76
Dieldrin	1972
Endrin	never produced/ used
Heptachlor	never produced/ used
Hexabromobiphenyl	never produced/ used

Hexachlorobenzene	On the list of prohibited plant protection products since 1991.
Mirex	never produced/ used
PCB	At present PCB is not used in the production of electro-energy equipment; inventory activities on existing working and withdrawn devices containing PCB are underway.
Toxaphene	On the list of prohibited plant protection products since 1991.

218. **Republic of Moldova.** Substances listed in annexes I and II aren't produced in the republic. Information relating to the sales of the substances listed in annexes I and II is not available. At the same time, certain POPs pesticides, that are listed in annexes I and II and are settled by the POPs Protocol and other acting international agreements were prohibited in the USSR and of course was it was in force also on the whole territory of the Moldavian Soviet Socialist Republic and the ban has the same value still now. Mentioned POPs pesticides are not included in the official register of permitted substances. Unfortunately, Department of Statistical and Sociological Analyses isn't accomplished state statistical registration of the POPs pesticides. In this context the Republic of Moldova plans to adopt a new normative act that will ban production, import, export, sales and use of POPs pesticides, regulated by POPs Protocol.

219. **Switzerland.** None of the intentionally produced substances in the Annexes 1, 2 and 3 of the POP Protocol has been produced in Switzerland in the last few years, and only one has been used: Lindane. The use is restricted to veterinary products and to seed dressings. Exact use figures are not available, but based on enquiries the consumption was estimated to be below 100 kg per year.

220. **Question 47 Provide information, as required by article 5, on measures taken to create favourable conditions to facilitate the exchange of technologies and techniques designed to reduce the generation and emission of persistent organic pollutants.**

221. **Austria.** Information about measures to promote the exchange of technology related to air pollution control and related to areas which influence the level of air pollution (energy, traffic) can be found in Q.25.

222. **Belgium.** Belgium. Flemish region: Different activities have been developed during the past years to improve the exchange of technologies and information. Some examples:

(a) The Centre for Best Available Techniques, founded in 1994 and operating under VITO, collects information about available pollution prevention techniques and disseminates this information to the Flemish government and industry. The center itself also draws up BAT studies for different industrial sectors. Regulation in Flanders is based on these BAT studies. Studies relevant for POPs are the BAT study for wood preservation and for treatment of used oil. Other relevant studies, not yet terminated, are BAT studies for foundries, for the production of asphalt, for waste treatment and for combustion installations.

(b) The Energy and Environment Information System (EMIS) collects and provides information on environmental topics to professionals, managers, civil servants and consultants. In

addition to information on law, literature, statistics and BAT, there is a databank with profiles that contains information sheets on companies, consultants and administrations. Furthermore, an overview of the current support programmes (to obtain investment support or subsidies for research and development) is available.

(c) The centre of expertise Rational Use of Energy (VITO) acts as a hub for the dissemination of knowledge and the promotion of cogeneration (or Combined Heat and Power, CHP), as well as a catalyst and objective assessor for the interest groups involved.

223. **Federal Government:** Web pages on the Federal Environment Ministry's website are currently being developed on the POPs Protocol and on the activities of this department in monitoring the marketing of POPs. Belgium is also the lead country for the inventorizing and monitoring of PCB emissions and releases under the OSPAR Commission.

224. **Canada.** Canada will prepare a summary of documentation and initiatives (e.g., guidance documents) to facilitate the transfer of the latest BAT information on Heavy Metals. This may include information on programs and initiatives such as the Canadian Consultant Trust Fund, administered by Environment Canada's Environmental Technology Advancement Directorate, and the Technology Partnerships Canada, administered by Industry Canada.

225. **Czech Republic.** Not used.

226. **Germany.** With the internet system "Cleaner Production Germany" (www.cleaner-production.de) the Federal Environmental Agency provides information on projects of clean production and pollution prevention and control.

227. With the Transform-Programme Germany provides technical assistance to the countries of Central and Eastern Europe including policy advice, training and feasibility studies. Since 1992, about 120 projects with a total volume of 27 million DM have been funded in the environmental field. Special emphasis has been given to the reduction of transboundary air pollution and the improvement of air quality in the 'Black Triangle' between the Czech Republic, Germany and Poland.

228. The Twinning Programme is a support programme carried out by the European Commission to help the accession countries of central and eastern Europe bring their environmental standards into line with those of the European Union (EU). The programme's main instrument is partnerships (twinning covenants) entered into between institutions of EU Member States and institutions in the candidate countries. Proposals for twinning projects are solicited from the Member States by the EU. The Federal Environmental Agency is carrying out a number of projects on behalf of the Federal Ministry for the Environment.

229. **Netherlands.** In general environmental technology is exchanged with other countries such as described in the earlier reviews.

230. **Poland.** See Q.34 and Q.35.

231. **Republic of Moldova.** Ministry of Environment and Territorial Development encourage

the exchange of the information regarding technologies and measures designed to reduce emissions of POPs and other pollutants, including exchanges for regulation of the products. Independently, there are target-oriented or customized workshops with representatives of ministries, departments, industrial enterprises and other organizations regarding existent technologies of limitation of the emissions in the environment, including atmospheric air, alternatives for POPs and other toxic chemicals.

232. We collaborate with the Commonwealth of Independent States (CIS) and Romania. The Republic of Moldova is a member of the Interstate Ecological Council (IEC) of CIS. We indicated the principal directions of these activities in the question 64. Also, representatives of the Ministry of Environment and Territorial Development, Ministry of Agriculture and Food Industry and Ministry of Health participated in organized by UNEP Chemicals in cooperation with Centre of International Projects (CIP from Russian Federation) workshops on

- (a) Technologies for Treatment/Destruction of PCBs and Obsolete Pesticides.
- (b) Reduction of POPs in Particular Dioxins and Furans.
- (c) Identification and Assessment of Releases of POPs.
- (d) Legislation on Management Chemicals in Particular POPs
- (e) National Strategy and Plan of Activities on Emission Reduction and Elimination of

POPs.

Also, representatives of the mentioned ministries will participate in organized by mentioned up UNEP Chemicals and CIP next workshop on Alternatives to POPs Pesticides, which will be held in St. Petersburg, Russian Federation, in July 2000.

233. Certain directions of the activity on these problems were included in the document "Environmental Performance Review". This review was elaborated and the final document with recommendations for solution of existing problems in national environmental policy and management was presented in 1998 for evaluation by the ECE Committee on Environmental Policy at its annual session in Geneva. This document was approved and published. Also, the future documents that are under development now will include necessary directions on measures for execution of stipulations of art. 5 of the POPs Protocol.

234. **Switzerland.** As an example, we can mention the financial support for the organisation of the Sub-regional Expert Meeting on Reduction of POPs, in particular Dioxins and Furans, St. Petersburg, Russian Federation, 14-17 December 1999.

235. Furthermore, in 1998, the Government of Switzerland actively supported the request made by the Intergovernmental Forum on Chemical Safety (IFCS) to UNITAR to collaborate with countries, international organisations and others to develop a Terms of Reference for a capacity building network for the sound management of chemicals. The objective of this Network should be to enhance the exchange of information and experience about capacity building activities carried out through international organisations, bilateral development co-operation agencies and other groups. Following the successful evaluation of the country-based pilot programmes in 1999, the Swiss Agency for Development and Co-operation (SDC) decided to support a third phase of the Programme from 2000-2002 (total support \$ US 1'300'000.-). Phase III focuses on consolidating the national programmes for integrated chemicals management in Argentina, Ghana, Indonesia and Slovenia and support the development of *National Programmes for the Sound Management of Chemicals* in 3 additional countries (selected by the end of 2000).

236. In relation with the exchange of technology, we can also mention the establishment of the *Swiss Cleaner Production Centre Program*. During the last years, the State Secretariat for Economic Affairs has supported the establishment of several Cleaner Production Centres (CPCs) in developing countries. Up to now CPCs have been built up in Colombia, Guatemala, Costa Rica, El Salvador, Vietnam. Further potential target countries are Morocco, Brazil, Peru and Pakistan. The main goal of the CPCs Program is to increase the application of Environmental Management Techniques and Cleaner Technologies. The concept of Eco-Efficiency and Cleaner Production are introduced and diffused on a large scale basis focusing on optimisation of production processes as well as on adequate waste management. Special interest is given to the application of the criteria of international environmental agreements.

237. Question: .48 Report, as required by article 6, on measures taken to promote the provision of information to the general public, such as information on labelling, risk assessment and hazard, risk reduction, elimination of POPs or a reduction in their use and alternatives to POPs.

238. **Austria.** Electric equipment containing PCB has to be labelled. Regarding POPs in general, a voluntary labelling scheme for environmentally friendly products („Umweltzeichen“) exists in Austria; it takes account of a product's influence on environment during the whole life-cycle.

239. **Belgium.** Flemish region: Concerning pesticides in general, some actions have been taken to inform stakeholders and the general public:

(a) 'Best Agricultural Practices' will be published within 2000. This text contains information on integrated pesticide management specified for each crop and on other practices to reduce the use of pesticides. A more general part of the BAP-publication explains the nature of pesticides and the current legislation. Furthermore it describes risks towards the environment and health;

(b) A specific sensibilisation campaign will be held in 2001 to reduce the non-agricultural use of pesticides especially on an individual housekeeping level;

(c) The economic and social impacts of the reduction of certain pesticides will be studied at the university of Gent from 2000 till 2002.

(d) The Royal decree of 7. July 1986 impose PCB containing transformers to carry a label with a St Andrew's cross and an indication of the presence of PCB's. The doors to the rooms where these transformers are placed must be labelled with a St Andrew's cross. These regulations have been translated in the Flemish Environmental Legislation (VLAREM). PCB or PCT containing transformers have to be put in open air or in a fire-free room (VLAREM II, art. 5.12.0.2, §2,5°). In case of fire, the emergency services are allowed to inquire about the presence of PCB containing equipment on a site in the registers of PCB containing equipment. These regulations have been put in the phasing out plan for the Flemish Region (approved by the Flemish Government on 17. March 2000 and published in the Belgian Law Gazette of 17. May 2000). In order to support the fast implementation of the phasing out plan, it will be presented to the public very soon by means of an information campaign.

240. Concerning the involuntary produced dioxins and furans, the current Flemish Minister of Environment and Agriculture started a project of continuous mutual information exchange

between the leader of a Flemish Municipal Waste Incinerator and a committee representing the people living in the neighbourhood.

241. **Federal Government:** Belgium is incorporating the directives and regulations relating to adjustments and adaptation to technical progress contained in the basic directive 76/769/EEC on the marketing and use of certain dangerous substances and preparations, including provisions relating to labelling.

242. **Canada.** Canada has existing programs that support public awareness on Persistent Organic Pollutants (POPs), including:

- (a) The labeling requirements for pesticide products and the Pest Management Regulatory Agency's policies, programs and projects on Sustainable Pest Management;
- (b) Published reports on the assessment of POPs on the Priority Substances List under the Canadian Environmental Protection Act;
- (c) Published reports on the assessment of POPs against the Track 1 criteria (virtual elimination from the environment of toxic substances that result predominantly from human activity and that are persistent and bioaccumulative) of the Toxic Substances Management Policy;
- (d) Reports and other forms of public information on ecosystem and regional studies, including reports on toxic chemicals in the Great Lakes basin and the north, and
- (e) The Canadian Pollution Prevention Information Clearinghouse.

243. **Czech Republic:** A number of publications have been issued to increase information levels amongst the public, e.g.: Polychlorinated dibenzo-p-dioxines and dibenzofurans in the environment (1995), Polycyclic aromatic hydrocarbons (PAHs) in the environment (1996), Industrial sources of halogenated organic pollutants and their prevention (1997) and a number of other works dealing not only with the subject of POPs, but also with other aspects of CLRTAP. Some of these works are available on the Internet (<http://www.env.cebin.cz>), in both Czech and English.

244. **Inter-ministerial expert group for POPs and HM** was established by the Ministry of the Environment. Members of NGOs, some specialized organizations and universities are also represented in the group which contributes to the better provision of information to the general public.

245. **Germany.** The substances in question, with the exemption of lindan (temporal restricted permit) have been prohibited in Germany, so that there is no need for the measures referred to above.

246. **Netherlands.** No action have been done to inform the general public about POP as such, but extensive public campaigns have been given on Dioxines and PCBs.

247. **Poland.** In general, for labelling the hazardous products and wastes the rules of EU are applied. Among aspects defined in the Regulation of the Minister of Agriculture and the Food Economy of 1996 concerning detailed principles for the issue of permits admitting plant protection products for sale and use are:

- (a) Procedure of granting authorisations and the formal requirements set out for applications for them;

(b) scope of documentation necessary for the assessment of the effectiveness of the plan protection product in Polish climatic conditions and of hazards to the health of humans and animals and to the environment;

(c) principles of classification;

(d) requirements relating to the labels and the use instructions.

The Regulation adopts into Polish legislation the EU labelling system, i.e. the signs and phrases (R, S) legally binding in the EU Member States.

248. **Republic of Moldova.** The Republic of Moldova is the party of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and other conventions, including Convention LRTAP, in which a range of articles requires that the parties create opportunities for access to information and its exchange, contact and cooperate in different fields.

249. All legislative acts of the Republic of Moldova established the stipulations of the public awareness. Legislative acts of the Republic of Moldova established the stipulations regarding:

(a) Public awareness;

(b) Informing service of IRPTC and other international registers by NRPTC concerning produced new potential toxic chemicals;

(c) Publication and discussion of the Declaration on Environmental Impact;

(d) Participation in Environmental Impact Assessment of public unions and organizations;

(e) Public participation in effectuating of the ecological expertise of projects;

(f) Other stipulations.

Also, the stipulations of the national legislation established the procedure of international cooperation, exchange of the information, access to information and other stipulations. Also, the ecological funds' resources are channeled to environmental protection measures significant at the national and local level, in the form of non-reimbursable or interest-free aid, including organization of information system, awareness programs and training for staff, organization of international cooperation, application of environmentally sound technologies, scientific research in environmental field at the ministry's order etc.

250. **Switzerland.** The Ordinance relating to Environmentally Hazardous Substances of 1986 regulates the import, the production, the supply, the use and the export of substances that may present a hazard to the environment. It comprises instructions for the environmental impact assessment of new and existing substances and products.

251. **Question: 49 Provide information on activities undertaken with a view to encouraging research, development, monitoring and cooperation related to this protocol, taking into account article 8.**

252. **Austria.** Programs for the monitoring of the ambient air concentrations of PCDD/F and selected PAH have been carried out in Austria; deposition levels of PCDD/F, PCB, PAH and other POPs have been measured at several sites (in wet deposition and biomonitoring with curly kale). Research projects also dealt with e.g. pollutant levels in eco-systems (analysis of spruce needles, measurement of POPs in soil).

253. **Belgium.** Flemish Region: At the moment the following POPs are systematically monitored in the region of Flanders :

- (a) pesticides (organofosphorpesticides, triazines, organochloropesticides) in rain water;
- (b) PCBs in rain water;
- (c) PAHs (10 non-volatile PAHs; also nitro-PAHs) in the air;
- (d) dioxins/furans : deposition measurements and air concentrations.

254. Concerning pesticides in general, the following research and monitoring related actions have been taken or will be taken in the framework of the Flemish Environmental Policy and Nature Development Plan for the period 1997 to 2001 (Mina-2 plan) : identification of pesticides for priority action and reduction on the base of exposure data and environmental and health risk assessment data, the setting up of a groundwater monitoring program to evaluate the impact of agriculture on nitrate contamination and the setting up of a surface water monitoring program. The use of pesticides will be screened by sending a yearly questionnaire towards stakeholders.

255. Concerning dioxins/furans three studies have been started or will be done in the framework of the Flemish Environmental Policy and Nature Development Plan for the period 1997 to 2001 (Mina-2 plan): a study to make an inventory of emissions from woodstoves and fire places, taking in account also backyard burning, and to propose and concretize policy measures in order to reduce this emissions; a study to make an inventory of emissions towards the solid residues of thermal process installations and to formulate proposals towards an integrated emission reduction policy, taking into account the possibility of displacement of dioxins/furans from the stack gasses towards the solid residues by the implementation of gas cleaning technologies; a study concerning emissions by traffic with an evaluation of their contribution in the measured deposition by analysing their congener patterns. A methodological study to improve the deposition measurements has been started. Additionally a modelling study has been set up in order to connect emission and deposition data around a metallurgical installation. This will be repeated for other kind of installations in the near future.

256. Federal Government: Belgium is keeping an inventory of quantities of pesticides placed on the market. At the same time, it is implementing the programme to harmonize data on PCB-contaminated products under the OSPAR Harp-Haz programme.

257. **Canada.** Canada will provide information through existing programs and initiatives on research, development and monitoring of POPs such as:

- (a) The Toxic Substances Research Initiative (TSRI);
- (b) The Northern Contaminants Program (NCP) and the Arctic Monitoring and Assessment Program (AMAP);
- (c) The Canadian Environmental Protection Act (CEPA) Strategic Option Process (SOP);
- (d) The National Pollutant Release Inventory (NPRI) and the Accelerated Reduction/Elimination of Toxics (ARET);
- (e) The Integrated Atmospheric Deposition Network (IADN) and other monitoring in the Great Lakes Basin;
- (f) Provincial and territorial POPs monitoring programs and initiatives;
- (g) Work under the Great Lakes Binational Toxics Strategy (GLBTS);
- (h) The Great Lakes Water Quality Agreement; and;
- (i) The Canada-Ontario Agreement (COA).

258. **Czech Republic.** Every year, the Ministry of the Environment of the Czech Republic announces projects in the Program of Care for the Environment and projects in the ME Program of Research and Development. Top-priority projects following from the individual Protocols to CLRTAP are also carried out in the framework of these programs. Financial means for work on these programs are partly or completely paid out of the state budget.

259. **Germany.** Measurements of POPs in precipitation are conducted at two EMEP stations, measurements to include the gaseous and particulate phases are under preparation.

260. **Netherlands.** In 1999 the Netherlands started an extensive monitoring program for POP deposition. The results will be reported to EMEP. The Netherlands further participate actively in the expert group on POPs and in the Task force on Health where POPs have a central role. The Netherlands is working on the identification of new candidates for the POP protocol. For the POPs, such as Lindane and DDT, that will need reviews within a short period of time after the POP protocol enter into force, the Netherlands has already performed national reviews that will be available for the convention.

261. **Poland.** Funds of the National Fund for Environmental Protection and Water Management and funds of the State Committee for Research are used to promote research and monitoring activities related to POPs. A good example of this could be an examination of the so called tombs of pesticides outdated and/or prohibited to use. The amount of pesticides stored this way is estimated at a level of 10.000 tons in over 350 tombs. In 1992, after almost 20 years of tombs existence, studies were undertaken in order to recognise the severity of the problem. An intensive research was carried out to find out all the data concerning the content of tombs and other places of storage of obsolete pesticides. Detailed data concerning 96 tombs have been collected.

262. Also a computer database consisting of all certified pesticides since 1961 was developed. The following elements of the certificate were taken into consideration:

- (a) Trade name of a pesticide;
- (b) common name of active ingredients and their contents;
- (c) chemical group, to which the active ingredients belong to;
- (d) type of formulation;
- (e) class of toxicity;
- (f) name and country of producer;
- (g) years of authorisation to use.

263. On the background of above mentioned parameters ranking of the most frequently occurring chemical groups of pesticides deposited in 96 tombs was established. Predominating 10 chemical groups are listed below:

- (a) 29% - chlorinated hydrocarbons;
- (b) 17% - inorganic;
- (c) 14% - dithiocarbamates;
- (d) 12% - phenoxyacids;
- (e) 10% - organophosphorous;
- (f) 8% - nitroderivatives.

264. Among the organochlorines as much as 44% consist of DDT, 21% - of toxaphene, 12% - of DMDT (methoxychlor), 9% - of HCH and lindane, 4% - of hexachlorobenzene and 4% - of aldrin/dieldrin. "Other" chlorinated hydrocarbons consisting of about 6% of the total amount of active ingredients are composed mainly with tetradifon, kelevan and pentachloronitrobenzene.

265. Assuming total amount of 10.000 tons of obsolete pesticides in about 350 tombs, and that active ingredients consist of 32% of the total weight of these pesticides, the amount of chlorinated hydrocarbons in 96 tombs is estimated as 114 tons, and in expected 10.000 tonnes - as 928 tons.

266. Pesticides already classified as POPs (aldrin, dieldrin, DDT, HCB, heptachlor and toxaphene) consist almost 75% of total amount of chlorinated hydrocarbons in the tombs.

267. The so-called potential POPs - HCH/lindane present in the tombs in considerable amount should be also taken into consideration. Active ingredient kelevan (trade name of the product Despirol) widely used in the control of Colorado potato beetle is one of the most persistent insecticides and could be also seen as another potential POP.

268. Computerised data concerning the content of 96 tombs gives the possibility of estimation with high probability the content of each unknown depot. For total estimated amount of 10.000 tons of pesticides in the tombs 928 tons of chlorinated hydrocarbons are anticipated. POPs consist of the following amounts:

- (a) DDT - approximately 400 tons;
- (b) toxaphene - approximately 190 tons;
- (c) aldrin/dieldrin - approximately 40 tons;
- (d) hexachlorobenzene - approximately 37 tons;
- (e) heptachlor - less than 1 ton;
- (f) HCH/lindane as potential POP - approximately 100 tons;
- (g) kelevan, another persistent candidate as potential POP - approximately 20 tons.

269. **Republic of Moldova.** Ministry of Environment and Territorial Development encourage research, development, monitoring and cooperation related to POPs Protocol. Taxes for environmental pollution that were gathered during 1999 and accumulated on the account of the National Environmental Fund were foreseen for the following expenditures:

- (a) Development of national programs and plans for protection of environment;
- (b) For scientific research in environmental field at the ministry's order;
- (c) Development of the system of ecological normative;
- (d) Organization of information system;
- (e) Awareness programs and training for staff;
- (f) Organization of international cooperation;
- (g) Application of environmentally sound technologies;
- (h) Accidents consequences liquidation;
- (i) Co-financing of environmental projects;

Financing of NGO basing of grants program etc.

270. **Switzerland:** A survey to assess the concentrations and the geographical distribution of

several POPs was done over several years through analysis of the POPs content of lichens in Switzerland (see specific report to be published in 2000 by the Swiss Agency for the Environment, Forest and Landscape, Berne).