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DRAFT
2000 REVIEW OF STRATEGIES AND POLICIES FOR AIR POLLUTION ABATEMENT

Draft report prepared by the secretariat

Addendum

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II. PROGRESS REPORT BY THE PARTIES ON EACH PROTOCOL (CONTINUED)

C. The 1991 Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes

1. This section summarizes the answers received to questions 9 to 17 of the questionnaire. Responses to the questions are mandatory for the Parties to the Protocol: Austria, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Slovakia, Spain, Sweden, Switzerland, United Kingdom. The names of the Parties that failed to provide a response to the secretariat are underlined. In addition, responses were received from 10 other Parties to the Convention: Belgium, Canada, Croatia, Greece, Latvia, Lithuania, Poland, Ukraine, United States and European Community (identified with * below).

1. National strategies, policies and programmes developed that specifically address the control and reduction of VOC emissions or their transboundary fluxes (question 9)

2. This question applies only to Parties that have chosen article 2, paragraph 2 (a), and 1988 as their base year. These Parties are: Austria, Finland, France, Germany, Netherlands, Spain, Sweden and United Kingdom. The Parties that have chosen article 2, paragraph 2 (a), but another year as their base are: Czech Republic (1990), Denmark (1985), Italy (1990), Liechtenstein (1984), Luxembourg (1990) and Switzerland (1984). It is probable that non-Parties (except those listed under 9 bis and ter) will choose this option when they ratify the VOC Protocol. They may, therefore, wish to respond to question 9.

3. **Austria.** The 1992 Ozone Law stipulates a reduction of Volatile Organic Compounds (VOC) emissions. Two resolutions (1992, 1996) have been adopted on the reduction of ozone.

According to the Industrial Code and the Clean Air Act for Steam Boilers, a licence is required for each new or modified installation (determination of emission limit values and/or measures according to Best Available Technology (BAT) are in the procedure). Car emissions and solvents in paints and lacquers have been addressed. For additional information concerning other emission sources requirements, see answer to questions 10, 11, 12 and 15. Emissions of non-methane VOC (NMVOC) dropped by 37% between 1988 and 1998, which is beyond the Protocol obligation.

4. **Belgium*. Walloon region:** For large fixed sources, values are set in some operating permits, following the German TA-Luft standards or the Flemish Vlarem standards. Directive 99/13/EC is being incorporated into the new draft of the General Regulations for the Protection of the Environment and will provide a broader legislative framework for operating permits. Additional measures will be adopted under the future air quality plan currently being drafted. The storage of fuel and its distribution to filling stations are regulated by an order of the Walloon government (1996) in implementation of Directive 94/63/EC. **Flemish region:** The general strategy of the air pollution control policy has been fixed in the Flemish Environmental Policy Plan 1997-2001. The strategy to combat tropospheric ozone is an important item. This Plan includes air quality standards and emission limit values for different types of industrial installations. **Brussels capital region:** There are 2 orders of the government of Brussels capital region: on the operating conditions of service stations (MB 24/03/99) and on the dry-cleaning sector (MB 20/04/95). Other orders are due to be adopted to regulate emissions from such sectors as printing, body shops and motor-vehicle servicing. An air pollution plan is under preparation. Between 1990 and 1997, VOC emissions in Belgium dropped by 10%. Brussels accounts for 5% of the country's emissions. **Federal Government:** Measures to control emissions of VOCs form part of the ozone plan (1996). This contains 14 measures in research and development, transport, energy, solvent-containing products, etc. A new plan is in preparation.

5. **Croatia*.** Half its emissions are from natural sources. The By-Law on Emission Limit Values prescribes limit values for individual volatile substances discharged from stationary sources in accordance with Best Available Technology Not Entailing Excessive Costs (BATNEEC) measures. More regulations will be necessary. For more information, see questions 2 and 18. After falling 30% in 1991, NMVOC emissions are slightly increasing and are now at 110,000 tonnes/year.

6. **Czech Republic.** In accordance with the requirements of the Protocol, a national programme to decrease emissions is being prepared, including source identification, abatement procedures and monitoring. The requirement to decrease VOC emissions by 30% by 1999 has already been met. In 1998, the national VOC emissions a total led 267,000 tonnes, a decrease of 36.8% on 1990.

7. **Denmark.** A voluntary agreement with the Confederation of Danish Industries (1995) aimed at reducing emissions (40% by 1999 compared to 1988) from all important industrial sources. Its target has been met. For motor vehicles, see question 2. Denmark has reduced the total annual VOC emissions for the period 1985 – 1999 by 30% in accordance with its commitments.

8. **Finland** has taken measures to reduce emissions from the major stationary sources. The Air Pollution Control Act and Decree (1982) and Environmental Permit Act and Decree (1991) include a permit procedures. In March 2000 the Environmental Protection Act and Decree came into force and an integrated permitting system will apply to installations using organic solvents. Total emissions have decreased by approximately 20% from 1988 to 1998.

9. **Germany.** National strategies, policies and programmes cover various stages of pollution generation using a range of policy instruments. The establishment and operation of installations particularly liable to cause harmful effects on the environment is subject to licensing. The plants are listed in an ordinance (4th BImSchV). Detailed provisions relating to the licensing procedure are laid down in another ordinance (9th BImSchV). Requirements concerning emission reduction requirements are laid down in 3 regulations: 1st BimSchVwV, 17th BimSchV, 2nd BImSchV.

10. **Italy**'s policy to control and reduce VOC emissions is mainly inspired by the twin principles that the polluter pays and the user pays, applied through a mix of command-and-control measures and economic instruments. Programmes and measures are principally based on a regulation framework: air quality standards for hydrocarbons (HC) and ozone, protection levels for health and vegetation and warning levels for ozone, emission limits for VOCs from industrial plants and petrol loading facilities, emission standards for new vehicles. Programmes and measures were also developed in the transport sector and chemical industry. The chemical industry sector has achieved a substantial reduction in emissions in the period 1989 – 1994, but VOC emissions in the transport sector during the nineties.

11. **Latvia*** has emission ceilings based on its obligations under the 1999 Gothenburg Protocol.

12. **Lithuania*** has started a drafting process.

13. **The Netherlands** refers to its original Air Pollution Act 1970, the revised provisions of the Environmental Management Act 1994, the Road and Traffic Act, and voluntary agreements. Environmental policy on VOC has been integrated into other economic sector policies and in the National Environmental Policy (Policy Documents on Air Transport and Air Pollution, on Vehicle Technology and Motor Fuels and the Memorandum on Manure and Ammonia Policy). There is also a document entitled Structure Scheme for Traffic and Transport III which sets target levels for SO2, NOx and VOC from traffic. The ambient air quality standards for selected VOC and the underlying national strategies submitted for the 1998 Major Review are still applied. In 1980 VOC emissions were 564,000 tonnes and in 1997 362,000 tonnes.

14. **Poland*** has met its basic Protocol obligation. As a result of the harmonization of the Polish and European Community (EC) environmental law, new VOC emission standards, based on the relevant EC Directives, are to be introduced very soon. The work on the national programme on VOC reduction is in its final phase. Its strategy will include restructuring of the fuel combustion sector and the use of BAT in new and existing sources.

15. **Slovakia** acceded to the Protocol in December 1999. It chose 1990 as its base year. In

1996, the National Programme of Non-Methane Volatile Organic Compounds Emissions Reduction was accepted by the government. Implementation of the first stage gives a 30% reduction of total VOC emissions. The reduction has been achieved by 5 actions that are listed.

16. **Spain** has applied European Union (EU) legislation. Directive 19/99/13/EC on the limitation of the emissions of VOCs due to the use of organic solvents in certain activities and installations is being applied.

17. **Sweden** has 6 major tools to reduce VOC emissions: EU emission standards for major sources: for on-road vehicles; and for off-road vehicles; environmental classification of fuels and vehicles; regulations for reduction of emissions from petrol distribution and technical development and environmental information; small-scale wood-burning facilities.

18. **Switzerland** notes its 1986 Air Pollution Control Strategy. Its minimum target is to bring VOCs emissions down to 1960 levels. The federal Law relating to the Protection of the Environment and its ordinances, in particular the 1986 Ordinance on Air Pollution Control (OAPC), amended in 1992 and 1997, regulates emissions from stationary sources. It contains emission standards for about 150 individual pollutants, fuel and petrol requirements as well as effect-oriented ambient air quality standards. This and other ordinances provide a legal framework. As regards pollution caused by motor vehicles, emission standards are laid down in the ordinances relating to the Laws on Road Transport, Navigation and Aviation. The incentive tax on VOC emissions has now been introduced and is charged as of January 2000.

	1960	1980	1984 (ref)	1988	1990	1995	1998
Emission level (1000 tonnes)	145.0	323.0	324.0	305.0	292.0	211.0	187.4

19. **United Kingdom.** The progressive upgrading of industrial plants under Part 1 of the Environmental Protection Act (EPA) 1990 (see answer to question 2) has played a significant role in the reduction of VOC emissions. In addition, EU Directive 94/63/EC was implemented in 1996. The latest figures for 1998 show that a reduction of 26% has now been achieved, compared with the 1988 baseline.

20. **United States*.** Strategies and programmes are expressed in specific pieces of legislation that have been enacted, most importantly the Clean Air Act (CAA) and regulatory programmes. Specific programmes have been and are being implemented which continue to push for further emission reductions from mobile sources and the fuels used in them, to install best available control technologies on new and existing major stationary sources of VOCs, and to bring all areas of the country into compliance with the National Ambient Air Quality Standards (NAAQS) for ozone. The CAA includes standards, emission controls and implementation deadlines for individual States.

2. National strategies, policies and programmes developed that specifically address the control and reduction of VOC emissions or their transboundary fluxes (question 9 (bis) for Canada and Norway)

21. **Canada*.** There are no federal regulations regarding VOC emissions from stationary sources. However, a number of national guidelines, codes of practice or standards for the reduction of VOC emissions were developed under the NO_x/VOC Management Plan and a list of 15 is given. Provinces use them as the basis for measures. The federal government also indicates Phase 3 of the Federal Smog Management Plan, the implementation of a plan to reduce VOC emissions from consumer products by 20% and a Memorandum of Understanding with the Canadian Chemical Manufacturers Association. Transport, chemical manufacturing and consumer products are targeted for VOC reductions. Vehicle requirements will be harmonized with those of the United States.

22. **Norway.** In the 1989-1998 period the national NMVOC emissions corresponding to the area south of 60°N increased by 13%. For the whole country, however, the increase has been as high as 25%. This was due to the emissions from oil production operations, which have counteracted reductions resulting from measures such as stricter emission standards for passenger cars (1989). As a result the Government has implemented, for instance, the EU Directive 94/63/EC, and has intensified measures to reduce emissions during the loading of crude oil, etc.

3. National strategies, policies and programmes that specifically address the control and reduction of VOC emissions or their transboundary fluxes (question 9 (ter) for Bulgaria, Greece and Hungary)

23. **Bulgaria.** By Government Decision 1033/97 a strategy was adopted for the implementation of the Protocol. VOC emissions in 1998 totalled 132,000 tonnes, i.e. lower than those in 1988 (309,000 tonnes) and in 1990 (217,000 tonnes).

24. **Greece*.** All EC Directives concerning control of VOC emissions are being or will be applied (99/13/EC, 94/63/EC). In addition, Greece will apply pollution-control equipment on tanks of liquid volatile organics and control emissions from road vehicles.

25. **Hungary.** A Ministerial Decree was prepared prior to ratification to reduce emissions during storage, fuelling, transport and refuelling of petrol in order to meet the obligations.

26. **Ukraine*.** A programme to reduce VOC emissions into the atmosphere is being developed. It is expected to be adopted in 2001-2002.

4. Application of appropriate national or international emission standards to control and reduce VOC emissions from new sources (question 10)

27. **Austria.** Emission standards are in force for 15 source categories (these are listed with measures applied). For other industrial sources, individual emission standards and/or measures according to BAT have to be set in the licensing procedure for each installation. Regarding the use of solvents, emission standards for a series of sources will be set according to the solvents

Directive (1999/13/EC).

28. **Belgium*. Walloon region:** Directive 1999/13/EC is being incorporated into the new draft general regulations for the protection of the environment. Emission standards for paint shops are listed. The **Flemish region** lists emission limit values with regard to 100 organic products that are applicable to all source categories except those with specific sector limit values and regulations; 9 of the latter are also listed. New emission limit values, according to the EU Directive 1999/13/EC, will come into effect at the latest on 1 April 2001.

28. **Bulgaria.** National emission standards to control and reduce VOC emissions from new sources fall under the provisions of the 1991 Regulation (SG 81/91) and Regulation 2 (SG 51/98). Pollution control measures and emission standards for eleven source categories are listed.

30. **Canada*.** Indicates emissions standards (and control measures) with regard to 6 important new or modified source categories (with the date of coming into effect).

31. **Croatia*** Indicates its general emission standards and those for 6 industrial sectors. For new stationary sources emission limit values (ELVs) came into effect on 1 January 1998 and for existing stationary sources they will do so on 1 July 2004. Croatia identifies 11 major stationary sources of NMVOC.

32. **Czech Republic.** New stationary sources of VOCs include all sources brought into operation after the date of entry into effect of Law No. 309/1991 Coll. or Decree 117/1997 Coll. Emission limits are not laid down for individual VOCs. The 1991 VOC Protocol is only partly incorporated into Czech legislation in Decree 117/1997 Coll. Full transposition will be achieved through the new law on the protection of the air and of the ozone layer and the pertinent decrees for implementation. The new legislation is expected to come into effect on 1 November 2001.

33. **Denmark.** EU Directive 1999/13/EC has been implemented. All stationary sources have the same emission standard (100 mg VOC/Nm^3) and pollution control measures. Motor vehicle emissions are reported under question 4.

34. **Finland** identifies 4 major stationary sources emitting VOCs. The permitting system described under question 9 covers both new and existing major stationary sources. One of the measures to be taken is the implementation of the EU Solvents Directive (1999/13/EC). National legislation is in preparation.

35. **Germany** identifies emissions standards with regard to all stationary sources subject to permitting with pollution control measures applied (see question 9) and special emission limit values for 11 other source categories.

36. **Greece*** identifies 5 source categories and standards (with pollution control measures applied) pursuant to Directives 99/13/EC and 94/63/EC.

37. **Hungary** lists emission limits (in terms of % of production) for 4 groups of chemicals

according to the new national clean air legislation for the pharmaceutical industry.

38. **Italy** introduced, with Law 413 of 4 November 1997, emission limits for new vapour recovery systems in petrol-loading facilities and, with the Ministerial Decree of 19 November 1997, emission limits for new incineration plants.

39. **Lithuania***. Draft standards for the reduction of VOC according to the requirements of the 94/63/EC Directive are in preparation.

40. **Netherlands**. Stationary sources are regulated through permits and so is fuel volatility and the evaporation of organic substances. No general emission limits have been set. A voluntary agreement between the government and industry (KWS-2000) deals with BAT to reduce VOC emissions. The Netherlands also indicates its future actions (for instance, the implementation of EC Council Directive 1999/13/EC). A permit system for all plants under the Environmental Protection Act is described. The Road and Traffic Act sets emission standards for mobile sources.

41. **Norway.** There have been no new stationary source categories since September 1999.

42. **Poland*.** The VOC emission standards for all source categories are in the final phase of preparation. They will be entirely consistent with the Directives: 96/61/EC (IPCC Directive) and 1999/13/EC (Solvents Directive).

43. **Slovakia.** Appropriate national or international emission standards have to be applied to new stationary sources by 14 March 2002. Governmental Order Nr. 92/96 has introduced general binding rules and conditions for the operation of sources of pollution and the release of organic gases and vapours. All available technical measures must be taken. Details of measures are provided.

44. **Spain** applies the EU legislation and strategies. See question 2.

45. **Sweden.** The national emission standards for new and existing stationary sources are those of the EU Solvents Directive.

46. **Switzerland** provides information on national emission standards for VOC in general (OAPC, annex 1, para. 71) and according to 3 types of substances and 14 source categories. Further information is provided on OAPC: annex 2, paragraph 85 (on dry-cleaning clothes), 87 (on surface treatment plants) and 88 (on building sites).

47. The **United Kingdom** identifies 3 major stationary source categories. Regulations under the Environmental Protection Act 1990 (including VOCs) prescribe industrial processes. VOC-emitting installations operate under a permit or authorization that contains constraints on VOC emissions (BATNEEC). These may be: emission limit values, total mass limit values, use of compliant coatings. Some 20 standards cover solvent use in industry. New installations should have met the standards if they started operation after 1991. There are some sub-sectors where second-phase emission reductions are due to take place between now and 2007, such as car manufacturing and small-scale wood coating. An EC Directive (1999/13/EC) covering the same

industries was agreed in 1999. It has to be fully complied with by 2007. The existing regime in the United Kingdom substantially delivers the standards set.

48. **United States*.** New Source Performance Standards (NSPS) have been established for 29 categories of major new stationary sources of VOC. In addition, the Environmental Protection Agency's (EPA) maximum achievable control technology (MACT) programme, as described under question 11, also applies to new sources of VOCs.

5. Progress made in applying measures to control and reduce VOC emissions from the existing stationary sources (question 11)

49. **Austria.** Each of the source categories mentioned in annex II to the VOC Protocol is considered as major stationary source. Emission standards (and measures applied) are indicated for 13 source categories.

50. **Belgium*. Walloon region**: See question 10. **Flemish region:** See question 10. General limit values and sector limit values are applicable from 1 January 1999 for existing installations. For some printing activities limit values are applicable from 1 January 2003. New emission limit values, according to EU Directive 1999/13/EC, will come into effect by 1 April 2001.

51. **Bulgaria.** There are new programmes for 2000 – 2002 to reduce of emissions from existing stationary sources in regions where national ozone standards have been exceeded. This will meet the requirement set in Directives 92/72/EC and 99/13/EC. In 2000, two pilot programmes for industry producing lacquer, dyes and pharmaceuticals will be implemented.

52. **Canada*** identifies 8 major source categories and provides detailed information on the emissions standards and technologies applied.

53. **Croatia***. See question 10.

54. **Czech Republic**. Five categories of stationary sources of VOC emissions are identified. Emissions of VOCs from industrial technology are not yet included in legislation. An amendment to Decree 117/1997 Coll. contains VOCs in the list of principal pollutants, both for specific and generally valid emission limits.

55. **Denmark**. No progress compared to question 10.

56. **Finland**. See answer to questions 9 and 10.

57. **Germany**. After a transition period the same requirements apply to both new and existing installations. For industrial installations transition periods of 3, 5 or 8 years are applied.

58. **Greece*** indicates 5 major stationary source categories. The provisions of Directives 99/13/EC and 94/63/EC are being, or will be, applied to the "use of solvents" and "oil industry"

categories. In the case of non-industrial combustion, provisions regarding the adjustment of combustion and the maintenance of plant are already in force. In the case of oil refineries, special measures are in force.

59. **Hungary** indicates 6 major stationary source categories and the techniques applied.

60. **Italy** lists emission standards for VOCs from all existing stationary sources, from combustion plants (according to the size) and 9 other existing stationary sources.

61. **Netherlands**. Environmental permits are used to control and reduce VOC emissions from existing stationary sources. In the KWS2000 Covenant process-oriented and/ or process-integrated measures were formulated for 4 sectors. The technologies are already in use.

62. **Norway**. The major stationary source category is the petroleum industry. There are no universal emission standards for each source category. Emission standards are set on a plant-by-plant basis. These comply with the EU IPPC Directive, Directive 99/13/EC and Directive 94/63/EC. They include BAT and air quality limit values more stringent than those set in the Directives.

63. **Poland*** is phasing in emission standards for existing stationary sources. By 2005 emissions should not exceed 150% of the standards; by 2007 they must meet the standards.

64. **Slovakia**. See answer to question 10.

65. **Spain** applies EU legislation and strategies. See answer to question 2.

66. **Sweden** indicates the EU Solvents Directive.

67. **Switzerland**. The emission standards apply not only to new plants, but also to existing plants. As a general rule, the existing plants have to be retrofitted within 5 years after the decision of the local authorities on emission limitations.

68. **United Kingdom**. See answer to question 10. Most existing installations should have reached the standards in the period 1997 to 1999.

69. **United States*** provides a list of the major stationary source categories for VOC. Control technology guidance has also been established for 30 categories of existing major sources of VOC emissions. Many of the NSPS have been in effect for a number of years. In addition, the CAA provides for technology-based standards, called MACT standards, for hazardous air pollutants covering over 150 categories of major stationary sources. Since many of the pollutants are VOCs, this programme has resulted in large reductions of VOCs. Since 1994, EPA has issued MACT standards that, when fully implemented, will achieve a 1.5-million-tonne reduction in VOCs. Overall, this programme is only partially implemented, with about half of the emission standards still to be issued, and with compliance being phased in over several years.

6. Progress in introducing techniques to reduce VOC emissions from petrol distribution and motor vehicle refuelling operations and to reduce the volatility of petrol (question 12)

70. **Austria**. Stages I and II controls are stipulated in Austrian legislation. A reduction of the volatility of petrol is stipulated in Directive 1998/70/EC.

71. **Belgium*. Walloon region:** Indicates the Walloon government order of 23 May 1996 pursuant to Directive 94/63/EC. **Flemish region**. Directive 94/63/EC is included in the Flemish legislation Vlarem II. Two sources of emissions and their emission control measures are listed. **Brussels capital region**. An order of the Brussels capital region government of 10 October 1996 stipulates operating conditions for petrol and conditions for its storage and distribution. **The Federal Government** reports that petrol delivered in Belgium must conform to EU standards (with effect from 1997), and refers to the Petroleum Products Analytical Fund (set up in 1996) and a new reduction in vapour pressure for all fuels (with a view to incorporating Directive 98/70/EC).

72. **Bulgaria.** Its main provisions concerning VOC emission reduction during storage, loading, unloading and transport of petrol are set in Regulation 16/99 (SG 75/99), which is a transposition of Directive 94/63/EC. Regulation 17/99 (SG 97/99) deals with fuel requirements regarding VOC emission reduction from petrol distribution and motor vehicle refuelling. In reference to the requirements regarding harmful substances in petrol and fuels, Bulgaria refers to its answers to questions 23, 32 and 45.

73. **Canada*.** Federal regulations for benzene in petrol and national regulations (1997) ensure that new light-duty vehicles and light-duty trucks are designed to limit hydrocarbon emissions during refuelling. A national regulation was adopted (in 2000) to limit the dispensing flow rate of petrol and petrol blends to a maximum of 38 litres per minute to ensure that fuel dispensers do not exceed the design capacity of the new on-board refuelling vapour recovery (ORVR) and enable these systems to perform effectively.

74. **Croatia*.** Since 1992, all petrol stations have offered unleaded petrol and had different pump nozzles for leaded and unleaded petrol. Only 4 stations have a vapour recovery installation for their tanks (VOC Stage I) and 1 station for car refueling (VOC Stage II). Total petrol consumption declined between 1990 and 1993 but has since increased.

75. **Czech Republic**. In the framework of the Law on the Protection of the Air against Pollutants, 4 measures to decrease emissions of VOC from the distribution of petrol has been adopted. The properties of car fuels for new vehicles are dealt with in Czech quality standards, i.e. for leaded petrol CSN 656505, for unleaded petrol CSN EN 228 and for biofuels CSN 656507-9.

76. **Denmark** refers to EU directive 94/63 EC, EU directive 98/70/EC and indicates that vapour recovery is mandatory for stations with a throughput of more than 500 m^3/year (since 01.01.2000).

77. **Finland**. VOC Stage I Directive (94/63/EC) was introduced in 1996. Its regulations will step by step apply to all existing storage installations and distribution stations by 2005. The limit value of 35 g/Nm3 will apply to vapour recovery units at terminals.

78. **Germany.** Stage I and II controls are in place for the storage and distribution of petrol (20th and 21th BImSchV). In addition, VOC control measures are required by the TA-Luft for the loading/unloading of liquid mineral oil products.

79. **Greece*.** In addition to the application of Directive 94/63/EC, measures are applied to petrol storage tanks before becoming obligatory under the Directive. Moreover, the benzene content of petrol has been reduced to a maximum of 1%.

80. **Hungary** notes its Ministerial Decree of 1995 on the reduction of HC emissions during storage, fuelling, transport and refuelling of petrol.

81. **Italy.** Technical requirements to conform to 96/63 EC Directive were introduced in Law 413 in 1997. This covers emissions from storage tanks, loading and transport and as well as the introduction of vapour recovery systems.

82. **Latvia*** indicates Regulations on Environment Quality Standards for Petrol Stations, Oil Depots and Mobile Tanks (1999), and a timetable for vapour recovery (stages I and II).

83. **Netherlands**. Petrol distribution is part of the KWS2000 Covenant. Measures for the mineral oil chain are in accordance with EU Directive 94/63/EC.

84. **Norway** implemented (in 1999) EU Directive 94/63/EC. The regulations refer only to distribution on land and determine how a plant, petrol station or mobile unit must be constructed and driven so that no evaporation occurs from storage at the terminals, during the loading and unloading operations between terminals or between terminals and petrol stations. Regulations do not include distribution of petrol from petrol stations to vehicles.

85. **Poland*.** Measures to reduce VOC emission from petrol distribution are determined by decree of the Ministry of Industry and Trade. They are in line with UN/ECE and EC regulations and will be part of the national programme of VOC emission reductions.

86. **Slovakia**. Conditions for petrol distribution and motor vehicle refuelling are set in GO 92/96.

87. **Spain** applies EU legislation and strategies. See question 2.

88. **Sweden** has implemented regulations for vapour recovery from the storage and distribution of petrol, from terminals and from petrol stations, stages I and II. For stage I, there is EU Directive 94/63/ EC. For stage II there is a Swedish regulation.

89. **Switzerland** provides information on the mineral oil industry in OAPC annex 2,

paragraph 31 (on storage by refineries, other emissions by refineries), 32 (on large storage tank installations) and 33 (on installations for loading petrol). There is also information on the equipping and operating of petrol stations.

90. The **United Kingdom** refers to EC Directive 94/63/EC, implemented in 1996, EC Directive 91/441/EC, implemented at the end of 1992, and new regulations of 1994 (setting standards for petrol volatility to limit evaporation of volatile hydrocarbons into the atmosphere). Standards for summer-time petrol volatility have been further tightened from 1 January 2000 with the implementation of EU Directive 98/70/EC on fuel quality.

91. **United States***. Since the 1998 model year, passenger cars have had a vapour recovery system which completely eliminates VOC emissions from vehicle refuelling. The requirements were phased in over 3 years. Beginning with the 2001 model year the same requirement will be phased in for medium-duty trucks. Ozone non-attainment areas have either adopted a requirement for reformulated petrol which reduces VOC emissions or have, at a minimum, regulated the volatility of petrol during the summer ozone season. EPA has a MACT standard that addresses VOC emissions from petrol distribution.

92. The **European Community*** has implemented Directive 94/63/EC on the control of emissions of VOCs resulting from the storage of petrol and its distribution from terminals to service stations. Council Directive 1999/13/EC on the limitation of emissions of VOCs due to the use of organic solvents in certain activities and installations entered into force in March 1999.

7. Application of appropriate national or international emission standards for new mobile sources based on best available techniques. (question 13)

93. **Austria.** EC emission standards for mobile sources are applied.

94. **Belgium*. Federal Government:** EU emissions standards apply to new mobile sources.

95. **Bulgaria.** See the answer to question 4.

96. **Canada*.** In 1997, Canada's new vehicle emission standards were brought into alignment with the regulatory requirements under the United States Environmental Protection Agency's federal programme, effective with the 1998 model year.

97. **Croatia*.** See answer to question 4.

98. **Czech Republic** applies emission limits for motor vehicles with VOC limits that take account of UN/ECE regulations (49/1982/83/1990 and 96/1996). All vehicles in the Czech Republic must comply with these. Emission limits for other mobile sources use international regulations and recommendations (International Union of Railways (UIC), International Civil Aviation Organization (ICAO)). Decree No. 103/1995 Coll. lays down regular measurements of the emissions of vehicles. Two mobile source categories are listed (with standards and pollution control measures).

99. **Denmark.** Same as question 4.

100. **Finland** follows the EU Directives called EURO standards. Finland has also implemented EU Directive 98/70/EC. Four mobile source categories with their standards are listed.

101. **Germany** lists 4 mobile source categories with their standards (EURO) and pollution control measures (mainly EU Directives) for VOC, NO_x and hydrocarbons (HC).

102. **Greece*** lists 3 mobile source categories. The provisions of all EU Directives are applied. Catalytic converters are used.

103. **Hungary** lists 5 standards applied for HC emissions.

104. **Italy** indicates emission standards for VOCs from 14 new mobile sources (according to EEC Directives) and dates of application (from 17.06.1999 to 31.12.2003).

105. **Netherlands**. The national VOC emission standards for new mobile sources are unchanged from the previous review. These are in agreement with EU Directives.

106. **Norway.** Emissions from vehicles are regulated through the relevant EU Directives, which Norway has implemented since the mid-1970s (see response to question 4).

107. **Poland*.** See answer to question 4.

108. **Slovakia.** New mobile sources must comply with EURO II, and with EURO III by 2000.

109. **Spain** follows EU legislation and strategies. See question 2.

110. **Sweden.** See answer to question 4.

111. **Switzerland** lists national emission standards for 4 mobile source categories that are/will be similar to EU Directives (EURO).

112. **United Kingdom.** Mobile sources are required to comply with the 91/441/EC and 93/59/EC and Directives. There are also national regulations for in-service cars that came into operation on 1 November 1991. These limits are subject to enforcement at the annual Ministry of Transport test for cars over 3 years old.

113. **United States*.** Refer to question 4.

8. Measures to foster public participation in emission control programmes (question 14)

114. **Austria.** Action programmes have been launched to raise public awareness concerning

ground-level ozone (target groups were schools and the general public with media campaigns, competition among schools, etc.) and to promote environmentally sustainable transport (for instance, "soft" mobility in tourism, pilot projects for traffic management and the use of zero-emission vehicles have been started).

115. **Belgium*.** The **Flemish region** indicates an ozone brochure, an exhibition 'Ozone, friend or foe, the creation of a mobility centre in each province, the establishment of a system of mobility contracts (between the region, the cities and a public transport company), promotion campaigns for public transport, the organization of car-pooling, an Internet site, etc. The **Walloon region** indicates an ozone information brochure. **Brussels capital region** indicates a campaign on "gas-free driving" and campaigns to encourage the use of public transport. The **Federal Government** participates in the European "Car-free Cities" day on 22 September 2000, which launches "Mobility Week". A series of awareness-raising and publicity activities about sustainable mobility is being held in conjunction with these events and a sustainable mobility plan is also being drawn up.

116. **Bulgaria** has a procedure allowing public access to environmental impact assessment projects. Monthly, quarterly and yearly bulletins reflecting the current environment status are published and a "Green Book" is issued annually. Non-governmental organizations (NGOs) participate in campaigns such as "Should I use unleaded petrol?", "Let's save the ozone layer", etc.

117. **Canada***. The Government has fostered public participation in emission control programmes such as Clean Air Day Canada (with the National Commuter Challenge) and Vehicle Emissions Inspection Clinics - Environment Canada.

118. **Croatia*.** "N/A".

119. The **Czech Republic** supports the activities of non-governmental organizations in the area of transport, cooperates closely with them and monitors their activities. Projects to decrease road transport are supported through subsidies to civic associations.

120. **Denmark**. The Danish green accounts system of 1995 is a mandatory environmental reporting system. 1000 enterprises must draw up annual green accounts, which are made available to the general public. Another 200 enterprises submit voluntary green accounts. The accounts must meet certain mandatory requirements concerning form and content but there are no limits regarding non-mandatory information. It is a market-oriented tool. Denmark participates in the "In town without my car!" and "Environmental Traffic Week" campaigns.

121. **Germany**. Activities to foster public participation in an environmentally friendlier traffic include the promotion of the efficient use of cars of public transport and bicycles, of traffic management, traffic calming, and mobility counselling.

122. **Greece*** has periodic publicity campaigns to promote the use of all forms of public transport and many activities to improve the use of public transport (cheap tickets, good

coordination of the transport services, facilities, etc.) in the Athens region.

123. **Hungary**. An environmental impact assessment should be prepared before building a filling station. During the authorization public participation is guaranteed.

124. **Italy** has introduced many measures. There are information campaigns, a car-free Sunday is organized monthly in the major cities, mobility managers (introduced for large organizations), car sharing and the "blue label" (the driver has to stick it on the windscreen to prove that the car has passed the annual exhaust test).

125. **Latvia***. Actions are/will be organized through the National Transport Development Programme (1997-1999) or the Cycle Transport Development State Programme for 1999-2015.

126. **Netherlands**. No public participation has been introduced in the emission control programmes of VOC, but many brochures and tax regulations influence modes of transport.

127. **Norway** indicates the Green Management Programme (GRIP), a collaboration with the major business confederations, local authorities, trade unions and environmental NGOs and a pilot project called Green State (the project involves 10 governmental institutions and aims at improving their environmental performance).

128. **Poland***. The new Act on Environmental Protection includes provisions on fostering public participation in the development of land-use programmes and decision-making on new development locations. According to the legally binding regulation on environmental impact assessment, planning of large developments is subject to public consultation.

129. **Spain** follows EU legislation and strategies. See question 2.

130. **Sweden** indicates different activities: environmental classification system for on-road vehicles, for motor fuels; agenda 21 activities in the communities; publications, videos and other information material issued by the Environmental Protection Agency and by the traffic authorities and sponsoring NGOs , especially the International Secretariat for Acid Rain.

131. **Switzerland** promotes public participation in emission reduction through traffic management schemes and public announcements on national and local levels.

132. **United Kingdom.** There is a national awareness campaign entitled "Are You Doing Your Bit?" and a new system of local transport planning is currently being introduced.

133. **United States***. EPA has established the Transportation Air Quality Center (TRAQ) which is designed to create innovative transport/air quality solutions and to enhance public education efforts. In addition, EPA and the Department of Transportation have collaborated on "It All Adds Up To Clean Air," a public education and partnership building programme.

9. Application of national or international measures to products that contain solvents and promotion of the use of products that are low in or do not contain VOCs (question 15)

134. **Austria.** There are limit values for solvents in paints, lacquers and inks. Products with higher solvent content may only be sold for industrial use with restrictions. A separate regulation exists for industrial installations for surface coating (see questions 10 and 11). There is also a voluntary labelling scheme for environmentally friendly products („Umweltzeichen").

135. **Belgium*.** The **Federal Government** is implementing European Directive 1999/19/EC on labelling. The Belgian Eco-Label Award Committee has organized information days for major users. Promotional activities are undertaken or planned for the benefit of producers, distributors, consumers, public authorities and the education sector.

136. **Bulgaria.** Labelling of products, specifying their VOC content, has not been introduced.

137. **Canada*** has in place several measures to control emissions from VOC products containing solvent under its NO_x/VOC Management Plan. Examples are: the Automotive Refinishing Standards for VOC content; and the Voluntary Agreements for Adhesives and Sealants as well as for miscellaneous and consumer surface coating.

138. **Czech Republic.** The emission limits implemented for the use of products containing solvents are comparable with the emission limits required by Directive 1999/13/EC and the Gothenburg Protocol. There are also the activities under the National Programme of Labelling Environment Friendly Products and Ministry of the Environment Directives.

139. **Denmark.** A voluntary agreement (1989) with the Danish Painters Association limits the marketing of paints, floor varnish and contact glue containing VOCs; and there is also an order (1999) on labelling and a restriction on the import, sale and application of paint.

140. **Germany.** Environmentally friendlier products can be awarded the "Blue Angel" label, e.g. solvent-free or low-solvent paints. For the public sector, environmentally friendly procurement is required under the Budgetary Principles Act.

141. **Greece*** has made provision for replacing trichloroethylene with trichloroethane 1,1,1 for surface treatment of metals. The country favours the drawing-up of a Community policy in this area.

142. **Hungary.** Many sectors are switching to alternative paints.

143. **Italy.** Control of products containing VOCs is voluntary. Labelling is obligatory only for dangerous and inflammable substances. However, labelling is widely used in the case of low-solvent or free-solvent products that are available to consumers.

144. **Netherlands.** In the framework of the voluntary agreement KWS 2000, a product-

oriented approach is followed to control VOC emissions. Government and industry have agreed to measures on a sector-by-sector basis concerning the VOC content of products. The Netherlands is also making efforts to combat organe-psycho syndrome through the Occupational Health Decree and ministerial decisions.

145. **Norway.** Chemicals and products classified as poisonous or carcinogenic are not to be sold to private consumers. Norway also indicates activities undertaken by the Norwegian Directorate of Labour Inspection, the decision (in 1989) of the Nordic Council of Ministers to implement a harmonized voluntary and positive Nordic environmental labelling system for products and the implementation of regulations on EMAS.

146. **Poland*.** Ecological criteria for the use of paints and lacquers, limiting solvent emissions, have been adopted, but legal regulations have not entered into force.

147. **Spain** follows EU legislation and strategies. See question 2.

148. **Sweden** applies the EU Solvents Directive, according to which Member States shall ensure guidance on the use of substances that have the least environmental effect. This is a clear demand in Swedish environmental legislation.

149. **Switzerland** indicates the Ordinance relating to Environmentally Hazardous Substances of 1986. Substances must be labelled with information on the type of hazard, methods of disposal, etc. Annexes to this Ordinance contain special regulations for particular groups of chemicals.

150. **United Kingdom**. A component of the "Are You Doing Your Bit?" campaign is to persuade the public to use low-solvent coatings and products. Whilst there is no government or statutory labelling scheme for products containing solvents, paint manufacturers and large retail chains both have their own voluntary systems. There is an EC Ecolabel for footwear that contains VOC criteria, and also one for paint.

151. **United States*.** Emissions from motor vehicles and stationary sources have declined in relation to the total emissions inventories. By the mid-1990s, the United States had begun to focus on small sources of VOCs, including consumer and commercial products. In 1998, EPA finalized rules to begin reducing emissions from these sources, including consumer products, architectural and industrial maintenance coatings, and automobile refinishing coatings.

10. Measures to facilitate the exchange of technology related to the reduction and control of VOC emissions (question 16)

152. **Austria**. Information can be found in question 25.

153. **Belgium***. At the international level, the regions participate in the EU IMPEL network and in the drafting of BAT reference documents (BREFs) pursuant to the EU IPPC Directive. At the national level, the 'Mixed Platform' was created (1998) for consultation and dissemination of information between the Government and industry. **Walloon region.** There is a "clean

technologies" service in the Walloon environment authority and a technology observatory at the Public Service Scientific Institute, which are responsible for gathering and disseminating information on BAT. **Flemish region.** Different activities have been developed, including the Centre for BAT (1994), the Energy and Environment Information System, and the centre of expertise Rational Use of Energy. **Brussels capital region**. Departments at the Brussels Institute for Environmental Management have, among their tasks, the dissemination of information to enterprises. The ECOBRU facility in the Brussels regional development association also provides regular information.

154. **Bulgaria**. See the answer to question 7.

155. **Canada***. Measures have been focused on Internet-accessible information databases (Canadian Pollution Prevention Information Clearinghouse, Business Environmental Performance Office, and the Canadian Environmental Solutions). Other information is available through Environment Canada's Web site (http://www.ec.gc.ca) and its links. Technology information exchange is accomplished through events such as workshops, seminars, tradeshows and conferences. Information is available in hard copy on request through government publications.

156. **Croatia***, in cooperation with United Nations Environment Programme (UNEP) and the United Nations Industrial Development Organization (UNIDO), has undertaken many activities to replace, in industry, ozone-depleting substances with those not harmful to the ozone layer and the environment.

157. **Czech Republic.** At present, there are no special activities at the government level.

158. **Denmark**. VOC reductions fall within measures that can be supported under the national assistance programme. Nine projects have been supported. Not all projects were targeted exclusively at VOC reductions.

159. **Germany**. The Internet system "Cleaner Production Germany" (www.cleaner-production.de) provides information on projects of clean production and pollution prevention and control. The Transform-Programme and the Twinning Programme are also assistance programmes to certain countries.

160. **Greece***. Experts from the Government and Greek industry are participating in the EC work in Seville, Spain on BAT. VOCs are among the pollutants targetted.

161. **Hungary**. With help from the Government of the Netherlands a cooperation programme on VOC reduction began in 1992. Council Directive 1999/13/EC will be transposed into Hungarian legislation in 2000.

162. **Italy** supports and co-finances (through many trust funds and international financing organizations, in accordance with Law 212/92) a number of activities to facilitate access to technologies through bilateral and multilateral cooperation.

163. The **Netherlands** has set up (1995) an information centre called InfoMil (Information Centre for Environmental Licensing) to support and facilitate the implementation of its environmental policy formulated on the basis of environmental legislation, with special emphasis on the application of the "as-low-as-reasonably-achievable (ALARA) principle. It operates a helpdesk, which provides information to municipalities, trade and industry as well as other organizations on licensing as formulated in environmental legislation.

164. **Norway**. See response to question 7.

165. **Poland***. See answer to question 7

166. **Spain** follows EU legislation and strategies. See question 2.

167. **Sweden**. See previous answers.

168. **Switzerland**. No special activity at the governmental level, rather on a commercial and consultant's basis.

169. **The United Kingdom** participated in the UN/ECE Working Group on Technology and provides bilateral technical assistance for environmental projects to countries in transition through the Environmental Know How Fund, set up by the Department for International Development.

170. **United States***. Efforts to facilitate the exchange of information regarding technologies used to control VOC emissions are made via professional associations, meetings/ conferences, journals, Web sites and "listservs".

11. Measures to ensure that toxic and carcinogenic VOCs, and those that harm the stratospheric ozone layer, are not substituted for other VOCs (question 17)

171. **Austria.** Paints, lacquers, wood protection agents and adhesives must not contain benzene and chlorinated solvents. These products must not contain more than 5% aromatic solvents; products with higher content of aromatic solvent may only be sold for industrial use (with restrictions). Furthermore, the replacement of VOCs with toxic and carcinogenic ones is unlikely due to existing legislation on labour safety.

172. **Belgium*.** The **Federal Government** is implementing EU regulations on hazardous substances and preparations. In addition, in designing and selecting federal policies and measures related to solvent-containing products, account is taken of their impact on other areas of environmental concern, such as the ozone layer.

173. **Bulgaria.** Strictly monitoring is in place to prevent any VOCs being replaced by others that are toxic or carcinogenic or harmful to the stratospheric ozone layer. The Government adopted a National Programme in 1994. Bulgaria has ratified the Vienna Convention, the Montreal Protocol and its Copenhagen, London and Montreal Amendments. By a number of Government Decrees, there is complete control and management of all ozone-depleting substances.

174. **Canada*.** Under the New Substances Program, all new substances are subject to risk assessment for human health and the environment before approval for unrestricted import/manufacture. New substances are assessed for their ozone depleting potential when it has been deemed to be appropriate.

175. **Croatia*.** Since 1992, no PCB-containing transformers or capacitors have been imported or produced.

176. **Czech Republic.** Professional knowledge is encouraging the gradual elimination of these substances in industry. The new Law on Chemical Substances and Chemical Preparations, No. 157/1998 Coll., has come into effect and, amongst other things, includes some requirements of the VOC Protocol.

177. **Denmark.** The general aim of Danish environmental management is to ensure that products with harmful effects on the environment and human health are not substituted for other substances such as VOCs.

178. **Germany.** Implementation of the Montreal Protocol by the CFC/Halon Prohibition Ordinance and extensive substitution of chlorinated hydrocarbons in accordance with the Ordinance on Limitations of Emissions of Highly Volatile Halogenated Hydrocarbons have not resulted in significant increases of VOC emissions.

179. **Greece*.** A new maximum limit of 1% was recently set on the benzene content of petrol. Pursuant to Community Directive 98/70/EC, the limit will be lowered to zero in 2005.

180. **Hungary.** The use of water-borne paints exceeds half the national total.

181. **Italy.** Regulations on substances harmful to the stratospheric ozone layer are related to implementation of the Montreal Protocol. A timetable to eliminate their use was approved. With regard to toxic and carcinogenic substances, alternative products can be used if they have no adverse effect on the environment and human health. The long-term target is to eliminate the use of VOCs when alternative substances are available at sustainable costs. The replacements of toxic and carcinogenic substances by non-toxic and non-carcinogenic VOCs is an intermediate step.

182. **Netherlands.** Within the KWS2000 Covenant and in the general VOC policy there is no distinction between different types of VOCs. The total emissions of VOCs need to be reduced, preferably by source-oriented and process-integrated measures, and occasionally by end-of-pipe measures. There are separate programmmes to prevent emissions of VOCs that deplete stratospheric ozone and those that have severe effects on human health.

183. **Norway.** With regard to ozone-depleting substances, the Norwegian regulatory framework complies with corresponding EU regulations. Norway has also implemented the Montreal Protocol. In addition, imported products containing trichloroethylene and tetrachloroethylene are subject to taxation.

184. **Poland***. The criteria adopted for paints and lacquers include limitations on the replacement of toxic and carcinogenic substances by other VOCs, however legal regulations have not entered into force.

185. **Slovakia.** The Act on Ozone Layer Protection, Nr. 76/1998, and Regulation Nr. 283/1998, by which the Act on Ozone Layer Protection is implemented, set the conditions by which regulated substances can be substituted.

186. **Spain** applies EU legislation and strategies. See question 2.

187. **Sweden.** Environmental legislation, notably the part dealing with chemical products and the corresponding ordinances, contains specific regulations banning the use of carcinogenic substances and substances affecting the stratospheric ozone layer.

188. **Switzerland.** General emission standards for non-carcinogenic VOCs are set according to classes of risk. In addition to these standards, tighter standards are set for carcinogenic VOCs. For some VOCs plant-specific requirements exist. This contributes to meeting the requirement to ensure that less harmful VOCs are not replaced by more harmful ones.

189. **United Kingdom.** Under part 1B of the Environmental Protection Act 1990, cleaning solvents used in offset printing processes were specifically targeted for replacement with significantly less volatile alternatives. In the case of petrochemical installations and those producing organic chemicals, 3 limit value bands are given, with increasing stringency for the more hazardous compounds. The United Kingdom is also an active participant in the Montreal Protocol. These controls make it most unlikely that VOCs which harm the stratospheric ozone layer would be substituted for other VOCs. In addition, Occupational Health and Safety legislation would also be unlikely to permit the replacement of one VOC by another that is more toxic/carcinogenic.

190. **United States*.** The Clean Air Act lists 189 compounds which are characterized as Ahazardous air pollutants@. It provides for controls on many stationary sources, referred to as maximum achievable control technology (or MACT) standards. Sources subject to MACT have an incentive to substitute non-hazardous air pollutants for the listed hazardous air pollutants in order to meet the standards. The Significant New Alternatives Policy Program requires EPA approval before switching to a substitute for an ozone-depleting substance.

D. The 1994 Protocol on Further Reduction of Sulphur Emissions

191. This section summarizes the answers received to questions 18 to 27 of the questionnaire. Responses to the questions are mandatory for the Parties to the Protocol: Austria, Canada, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Liechtenstein, Luxembourg, Netherlands, Norway, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom and European Community. Those names of that failed to provide a response to the secretariat are underlined. In addition, responses were received from 8 other

Parties to the Convention: Belgium, Bulgaria, Georgia, Hungary, Latvia, Lithuania, Poland and Russian Federation (identified with* below).

1. National strategies, policies, programmes and measures that specifically address the control and reduction of sulphur emissions (question 18)

192. **Austria. A** licence is required for each new or modified installation under the Industrial Code and Clean Air Act for Steam Boilers. Emission limit values and/or BAT measures are included in the licensing procedure. Several categories of (new and existing) stationary emission sources have explicit emission limit values and BAT requirements set by ordinance (see questions 19 - 23). Emissions of sulphur dropped by 88% between 1980 and 1998 (by 49% between 1990 and 1998).

193. **Belgium*.** Directive 88/609/EEC sets sulphur reduction targets for existing installations (emissions reductions and other obligations for electricity producers have been laid down in an agreement signed by the electricity sector). The 2003 targets were reached in 1999. **Walloon region.** The sulphur reduction policy hinges on the implementation of Directive 84/360/EEC and the granting of operating permits (there are some revisions). There is an agreement with Walloon glass manufacturers. A general air quality plan is being drawn up. The ceilings set by the new Directive 1999/30/EC for 2005 have already been met for all measuring stations except one. **Flemish region.** The strategy for control policy is set out in the Flemish Environmental Policy Plan (1997-2001). Five actions are related to sulphur emission reductions. **Brussels capital region** implements Directive 93/12/EEC. An air pollution plan is under preparation. The level of sulphur emissions in Belgium dropped by 73% between 1980 and 1997. The targets set by the Helsinki and Oslo Protocols for the reduction of sulphur emissions have been reached. **Federal Government.** An acidification control and tropospheric ozone plan is in preparation.

194. **Bulgaria*** has signed the Protocol but not yet ratified it. Parliament approved measures to achieve the goals of the National Energy Development and Energy Efficiency Strategy by the year 2010. This objective was confirmed with the signing of the 1999 Gothenburg Protocol.

195. **Canada.** National and regional caps have been set for sulphur emissions. The key policy measures used for reducing emissions have been federal-provincial agreements, in which the federal government sets the target (or limit) and the provinces either regulate or have voluntary agreements with emitters to achieve the reductions. The Canada-Wide Acid Rain Strategy for Post-2000 provides the framework for the achievement of further major reductions in emissions, including SO_2. Under Phase 3 of the Federal Smog Management Plan, the Government will engage in a multi-pollutant approach with several industrial sectors. In 1998, emissions of SO_2 in eastern Canada were 20% below the cap, national emissions were 16% below the cap, and emissions in the sulphur oxides management area (SOMA) were 25% below the cap.

196. **Croatia.** The objective of Croatia's air protection is to achieve the first category of air quality within the next 10 years. Fifteen regulations govern air protection, for example the By-law on Limit Values of Pollutant emissions from Stationary Sources to comply with the second Sulphur Protocol obligations. Since 1990, air emissions of the main pollutants from stationary and

mobile sources have decreased as a consequence of the overall economic recession, economic reform, and the war. Emissions of SO_2 decreased by 55%. Croatia's obligation in accordance with the Protocol, to cut SO_2 emissions by 22% by 2010 compared to 1980, has already been met.

197. **Czech Republic.** The 1995 Concept of the National Environmental Protection Policy reflects targets, plans and measures. State Environmental Policy (1999) includes national policies and strategies, and selected targets and measures for further reducing SO_2 in view the obligations under the Protocol. The most significant programme concerned with the control and reduction of sulphur emissions is the Environmental Programme of the Czech Power Company. Emission control technology is not specified, control is achieved through setting emission limits. National SO_2 emissions from stationary sources decreased from 1,976,000 tonnes in 1990 to 446,000 tonnes in 1998, i.e. by 76.4%.

198. **Denmark.** As described in question 1, the general energy strategy is expected to reduce emissions of sulphur. Furthermore, specific measures addressing sulphur emissions have been implemented: a sulphur tax; limit values for the sulphur content in fossil fuels and emissions from large combustion plants; a quota system for large combustion plants capping yearly emissions.

199. **Finland** notes basic scientific and technical work done, e.g. the Acidification Project started in the 1980s. Further planning of control measures has taken place in committees led by the Ministry of the Environment. The Government has adopted decisions on these grounds. The Air Pollution Control Act and decisions of the Council of State have been used for implementation. The level of Finland's emission ceiling for 2000 (annex II to the Protocol) was attained in 1994.

200. **Germany** notes its broad spectrum of policy instruments and abatement strategy covering various stages of pollution generation. Air quality standards and emission limits are especially relevant. The establishment and operation of installations particularly liable to cause harmful effects on the environment is subject to licensing. Requirements concerning emission reduction (according to the state of the art) are laid down in 4 regulations (on air quality control, large and small firing installations, waste incinerators).

201. **Greece.** The limits for annual emissions will easily be met because of the application of the provisions of Directives 99/32/EC, 98/70/EC, 99/32/EC, 88/609/EEC, 96/61/EEC. In addition, the use of natural gas and electricity production is growing and a flue gas desulphurization (FGD) unit has been commissioned at a 300 MW conventional thermal power station. Sulphur dioxide emissions currently total some 540,000 tonnes (1988).

202. **Hungary*.** See answer to question 1.

203. **Ireland.** Total SO_2 emissions have decreased (25% from 1980 to 1995) due to: a switch to low-sulphur fuel in the energy and industrial sectors; the reduction in fuel oil combustion in industry; and the conversion of solid-fuel heating systems in private dwellings to gas or oil-fired systems. Information is provided on industrial/power generation and on residential/ commercial

fuel combustion stationary sources. For industrial/power generation sources detailed information is given on existing legislation, voluntary agreements and proposed measures.

204. **Italy's** policy on sulphur emissions is mainly inspired by the twin principles that the polluter pays and the user pays, applied through a mix of command-and-control measures and economic instruments. Programmes and measures are based on a regulatory framework. Promotion of renewable energies, energy saving, etc. represents another important part of Italian strategies, programmes and measures to reduce sulphur emissions.

205. **Latvia*** has set emission ceilings for sulphur dioxide for the year 2010 10 per cent below the 1990 level,in keeping with the 1999 Gothenburg Protocol.

206. **Lithuania*.** Emission ceilings for sulphur are set in annex II oto the 1999 Gothenburg Protocol.

207. **Netherlands** indicates the relevance of its answer to question 1. The predicted SO_2 emissions for 2010 are 66,000 tonnes, which are below the obligation set in the Protocol.

208. **Norway.** Its Protocol objective was met in 1994. Major national measures can be summarized as: regulations through emission permits under the Pollution Control Act of 1981; requirements on the permitted content of sulphur in oil products; stipulation of sulphur taxes; and the implementation of EU Directives regarding air pollution. Norway has ratified Annex VI on the Prevention of Air Pollution from Ships adopted in 1997 to the International Convention for the Prevention of Pollution from Ships of the International Maritime Organization (IMO) and supported the EC proposal to IMO to decrease emissions from North Sea shipping. In 2000 the Ministry of Energy proposed creating a new administrative body dedicated to energy conservation and new renewable energy sources, particularly wind power and bio-energy.

209. **Poland's*** National Programme for SO_2 Emission Reduction sets out the policy aimed at the fulfilment of the Protocol obligations. Recent analysis has revealed that the SO_2 emission reduction target is feasible.

210. **Russian Federation*.** The 1996 "Environmental programme for electric power generation in Russia" and its "Blueprint for energy saving" set goals and ways of addressing problems up to 2005. For existing power stations, environmental protection measures to reduce SO_2 emissions in the next few years mainly involve conversion to the burning of natural gas. The immediate task is to use desulphurization technologies to meet specific emission standards at newly commissioned or modernized plants and to comply with the obligations arising under the Convention.

211. **Slovakia.** The National Environmental Policy, approved in 1993 sets long- and medium-term objectives, including for SO_2. These objectives will be reached by means of several pieces of legislation. See also answer to question 1. Planned emission reductions will ensure a decrease in SO_2 emissions by 2000 more than 50% from 438,000 tonnes in 1991

212. Spain. See answer to question 2.

213. **Sweden.** See answer to question 1.

214. **Switzerland.** Its national strategies, policies, programmes and measures are the same as those mentioned in response to question 1.

Switzerland	1950	1980	1985	1990	1995	1998	Protocol target for 2000
Emission level (1000 tonnes)	46.2	116.0	75.9	42.5	34.3	27.6	60.0

215. **United Kingdom.** Part 1 of the Environmental Protection Act 1990, supplemented by regulations, is the main legislative instrument for the control of air pollution (including SO_2) from industrial sources. Regulations prescribe industrial processes requiring authorizations based on BATNEEC. The arrangements will be continued under the pollution control regime to be set up under the Pollution and Prevention Control Act 1999, which will implement the EC Integrated Pollution Prevention and Control (IPPC) Directive (96/61/EC) and eventually supersede the 1990 Act. Under the Protocol, the United Kingdom agreed to make an 80% reduction in SO_2 emissions by 2010 (with intermediate targets of 50% by 2000 and 70% by 2005). By the end of 1997, it had achieved a 67% reduction from 1980 baselines.

216. **European Community.** See answer to question 3.

2. Measures to reduce sulphur emissions from new and existing sources

217. **Austria.** There is a high potential for increasing energy efficiency in the residential sector. Many efforts are being made in this direction, e.g. the regulations in the building codes have been tightened. Also, the federal government's energy policy has put special emphasis on the intensified use of renewable energy. The national strategy for climate protection will also focus on the topics of energy efficiency and renewable energy sources. Limits for the sulphur content of fuels that have been stipulated for several source categories where no ELVs apply are listed. Fifteen sector-specific emission standards and/or measures related to best available control technology have been stipulated since the early 1990s. For industrial sources emission standards and/or measures according to BAT are set in the licensing procedure for installations.

218. **Belgium*.** There are measures to increase energy efficiency, to reduce the sulphur content of fuel and to apply BAT. The **Flemish region** indicates legislation (with ELVs and obligations to apply BAT), voluntary agreements between the Flemish environmental administration and local authorities, and the implementation of many other activities to decrease SO_2 emissions, e.g. use of combined heat and power, promotion of renewable energy sources. The **Walloon region** indicates different tax deductions to increase energy efficiency. It also indicates its environment plan, pilot projects, inventory, plans of action and financial incentives to increase the use of renewable energy. BAT is required in operating permits for new enterprises. The **Federal Government** has worked to reduce the sulphur content in gas oil and road diesel, diesel delivered to the railways, petrol, etc., in line with EC Directives.

219. **Bulgaria*.** Having signed the relevant Protocols, Bulgaria pursues an abatement policy and has taken the following steps to reduce sulphur emissions: measures to increase energy efficiency (Energy Development and Energy Efficiency Act (SG 64/99), Energy Efficiency National Programme); measures to increase the share of natural gas used to generate electric power and thermal energy for industrial purposes and in centralized heating systems; fuel in power-and-heating plants will be replaced with low-sulphur solid fuel; BAT applied by equipping eight 630 megawatt power stations with FGD in 1999. In 1998 total emissions were 38% lower than in 1990.

220. **Canada.** The Natural Resources Canada's Office of Energy Efficiency manages 18 programmes aimed at moving the market towards energy efficiency. Attention is drawn to the National Energy Use Database (which supports the development of Canadian energy end-use data, knowledge and analytical capabilities and also the adoption of energy-efficient technologies, etc.). The provinces have implemented the SO_2 emission limits in the national emission guidelines for all new and substantially modified coal and oil-fired electric power units commissioned since 1990. Diesel fuel regulations, which reduce sulphur in diesel fuel used in on-road vehicles to 500 ppm, have reduced emissions of sulphur and particulate matter. Some provinces have limits on sulphur in fuel oils, which have reduced emissions of sulphur oxides from boilers and furnaces.

221. **Croatia.** See answer to question 18.

222. **Czech Republic's** main measures are set out in the State Programme for Energy Savings and Utilization of Renewable Energy Sources. Use of renewable energy is small (2%) but expected to grow. At the present time, a working group at the Ministry of the Environment is preparing implementation of IPPC into Czech legislation. The aspect of BAT is dealt with in connection with the introduction of EU Directive 96/91/EC. Decreasing SO_2 emissions is one of the objectives of the Transport Policy (1998). Expected trends in the production of emissions of sulphur dioxide from mobile sources are:

Year	1997	1998	1999	2000	2005	2010
Emissions of SO_2, tonnes	6338	5293	4287	3268	1046	943

223. **Denmark.** To promote low-sulphur and environmentally friendly technologies small producers of combined heat and power (CHP) receive a high fixed price for the production of electricity. On top of this, support is given to CHP based on renewables. See also answer to questions 1 and 18.

224. **Finland's** climate encourages energy conservation**.** Active means to encourage energy efficiency include building regulations, financial support, voluntary agreements as well as information campaigns carried out by MOTIVA centre. Energy consumption in 1995 was 13% lower than it would have been without additional efficiency measures, taking 1970 as the base year. The Council of State has taken several decisions on the sulphur content of fuels. According to recent environmental legislation best practical technologies should be used.

225. **Georgia*** indicates 5 measures to increase energy efficiency: the modernization of individual boilers; the insulation of buildings to increase energy efficiency; the construction or modification of hydroelectric stations; the use of geothermal water for household heating; the increase in the use of renewable energy. It notes measures for reducing the sulphur content of fuels and economic incentives.

226. **Germany** notes the importance of energy efficiency measures. They are listed in the Federal Government's Second National Report under the United Nations Framework Convention on Climate Change. The report describes about 140 different measures to combat greenhouse-gas emissions, including: the limitation of heat losses in the waste gas of small firing installation; financial support for co-generation; the obligation to buy electricity from renewable energy at "incentive" prices; regulations on efficient heating installations and insulation of buildings; voluntary agreement with industry on the reduction of energy use. See questions 50 and 63.

227. **Greece.** The use of renewable energy is encouraged by subsidizing purchase and running cost. For fuels and BAT, see answer to question18.

228. **Ireland** gives information on: energy efficiency (e.g. since 1990 the Electricity Supply Board (ESB) has carried out a demand-side management and energy efficiency promotion programme in support of commercial and Government energy/environment policy objectives); renewable energy (e.g. the Alternative Energy Programme, the EU energy programmes); sulphur content of fuels (e.g. Irish legislation and EU standards); and best available control technologies (e.g. the Environmental Protection Agency Act and the EU requirements).

229. **Italy.** Numerous measures were introduced to promote energy-saving initiatives in the production and use of energy and to increase the use of renewable sources (instruments to promote investments, instruments for the qualification of devices for the end-use of energy, instruments for changing behaviour and accelerating product acceptance). Regulations were introduced for fuels with lower sulphur content. Emission standards were produced for existing plants based on the application of BATNEEC. For new installations BAT must be applied. Italy is implementing EEC Directive 96/61.

230. **Latvia*** indicates its measures to increase energy efficiency, measures to increase the use of renewable energy, measures to reduce the sulphur content of particular fuels and to encourage the use of fuel with a low sulphur content. It draws attention to several pieces of national legislation, market based incentives, programmes and voluntary agreements, research and development, and information and education that support these measures.

231. **Lithuania*.** The draft action plan for the implementation of the National Energy Strategy (1999) is under preparation. All the listed measures will be addressed.

232. **Netherlands.** (a) (b) (c). The measures are included in the national strategy and policy, and implementation through licensing (permits). (d) See questions 7 and 16, which are also applicable to sulphur.

233. **Norway.** Permits issued to large stationary sources are based on the more stringent standards in Europe and the United States, as they include a requirement for the use of BAT in new plants. National regulations for smaller plants (smaller than 50 MW) burning gas and oil fuels are close to finalisation. Regulations on the sulphur content in fuel oils were revised in 1995. Use of heavy fuel oil in some cities was prohibited, and sulphur content limits set for different parts of the country. Additionally the sulphur content of gas oils is in compliance with EU Directive 93/12/EEC. Implementation of EU Directives Large Combustion Plant (LCP) and IPPC concerning emissions from large stationary sources, the EU Directive 80/779/EEC on air quality limit values, and EU Directive 94/67/EC on the incineration of hazardous waste, provides controlling legislation. From 1996 onwards no tax is paid on low-sulphur fuels, and a tax has been introduced for coal and coke for processing. The Government offers subsidies for the abatement of air pollution, focusing primarily on information, education and the introduction of new energy sources, especially bio-energy. The Government has raised an environmental fund of 250 million NKr to assure the financing of projects that contribute to the reduction of emissions of greenhouse gases and other pollutants. It has established the Green Management Programme (GRIP), for motivating and facilitating sustainable development by business and local authorities. See also response to question 14.

234. **Poland*.** The primary technical measures for reducing of SO_2 emissions from large stationary sources are efficient flue gas desulphurization and cleaning of hard and brown coal. The national emission reduction programme also provides for progressive fuel switching. The improvement in energy efficiency is expected to be attained by 4 approaches including insulation standards and projects on the efficient use of energy.

235. **Russian Federation*.** Its environmental programme relies on the maximum use of simple technologies. Various technologies are developed to remove SO_2 from waste gases of thermal power plants. A draft federal law calls for the creation of economic incentives for the production of fuel oils with low sulphur content.

236. **Slovakia.** Measures on energy efficiency take account of international agreements. Although interest has been declared, control and regulation have not been achieved. A draft act on energy efficiency has been prepared. To increase the use of renewable energy, there is legislation is that imposes the purchase from environmentally justified sources by the distributor. Tax incentives are also described. Measures for applying best available control technologies are based on the Act on Air, by which new installations and substantially changed installations have to apply BATNEEC.

237. **Spain.** A new and ambitious Plan for Renewable Energies from 2000 to 2010, has been approved at the end of 1999 "Plan de Fomento de las Energías Renovables". Investments and subsidies are associated with the Plan. Spain also follows EU legislation and strategies. See answer to question 2.

238. **Sweden** provides information on: energy efficiency (subsidies to investments for demonstration of new techniques, voluntary standards for electrical appliances); renewable energy

(one of the goals in the Swedish energy tax system is to increase the use of renewable energy, and subsidies can be given to investments regarding energy); application of BAT (the legislation is based on the use of BAT for stationary sources); and fuels (see question 53).

239. **Switzerland** gives information about: energy policy (the national action programme 'Energy 2000' and a law relating to the reduction of CO_2 emissions adopted in 1999); fuel quality and sulphur content (see question 53); and emission limit values and BAT (emissions shall be limited as far as technology and operating conditions allow, provided this is economically feasible).

240. The **United Kingdom** provides detailed information on its measures to: increase energy efficiency (Energy Efficiency Best Practice Programme, Home Energy Efficiency Scheme); increase the use of renewable energy (it is an important part of the climate change programme, the Government has initiatives to give a boost to renewables); reduce the sulphur content of particular fuels and to encourage the use of fuel with low sulphur content (under EC Directive 1999/32/EC); and to apply best available control technologies (under part 1 of the Environmental Protection Act 1990).

241. **European Community.** Council Directive 98/70/EC relating to the quality of petrol and diesel fuel sets current and future maximum limits on the sulphur content of petrol and diesel fuels. Council Directive 99/32 relating to a reduction in the sulphur content of certain liquid fuels limits the future sulphur content of heavy fuel oil and the maximum sulphur content of gas oil.

3. Progress made in applying stringent emission limit values to the major new stationary combustion sources (question 20)

242. **Austria** has six categories of emission standards that are in force for steam boilers and industrial boilers that are more stringent than those in annex V to the Protocol.

243. **Belgium*.** The **Walloon region** has limit values for large fixed sources (according to type of fuel and capacity of the installations) over 300 MW that are more stringent than those in the Protocol. **Flemish region.** There is no major new stationary combustion source. For new installations, ELVs indicated in questions 21 and 22 are in effect.

244. **Bulgaria*** has adopted emission limit values identical to those in annex V for new combustion sources above 50 MW.

245. **Canada** is not required to respond.

246. **Croatia** indicates its ELVs (according to the type of fuel and capacity of the installation). New stationary sources had to apply them from 1998, existing stationary sources will apply them by 1 July 2004.

247. **Czech Republic.** There are ELVs for all large and medium-sized combustion sources. A new law will provide compliance with all requirements of the Protocol.

248. **Denmark.** New stationary combustion source ELVs are in accordance with annex V.

249. **Finland** has ELVs given by the Council of the State in 1990; BAT and international agreements are taken into account when environmental permits are given.

250. **Germany** has national emission standards for power generation (according to the type of fuel) and industrial process (selection) and provides a list of values.

251. **Greece.** The SO_2 ELV of the only large combustion plant under construction will be similar to that in annex V. Flue gas desulphurization will use wet alkali scrubbing.

252. **Ireland** has a By-law requiring the ELVs in annex V to apply to new industrial plant with a rated thermal input of 50 MW or more (giving effect to EU Directive 88/609/EEC).

253. **Italy.** The emission limit values as stated in Directive 88/609/EEC and specified in annex V to the Protocol are applied to major new stationary combustion sources.

254. **Latvia*.** Draft regulations on reduction, restriction and control of emissions of air pollutants from stationary air pollution ources are expected to be approved in 2000. They will be introduced for new combustion plants. ELVs for gaseous, liquid and solid fuels are given.

255. **Lithuania*** has ELVs for existing and new stationary combustion sources (according to the type of fuel and the thermal capacity).

256. **Netherlands.** See questions 21 and 22.

257. **Norway.** The emission standards are set on a plant-by-plant basis in pursuance of the provisions of the Pollution Control Act of 1981. The conditions in the individual permits are determined on the basis of the more stringent standards practised in Europe and the United States, as well as the guiding limit values for polluting substances and the type and quality of the recipient. BAT has been a requirement for major new combustion sources.

258. **Poland*.** A decree lays down new emission standards for air pollutants from technological processes. Emission standards for new major stationary combustion sources (1990) are listed for solid, liquid and gaseous fuels. For new stationary combustion sources the standard emission value of 400 mg SO_2/m^3 has been adopted in keeping with the Protocol.

259. **Slovakia** has emission limits for major new stationary combustion sources (according to the type of fuel and gas and the thermal capacity) as specified by Governmental Order Nr. 92/1996 and the Act on Air Nr. 309/1991.

260. **Spain** applies EU legislation and strategies. See answer to question 2.

261. **Sweden** has SO_x emissions limit values for plants emitting up to and more than 400

tonnes of sulphur/year, new coal-fired plants (irrespective of size) and new plants > 500 MWth.

262. **Switzerland** has national emission standards for SO_2 in general (250mg/m^3) and for eight source categories. It has also provided information concerning incineration of municipal and special wastes, on national emission standards for combustion installations run on "extra light", "medium" and "heavy" fuel oil, and on coal combustion installations. Emission standards are usually based on the state of the art (BAT).

263. **United Kingdom.** Under EC Directive 88/609/EC, all plants above 50 MWth licensed after 1 July 1987 are required to meet the ELVs specified in annex V to the Protocol.

264. **European Community.** See answer to question 3.

4. Progress in applying emission limit values such as those specified in annex V to existing stationary combustion sources with a thermal input above 500 MW_{th} (question 21)

265. **Austria** has emission standards in force for existing steam and industrial boilers > 500 MW_{th}. The standards – except for brown coal – are more stringent than the values in annex V.

266. **Belgium*.** In Brussels there are no large combustion plants. For the **Walloon region**, see answer to question 22. The **Flemish region** indicates the measures and ELVs applied to refineries and power plants according to fuel type.

267. **Bulgaria*.** Emission limit levels, applicable to existing stationary combustion sources with thermal input above 50 MW, are identical to those specified in annex V. A programme is being drafted to meet the requirements set out in Article 3 of Directive 88/609/EEC.

268. **Canada** is not required to respond.

269. **Croatia.** The new thermal power plant PLOMIN II is equipped with a desulphurization unit, low-NO_x burners and an electrostatic precipitator.

270. **Czech Republic.** For all stationary combustion sources with a thermal input above 500 MW_{th} the national emission limit is 500 mg/m^3 (dry gas, 101.32 kPa, 0°C, 6% O_2).

271. **Denmark.** For all existing stationary combustion sources with thermal input above 500 MW (i.e. power plants in Denmark), the ELVs in annex V are applied using low-sulphur coal and flue gas desulphurization. Since the mid-1980s total emissions of SO_2 from the 19 most important power plants have been regulated through a "Quota Law".

272. **Finland.** In practice all existing power plants which have a thermal input of more than 500 MW and which are in operation have ELVs below those specified in annex V to the Protocol. The licensing procedure, where BAT is applied, is used to fix emission limits for power plants and other major stationary sources.

273. **Germany.** All existing stationary combustion sources with a thermal input above 500 MW_{th} apply ELVs below those specified in annex V of the Protocol. After a transitional period (usually 5 years) existing installations are subject to the same requirements as new installations.

274. **Greece.** Since the sulphur emissions ceilings can be met without any work on existing large combustion plant, there is only one plant to which an ELV applies. The sulphur ELV is similar to that in annex V. Flue gas desulphurization is by wet alkali scrubbing.

275. **Ireland.** The integrated pollution control licensing system using BATNEEC is being extended to cover existing stationary sources (LCPs) over 2000 – 2002 (see questions 2 and 5).

276. **Italy.** The ELV applied to existing stationary combustion sources with a thermal input above 500 MWth is the same limit value stated in annex V (400 mg/Nm^3).

277. **Latvia*** has ELVs for liquid, solid and gaseous fuels. Draft regulations on reduction, restriction and control of emissions of air pollutants from stationary air pollution sources are expected to be approved in 2000. Regulations will be introduced for existing combustion plants from 1 January 2006.

278. **Lithuania*** has ELVs for existing stationary combustion sources > 500 MW according to the type of fuel.

279. **Netherlands.** In the new large combustion plant regulation, stationary combustion sources with a thermal input above 300 MW have an emission limit of 200 mg/m3. Desulphurization measures are applied.

280. **Norway.** There are no stationary combustion sources with a thermal input above 500 MW_{th} in Norway.

281. **Poland*** has emission standards for existing major stationary combustion sources above 500 MW_{th}, for solid fuels (hard coal and brown coal/coke) before and after December 2005.

282. **Slovakia** has emission limits for existing major stationary combustion sources (according to type of fuel) specified by Governmental Order Nr.92/1996, Act on Air Nr. 309/1991.

283. **Spain** applies EU legislation and strategies. See question 2.

284. **Sweden.** See question 20.

285. **Switzerland.** For existing stationary combustion sources with a thermal input above 500 MW_{th}, see previous answer.

286. The **United Kingdom** is committed to reducing SO_2 emissions from existing large combustion plants under EC Directive 88/609/EC the UK. Operators of combustion plants have

been set limits for SO_2 emissions each year with a timetable for installing the new equipment required to meet the emission levels set for future years. In 1997 the United Kingdom had already met its targets under the Directive. In general, emissions standards for processes regulated under Part 1 of the Environmental Protection Act (such as existing power plants) are set on a process- and site-specific basis. Operators of these processes are required to employ BATNEEC. In future, SO_2 emissions from existing power plants will be controlled through the pollution control regime to be set up under the Pollution Prevention and Control Act 1999, which will implement the EC Integrated Pollution Prevention and Control Directive.

287. **European Community.** See answer to question 3.

5. Progress in applying emission limit values or emission limitations to the major existing stationary combustion sources whose thermal input is between 50 and 500 MW_{th} (question 22)

288. **Austria** has emission standards in force for six categories of existing steam and industrial boilers whose thermal input is between 50 and 500 MW_{th}. The standards, except for brown coal, are more stringent than the values in annex V.

289. **Belgium*.** Walloon region has applied ELVs to existing installations since 1987, according to the type of fuel and the capacity of the installations. The **Flemish region** has measures and ELVs for refineries and combustion plants. The ELVs for power plants and combustion plants with a thermal input >300 MW and authorized after 31 June 1987, and for gaseous fuel, are more stringent than those of the Protocol. The ELVs for refineries are more stringent than prescribed in the Protocol. For installations authorized before 01/07/87, additional measures will have to be taken before 1/7/2004 in accordance with article 2, 5.(b) of the Protocol. The same applies for installations authorized after 31/06/87, using solid fuels and with a thermal input between 100 and 300 MW.

290. **Bulgaria*.** See the answer to question 21.

291. **Canada** is not required to respond.

292. **Croatia** has three main stationary sources that apply prescribed ELVs.

293. **Czech Republic.** For major stationary combustion sources whose thermal input is in the 50-300 MW_{th} range the national emission limit is 1700 mg/m^3 and for 300-500 MW_{th} the national emission limit is 500 mg/m^3.

294. **Denmark.** For existing stationary combustion sources with a thermal input between 50 and 500 MW (power plants in Denmark), the emission limit values in annex V are applied. The technologies used are coal with low sulphur content and flue gas desulphurization.

295. **Finland.** In practice all major existing power plants that are in regular operation apply the emission limit values in annex V.

296. **Germany.** See answer to question 21.

297. **Greece.** There is no application of ELVs to large combustion plants. See reply to question 21 above.

298. **Ireland.** See reply to questions 2 and 5.

299. **Italy.** The ELV applied to existing stationary combustion sources between 50 and 500 MWth is set using annex V as guidance (1700 mg/Nm^3).

300. **Latvia*.** The draft regulations on reduction, restriction and control of emissions of air pollutants from stationary air pollution sources are expected to be approved in 2000. Regulations will be introduced for existing combustion plants from 1 January 2006.

301. **Lithuania*** has emission limit values for existing and new stationary combustion source (according to the type of fuel and thermal capacity).

302. **Netherlands.** The new large combustion plant regulation for stationary combustion sources with a thermal input below 300 MW has an emission limit of 100 mg/m^3. The measure applied is desulphurization.

303. **Norway.** See question 20.

304. **Poland*.** For existing major stationary combustion sources whose thermal input is between 50 and 500 MW_{th}, and which were launched before 28 March 1990 have emission standards for solid fuels (hard coal and brown coal/coke) up to and after December 2005.

305. **Slovakia** has ELVs for existing sources whose thermal input is between 50 and 500 MW_{th} according to the type of fuel. Emission quotas are allocated to major sources of pollution for SO_2 emissions. Quotas will enter in force for the years 2002, 2003 and 2004. The control of emissions will ensure that the emission ceilings specified in annex II are achieved. Emission limits are at present based on thermal output, in future legislation the input approach will be used.

306. **Spain** follows EU legislation and strategies. See answer to question 2

307. **Sweden.** See question 20.

308. **Switzerland.** The emission standards mentioned in response to question 20 do not apply only to new plants, but also to existing ones. As a general rule, the existing plants have to be retrofitted within five years after the entry into force of emission limits.

309. **United Kingdom.** See answer to question 21.

310. **European Community.** See answer to question 3.

6. Progress in applying national standards for the sulphur content of gas oil which are at least as stringent as those specified in annex V to the Protocol (question 23)

311. **Austria.** The fuel quality standards for gas oil are: diesel (road and off-road): ≤ 0.035%; and heating oil: ≤ 0.1%.

312. **Belgium*.** The **Federal government** refers to Directive 93/12/EC (concerning the maximum sulphur content of road vehicle fuels), the voluntary agreement between Belgian railways and petroleum operators (on the diesel delivered to the railways) and, from 2000, Directive 98/70/EC (on the quality of petrol and diesel fuels, maximum sulphur content 0.015% and 0.035% respectively).

313. **Bulgaria*.** The standards for sulphur in gas oil are determined in Regulation 17 (SG 97/99). Standards until 2003 are: diesel 0.2%, other 1.25%. There are additional standards for the future.

314. **Canada** is not required to respond.

315. **Croatia** indicates, in a table, its fuel quality standards regarding sulphur, lead and benzene content. In accordance with paragraph 5 of article 2 of the Protocol, Croatia has declared it will use the extended time period up to the year 2005.

316. **Czech Republic.** National standards have not yet been set; nonetheless, the sulphur content in heating gas oils is already lower than the limits laid down in the Protocol (0.2%).

317. **Denmark** is currently implementing EU Directive 99/32/EC, which reduces the sulphur content from 0.2% to 0.1% by 2008. Tax incentives have already resulted in market specifications of 0.05% for heavy gas oil and 0.005% for road diesel.

318. **Finland.** The Council of State issued a regulation equivalent to annex V, section B in 1997.

319. **Georgia's*** existing fuel standards are: petrol (all types 0.1%, diesel I 0.2% and diesel II 0.5%).

320. **Germany.** There are national standards for the sulphur content of light fuel oil (0.16%, diesel 500 ppm, diesel (from 2000) 350 ppm, petrol (from 2000) 150 ppm), heavy fuel oil (1.0%), hard coal (1%) and lignite (1%).

321. **Greece.** The national standards correspond to those in annex V of the Protocol.

322. **Ireland.** The marketing of gas oil with a sulphur content >0.2% by weight and diesel oil with a sulphur content >0.05% by weight is banned by law. The specification for diesel was lowered to 0.035% from 1 January 2000 (to be further reduced to 0.005% from 1 January 2005) in accordance with EU Directive 98/70/EC of the EU Auto Oil Programme.

323. **Italy.** The sulphur content of gas oil is 0.035% for diesel for on-road vehicles and 0.2% for other types, as specified in annex V to the Protocol.

324. **Latvia*.** The draft regulations on fuel quality standards are expected to be approved in 2000. According to ISO standard 8754 by the end of 2001 the sulphur content of diesel oil should not exceed 0.2%. From 2004 the sulphur content should not exceed 0.05%.

325. **Netherlands**. The national standard for gas oil is 0.2% sulphur.

326. **Norway.** Present values are lower than those specified in annex V to the Protocol, and are in accordance with EU Directive 98/70/EC on the quality of petrol and diesel fuels.

327. **Poland*** has national emission standards for liquid fuels (according to the thermal power) and gaseous fuels (according to the type of gas).

328. **Spain** follows the EU legislation and strategies. See answer to question 2.

329. **Slovakia.** National standards for sulphur content are the same or more stringent than those set in Annex V to the Protocol: diesel for on-road vehicles: 0.05% (since 1 January 2001, only 350 ppm weight will be allowed); other types: 0.2% since 1 July 2000.

330. **Sweden.** The maximum sulphur content of light fuel oil is 0.2%. There is no specific limit for sulphur in heavy oil and solid fuels. The sulphur tax specifies the content of light (0.1%) and heavy (0.4%) fuel oils.

331. **Switzerland.** The standard for gas oil for on-road vehicles was 0.05% until the end of 1999; it has been 350 mg/kg (0,035 %) since 1 January 2000 and will be 50 mg/kg by 1 January 2005 following Directive 98/70/EC. For other fuel oil types like “extra light” heating oil it is less than 0.2 %

332. **United Kingdom.** Under the Marketing of Gas Oil (Sulphur Content) Regulations 1994, the United Kingdom prohibited the marketing of gas oils with a sulphur content greater than 0.2% by weight from 1 October 1994. This was in line with Directive 93/12/EEC. Under EC Directive 1999/32/EC (which amends 93/12/EEC), the sulphur content of gas oil will be limited to 0.2% from 1 July 2000 and to 0.1% from 1 January 2008.

333. **European Community.** See question 19.

7. Economic instruments applied to encourage the adoption of cost-effective approaches to the reduction of sulphur emissions (question 24)

334. **Austria.** Economic instruments have not been used.

335. **Belgium*.** See answer to question 57.

336. **Canada**. No economic instruments related to sulphur are in place at the federal level. There is an overall SO_2 cap on power utilities in each of the provinces of Nova Scotia and New Brunswick, and the provinces allow emissions trading under this "bubble"/cap. There is no trading of SO_2 between provinces and no estimate of cost savings is available.

337. **Croatia.** Economic instruments are expected to be used to decrease sulphur emissions (products charges, taxes, tax differentiation, etc.). A special regulation or a governmental decision should be adopted to prescribe the allowances and exemptions from taxation, customs duties and other levies.

338. **Czech Republic** reports economic instruments are "not used".

339. **Denmark.** As described in question 18, the Danish Government has implemented a sulphur tax. Tax incentives to promote low-sulphur diesel have been in force since 1992. The last amendment, introduced on 1 June 1999, concerned diesel with sulphur content <50 ppm (0.005%). As a result all auto diesel sold in Denmark since that date is low-sulphur diesel (<50 ppm).

340. **Finland.** There are economic instruments to increase the use of sulphur-free diesel oil.

341. **Georgia*.** A differentiated tax on sulphur emissions is used. The tax rate is different for emissions under and above the emission limit.

342. **Germany** notes the bubble concept under TA Luft, see question 60.

343. **Greece.** For industry, there is an incentive to use gas to reduce SO_2 emissions.

344. **Ireland** identifies three economic instruments: a solid fuel subsidy; rebated fuel taxation for public service vehicles; and differentiated taxi licensing fees.

345. **Italy.** The budget law for 1998 introduced a tax for large combustion plant on emissions of SO_2. A reduced excise duty is applied to fuel oils with a sulphur content of less than 1%.

346. **Latvia*** has seven market-based incentives including a public investment programme and harmonization of taxes and tariffs with the EU.

347. **Netherlands** reports VAMIL and EIA regulations have been applied.

348. **Norway.** The major economic instrument used to abate sulphur emissions has been the sulphur taxes described under the response to questions 1 and 19.

349. **Poland*.** A system of subsidies, preferential credits and tax allowances is operating to encourage SO_2 emission reduction. Four other financial options are listed, e.g. creation of new

markets, joint implementation.

350. **Slovakia.** Emission quotas are defined in Act Nr.309/91. Information on the operation and use of the quotas is provided.

351. **Spain** follows EU legislation and strategies. See answer to question 2

352. **Sweden.** See answers to questions 54, 55 and 56.

353. **Switzerland.** The Federal Law relating to the Protection of the Environment introduced the principle of incentive taxes. It is an incentive not a fiscal measure, since the revenue of the taxes will be redistributed to the population as a uniform reimbursement per capita through insurance bills. A tax on sulphur emissions from extra light heating oil with a sulphur content above 0.1% has been in effect since 1 July 1998.

354. The **United Kingdom** does not operate a system of emissions charges or taxes.

8. Measures taken to facilitate the exchange of technologies and techniques to reduce sulphur emissions (question 25)

355. **Austria** identifies the "East-Ecofund" that provides project support to neighbouring central and east European countries. The regional energy agency for the federal province of Upper Austria (an active member of FEDARENE) carries out projects related to energy saving and renewable energy together with neighbouring countries. Recent initiatives are the "World Sustainable Energy Day" and "Energy Globe 2000". Several energy agencies participate in the Organization for the Promotion of Energy Technologies. The federal government also directly supports projects for information transfer like the MUNICIPIA. It participates actively in the EU programmes for establishing BAT standards for several sectors. The private sector contributes to the exchange of technologies, it is, however, difficult to collect detailed information on that issue.

356. **Belgium*.** The three regions participate in the EU IMPEL network, in the drafting of BAT reference pursuant to the EU IPPC Directive. There is also the "Mixed Platform". The **Walloon region** has the activities of the regional "clean technologies" service, its collaboration under the EU's PERU and INTERREG II programmes, and training, information and technology transfer programmes. The **Flemish region** has some examples activities developed: the foundation of the Centre of BAT (1994); the Energy & Environment Information System; and the centre of expertise Rational Use of Energy (VITO). **Brussels capital region** indicates 2 departments at the Brussels Institute for Environmental Management, which disseminate information to enterprises in the region, and the ECOBRU facility in the Brussels regional development association.

357. **Canada.** The measures have focused on Internet-accessible information databases (the Canadian Pollution Prevention Information Clearinghouse, Business Environmental Performance Office, and Canadian Environmental Solutions). Other information is available through Environment Canada's Web site (http://www.ec.gc.ca) and its Web links. Technology

information exchange is also accomplished through events such as workshops, seminars, tradeshows and conferences. Information is also available in hard-copy upon request through government publications.

358. **Croatia** has been included in the Netherlands programme for cooperation with countries in central and eastern Europe (1998). It has also signed a Memorandum of Understanding with the Netherlands on energy efficiency issues and the use of renewable energy on the Island of Hvar.

359. **Czech Republic** replies "not used".

360. **Denmark.** The projects associated with the largest emission reductions are desulphurisation projects in two power stations in Poland.

361. **Finland.** See answer to question 7.

362. **Germany** provides information on clean production and pollution prevention and control projects on the Web site: www.cleaner-production.de. It indicates its participation in the Transform-Programme, providing technical assistance to central and Eastern Europe, and the Twinning Programme of the EC.

363. **Greece** participates in the EC work in Seville on BAT in various sectors of industry.

364. **Ireland.** The Electricity Supply Board actively participates in international technical bodies (Eurelectric, VGB).

365. **Italy** participates through bilateral and multilateral cooperation, through many trust funds and international financing organizations, and through Law 212/92 (which set up a fund for bilateral assistance to east European countries). Italy contributes to the EU PHARE and TACIS programmes. Several specialized Italian research institutions provide direct assistance, mostly through capacity-building initiatives. Many private companies and engineering companies are involved in the transfer of environmental technologies.

366. **Latvia*** has its draft regulations on reduction, restriction and control of emissions of air pollutants from stationary air pollution sources and Climate Change Mitigation Policy Plan.

367. **Netherlands.** See answers to questions 7 and 16.

368. **Norway.** See answer to question 7.

369. **Poland*.** See answer to question 7.

370. **Russian Federation*** has signed an agreement with Sweden on cooperation in energy efficiency and renewable sources of energy (1999).

371. **Slovakia** has its Programme for Support of Energy Efficiency and the Use of Alternative

Energy Sources.

372. **Spain** follows EU legislation and strategies. See answer to question 2.

373. **Sweden.** See earlier questions.

374. **Switzerland.** No special activity at the governmental level, rather on a commercial and consultancy basis.

375. The **United Kingdom** has activities on energy efficiency (The EEBP programme, the SAVE programme, THERMIE programme and JOULE programme) and renewable energy (new and renewable energy support programme, expenditure on research and development is being greatly increased, three new photovoltaic initiatives have been announced).

376. **European Community** has taken steps to facilitate the use of renewable energy. A comprehensive strategy set out in the White Paper "Campaign for Take-Off" (1999-2003) is aimed at: increasing private investment in renewables through public relation activities; focusing public support programmes on the objectives of the Campaign; and raising public awareness. In the ALTENER II programme renewable energy is promoted in the EU. The EC will soon present a proposal for a Directive that seeks to promote electricity from renewables. The SAVE and SAVE II programmes have provided funding for energy efficiency work within the EC. An important element of the Fifth Framework Programme on Research and Development is devoted to clean and efficient energies with substantial financial resources devoted to demonstration projects.

9. Procedures established to create more favourable conditions for the exchange of technology to reduce sulphur emissions (question 26)

377. **Austria.** See answer to question 25.

378. **Belgium*.** See answer to question 25.

379. **Bulgaria*.** See answer to question 7.

380. **Canada.** Programmes exist to fund the research and development of new technologies ultimately leading to a reduction of sulphur emissions.

381. **Croatia.** The law on the environmental fund is in preparation.

382. **Czech Republic.** No technical-administrative provisions have been made for this requirement of the Protocol on the part of the State administration. The requirement will be incorporated in the new air protection legislation.

383. **Denmark.** The Danish environmental assistance programme to countries in transition has mainly centred on the establishment of demonstration projects introducing cleaner technologies and cleaning processes by means of grants.

384. **Germany.** See question 26.

385. **Greece.** The Greek "contribution" to Seville (see question 25) is derived from the close contact between Greek business and experts from the government.

386. **Ireland.** See answer to question 25.

387. **Italy.** Law No.212 was approved (in 1992) to promote cooperation with central and east European institutions and organizations. Furthermore, the Italian Ministry of Environment concluded a memorandum of understanding on bilateral cooperation with the Bulgarian Ministry of Environment and Water (1999).

388. **Latvia*.** The Law on the Natural Resource Tax was adopted in 1995. The Regulations on the application of its provisions were adopted in 1996. The National Energy Development Programme, adopted in 1998, envisages measures that are relevant to emission reductions, including reductions in sulphur and nitrogen oxides emissions.

389. **Netherlands.** See answer to question 7.

390. **Norway.** See response to question 7.

391. **Poland***. See response to question 7.

392. **Slovakia.** There are no special provisions.

393. **Spain** follows the EU legislation and policies. See answer to question 2.

394. **Sweden.** See answer to previous questions.

395. **Switzerland.** No special activity at the governmental level.

396. The **United Kingdom** participated in the UN/ECE Working Group on Technology. It also provides bilateral technical assistance for projects to countries in transition through the Environmental Know How Fund.

10. Activities undertaken with a view to encouraging research, development, monitoring and cooperation related to this Protocol (question 27)

397. **Austria.** Ambient air concentrations of sulphur dioxide are monitored at about 150 monitoring stations (three are in the EMEP network). Research projects also deal with, for example, improvement of data on critical loads, deposition of sulphur compounds, dispersion and receptor modelling of air pollutants, integrated monitoring of air pollution effects on ecosystems. Research and development are focused on renewable energy and energy efficiency. Broad framework R&D programmes for sustainable transport and economy have been started.

398. **Belgium*.** The **Walloon region** draws attention to five activities (such as subsidies or repayable advances that are given for research and development programmes). The **Flemish region** indicates the main activities of the Flemish Institute for Technological Research (VITO). There is also a promotion, demonstration and advice centre (PRODEM, founded in 1996 and operating under VITO). Belgium also participates in important European (CADDET and OPET networks, etc.) and international networks.

399. **Bulgaria*.** Scientific research is funded by the national budget and the National Environment Protection Fund. The PHARE Programme aided air quality and source emissions monitoring. Otherwise, all companies must conduct their own measurements.

400. **Canada.** The Canada-Wide Acid Rain Strategy for Post-2000 also calls for a pollution prevention approach. Further provisions aim to ensure that Canada's capacity of acid rain science and monitoring programmes remains adequate to assess both environmental improvements achieved and the effectiveness of control programmes. A review of acid rain science and monitoring was carried out in 1999. With the conclusions and recommendations of the review, federal and provincial governments are undertaking an examination of costs and funding options for a revitalized science and monitoring programme.

401. **Croatia.** The assessment of critical load values for forest soil has started with Croatian involvement in the Convention's work on critical loads calculation and mapping. There is also cooperation between the Croatian Meteorological and Hydrological Service from Zagreb and the EMEP centres in Norway.

402. **Czech Republic.** Projects in the Programme of Care for the Environment and projects in the Programme of Research and Development are announced every year.

403. **Denmark.** Existing measures to reduce the emissions of SO_2 are sufficient to meet the Danish target under the Protocol, so it has not been necessary to encourage the development of further measures.

404. **Germany.** In the second half of the 1990s, the federal government provided annual support for about 90 air quality control projects per year. Concerning technical development projects, also see questions 25 and 57. Fields of research focused on: use of renewable energies; use of waste heat in industrial installations; reduction of NOx and VOC emissions; monitoring of air pollution and changes to the atmosphere. There are three major fields of monitoring: plants subject to permit; densely populated areas; rural areas and long-range and transboundary air pollution. Concerning cooperation, see answer to question 64.

405. **Greece.** All refineries and large combustion plants are gradually being required to introduce permanent or temporary monitoring, as appropriate, of SO_2 emissions. An annual report is also required.

406. **Ireland.** The Environmental Protection Agency carries out a national inventory of

sulphur emissions as required by the Protocol. Monitoring stations participate in EMEP. The Environmental Protection Agency has completed the current phase of its estimation and mapping programme of critical loads for acidity, sulphur and nitrogen. The Agency continues to act as the National Focal Centre for mapping critical loads and deal with any queries that arise from submissions already made to the Coordination Center for Effects. In 1998/1999 a study was financed to assess the costs of controlling and reducing emissions of SO_2 and NOx in the context of the finalization of negotiations on the Gothenburg Protocol. The Agency has coordinated a general investigation into health problems to determine the role, if any, played by environmental pollutants.

407. **Italy.** Research programmes were developed to: establish critical loads and levels; apply models to evaluate strategies to reduce sulphur emissions; develop research projects; and, in collaboration with other international institutions, improve knowledge on corrosive effects on materials; study the effects of acidification on forest and lakes and their trends. The Italian monitoring network on acid deposition was recently enhanced, and a programme is under development to increase the number of Italian EMEP stations. Many programmes on research, development and demonstration of energy efficiency technologies and techniques, renewable energy sources and clean technologies were developed.

408. **Latvia*.** The methodology for measurement and monitoring, the assessment levels for releases in air and information indicators for public information are included in the Regulations on Air Quality (prepared in accordance with the provisions of Directives: 96/62/EC; 80/779/EEC; 82/884/EEC; 85/203/EEC; 92/72/EEC; 97/0266 (SYN)).

409. The **Netherlands** sponsors the Coordination Center for Effects, which is the scientific centre under the ICP on Modelling and Mapping.

410. **Norway.** Data from the air/precipitation and aquatic chemistry monitoring programmes are being provided to EMEP and to the different effect-oriented activities under the Working Group on Effects. Also, the work on critical loads has been going on since 1988. National projects are still being carried out, partly as a contribution to the ICP Mapping Programme.

411. **Poland*.** The national programme for SO_2 emission reduction is based on the results of a number of research programmes (inventory, mapping of critical loads, integrated assessment of ecological and economic effects of sulphur deposition). Most of the research has been carried out in close cooperation with foreign scientific centres under the patronage of the UN/ECE Working Group on Effects and its subsidiary bodies.

412. **Slovakia.** No special activities for this.

413. **Spain** follows the EU legislation and strategies. See answer to question 2.

414. **Sweden.** The major research programme dealing with transboundary air pollution is the International and National Abatement Strategies for Transboundary Air Pollution programme

(ASTA). Six of its key activities are identified, including recovery from acidification, ozone and nitrogen-induced ecosystem changes.

415. **Switzerland.** The National Air Pollution Monitoring Network comprises 16 monitoring stations. Beside this network, about 100 monitoring stations are now operated by various institutions. Priority was given from 1991 to 1993 to mapping critical loads of acidity for forest soils and alpine lakes at a high spatial resolution. Differences in the results using different models and consideration of the dynamics of change are noted as being of current interest due to concern over the slow rates of recovery predicted.

416. The **United Kingdom** provides information on: research, development, monitoring and cooperation related to the costs and benefits, atmospheric modelling, measures to combat transboundary air pollution, technologies and techniques to enhance energy efficiency, energy conservation and the use of renewable energy (see answer to question 25). It notes the substantial research done in the past year to establish an understanding of costs and benefits. It participates in all International Cooperative Programmes under the Convention.

E. The 1998 Protocol on Heavy Metals

417. This section summarizes the answers received to questions 28 to 36 of the questionnaire. The Protocol on Heavy Metals is not yet in force. Consequently, all the questions in this 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.

1. National strategies, policies and programmes to implement the Protocol and control and reduce emissions of the heavy metals listed in annex I to the Protocol (question 28)

418. **Austria** has not yet ratified this Protocol. Nevertheless, early measures for the reduction of heavy metals (HM) emissions, like limit values for particulate matter and a ban on leaded petrol, have been taken. Regulations for stationary sources in general (see question 30) and several specific sectors (see question 31) as well as for several products (see questions 32 and 33) are in force.

419. **Belgium.** The **Walloon region's** metals reduction policy hinges primarily on the granting of permits to enterprises which set conditions and individual standards, based on the General Regulations on Occupational Safety. Particular measures for large sources, e.g. incinerators, are regulated under EC Directives, etc. Air quality and limit values are set for lead. **Flemish region**. Legislation is based on the North Sea Conferences. **Brussels capital region** will implement the Protocol through regulations on environmental permits and the preparation of an inventory of emissions. An air pollution programme is under preparation. The **Federal Government** is following work by the EC on substances in annex I.

420. **Bulgaria** signed the Protocol. A national strategy was drawn up with relevant institutions.

421. **Canada** will implement the requirements of this article through existing strategies, policies, programmes and measures addressing heavy metals, e.g. the federal Toxic Substances Management Policy, the Canada-Wide Standards process, regional and ecosystem strategies, including several programmes, plans and agreements, the Canadian Environmental Protection Act, provincial/territorial legislation and regulations.

422. **Croatia** has information on emission levels and sources of lead (Pb) and cadmium (Cd). These indicate that major improvements are needed in industry. The main instruments of air quality protection policy are the By-laws on Limit Values of Pollutant Emissions from Stationary Sources, on Quality Standards for Liquid Oil Fuels, on Recommended and Limit Ambient Air Quality Values and the Law on Waste. The Law on Air Quality Protection identifies remedial measures in areas of poor air quality. The proposed air quality and protection strategy includes a number of industrial measures.

423. **Czech Republic.** The new document on national policies is the State Environmental Policy. This includes national policies and strategies, selected targets and measures for emission reduction of HM, with respect to the obligations under the Protocol. Law No. 309/1991 Coll., the Clean Air Law, as amended, and implementing Decree 117/1997 Coll., with amendment, will fulfil most of the requirements of the Protocol. New laws will provide full implementation. Transport measures will cut lead emissions.

424. **Denmark's** primary goal is to limit, to the greatest extent possible, the exposure of the environment and humans to heavy metals. This goal will guide efforts relating to cadmium, lead and mercury (Hg) as well as efforts directed towards other heavy metals (arsenic, chromium, copper, nickel, etc.) which deserve attention. The strategy aims at limiting the release and use of heavy metals by substitution, and secondly to promote recycling and treatment. In 1990 a new guideline regulating the emissions to the air from all significant sources was introduced. This includes limit values.

425. **Germany.** All emission sources are subject to the statutory requirement of emission avoidance at source according to the state of the art. The establishment and operation of installations particularly liable to cause harmful effects on the environment is subject to licensing.

426. **Greece.** The law provides ELVs for all fixed sources emitting Cd and Pb. These sources have to be licensed and environmental protection measures taken. The provisions of Community Directive 96/61/EC (IPPC) will be applied. The use of unleaded petrol will cut lead emissions.

427. **Netherlands.** The objective of the environmental policy is the pursuit of sustainable development, which has been apparent in all three environmental policy plans. The lastest plan aims to decouple economic growth from environmental pressure. The long-term aim is to reduce the emissions of air pollutants to a sustainable level. The Netherlands supports an effect-based approach to identifying the sustainable levels for HM emissions. Environmental permits regulate

the emissions of HMs.

428. **Poland.** An analysis for signing the Protocol was prepared in 1998. It was the basis for the draft National strategy for the reduction of heavy metal emissions (1999), which includes: a modification of the Polish public system of statistics (emission inventories); a detailed prognosis for heavy metal emissions on the national and sector level; an inventory of major emission sources within the 11 categories; an evaluation of applied technologies and emission control measures; a technical and cost-benefit analysis of the possibilities for introducing BAT; mandatory and recommended product control measures; an analysis of the effectiveness of applying economic and market instruments; and the preparation of appropriate emission standards. The new National Environmental Policy also provides a framework for measures. Many activities are already underway and initial results have been achieved.

429. **Republic of Moldova.** Activities for atmospheric air pollution prevention are included in a range of laws. Six legislative acts were introduced after independence. The "polluter pays" principle was included in the National Strategic Action Plan for Environmental Protection (1995) and National Action Plan on Environmental Protection (1996). The realization of this principle was established under three new acts. Also, strategic directions of environmental protection from toxic substances were included in the ECE Environmental Performance Review and the National Plan of Activities for Health. The latter (developed in 1999) includes provisions from 2001 for the protection of the environment from HMs, the establishment of HMs control systems, etc. Economic instruments for reducing toxic substances cover HMs. Several documents that refer to HMs and their emission controls are in preparation.

430. **Russian Federation.** See the reply to question 6.

431. **Switzerland** set out the principles of its air pollution control policy in the 1985 Federal Law relating to the Protection of the Environment. Its objective is to protect man and his environment using both source-oriented and effect-oriented approaches. It stipulates minimum economically feasible emissions, but controls are more stringent if harmful effects are expected. The Ordinance of 1986 on Environmentally Hazardous Substances regulates the import, production, supply, use and export of substances that may present a hazard to the environment. In addition to the general regulations, annexes to this Ordinance contain special regulations for particular groups of chemicals. Among them are several of special interest regarding the emissions of hazardous substances to the atmosphere which may occur during production and use or during waste treatment (e.g. heavy metals).

432. **Ukraine** has developed an outline plan to reduce emissions of heavy metals to the atmosphere that the Government is assessing. The plan makes provision for: the development of a programme to reduce emissions; a survey of the emissions into the atmosphere up to the year 2002; and the preparation of legislation to introduce a new system of regulation for the emissions into the atmosphere with effect from 2002. A draft programme to reduce emissions to the atmosphere is being developed. It is expected to be adopted in 2001-2002.

433. **United Kingdom.** See answer given in question 70.

2. Measures to reduce emissions of the heavy metals listed in annex I from their level in the reference year (question 29)

434. **Austria.** See questions 30–33 for details.

435. **Belgium.** The **Walloon region** has not taken steps towards ratification of the Protocol or setting the reference year. The **Flemish region** has not taken steps towards ratification of the Protocol or choosing the reference year. As an alternative, the reports in the framework of the Third and Fourth North Sea Conferences give information on emissions and their reduction. The **Federal Government** participated in the 1996 review of implementation of the OECD environment ministerial declaration on reducing the risks of lead (and updated its contribution in 1999).

436. **Bulgaria's** expects to decide on 1998 as its reference years for the emissions of cadmium and lead and 1990for mercury.

437. **Croatia's** emissions of lead, mercury and cadmium (1990-1998) are decreasing and Croatia can provide possible explanations for the changes.

438. **Czech Republic.** Heavy metals are monitored in operations where sludges and dust from blast furnace or steel plants are processed. As expected when BAT technology is used, there is a significant decrease in emissions. From the beginning of 2003, petrol and diesel fuel will comply with the requirements of Directive 98/70/EC. The law stipulates the content of lead in petrol. Pursuant to Decree No. 244/1999 Coll., petrol supplied for on-road motor vehicles after 1 January 2000 must comply with the following limits: leaded petrol: from 0.03 to 0.15 g/l; unleaded petrol: a maximum of 0.005 g/l. Mercury emissions in chlorine production are regulated.

439. **Denmark.** The use of cadmium as surface treatment, as a pigment and as a stabilizer in plastics has been banned (with some delays) since 1983. The content of cadmium in phosphorous fertilizers has been limited since 1989. A Statutory Order banning lead in products was notified to the EU in late 1998 and is expected to come into force in spring 2000. For compounds of lead the ban is general (with delays and exemptions), for metallic lead the ban is on specified uses. A general ban on mercury in products (with delays and exemptions) was introduced in 1994.

440. **Germany.** A reference year has not yet been set. Requirements to reduce HMs emissions are laid down in three regulations. Of equal importance are measures on the efficient use of energy. There are also measures to eliminate and restrict the use of HMs in products that are regulated on the basis of the Chemicals Act.

441. **Latvia.** The reference year for each metal is 1990. Emission levels are not set.

442. The **Netherlands** has limit values for 11 industrial source categories that can obtain a permit. The reference year for each metal is 1990.

443. **Poland.** According to the draft national strategy for the reduction of heavy metal emissions, Poland's reference years should be: 1985 for cadmium and lead, 1988 for mercury. The introduction of emission standards for major categories of emission sources, changes in energy sectors, the use of product control measures and the phasing-out of leaded petrol by the year 2005, together with other measures, should bring satisfactory results in the future.

444. The **Republic of Moldova** has nine measures for reducing emissions and promoting the use of ecological technologies and installations. They concern mainly the use of leaded fuel (e.g. standards, the substitution of gaseous fuels for leaded fuels, certain prohibitions, payment for air pollution, stimulation of import of unleaded petrol) to reduce the emissions of HMs from stationary and mobile sources. Certain recommendations for air management were made in the Environmental Performance Review (Chapter 4, part two). Modifications to the Law on the Payment for Pollution of the Environment are under development. The reference year is 1990 for cadmium, lead and mercury.

445. **Switzerland** applies the precautionary principle, i.e. preventing emissions by as much as technically feasible and economically acceptable. There are no other reduction targets. The reference year for each metal will be 1990.

3. Progress made towards applying best available techniques to existing stationary sources (question 30)

446. **Austria** assumes all categories of annex II are major source categories. According to the Industrial Code and the Clean Air Act for Steam Boilers, a licence for each new or modified installation is required (emission limit values and/or measures according to BAT are in the procedure). For several categories of stationary sources, explicit emission limit values and BAT requirements are set by ordinance. See question 31.

447. **Belgium. Walloon region.** The use of filters, electrostatic precipitators and scrubbers is widespread and subject to operating permits. The **Flemish region** will take sectors of annex II in a reorganized form with six categories, eight metals with the BAT applied in each sectors.

448. **Canada.** Emission standards for most industrial sources are set and enforced provincially. However, national emission guidelines are developed jointly by the federal and provincial governments working with industry and other interested parties. The Canada-Wide Standards and the Canadian Environmental Protection Act's (CEPA) Strategic Options Processes will help to identify the BAT for the different source categories. However, industry is allowed to decide how it will achieve limit values and standards.

449. **Croatia** applies BAT to seven existing stationary sources.

450. The **Czech Republic** is preparing a law on integrated pollution prevention and control (IPPC) in accordance with Directive 96/61/EC. It plans to get involved with the IPC Office in Seville, which is responsible for BAT definitions. Projects on, and evaluations of, BAT applications have been commissioned. A new law on protection of the air is also being prepared.

Methods corresponding to BAT have been used for reducing mercury emissions from chlorine production that uses Hg cathodes for electrolysis. A company with a tradition of treating lead and silver ores works now as a recycling plant. Equipped with new technology, which can be described as BAT, the plant meets all ecological laws and successfully competes with west European plants.

451. **Denmark.** See answer to questions 28.

452. **Germany.** The principle of applying state-of-the-art techniques to new and existing installations is established by law. For source categories, limit values and applied techniques, see question 31.

453. **Greece** has three categories of stationary source: combustion plants, steelworks and other metal-manufacturing plants. Pollution control measures are limited to the use of filters for flue-gas dust. The law provides the standards applied. More stringent measures will be introduced with the application of Directive 96/61/EC.

454. **Latvia.** There were 33 stationary sources with a net rated thermal input exceeding 50 MW in 1997. Four measures concerning fuel reduce pollution (particulates) for public power, co-generation and district heating plants.

455. **Netherlands.** See answer to question 29.

456. **Poland.** The use of BAT, though not mandatory, is enforced for major stationary emission sources through regulations with mandatory emission requirements. No national inventory of BAT is available. Effects are the most important factor (see question 29). The source categories considered as major stationary source categories are: fuel combustion processes for energy production; steel and iron production; non-ferrous metal production; production of construction materials; non-ferrous industry; chemical industry; transport; and waste incineration.

457. The **Republic of Moldova** has major stationary sources in categories 1 and 4. Enterprises under construction or reconstruction are designed according to legislative acts and ecological and health standards which call for the use of minimum-emission technology. Multiple BAT requirements are contained in the Law on the Protection of the Environment and other laws (for example, a permit is required before commencing construction). The concept of BAT is not explicitly stated in legislation. To conform with annex III to the Protocol certain measures are used for reducing emissions and for promoting the use of the most ecological technologies and installations (indicated in question 29 and others).

458. **Switzerland** has a list of source categories that are considered major stationary source categories under the Protocol, taking into account article 1 (Definitions) and annex II to the Protocol.

4. Progress towards applying the limit values specified in annex V to existing stationary sources (question 31)

459. **Austria.** For major source categories, see question 30. Sector-specific emission limit values have been set explicitly for several sectors by law (for new and existing sources). For the metals of annex I and for other heavy metals, these sectors are: combustion of waste and hazardous waste, production of iron and steel, production of non ferrous metals, casting of metals, production of glass, production of cement. For particulate matter in general and for other sectors, the limits are as for steam boilers, industrial boilers except steam boilers and sinter plants.

460. **Belgium.** The **Walloon region** has limit values for eight source categories. The **Flemish region** has environmental legislation for general (15 contaminants and their compounds) and sector-specific (combustion of fossil fuels > 50 MW, metallurgical activities and glass industry) limit values for metals and total suspended particles.

461. **Bulgaria** has ELVs for three classes of heavy metals (from 1993) that include lead, cadmium and mercury, and ELVs for solid particles for ten categories of new stationary source (from 1993). By 1996 existing stationary sources had to reduce their emissions to the limit values for new stationary sources.

462. **Canada** has selected the option of reducing annual atmospheric emissions by 50% from the 1990 base year for lead, cadmium and mercury.

463. **Croatia** has four source categories with specific limit values.

464. **Czech Republic.** Emission limits for heavy metals from existing stationary sources are laid down either as summary emission limits for several metals together or as group emission limits for groups of pollutants containing heavy metals. A separate emission limit is laid down for Hg from agglomeration belts for the sintering of iron and manganese ores, and for chlorine production by electrolysis. The requirements of the Protocol will be met by the new Law on the Protection of the Air and of the Ozone Layer (expected to come into effect by November 2001).

465. **Denmark.** For waste incineration plants, a revised guideline was published in 1993, setting out an emission limit for Pb and the sum of Cd and Hg of 1 mg/Nm^3 and 0.2 mg/m^3 respectively. The figures are given for the sum of both gas and solid phases. There are limit values for hazardous and medical waste, and for municipal waste.

466. **Germany** has ten source categories with limit values (introduced in 1986, they are valid for new and existing sources).

467. **Greece** has limit values for all licensed sources. These have different values depending on whether they were licensed before or after 1982.

468. **Latvia** has four source categories with limit values. Several of them will be introduced

for new combustion plants from 1 July 2000 and for existing combustion plants from 2006.

469. **Netherlands.** See answer to question 29.

470. **Poland.** ELVs for fuel combustion energy sources are the only air pollution emission standards covered by legislation. The main criteria for determining emission ceilings for an enterprise is the ambient air pollution concentration in the vicinity of the source. This "effect approach" is used for all emission sources, except for fuel combustion installations. Possible changes in the approach are being considered. Furthermore, a recent project has considered the preparation of a proposal for air emission standards for pollutants from industrial processes. According to the draft national strategy for the reduction of heavy metal emissions, it would be necessary to establish ELVs for the following source categories and processes: sinter plants, pellet plants, blast furnaces, electric arc furnaces, production of copper and zinc, production of lead, cement industry, chlor-alkali industry, glass industry and waste incineration.

471. **Republic of Moldova.** Limit values for HMs for existing stationary sources are not established but maximum permitted concentrations of HMs polluting the air in residential areas do exist and must be observed. The Indicative Plan of Activities in the Energy Sector of the Energy Strategy, the National Plan of Activities for Health in relation with Environment and the New Concept of Environmental Policy include provisions for the drawing up of limit values, norms and standards for HMs.

472. **Switzerland** has limit values for six source categories. Emission limitations are in principle achieved through ELVs. Emission standards are usually based on the state of the art (BAT). A medium-sized, economically sound industrial plant is used as the criterion for assessing the economic feasibility of emission limitation.

5. Product control measures in accordance with the conditions specified in annex VI (question 32 – answers may refer to question 6 concerning lead in petrol)

473. **Armenia** has started to phase out the use of leaded petrol. With effect from 1 March 2000 the production of leaded petrol is prohibited. Threshold limit values have been introduced for leaded (0.15 g/l) and unleaded (0.013 g/l) petrol. Importing petrol not complying with these requirements is prohibited. A programme of action for the further phase-out of leaded petrol and a national standard for car fuel in compliance with European standard EN 228 are under discussion.

474. **Austria.** Leaded petrol has been banned since 1993; mercury in batteries is limited to 0.001% for zinc carbon batteries and to 0.025% for alkaline manganese batteries.

475. **Belgium** has incorporated (or is incorporating) the EC Directives 91/157/EEC, 98/101/EC and 98/70/EC.

476. **Bulgaria.** Pursuant to Regulation No. 17/99, the content of lead in unleaded petrol is being reduced to 0.013 g/l until 2003 and to 0.005 g/l thereafter.

477. **Canada** will be able to demonstrate compliance with the application of product control measures through details on its leaded petrol regulations. Lead additives in petrol were phased out in December 1990 (with some exemptions reviewed on a periodic basis).

478. **Croatia** expects to phase out leaded petrol in 2005.

479. The **Czech Republic** endorsed, in 1998, the ECE Pan-European Strategy to Phase Out Leaded Petrol, which entails the phasing-out of leaded petrol by 2005 at the latest. From 2003, only petrol and diesel fuel that comply with the requirements of the Directive 98/70/EC will be distributed. By Decree No. 244/1999 Coll., the sales of leaded petrol directly to consumers must be terminated by 2001.

480. **Germany.** Leaded petrol has been phased out. The EU Directive 98/101/EC (on batteries) is being incorporated into national law.

481. **Greece.** See response to question 6.

482. **Latvia.** The Regulations on Fuel Quality Standards for the Environment are in force and include the requirements of Directives 85/210/EEC, 87/416/EEC and 93/12/EEC. The Regulations on Fuel Quality Standards are expected to replace the existing regulations in 2000. These new regulations include requirements of Directive 93/12/EEC, amendments 1999/32/EC and Directive 98/70/EC.

483. The **Netherlands** has a long history of reducing mercury emissions. Past developments include the Foundation for the Collection and Processing of Mercury Oxide Batteries (1979), two voluntary agreements (in 1985 and 1987), the Implementation Plan for Batteries (1992), the Battery Disposal Decree (1995), and the Decree on Mercury-Containing Products (1998). At the moment the Netherlands is working on the implementation of Directive 98/101/EC. It also has product control measures for cadmium.

484. **Poland.** According to the new draft act on waste, some specific measures are to be considered mandatory, in particular regarding batteries and car batteries containing mercury, cadmium or lead. Other obligations concerning the heavy metal content in packaging materials are foreseen in the draft act on packaging and packaging waste. Detailed requirements are set for limit values of the sum of cadmium, lead, mercury and chromium^{+6} in packaging material. Included in the draft acts are general requirements on environmental protection and the management of certain waste, product charges and deposit fees. Permissible doses of mercury in four categories of lamps depending on the type of the lamp and its construction are set in a regulation of the Minister of Economy (1998).

485. The **Republic of Moldova** applies its Law on the Payment for Pollution of the Environment, the Law on Licensing Certain Types of Activities and other national legislative acts

and documents on the production, import and export, sales and use of harmful products and substances, and the Law on Harmful Products and Substances. Proposals to introduce modifications to the Law on the Payment for Pollution of the Environment are under development. Increased burning of gaseous fuels has reduced heavy metal emissions from stationary and mobile sources.

486. **Switzerland** phased out the use of leaded petrol for on-road vehicles by 2000. The lead content of unleaded petrol is limited to 5 mg/l. There are regulations on importing and supplying batteries and accumulators and on obligations for returning and accepting used batteries.

6. Additional product management measures (question 33)

487. **Austria** has regulations for several products (antifouling agents, paint and plastics, pesticides, fluorescent lamps, batteries, dental amalgam waste) most of them since the early 1990s.

488. **Belgium** is following work in the Commission on the preparation of a Directive on mercury-containing electrical components. It has a voluntary programme for industry on measuring apparatus and a decree which regulates mercury-containing pesticides.

489. **Canada.** The Canada-Wide Standard for selected mercury-containing products (fluorescent tubes, dental amalgam/wastes, and sewage sludge) will be completed early in 2000. A North American Regional Action Plan (NARAP) on mercury will be submitted for approval of the three North American countries by June 2000. It includes Action Item 2: Mercury Management in Processes, Operations and Products. A Regional Action Plan was developed by the Conference of New England Governors and Eastern Canadian Premiers Committee of the Environment.

490. The **Czech Republic** does not use product management measures.

491. **Germany.** Provisions concerning HMs in products are laid down in the ordinances under the Chemicals Act. On the EU level some product-specific measures are being considered.

492. **Netherlands.** On 1 November 1998 the Act on Mercury-Containing Products under the Act on Environmental Hazardous Compounds entered in force. This indicates future obligations regarding the import, trade and production of mercury-containing products. Partly through European legislation, the mercury content of specific products is already controlled.

493. **Poland.** Certain management requirements concerning products that become waste are included in the new draft act on waste. They cover: a ban on landfilling tyres, an inventory system for PCB products and wastes, and specific management methods for certain types of waste. The draft act on packaging and packaging waste introduces a limit value of 100 ppm for the content of the sum of four heavy metals in packaging material. More requirements, related mainly to economic mechanisms, are included in the draft act on product fees and deposit charges.

494. The **Republic of Moldova** plans, in the near future, to draw up proposals for a

modification of the fuel quality standards and the Law on the Payment for Pollution of the Environment.

495. **Switzerland.** The Ordinance relating to Environmentally Hazardous Substances of 1986 regulates the import, production, supply, use and export of substances that may present a hazard to the environment. In addition to the general regulations, annexes to this ordinance contain special regulations for particular groups of chemicals. Among them are several of special interest regarding the emissions of hazardous substances to the atmosphere which may occur during production and use or during waste treatment (e.g. CFCs, halogenated organic compounds, heavy metals).

7. Measures to facilitate the exchange of technologies and techniques designed to reduce emissions of heavy metals (question 34)

496. **Austria**. Information about measures to promote the exchange of technology related to air pollution control can be found in answer to question 25.

497. **Belgium.** The **Flemish region** has developed three activities to improve the exchange of technologies and information (the centre of BAT, the Energy and Environment Information System and the centre of expertise Rational Use of Energy) and the Flemish Support Point for Waste and Emission Prevention, which will be set up in June 2000 to support organizations with an active role in waste and emissions prevention.

498. **Bulgaria.** Refineries apply technologies consistent with EC Directives for the quality of petrol.

499. **Czech Republic.** Cooperation has started with the IPPC Office in Seville, which prepares BREFs for individual EU countries to facilitate replacement of technology and techniques.

500. **Germany.** The Web site www.cleaner-production.de provides information on clean production and pollution prevention and control projects. There are also the Transform-Programme and the Twinning Programme.

501. **Greece.** See answers to questions 7, 16, 25 and 64.

502. **Netherlands.** See answers to questions 7 and 16.

503. **Poland.** The Technical and Technological Agency is a unit providing assistance in the implementation of new techniques and technologies including economic mechanisms. New techniques and technologies are supported by the National Fund for Environmental Protection and Water Management. The transfer of new environmental technologies is also one of the main issues included in multilateral and bilateral cooperation (EURECA Programme). There is also the Programme for the Promotion of Quality (preparing enterprises to introduce ISO 45 000 and 9000 standards). Environmental management systems are of interest to the Polish Centre for Testing

and Certification, which, with the Polish Standardization Committee, is involved in popularizing the ISO 14 000 standards and the Eco-Management and Audit Scheme (EMAS).

504. The **Republic of Moldova** has had target-oriented or customized workshops with representatives of ministries, departments, industrial enterprises and other organizations. It cooperates with the Commonwealth of Independent States (as a member of the interstate Ecological Council) and Romania. Certain aspects on these problems were included in the Environmental Performance Review. The documents that are under development will include measures for complying with article 4 of the Protocol.

505. **Switzerland.** No special activity at the governmental level, rather on a commercial and consultancy basis.

8. Procedures to create more favourable conditions to promote the exchange of technologies (question 35)

506. **Austria.** See answer to question 34.

507. **Belgium**. The **Walloon region** has a "clean technologies service" and a technology observatory at the Public Service Scientific Institute, which are responsible for disseminating information on BAT. Internationally, there is involvement in the EU IMPEL network and in drafting the BAT reference documents (BREF) related to the EU IPPC Directive. The **Flemish Region**. The Flemish Institute for Technological Research (VITO) conducts research on BAT and there is a demonstration and advice centre operating under VITO. There is also cooperation with various international research networks.

508. **Canada** will prepare a summary of documentation and initiatives to facilitate the transfer of the latest BAT information on HMs. This may include information on programmes 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.

509. **Czech Republic** does not use any procedures.

510. **Germany.** See answer to question 34.

511. **Greece.** See answers to questions 7, 16, 25 and 64.

512. **Netherlands.** See answer to questions 7 and 16.

513. **Poland** expects that integration processes with the EU will create more favourable conditions to promote the exchange of technologies and will facilitate contacts and cooperation on a national and international level. For more details, see question 34.

514. The **Republic of Moldova** is party of more than seven international environmental

conventions. National legislation has established procedures for international cooperation, exchange of information, access to information, etc. The Ecological Funds are channeled to environmental protection measures, including the organization of information system, awareness programmes, training for staff, organization of international cooperation, application of environmentally sound technologies, scientific environmental research at the Ministry's order, etc.

515. **Switzerland** has no special activity at the governmental level.

9. Activities to encourage research, development, monitoring and cooperation (question 36)

516. **Armenia** has entrusted the appropriate monitoring organizations with including lead in the list of regularly monitored substances.

517. **Austria.** Measurements of HMs in soil have been carried out at several hundred sites in recent years. Bio-monitoring programmes have been used to monitor deposition. Monitoring of ambient air concentrations of lead (in particulate matter) is performed at about 12 stations; deposition measurements of lead, cadmium and other heavy metals are taken at more than 50 sites. Research projects include studies on the transfer of heavy metals, pollutant levels in ecosystems and analytical methods.

518. **Belgium. Walloon region.** Deposits of 20 HMs are measured by the air quality monitoring network. Emission inventories exist from 1990. More precise and comprehensive emissions inventories are being established. For BATs, see answer to question 35. There is a selective collection service for household waste containing HMs. Studies are being carried out on HMs policy, including consideration of the preparation of an air quality plan. **Flemish region.** Three monitoring programmes for HMs exist. An inventory of all metals on the priority list of the Third North Sea Conference is being made. There are also six other research projects of note. The **Federal Government** passed an eco-taxation act in 1996 to encourage sorting and recycling.

519. **Canada** will provide information through existing programmes, initiatives and agreements on research, development and monitoring of HMs, e.g. Northern Contaminants Program, the Arctic Monitoring and Assessment Programme, the Toxic Substances Research Initiative. Fourteen examples are provided.

520. **Czech Republic.** Projects resulting from Protocols to the Convention are carried out in the framework of the Programme of Care for the Environment and in the Ministry of Environment's Programme of Research and Development.

521. **Germany.** For research and development, see answer to question 61. Cd, Hg and Pb are measured at eight EMEP monitoring stations.

522. **Greece.** See answer to questions 35.

523. **Latvia.** The Regulations on Air Quality (prepared in accordance with EU Directives:

96/62/EC; 80/779/EEC; 82/884/EEC; 85/203/EEC; 92/72/EEC; 97/0266 (SYN)) include ambient air quality standards for particulates and lead, methodologies for measurement and monitoring, assessment levels for releases to air related to health effects.

524. The **Netherlands** has actively participated in the development of an effect-based approach for HMs. In this context, manuals for calculating critical loads of heavy metals for aquatic and terrestrial ecosystems have been published. Also, the Ministry has participated in the preparations for the Bad Harzburg and the Schwerin workshops, which aimed at the development of effect-based approaches for HMs.

525. **Poland.** Various projects and research surveys covering the issues related to this Protocol have been completed or continue throughout Poland. They include heavy metal emission inventories, broadening of the national environmental monitoring system, research on new production technologies and emission control measures, preparation of emission standards for industrial processes and possibilities for decreasing the heavy metal content of products.

526. **Republic of Moldova.** Taxes for environmental pollution that were gathered during 1999 and accumulated in the National Environmental Fund are planned to be used for at least ten environmental projects.

527. **Switzerland.** The National Air Pollution Monitoring Network (NABEL) comprises 16 monitoring stations that record pollution levels at different characteristic sites of the country. Moreover, it serves to assess the long-term efficiency of air pollution control measures. HMs in mosses were assessed by bio-monitoring at 200 sites in 1990 and in 1995 (see specific reports from the Swiss Agency for the Environment, Forest and Landscape, SRU Nr. 194/1993 and UM Nr. 101/1998, Bern). They will be further assessed in 2000.

F. The 1998 Protocol on Persistent Organic Pollutants

528. 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,

529. land, Portugal, Republic of Moldova, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States, and European Community.

1. National strategies, policies and programmes to implement the Protocol on POPs to control, reduce or eliminate discharges, emissions and losses of persistent organic pollutants (question 37)

530. **Armenia** ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1999. Steps are being taken to improve the national monitoring system, to set up a register of hazardous wastes, and to drraw up and ratify environmentally sound methods for their disposal, as well as the corresponding regulatory

instruments.

531. **Austria** has taken measures for the reduction of POPs and their emissions fromproducts (see questions 38-42), and their emissions from stationary sources (see question 44) and mobile sources (see question 45).

532. **Belgium.** The **Walloon region** has set standards for dioxin discharges from household waste incinerators and for hazardous waste incinerators. There are also strict provisions for PCBs (see question 42). **Flemish region.** Six actions concerning POPs are included in the Environmental Policy and Nature Development Plan (1997-2001). The actions are designed to control, eliminate or reduce discharges, emissions and losses of POPs. To meet emission reductions in the framework of the Third North Sea Conference (1990) substance inventories have been made for POPs relevant to the Protocol. They provide information on emission reductions from 1985. The emissions will be further reduced by the implementation of ELVs as set by Flemish environmental legislation. **Brussels capital region.** Environmental permit regulations apply to all enterprises whose activities fall under the Protocol. An air pollution control plan is in preparation. The **Federal Government** has signed up to the provisions of the EC regulation on eco-labelling.

533. **Bulgaria** has drafted a national strategy.

534. **Canada** will implement the requirements through existing strategies, policies and measures addressing POPs. These include the Toxic Substances Management Policy and the Canadian Council of Ministers of the Environment is Policy for the Management of Toxic Substances, the Canada-Wide Standards process, federal legislation and regulation (e.g. Canadian Environmental Protection Act, Pest Control Products Act), the Strategic Options Process, federal-territorial legislation and regulation, and regional and ecosystem strategies.

535. **Croatia.** A POPs emission inventory has been maintained since 1996 (with the EMEP/CORINAIR methodology). Information is available on pesticide use and emissions, polycyclic aromatic hydrocarbon (PAH) emissions from various sectors, and the emissions of furans and dioxins. Pesticide use is governed by several pieces of legislation, while a range of laws provide protection for plants, agriculture and food, but the absence of soil and water monitoring hinders sustainable management measures. For PCBs an inventory has been created and plans for substitution and destruction made. While no specific legislation outlaws the use of PCBs or governs their disposal, many general laws and regulations provide legal measures. There is still a need for action, for example, to identify emission limits, to set up non-compliance legislation, to develop environmental awareness amongthe public. Priorities for a waste management policy are being set.

536. **Czech Republic.** The principal policy document is the State Environmental Policy (1999). This and the Clean Air Law will meet most requirements of the Protocol. Full compliance through suitable legislation will be achieved when two new laws are passed. These are expected to come into effect by November 2001 and January 2003.

537. **Denmark** has various prohibitions and regulations for the substances in annexes I, II and III. It also has specific prohibitions relating to PCPs.

538. **Germany** has two ordinances, and relevant installations are subject to licensing under the Federal Immission Control Act. Control requirements reflect the state of the art.

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

540. The **Netherlands** has implemented EU Directive 96/59/EC concerning PCBs and PCTs. The production and use of compounds listed in annex I are forbidden. Filters and emission limits are applied to waste combustion plants to eliminate emissions of compounds listed in annex III.

541. **Poland.** An analysis of the possibilities for signing the Protocols on POPs and on Heavy Metals was prepared in 1998. This was the basis for the draft national strategy for the reduction of POP emissions, which is now awaiting approval. At the same time a framework draft document, the new National Environmental Policy is under discussion and waiting for approval. Priority activities for reducing POP emissions are emphasized. These include the wider use of emission standards, the use of product control measures, the elimination of PCB-containing devices, the introduction of BAT and emission standards for 12 source categories. The need for structural charges in fuel consumption was also identified.

542. The **Republic of Moldova** has provided a separate annex that describes legislative acts that have been developed and introduced.

543. **Russian Federation.** In 1999 a decree was issued for conducting an inventory of plants, equipment and materials using or containing PCBs and of PCB-containing waste. A decision on a model law for the safe handling of pesticides and other agricultural chemicals was adopted in 1998.

544. **Switzerland.** The principles of the air pollution control policy are set out in the 1985 Federal Law relating to the Protection of the Environment. Among the annexes to the Ordinance relating to Environmentally Hazardous Substances (of 1986) are several of special interest regarding the emissions of hazardous substances occurring during production and use or during waste treatment. Many important commitments of the Protocol on POPs are implemented through the Ordinance on Substances (see questions 38 to 48 below).

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

546. **United Kingdom.** Refer to the answer given in question 71.

2. Measures to eliminate the production and use of substances listed in annex I (question 38)

546. **Austria.** The use and production of most of the substances listed in annex I are

prohibited. Mirex is not licensed as a plant-protective agent. The use of chlordone, DDT and toxaphene as pesticides is prohibited.

547. **Belgium.** The production and use of most of the substances listed in annex I are prohibited (with some exceptions listed in annex II). Details, including separate references to agricultural and non-agricultural use, application conditions and dates banned, are available.

548. **Bulgaria.** None of the substances listed in annex I is produced and their use was banned before 1990.

549. **Canada.** All of the pesticides listed in annex I are pesticides whose sale and use have been discontinued under the Pest Control Product Act. The remaining four substances (hexabromobiphenyl, hexachlorobenzene, mirex and PCBs) are regulated under the Canadian Environmental Protection Act. Information on the regulation of each is available.

550. **Croatia.** Three activities were carried out in the period 1993-1999: a PCB database for Croatia was set up; a plan relating to the substitution of equipment and devices containing PCBs was drawn up; and the organized management/destruction of PCBs was started.

551. **Czech Republic.** POPs listed in annex I are not produced and not used. Transformers containing POPs are used but special conditions are imposed on their operation and their storage at the end of their life.

552. **Denmark.** See answer to question 37.

553. **Germany.** Most of the substances listed in annex I are prohibited pursuant to different ordinances. None is a component or active ingredient in a registered pesticide.

554. **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.

555. **Latvia.** POPs are not produced. In the past it was permitted to use two substances listed in annex I: DDT (until 1967) and heptaclor (until 1980).

556. **Netherlands.** The production and use of substances in annex I are forbidden.

557. **Poland.** The State Institute of Hygiene established (in 1991) a list of plant protection products that were prohibited. The list is available. The import and the use of endrin, heptachlor, hexabromobiphenyl and mirex have never been permitted.

558. **Republic of Moldova.** The substances included in annex I are not produced. POPs pesticides (those which were prohibited in USSR) are not included in the 1997 official register of permitted substances. In this context, the Republic of Moldova plans to adopt a new act that will ban the production, import, export, sale and use of POPs pesticides listed in annex I.

559. **Switzerland.** The use of most substances is severely restricted. The manufacture, supply, import and use of POPs in annex I and annex II are prohibited. The general exemptions are: use for laboratory-scale research purposes, products which contain such substances only as an unavoidable impurity, the import and export of waste containing such substances for sound destruction in accordance with the Basel Convention. Mirex is not officially banned but it is not licensed as a pesticide or registered for any other use. The use of the gamma isomer lindane is only permitted in seed dressings and pharmaceuticals.

3. Measures taken to ensure that the destruction or disposal of substances listed in annex I is undertaken in an environmentally sound manner (question 39)

560. **Austria** has strict regulations on the handling and transport of hazardous waste. Installations for disposal and destruction must be constructed and operated according to BAT; strict emission limit values apply. Regulations exist for the import and export of hazardous waste according to the Basel Convention.

561. **Belgium. Walloon region and Flemish 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 EU Directive on hazardous wastes and Belgian regional legislation. They are also subject to the procedures for the international transport of waste under Council Regulation (EEC) No. 259/93. The **Flemish region** also draws attention to the regulation and control of PCBs and pesticides stocks, especially in relation to disposal.

562. **Bulgaria.** An act on mitigating the harmful effect of wastes on the environment and a regulation (in compliance with both the Basel Convention and Directive 94/67/EC) on industrial and hazardous waste handling and transport were adopted in 1999.

563. **Canada.** Of the substances listed in annex I, PCBs, furans and dioxins are specially mentioned in both annex I and annex VIII to the Basel Convention, although the remaining POPs substances would also be controlled for transboundary movements either through annex I to the Protocol or Canada's domestic definition of hazardous waste. In Canada, the authorization of waste disposal is a provincial responsibility. 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 OECD as well as the Basel Convention.

564. **Croatia.** In accordance with the Law on Waste, handling hazardous waste is entrusted to authorized companies. Hazardous waste such as PCBs are not yet handled in an environmentally sound manner in Croatia. Valid permits allow for PCBs to be handled in western Europe. Only 10-15% of PCBs in use have been disposed of so far.

565. **Czech Republic.** An amendment to legislation has been prepared to provide inventories of installations containing PCBs. The new Law on Waste will deal separately with the management of waste containing PCBs.

566. **Germany.** Stocks of nine POPs in annex I are negligible. 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.

567. **Greece.** Management of hazardous waste is governed by provisions of the environmental licences for the plants in question. Pending national policy such wastes are stored temporarily and disposed of outside Greece. All the EC rules concerning the transboundary carriage of such waste are applied.

568. **Latvia.** The regulations on the Classification and Criteria of Hazardous Waste (1997) stipulate: the establishment of separate waste collection systems, waste reuse, waste minimization in landfills, biological treatment of waste, the clean-up of old landfills, and the development of waste management infrastructure.

569. The **Netherlands** has ratified and implemented the Basel Convention.

570. **Poland.** According to the Act on Waste (1997), producers of hazardous waste must obtain a permit. Selected treatment methods are mandatory and subject to regulation, and there are fees for landfill disposal. Also Poland, as a Party to the Basel Convention, fulfils its obligations following strict rules on the import, export and transit of hazardous waste.

571. **Republic of Moldova.** As a Party to the Basel Convention, appropriate decisions regarding the destruction or disposal of the substances listed in annex I will be taken in an environmentally sound manner. The Law on the Production and Consumption of Wastes identifies the obligatory character of procedures for waste management. At the same time the terms "disposal" and "environmentally sound manner" are not explicitly stated in the national legislation.

572. **Switzerland** took early steps to control the export of special waste. In 1987, the Ordinance on Movements of Special Wastes was issued. Only those in possession of a permit may accept special wastes for disposal. The Swiss Agency for the Environment, Forests and Landscape regulates the import and export of special wastes. The official control procedures ensure accountability.

4. Measures to endeavour to ensure that the disposal of substances listed in annex I is carried out domestically (question 40)

573. **Austria.** Any export or import of waste has to be licensed. Export is allowed only if domestic treatment is not possible and if treatment in the importing country is environmentally sound.

574. **Belgium. Walloon region**. In applying the proximity principle, hazardous wastes are generally disposed of domestically unless capacity is lacking (e.g. PCBs). In such cases export is subject to the safeguards of EC Regulation 259/93. In addition, it is prohibited to transport wastes for disposal to non-OECD countries and to Africcan, Carribean or Pacific countries. The **Flemish**

region refers to question 39.

575. **Bulgaria.** There are no installations for the domestic disposal of annex I and II substances, Bulgaria and the Netherlands are studying options for cooperation in this respect.

576. **Canada.** Many, if not all, of the annex I POPs are addressed in Canadian legislation. PCB exports are permitted to the United States but its border is closed to imports. Some general pesticide waste is exported to the United States to take advantage of the nearest appropriate facility. CEPA 1999 contains authority to request waste reduction plans from waste exporters.

577. **Czech Republic.** There are no facilities for the disposal of wastes containing PCBs and these wastes are exported. In the framework of prepared management plans, a proposal will be made on the management of these wastes.

578. **Germany.** The disposal of nine substances is carried out domestically in accordance with the regulations specified under response to question 39.

579. **Greece.** A national plan and the accompanying regulations are in preparation.

580. The **Netherlands** has ratified and implemented the Basel Convention.

581. **Poland.** The Act on Waste (1997) rules that all produced waste should be treated and disposed of nearest to its source to avoid its unnecessary movement. For many years pesticides were stored in concrete "tombs". A Programme for the Elimination of Pesticide Waste has been prepared on the basis of an inventory.

582. **Republic of Moldova.** Existing environmental legislation prohibits the import of any wastes and residues. Forthcoming amendments concern permission to import wastes that are secondary material resources (e.g. scrap metal, paper). Existing legislation does not specify that regulated substances should be disposed of within the country.

583. **Switzerland.** Disposal autonomy has largely been achieved (90% of special wastes are disposed of within Switzerland). For the remainder, 105 firms may export special wastes if they can demonstrate that environmentally sound treatment abroad is assured.

5. Measures taken to ensure that the transboundary movement of substances listed in annex I is conducted in an environmentally sound manner (question 41)

584. **Austria.** See answers to question 39 and 40.

585. **Belgium. Walloon region**. See answer to question 39. **Flemish region**. See answer to questions 39 and 40.

586. **Bulgaria.** See answers to question 39 and 40.

587. **Canada.** International obligations (Basel Convention, OECD Council decisions and the Canada-United States Agreement on Transboundary Movement of Hazardous Wastes) are in operation through the 1992 Export and Import of Hazardous Wastes Regulations. Furthermore, most provinces and territories have programmes to address industrial, commercial and domestic hazardous wastes, including POPs in products.

588. **Croatia.** The legislation concerning the import, export and disposal of hazardous waste is harmonized with obligations arising from the Basel Convention.

589. **Czech Republic.** The export of equipment and wastes containing PCBs is subject to approval (by the government and the country to which the waste is exported). The exporter has to ensure that export is carried out in an environmentally sound manner.

590. **Germany** has implemented the Basel Convention by Council Regulation (EEC) No. 259/93 as well as by the Waste Movement Act, i.e. the export of waste for final disposal in non-EU and non-European Free Trade Association (EFTA) countries is banned, and export for recovery/recycling to non-OECD countries is banned.

591. **Greece.** See response to question 39.

592. The **Netherlands** has ratified and implemented the Basel Convention.

593. **Poland** has been a Party to the Basel Convention since 1992 and fully complies with its provisions and obligations. For more information, see question 39.

594. **Republic of Moldova.** The import or export of harmful products and substances is by licence, given by the competent authorities with the accord of the environmental protection authorities.

595. **Switzerland** has participated in the establishment of the Eastern European Centre in Bratislava, has commissioned the "Fachhochschule beider Basel" (FHBB) and has organized the FHBB in Muttenz (Canton of Basel-Landschaft). These contribute to the training and education of experts from central and eastern Europe on the management of waste and cleaner production.

6. Measures to restrict the substances listed in annex II (question 42)

596. **Austria** prohibits: the use of DDT and HCH as a plant-protective agent and pesticide; the production and sale of PCBs and materials containing PCBs and their use in hydraulic fluids. The use of electric equipment containing PCBs is being phased out.

597. **Belgium. Walloon region**. For HCH and DDT, see response under Federal Government. PCBs have been banned from the market since 1986. Old equipment containing PCBs is being phased out with certain exceptions under specific conditions. **The Flemish region** has taken ten measures that specify lifetimes and deadlines for the phasing-out of PCBs. **The Federal Government** sets application conditions and reservations for use regarding DDT and HCH.

598. **Bulgaria.** DDT, PCBs, HCH are not produced and their use is banned. There are small quantities to be disposed of from the past. See answer to question 40.

599. **Canada.** DDT is not registered for use; the registered use of lindane complies with the Protocol; PCB production and new uses are banned; existing uses of PCBs comply with those allowed under the Protocol and are subject to joint federal/provincial/territorial regulatory management schedules; the phasing-out of PCBs is being addressed in a number of forums (e.g. North American Regional Action Plan on PCBs and amendments to federal PCB regulations).

600. **Croatia.** See answer to question 39.

601. **Czech Republic.** The use of substances listed in annex II is restricted.

602. **Denmark.** See answer question 37.

603. **Germany's** Ordinance on the Prohibition of Chemicals prohibits the manufacture and use of DDT and PCBs.

604. **Latvia** has restricted the use of DDT and HCH since 1967.

605. **Netherlands.** See answer to question 38.

606. **Poland** forbids the use of lindane, HCH and DDT. A decrease in the use of equipment containing PCBs is expected, as devices are now filled with mineral oil. The production of capacitors containing PCBs stopped in 1991. An inventory of PCB use has been made. In the medium-term priorities (until 2005) the new National Environmental Policy should be completed with legal acts on restrictions and voluntary agreements for POPs.

607. **Republic of Moldova.** Data are not available. The planned draft national strategy on reduction and elimination of POPs releases should provide measures for restricting the use of the substances listed in annex II.

608. **Switzerland.** See answer to question 38.

7. Progress made in developing strategies for identifying articles still in use and wastes containing substances listed in annex I, II or III to the Protocol (question 43)

609. **Armenia.** See answer to question 37.

610. **Austria.** Electric equipment containing PCB must be labelled; its location and its quantity has to be reported to the Ministry for the Environment. Most other substances have been prohibited or have not been in use for some years. The existence of significant amounts in articles still in use seems unlikely.

611. **Belgium.** The **Flemish region** has a plan for phasing out PCBs. For dioxins/furans and PAHs, inventories have been made in the framework of the Environmental Policy and Nature Development Plan. For PAHs, progress has been made concerning their identification in tar-containing asphalt. For dioxins/furans, an emission reduction plan is being made. In addition, their spread into the environment and threat to human health will be evaluated and measures proposed.

612. **Bulgaria.** See answers to questions 39 and 40.

613. **Canada** has legislation resulting from being a Party to the Basel Convention. With the exception of PCBs, there are no stockpiles of the targeted substances. PCB disposal is subject to various federal and provincial requirements. Most provinces and territories have programmes to address industrial, commercial and domestic hazardous wastes, including POPs in products.

614. **Croatia.** The waste management strategy is in preparation within the framework of the Environmental Protection Strategy and is expected to be finalized by the end of 2000.

615. The **Czech Republic** does not use these articles or measures.

616. **Germany** has regulations under the Act on Closed Substance Cycle Waste Management and Waste Disposal for dealing with the remaining stocks of PCBs used in condensers, transformers and as hydraulic fluids, by the year 2005.

617. **Greece.** See response to question 39.

618. The **Netherlands** has ratified and implemented the Basel Convention. See also question 38.

619. **Poland.** The Act on Waste and the Act on the Protection and Management of the Environment, with their numerous executive acts, provide a set of rules for environmentally sound waste management. At present new draft acts are being prepared to identify specific methods and measures for selected types of waste including products, articles and waste containing POPs (e.g. PCBs, pesticides).

620. The **Republic of Moldova** plans to draw up a draft national strategy on reduction and elimination of POPs releases, in which the requirements of paragraph 3 of article 3 of the Protocol will be included. As Party to the Basel Convention, its destruction or disposal of the wastes will take place in an environmentally sound manner. The Law on Production and Consumption of Wastes provides obligatory procedures for waste management, including destruction or disposal and prevention or minimization of environmental risk. A national programme on industrial and municipal wastes management is under development.

621. **Switzerland** has regulations governing the supply, import, ownership, operation and disposal of capacitors and transformers.

8. Progress made towards applying best available techniques (BAT) (question 44)

622. **Austria** assumes most categories of annexVIII are major source categories. It licenses new and modified installations of several stationary emission source categories where limit values and BAT are applied. For several new and existing categories, explicit ELVs and BAT requirements have been set by ordinance.

623. **Belgium.** The **Walloon region** has two incineration source categories with limit values. **The Flemish region** has nine major sources of PAH and limit values for benz(a)pyrene and dibenzo(a,h)-anthracene (0.1 mg/m^3) with a statistical treatment for compliance. Detailed information on regulations on PAH emissions from coke production and for wood preservation plant is available. For dioxins/furans, eight source categories have limit values applied, a statistical treatment to be used, and specified control measures.

624. **Bulgaria** has limit values of 0.1 TEQ/m^3 for household, hazardous and hospital waste incinerators.

625. **Croatia** has one specialized installation for treating hazardous waste and more than 20 thermal power installations and refineries that could be used to incinerate waste oil. There are other potential source categories. There are specific limit values for dioxins/furans (0.1 ngET/m^3) and PAHs (20 mg/m^3) for waste incineration and other sources.

626. The **Czech Republic** has limit values for the incineration of municipal and hazardous waste, which, from May 2000, will define specific limits for PCDD and PCDF. The requirements of the Protocol will be met through the new Law on the Protection of the Air and of the Ozone Layer. BAT is dealt with in connection with the introduction of EU Directive 96/91/EC.

627. **Denmark** has limit values of 0.1 TEQ/m^3 for municipal, hazardous and medical waste incineration.

628. **Germany's** emissions of PCDD/Fs, PAHs and HCB from stationary sources are controlled using the state of the art, as laid down in the Federal Immission Control Act and its regulations.

629. The **Netherlands** has limits values of 0.1 TEQ/m^3 for municipal, hazardous and medical wastes incinerators.

630. **Poland** has carried out a number of analyses recently to provide a sound basis for strategies for POPs emission reductions. Documents for a national strategy and for estimating the cost of implementing the Protocol are being prepared.

631. The **Republic of Moldova** does not have limit values for POPs from existing stationary

sources. It has maximum permitted concentrations in air in residential areas and plans for setting limit values. Current maximum permissible emissions relate to the prevention of harmful air concentrations. There are three major source categories. With regard to BAT, the Republic of Moldova uses a range of measures for reducing POPs emissions.

632. **Switzerland** has limit values and control measures for benzo(a)pyrene, dibenzo(a, h)-anthracene, diesel soots, PCDD and PCDF but does not specify source categories.

9. Measures to control emissions from mobile sources (question 45)

633. **Austria** applies emission standards to mobile sources and fuel quality standards according to EC legislation.

634. **Belgium's** emissions of dioxins/furans from mobile sources are related to the use of leaded fuels. Belgium conforms to the EU Directive 98/70/EC and now prohibits the marketing of fuel containing lead. All objectives and reduction targets for PAHs in the Protocol on POPs can be reached by implementation of the EU Directive (98/69/EC, 97/98/EC, 99/96/EC, 98/70/EC, 96/96EC). The ELVs on new mobile sources from European legislation are implemented.

635. **Bulgaria** uses measures to address the production of fuels that meet EC Directives.

636. **Canada.** Transport Canada published (in 1997) comprehensive new emission regulations in the Canada Gazette, Part II. Canada's new vehicle emission standards are fully harmonized with those applicable in the United States and are consistent with the recommendations of the Canadian Council of Ministers of the Environment's (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. Memorandums of Understanding are being developed to ensure benefits from clean technology engines. Standards for off-road fuel use have been set. Environment Canada published the Gasoline Regulations (1989) and the Diesel Fuel Regulations (1997) ensuring the low sulphur content of fuels. New low-sulphur standards for diesel fuel for on-road vehicles are being considered for 2004.

637. The **Czech Republic** has implemented the following measures to control emissions of POPs (PAH, PCDD, PCDF) from mobile sources: elimination of scavengers containing PCDD and PCDF from leaded petrol; setting of emission limits for hydrocarbons from spark-ignition and diesel engines and particulate matter from diesel engines; regular controls of the emissions of hydrocarbons. There are emission limits for passenger cars (with diesel engines), trucks and buses. Measures to decrease the benzene content of petrol and the sulphur content of diesel are being prepared.

638. **Germany** regulates emissions of pollutants by EU Directive 97/68/EC. There are plans to extend the scope of the Directive to include spark-ignition engines.

639. **Greece** applies or will apply the provisions of all Community Directives concerning mobile sources or fuels. Petrol and diesel road vehicles are subject to inspection once or twice a

year.

640. The **Netherlands** has implemented EU Directive 97/68 concerning NOx and particulates emitted from mobile sources.

641. **Poland** will eliminate emissions of dioxins from mobile sources from 2005 after prohibiting the use of leaded petrol.

642. The **Republic of Moldova** has implemented a number of measures for controlling motor vehicles and their fuel so as to protect the environment. Future measures are planned, including standards for emissions, increased use of gaseous fuels, improved fuel quality standards.

643. **Switzerland** regulates emission of polyaromatic hydrocarbons from mobile sources through the emission limitation of exhaust gas particles and the newly adopted emission limit value for smoke of heavy-duty vehicles following the new EU Directive 99/96/EC and Directive 97/68/EC for off-road vehicles and machines.

10. Production and sales of substances listed in annexes I and II to the Protocol (question 46)

644. **Armenia** has prohibited the production, sale and use of: aldrin (1970), DDT (1970), heptachlor (1986), pentachlorophenol (1986) and dieldrin (1985).

645. **Austria.** The sale of lindane (gamma HCH) declined to zero in 1998. The production and use of the other substances in annexes I and II – at least regarding significant purposes – is abolished, and their sale is expected to be zero.

646. **Belgium.** Two royal decrees govern the environmental tax arrangements for the marketing of pesticides. For HCH (lindane) only one figure is available for production or sales: less than 50 tonnes/year.

647. **Bulgaria** neither produces, nor sells the substances.

648. **Croatia** has authorized limited production (7 tonnes/year) and sale (6 tonnes/year) of lindane.

649. **Czech Republic**. Substances listed in annexes I and II are neither produced nor sold.

650. **Germany** does not produce the substances listed in annexes I and II. Nor have lindane-containing products been registered for use in agriculture. It cannot be ruled out that lindane is contained in other biocidical products as an ingredient but information is not available.

651. **Greece.** The sale and the production of all substances listed in annex I are prohibited.

652. **Latvia** does not produce these POPs.

653. **Netherlands.** See question 38.

654. **Poland** neither produces nor uses aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexabromobiphenyl and mirex. Toxaphene, chlordecone, hexachlorobenzene have been on the list of prohibited plant protection since 1991. PCBs are not used in the production of electro-energy equipment. An inventory of the use and disposal of devices containing PCB is under way.

655. The **Republic of Moldova** does not produce the substances listed in annexes I and II. Information relating to the sales of these substances is not available.

656. **Switzerland.** None of the intentionally produced substances in the annexes I, II and III of the Protocol has been produced in the past few years, and only lindane has been used.

11. Measures to create favourable conditions to facilitate the exchange of technologies and techniques (question 47)

657. **Austria.** Information can be found in question 25.

658. **Belgium.** The **Flemish region** has activities to improve the exchange of technologies and information (e.g. the Centre of BAT, the Energy and Environment Information System, the centre of expertise Rational Use of Energy (VITO)). **The Federal Government** has its Federal Environment Ministry's Web site. Belgium is the lead country for the inventories and monitoring of PCB emissions and releases under the OSPAR Commission.

659. **Canada** will prepare a summary of documentation and initiatives to facilitate the transfer of the latest BAT information on heavy metals.

660. The **Czech Republic** has not used exchange facilities.

661. **Germany's** Web site: www.cleaner-production.de provides information on clean production and pollution prevention and control projects. To facilitate the exchange of technologies and techniques, the Transform Programme and the Twinning Programme have been used respectively to provide technical assistance, training, etc. and to support the EC help programme for accession countries.

662. **Netherlands.** Environmental technology is exchanged with other countries as described in the earlier reviews.

663. **Poland.** See answer to questions 34 and 35.

664. The **Republic of Moldova** encourages the exchange of information. There are target-oriented or customized workshops for ministries, industrial enterprises, etc. The Republic of Moldova cooperates with the Commonwealth of Independent States (CIS) and Romania as a member of the Interstate Ecological Council (IEC) of CIS. Also, representatives of the Ministry of

Environment and Territorial Development, the Ministry of Agriculture and Food Industry and the Ministry of Health participate in workshops organized by UNEP Chemicals in cooperation with the Centre of International Projects (CIP of the Russian Federation). The next workshop, on Alternatives to POPs Pesticides, will be held in St. Petersburg, Russian Federation, in July 2000. Future documents will include measures for article 5 of the Protocol.

665. **Switzerland**, for example, provides financial support for the organization of the Sub-regional Expert Meeting on Reduction of POPs and support to the request made by the Intergovernmental Forum on Chemical Safety (IFCS) to the United Nations Institute for Training and Research (UNITAR) aiming at a capacity-building network for the sound management of chemicals. Following a successful pilot phase, the Swiss Agency for Development and Cooperation (SDC) is supporting a third phase of programme, including integrated chemicals management in Argentina, Ghana, Indonesia and Slovenia, for 2000-2002. In relation to the exchange of technology, Switzerland has established the Swiss Cleaner Production Centre Programme which supports the establishment of cleaner productions centres in developing countries.

12. Measures to promote the provision of information to the general public (question 48)

666. **Austria** requires labelling of electric equipment containing PCBs. Regarding POPs in general, a voluntary labelling scheme for environmentally friendly products („Umweltzeichen“) exists.

667. **Belgium.** The **Flemish region** has informed stakeholders and the general public about the risks of pesticides to the environment and health through a number of actions: “best agricultural pratices” will be applied; a campaign in 2001 aims to reduce non-agricultural pesticide use; there will be a study of the economic and social impacts of reducing pesticides; and regulations regarding the labelling, use and reporting of PCB-containing transformers. A project has started on unintentionally produced dioxins and furans. **The Federal government** incorporates the Directives and regulations contained in 76/769/EEC on the marketing and use of certain dangerous substances, including provisions relating to labelling, into its legislation.

668. **Canada** has programmes that support public awareness on POPs, including: the labelling requirements for pesticide products and the Pest Management Regulatory Agency’s policies, programmes and projects on Sustainable Pest Management; published reports on assessment of POPs; published reports (and other forms of public information) on ecosystem and regional studies; and the Canadian Pollution Prevention Information Clearinghouse.

669. **Czech Republic.** A number of publications and other works (dealing not only with the subject of POPs, but also with other aspects of the Convention) have been issued to improve public information. Some of these are available on the Internet (http://www.env.cebin.cz). An Inter-ministerial expert group for POPs and HM has been established with participation from universities, NGOs, etc. to provide better information to the general public.

670. **Germany** has prohibited these substances (with the exemption of lindane) so there is no

need for the measures referred to above.

671. **Netherlands.** No action has been taken to inform the general public about POPs, but extensive public campaigns on dioxins and PCBs have taken place.

672. **Poland.** In general, for labelling hazardous products and wastes the rules of EU are applied. The Regulation of the Minister of Agriculture and Food Economy (1996) encompasses principles for issuing permits, classification, and labelling.

673. The **Republic of Moldova** is a Party to the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. All legislative acts of the Republic of Moldova stipulate the need for public awareness and participation. Also, the ecological funds are used for organizing information systems, awareness programmes, training for staff, etc.

674. **Switzerland.** The Ordinance on Environmentally Hazardous Substances (1986) requires environmental impact assessment of new and existing substances and products.

13. Activities to encourage research, development, monitoring and cooperation related to this Protocol (question 49)

675. **Austria** has programmes for monitoring ambient air concentrations of PCDD/F and selected PAHs; deposition levels of PCDD/F, PCB, PAH and other POPs have been measured at several sites. Research projects have dealt with, for example, pollutant levels in ecosystems, and measurement of POPs in soils.

676. **Belgium.** In the **Flemish region** PCBs and pesticides in rain water, PAHs in the air, dioxins/furans deposition and air concentrations are monitored. Studies concerning pesticides, dioxins/furans have been or will be carried out in the framework of the Flemish Environmental Policy and the Nature Development Plan for the period 1997 to 2001. The **Federal Government** is keeping an inventory of quantities of pesticides on the market and implementing a programme to harmonize data on PCB-contaminated products.

677. **Canada** will provide information through 13 existing programmes, initiatives on toxic substances and agreements on research, development and monitoring of POPs, e.g. Northern Contaminants Program, the Arctic Monitoring and Assessment Programme, Canada-Ontario Great Gakes Water Quality Agreement.

678. **Czech Republic.** Every year, the Ministry of the Environment announces projects in the Programme of Care for the Environment and in its Programme of Research and Development. Top-priority projects related to the individual Protocols are carried out in the framework of these programmes.

679. **Germany.** Measurements of POPs in precipitation are conducted at two EMEP stations, future measurements will include the gaseous and particulate phases.

680. The **Netherlands** started (in 1999) an extensive monitoring programme for POP deposition. The results will be reported to EMEP. It participates actively in the expert group on POPs and in the Task force on the Health Aspects of Air Pollution and is working on the identification of new candidates for the Protocol. For POPs such as lindane and DDT, it has already performed national reviews that will be made available to the Convention.

681. **Poland.** The National Fund for Environmental Protection and Water Management and the State Committee for Research fund the promotion of research and monitoring activities related to POPs. An example is the examination of the "tombs" for pesticides that are outdated and/or prohibited. A database of certified pesticides has been established; this has enabled research to quantify the content of the tombs.

682. The **Republic of Moldova** encourages research, development, monitoring and cooperation related to the Protocol on POPs. Taxes for environmental pollution that were paid during 1999 into the National Environmental Fund were to be used for the development of national programmes and plans for the protection of the environment, for scientific environmental research, the organization of international cooperation, for co-financing environmental projects, etc.

683. **Switzerland** has assessed the concentrations and the geographical distribution of several POPs by analysis of the POPs content of lichens collected in a survey of Switzerland.

G. Future ratification

1. Ratification/accession to the 1984 EMEP Protocol (question 66)

684. **Armenia** intends to accede to the 1984 EMEP Protocol although this will involve economic and technical problems.

685. **Belarus** has not made reference to the 1984 EMEP Protocol in its reply.

686. **Georgia** has plans to accede to the Protocol but the date of accession is not yet identified.

687. **Lithuania** will accede to the Protocol after accession to the EU.

688. The **Republic of Moldova** plans to ratify the 1984 EMEP Protocol. The greatest obstacle to earlier ratification is the difficult economic situation. In this context the Republic of Moldova is preparing project proposals for its participation in EMEP, including contributions in kind.

2. Ratification/accession to the 1988 Nitrogen Oxides Protocol (question 67)

689. **Armenia** intends to accede to the 1988 Nitrogen Oxides Protocol although this will

involve economic and technical problems.

690. **Belgium** intends to ratify the Protocol. The institutional structure of Belgium means that all international arrangements (including the Protocols) are subject to an approval procedure by the three regional parliaments and by the Federal Parliament in the event of concurrent competence, in order to be ratified by the Belgian State. This means that there are actually four procedures to be complied with, rather one, and if these are not conducted in parallel final ratification is delayed. The four Belgian authorities intend to ratify all the Protocols signed to date, including the Gothenburg Protocol. The only problem is that of procedural delays, there is no opposition in principle. The Nitrogen Oxides is in the final stage of ratification.

691. **Cyprus.** Due to the developing nature of the Cyprus economy its NO_x emissions increased during the period covered by the Protocol. Therefore, Cyprus could not meet the requirements of the Protocol.

692. **Georgia** does not plan to accede to the Protocol.

693. **Latvia** will ratify the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone.

694. **Lithuania** plans to accede to the Protocol after it becomes a member of the EU.

695. **Poland** signed the 1988 Nitrogen Oxides Protocol on 1 November 1988 but it has not yet ratified it. Ratification is planned in 2000.

696. The **Republic of Moldova** does not plan to ratify the 1988 Nitrogen Oxides Protocol in the near future. It signed the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, agreeing to obligations regarding emission ceilings of nitrogen oxides for 2010. The next step will be to complete the necessary procedures to ratify it and to draw up the national programme of activities concerning implementation of obligations, including the achievement of NOx emission ceilings.

697. **Turkey** has not ratified the 1988 Nitrogen Oxides Protocol yet. Although Turkey fully associates itself with the objectives of the Protocols, it will not be able to ratify the Protocol in the near future because of the limitations in technological transformation, bottlenecks in financing such transformation as well as the inadequacy of its environmental monitoring infrastructure and lack of proper emission inventories.

698. **Ukraine** has not ratified the 1988 Nitrogen Oxides Protocol, and has no plans to do so for economic and technical reasons.

3. Ratification/accession to the 1991 VOC Protocol (question 68)

699. **Armenia** intends to accede to the 1991 VOC Protocol although this will involve

economic and technical problems.

700. **Belarus** is carrying out the scientific groundwork to evaluate the options and implications of accession to the VOC, Heavy Metals and POPs protocols. The work is due to be completed in 2001.

701. **Belgium** intends to ratify the Protocol. See paragraph 690 above. The VOC Protocol is in the final stages of ratification.

702. **Croatia** intends to ratify in 2000/2001.

703. **Cyprus** will consider the ratification of the VOC Protocol soon, but after the evaluation of data that are being collected within the accession negotiations with the European Union.

704. **Georgia** does not plan to accede to the Protocol.

705. **Greece** intends to ratify the 1991 VOC Protocol. This will require the adoption of a law on the matter by the Parliament.

706. **Latvia** plans to discuss accession to the Protocol. Latvia will ratify the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone.

707. **Lithuania** will accede to the Protocol after accession to the EU.

708. **Monaco** is a very small, entirely urbanized country, and as a result is considered to be a point source of pollution, most of which is transboundary. The Protocols' reduction targets are designed for large areas with many sources. Consequently, Monaco's pollutant emission assessment cannot be compared to those of the other Parties to the Convention and its Protocols. It is, therefore, difficult for Monaco to comply with the obligations as they are spelt out in the Protocols. However, the general obligations for abatement are part of its national sustainable development policy. Monaco, nevertheless, plans to ratify the Protocol on Volatile Organic Compounds.

709. **Poland** has not signed the 1991 VOC Protocol, but is considering acceding to it.

710. The **Republic of Moldova** will not ratify the 1991 VOC Protocol in the near future. It has signed the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone. This Protocol Lays down obligations regarding emission ceilings on VOC for 2010. The next step will be to complete the necessary procedures to ratify it and to draw up the national programme of activities concerning implementation of obligations, including the achievement of VOC emission ceilings.

711. **Turkey** has not ratified the 1991 VOC Protocol yet.

712. **Ukraine** has not ratified the 1991 VOC Protocol, and has no plans to do so for economic

and technical reasons.

713. The **United States** has no current plans to move forward with ratification of the 1991 VOC Protocol. However, the United States is achieving the goals of the Protocol. It made a 30% reduction by 1999 in VOC emissions from 1984 levels and will maintain this level.

714. **European Community.** Ratification of the Protocol on behalf of the European Community is not envisaged.

4. Ratification/accession to the 1994 Sulphur Protocol (question 69)

715. **Armenia** intends to accede to the 1994 Sulphur Protocol although this will involve economic and technical problems.

716. **Belarus.** For the time being Belarus considers it impossible to accede to the 1994 Sulphur Protocol. Reconstruction and major investment will be needed at the two oil refineries in Novopolotsk and Mozyr to achieve the standards set by the Protocol for sulphur content in fuels. A considerable proportion of the light and heavy petroleum products supplied to Belarus comes from the Russian Federation and other CIS countries which have not ratified the Protocol. This creates serious problems in meeting obligations under the Protocol.

717. **Belgium** intends to ratify the Protocol. See paragraph 690. The Sulphur Protocol is in the final stages of ratification.

718. **Bulgaria**. Ratification is expected in 2002.

719. **Cyprus** will consider the ratification of the 1994 Sulphur Protocol on the basis of the outcome of the accession negotiations that are now taking place with the European Union.

720. **Georgia** has no plans to ratify the Protocol.

721. **Hungary** plans to ratify the Protocol in 2000.

722. **Latvia** foresees acession to the Protocol in 2000.

723. **Lithuania** plans to accede to the Protocol after accession into the EU.

724. **Monaco.** See paragraph 708 above. Monaco, nevertheless, plans to ratify the Protocol on Sulphur.

725. **Poland** signed the 1994 Sulphur Protocol on 14 June 1994, but has not yet ratified it. Its ratification is planned in 2000.

726. The **Republic of Moldova** does not plan to ratify the 1994 Sulphur Protocol in the near future. It signed the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and

Ground-level Ozone, which included its obligations regarding emission ceilings for sulphur for 2010. The next step will be to complete the necessary procedures to ratify it and to draw up the national programme of activities concerning implementation of obligations, including the achievement of slphur emission ceilings.

727. **Turkey** has not ratified the 1994 Sulphur Protocol yet.

728. **Ukraine** has not ratified the 1994 Sulphur Protocol, and has no plans to do so for economic and technical reasons.

5. Ratification/accession to the 1998 Protocol on Heavy Metals (question 70)

729. **Armenia** intends to accede to the 1998 Protocol on Heavy Metals although this will involve economic and technical problems.

730. **Austria** plans ratification for early 2001.

731. **Belgium** intends to ratify the Protocol. See paragraph 690 above. The Protocol on Heavy Metals is at an early stage of ratification.

732. **Bulgaria.** Ratification is expected in 2002.

733. **Croatia.** Ratification is expected in 2001.

734. **Cyprus.** Ratification is planned for 2004 at the latest.

735. The **Czech Republic** expects to ratify the Protocol on Heavy Metals by the end of 2000.

736. **Denmark** intends to ratify in autumn 2000.

737. **Georgia** does not plan to ratify the Protocol.

738. **Germany** plans to ratify in 2001.

739. **Greece** intends to ratify the 1998 Protocol on Heavy Metals. That will require the adoption of a law on the matter by the Parliament.

740. **Hungary** will not ratify before 2002.

741. **Italy.** The ratification of the 1998 Protocol on Heavy Metals is in process.

742. **Latvia.** Preparation work for ratification has started. Due to limited financial resources, ratification of the Protocol is envisaged in 2002 or 2003.

743. **Lithuania** will ratify the Protocol after accession to the EU.

744. **Monaco.** See paragraph 708 above. Monaco, nevertheless, plans to ratify the Protocol on Heavy Metals.

745. **Poland** signed the 1998 Protocol on Heavy Metals on 24 June 1998 and is planning to ratify it in 2001. As soon as the strategy on heavy metal emission reduction is approved by the Government, the ratification procedure can be started.

746. The **Republic of Moldova** plans to ratify the 1998 Protocol on Heavy Metals. At present consultations are being undertaken to this end. The greatest obstacle to early ratification is the Republic's difficult economic situation. It is hard to undertake the monitoring and laboratory control, and there is insufficient knowledge to estimate critical loads and levels, assess the long-range transfer of pollutants and levels of deposition, and to carry out modelling.

747. **Slovakia** has to prepare a detailed emission inventory for heavy metals and then decide on appropriate measures to fulfil its commitments under the Protocol. Slovakia expects to ratify it by the end of 2002 at the latest, and most likely in 2001.

748. **Spain** intends to ratify the Protocol.

749. **Switzerland** will probably ratify the 1998 Protocol on Heavy Metals at the end of 2000.

750. **Turkey** has not ratified the 1998 Protocol on Heavy Metals yet.

751. **Ukraine** has not ratified the 1998 Protocol on Heavy Metals. Ratification is planned for 2001-2002.

752. The **United Kingdom** plans to ratify the Protocol on Heavy Metals in 2001.

753. The **United States** intends to ratify the 1998 Protocol on Heavy Metals and is currently taking the necessary steps with a view toward ratification within the next year.

754. **European Community.** The ratification procedure has already started (Proposal for a Council Decision on the conclusion on behalf of the European Community of the Heavy Metals Protocol, COM(2000)177 final of 12 April 2000).

6. Ratification/accession to the 1998 Protocol on Persistent Organic Pollutants (question 71)

755. **Armenia** intends to accede to the 1998 Protocol on POPs although this will involve economic and technical problems.

756. **Austria** plans for ratification in early 2001.

757. **Belgium** intends to ratify the Protocol. See paragraph 690 above. The Protocol on POPs is at an early stage of ratification.

758. **Bulgaria** expects to ratify in 2001.

759. **Croatia** intends to ratify the Protocol in 2001.

760. **Cyprus** plans to ratify in 2004 at the latest.

761. The **Czech Republic** expects to ratify the 1998 Protocol on Persistent Organic Pollutants at the end of 2000.

762. **Denmark** plans to ratify in autumn 2000.

763. **Finland** will ratify the Protocol on POPs as soon as it can fix the base year for emission reductions. The preliminary results will be ready in autumn 2000, so ratification might happen early in 2001.

764. **Georgia** does not intend to ratify the Protocol.

765. **Germany** plans to ratify the Protocol in 2001.

766. **Greece** intends to ratify the 1998 Protocol on Persistent Organic Pollutants. That will require the adoption of a law on the matter by the Parliament.

767. **Hungary** plans to ratify the Protocol in 2001.

768. **Italy.** The ratification of the 1998 Protocol on Persistent Organic Pollutants is in progress.

769. **Latvia.** Preparation work for ratification has started. Due to limited financial resources, ratification of the Protocol is envisaged in 2002 or 2003.

770. **Lithuania** plans to ratify after accession to the EU.

771. **Poland** plans to ratify the Protocol in 2001. As soon as the strategy on POP emission reduction is approved by the Government the ratification procedure can be started.

772. The **Republic of Moldova** plans to ratify the Protocol in 2000. The necessary procedures have begun. The greatest obstacle to earlier ratification is the difficult economic situation in the Republic. See paragraph 746 above.

773. **Slovakia** has to prepare the detailed emission inventory for POPs and then decide on appropriate measures to fulfil its commitments under the protocol. Slovakia expects to ratify the Protocol by the end of 2002 at the latest, most likely even in 2001.

774. **Spain** intends to ratify the Protocol.

775. **Switzerland** will probably ratify the Protocol at the end of 2000.

776. **Turkey** has not ratified the 1998 Protocol on Persistent Organic Pollutants yet.

777. **Ukraine** has not ratified the 1998 Protocol on Persistent Organic Pollutants. Ratification is planned for 2001-2002.

778. The **United Kingdom** expects to ratify the Protocol in 2001. Further research is required to prepare it for ratification, and it may be that EC action is required to fulfil some aspects of the Protocol's obligations.

779. **United States.** At the conclusion of the global POPs negotiations, the United States will begin the process to make the appropriate changes to its law that are necessary to ratify both the 1998 Protocol on POPs and worldwide agreement on POPs concurrently.

780. **European Community.** Ratification on behalf of the European Community is planned. There is no precise timetable yet**.**