

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

THE 2000 REVIEW ON STRATEGIES AND POLICIES
FOR AIR POLLUTION ABATEMENT

ECONOMIC INSTRUMENTS
REPLIES TO QUESTIONS 54 - 60 OF THE 2000 QUESTIONNAIRE

Prepared by the secretariat from submissions by the Parties

Introduction

1. This document is the basis for part of the 2000 Review of Policies and Strategies requested by the Executive Body at its seventeenth session in December 1999. It provides the answers as received from Parties in response to the questionnaire circulated in January 2000. It is in English only, non-English submissions were passed to the UN translation services, and are incorporated as translated. Answers have been reformatted for the document but have been subjected to minimal editing. Indication is given where responses have been altered, e.g. moved where an answer appears to be for a different question.

2. The document is intended as a reference for the summary to be found in the 2000 Review of Strategies and Policies (EB.AIR/2000/1/Add.3) and will be provided to the Executive Body, the Implementation Committee and will be made available through the Executive Body document Web site. The document is one section of the questionnaire.

3. This section summarizes the answers received to questions 54 to 60 of the questionnaire. The questions in this section are of a general nature and optional. Their purpose is to provide further information that will enable the secretariat to analyse the current situation regarding air pollution abatement in the region, and provide information that the Executive Body would like the Parties to the Convention to share to identify air pollution abatement. Parties may wish to recall that under article 4 of the Convention they have committed to exchanging information on their policies aimed at abating air pollution.

4. **Question 54 Parties are invited to describe briefly their application of emission charges and/or taxes in relation to the amount of a given pollutant or the characteristics of the pollutant, if it is covered by one of the protocols. Charges or taxes are often linked to energy consumption, as emissions can in many cases be directly related to energy use; if they are applied to the price of products, such as fuels, they should be reported under question 55.**

5. **Armenia.** In December 1999, the National Assembly of Armenia adopted a law on nature protection payments and on fees for the utilization of natural resources (the second stage in the introduction of fee-based utilization of natural resources in Armenia), which establishes fees for atmospheric emissions of harmful substances. A number of subsequent subsidiary instruments enacted in 1999 and 2000 regulate the corresponding arrangements for the collection of these fees. In accordance with a Government resolution of 25 May 1999, where a polluter exceeds the emissions limit established for him, the fee is trebled.

6. **Austria.** Austria currently does not make use of taxes which are directly linked to the amount of pollutant emissions. There is, however, a motor vehicle tax (increasing with engine power, surcharge for cars without catalytic converter; for heavy-duty trucks the tax is based on vehicle weight) and a motorway toll sticker (which allows use of motorways for a specific time period, with different prices for trucks, buses, passenger cars and motorcycles). Furthermore there is a general road use duty for heavy-duty trucks > 12 t (for domestic and foreign vehicles). The introduction of road-pricing (charge according to the distance actually driven) for heavy-duty vehicles on motorways is planned for the year 2002.

7. **Belarus.** In accordance with the Tax on Use of Natural Resources (Environmental Tax) Act of 23 December 1991, payment for air pollutant emissions is mandatory. Tax rates per ton of emissions are set annually by the Council of Ministers and differentiated according to the hazard class of the substance (in Belarus there are four hazard classes based on health and safety indicators regarding their content in the ambient air). Tax reductions are calculated for emissions resulting from the burning of fuels to meet the fuel and energy needs of the population with a coefficient of 0.3, and for emissions from mobile sources or emissions of components of natural gas during transfer (technical emissions) with a coefficient of 0.8. Exemptions from the environmental tax on emissions apply to sources belonging to organizations financed from the national budget or local budgets, and also to owners of private vehicles not engaged in entrepreneurial activities. There is a 15-fold increase in the rate of tax if the established emission limit is exceeded.

8. **Bulgaria.** The 1993 Regulation for determining and levying of charges for environmental damages and excessive pollution was amended in 1999 (SG 63/99) to address charges amount, e.g. amounts charged for:

Nitrogen oxide emissions from combustion plants	0,12 Lv/kg
Sulphur oxide emissions from stationary combustion sources above 500 MW	0,06.10 ⁻³ Lv/kg
100 B 500 MW	0,6.10 ⁻³ Lv/kg
Lead	45 Lv/kg
Cadmium	13,60 Lv/kg

(1 USD = 2 Leva

9. **Canada.** Canada has no environmental taxes or greenhouse gas taxes at the federal level that would related to the level of pollutant emitted. Some provincial governments charge stationary sources a fee based on emissions for operating permits; the higher the emissions, the higher the fee.

10. **Croatia.** So far there are no emission charges and/or taxes in Croatia.

11. **Czech Republic.** Payments for the discharge of pollutants into the air are imposed on large and medium-sized sources, i.e. with an installed output of greater than 5 MW_{th} and between 0.2 and 5 MW_{th}. Small sources with an installed output of up to 0.2 MW_{th} of business entities are subject to payments according to the kind of fuel (this is more of a user's fee, so that the discharge of pollutants is indirectly subject to payment). The payments for the burning parts of coal mines,

open-pit mines or tips also constitute indirect payments for emissions, where the fee rate is determined per unit affected area or volume. 93 substances are subject to emission fees for large and medium-sized sources. The main pollutants have the following fee rates for emissions:

Pollutant	Fee rate (USD per ton)
Particulate matter	85.7
SO ₂	28.6
NO _x	22.9
CO	17.1
Hydrocarbons	57.1

USD = 35 Czech Crowns (CZK)

The other substances are divided into classes according to their harmfulness and each of these classes has its own rate:

Class	Fee rate (USD per ton)
Class I	571
Class I	286
Class I	29

The fee rate for the burning part of coal mines, open-pit mines or tips is 5.7 USD/m³.

12. In connection with energy production, the "green haller" should be mentioned, which is part of the Law on management of energy, i.e. the energy policy. This is a measure according to which a very small amount should be set aside from each kWh of electricity (of the order of hallers, in the draft 10 CZK per MWh of electricity supplied to the end consumer) and transferred to the State Environmental Fund; the use of this amount would be bound to support for energy savings and the use of renewable sources of energy. It is estimated that income from this source will be about 500 mil. CZK annually i.e 14.3 mil USD (USD = 35 CZK).

13. **Denmark.** Yearly tax on passenger cars are related to fuel consumption (CO₂-emission)

14. **Georgia.** Refer to Q. 55.

15. **Germany.** Under clean air policy, emission-oriented charges have so far only been applied to products (motor vehicle tax, mineral oil tax).

16. **Greece.** While the sum is not considered as a tax, 0.4% of the turnover of the Public Power Corporation is placed in an account for the benefit of the three regions of the country where lignite-fired power stations predominate. The sum is shared out according to each region's energy production.

17. **Hungary.** Owners of vehicles with catalytic converters pay only half the motor vehicle tax.

18. **Italy.** The budget law for 1998 introduced a tax for large combustion plant of Lit 103,000/ton/year on emissions of SO₂ and Lit 203,000/ton/year on emission of NO_x.

19. **Latvia.** Law on Natural Resource Tax, in force from 1.01.1996, envisages taxes for emissions of pollutants into the air. Classification of emissions by category of hazardousness according to tax rate groups

Emission	Category of hazardousness	Tax rate; Euro/ton
Dust	Non hazardous	4.64
Carbon oxide, CO	Medium hazardous	6.97
Sulphur dioxide, SO ₂	Hazardous	15.48
Nitrogen oxides (Nox)	Hazardous	15.48
Ammonia, NH ₃	Hazardous	15.48
VOCs	Hazardous	15.48
Hydrocarbons, C _n H _m	Hazardous	15.48
Heavy metals and their compounds	Extremely hazardous	1238.39
Others non-organic compounds	Hazardous	15.48

Four air pollutant categories of hazardousness account for more than 160 substances.

20. **Lithuania.** The following economic instruments are used for the integration of economic and environmental decisions:

- (a) Taxes on natural resources;
- (b) charges on discharge of pollutants into air;
- (c) penalties for exceeding established discharge limits;
- (d) excise duty/customs duty on fuels and cars.

The taxes on natural resources (mineral) are paid into the State budget. It links the tax directly to the quantity of extracted resource. The extraction of more mineral resources than is allowed leads to fines.

21. The new Law on Environmental Pollution Charges (1999) sets rates for all air polluting substances. SO₂, NO_x and particulates matters are in the list of major air pollutants. All other pollutants are divided into four groups according to the degree of their hazardness. The rate schedule is valid for five years. The penalty for illegal (unlicensed) extraction of mineral resources is ten times of the regular tax. Excess pollution can be fined in two situations:

- (a) if an environmental inspectorate finds some evidence of unreported pollution, and
- (b) if an enterprise pollutes more than the permit allows, the polluter is liable for a fine.

22. **Monaco.** Not relevant.

23. **Netherlands.** The situation is unchanged from what was reported in the latest reviews. See also Q 56.

24. **Poland.** Poland has a significantly wide use of economic instruments in environmental protection, and especially in air protection. They include fees for the use of the environment and causing negative effects due to economic activity (in the form of pollution emission fees) and fines for not complying with the mandatory environmental requirements. A separate regulation on fees which are updated is published every year. Emission fees are listed in several tables covering:

(a) fees for 1 kg of emission of pollutants depending on the pollutant (e.g. for cadmium, mercury, PCB – 120 PLN which is app. 30 USD/1 kg; for lead – 27 PLN which is app. 7 USD/1kg; dioxines/furans – 240 PLN which is app. 60 USD/1 kg; SO₂, NO_x – 0.34 PLN, app. 0.09 USD);

(b) fees for emissions from petrol handling operations;

(c) fees for air pollution from combustion processes (installations of thermal capacity over 0.5 MWth – fuelled by coal or oil and of less than 1MWth fuelled by coke, wood or gas) which are calculated on the basis of the amount of fuel used;

(d) fees for emissions from mobile sources - combustion engines depending on the type of engine and motor vehicle and fuel used (e.g. leaded petrol, unleaded petrol, diesel oil, and gas).

In cases where enterprises obliged to submit for emission permits do not comply with this obligation fees are increased by 500%. If the legal requirements are violated a fine of ten times the fee rate is imposed and it can be doubled if the violation continues.

25. **Republic of Moldova.** The economic instruments currently used for air pollution abatement under the Law on the Payment for Environmental Pollution are charge for pollution of the environment, including the ambient air. The procedure for determining such payments for pollution of the environment, disposal of wastes and other harmful activities, and their maximum levels, was approved by the Parliament of the Republic of Moldova in decision nr.1540 - XIII from 25.02.1998.

26. Payment of environmental pollution charges does not release users of natural resources from the need to pay full compensation for harm caused to the environment, the health and property of citizens and the economy by pollution, in accordance with the applicable legislation. Pollution charges take the form of partial compensation for economic damage caused by pollutants in the ambient air, and are applied in accordance with the basic tariffs of charges for emissions of pollutants within permissible concentrations levels and established emission limits. Step – up coefficient 5 is applied in the case of emissions in excess of the limit.

27. The payment for air emissions from stationary and mobile sources was introduced in the Law on the Payment for Environmental Pollution (1998). Although this kind of payment already exists from 1993, and it wasn't approved on a legislative basis, it was applied according to the Decision of the local public authorities and the payment was taken practically only in Chisinau. The economic agents pay for air emissions from stationary sources in two cases:

(a) In established pollutants' limits;

(b) in limits that are higher than those established.

Each economic agent pays for the pollutants that are enclosed in the license given by State Ecological Inspection of the Ministry of Environment and Territorial Development. The payment for pollution is made for the concrete emissions of pollutants and is allocated by paying agents quarterly on the accounts of local environmental funds. Local environmental funds are transferring 30% of total amount of resources to the National Environmental Fund, and 70% are used to finance environmental projects, approved by the Administrative Council of the Fund. The payment is increased in 5 times when the emissions into air from stationary sources are higher than the established limits. When the accidental emissions from stationary sources are having place then it's going to be increased in 50 times.

28. Payment for air pollution by mobile sources, using petrol as fuel (leaded, unleaded) and diesel fuel, is established for juridical and physic persons, importing this kind of fuel. The differentiation is especially used in relation to fuel taxes to encourage the consumption of less polluting fuels. Differentiation of fuel taxes has, for instance, been widely applied to promote unleaded petrol. In our country payment for air pollution by mobile sources, using petrol as fuel (leaded, unleaded) and diesel fuel, is established for juridical and physic persons, importing this kind of fuel. Payment for air pollution by mobile sources, using leaded fuel and diesel fuel, is established 1% of the custom taxation if fuel. Payment for air pollution by mobile sources, using unleaded fuel, is established 0,5% of the custom taxation if fuel.

29. The payment for the emissions into atmospheric air is established for the mobile sources (auto vehicles) in our republic that use liquefied natural gas and pressed hydrocarbon gas as fuel (excluding the owners of private transport, that don't carry business activities). The established costs for payment are the following:

(a) Mobile sources, working on pressed hydrocarbon gas – 0,9 lei for 1 ton of used fuel;

(b) Mobile sources, working on liquefied natural gas – 0,75 lei for 1000 cubic meters of used fuel.

This payment is going to the local environmental funds, its management is undertaken by territorial ecological agencies of the Ministry of Environment and Territorial Development. The funds' resources are channeled to environmental protection measures of significance at the republic and local level, in the form of non-reimbursable or interest-free aid.

30. **Russian Federation.** The Russian Federation has adopted a system of charges for pollutants vented into the atmosphere. The charge is differentiated according to the emission standards set for enterprises. It is increased five-fold if the established emission standards are exceeded.

31. **Slovakia.** Emission charges are paid for each pollutant, by each legal or individual subject authorized for business activities. Charges are paid for each polluting substance, listed in the regulation 401/1998, Annex 1. They include, inter alia: sulphur oxides, expressed as sulphur dioxide_ nitrogen oxides expressed, as nitrogen dioxide_ organic substances expressed as total organic carbon_ and others. Charges are paid on monthly basis (if the total year charge is equal or higher than 1 million SK), and on quarter-year basis (if the total year charge is from 1100 to 1 million SK). The charges are paid to the State Environmental Fund. If the operator fails to fulfil its obligations, it could be charged with penalty from 5 000 to 1 000 000 SK (depending on due amount, source category etc.). The total sum of charge depends on compliance/non-compliance with emission limit value, categorisation of the pollutant (category B has higher coefficient_ see also R.5.), monitoring of compliance with emission limits, and on compliance with allocated emission quotas.

32. **Spain.** Despite there is not a national legislation about taxes in relation to the amount of SO₂, the Comunidad Autónoma GALICIA (administrative region in the Northwest of Spain) has adopted a specific legislation about the sulphur released by large stationary sources inside his territory : thermal power stations, refineries and heavy industries (paper). The tax is proportional to the SO₂ released every year.

33. **Sweden.** Q.54, Q.55 and Q.56. Emission charges and taxes:

(a) The sulphur tax: A sulphur tax was introduced in 1991 and led to a switch of the sulphur content in heavy fuel oils to about 0.4 %. A nitrogen oxide charge came into force in 1992, an effective means to reduce emissions from large and medium sized combustion plants. In the coming years the climate change policies with a reduced consumption of fossil fuels will also lead to reductions of SO_x and NO_x-emissions;

(b) The shipping sector: A system with environmental charges for the shipping sector is introduced from 1998 and will reduce SO_x- and NO_x-emissions from this sector;

(c) Nitrogen oxides charges: The nitrogen oxides charge is based on actual recorded emissions. It is levied at a rate of SEK 40 per kg NO_x. The charge applies to combustion/incineration plants for energy generation, which includes the production of heat or electricity in industry. Combustion directly involved in industrial processes is exempt. It doesn't include the smallest boilers. The total revenues, not including administrative costs, are refunded to the charge payers in proportion to their share of the total energy output;

(d) Carbon dioxide tax: The carbon dioxide tax is levied on all fossil fuels under the General Energy Tax Act. Tax rates vary in relation to the average carbon content of each fuel. Fuels covered by the carbon dioxide tax are also covered by energy tax. Following rises in stages the carbon dioxide tax now (from 1 January 1997) averages SEK 0.36 per kg CO₂;

(e) Environmental classification of diesel oil: The general tax on diesel fuel oil and heating oil was differentiated according to three environmental classes. The differentiation has changed over time and was on 1 September 1996 SEK 500 m³ for EC 1 and SEK 280/m³ for EC 2. The most important parameter is sulphur, 50 ppm in EC 1 diesel oil;

(f) Environmental classification of petrol: The energy tax on petrol is differentiated, two environmental classes, EC 2 and EC 1. A tax differential was achieved by raising the tax on non-EC2/1 petrol by SEK 0.06 per litre.

34. **Switzerland.** A tax on sulphur emissions from extra light heating oil with a sulphur content above 0,1% was introduced on 1 July 1998. The tax amount to SFr. 2 per tonne of oil. The incentive tax on VOC emissions has now been introduced and is charged as of January 2000. The rate is initially SFr. 2 per kg of VOC emitted and will rise to SFr. 3 in 2003. The distribution of revenue from the taxes shall be in equal part to all persons, subject to mandatory health insurance and with domicile in Switzerland, who are insured on 1 January of the year of payment.

35. **Turkey.** No environmental taxes are directly related to air quality, though part of the revenue from motor vehicle inspection taxes and vehicle sales taxes and taxes on aeroplane tickets goes to the Environmental Pollution Prevention Fund. As part of the plan to phase out leaded gasoline, a small tax advantage was given to unleaded gasoline in 1999. The market share of unleaded gasoline increased to 25 %. Energy prices are traditionally either set or influenced by the Government. Since 1954, to encourage economic activity in Priority Development Areas electricity tariffs have been 14 % below those in the rest of the country- This concerns about 10 % of the electricity consumed in Turkey. Domestic hard coal production is heavily subsidized. According to the Producer Subsidy Equivalent method, total subsidies were USD 267 million in 1995. The price of oil has been kept low in hopes of curbing inflation. An automatic Pricing Mechanism was introduced in 1998.

36. **Ukraine.** Pursuant to the Customs and Excise (Certain Goods and Products) Act, the rate of excise and customs duty on imported leaded petrol has been increased by a factor of 1.5.

37. **United Kingdom.** The UK Government does not currently operate a system of emissions charges or taxes.

38. **United States.** EPA's Market Incentives Resource Center (MIRC) has a website that provides a database of various market based emission reduction programmes that have been implemented in the United States, along with related guidance. (Note: The main emphasis of the database is on State programmes; it does not at this time include all national market-based air programmes.) The address is: <http://www.epa.gov/oms/transp/traqmkti.htm>

39. **Question 55 Parties are invited to report briefly on the product charges and taxes, and tax differentiation, including fuel taxes, that they apply.**

40. **Armenia:** By resolutions of 31 December 1998 and 15 June 1999, the Government of the Republic of Armenia established payments for the import, production and use of the following products, which have a harmful effect on the environment:

Product name	Fee as percentage of value of product
Products containing lead, paints	3
Bitumen	2
Luminescent lamps, amalgams (mercury)	3
Printing materials, white pigment	3
Electrodes	1.5
Petroleum, petroleum products	2
Fuels and lubricants	2
Naphthalene	1.5
Car batteries (lead, lithium)	1.5
Transformers, condensers	1.5
Car tyres	0.8
Photographic film	0.8
Fibreglass	0.8
Dirty containers (containers, tankers, jerrycans)	0.8
Plastic and polythene packaging	0.5
Mineral oils	2
Detergents (cleaning agents)	0.5
Freon-containing appliances and products	0.5

41. **Austria.** Taxation on energy products exist for electricity and natural gas (12 per cent of the revenues are transferred to the federal provinces for environmental and energy-saving measures and 5 per cent to the municipalities for funding of public transport), for petrol and diesel (part of the revenues earmarked for investments in public transport) and fuel oil. The fuel consumption levy applies to newly registered passenger cars and depends on the standard fuel consumption of the vehicle. It is meant to provide an incentive to purchase cars with lower fuel consumption and ranges from 0 per cent (for electric cars) to 16 per cent (for cars with high fuel consumption).

42. **Belarus.** Product charges and taxes are not currently applied in the Republic of Belarus.

43. **Belgium.** Federal Government:

I. Excise duties on mineral oils

Products	Units	Excise duty in EUR
<i>Petrol</i>	1,000 l	
- leaded		551.81100
- unleaded		493.55601
<i>Kerosene</i>	1,000 l	
- used as motor fuel		551.81100
- for industrial and commercial applications		18.59202
- for heating purposes		0
<i>Gas oil</i>	1,000 l	
- used as motor fuel		290.03543
- for industrial and commercial applications		18.59202
- domestic heating oil		5.20577(1)
<i>Heavy fuel oil</i>	1,000 kg	
- with not more than 1% sulphur		6.19734
- with more than 1% sulphur		18.59202
<i>Liquid petroleum gas and methane</i>	1,000 kg	
- used as motor fuel		0
- for industrial and commercial applications		37.18403
- for heating purposes		0

(1) inspection fee

The main exemptions are :

- (a) mineral oils which are used for other purposes than as engine fuel or as heating fuel;
 - (b) mineral oils to be used as fuel for aircraft, including private pleasure aircraft (for the latter, the exemption is restricted to the period ending on December 31st, 2000);
 - (c) mineral oils to be used as fuel for navigation in Community water, including fishing (for private craft : only for gas oil and only till December 31st, 2000).
- mineral oils injected in blast furnaces in addition to coke used as the main fuel, with a view to chemical reduction.

44. II. Levy on energy

Definition: The levy on energy is an indirect tax levied on the release for consumption or the use in this country of motor fuels, fossil fuels for heating and electric energy, irrespective of their origin. Products subject to the levy and rates to be applied: The philosophy of this levy is the preservation of a neutral treatment between the various energy sectors, at least with respect to fuels. The rate of the levy is calculated according to the principle of equal taxation per energy unit in proportion to the calorific value in relation to the taxation level for heating oil. The products subject to the levy and the rates to be applied are as follows:

Products	Units	Levy in EUR
1. Motor fuels		
Leaded and unleaded petrol	1,000 l	13.63415
Kerosene used as motor fuel	1,000 l	13.63415
2. Fuels for heating purposes		
Kerosene used for heating purposes	1,000 l	12.89047
Domestic heating oil	1,000 l	8.42838
Butane	1,000 kg	17.10466
Propane	1,000 kg	17.35255
Natural gas (all tariffs save ND3)	1 gigajoule	0.33888
3. Electricity		
Low voltage tariff	1 MWh	1.36342

Exemptions. The following are exempted from the levy on energy :

- (a) the products for which the exemption of excise duty is granted;
- (b) the specific social tariffs applied in the sector for the distribution of natural gas and electricity.

45. **Bulgaria.** Environmental taxes are levied for fuel production and import. In compliance with the amendment of the Clean Air Act (SG 27/00), levied taxes are added to the price of fuel. The National Environment Protection Fund (NEPF) charges the following amounts:

-Unleaded petrol for light vehicles	24 Lv/Ton
- Diesel fuel	14 Lv/Ton
- Residual oil with sulphur content over 1%	22 Lv/Ton
- Leaded petrol for vehicles:	
A 91 octane petrol	37 Lv/Ton
A 98 octane petrol	48 Lv/Ton
- Industrial gas oil	13 Lv/Ton

46. **Canada.** The federal government imposes a flat rate tax on automobile air conditioners (\$100Cdn.) and a sliding scale tax on vehicles based on their weight over and above a certain threshold (2007 Kg for cars and 2268 Kg for vans and wagons). Alternative fuels (ethanol, methanol, natural gas and propane) are not subject to excise tax. The Province of Ontario has a Fuel Conservation and Rebate Charge System which targets fuel-inefficient vehicles.

47. **Croatia.** Different customs duties are levied on motor vehicles, depending on their engine power. The consumer price of leaded gasoline RON 98 is 7.10 Kunas and for the unleaded gasoline RON 95 is 6.48 Kunas. The retail price difference is 8.7 per cent in favour of unleaded petrol.

48. **Cyprus.** Recently a change in fuel pricing took place, by which the unleaded petrol's price became less than the price of leaded petrol. There is also a price differentiation between regular (lower Pb content) and super (higher Pb content) petrol. Although not directly relevant, it is noted that there is a tax per ton of material quarried or mined. The tax collected is used for environmental projects in the area around the quarries or mines. Finally, the Electricity Authority of Cyprus has made available a sum of USD 20 mill for environmental projects for those communities in the vicinity of which it is erecting a new Power Station.

49. **Czech Republic.** Consumer taxes. The tax rates for liquid fuel/automotive fuels are laid down to come into effect from May 1, 2000 for automobile petrols, airplane fuels, technical petrols, diesel fuels, heating oils (if not used for heating), oils and lubricants, fuels containing alcohol and liquified gases used as automotive fuels. The total revenue from consumer taxes on automotive fuels in 1999 equalled 44.7 bil. CZK (1.28 mil. USD), of which about 40% corresponded to income from taxes on petrols and about 60% to income from taxes on diesel fuel. The state budget was the only recipient of revenues from consumer taxes on automotive fuels up to 1999, and thus there was no purpose-bound use of this income.

50. **Denmark.** Tax differentiation is used for auto diesel related to sulphur content (50 ppm). (See Q.24)

51. **Finland.** Energy taxes in Finland from 1.9.1998 are:

	Basic duty	Additional duty (CO2-tax)	Remarks
Liquid fuels, 1998 pennies /litre			
Unleaded petrol			
- normal grade	309.4	23.9	
- reformulated	304.4	23.9	
Diesel oil			
- normal grade	166.6	26.9	
- extremely low sulphur content	151.6	26.9	
Light fuel oil for commercial, industrial and heating purposes	10.9	27	Applied only for heating
Heavy fuel oil, p/kg		32.1	Applied only for heating

Other fuels and electricity			
Coal, lignite mk/tonne		246	Applied only for heating
Milled peat, mk/MWh	-	9	Applied only for heating
Natural gas, p/nm ³	-	103	Applied only for heating
Electricity, p/kWh rate I	-	4.1 *)	households, services
rate II	-	2.5 *)	industry
Pine oil, p/kg	32.1	-	

*) The electricity is taxed only at the consumption level. Therefore, the additional tax for electricity is not based on carbon content of fuels. There are subsidies for electricity produced with wood and wood-based fuels. There are some exceptions for combined heat and power production, wind power and electricity production with waste gas from metallurgical processes.

52. **Georgia.** Georgia applies product taxes on different oil products (petrol, diesel, kerosene, heavy oil, natural and liquid gas) imported, produced and sold except the fuel used for feedstock.

Base tax rates are as follows:

Leaded petrol	1 kg	0.12 laris
Unleaded petrol	1 kg	0.04 laris
Diesel	1 kg	0.035 laris
Kerosene	1 kg	0.02 laris
Heavy oil S% from 0.5 to 2	1 kg	0.01 laris
Heavy oil S% more than 2	1 kg	0.02 laris
Liquid gas	1 kg	0.01 laris
Natural gas	1 kg	0.005 laris

note: 1 USD = 2 laris

53. **Germany.** In Germany the two main energy taxes are the Mineral-Oil Tax and the Electricity Tax, which was introduced in 1999. The Mineral Oil Tax Act regulates the taxation as follows (status: 31 March 1999):

Diesel	62	pfennigs/litre
Petrol (unleaded)	98	pfennigs/litre
Light fuel oil	8	pfennigs/litre
Natural gas	0.36	pfennigs/kWh
Electricity	0	pfennigs/kWh

These tax rates were increased in April 1999 through Stage 1 of the Ecological Tax Reform. In addition, an electricity tax of 2 pfennigs/kWh has been levied since April 1999. The rates of increase of Stages 1 to 5 of the **Ecological Tax Reform** are - with some exemptions in order to enhance eco-efficiency and to avoid economic disadvantages for certain sectors - as follows:

	Stage 1	Stages 2 – 5
	(as of April 1999)	(January 2000 – 03)
	non-recurring	annually
Motor fuels	6 pfennigs/litre	6 pfennigs/litre
Light fuel oil	4 pfennigs/litre	-
Gas	0.32 pfennigs/kWh	-
Electricity	2 pfennigs/kWh	0.5 pfennigs/kWh

To promote low-emission motor vehicles, the annual **Vehicle Tax** has been restructured. For passenger cars (six vehicle categories) pollutant emissions are now the basis of taxation. The rates are to be increased in several stages over a period extending to the year 2005:

	Petrol	Diesel
	DM/100 cm ³ and year	
Euro 3, Euro 4, 3 litre car	10.00	27.00
Euro 2	12.00	29.00
Euro 1	13.20	37.10
Other cars allowed to operate during smog alert	21.80	45.50
Partially clean, not allowed to operate during smog alert	33.20	57.10
other cars	41.60	65.50

54. **Greece.** An (environmental) tax of 5 drachmas per litre of petrol or diesel fuel is applied. The tax on diesel fuel for transport users is higher than that on diesel fuel for heating.

55. **Hungary.** Product charges are applied to fuels, tyres, batteries, refrigerators, fuel oil and grease.

56. **Italy.** In Italy there is a price differentiation between leaded and unleaded petrol; presently this differentiation is Lit 85/l. A reduced excise duty is applied to fuel oils with a sulphur content of less than 1 per cent.

57. **Latvia.** Law on Excise Tax for Oil Products, approved by Parliament on 13.11.1997, applies differentiated tax for leaded and unleaded gasoline. The difference rises year by year, and up to the year 2000 the leaded gasoline will be more expensive as unleaded. Law on Excise Tax for Oil Products provides the scheme for increase of excise tax from 01.01.1998 to 01.01.2000.

Oil products	Excise tax , 01.01.98; Ecu/l	Excise tax , 01.01.99; Ecu/l	Excise tax, 01.01.2000; Ecu/l
Leaded petrol	0.27	0.28	0.31
Unleaded petrol	0.21	0.23	0.27
Diesel	0.15	0.19	0.23
Other gaseous VOCs, except natural gas	0.015	0.045	0.075

Excise tax has extension regarding fuel for air transport, sea transport and use for agriculture. There are no specific limitations for price formation. VAT is 18%.

58. According Law on Natural Resource Tax the import of mercury luminiscent bulbs, all types of tires, electric power batteries and chemical batteries with purpose of free circulation in the customs area of Latvia is entities subject to the natural resource tax.

Type of products	Unit of measure	Tax rate, Euro
Mercury luminiscent bulbs	Item	0.155
All types of tires	Kg	0.077
Electric power batteries	Value in national currency	15%
Chemical batteries:		
Pb with capacity	Item	2.32
up to 50 Ah	Item	4.64
51-100 Ah	Item	6.97
101-150 Ah	Item	9.29
151 Ah and more	Item	

59. On 04.02.1999, Parliament adopted amendments to the Law on Excise Tax, changing excise tax for imported old cars: for cars up to 10 years age B 15.48 Euro per year; for cars more than 10 years old the excise tax is 31 Euro per year; and in addition there is obligation to pay tax from 46 Euro to 2555 Euro, depending on type of engine for petrol-fuelled and diesel-fuelled cars.

60. **Monaco.** Not relevant (unofficial translation).

61. **Netherlands.** The situation is unchanged from what was reported in the latest reviews. See also Q 56.

62. **Poland.** Differentiated taxes (excise duties) for a list of products, incl. fuels are annually updated by a regulation issued by the Minister of Finances. This year taxes for domestically marketed fuels differ from imported fuels. Additionally the rates are different for different periods of time. In 2000 the following examples of tax levels per 1000 litres were applied: 1399 PLN (app. 350 USD) for leaded petrol, 1257 PLN (app. 314 USD) for unleaded petrol; 926 PLN (app. 232 USD) for diesel oil with 0.05-0.2% of sulphur; 881 PLN (app. 220 USD) for diesel oil with 0.005-0.05% of sulphur; 850 PLN (app. 212 USD) for diesel oil with sulphur content below 0.005%; 418 PLN (app. 105 USD) for diesel oil with at least 10% content of components from recycled oil waste. Apart from the existing economic instruments mentioned above (see Q.54) draft legal acts are now under preparation and discussion introducing other mechanisms, such as:

- (a) Product taxes and environmental deposits;
- (b) fees and charges for the use of public environmental facilities;
- (c) fuel environmental charges and/or coal charges;
- (d) environmental deposits.

63. **Republic of Moldova.** Payment for air pollution by mobile sources, using petrol as fuel (leaded, unleaded) and diesel fuel, is established for juridical and physic persons, importing this kind of fuel. The differentiation is especially used in relation to fuel taxes to encourage the

consumption of less polluting fuels. Differentiation of fuel taxes has, for instance, been widely applied to promote unleaded petrol. In our country payment for air pollution by mobile sources, using petrol as fuel (leaded, unleaded) and diesel fuel, is established for juridical and physic persons, importing this kind of fuel. Payment for air pollution by mobile sources, using leaded fuel and diesel fuel, is established 1% of the òàîæåííé taxation îf fuel. Payment for air pollution by mobile sources, using unleaded fuel, is established 0,5% of the òàîæåííé taxation îf fuel.

64. Actually proposals to introduce modifications in the Law on payment for environmental pollution are under development and their goal is stipulation of payment provisions for some goods that have environmental impact. List of goods that are supposed to be regulated by some economic instruments will include the following:

- (a) Substances depleting ozone layer and products containing those substances;
- (b) Plastic packaging including PVC;
- (c) Heavy fuel oil medium-sulphur and high-sulphur;
- (d) Luminescent lamps;
- (e) Pesticides;
- (f) Cigarettes;
- (g) Auto vehicles accumulators;
- (h) Detergents;
- (i) Mineral oils;
- (j) Naphtaline and other products.

65. **Russian Federation.** In 1998 there was a letter from the Ministry of Finance of the Russian Federation on the introduction of charges for environmental pollution by products resulting from the combustion of motor fuel.

66. **Sweden.** See Question 54

67. **Switzerland.** There is a tax differentiation (8 centimes, approximately 7% of the market price) between unleaded and leaded gasoline. The basic tax for diesel is between the tax for unleaded and leaded petrol, so the retail price of diesel is higher than that of unleaded petrol.

68. **Turkey.** Although these are the taxes on goods and services that affect the environment, such as the gasoline consumption tax, marine vessel, or electricity and coal consumption taxes, they are generally revenue raising instruments and do not aim at significantly altering consumer behaviour. Part of the revenues from taxes on motor vehicle sales and aeroplane tickets is earmarked for environmental purposes. There is some tax differentiation based on environmental considerations for some energy products. For example, the consumption tax is 300 % on leaded gasoline, 290 percent on unleaded, 190 per cent on diesel and 1% per cent on LPG. The difference between unleaded and leaded gasoline prices is not great enough to have a strong incentive effect.

69. **United Kingdom.** Vehicle Excise Duty: In the March 1999 Budget the UK Government announced a package of measures to reform vehicle excise duty (VED) to encourage the use of more environmentally friendly vehicles. These included a reduced rate for cars under 1100cc introduced on 1 June 1999. In the March 2000 budget it was announced that the reduced rate will be extended to cars with engines up to 1,200cc from March 2001. Further, from March 2001, all new cars will be placed into one of four VED bands, based on their rate of carbon dioxide

emissions. There will be discount rates within each band for cars using cleaner fuels and a small supplement for diesel cars to reflect their higher emissions of local air pollutants. The March 1999 Budget also doubled the maximum VED discount for low lorries and buses with low particulate emissions to £1000. Some 13,000 vehicles have benefitted from the concession. The UK Government recently consulted on proposals to tighten the standards which vehicles would need to meet to obtain the concession, and expects to legislate during 2000. In the March 2000 budget a package of reforms to lorry VED included the introduction of a favourable VED rate for 44-tonne lorries meeting European emissions standards.

70. **Fuel Duty:** In the November 1999 pre-Budget statement the UK Government announced the end of pre-determined above inflation increases in fuel duties – previously the UK had a policy of increasing duty on petrol and diesel each year by at least 6% above inflation. From now on the level of duties will be set on a Budget by Budget basis taking into account the Governments environmental commitments as well as economic and social objectives. Revenues from any increases in fuel duties over and above inflation will, in future, go straight to a ring-fenced fund for improving public transport and modernising the road network. In the March 1999 budget, the duty differential between ultra-low sulphur diesel and ordinary diesel was widened to 3p per litre to encourage take-up of the cleaner fuel. The duty differential between diesel and unleaded petrol was also widened to 3p per litre. The Budget also announced a 29% cut in the duty on environmentally-friendly road fuel gases (natural gas and liquefied petroleum gas) to encourage the greater use of these cleaner fuels, giving the UK the widest duty differential between road fuel gases and other types of fuel of any country in the EU. In the March 2000 Budget it was announced that a new 1p per litre cut in duty to help incentivise the use of ultra-low sulphur petrol will be introduced from October 2000.

71. **Industrial Energy Tax:** A levy on the business use of energy (Climate Change Levy), with offsetting cuts in employers' National Insurance Contributions and additional support for energy efficiency schemes and renewable sources of energy, will be introduced from April 2001. The levy is projected to save at least 2M tonnes of Carbon by 2010. The levy is expected to raise £1 billion in 2001/02 with these revenues being used to reduce employers' National Insurance contributions by 0.3 percentage points and to support energy efficiency measures.

72. **United States.** See response to Question 54.

73. **Question 56** If relevant, provide a short description of your country's experience with the use of emission taxes and charges. Also provide information, if possible, on whether such revenues have been earmarked for environmental purposes: e.g. to compensate those that suffer damage from pollution; to subsidize emission control measures; or to compensate for a loss in competitiveness for the industry concerned.

74. **Austria.** Part of the revenues of energy levies are earmarked for energy-saving measures and public transport (see. Q.55).

75. **Belarus.** Taxes on emissions are paid into the budgetary funds for environmental protection from the district (60%), region (30%) and republic (10%). The environmental protection funds of all three levels are constituted from taxes on emissions into the ambient air, discharges into surface water, dumping of waste and mining, and fines for breaches of environmental protection standards and rules. Up to 10% of the resources of the national fund are

used for interest-free loans (over a two-year period) to finance environmental protection measures. Up to 70% of such resources at all levels are ploughed back in the form of investment and shared financing of environmental protection measures. A proportion of the funds goes for research and development work aimed at reducing environmental pollution. Estimated expenditures from district and regional funds are approved by the local authorities, and those from the national fund by the Council of Ministers.

76. **Bulgaria.** System of levying charges for exceeding air pollution emission limits was established in 1993. Control emission measuring at stationary sources is carried out twice a year by the 15 Regional Inspections to the Ministry of Environment and Water. Regional Inspection Directors may levy charges up to 2 000 Lv, while for larger sums, the Ministry of Environment and Water fines the perpetrator. The penalties are collected in a special non-budgetary NEPF account of the Ministry. Penalized companies may appeal the charges in court. A Managing Committee, whose members are Deputy Ministers from all Ministries, runs NEPF and Chairman is the Minister of Environment and Water. Expenditures are only for funding ecological issues, as specified in the Regulation on the accumulation, disbursement and control of NEPF funds (SG 75/95).

77. **Czech Republic.** The existing payment system was established in 1991 by Law No. 389/1991 Coll., on state administration and payments for air pollution, and related regulations. Payments pursuant to this Law shall be paid by the operators of large and medium pollution sources according to the amount and kind of discharged emissions. In both cases the payments are an income for the State Environmental Fund of CR (SEF). Fines laid down by the Czech Environmental Inspection or the administrators of the fund, i.e. ME, are also an income for the fund. The financial means of SEF, including income from air pollution, are subsequently expended for implementation of measures dealing with the most acute problems in the area of the environment. In the area of air protection, these consist particularly in:

- (a) Decreasing emissions of air pollutants from small and medium-sized air pollution sources operated for the purpose of activities in the public benefit;
- (b) decreasing emissions of substances from small and medium-sized air pollution sources;
- (c) use of cogeneration units;
- (d) decreasing emissions of volatile organic compounds;
- (e) protection of the ozone layer of the Earth;
- (f) decreasing emissions and pollution levels in territories.

At the present time, a new program is being prepared, concerned with monitoring amounts and quality in the state monitoring network.

78. The total income from payments for emissions into the air in 1999 equalled about 1100 mil. CZK (31.4 mil. USD). Of this amount, emissions from large sources corresponded to about 85% of the total and income from emissions from medium-sized sources equalled about 15%. The fraction from other sources was negligible. The financial authorities collect the fees. The fees are an income for the State Environmental Fund (subject to the Ministry of the Environment), which uses these incomes entirely for financing investments into protection of the environment. This does not consist only of financing of measures to protect the air, but includes all projects to protect the environment that the fund can support in accord with the regulations. The payments from small sources are an income for the municipalities, in whose territory the source subject to

payments is located. This is an income for the municipal budget and its use should be bound to protection of the environment in the municipality.

79. **Georgia.** Air and water discharge taxes are differentiated under and above emission limits. Above the limits (on exceedances of the limit value) tax 5 times as much as that under the limit. There is no revenue earmarking. All revenues go to the State Budget.

80. **Germany.** Taxes on mineral oil and motor vehicles are not earmarked. The eco-tax is earmarked for the reduction of social security contributions.

81. **Greece.** In general, the receipts from the abovementioned environmental tax (R.55) and the sums earmarked for the regions having lignite-fired power stations are used for environmental action and bodies.

82. **Hungary.** The revenues coming from the product charges get to the Environmental Fund and have been earmarked for environmental purposes.

83. **Italy.** On December 1998, a Carbon Tax was approved by the Italian Parliament. It is aimed at reducing the consumption of energy products with high percentage of carbon in favour of products with lower percentages of carbon, thus to improve energy efficiency and fostering the use of renewable energy sources. In Italy in fact renewable are not subject to taxation. The Carbon tax will finance CO₂ emissions reduction projects: about 150 millions US dollars of the 1999 revenues of the Carbon Tax will be allocated to support projects to implement the Kyoto Protocol. The new excise will be enforced gradually in 5 years. According to this bill, revenues of about 10,500 GLit will be collected in the year 2005. The prices will increase differently according to the sector and the fuel (see table below). The carbon tax anticipates the introduction in Italy of the so called “Monti directive”, the EU proposal that tries to harmonise the minimum taxation levels on energy products across member states. The price of gasoline remains 10% above the minimum proposed level, the excise of diesel, LPG and methane for transport have been increased in order to become 10% of the minimum proposed level. Above this level, an environmental tax has been applied: 10 Lit/kg CO₂ for methane, 50 Lit/kg for all other liquid fuels based on the carbon content of the fuels, such tax is reduced to 4 and 14 for electricity production. Fuel prices in 2005, as modified by the actual carbon – energy tax will be:

Sector /	Unit	Effect on total price			c-tax +
Fuels	of	Lire / quantities		Lit /kep	VAT
	measure	variation	%		taxation
Trasport					(GLit)
petrol, 98	lt	46	2.5%	60	447
petrol, 95	lt	154	8.7%	198	2272
diesel fuel	lt	190	13.9%	223	4404
LPG	lt	-133	-15.7%	-209	-307
NGL	mc	120	18.8%	145	37
			8.7%	(a)	6852
Civil					
diesel fuel	lt	190	14.0%	223	704
natural gas	mc	20	2.0%	25	413
n. gas: cooking, w.	mc	7	0.9%	8	45

water					
very fluid f. oil, low s.	lt	199	15.3%	221	11
fluid fuel oil, low s.	lt	309	51.1%	343	338
LPG	lt	30	4.5%	44	105
fuel oil, low s.	lt	360	127.0%	400	0
coke / coal	kg	50	24.0%	72	10
wood	kg	0	0.0%	0	0
			3.0%	(a)	1627
Agriculture / fishing					
diesel fuel	lt	36	6.0%	43	97
natural gas	mc	7	1.2%	8	1
					98
Industry					
diesel fuel	lt	190	14.0%	223	141
diesel fuel	lt	57	7.9%	67	13
fuel oil, high s.	kg	175	66.4%	179	35
fuel oil, low s.	kg	83	34.9%	84	286
natural gas	mc	24	7.3%	29	433
coal	kg	0	0.0%	0	0
pet coke	kg	71	74.1%	86	142
					1051
Refinery					
refinery gas	mc	0	0.0%	0	0
fuel oil, low s.	kg	12	7.1%	12	30
			11.8%	(b)	30
Power plants					
fuel oil, aver.	kg	14	5.1%	14	285
fuel oil, high s.	kg	14	6.4%	14	0
diesel fuel	lt	4	0.8%	4	6
natural gas	mc	10	4.0%	13	155
coal	kg	50	44.0%	79	377
orimulsion	kg	37	34.3%	56	0
Termoel. Autoprod.					
fuel oil, high s.	kg	12	5.2%	12	12
diesel fuel	kg	7	1.7%	9	0
natural gas	mc	3	1.2%	3	2
			9.2%	(a)	838
					10495
(a) sector average; (b) average of industry, agric. and refinery					

Another revenue that have been earmarked for environmental purpose is related to an aircraft noise tax. The tax is used for environmental monitoring and reclaiming of the airports, and it is based on taking-off and landing.

84. **Latvia.** The tax allowance referred to the Law on Natural Resource Tax can be granted to the tax payer which funds the projects aimed to reduce environment pollution when implementing technological improvements or environment protection measures. The tax payments for consumption of mercury luminiscent bulbs, tires, and batteries shall be refunded to the individuals which hand the remnants of the aforesaid products for recycling, and to the enterprises (companies) which perform the disposal or recycling of these products. Latvian

Environmental Protection Fund is institution for allocation of subsidies. Apart from the natural resource tax, excise tax, the following economic instruments are available and often used in Latvia:

- (a) Subsidies, e.g. budget subsidies;
- (b) credit by the Environmental Investment fund, Self-government Environment Investment Fund, or different foreign donors, and soft loans;
- (c) Guarantee Agency of Latvia guarantees state loans for municipalities to implement environmental protection projects;
- (d) administrative charges for issuing permits and licences;
- (e) compensation for environmental damage.

85. **Netherlands.** The tax rate on fuels is derived from the energy content (50 %) and the CO₂ emission (50 %). The fuels which are taxed are petrol, light fuel oil and other mineral oils, LPG, coal gas, natural gas and residuals which are used in the chemical and petroleum industries. Leaded petrol (no longer on the market) is taxed at 1,299 NLG/l, unleaded petrol at 1,256 NLG/l, diesel fuel at 0,736NLG/l and LPG at 0,262 NLG/kg. In 1996 a regulatory tax on the small-scale use of gas and electricity entered into force. This tax applies to the first 170.000m³ of gas and 50.000 kWh of electricity used per year and is charged in addition to the fuel tax. Taxes on ammonia were considered, but not implemented due to the existing economic pressure on farmers. Only passengers cars are charged a registration tax (roughly 1/3 of the retail price). Annual road taxes are as follows:

- (a) Passenger cars (average car, curb weight 1,100 kg): petrol engine vehicles, 852 NLG; diesel engine vehicles, 1680 NLG; LPG-equipped vehicles, conventional equipment, 1816 NLG; advanced equipment 1568 NLG;
 - (b) Light and heavy duty truck and buses: annual tax not differentiated according to fuel type;
 - (c) Buses for public transport: no annual tax for gaseous fuels (LPG and CNG).
- Revenues acquired from fines are not earmarked for pollution abatement.

86. **Poland.** Fees, in the first place, are an effective mechanism for collecting financial resources for environmental goals. Their direct impact on enterprises aiming at undertaking environmental activities is limited but in some cases (depending on the type of production) it is a significant element to their environmental approach in the management policy on a plant level. In general, the Polish Government considers the fee mechanism to be environmentally effective.

87. **Republic of Moldova.** The funds' resources are channeled to environmental protection measures of significance at the republic and local level, in the form of non-reimbursable or interest-free aid. Taxes for environmental pollution that were gathered during 1999 and accumulated on the account of the National Environmental Fund were foreseen for the following expenditures:

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

- (i) Co-financing of environmental projects;
- (j) Financing of NGO basing of grants program etc.

88. **Russian Federation.** In accordance with the instructions and guidelines on charges for environmental pollution, the expenditures of natural resource users on environmental protection measures implementing the main provisions of international agreements on environmental protection or under environmental programmes must be considered by the regional bodies of the State Environmental Committee of the Russian Federation with a view to offsetting them against the charges on a priority basis.

89. **Slovakia.** All emission charges and fees are the income of the State Environmental Fund. The portion earned from air pollution charges is then used for air protection activities, based on applications, submitted through the regional and district offices to the SEF, mostly for activities, which are not commercially feasible (contributions to gasification of small municipalities, NGOs, biomass...)

90. **Sweden.** See answer to Q.54

91. **Switzerland.** Description of the redistribution to the population of the S and VOC incentive taxes revenue through the mandatory health insurance. Ordinance on incentive taxes on VOC of 12 November 1997. Article 23 Distribution of revenue from the tax: "Insurance companies who provide the mandatory health insurance required by the Federal Law on Health Insurance shall distribute the revenue to the population, on the mandate and under the supervision of the Federal Office for the Environment. They shall be reimbursed for their administrative expenses. The distribution of one year's revenue, defined as the revenue collected by 31 December including interest, shall be carried out in the subsequent year, this shall take place for the first time in the year 2002. The insurers shall pay out to each recipient the amount due by 31 December of the year of payment, and shall inform the recipients of the amount credited to them. The distribution of revenue from the tax shall be in equal part to all persons, subject to mandatory health insurance and with domicile in Switzerland, who are insured on 1 January of the year of payment."

92. **Turkey.** In Turkey emission taxes and charges mechanisms are not applied.

93. **United Kingdom.** The UK Government does not currently operate a system of emissions charges or taxes.

94. **United States.** See response to Q.54. In addition: The 1989 Budget Reconciliation Act (Public Law 101-239, a congressional budget law) included an excise tax on the production of the five chlorofluorocarbons (CFCs) and three halons regulated under the original Montreal Protocol. The tax was expanded in the 1990 Budget Reconciliation Act (Public Law 101-508) to cover more CFCs, carbon tetrachloride and methyl chloroform. The Energy Policy Act of 1992 (Public Law 102-486) increased the excise taxes on ozone-depleting chemicals. The first year the tax was collected was 1990. In addition to a tax on manufacturers and importers, which increases over time, there is a floor stock tax for firms using taxed substances in their products, which decreases over time. Rates for each substance reflect the ozone-depleting potential of the substance. Revenues go to the general treasury and are not earmarked for environmental purposes. By helping to increase the price of ozone-depleting substances, the tax added to the incentives to

switch to substitutes created by the regulatory phaseout of CFCs and other key ozone depleting substances under the Montreal Protocol and Clean Air Act.

95. The September 1999 draft of the U.S. EPA's Economic Incentive Program guidance (chapters 10 and 17.1) proposes a new type of economic incentive program, known as a clean air investment fund, or CAIF. Sources that find that the cost of reducing emissions exceeds a specified cost per ton (\$10,000 per ton, for example) would have the option of paying that amount into the fund. The state would then use the funds to purchase emission reductions at a lower cost, or use the money to fund research and development of improved control technology. This draft guidance is available on the U.S. EPA's Technology Transfer Network/Economics & Cost Analysis Support webpage at: <http://www.epa.gov/ttn/ecas/innostra.htm>

96. **Question 57** If applicable, please provide a short description of your country's financial assistance schemes that lead to a decrease in the emissions of major air pollutants covered by the Convention and its protocols.

97. **Austria.** Measures for emission reduction, energy-saving and renewable energy in the commercial/industrial sector can receive financial support according to the federal Environmental Support Act. Promotion of biomass for energy use is granted by the Federation („Eco-Energy-Fund“) and the federal provinces. District heating projects, which have been started before 1993, have been supported according to the District Heating Promotion Act; current projects can receive financial assistance from the federal provinces. The federal provinces grant subsidies for the construction and rehabilitation of residential buildings, an increasing part of which is coupled to energy efficiency parameters. Subsidies from provinces and municipalities exist for the installation of solar collectors and heat pumps and for the purchase of electric vehicles.

98. In the agricultural sector, subsidies for organic and extensive (integrated husbandry and reduced fertilizer use) farming are granted. These farming methods bring about reductions in the use of pesticides, fertilizers and energy and thus contribute to a reduction of emissions covered by the Convention and its protocols. There are also tax reductions and exemptions (e.g. for public transport, electric cars, vehicles for use in combined transport), which may be seen as a form of financial assistance.

99. **Belarus.** See answer to question 56.

100. **Belgium.** Walloon region: Pursuant to the legislation on economic expansion, a subsidy may be granted to enterprises of up to 20% of the necessary investment cost to enable the enterprise to meet more rigorous standards than those set by the region, the State or the European Union (the rate varies according to the amount of effort expended in exceeding the usual standards). A fixed subsidy of 15% may be granted to enterprises which clean up a polluted site.

101. Increased tax deductions may be granted for investment in research and development relating to new products or new technologies with minimal or no impact on the environment. Another research and development programme grants subsidies or repayable advances (between 50% and 70%) for programmes pertaining to the prevention of industrial pollution, recycling or treatment of effluents, emissions control and effective methods of dealing with industrial pollution. In addition, any arrangements for the granting of assistance in the Walloon region, relating to an investment which has nothing *a priori* to do with the environment, is subject to

compliance with social, fiscal and environmental legislation. Some banks make the granting of their assistance conditional on a certified undertaking to comply with environmental legislation.

102. **Brussels capital region:** The order of 1 July 1993 relating to the promotion of economic expansion in the Brussels capital region (published in the *Moniteur belge* on 31 July 1993) stipulates that assistance grants may be given to enterprises for investments made in the territory of the region and in pursuit of one or more objectives which are listed; these include the rational use of energy and protection of the environment. The level of such assistance may be as much as 20% of the cost of the investment.

103. **Flemish region:** For measures for environmental protection and energy saving, companies can apply for ecology support. A subsidy signpost is available on the website of the Administration of Economy and informs about the different possibilities and conditions. The subsidies differ whether a small (support up to 20%) or a big company is applying and differ according to the character of the measures (e.g. 12% for process integrated measures, 10% for energy saving measures and 8% for end of the pipe techniques).

104. **Bulgaria:** The following financial assistance schemes, leading to a decrease in the emissions of major air pollutants are employed in Bulgaria:

(a) No-interest loans and cash grants from the National Environment Protection Fund. Financial sources are: pollution charges, taxes, 5% of privatization revenues from the privatization of state enterprises, grants, etc;

(b) No-interest loans and cash grants from the National Trust Fund (SG 63/2995), in which the revenues from the debt-for-environment swaps are accumulated;

(c) Grants from the EU PHARE programme. The Governments of Denmark, Germany, the Netherlands and others for the implementation of joint projects grant significant financial assistance under bilateral agreements;

(d) Fine write-offs. By amendment of the Regulation on charges for environmental damages (SG 34/1997), 80% of the fine may remain in the company for investing in pollution abatement and achieving permissible emission limit values. An implementation control and supervision procedure was drafted, as well;

(e) Value Added Tax (VAT) exemption. By amendment of the Environment Protection Act (SG 62/1998), goods and services imported on International Grant agreements are VAT exempt. For example, the Grant Agreement with the World Bank, amounting to 10.5 mln. USD for procurement of equipment and technologies for the phasing out of ozone depleting substances;

(f) Low-interest loans and accelerated write-off allowances. Such loans, amounting to 80 mln. USD were received from Japan for the reconstruction of the non-ferrous plants in Plovdiv and Eliseina;

(g) Fine write-offs upon agreement to invest in technological reconstruction and achieving permissible emission limit values for a period, not longer than five years is provided in the Regulation on Temporary Emission Limit Values (SG 51/1998). The technological reconstruction of the non-ferrous plant in Pirdop, owned by the Belgium Company Union Miniere was negotiated this way.

105. **Canada.** The federal and provincial governments have many programs for funding a wide range of projects, including pollution abatement projects, in small and medium sized enterprises. They have grant, loan, investment and equity programs for funding technology research, development, commercialization and export. There are also tax credits and refunds available for

research and development. Programs include the Industrial Research Assistance Program, the Science Research and Experimental Tax incentive program, Technology Partnerships Canada, and the First Time Scientific Research and Experimental Development Claimant Service.

106. **Cyprus:** The Government of Cyprus adopted the following forms of financial assistance:
- (a) A cash grants scheme through Government funds up to 30% of the total investment in pollution abatement equipment with a ceiling value of CY Pounds 75,000 (equivalent to about USD 150,000);
 - (b) a cash grants scheme of up to 25% of the total investment for the installation of modern technologies equipment;
 - (c) A scheme of cash grants by the Institute of Technology, that covers up to 40% with max USD 12000 the cost of studies carried out for investments in the industrial sector, including investments in clean technologies and pollution control installations, and 50% of consultancy fees during the implementation of the study, with max USD 5000.

107. **Czech Republic.** State financial assistance leading to a decrease in the emissions of the chief air pollutants provide particularly for programs announced by the Ministry of the Environment in the framework of the ME Directive on provision of financial means from SEF. For the area of air protection, an application can be submitted for support for implementation of measures in the framework of the following programs:

108. The program for decreasing the principal pollutants and protection of the climate of the earth with emphasis on energy-saving approaches: The target of the program is to decrease emissions of substances and CO₂ from air pollution sources with emphasis on energy-saving approaches, including the creation of preconditions for reconstruction of air pollution sources through development of the infrastructure in municipalities. This includes the Program of development of the infrastructure of small municipalities, intended for municipalities of up to 1000 inhabitants. It contains especially the following measures:

- (a) construction of the public parts of the connections and medium-pressure gas pipelines;
- (b) construction of the public parts of the connections and networks of central heat supplies.

The program contributes to compliance with the protocol to CLRTAP on decreasing emissions of volatile organic compounds.

109. Program for compliance with the UN ECE Protocol on decreasing emissions of volatile organic compounds: The target of the program is to decrease air pollution by organic compounds for the installations of technical processes for small and medium-sized air pollution sources. For example, the following technology is involved:

- (a) Coating application technology;
- (b) Polygraphics;
- (c) degreasing of metals and electro-components with chlorinated organic solvents;
- (d) cleaning of textiles, leather and furs using organic solvents.

110. Program for attaining air quality in relation to the requirements of the European Union: The target of the program is to prepare action plans for environmental protection in the area of protection of the air and their gradual implementation on the basis of determination of the air quality in relation to human health and the environment. This is to be achieved through the use of joint methods and criteria, obtaining of data and the availability of information on the air and

maintenance of air quality in areas with acceptable pollution levels and improvement of air quality everywhere where there is excessive pollution. The expected output consists in a Program of implementation of concepts in emissions and imissions of pollutants. The target of the program consists in implementation of measures leading to a decrease in emissions and imissions of pollutants discharged into the air from local sources that significantly affect the air quality in the region. The program will be implemented on the basis of elaborated concepts of decreasing emissions and the imission burden according to the individual methods of SEF in cooperation with the locally competent authorities, institutions and public benefit organizations through public calls for tenders.

111. **Germany.** Financial assistance schemes subject to special terms are available in particular to medium-sized companies for pollution abatement measures. Direct subsidies, low-interest credits and special depreciation allowances are granted for measures to promote a rational and economical use of energy and for renewable energies. Commercial-scale demonstration projects can be supported with subsidies amounting to up to 30% of the sum invested provided they serve to generate knowledge about the measures' technical and economic feasibility as a basis for relevant regulations. Depending on federal interest, research and development projects can be supported at rates of up to 100%.

112. **Hungary.** The Environmental Fund was established in 1992. The main purposes of the Fund are:

- (a) To develop the environmentally sound economic structure;
- (b) to prevent the harmful effects of the human activities;
- (c) to reduce the contamination in the environment;
- (d) to maintain the protected natural areas.

Investors for the different purposes of air protection can apply for financial support (grant or low-interest loans) to the Environmental Fund.

113. **Monaco.** The Government of Monaco has set up a grant scheme to replace fossil-fuelled vehicles by electric ones. The scheme applies only to company cars. Government departments use electric vehicles whenever possible (unofficial translation).

114. **Netherlands.** The Netherlands will be using 165miljon NLG to reduce NOx emissions. Please also refer to Q 58.

115. **Poland.** Forms of financial assistance used in Poland depend on the project type, the investor and the financing institution. The most often used are the following assistance schemes leading to emission reduction of major air pollutants:

(a) Low interest rate loans. The lowest rates are applied to priority projects. Possible are also cancellations of parts of the loan repayments. The basic criteria for granting the preferential loan interest rate and partial loan redemption is the possibility of obtaining the expected environmental outcome in time. Loans are granted by the national and provincial funds for environmental protection and water management and are operated by a banking system, including the Environmental Protection Bank;

(b) Subsidies from environmental funds. They apply to selected areas selected areas such as nature protection, environmental education, scientific research, health protection etc.;

- (c) Bank loans. The differences between commercial and preferential interest rates are covered by environmental funds;
- (d) Budget subsidies from central and regional budgets;
- (e) Subsidies and grants from the ECOFUND Foundation and foreign environmental assistance funds;
- (f) Loan consortia established by the National Fund for Environmental Protection and Water Management jointly with the Environmental Protection Bank and other entities to finance strategic environmental projects.

The national and regional funds for environmental protection and water management are distributed in the form of loans and subsidies. The Environmental Protection Bank provides credits, in particular for air pollution abatement equipment, emission control and measuring devices. Indirect subsidies for environmental expenditures and investments are provided by granting discounts on income taxes, turnover taxes and agricultural taxes.

116. **Republic of Moldova.** Industrial enterprises could obtain financial support from local and national ecological funds in order to reduce of emissions of pollutants. Ecological funds may accomplish the follow kinds of finance:

- (a) Irrevocable subsidies or grants;
- (b) Privileged no-interest or low-interest rate credits;
- (c) Credits with guaranties;
- (d) Subsidies for percent payment on credit (for organizations which take bank credit for environmental projects).

Enterprise has (must) present to ecological fund a project where it passes certain stages of evaluation and selection. The project will be financed in case of positive conclusion. The enterprise will be released from payment for pollution of environment, including atmospheric air, when it will realize actions on emission reducing of pollutants (on personal account). The list of measures that counts in payment for pollution is indicated in the Law on Payment for Pollution of the environment. There is also the possibility of subsidies from national and local ecological funds for environmental education scientific research and health protection, development monitoring.

117. **Switzerland.** In general, application of polluter-pays principle without subsidies for new emission control measures or retro-fitting.

118. **Turkey.** The Environmental Pollution Prevention Fund, as well as the Bank of Provinces, has provided funding for a number of air management related projects. Discounted energy pricing is available for water and air treatment plants. Grants are also available to help enterprises to cover up to half the costs incurred in obtaining a compliance (quality assurance) certificate and logo from the Turkish Institute of Standards (TSE). Fifty per cent of the cost, up to US \$ 1,000, is available to fund audits for compliance with internationally accepted environmental standards.

119. **United Kingdom.** Please see answer on energy efficiency to question 19 above.

120. **United States.** The U.S. EPA has provided financial assistance to small businesses that face compliance with various air pollution regulations through the Small Business Stationary Source Technical and Environmental Compliance Assistance Program (Section 507 of the 1990 Clean Air Act Amendments). This programme has provided assistance, technical as well as

financial, to hundreds of small businesses since 1990. The EPA has also sponsored the development of Clean Air Investment Funds (or CAIFs) in States and locales. A CAIF allows firms facing high pollution control costs to pay into a fund rather than control emissions themselves. The fund revenues can then be used to purchase additional emission reductions from lower cost sources. A CAIF can therefore facilitate continued progress on reducing pollution while easing compliance for sources choosing to pay into the fund. Finally, EPA has helped fund more than 50 transportation-related grants to encourage reduction of pollution from mobile sources in various States and locales. A list of these grants can be found at <http://yosemite.epa.gov/aa/grants.nsf>.

121. Question 58 While subsidies have been used to support the introduction of new technologies, thus benefiting the environment, they have also been adopted on a widespread scale in the energy and transport sectors with detrimental effects on the environment. If applicable, describe shortly your country's experience in this domain.

122. **Austria.** Direct subsidies shouldn't have severe detrimental effects on the environment any longer, as most funding guidelines request that funded projects do not have detrimental effects on the environment. Nevertheless the tax system provides tax reductions and exemptions („indirect subsidies“), which may increase emissions. They are either the result of international obligations (tax exemption for kerosene in aviation) or of currently unresolvable divergent interests (the exemption of sectors with high energy consumption was prerequisite for a compromise on the taxation of electricity and natural gas; the reduction of income tax for commuters compensates for higher transport costs and increases the necessary ability of employees to commute to distant sites, but on the other hand it may be an incentive for migration from the city and create new commuters and more traffic therefore).

123. **Bulgaria.** All financial assistance schemes, described in A. 57 have been used to support the introduction of new technologies in the energy, industry and transport sectors.

124. **Canada.** The focus of Government of Canada energy-related expenditures, including grants and contributions which support energy technology, has changed over the years. An important trend has been a shift away from the late 1970s and early 1980s focus on the security of energy supply. Current spending is now mainly directed at finding cost-effective ways to expand the use of renewable energy and to increase energy efficiency, both of which have an impact on Canada's emissions of greenhouse gases.

125. **Croatia.** The Law on Air Quality Protection anticipates that economic instruments will also be used. A special regulation or a governmental decision should be adopted to prescribe the allowances and exemptions from taxation, custom duties and other levies for: purchasing equipment/techniques for air emission abatement, cleaner technologies/raw materials, developing and using renewable energy sources, waste recycling and monitoring instruments. These economic instruments were included in the Law on Tax on Turnover of Products and Services, valid until the end of 1997. However, the current Value-Added Tax Law does not foresee such exemptions. Only a case-by-case exemption from custom duties is still possible. The desulphurization unit for Plomin II, the hazardous waste incineration plant PUTO, or the Claus process equipment in the Rijeka refinery are examples.

126. **Czech Republic.** One of the measures for decreasing the detrimental impacts of transportation in cities is the ME Program of support for the infrastructure of environmentally sound urban transportation. The target of the program is support for extension of urban transportation operated by natural gas or electricity, through the creation or extension of the technical base, i.e. construction of filling or charging stations, etc. The condition for provision of assistance consists in accord of the proposed measures with the territorial plan of the affected territory or the transportation conception. The program is primarily directed towards the territories of cities and districts requiring special air protection.

127. **Denmark.** ANS Q.54-Q.58. The Danish Energy Taxation System: In 1996, the existing energy taxation system was extended. The CO₂ tax was increased and the design of the CO₂ tax system was adjusted and adopted its present form. The purpose is to reduce the emissions of CO₂ without distorting the competitiveness between companies. Furthermore, a sulphur tax was introduced.

128. The present energy taxation system consists of three different taxes: an energy tax, a CO₂ tax and a sulphur tax. The energy taxes on oil, coal, gas and electricity are determined according to the gross energy content of the different fuels. The CO₂ tax rate on energy is determined according to the CO₂ emissions on combustion by the different fuels. The sulphur tax rate on energy depends on the content of sulphur of the fuels or the net SO₂ emission on combustion.

129. Energy taxes are fully reimbursed to companies for energy used in industrial processes. The CO₂ tax is partially reimbursed to companies. The present tax reimbursement system provides concessions for energy intensive applications of energy, regardless of where or in which company the application arises. The most energy-intensive processes, which are identified as heavy processes, face the highest rate of refund, i.e. the lowest CO₂ tax rates. Presently, 35 processes are identified as heavy processes in an appendix to the Act. All other processes are characterised as light processes and receive a lower rate of reimbursement; i.e. the net CO₂ tax is higher than for heavy processes. The CO₂-tax allows for having a low marginal taxation on the most energy intensive processes, but in such a way that the CO₂ tax burden per unit produced increases. Energy used for space heating in companies is subject to energy-, CO₂- and sulphur taxes without reimbursement. Furthermore, the rates of reimbursement for heavy processes depend on whether the company has entered into a voluntary agreement with the authorities. The use of agreements between the authorities and the companies is to be seen as a means of promoting energy efficiency measures in trade and industry. Companies carrying out heavy processes can enter into a voluntary agreement, as the agreements are conceived as a suitable instrument to improve the degree of energy efficiency and thereby contribute to reducing the emissions of CO₂. The rate of refund increases if the company enters into a voluntary agreement with the authorities on improving its energy efficiency.

130. As a consequence of the energy tax system introduced in 1996, the tax revenue increased and the additional revenue was to be re-transferred to industry and trade. The re-transfer is effected through reduced labour market contributions and reduced pension payments paid by the enterprises; through subsidies to investments in energy-saving technology and finally through various retransfer systems for the group of self-employed that do not benefit from reduced non-wage labour costs.

131. **Germany.** No cases reported

132. **Monaco.** In addition to a smoke-cleaning system, the urban waste incinerator is also fitted with an energy recovery unit intended for street lighting and for heating and air conditioning system of government buildings (unofficial translation).

133. **Netherlands:** In the Netherlands recently a study is completed on so called environmental harmful subsidies. The goal of this study was to list the direct subsidies that have environmental harmful effects and investigate what ways there are to (partly or in whole) take away these effects. Fiscal subsidies with environmental harmful effects were listed but not investigated. The scope of the study included subsidies in the energy and transport sectors. It was found that in general subsidies do have sometimes environmental harmful effects, but these effects can seldom be taken away unless the goal of the subsidy itself is given up. The study did not have to make a judgement whether the environment or the goal of the subsidy was more important.

134. **Poland.** See Question 7 (information included there relates to all air pollutants).

135. **Republic of Moldova:** Central funding of environmental protection projects has now practically ceased. Consequently, one of the most widespread forms of subsidy is the granting of resources from national or local ecological funds. Funds for environmental protection projects are generally granted on non-reimbursable or interest-free terms. Funding may also be obtained through the development and governmental approval of targeted integrated programmes or decisions designed to address the most acute environmental problems. The stipulations listed in Q.57, spread on all enterprises, including energy and transport enterprises

136. **Switzerland.** In general, application of polluter-pays principle with two exceptions:
(a) Small amount of subsidies for the replacement of oil heating systems by geothermal heat pumps and for the promotion of solar energy;
(b) Subsidies are allocated to municipalities and cantons for the implementation of certain measures to reduce air pollution from transport infrastructure (e.g. road building with traffic moderation, roundabout).

137. **United States .** See response to Question 54.

138. **Question 59 If applicable, briefly describe the market incentives, such as labelling and procurement policies, used in your country to further reduce emissions from and/or generation of substances covered by the Convention and its protocols.**

139. **Austria.** The existing voluntary labelling scheme for environmentally friendly products („Umweltzeichen“) takes account of a product's influence on environment during the whole life-cycle. Emissions covered by the Convention and its protocols are one of the aspects considered within this integrated assessment. Procurement policy of many public institutions takes the environmental effects of products into account. There is also an Austrian „Eco-Label“ for enterprises in tourism (hotels, boarding-houses etc.); use of environmentally friendly products and efficient use of energy are part of the requirements for the label to be awarded. An increasing number of enterprises (industry, transport, banking business) is registered under the Eco-Management and Audit Scheme (EMAS); the procurement policy of these enterprises will also be a market incentive for environmentally friendly products.

140. **Canada.** The Environmental Technology Verification (ETV) Program aims to accelerate the application of innovative technologies that address environmental priorities. It provides independent third party assessment and validation of performance claims. Once verified, the successful company is entitled to use the ETV Logo, a Verification Certificate, a Technology Fact Sheet defining conditions of performance, and the Verification Report in their marketing activities.

141. Canada's Environmental Choice Program is an Ecolabelling program, which develops and promotes standards of environmental preferability against which products and services can be assessed. Certification entitles a company to incorporate the EcoLogo (the program's certification mark) in their advertising and promotional efforts. To date more than 7000 products, services and technologies have been certified by the program. Examples include low VOC paints; products made from recycled plastic, paper and rubber; renewable low-impact electricity; energy efficient tires; and vegetable based lubricants and printing services.

142. **Czech Republic.** In order to support the use of products with low VOC content (such as water-based coating materials), value added tax is decreased from the usual 22% to 5% for these products. At the present time, further advantages for products with low solvent contents are being considered in connection with the new Law on protection of the air.

143. **Germany.** Environmentally friendlier products can be awarded the "Blue Angel" environmental label. As far as products of relevance to air quality control are concerned, the label has been awarded for example to low-emission oil and gas burners and to paints low in (content of less than 10 to 15 wt.%) or free of solvents. For the public sector environmentally friendly procurement is required under the Budgetary Principles Act.

144. **Hungary.** A system of eco-labelling is in place. Environmentally sound products and technologies can apply for eco-label. Having this distinctive mark only half of the product charge should be paid.

145. **Monaco.** Given Monaco's customs agreement the countries of the European Union, Community measures are reflected in the Principality (unofficial translation).

146. **Netherlands.** In the Netherlands exists a national ecolabelsystem, which takes into account all possible environmental aspects related to the life cycle of the product. One of these aspects concerns air pollution, for example VOC or emissions because of energy use. Recently the Dutch government has started a program for public green procurement. Information will be gathered for a great number of products and services bought (e.g. paper, furniture) or delivered (e.g. maintenance of public parks in the city) by the government. The information is available on the website. At the moment about four products/ services are available.

147. **Poland.** Eco-labelling of products has been introduced in Poland as one of the market incentives stimulating emission reduction. Although eco-labelling has a voluntary nature companies are encouraged to submit for this sign within the national system for testing and certification. A system of preferential credits granted for environmental investments also plays an economically stimulating role. Such credits are granted by the Environmental Protection Bank

and their low interest rates are refinanced by the National Fund for Environmental Protection and Water Management.

148. **Republic of Moldova.** Data not available.

149. **Sweden.** Market incentives. There are two major volunteer labelling systems. One is organized together with the Nordic countries, the Nordic Swan. The Swan is available for several products important for air pollution e.g. oil burners, wood stoves and pulp and paper production. An other is a Falcon, organized by Swedish Society for the Conservation of Nature. There are provisions for more detailed environmental product information. The first products have now got licences. There is a system with environmental classification of automobiles; I, II and III. Higher standards for durability and low emissions regarding classification of motorfuels, see above.

150. **Switzerland.** The Ordinance relating to Environmentally Hazardous Substances of 1986 regulates the import, the production, the supply, the use and the export of substances that may present a hazard to the environment. It comprises instructions for the environmental impact assessment of new and existing substances and products. Corresponding to the assessment, the substances must be labelled with information on the type of hazard, on the methods of disposal and on other particular instructions such as safety instructions. In addition to the general regulations, annexes to this ordinance contain special regulations for particular groups of chemicals. Among them, several are of special interest regarding the emissions of hazardous substances into the atmosphere which may occur during production and use or during waste treatment (e.g. CFCs, halogenated organic compounds, heavy metals).

151. **Turkey.** According to the Regulation on the Phase-out of Ozone Depleting Substances which entered into force on 25h July 1999, importers of ozone depleting substances (those listed I in Annex A and Annex B Group II and III of the Protocol) are obliged to clearly label the package or the container in which the substance is transported with the warning inscription "Endangers the Ozone Layer". The importers of some products which either contain those substances or whose functioning relies on them are also obliged to include the name of the substance contained in the imported product on the documents accompanying the importation.

152. **United Kingdom.** The Government supports EU mandatory energy labels and minimum energy efficiency standards for domestic products. To date, regulations have been introduced requiring energy labels for refrigeration appliances (*The Energy Information (Refrigerators and Freezers) Regulations 1994* (SI 1994/3076)), washing machines (*The Energy Information (Washing Machines) Regulations 1996* (SI 1996/600)), electric tumble dryers (*The Energy Information (Tumble Driers) Regulations 1996* (SI 1996/601)), combined washer-dryers (*The Energy Information (Combined Washer-driers) Regulations 1997* (SI 1997/1624)), dishwashers (*The Energy Information (Dishwashers) Regulations 1999* (SI 1999/1676)) and lighting (*The Energy Information (Lamps) Regulations 1999* (SI 1999/1517)). Proposals to extend labelling to boilers, gas tumble dryers, ovens, water heaters and air conditioning units are under consideration.

153. Regulations have been introduced removing inefficient boilers (*The Boiler (Efficiency) Regulations 1993* (SI 1993/3083) and *The Boiler Efficiency (Amendment) Regulations 1994* (SI 1994/3083)) and refrigeration appliances (*The Energy Efficiency (Refrigerators and Freezers) Regulations 1997* (SI 1997/1941)) from the European market, and proposals for similar mandatory minimum standards for fluorescent lamp ballasts are being developed. In addition,

voluntary agreements have been reached with European manufacturers improving the stand-by power of televisions and video cassette recorders, and removing inefficient washing machines from the European market. Informal discussions are taking place on possible agreements and measures to raise the efficiency of other appliances and components.

154. The Government also participates in the EU ecolabelling scheme, established by Regulation in 1992, which aims to encourage consumers to buy, and manufacturers to produce, products which do less damage to the environment than their alternatives. Products are selected, and criteria set, on the basis of their most significant environmental impacts over their life cycle. Criteria have been adopted for 15 product groups.

155. **United States.** Market-based approaches are being used to accomplish environmental goals at lower costs than traditional command and control regulation in the United States. For example, the Acid Rain Program, a federal emissions trading programme for sulphur dioxide, is an example of an existing large-scale, market-based environmental programme.

156. The programme for SO₂ emission reduction is built on a market-based system of tradeable allowances. Each regulated entity is allocated a set of allowances that it uses to cover actual SO₂ emissions, bank for later use, or sell to others. The trading programme allows power plants more flexibility in planning how to achieve the required reductions in emissions and facilitates cost savings. Annual allowances are allocated to affected units based on historical fuel use, emission rates specified in the law and the overall approximately 40 percent reduction in emission levels from 1980 levels from these sources. Those sources that reduce emissions the most have the greatest amount of allowances available for trading. In the first auctions held by the Chicago Board of Trade, environmental groups purchased allowances to retire them. Enforcement is provided by an automated system to track trading and continuous emission monitors. In the first Phase of the Acid Rain Program (1995-1999), sulphur dioxide emissions have dropped by 4 million tons annually. Throughout the first Phase, SO₂ emissions were controlled below allowable levels. For example, in 1998, emissions were reduced 1.3 million tons below allowed levels. Beginning in 2000, Phase II will further control these and many additional electric power sources to achieve a total 10 million ton reduction in SO₂. This reduction in SO₂ power plant emissions is maintained by a SO₂ cap of 8.9 million tons. For multiple reasons, the cost of the programme upon full implementation is substantially less than originally estimated.

157. Drawing on the experience of the acid rain programme, States within the Ozone Transport Commission (OTC) with EPA assistance have formulated and are now implementing a regional NO_x trading programme to reduce transboundary ozone in the Northeast. In 1999, the first year of the OTC's NO_x trading programme, the effort resulted in a 50 percent reduction in NO_x emissions from 1990 levels in participating States. The NO_x SIP call B a federal rule to reduce interstate ozone pollution in much of the Eastern United States -- also includes, as guidance, a model cap-and-trade programme that States may choose to adopt into their plans.

158. Within individual states, both cap-and-allocation and open market trading programmes have been implemented or are under development. Many local governments are adopting trading schemes to add flexibility to their attainment programmes. The most extensive programme is in Los Angeles where a comprehensive emission trading system (RECLAIM) is being used to reduce the emissions of nitrogen oxides and sulphur dioxide. The programme gradually reduces allowable levels of industrial sources emissions. EPA has issued guidance to assist states in

designing trading and other economic incentive programmes to reduce criteria pollutants, and will soon update that guidance. EPA also has assisted states in setting up trading programmes, such as the RECLAIM and OTC programmes mentioned above.

159. Another programme involving market incentives that EPA has run is the CFC phase-out programme. EPA has issued guidance to assist states in designing trading and other economic incentive programmes to reduce criteria pollutants, and will soon update that guidance. EPA also has assisted states in setting up trading programmes, such as the RECLAIM and OTC programmes mentioned above.

160. EPA provides trading opportunities in most national air rules for vehicle manufacturers and fuel refiners. In the 1980s, EPA allowed refiners to trade credits to aid compliance with rules requiring the gradual reduction of lead in gasoline. The most recent example is the "Tier II" rule requiring cleaner autos and light-duty vehicles and cleaner, low-sulphur gasoline. This rule would allow averaging, banking and trading to provide additional flexibility to vehicle manufacturers and fuel providers.

161. EPA has issued guidance to allow states to count toward their state planning requirements programmes that encourage voluntary measures to reduce emissions from transportation sources - - such as ridesharing programmes and ozone action day.

162. Question 60 If applicable, provide information on your country's experience in tradeable permits, including the cost-saving potential.

163. **Bulgaria.** A system of tradable permits was established, as for an Environment Impact Assessment in the industrial or energy sector the tariff is as follows:

(a) For a plant of international significance B 0,05% of the project or referential value B the long-term assets (LTA);

(b) for a plant of national or regional significance B 0,03% of project or LTA value.

164. **Canada.** Canada's experience with tradable permits has been limited. There is an overall SO₂ 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 SO₂ between provinces and no estimate of cost savings is available.

165. The Pilot Emission Reduction Trading Project (PERT) was launched in 1996 as an industry-led multistakeholder initiative, initially focused on smog reductions in one province and adjoining airsheds; it was expanded in 1997 to include greenhouse gases. As this is a pilot project, no regulatory mechanism is currently in place that gives the tradable commodities value. The extension of PERT to March 2001 will allow the pilot to complete its work. Approximately 15 trades have taken place under PERT to date. All of these trades are bilateral trades handled under private contract; many of them involve options to purchase. These are speculative markets and for reasons of confidentiality information on prices and potential cost savings has not been made available.

166. **Czech Republic.** not used

167. **Germany.** The Federal Immission Control Act provides the possibility to apply a compensation rule (bubble concept). This rule allows pollution rights to be traded (compensation) if this results in higher emission reductions than can be achieved through compliance with the specific emission limits. The actual use of this instrument by regulated Parties is rather poor.

168. **Netherlands.** The Netherlands has a great interest in tradeable emission and permits, but does not have any experience in that field.

169. **Poland.** Discussion and preparatory work on the possibilities of introducing tradeable permits is underway. Draft environmental legislation includes this possibility to some extent.

170. **Republic of Moldova.** There are requirements in our legislation regarding obligatory obtaining of permit for emissions of pollutants in atmospheric air. The permits given by State Ecological Inspection are paid.

171. **Slovakia.** Slovakia only recently introduced the emission quotas for SO₂, and they were now allocated for years 2002, 2003 and 2004. See also R.24.

172. **Switzerland.** No provision on it at the federal level. In some cantons the application of a limited form of the bubble concept is being examined at local level (through emission certificates). The application will in any case only be possible for the remaining emissions after the implementation of the emission standards set in the Ordinance on Air Pollution Control.

173. **United Kingdom.** The Government is committed to the introduction of market based instruments where these can provide a more cost-effective alternative to the traditional regulatory command and control means of achieving environmental objectives. Under the Integrated Pollution Control authorisations for the Electricity Supply Industry in England and Wales, announced in December 1999 by the Environment Agency, provision was made for allowing sulphur emission quotas to be switched between plants, subject to site-specific constraints which reflect the local environmental conditions. Authorisations contain two types of emission limits for sulphur: a site-specific 'A' limit taking into account impacts local to the power station; and a portfolio or 'B' limit applied to a group of stations as a whole, which would reflect the impact on a regional or national scale of the combined emissions from the group. Each operator has the freedom to alter the allocation of sulphur discharges between its different power stations provided it does not exceed its overall allocated sulphur 'B' limit total, and provided the individual station's sulphur emissions reached in this way do not exceed their 'A' limits.

174. **United States.** Since 1990, the EPA has implemented the Acid Rain SO₂ Trading Program under Title IV of the CAA. This programme has led to large reductions in SO₂ nationwide, and improved compliance with ambient standards for coarse and fine particulate matter (PM₁₀ and PM_{2.5}, respectively). Costs of Title IV are now estimated to be 75 percent less than estimated in 1990. Costs in 1990 were estimated at \$4 to 5 billion when fully implemented; costs are now estimated to be \$1 to 2 billion when fully implemented. These cost savings are attributed to the flexibility of the market-based mechanism. In addition, the EPA finalized a NO_x Budget Trading Program, a cap-and-trade programme in which allowances can be bought and sold to induce NO_x emission reductions in States covered by the NO_x SIP call (mostly States east of the Mississippi River). Affected States are subject to a cap on summer NO_x emissions. See answer to Q.59 for additional examples and detail.

