2
AIR MANAGEMENT*

Features

- Air management: effectiveness and efficiency
- Environmental measures in the transport sector
- Market-based integration in the transport sector
- Market-based integration in the energy sector
- Transalpine freight transport
- Decoupling results in the energy sector

* The present chapter reviews progress in the last ten years, and particularly since the previous OECD Environmental Performance Review of 1995. It also reviews progress with respect to the objective "maintaining the integrity of ecosystems" of the 2001 OECD Environmental Strategy. It takes into account the latest IEA Energy Policy Review of Austria and the sustainable development part of the OECD Economic Survey of Austria.

Recommendations

The following recommendations are part of the overall conclusions and recommendations of the OECD Environmental Performance Review of Austria:

- develop and implement a *national emission reduction strategy* to meet the objectives of the EU directive on national emission ceilings, giving priority to cost-effectiveness and to achieving synergy with the National Climate Strategy;
- further extend the use of *market-based instruments in the energy and transport sectors* (including road pricing and emission trading programmes) to help achieve national objectives regarding NO_x, NMVOC and CO_2 emissions;
- further reduce *ambient levels of ozone and small particulates* through measures related to mobility, energy, climate and spatial planning;
- assure *effective co-ordination* among federal ministries and federal, provincial and local governments with respect to: i) implementation and monitoring of measures to achieve federal emission targets; and ii) integration of air quality concerns into sectoral policies;
- develop and implement a *sustainable transport strategy*, including measures to reduce vehicle emissions, to strengthen alternatives to road transport for long-distance freight shipping and to promote integrated services for freight and passenger transport.

Conclusions

Over the last ten years, the country has made continuous progress in reducing emissions of a range of air pollutants, including hazardous substances, from most major sources. Emissions of a number of pollutants have been successfully *decoupled from economic growth*; SO_x, NO_x and CO_2 emissions, both per capita and per unit of GDP, are among the lowest in the OECD. Austria's *air management policies* have been driven by the precautionary principle, with limit values and targets often stronger than those of EU and international law. Ambient air quality has generally improved (e.g. as concerns SO_2 and CO). Sustained investment in pollution control, often using best available technology, has led to significant decreases in emissions from power generation, heating systems and industry. Austria's *energy policies* have prioritised energy efficiency improvements and the development of renewable energy sources. Energy intensity per unit of GDP is among the lowest in the OECD, and renewables (mostly hydropower and biomass) represent 24% of the energy supply. *Transport* policies have also contributed to meeting air management objectives through early introduction of cleaner vehicles and fuels, and effective inspection and control. Steps have been taken to promote environment-friendly transport,

domestically and internationally, and public transport is well developed. An "eco-point" system to regulate transit road freight traffic has helped improve the average emission performance of transit freight vehicles.

However, Austria has not met, nor is it on the way to meeting, its national emission reduction targets for *NO_x and NMVOCs*. Related *air quality*, in urban areas and along major Alpine transport corridors, raises concern. Integration of air management issues into transport policies and provincial spatial plans is insufficient, as are measures to influence the use of private cars and strengthen competitive alternatives to road freight transport. Transport and energy taxes and charges are not fully in accordance with the *polluter pays and user pays principles*; distorted incentives in the energy sector favour large consumers and some carbon-intensive fuels. Austria faces challenging targets for NO_x and NMVOCs under the Gothenburg Protocol and the EU directive on national emission ceilings. Given Austria's already low emission levels and energy intensity, its continued traffic growth and an expected slowdown in emission reductions by industry, further progress may prove more costly than expected and will require: i) more strategic planning; ii) greater attention to implementation and cost-effectiveness, extending the range of instruments to economic and social ones; and, iii) more effective co-ordination among all relevant government administrations and levels.

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1. Air Management Objectives and Targets

Austria has given priority to preventive actions to reduce ambient air pollution and protect human health and ecosystems, and has set limit values and targets often beyond those required by EU and international law. Since Austria's participation in the European Economic Area (1992) and its subsequent EU membership (1995), *European legislation* has gained in importance. Where stricter regulations and targets predated EU membership, these have been kept (e.g. for solvents and selected air quality standards) or have influenced EU law (e.g. for maximum sulphur content in fuels or benzene levels in gasoline). Industry pressure and the pending EU enlargement have led Austria increasingly to encourage EU-wide actions so as to establish a *level playing field* with neighbouring and partner countries.

Concerning air emissions, Austria has a number of international emission reduction targets under the *Convention on Long-range Transboundary Air Pollution and its protocols*. Additional, more stringent national targets were set for precursors of ground-level ozone: the 1992 *Ozone Act* set reduction targets for NO_x and NMVOC emissions by 40% (end of 1996), 60% (end of 2001) and 70% (end of 2006) compared with 1985 and 1988

Table 2.1 **Selected national ambient air quality standards and corresponding EU standards**

Pollutant		National standards		EU legislation[a]	
		Limit value	To be achieved[b]	Limit value	To be achieved[b]
For protection of human health, as of 7 July 2001					
SO_2	½-hr mean	200 µg/m³, may be exceeded up to 3 times per day and up to 48 times per year, if the concentration does not exceed 350 µg/m³	2001[d]	1-hr mean: 350 µg/m³, not to be exceeded more than 24 times per year	2005
	24-hr mean	120 µg/m³	1998[d]	24-hr mean: 125 µg/m³, not to be exceeded more than 3 times per year	2005
TSP	24-hr mean	150 µg/m³	1998[d]	–	
PM_{10}	24-hr mean	50 µg/m³: – until 2004: not to be exceeded more than 35 times per year – 2005-09: not to be exceeded more than 30 times per year – from 2010: not to be exceeded more than 25 times per year	2001[d]	24-hr mean: 50 µg/m³, not to be exceeded more than 35 times per year	2005
	Annual mean	40 µg/m³	2001[d]	Annual mean: 40 µg/m³	2005
NO_2	½-hr mean	200 µg/m³	1998[d]	1-hr mean: 200 µg/m³, not to be exceeded more than 18 times per year	2010
	Annual mean	30 µg/m³: – from 7 July 2001 to 1 January 2005: additional margin of tolerance of 30 µg/m³, to be reduced by 5 µg/m³ per year – 2005-09: margin of tolerance of 10 µg/m³ – 2010-11: margin of tolerance of 5 µg/m³	2001[d]	Annual mean: 40 µg/m³	2010
CO	8-hr mean	10 mg/m³ (running average)	1998[d]	8-hr mean: 10 mg/m³ (maximum daily value)	2005
Lead	Annual mean	0.5 µg/m³	2001[d]	Annual mean: 0.5 µg/m³	2005
Benzene	Annual mean	5 µg/m³	2000	Annual mean: 5 µg/m³	2010
Ozone[e]	8-hr mean	110 µg/m³	1998[d]		

Table 2.1 **Selected national ambient air quality standards and corresponding EU standards** *(cont.)*

Pollutant		National standards		EU legislation[a]	
		Limit value	To be achieved[b]	Limit value	To be achieved[b]
For protection of vegetation and ecosystems, as of 1 January 2001					
SO_2	Annual mean	20 µg/m^3	2001	Annual mean: 20 µg/m^3	2001
	Winter average[c]	20 µg/m^3	2001	Winter average: 20 µg/m^3	2001[c]
NO_x	Annual mean	30 µg/m^3	2001	Annual mean: 30 µg/m^3	2001

a) Directive 99/30/EC for SO_2, NO_2, PM_{10} and lead; Directive 00/69/EC for CO and benzene.
b) Unless otherwise stated, date refers to beginning of year indicated.
c) From 1 October to 31 March.
d) The limit values entered into force on 1 April 1998 and 7 July 2001, respectively.
e) Target value.
Source: BMLFUW; UBA; OECD.

levels, respectively. The EU *national emission ceiling directive*, currently being transposed into national law, imposes further reduction targets by 2010 for SO_x, NO_x, NMVOCs and ammonia, similar to those in the Gothenburg Protocol (Table 8.3). Under the *Kyoto Protocol*, as part of the EU burden-sharing agreement, Austria has agreed to reduce its greenhouse gas (GHG) emissions to 13% below 1990 levels by 2008-12, and plans to achieve 80% of these reductions through domestic measures (Chapter 8).

Concerning air quality, particular attention is given to *ground-level ozone* and its precursors, to related health impacts in urban areas and along the Alpine valleys, and to critical levels in Alpine ecosystems. *Ambient air quality standards include* threshold levels for ozone (in the 1992 Ozone Act) and legally binding limit and target values (in the 1997 Air Quality Act) for SO_2, NO_x, total suspended particulates (TSP), PM_{10}, CO, benzene, lead and ozone (in line with the EU framework directive on air quality and its two first "daughter" directives). Stricter standards have been kept for some pollutants; in the case of NO_2, negotiations with industry resulted in a compromise timetable with progressive implementation by 2010-12 (Table 2.1).

The *1995 OECD Environmental Performance Review* recommended that Austria:

– fully implement measures already developed and consider a broader range of instruments, including economic instruments, to reduce CO_2, NO_x and NMVOC emissions;

- continue to pursue effective co-ordination among federal ministries on matters concerning emission regulations and enforcement, as well as among the federal, provincial and local levels of government;
- extend the monitoring of hazardous air pollution and take appropriate remedial measures where required;
- promote integration of air pollution concerns in energy and agricultural policies;
- strengthen energy efficiency measures in all sectors, including industry;
- strengthen implementation of the comprehensive programme to reduce CO_2 emissions at federal and provincial levels as rapidly as possible; introduce an energy or CO_2 tax, taking account of policies adopted at EU level;
- continue to promote district heating and the use of biomass while giving attention to cost-effectiveness;
- develop and implement a more comprehensive and environmentally sensitive transport policy, with measures to reduce vehicle emissions and to contain road traffic, including rail infrastructure development and integrated land use planning;
- adopt long-term plans to cope with unsustainable growth in transit freight traffic and stimulate the financing of appropriate transit infrastructure at a European level.

2. The Air Management Framework

2.1 An effective approach

Emission reduction targets and air quality standards are *set at federal level*. Implementation, inspection and enforcement *lie with the provinces* (Länder). The provinces also have a strong role in other areas of relevance to air management, such as housing policies, subsidies for renewable forms of energy, road infrastructure and local public transport. There is rarely quantitative burden sharing among provinces or sectors to achieve federal targets. Policies build on negotiated rather than regulated contributions, giving priority to *consensus building mechanisms* and social partnerships. Industry and other stakeholders are consulted during the preparation of legal texts concerning air pollution and emission reductions. In areas where greater co-ordination is needed, the federal government can conclude *agreements with the provincial governments* and set minimum standards to be applied, accompanied by negotiated financial transfers. This was done in 1995 to harmonise the implementation of energy efficiency measures across the country. Such mechanisms have a long tradition and are widely accepted.

Since the 1980s, regulation of industry and *large combustion plants* has been based on the Trade and Industry Code (last amended in 2002) and the Clean Air Act for Steam Boilers (last amended in 1998). Emissions from waste incinerators are regulated by the Waste Management Act. These laws provide for *emission limits* and reduction measures according to *best available technology* (BAT) during the licensing procedure. They also transpose into national law major elements of the 1996 EU directive on integrated pollution prevention and control (IPPC), a provision of the 1999 VOC directive on emission reduction plans and elements of the *Seveso* II directive. Older facilities generally benefit from a certain margin of tolerance and from transition periods to adapt to new standards. Industrial *emissions of solvents* are further regulated by the 2002 VOC installations ordinance, which transposes the 1999 VOC directive into national law while keeping stricter standards from earlier national legislation.

Inspection and enforcement of permit conditions is done by 84 district authorities that benefit from federal and provincial technical support. Related costs are covered as part of the budget agreements negotiated between the federal government and the provinces every four years. The frequency of inspections depends on the respective laws. The Trade and Industry Code gives major responsibility to licence holders for *self-monitoring* and compliance checking. BAT requirements have to be reviewed at least every ten years; self monitoring has to be done every five or six years depending on whether the licensing procedure is normal or simplified. Enterprises with an EMAS certificate not older than three years can be exempted. The Clean Air Act requests large combustion plants to carry out additional annual checks. However, reporting is required only in cases of non-compliance or upon request (e.g. to fulfil EU reporting obligations). Provincial and district authorities can also conduct on-site checks as secondary enforcement; this is mostly done after complaints by neighbours or in case of an obvious risk of non-compliance.

2.2 Perspectives: further results and improved efficiency?

Austrian legislation does not yet fully comply with *EU requirements concerning IPPC* and large combustion plants. Some differences remain concerning inspection frequency at certain types of installations, responsibility for compliance checks and plant operators' reporting obligations. Public authorities' *oversight capacity*, as regards inspections and ability to intervene, remains incomplete and varies among provinces depending on the resources available. *Self-monitoring* by operators is well established in large plants but often seen as a burden in smaller plants. Implementing a *fully integrated pollution prevention and control* system proved more difficult than expected, requiring amendments to several laws and provincial ordinances regulating industrial permitting and emission control. Steps taken since 2002 to establish a

one-stop shop for licensing of large IPPC installations, under the responsibility of the trade and industry administration, are expected to help *co-ordinate and streamline* the licensing procedures under these laws. Ultimately, Austria should consider an overall review of the legal base concerning IPPC and bring the main elements together in an IPPC framework law and related ordinances. *No pollutant release and transfer register* has yet been established. Regular reporting will become mandatory under the EU directive on a European pollutant emission register; an ordinance establishing the basis for data collection was adopted in July 2002 and a first reporting exercise, covering 450 IPPC installations in the industry, energy and waste management sectors, is to be done by the Federal Environment Agency (UBA) in the course of 2003.

There may also be a need to revisit the present approach as Austria sets to implement the *EU emission ceiling directive*. Developments since the mid-1990s have shown that current arrangements will need to be accompanied by additional, *more results-oriented measures* to be effective. Examples of such measures are: i) the setting of timelines and intermediate targets for implementation; and, ii) regular monitoring and assessment of results in individual sectors and individual provinces. Given the strong role of provinces in the implementation of federal objectives, further nationwide agreements and some burden sharing might need to be envisaged to maintain a balance between federal and provincial commitments.

Furthermore, beyond regulatory instruments, *financial support* and inspection and control mechanisms, the *mix of instruments* has not significantly evolved. Austria will need to assure efficiency in achieving the EU targets. The government has reached environmental agreements with the oil refining industry to limit benzene and sulphur in fuels, and to introduce sulphur-free fuels, in advance of EU legislation. Some progress has also been made in the use of *economic instruments* in the energy and transport sectors. Plans to extend the use of market-based instruments, and to pursue an ecological tax reform were included in the National Climate Strategy and in the National Strategy for Sustainable Development. In June 2003, the introduction of a green tax reform was approved by the Austrian Parliament. (Chapters 5 and 8).

3. Reducing Air Emissions and Improving Ambient Air Quality

3.1 Air emissions

Over the past ten years, Austria has made continuous progress in reducing emissions of major air pollutants. It has *decoupled them from economic growth*, achieving per capita and per GDP emissions among the lowest in the OECD for SO_x, NO_x and CO_2 (Figures 2.1 and 2.2). The downward trend is particularly significant for SO_x,

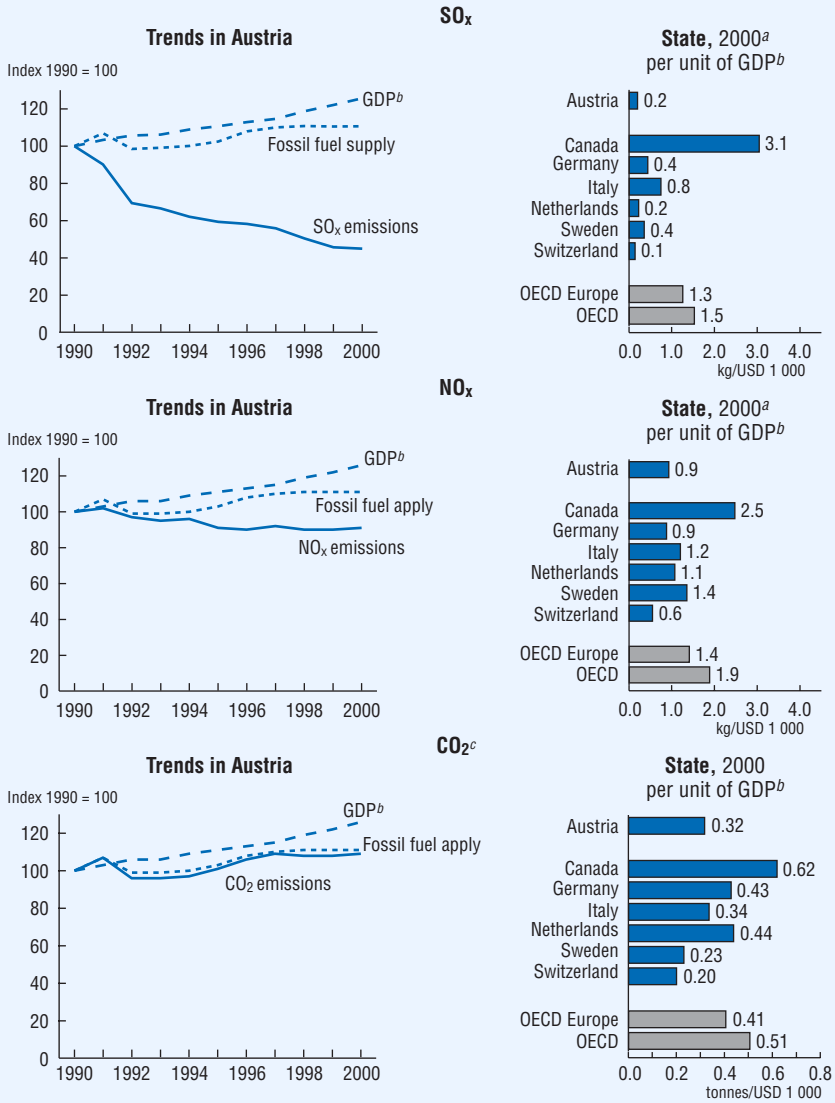
NMVOCs and CO, whose emissions decreased by 55%, 34% and 33%, respectively. NO_x emissions decreased by 9% (Table 2.2). By 2000, Austria was *meeting nearly all its commitments* under the transboundary pollution convention concerning SO_x, NO_x and NMVOCs, and was approaching the 2010 target levels for ammonia and SO_2 set by the EU emission ceiling directive and the Gothenburg Protocol. Substantial progress has also been made in reducing emissions of hazardous substances (heavy metals, dioxins, polycyclic aromatic hydrocarbons): the 2000 levels were already below provisional commitments for 2010 under the Aarhus Protocols (Chapter 8). However, greater attention needs to be given to small particulates (PM_{10}, $PM_{2.5}$): while emissions of these have been more or less stable, concentrations in urban areas raise concern, with frequent exceedances of air quality standards.

A major part of this performance can be attributed to strict regulations for *large stationary sources*, combined with improvements in industrial processes, increased use of low-solvent products and cleaner fuels; and to improved energy efficiency, especially in power production and heating, resulting from Austria's energy policies. To a lesser extent it also reflects reductions in emissions from *transport* due to early promotion of cleaner vehicles and fuels, along with effective inspection and control.

Despite many initiatives at federal and local level, and a general downward trend, Austria has not met its first two *national targets for NO_x and NMVOC emissions* and is not on the way to meeting the third target. It missed the 1996 target by 10% for VOCs and 24% for NO_x. By 2000, the distance to the 2006 target was 52% for VOCs and 65% for NO_x. Reaching the EU emission ceiling targets will require further reductions of 33% for VOCs and of 44% for NO_x; as these have a longer commitment period, they could be within reach for VOCs, but serious doubts remain as regards NO_x. *Industry and solvent use* remain the dominant sources of NMVOC emissions. Strict regulations on solvent use and the solvent content of products led to a 27% decline in VOC emissions from solvents between 1990 and 1995, though progress since has been limited. Further measures under the 2002 VOC Installations Ordinance are expected to yield additional reductions, but these might in turn generate additional CO_2 emissions. *Transport* is the main source of NO_x emissions, followed by industry and power generation. NO_x emissions from road transport and industrial combustion slowed in the early 1990s but rose again after 1995 with growth of the transport sector and industrial production. Current policies are unlikely to lead to further progress, but advances should result from measures implemented as part of the National Climate Strategy.

Given Austria's already low emission and energy intensities, combined with the growth of the transport sector and slow emission reductions by industry, *further progress will not be easy* to achieve and may entail greater marginal costs than

Figure 2.1 **Air pollutant emissions**



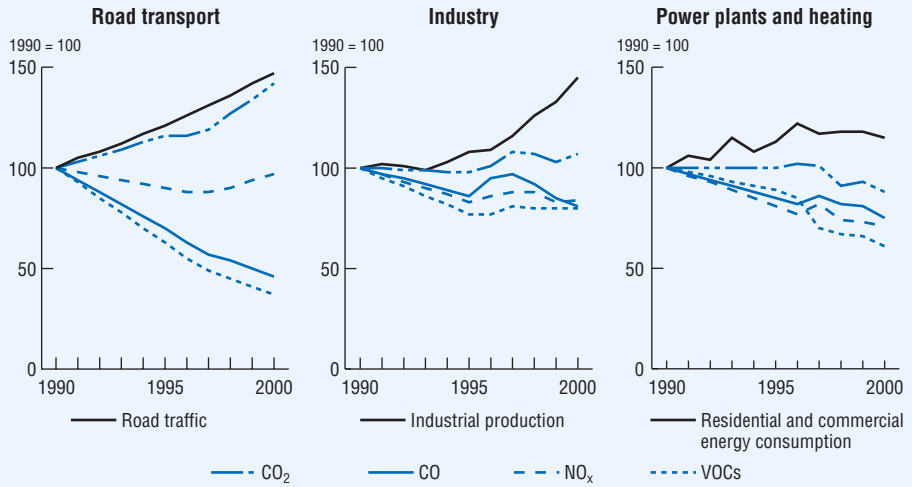
a) Or latest available year.
b) GDP at 1995 prices and purchasing power parities.
c) Emissions from energy use only; excludes international marine and aviation bunkers.
Source: OECD; IEA-OECD.

Table 2.2 **Emission trends and structure**

			Levels			Change (%)		Share in total (%)	
			1990	1995	2000	Since 1990	Since 1995	1990	2000
SO_x	Transport	1 000 t	6.0	5.6	3.5	*–42*	*–38*	*7*	*9*
	of which: Road		3.5	4.6	2.7	*–23*	*–42*	*4*	*7*
	Power and heating		44.1	23.1	14.1	*–68*	*–39*	*49*	*35*
	Industry		38.5	23.5	22.9	*–41*	*–3*	*42*	*56*
	Total		90.7	53.8	40.7	*–55*	*–24*	*100*	*100*
NO_x	Transport	1 000 t	120.1	114.3	118.6	*–1*	*4*	*60*	*65*
	of which: Road		79.9	72.2	77.7	*–3*	*8*	*40*	*42*
	Power and heating		34.2	27.9	24.3	*–29*	*–13*	*17*	*13*
	Industry		41.1	34.2	34.4	*–16*	*1*	*20*	*19*
	Total		201.8	182.7	183.6	*–9*	*0*	*100*	*100*
CO	Transport	1 000 t	538.4	398.6	279.1	*–48*	*–30*	*40*	*31*
	of which: Road		469.4	330.5	218.2	*–54*	*–34*	*35*	*24*
	Power and heating		506.0	431.1	377.1	*–25*	*–13*	*37*	*42*
	Industry		282.3	243.7	227.7	*–19*	*–7*	*21*	*25*
	Total		1 353.0	1 097.8	906.5	*–33*	*–17*	*100*	*100*
NMVOCs	Transport	1 000 t	114.4	79.4	53.3	*–5*	*–33*	*32*	*22*
	of which: Road		94.3	59.3	34.9	*–63*	*–41*	*26*	*15*
	Power and heating		47.5	42.2	28.9	*–39*	*–32*	*13*	*12*
	Industry and solvents		189.4	145.7	150.7	*–20*	*3*	*53*	*63*
	Total		359.7	275.7	238.7	*–34*	*–13*	*100*	*100*
CO_2	Transport	Million t	14.7	16.6	19.8	*35*	*19*	*24*	*30*
	of which: Road		11.6	13.5	16.6	*42*	*23*	*19*	*25*
	Power and heating		24.5	24.6	21.5	*–12*	*–13*	*39*	*33*
	Industry		20.4	19.9	21.7	*7*	*9*	*33*	*33*
	Total		62.3	64.0	66.1	*6*	*3*	*100*	*100*
Emission intensities	SO_x	kg/10^3 USD	0.6	0.3	0.2	*–64*	*–33*		
	NO_x	kg/10^3 USD	1.3	1.1	0.9	*–28*	*–12*		
	CO	kg/10^3 USD	8.7	6.4	4.6	*–47*	*–27*		
	NMVOC	kg/10^3 USD	2.3	1.6	1.2	*–47*	*–24*		
	CO_2	t/10^3 USD	0.4	0.4	0.3	*–16*	*–9*		

Source: UBA; OECD.

Figure 2.2 **Emission trends by sector,** 1990-2000



Source: OECD.

initially foreseen. To achieve its targets cost-effectively, Austria will need to adopt a *more comprehensive and strategic approach* in its air management policies and ensure that measures are well co-ordinated across the country and across sectors, and that complementarity among plans and measures is maximised. In particular, a comprehensive national emission reduction strategy is needed, giving particular attention to reducing emissions of NO_x, NMVOCs and small particulates, including through harnessing synergies that might result in combination with climate-related measures (Chapter 8). Austria should identify areas and sectors where further progress can be achieved at least cost, building on a broader range of measures and instruments than currently used. One example is expanded use of *market-based instruments*, including *emission trading*, that could be extended to other pollutants such as NO_x or NMVOCs.

3.2 Ambient air quality

Air quality has *generally improved* over the last ten years. Average concentrations of *SO_x and CO* have decreased and remain below limit values. In the case of

SO_2, additional improvements have been observed since 1997 as a result of emission reductions in neighbouring countries, particularly the Czech Republic, Germany and Slovenia. Good results have also been obtained for *benzene*.

The situation is *relatively mixed* for pollutants such as *NO_x, particulates and ground-level ozone*. Despite a general improvement, limit values for NO_2 are still exceeded in areas with high traffic intensity, especially Vienna, Graz and Linz, but also along traffic routes in the Alps (e.g. through Innsbruck, Salzburg and the Inn valley). Particulates follow a similar pattern, but information remains incomplete, especially as regards PM_{10} and $PM_{2.5}$. First results of PM_{10} monitoring in 2001 showed a large number of exceedances of limit values for human health in Vienna, Graz and Linz. Ground-level ozone remains the most serious air quality problem. Limit values for the protection of vegetation are frequently exceeded (e.g. at higher altitudes). The target value for the protection of human health is exceeded at all monitoring sites.

Transboundary air pollution and emissions from cross-border and transit road traffic add to Austria's domestic air pollution. About 92% of oxidised sulphur compounds and 85% of oxidised nitrogen compounds deposited in Austria are attributed to transboundary inflows. Critical loads for the *deposition* of acidifying substances continue to be exceeded in 10% of the ecosystem area and in 50% of the most sensitive areas; however, this is a considerable improvement over the situation in the early 1990s (48% and 90%, respectively). The high SO_2 and ozone concentrations in north-eastern Austria are also largely due to transboundary inflows, which interact with emissions from the Vienna area.

In Alpine valleys, topography and frequent temperature inversions exacerbate the effects of air pollution from transit and other traffic. NO_2 concentrations are up to three times higher in mountain valleys than in a plain with similar traffic levels; ozone smog also reaches higher levels. In *Tyrol province*, average annual NO_2 concentrations have been increasing at most stations. In 2001, ozone standards for vegetation protection were exceeded in Alpine valleys for as many as 220 days and in the mountains almost every day. In the narrow *Brenner and Inn valleys*, transit traffic accounts for, respectively, 66% and 40% of NO_x emissions. In September 2002, the governor of Tyrol banned all goods vehicles at night during the winter.

Further improvements, especially for NO_2 and ozone, can be expected from measures to achieve the EU emission ceilings and commitments on climate. Greater attention to monitoring small particulates, and the related health effects, is needed. The control and further abatement of emissions from transport will be crucial, as is co-ordination of measures concerning air quality and mobility management in provinces and major cities. Provinces could make more use of the catalogue of measures laid down in the Air Quality Act and its ordinances to prevent pollution episodes and limit their duration.

4. Integrating Air Management Objectives into Transport Policies

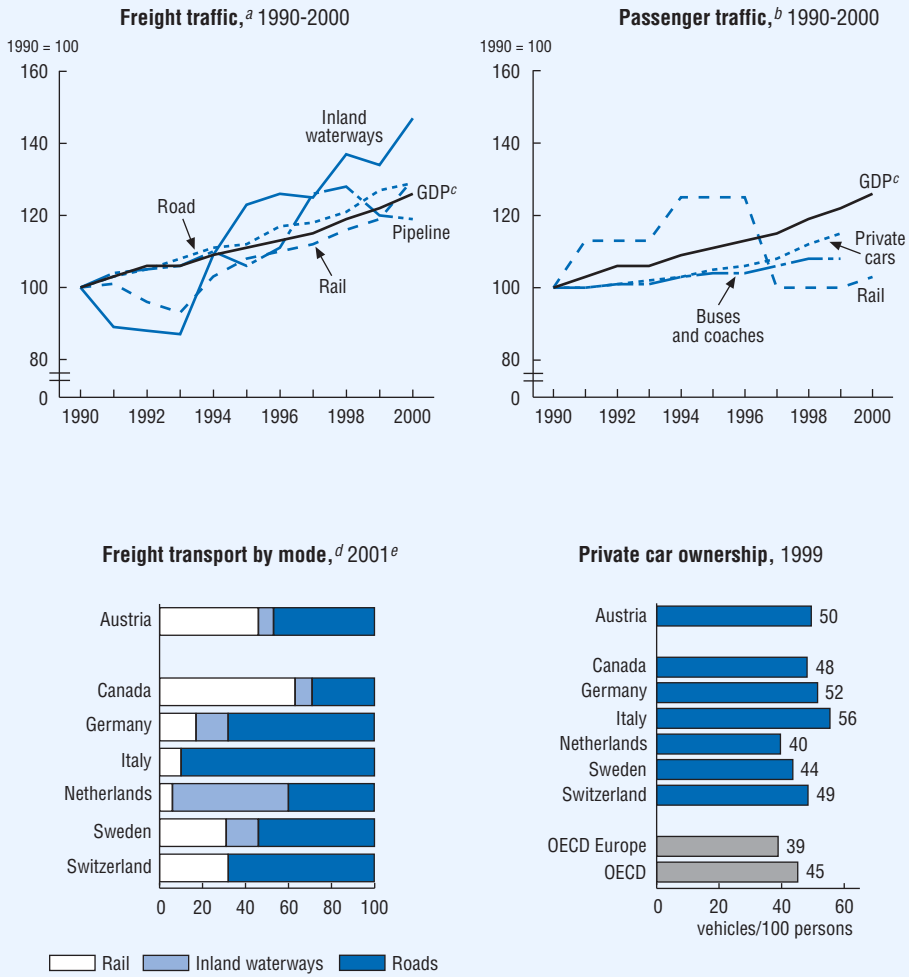
The Austrian transport sector is characterised on the one hand by a relatively balanced modal split in *freight transport* (44% rail, 49% road, 7% waterways) and well-developed public transport systems, and, on the other, relatively high level of motorisation, cross-border and transit traffic, and tourism-related traffic (Figure 2.3).

4.1 Objectives

Transport-related objectives with environmental significance were defined in the *Master Transport Concept* (1991) and *National Environment Plan* (1995). They included reducing transport demand and avoiding unnecessary traffic; improving transport efficiency and promoting shifts to environment-friendly modes; improving vehicle technology and increasing the use of alternative fuels; and promoting integrated traffic management. The *environment plan* further defines several qualitative environmental objectives for the transport sector, including reducing emissions of ozone precursors and reducing average vehicle fuel consumption and related CO_2 emissions. An implicit objective for transit freight road transport, of reducing NO_x emissions by 60% between 1992 and 2003, is part of the *eco-point system* (Box 2.1). The *National Climate Strategy* estimates the reduction potential of transport-related measures at 3.7 million tonnes of CO_2 equivalent in avoided emissions by 2010 (Chapter 8).

The *General Transport Plan* of 2002 focuses on infrastructure development. Its preamble highlights the importance of sustainable mobility and environment-friendly developments in the transport sector. It adopts for the first time an integrated approach to infrastructure developments (road, rail, water), but does so in isolation from environmental considerations and from other transport issues on which infrastructure decisions have a bearing. Experience gained from the strategic environmental assessment of the Danube corridor project might be expanded to all infrastructure projects in the plan. Overall, the *environmental effectiveness and economic efficiency* of transport planning would gain from a more comprehensive approach linking infrastructure developments to other transport issues and assuring greater coherence with urban and provincial spatial planning and with air and climate policies.

Figure 2.3 **Trends in the transport sector**



a) Index of relative change since 1990 based on values expressed in tonne-kilometres.
b) Index of relative change since 1990 based on values expressed in passenger-kilometres.
c) GDP expressed in 1995 prices and purchasing power parities.
d) Based on values expressed in tonne-kilometres.
e) Or latest available year.
Source: ECMT; AAMA; IRF; OECD.

Box 2.1 **Transalpine freight transport**

Since 1994, freight transport (in tonnes) across the Austrian Alps has grown by 45%. The traffic includes transit, domestic and bilateral freight movements. *Transit*, which now represents more than half these movements, has increased by 70%. Most transit freight transport is between Italy and Germany, with the major burden along the *Brenner route*, where 70% of the goods are transported by road. There are also large transalpine road passenger movements, including those related to tourism.

Spurred by the *importance of the Alpine region* for the Austrian *tourism* sector, and strong *local opposition* to freight traffic in the Alps, Austria has acted to control freight traffic by road and to reduce related air pollution and noise. Since 1989, a *night driving ban* has been in effect for large trucks on all major transit routes. Austria has imposed a toll on the Brenner motorway and since 2002 a motorway user charge for vehicles over 12 tonnes (based on emission characteristics).

Further to a transit agreement concluded with the European Union, *a system of rights of transit based on eco-points* became operational in 1993. Its objective is to *reduce air pollution from heavy goods vehicles in transit by 60% by the end of 2003* by encouraging the use of environmentally friendly vehicles and promoting a *modal shift* from road to rail, including *combined transport*. When Austria acceded to the EU in 1995, it negotiated a temporary derogation permitting the eco-point system to be applied up to the end of 2003. For every journey made through Austria, heavy goods vehicles must purchase *special permits* with eco-points whose number is equivalent to the vehicle's NO_x, emissions (in g/kWh). The total number of eco-points allocated to individual countries is specified each year and progressively reduced to achieve the targeted emission reduction. To avoid environmental benefits from cleaner technologies being offset by traffic growth, the system *caps the total number of trips* in a given year (e.g. 108% of the 1991 value).

The system is managed by the European Commission and operated by Austrian authorities. It *applies to all transit trips* by heavy goods vehicles of over 7.5 tonnes registered in the EU (including Austria) and in Switzerland, Slovenia, Norway, Liechtenstein and Macedonia, with which special agreements were passed. Vehicles using ECMT permits or registered in third countries are *exempted*. Special provisions apply to vehicles making use of *combined transport*. In 2003, pending an EU-wide agreement on road pricing, an *interim arrangement up to 2006* is being negotiated.

To encourage *modal shifts*, Austria is acting to *accompany the eco-point system with measures* to develop rail and combined transport capacity on major transit routes, mainly through the Alps. Measures include *financial assistance* (e.g. investment funding for combined transport infrastructure equivalent to up to 30% of the investment costs, depending on the expected decrease in the traffic burden), *fiscal measures* (e.g. tax exemptions and rebates granted to Austrian trucks used for transport operations to and from railways, or transported by rail; refunds of road user charges for vehicles driving to or from combined transport terminals), and *transport-related measures* (e.g. exemptions from the night or weekend driving bans).

Box 2.1 **Transalpine freight transport** *(cont.)*

Good *results* were obtained as regards the use of more *environment-friendly vehicles* to transit Austria. The results are less favourable as regards *modal shifts, air emissions* from freight transport and pollution levels along the Brenner and Inn corridors (resulting from an *increase in traffic* by vehicles not bound by the system).

4.2 Environmental measures in the transport sector

Austria has taken *many effective steps* to counter negative environmental effects of transport. These steps range from national measures on vehicles, fuels and transit freight traffic to local measures on urban traffic management, local public transport and sustainable mobility in tourist areas. Austria also supports OECD and other international projects on environmentally sustainable transport.

Strict *emission standards for cars* came at an early stage: as of 1986 there was a de facto requirement of catalytic converters for new cars. Leaded gasoline was banned in 1993. The benzene and maximum sulphur contents of *road fuels* were reduced ahead of EU legislation under voluntary agreements with Austrian oil and gas multinational OMV. Today, vehicle emission and *fuel quality standards* rely entirely on EU law and Austria participates actively in the EU's Auto-Oil Programme. Vehicle exhaust emissions follow Euro III standards for passenger cars and heavy vehicles. Regulations and control programmes are well enforced, and *periodic inspection*, including emission checks, is compulsory for all vehicles. In March 2003, OMV and the Austrian Automobile Club signed agreements to introduce sulphur-free fuels as of 1 January 2004, one year ahead of the EU deadline, and to promote particle traps and other emission technologies for diesel vehicles.

Measures taken since 1989 to control *road freight traffic* and reduce related air pollution include a night driving ban for large trucks (except low-emission vehicles) on all major transit routes and, since 1992, an eco-point system for heavy vehicles driving through Austria. With EU accession in 1995, Austria negotiated a transition period for road, rail and combined transport. The environmental effectiveness of such measures, however, depends on the competitiveness of alternatives to road transport and on the consistency of policies of Austria and other Alpine countries (Box 2.1).

Innovative initiatives have been taken at *municipal* level. For institutional reasons, however, actions concerning traffic management are not systematically

integrated with actions to tackle air pollution and with measures concerning spatial planning. The *climate protection plan* of the city of Vienna could usefully be adopted by other cities. The plan, in effect since 1999, involves all municipal departments. It includes time-bound quantitative targets for the reduction of GHG emissions by 2010, supported by a set of 36 measures in the transport, energy, housing, public procurement and waste management sectors.

Local public transport is well developed. About 4.9% of fuel excise tax revenues are earmarked for the promotion of public transport and allocated to the provinces (which also receive 6.6% of the fuel tax revenues for general purposes). Most public transport companies are owned by the federal government or municipalities. Subsidies for local public transport are estimated at 0.65% of GDP. However, low fuel prices, increasing suburbanisation, the closure of less profitable railway lines and increased parking space in city centres tend to offset the benefits of past policies and encourage the use of private cars. Over the past ten years, public transport has lost three points to private cars in overall transport market share.

Mobility management is not yet well developed, but promising local initiatives and pilot projects have been launched. Examples are projects on *corporate mobility* management and on sustainable mobility in *tourist areas*, including car-free tourism in the province of Salzburg. The latter benefit from close co-operation with travel agencies in Austria and abroad, and from EU financial support. Plans to set up a *mobility management network* among cities builds on similar initiatives in other European countries. The Ministry of Traffic and Transport, Information and Technology is promoting the development of integrated mobility services and logistics for freight transport. Wider application of such approaches should be encouraged.

4.3 Market-based integration in the transport sector: taxation and pricing policies

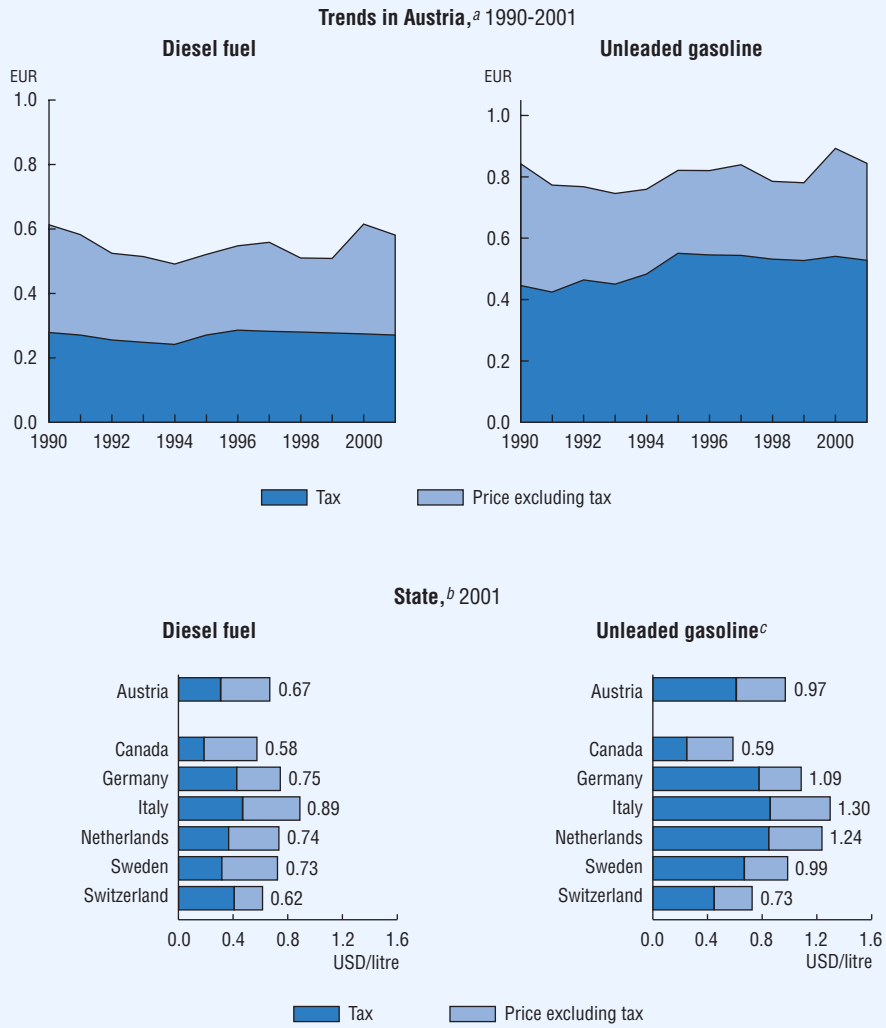
Environment-friendly transport is encouraged through a number of measures. Motor *vehicle taxes* have been differentiated since the early 1990s according to fuel consumption or engine power. Owners of passenger cars and light goods vehicles also pay an engine-power-*related insurance tax*. Since 1995, cars not equipped with catalytic converters have paid a surcharge of 20% on the vehicle tax. Exemptions and rebates are granted to *low-emission vehicles* and *combined road-rail transport*: electric vehicles are exempted from 40% of VAT, the full motor vehicle tax and the vehicle registration tax; trucks used for transport operations to and from railways are exempted from the annual motor vehicle tax; and trucks transported by rail get a rebate on the monthly motor vehicle tax equivalent to 15% per trip. Biofuels and liquefied petroleum gas for local public transport are exempted from fuel taxes (Table 5.2).

However, current taxation and pricing policies applying to transport and mobility could usefully be reviewed with air management objectives in mind. *Road fuel prices* are, on average, 10-15% lower than in other EU countries (Figure 2.4). This leads to cross-border fuelling, which is estimated to represent, by volume, more than 7% of motor fuel consumption in Austria. Since 1991, diesel fuel has benefited from a considerable tax advantage over gasoline. In 2001, prices for unleaded gasoline were 43% higher than those for diesel used for commercial purposes. This lowers the cost of road freight transport, whose share in air emissions increased over the 1990s. As of January 2004, road fuel taxes that remained unchanged since 1995 will be adjusted to a slightly higher rate, and a small differential favouring sulphur-free fuels will however be introduced. While a step in the right direction, these adjustments will not suffice to help tackle cross-border fuelling. The car registration tax favours diesel vehicles, whose standard fuel consumption and CO_2 emissions are lower than those of gasoline vehicles. Combined with the excise tax differential in favour of diesel fuel, this has encouraged the use of diesel cars, whose number also increased significantly in the 1990s. In 2001, 64% of new car registrations were for diesel vehicles, the highest rate for any EU country. Diesel cars account for 35% of the Austrian fleet. Income tax legislation makes *commuting by car* and the use of private cars for business purposes partially deductible, though the deductions are lower than in many other countries.

Other market-based instruments, such as *road pricing*, do not have a long tradition and developments are driven by EU law. Since 2002, vehicles of over 12 tonnes have had to pay a charge for *motorway use* that is differentiated by emission characteristics (Table 5.2). All other vehicles buy a road use sticker, whose price doubled between 1997 and 2001. Some parts of the motorway network, such as the Brenner motorway, are toll roads. Revenues from these charges are earmarked for road infrastructure. This system is to be replaced by the end of 2003 with an *electronic road pricing system* applying to all trucks of 3.5 tonnes or more and based on distance travelled.

The system of *transport taxes and charges* needs to be reviewed. Taxes and charges should be set in accordance with the user pays and polluter pays principles. The tax advantage for diesel fuel should be progressively reduced, the use of road pricing expanded and made more consistent and environment-friendly transport modes promoted more. Such changes would need to be done in co-operation with other European countries and in line with developments at EU level. Further environmental benefits could be realised by providing incentives to improve the *efficiency of transport* services (e.g. in terms of energy consumption, logistics, etc.), and particularly to improve *service quality* of alternatives to road transport (e.g. public transport, long-distance rail freight transport, multimodal services). Results will depend on the extent to which *external costs* of transport are integrated into transport prices and how they are shared among modes.

Figure 2.4 **Road fuel prices and taxes**



a) At constant 1995 prices.
b) In USD at current prices and purchasing power parities.
c) Unleaded premium (RON 95); Canada: unleaded regular.
Source: IEA-OECD.

5. Integrating Air Management Objectives into Energy Policies

The Austrian energy sector is already characterised by relatively *low energy intensity* and an energy mix that includes *large shares for renewables* (e.g. hydro, biomass) and for district heating and combined heat and power, but in which the share of fossil fuel is 75% (Figure 2.5).

5.1 Objectives

Austria pursues two objectives closely linked to concerns over air pollution and climate change and in line with the 1995 OECD recommendations: i) improving *energy efficiency;* and ii) promoting the use of *renewable energy* sources (Box 5.2). These objectives translate into ambitious *time-bound quantitative targets*, integrated in national and provincial strategies, policy plans and regulations.

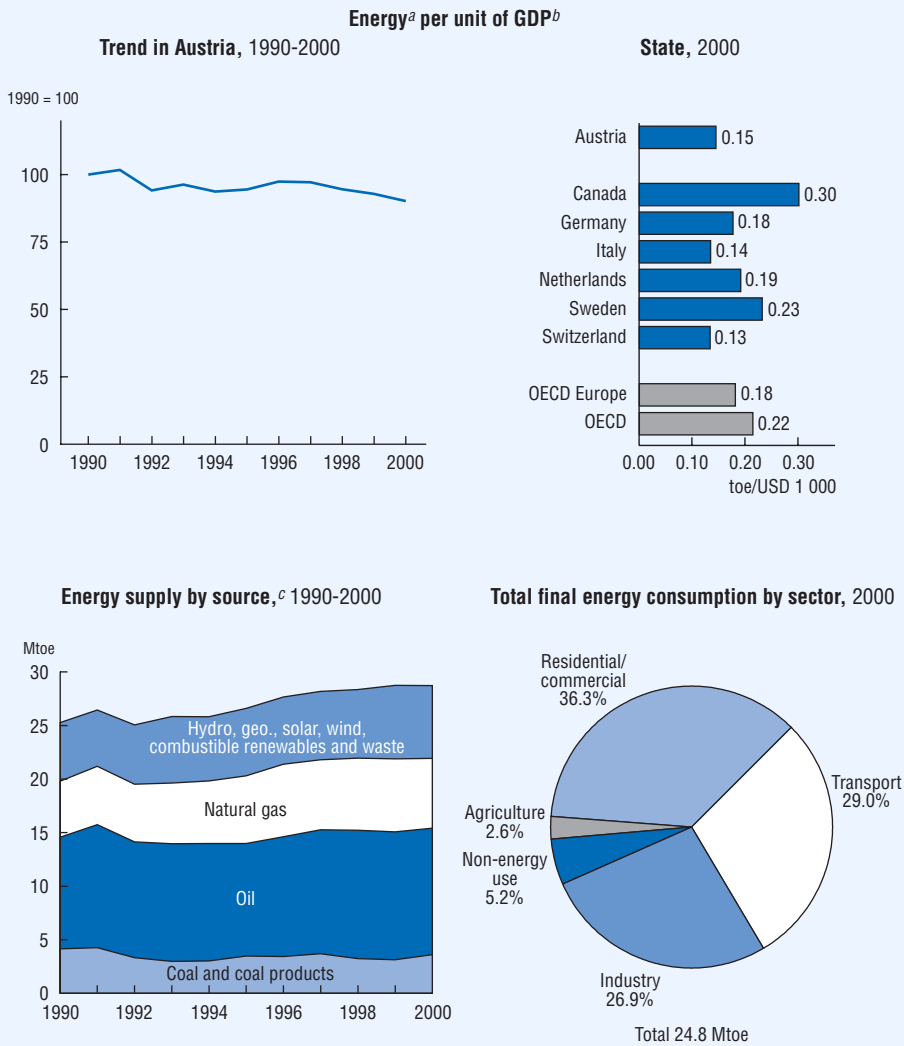
The *National Climate Strategy* and *Sustainable Development Strategy* were adopted in 2002. The former gives a prominent role to the energy sector, which is expected to produce nearly 40% of domestic GHG reductions as of 2000, mainly through improvements in heating efficiency. The latter aims at further reducing *energy intensity* by 1.6%. per year (i.e. one percentage point beyond the 0.6% average improvement observed in the European Union in 1990-97), and at further increasing the share of *renewables* (currently 23%) by one percentage point per year up to 2008-12.

The 2000 *amendment to the Electricity Act* includes ambitious targets for the inclusion of renewables in the energy mix and requires electricity suppliers to source a minimum share of the power they sell from renewables. The *Green Electricity Act* adopted in July 2002 aims at increasing the share of electricity from renewable sources in total electricity consumption from 70% in 1997 (mainly large hydropower) to 78.1% in 2010. By 2008, the share of electricity from new renewables (e.g. biomass, biogas, solar, wind) should reach 4% (from 0.5% in 2000). The target share for small hydropower plants (up to 10 MW) is 9%.

5.2 Environmental measures in the energy sector

Since the 1995 OECD Environmental Performance Review, Austria has further strengthened its efforts to implement energy- and climate-related measures in the *residential, service and industry sectors* (Box 2.2). Measures include incentives to switch to fuels with lower carbon content, the development and use of renewable energy sources, the promotion of district heating and of combined heat and power

Figure 2.5 **Energy structure and intensity**



a) Total primary energy supply.
b) GDP at 1995 prices and purchasing power parities.
c) Breakdown excludes electricity trade.
Source: OECD; IEA-OECD.

Box 2.2 **Decoupling results in the energy sector**

The overall *environmental results* in the Austrian energy sector are *very good*. Most emissions from power production and residential heating systems have been brought under control and were *successfully decoupled* from energy supply and consumption, which grew by 13% and 19%, respectively. Achievements have been most significant for emissions from thermal and combined heat and *power plants*, with marked reductions for SO_x, NMVOCs and NO_x (–79%, –55% and –47%, respectively), but also for CO_2 (–21%), reflecting the effectiveness of clean air regulations and energy-related measures. Very good progress was also made as regards *residential heating*. As a result of fuel switching from coal to oil and gas, and increased use of district heating, SO_x emissions from residential fuel combustion declined by 62%, and CO emissions, which represent over 40% of total emissions, declined by 26%.

This good performance, however, leaves scant room for further progress. *Future developments* in the Austrian energy market will need to be closely monitored, and assessed against the emission reduction targets that Austria has committed itself to achieving. Electricity demand in most sectors is expected to grow further as a result of *energy market liberalisation*. At the same time no more large hydropower projects are seen as feasible economically and environmentally or in terms of public acceptance. The greatest potential for further cutting emissions from power plants thus lies with development of the so-called *new renewables* and revision of emission limits for large combustion plants on the basis of updated BAT requirements, which could yield increased reductions in NO_x and dioxin emissions. The cost-effectiveness of further regulatory measures would need to be carefully reviewed, however.

Smaller emission sources offer more scope for improvement. In the *residential sector*, and further reductions can be expected from measures aimed at the *energy efficiency of buildings* (renovation, thermal insulation, harmonised energy "identity card" for buildings), from further promotion of renewables and from more systematic monitoring and compliance checks. Further progress on CO_2 and other GHG emissions will also depend on the extent to which Austria supports *joint implementation* projects in countries with a large reduction potential in the housing sector and where reductions can be achieved at lower cost. Medium- and long-term results will depend above all on an effective combination of measures affecting energy, air and climate, and the removal of fiscal distortions in the energy sector benefiting large energy consumers. Financial support will continue to play a role, in particular in the residential sector, but should be accompanied with regular monitoring of results. Co-operation among the federal, provincial and municipal levels will be essential.

production, energy efficiency and energy saving measures in industry, and measures to improve the energy efficiency of buildings and to improve technical standards for thermal insulation of buildings under the provincial Technical Construction Regulations. Since 1995, *energy efficiency measures* have been co-ordinated among the federal and provincial governments. Further measures are planned as part of the National Climate Strategy with a focus on space heating and, to a lesser extent, power and heat generation.

Financial assistance remains an important tool, especially in the residential sector. For power generation, Austria has been moving away from financial support, in line with OECD recommendations. Heating systems using renewables without power generation are supported with *investment support* (Box 5.3). *Public funding* of energy-related measures linked to climate change from 1997 to 2000 amounted to an average of EUR 55 million annually (EUR 35 million from the federal government and EUR 20 million from provinces and municipalities). By 2010, an additional EUR 90 million is to be made available for implementation of the climate strategy. The Ministry of Economic Affairs and Labour supports *energy audits* in enterprises. *Third party financing* is used to support energy savings in *public buildings*. An initiative launched in March 2001 is expected to yield a reduction of CO_2 emissions from federal public buildings of 70 to 100 kilotonnes per year, and 500 kilotonnes per year if expanded to other public buildings.

Measures taken in the *residential sector* benefit from additional *financial support by the provinces*, mainly through their *housing support programmes*. Special support programmes exist for the use of renewables in domestic heating systems, district heating connections and thermal insulation. In 1999, more than 33 000 dwellings benefited from such support, which amounted to EUR 228.5 million (EUR 75 million in the form of subsidies and the remainder in the form of loans and guarantees). Subsidies are differentiated according to both social and environmental criteria. The National Climate Strategy calls for increasing provincial subsidies for thermal insulation and energy efficiency measures by shifting from normal housing subsidies to environment-related housing subsidies.

5.3 Market-based integration in the energy sector: taxation and pricing policies

A *fuel excise tax* is levied on fossil fuels, excluding coal (Table 5.2). Heating oil is taxed on the basis of EU law. An *energy consumption tax* on electricity and natural gas was introduced in 1996. In June 2000, after electricity prices were reduced further to the liberalisation of the electricity market, the tax rate on electricity was doubled to curb increases in demand. As of January 2004, taxes on natural gas and on heating oil

for households and industry will increase by 51%, 42% and 67%, respectively, and a tax on coal will be introduced, although coal used for electricity production and for industrial processes will be exempted. *Tax rebates* for fuels used in combined heat and power plants are aimed at avoiding double taxation (given the electricity tax) and to provide incentives for heat production from such plants. Rebates for fuels used for heat production are bound by energy efficiency criteria. About 17% of the *energy consumption tax revenues* are earmarked for energy saving and other environmental projects at local level: about 12% (EUR 50 million per year) goes to the provinces and 5% to the municipalities. Since 2001, provinces have received an additional EUR 25 million from the increased tax (Chapter 5).

Federal investment support for *electricity production* from renewables has diminished since the introduction in 2002 of a *feed-in tariff system*, obliging utilities to purchase power generated from selected renewables at above-market tariffs (Chapter 5). Provincial electricity distributors can recover additional costs from feed-in tariffs through an extra grid charge that adds to the access charges paid by customers. Since January 2003, the feed-in-tariffs applied are set by the federal government for a period of ten years, thus providing clearer incentives for investments in renewable energy. These measures are helping transfer the financial burden for reaching the green electricity target from the taxpayer to the final electricity user. The financial burden is unevenly distributed among customers, however, and distorted incentives favour large energy consumers and fuels with a high pollution burden, such as coal. Energy-intensive manufacturing industries benefit from a *tax reimbursement* system that applies when the total energy consumption tax exceeds 0.35% of net production value. It is estimated that eligible companies are thus exempted from almost half of the energy consumption tax. Also, price reductions subsequent to the *liberalisation of the electricity and natural gas markets* in 2001-02 have mainly benefited large consumers; small consumers, including households, have seen the reductions offset by increases in the tax.

The system of *energy taxes and charges* and the tax ceilings granted to energy-intensive industries need to be further reviewed and assessed against the user pays and polluter pays principles, taking into account both the environmental and economic effectiveness of the system, including competitiveness and distributive aspects. This review should be carried out with the relevant ministries and in consultation with industry.

REFERENCES

I.A Selected environmental data

I.B Selected economic data

I.C Selected social data

II.A Selected multilateral agreements (worldwide)

II.B Selected multilateral agreements (regional)

III. Abbreviations

IV. Physical context

V. Selected environmental events (1995-2002)

VI. Selected environmental Web sites

I.A: SELECTED ENVIRONMENTAL DATA (1)

		CAN	MEX	USA	JPN	KOR	AUS	NZL	**AUT**	BEL	CZE	DNK	FIN
LAND													
Total area (1000 km^2)		9971	1958	9364	378	99	7713	270	**84**	31	79	43	338
Major protected areas (% of total area)	*2*	9.6	8.2	21.2	6.8	6.9	7.7	23.5	**29.2**	2.8	16.2	32.0	8.4
Nitrogenous fertiliser use (t/km^2 of arable land)		3.8	4.9	5.7	11.3	21.9	1.9	59.0	**7.9**	17.0	7.1	10.3	7.1
Pesticide use (t/km^2 of arable land)		0.07	0.13	0.20	1.50	1.29	0.06	0.82	**0.24**	1.15	0.13	0.12	0.05
FOREST													
Forest area (% of land area)		45.3	33.4	32.6	66.8	65.2	19.4	29.5	**47.6**	22.2	34.1	10.5	75.5
Use of forest resources (harvest/growth)		0.4	0.2	0.6	0.3	0.1	0.6	0.6	**0.7**	0.9	0.7	0.6	0.8
Tropical wood imports (USD/cap.)	*3*	1.6	0.2	2.2	10.7	6.1	4.0	3.4	**0.4**	24.2	0.3	3.8	1.4
THREATENED SPECIES													
Mammals (% of species known)		32.6	33.2	10.5	24.0	17.0	23.2	15.2	**26.2**	31.6	33.3	22.0	11.9
Birds (% of species known)		13.1	16.9	7.2	12.9	14.1	12.1	25.3	**26.0**	27.5	55.9	13.2	13.3
Fish (% of species known)		7.5	5.7	2.4	24.0	1.3	0.7	0.8	**41.7**	54.3	29.2	15.8	11.8
WATER													
Water withdrawal (% of gross annual availability)		1.6	15.3	19.0	20.5	33.9	6.2	0.6	**4.2**	45.1	11.5	12.3	2.1
Public waste water treatment (% of population served)		72	24	71	64	70	..	80	**86**	38	64	89	81
Fish catches (% of world catches)		1.0	1.4	5.0	5.3	1.9	0.2	0.6	**-**	-	-	1.6	0.2
AIR													
Emissions of sulphur oxides (kg/cap.)		82.3	12.2	62.7	6.9	24.8	96.0	11.6	**5.0**	20.1	25.8	5.2	14.6
(kg/1000 USD GDP)	*4*	3.1	1.6	2.0	0.3	2.1	4.1	0.7	**0.2**	0.9	2.0	0.2	0.6
% change (1990-late 1990s)		-22	..	-20	-3	-29	-4	20	**-55**	-37	-86	-85	-71
Emissions of nitrogen oxides (kg/cap.)		66.8	12.0	84.4	13.1	23.4	135.4	53.4	**22.6**	35.7	38.6	38.9	45.6
(kg/1000 USD GDP)	*4*	2.5	1.6	2.7	0.5	2.0	5.7	3.1	**0.9**	1.5	3.0	1.5	1.9
% change (1990-late 1990s)		-2	18	5	-	17	17	18	**-9**	16	-47	-25	-21
Emissions of carbon dioxide (t./cap.)	*5*	16.7	3.8	20.8	9.3	9.5	17.2	8.4	**7.7**	11.8	11.9	9.4	10.8
(t./1000 USD GDP)	*4*	0.62	0.45	0.63	0.38	0.68	0.71	0.45	**0.32**	0.48	0.91	0.37	0.45
% change (1990-2000)		22	24	18	13	88	26	38	**9**	14	-19	2	5
WASTE GENERATED													
Industrial waste (kg/1000 USD GDP)	*4, 6*	..	50	..	40	60	110	30	**80**	60	70	20	150
Municipal waste (kg/cap.)	*7*	350	320	760	410	360	690	380	**560**	550	330	660	460
Nuclear waste (t./Mtoe of TPES)	*8*	4.7	0.1	0.9	1.7	3.5	-	-	**-**	2.2	1.0	-	2.2
PAC EXPENDITURE (% of GDP)	*9*	1.1	0.7	1.6	1.4	1.5	0.8	..	**2.4**	1.5	1.7	..	0.8

.. not available. - nil or negligible. x data included under Belgium.

1) Data refer to the latest available year. They include provisional figures and Secretariat estimates. Partial totals are underlined. Varying definitions can limit comparability across countries.

2) Data refer to IUCN categories I to VI; AUS, HUN, ITA, LUX, NOR, POL, TUR: national data.

3) Total imports of cork and wood from non-OECD tropical countries.

4) GDP at 1995 prices and purchasing power parities.

Source: OECD Environmental Data Compendium.

OECD EPR / SECOND CYCLE

FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD*	OECD*
549	357	132	93	103	70	301	3	42	324	313	92	49	506	450	41	779	245	34777
10.1	26.9	2.6	9.1	9.5	0.9	9.1	6.5	11.6	7.6	9.7	6.6	21.6	8.4	8.1	18.0	3.8	20.4	12.4
12.4	15.3	7.3	6.4	9.8	43.1	7.6	x	30.5	11.4	6.0	3.9	4.5	5.8	6.9	11.8	5.1	16.0	6.2
0.51	0.26	0.29	0.10	-	0.25	0.44	0.63	0.98	0.04	0.06	0.50	0.21	0.18	0.06	0.33	0.13	*0.52*	*0.21*
31.4	30.1	22.8	18.9	1.3	8.8	23.3	34.4	9.2	39.2	29.7	37.9	42.2	32.3	73.5	31.7	26.9	10.5	33.9
0.7	0.4	0.6	0.6	-	0.6	0.3	0.5	0.6	0.5	0.6	0.8	0.5	0.5	0.7	0.5	0.4	0.7	0.5
6.8	1.8	2.8	0.1	2.8	11.2	7.1	-	15.6	3.6	0.3	17.9	0.1	6.2	2.2	0.6	0.5	2.7	4.0
19.7	36.7	37.9	71.1	-	6.5	40.7	51.6	15.6	3.4	14.6	17.3	22.2	21.2	23.1	34.2	22.2	*21.9*	..
14.3	29.2	13.0	18.8	34.7	21.8	18.4	50.0	27.1	7.7	14.7	13.7	14.4	14.1	19.2	42.6	6.7	*6.4*	..
7.5	68.2	24.3	32.1	-	33.3	31.8	27.9	82.1	-	9.6	18.6	23.8	29.4	7.9	44.7	9.9	*11.1*	..
16.9	22.3	12.1	4.7	0.1	2.3	32.1	3.7	5.2	0.7	16.9	15.1	1.4	28.6	1.5	4.8	17.0	*20.7*	*11.4*
77	91	56	32	33	73	63	95	98	73	55	46	49	48	86	96	17	*95*	*64*
0.6	0.2	0.1	-	2.1	0.3	0.3	-	0.5	2.9	0.2	0.2	-	1.0	0.4	-	0.5	0.8	27.4
14.3	10.1	51.4	58.5	33.4	42.2	16.0	7.1	5.7	6.4	39.1	37.6	33.2	40.3	8.0	3.9	33.0	19.9	32.7
0.7	0.4	3.7	5.7	1.3	1.7	0.8	0.2	0.2	0.2	4.3	2.4	3.3	2.4	0.4	0.1	5.3	1.0	1.5
-34	-84	7	-41	14	-14	-46	-79	-55	-46	-53	4	-67	-25	-48	-35	..	-68	-33
28.3	19.9	36.3	22.0	91.7	32.2	25.8	38.8	26.6	53.7	21.7	37.1	24.1	32.9	30.2	14.8	14.1	26.9	40.3
1.3	0.9	2.6	2.1	3.5	1.4	1.2	0.9	1.1	2.1	2.4	2.4	2.4	2.0	1.4	0.6	2.3	1.3	1.9
-12	-40	17	-7	-2	3	-24	-27	-27	6	-35	17	-43	6	-23	-32	48	-42	-4
6.0	10.0	8.0	5.5	7.7	11.0	7.4	18.4	10.9	7.7	7.7	6.0	6.6	7.2	5.3	5.6	3.1	9.2	11.2
0.26	0.43	0.54	0.49	0.29	0.40	0.34	0.43	0.44	0.29	0.85	0.36	0.63	0.40	0.23	0.20	0.49	0.44	0.51
-3	-15	23	-18	8	29	8	-23	11	21	-16	49	-36	35	-2	-5	49	-3	13
80	30	50	20	1	60	20	140	30	30	160	80	80	40	110	10	30	40	70
510	540	430	450	700	560	500	640	610	620	290	450	320	660	450	650	390	560	540
4.4	1.2	-	1.8	-	-	-	-	0.2	-	-	-	2.5	1.4	4.6	2.4	-	3.4	1.5
1.6	1.6	1.0	1.5	..	0.6	0.9	..	2.0	..	2.0	0.8	0.8	0.8	0.8	1.6	1.1	0.7	..

UKD: pesticides and threatened species: Great Britain; water withdrawal and public waste water treatment plants: England and Wales.

5) CO_2 from energy use only; international marine and aviation bunkers are excluded.

6) Waste from manufacturing industries.

7) CAN, NZL: household waste only.

8) Waste from spent fuel arising in nuclear power plants, in tonnes of heavy metal, per million tonnes of oil equivalent of total primary energy supply.

9) Household expenditure excluded.

I.B: SELECTED ECONOMIC DATA (1)

		CAN	MEX	USA	JPN	KOR	AUS	NZL	**AUT**	BEL	CZE	DNK
GROSS DOMESTIC PRODUCT												
GDP, 2001 (billion USD at 1995 prices and PPPs)		842	812	9156	3131	674	474	72	**198**	258	139	138
% change (1990-2001)		33.4	40.7	39.1	14.6	87.1	44.0	32.6	**27.0**	24.6	3.8	26.9
per capita, 2001 (1000 USD/cap.)		27.1	8.2	32.1	24.6	14.2	24.5	18.7	**24.4**	25.1	13.6	25.8
Exports, 2001 (% of GDP)		43.3	27.5	10.3	10.4	42.9	22.4	36.6	**52.2**	86.8	71.4	45.3
INDUSTRY	*2*											
Value added in industry (% of GDP)		31	28	25	32	44	26	27	**33**	28	41	27
Industrial production: % change (1990-2001)		36.0	42.6	41.6	-5.3	135.8	28.2	19.1	**45.4**	15.2	-18.6	41.9
AGRICULTURE												
Value added in agriculture (% of GDP)	*3*	3	4	2	1	5	4	8	**2**	1	4	3
Agricultural production: % change (1990-2001)		13.9	33.4	20.3	-9.2	26.2	28.0	29.0	**4.3**	17.2	..	2.3
Livestock population, 2001 (million head of sheep eq.)		103	276	786	55	27	295	102	**18**	30	14	25
ENERGY												
Total supply, 2000 (Mtoe)		251	154	2300	525	194	110	19	**29**	59	40	19
% change (1990-2000)		20.0	23.8	19.3	19.6	109.1	25.9	32.9	**13.3**	22.3	-14.8	7.7
Energy intensity, 2000 (toe/1000 USD GDP)		0.30	0.19	0.25	0.17	0.30	0.24	0.26	**0.15**	0.23	0.30	0.14
% change (1990-2000)		-8.7	-12.2	-13.2	3.9	15.1	-10.5	2.1	**-9.8**	-0.8	-15.0	-14.4
Structure of energy supply, 2000 (%)	*4*											
Solid fuels		12.0	4.6	23.6	17.9	21.7	43.1	5.4	**12.5**	14.2	52.2	20.7
Oil		34.7	61.8	38.7	50.5	53.6	33.2	33.9	**41.1**	40.4	19.1	45.0
Gas		29.4	21.7	23.7	12.3	8.8	17.5	27.1	**22.7**	22.7	18.2	22.9
Nuclear		7.5	1.4	9.1	16.0	14.7	..	..	**..**	21.3	8.6	..
Hydro, etc.		16.5	10.4	5.0	3.3	1.3	6.3	33.5	**23.7**	1.3	1.9	11.3
ROAD TRANSPORT	*5*											
Road traffic volumes per capita, 1999 (1000 veh.-km/cap.)		9.4	0.6	15.8	6.0	1.8	9.3	8.0	**7.8**	8.7	3.1	8.4
Road vehicle stock, 1999 (10 000 vehicles)		1784	1459	21533	7003	1116	1199	231	**485**	512	373	223
% change (1990-1999)		7.8	47.7	14.1	24.0	228.9	22.7	25.2	**31.3**	20.2	43.7	17.9
per capita (veh./100 inh.)		58	15	79	55	24	63	61	**60**	50	36	42

.. not available. - nil or negligible. x data included under Belgium.

1) Data may include provisional figures and Secretariat estimates. Partial totals are underlined.

2) Value added: includes mining and quarrying, manufacturing, gas, electricity and water and construction; production: excludes construction.

Source: OECD Environmental Data Compendium.

OECD EPR / SECOND CYCLE

FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD	OECD
124	1393	1921	165	117	8	112	1288	20	398	120	352	167	58	739	206	200	391	1293	24965
24.6	22.0	19.0	31.2	12.2	31.8	115.0	19.0	86.5	34.4	41.9	44.6	33.7	14.9	33.5	20.6	10.3	31.6	28.3	30.6
23.9	23.5	23.3	15.5	11.5	26.8	29.1	22.2	44.5	24.9	26.5	9.1	16.6	10.8	18.4	23.2	27.7	5.7	21.6	22.0
40.4	28.2	35.0	24.5	60.6	39.8	94.5	28.3	153.6	65.8	46.2	29.8	31.5	75.9	29.9	46.5	43.8	35.0	27.1	21.6
34	25	30	21	34	29	41	29	21	27	43	35	31	35	30	28	30	30	28	28
63.2	19.0	14.0	14.1	54.0	..	256.6	14.2	28.9	20.7	41.1	64.3	24.7	0.2	21.7	40.0	26.1	38.2	10.0	23.6
4	3	1	8	4	11	4	3	1	3	2	4	4	5	4	2	2	15	1	2
-13.7	2.0	-2.9	16.9	-13.0	9.1	10.3	7.2	x	-0.6	-15.2	-16.2	0.5	..	12.8	-9.3	-7.0	7.8	-11.2	..
9	164	124	21	13	1	54	71	x	46	9	57	19	7	96	13	12	117	117	2682
33	257	340	28	25	3	15	172	4	76	26	90	25	17	125	47	27	77	233	5317
15.0	13.8	-4.5	27.9	-12.9	63.5	39.8	13.1	3.1	14.0	19.4	-9.9	43.4	-19.5	37.9	1.7	6.1	46.4	9.5	17.8
0.27	0.19	0.18	0.18	0.22	0.46	0.14	0.14	0.20	0.19	0.22	0.26	0.15	0.31	0.17	0.23	0.13	0.18	0.18	0.22
-7.0	-4.8	-19.3	1.5	-19.4	27.8	-30.7	-3.2	-41.9	-14.2	-14.6	-37.0	9.3	-27.6	6.2	-14.6	-2.5	3.0	-12.7	-8.9
15.7	5.7	23.7	32.5	16.2	2.9	18.2	7.5	3.9	10.8	3.9	62.2	15.5	24.1	16.8	5.5	0.9	30.5	15.5	20.4
30.4	33.2	38.8	56.1	28.0	24.5	56.5	52.6	73.3	38.5	33.1	22.1	63.4	16.2	52.1	28.6	46.8	40.5	35.9	40.8
10.6	13.4	21.2	6.1	39.3	..	23.5	34.5	21.0	46.8	13.3	11.0	8.3	32.6	12.2	1.5	8.9	16.4	37.8	21.6
18.2	41.1	13.0	..	14.9	..	..	..	..	1.4	..	..	..	24.3	13.0	32.0	25.4	..	9.6	11.0
24.9	6.6	3.3	5.3	1.6	72.6	1.8	5.4	1.8	2.6	49.6	4.7	12.8	2.7	5.9	32.4	17.9	12.6	1.2	6.2
8.9	8.4	7.4	7.3	3.5	6.5	8.3	8.0	8.9	7.0	7.2	4.5	5.8	2.2	4.2	8.4	7.2	0.8	7.8	8.0
240	3309	4503	389	271	17	148	3545	31	675	225	1104	461	141	2048	424	376	548	2909	57281
7.6	16.3	20.7	54.1	12.7	27.3	55.8	15.9	40.2	17.7	16.0	72.6	109.5	..	41.8	7.9	13.9	132.1	15.4	21.7
46	56	55	37	27	62	39	61	71	43	51	29	46	26	52	48	53	8	49	51

3) Agriculture, forestry, hunting, fishery, etc.

4) Breakdown excludes electricity trade.

5) Refers to motor vehicles with four or more wheels, except for Italy, which include three-wheeled goods vehicles.

I.C: SELECTED SOCIAL DATA (1)

		CAN	MEX	USA	JPN	KOR	AUS	NZL	**AUT**	BEL	CZE	DNK
POPULATION												
Total population, 2001 (100 000 inh.)		311	991	2850	1273	473	194	39	**81**	103	102	54
% change (1990-2001)		12.3	22.0	14.0	3.0	10.4	13.6	14.5	**5.3**	3.2	-1.3	4.2
Population density, 2001 (inh./km^2)		3.1	50.6	30.4	336.9	476.7	2.5	14.3	**96.9**	336.9	129.6	124.4
Ageing index, 2001 (over 64/under 15)		67.1	17.0	58.4	125.1	36.3	61.0	52.4	**92.5**	94.5	84.4	79.3
HEALTH												
Women life expectancy at birth, 2000 (years)		81.7	77.9	79.4	84.6	79.2	82.0	80.8	**81.2**	80.8	78.5	79.0
Infant mortality, 2000 (deaths /1 000 live births)		5.3	24.9	7.1	3.2	7.7	5.2	5.4	**4.8**	5.2	4.0	5.3
Expenditure, 2000 (% of GDP)		9.3	5.4	13.0	7.8	5.9	8.3	8.2	**8.0**	8.7	7.2	8.4
INCOME AND POVERTY												
GDP per capita, 2001 (1000 USD/cap.)		27.1	8.2	32.1	24.6	14.2	24.5	18.7	**24.4**	25.1	13.6	25.8
Poverty (% pop. < 50% median income)		10.3	21.9	17.0	8.1	..	9.3	..	**7.4**	7.8	..	5.0
Inequality (Gini levels)	*2*	28.5	52.6	34.4	26.0	..	30.5	25.6	**26.1**	27.2	..	21.7
Minimum to median wages, 2000	*3*	42.5	21.1	36.4	32.9	23.8	57.9	46.3	**x**	49.2	30.4	x
EMPLOYMENT												
Unemployment rate, 2001 (% of total labour force)		7.2	2.5	4.8	5.0	3.7	6.8	5.3	**4.9**	6.6	8.2	4.3
Labour force participation rate, 2001 (% 15-64 year-olds)		77.5	55.7	66.9	78.2	65.3	75.4	66.0	**76.9**	64.0	71.5	80.1
Employment in agriculture, 2001 (%)	*4*	2.9	17.6	2.4	4.9	10.3	4.9	9.1	**5.7**	2.2	4.8	3.3
EDUCATION												
Education, 2001 (% 25-64 year-olds)	*5*	81.9	21.6	87.7	83.1	68.0	58.9	75.7	**75.7**	58.5	86.2	80.2
Expenditure, 1999 (% of GDP)	*6*	6.6	5.2	6.5	4.7	6.8	5.8	..	**6.3**	5.5	4.7	6.7
OFFICIAL DEVELOPMENT ASSISTANCE	*7*											
ODA, 2001 (% of GNI)		0.22	..	0.11	0.23	..	0.25	0.25	**0.29**	0.37	..	1.03
ODA, 2001 (USD/cap.)		49	..	40	77	..	45	29	**66**	85	..	305

.. not available. - nil or negligible. x not applicable.

1) Data may include provisional figures and Secretariat estimates. Partial totals are underlined.

2) Ranging from 0 (equal) to 100 (inequal) income distribution; figures relate to total disposable income (including all incomes, taxes and benefits) for the entire population.

3) Minimum wage as a percentage of median earnings including overtime pay and bonuses.

Source: OECD.

OECD EPR / SECOND CYCLE

FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD	OECD
52	592	823	106	102	3	38	579	4	160	45	386	101	54	403	89	72	686	600	11367
4.2	4.4	3.7	5.3	-1.7	11.9	9.6	2.1	14.8	7.0	6.4	1.4	1.9	1.5	3.6	3.9	7.7	22.1	4.2	9.1
15.4	107.8	230.6	80.5	109.5	2.8	54.6	192.3	170.6	385.0	13.9	123.6	109.4	109.7	79.6	19.8	175.1	88.0	245.0	32.7
84.4	86.2	116.3	111.9	92.4	50.0	52.2	124.9	74.6	73.0	75.0	67.0	90.7	60.2	116.3	100.1	95.6	18.4	82.3	65.9
81.0	82.5	80.7	80.6	75.6	81.4	79.1	81.6	81.2	80.6	81.4	78.0	79.1	77.2	82.4	82.1	82.5	71.0	79.8	..
3.8	4.5	4.4	6.1	9.2	3.0	5.9	5.1	5.1	5.1	3.8	8.1	5.5	8.6	4.6	3.4	4.9	38.7	5.6	..
6.6	9.5	10.6	8.3	6.8	8.9	6.7	8.1	6.0	8.1	7.5	6.2	8.2	5.9	7.7	7.9	10.7	4.8	7.3	..
23.9	23.5	23.3	15.5	11.5	26.8	29.1	22.2	44.5	24.9	26.5	9.1	16.6	10.8	18.4	23.2	27.7	5.7	21.6	22.0
4.9	7.5	9.4	13.8	7.3	..	11.0	14.2	..	6.3	10.0	..	..	..	..	6.4	6.2	16.2	10.9	..
22.8	27.8	28.2	33.6	28.3	..	32.4	34.5	..	25.5	25.6	..	..	..	..	23.0	26.9	49.1	32.4	..
x	60.8	x	51.3	35.6	x	x	x	48.9	46.7	x	35.5	38.2	..	31.8	x	x	..	x	..
9.1	8.7	7.4	10.4	5.7	1.5	3.9	9.6	2.6	2.2	3.6	18.2	4.1	19.3	10.5	4.0	1.9	8.4	5.1	6.4
74.8	69.7	75.1	63.0	58.0	76.8	70.4	60.8	65.3	67.0	80.7	65.1	75.7	69.5	69.3	77.0	81.8	51.5	75.9	68.5
5.7	3.7	2.6	16.0	6.3	7.8	7.0	5.3	1.4	2.9	3.9	19.1	12.7	6.1	6.4	2.3	4.2	32.6	1.4	6.6
73.8	63.9	82.6	51.4	70.2	56.9	57.6	43.3	52.7	65.0	85.2	45.9	19.9	85.1	40.0	80.6	87.4	24.3	63.0	64.2
5.8	6.2	5.6	3.9	5.2	..	4.6	4.8	..	4.7	6.6	5.3	5.7	4.4	5.3	6.7	5.9	3.9	5.2	5.5
0.32	0.32	0.27	0.17	..	..	0.33	0.15	0.82	0.82	0.80	..	0.25	..	0.30	0.77	0.34	..	0.32	0.22
75	71	61	19	..	..	75	28	318	198	298	..	26	..	43	187	126	..	76	61

4) Civil employment in agriculture, forestry and fishing.

5) Upper secondary or higher education; OECD: average of rates.

6) Public and private expenditure on educational institutions; OECD: average of rates.

7) Official Development Assistance by Member countries of the OECD Development Assistance Committee.

II.A: SELECTED MULTILATERAL AGREEMENTS (WORLDWIDE)

Y = in force S = signed R = ratified D = denounced

			CAN	MEX	USA	JPN
1946 Washington	Conv. - Regulation of whaling	Y	D	R	R	R
1956 Washington	Protocol	Y	R	R	R	R
1949 Geneva	Conv. - Road traffic	Y	R		R	R
1954 London	Conv. - Prevention of pollution of the sea by oil	Y	R	R	R	R
1971 London	Amendments to convention (protection of the Great Barrier Reef)		R			
1957 Brussels	Conv. - Limitation of the liability of owners of sea-going ships	Y	S			D
1979 Brussels	Protocol	Y				
1958 Geneva	Conv. - Fishing and conservation of the living resources of the high seas	Y	S	R	R	
1960 Geneva	Conv. - Protection of workers against ionising radiations (ILO 115)	Y		R		R
1962 Brussels	Conv. - Liability of operators of nuclear ships					
1963 Vienna	Conv. - Civil liability for nuclear damage	Y		R		
1988 Vienna	Joint protocol relating to the application of the Vienna Convention and the Paris Convention	Y				
1997 Vienna	Protocol to amend the Vienna convention					
1963 Moscow	Treaty - Banning nuclear weapon tests in the atmosphere, in outer space and under water	Y	R	R	R	R
1964 Copenhagen	Conv. - International council for the exploration of the sea	Y	R		R	
1970 Copenhagen	Protocol	Y	R		R	
1969 Brussels	Conv. - Intervention on the high seas in cases of oil pollution casualties (INTERVENTION)	Y		R	R	R
1973 London	Protocol (pollution by substances other than oil)	Y		R	R	
1969 Brussels	Conv. - Civil liability for oil pollution damage (CLC)	Y	R	D	S	D
1976 London	Protocol	Y	R	R		R
1992 London	Protocol	Y	R	R		R
1970 Bern	Conv. - Transport of goods by rail (CIM)	Y				
1971 Brussels	Conv. - International fund for compensation for oil pollution damage (FUND)	Y	D	D	S	D
1976 London	Protocol	Y	R	R		R
1992 London	Protocol	Y	R	R		R
1971 Brussels	Conv. - Civil liability in maritime carriage of nuclear material	Y				
1971 London, Moscow, Washington	Conv. - Prohib. emplacement of nuclear and mass destruct. weapons on sea-bed, ocean floor and subsoil	Y	R	R	R	R
1971 Ramsar	Conv. - Wetlands of international importance especially as waterfowl habitat	Y	R	R	R	R
1982 Paris	Protocol	Y	R	R	R	R
1987 Regina	Regina amendment	Y	R	R		R
1971 Geneva	Conv. - Protection against hazards of poisoning arising from benzene (ILO 136)	Y				
1972 London, Mexico, Moscow, Washington	Conv. - Prevention of marine pollution by dumping of wastes and other matter (LC)	Y	R	R	R	R
1996 London	Protocol to the Conv. - Prevention of marine poll. by dumping of wastes and other matter		R		S	
1972 Geneva	Conv. - Protection of new varieties of plants (revised)	Y	R	R	R	R
1978 Geneva	Amendments	Y	R	R	R	R
1991 Geneva	Amendments	Y			R	R
1972 Geneva	Conv. - Safe container (CSC)	Y	R	R	R	R
1972 London, Moscow, Washington	Conv. - International liability for damage caused by space objects	Y	R	R	R	R
1972 Paris	Conv. - Protection of the world cultural and natural heritage	Y	R	R	R	R
1973 Washington	Conv. - International trade in endangered species of wild fauna and flora (CITES)	Y	R	R	R	R
1974 Geneva	Conv. - Prev. and control of occup. hazards caused by carcinog. subst. and agents (ILO 139)	Y				R
1976 London	Conv. - Limitation of liability for maritime claims (LLMC)	Y		R		R
1996 London	Amendment to convention		S			
1977 Geneva	Conv. - Protection of workers against occupational hazards in the working environment due to air pollution, noise and vibration (ILO 148)	Y				
1978 London	Protocol - Prevention of pollution from ships (MARPOL PROT)	Y	R	R	R	R
1978 London	Annex III	Y			R	R
1978 London	Annex IV					R

OECD EPR / SECOND CYCLE

Y = in force S = signed R = ratified D = denounced

KOR	AUS	NZL	**AUT**	BEL	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD	EU
R	R	R	**R**			R	R	R	R			D	R	R		R	R				R	R	R		R	
R	R	R				R		R	R			R	R	R		R	R				R	R	R		R	
R	R	R	**R**	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	
R	R	R	**R**	R		R	R	R	R	R		R	R	R		R	R	R	R		R	R	R		R	
	R	R				R	R	R	R	R				R			R					R	R		R	
	D			D		D	D	D	D			R		S	R	D	D	R	R		R	D	R		D	
	R			R			S		S						R			R	R		R		R		D	
	R	S		R		R	R	R				S	S			R			R		R		R		R	
				R	R	R	R	R	R	R	R			R		R	R	R	R	R	R	R	R	R	R	
				S					S				S			R			R							
					R						R							R		R	S				S	
				S	R	R	R	S	S	S	R			R		R	R	R	S	R	S	R	S	S	S	
					S						S			S				S								
R	R	R	**R**	R	R	R	R		R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	
				R		R	R	R	R			R	R			R	R	R	R		R	R			R	
				R		R	R	R	R			R	R			R	R	R	R		R	R			R	
S	R	R		R		R	R	R	R	S		R	R	R		R	R	R	R		R	R	R		R	
	R	S		R		R	R	R	R				R	R		R	R	R	R		R	R	R		R	
D	D	D		D		D	D	D	D	D		D	D	D	R	D	D	D	R		D	D	D		D	
R	R			R		R	R	R	R	R		R	D	R	R	R	R	R	R		R	R	R		D	
R	R	R		R		R	R	R	R	R		R	R	R		R	R	R	R		R	R	R		R	
			R	R	R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	
D	D	D		D		D	D	D	D	D		D	D	D		D	D	D	R		D	D	D		D	
	R			R		R	R	R	R	R		R	D	R		R	R	R	R		R	R			D	
R	R	R		R		R	R	R	R	R		R	R	R		R	R	R	R		R	R			R	
				R		R	R	R	R					R		R	R		S		R	R			S	
R	R	R	**R**	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R		R	R	R	R	R	R	R	R	R	R	R	R	R				R	R		R	
					R		R	R	R	R	R			R						R	R		R			
R	R	R		R		R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	R	R		R	
	R	R		S		R	S		R			S	R			S	R				R	S	R		R	
R	R	R	**R**	R	R	R	R	R			R		R	R		R	R	R	R	R	R	R	R		R	
R	R	R	**R**		R	R	R	R	R		R		R	R		R	R	R	R	R		R	R		R	
R	R					R	R		R							R						R			R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	S	S	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	S	R	R	R	R	S	R		R	R	R	R		R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	
				R	R	R	R	R	R		R	R	R			R	R		R	R		R	R		R	
	R	R		R		R	R	R	R	R			R			R	R	R			R	R	R	R	R	
						S	R	S	R							S	N					S			R	
				R	R	R	R	R	R		R			R			R		R	R	R	R			R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	
			R	R	R	R	R	R	R	R	R			R	R			R	R	R	R	R	R		R	

II.A: SELECTED MULTILATERAL AGREEMENTS (WORLDWIDE) (cont.)

Y = in force S = signed R = ratified D = denounced

		CAN	MEX	USA	JPN
1978 London	Annex V	Y	R	R	R
1997 London	Annex VI				
1979 Bonn	Conv. - Conservation of migratory species of wild animals	Y			
1991 London	Agreem. - Conservation of bats in Europe	Y			
1992 New York	Agreem. - Conservation of small cetaceans of the Baltic and the North Seas (ASCOBANS)	Y			
1996 Monaco	Agreem. - Conservation of cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area	Y			
1996 The Hague	Agreem. - Conservation of African-Eurasian migratory waterbirds	Y			
1982 Montego Bay	Conv. - Law of the sea	Y S	R		R
1994 New York	Agreem. - relating to the implementation of part XI of the convention	Y S		S	R
1995 New York	Agreem. - Implementation of the provisions of the convention relating to the conservation and management of straddling fish stocks and highly migratory fish stocks	Y R		R	S
1983 Geneva	Agreem. - Tropical timber	Y R		R	R
1994 New York	Revised agreem. - Tropical timber	Y R		R	R
1985 Vienna	Conv. - Protection of the ozone layer	Y R	R	R	R
1987 Montreal	Protocol (substances that deplete the ozone layer)	Y R	R	R	R
1990 London	Amendment to protocol	Y R	R	R	R
1992 Copenhagen	Amendment to protocol	Y R	R	R	R
1997 Montreal	Amendment to protocol	Y R			
1999 Beijing	Amendment to protocol	R			
1986 Vienna	Conv. - Early notification of a nuclear accident	Y R	R	R	R
1986 Vienna	Conv. - Assistance in the case of a nuclear accident or radiological emergency	Y S	R	R	R
1989 Basel	Conv. - Control of transboundary movements of hazardous wastes and their disposal	Y R	R	S	R
1995 Geneva	Amendment				
1999 Basel	Prot. - Liability and compensation for damage				
1989 London	Conv. - Salvage	Y R	R	R	
1990 Geneva	Conv. - Safety in the use of chemicals at work (ILO 170)	Y	R		
1990 London	Conv. - Oil pollution preparedness, response and co-operation (OPRC)	Y R	R	R	R
1992 Rio de Janeiro	Conv. - Biological diversity	Y R	R	S	R
2000 Montreal	Prot. - Biosafety	S	S		
1992 New York	Conv. - Framework convention on climate change	Y R	R	R	R
1997 Kyoto	Protocol	S	R	S	R
1993 Paris	Conv. - Prohibition of the development, production, stockpiling and use of chemical weapons and their destruction	Y R	R	S	R
1993 Geneva	Conv. - Prevention of major industrial accidents (ILO 174)	Y			
1993	Agreem. - Promote compliance with international conservation and management measures by fishing vessels on the high seas	R	R	R	R
1994 Vienna	Conv. - Nuclear safety	Y R	R	R	R
1994 Paris	Conv. - Combat desertification in those countries experiencing serious drought and/or desertification, particularly in Africa	Y R	R	R	R
1995 Rome	Code of conduct on responsible fishing				
1996 London	Conv. - Liability and compensation for damage in connection with the carriage of hazardous and noxious substances by sea	S			
1997 Vienna	Conv. - Supplementary compensation for nuclear damage			S	
1997 Vienna	Conv. - Joint convention on the safety of spent fuel management and on the safety of radioactive waste management	Y R		S	
1997 New York	Conv. - Law of the non-navigational uses of international watercourses				
1998 Rotterdam	Conv. - Prior informed consent procedure for hazardous chemicals and pesticides (PIC)			S	S
2001 London	Conv. - Civil liability for bunker oil pollution damage				
2001 Stockholm	Conv. - Persistent organic pollutants	R	S	S	

Source: IUCN; OECD.

OECD EPR / SECOND CYCLE

Y = in force S = signed R = ratified D = denounced

KOR	AUS	NZL	**AUT**	BEL	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD	EU
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
																	S					S				
	R			R	R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R		R	R
				S	R	R	R	R	R		R		R		R	R	R	R	R	R		R			R	
				R		R	R		R							R		R				R			R	S
								S		S				S					S		R			S		S
				S		R	R	S	R	S			S		S	R				R	R	R	R		R	S
R	R	R	**R**	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	S		R	R
R	R	R	**R**	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	S		R	R
S	R	R	**S**	S		S	S	S	S	S		R	S	S	S	S	R		S		S	S			R	S
R	R	R	**R**	R		R	R	R	R	R			R	R	R	R	R		R		R	R	R		R	R
R	R	R	**R**	R		R	R	R	R	R			R	R	R	R	R		R		R	R	R		R	R
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
R	R	R	**R**	S	R	R	R		R		R	R		R	R	R	R	R		R	R	R			R	R
		R			R		R								R		R								R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R	R	S	R	R	R	R	R	S	R	R	R	R	S	R	S	R	R	R	R	R	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
			R		R	R	R								R	R	R		R	R	R	R			R	R
						S	S	S			S				S							S	S		S	
	R					R	S	R	R	R			R	R		R	R	S			S	R	R		R	
																	R					R				
R	R	R				R	R	R	R	R		R	R	R		R	R	S			R	R	R		R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
S		S	**S**	S	S	S	S	S	S	S	S	S	S	S	S	S	R	S	S	S	S	S	S	S	S	S
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	R
S	S	S	**R**	R	R	R	R	R	R	R		R	R	R	R	R	R	S	R	R	R	R	S		R	R
S	R	R	**R**	R	R	R	R	R	R	R	R	S	R	R	S	R	R	R	R	S	R	R	R	S	S	
				S												R						R				
																	R					R				R
R	R		**R**	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	
R	R	R	**R**	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
						S	S		S							S	S					S			S	
	S				S									S												
S	S		**R**	S	R	R	R	R	R	R		R	S	R	R	R	R		R	R	R	R	R		R	
							R		S		R				S	R	R		S			R				
S	S	S	**S**	S	R	S	S	S	R	S	R			S	S	R	R	S	S		S	S	R	S	S	S
S	S	S	**S**	S	S	S	S	S	S	S	S	S	S	S	S	R	S	S	S	S	S	S	S	S	S	S

II.B: SELECTED MULTILATERAL AGREEMENTS (REGIONAL)

Y = in force S = signed R = ratified D = denounced

			CAN	MEX	USA	JPN
1957 Geneva	Agreem. - International carriage of dangerous goods by road (ADR)	Y				
1975 New York	Protocol	Y				
1958 Geneva	Agreem. - Adoption of uniform conditions of approval and reciprocal recognition of approval for motor vehicle equipments and parts	Y				
1959 Washington	Treaty - Antarctic	Y	R		R	R
1991 Madrid	Protocol to the Antarctic treaty (environmental protection)	Y	S		R	R
1960 Paris	Conv. - Third party liability in the field of nuclear energy	Y				
1963 Brussels	Supplementary convention	Y				
1964 Paris	Additional protocol to the convention	Y				
1964 Paris	Additional protocol to the supplementary convention	Y				
1982 Brussels	Protocol amending the convention	Y				
1982 Brussels	Protocol amending the supplementary convention	Y				
1988 Vienna	Joint protocol relating to the application of the Vienna Convention and the Paris Convention	Y				
1960 Steckborn	Agreem. - Protection of Lake Constance against pollution	Y				
1966 Bern	Regulation (water withdrawal)	Y				
1968 Paris	Conv. - Protection of animals during international transport	Y				
1979 Strasbourg	Protocol	Y				
1969 London	Conv. - Protection of the archaeological heritage	Y				
1979 Bern	Conv. - Conservation of European wildlife and natural habitats	Y				
1979 Geneva	Conv. - Long-range transboundary air pollution	Y	R		R	
1984 Geneva	Protocol (financing of EMEP)	Y	R		R	
1985 Helsinki	Protocol (reduction of sulphur emissions or their transboundary fluxes by at least 30%)	Y	R			
1988 Sofia	Protocol (control of emissions of nitrogen oxides or their transboundary fluxes)	Y	R		R	
1991 Geneva	Protocol (control of emissions of volatile organic compounds or their transboundary fluxes)	Y	S		S	
1994 Oslo	Protocol (further reduction of sulphur emissions)	Y	R			
1998 Aarhus	Protocol (heavy metals)		R		R	
1998 Aarhus	Protocol (persistent organic pollutants)		R		S	
1999 Gothenburg	Protocol (abate acidification, eutrophication and ground-level ozone)		S		S	
1980 Madrid	Conv. - Transfrontier co-operation between territorial communities or authorities	Y				
1995 Strasbourg	Additional protocol	Y				
1998 Strasbourg	Second protocol	Y				
1991 Espoo	Conv. - Environmental impact assessment in a transboundary context	Y	R		S	
1991 Salzburg	Conv. - Protection of Alps	Y				
1994 Chambery	Prot. - Nature protection and landscape conservation	Y				
1994 Chambery	Prot. - Town and Country Planning and Sustainable Development	Y				
1994 Chambery	Prot. - Mountain agriculture	Y				
1996 Brdo	Prot. - Mountain forests	Y				
1996 Brdo	Prot. - Tourism	Y				
1998 Bled	Prot. - Energy	Y				
1998 Bled	Prot. - Land conservation	Y				
2000 Lucerne	Prot. - Transport	Y				
2000 Lucerne	Prot. - Dispute settlement	Y				

OECD EPR / SECOND CYCLE

Y = in force S = signed R = ratified D = denounced

KOR	AUS	NZL	**AUT**	BEL	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD	EU
			R	R	R	R	R	R	R	R	R			R	R	R	R	R	R	R	R	R	R		R	
			R	R		R	R	R	R		R			R	R	R	R	R	R		R	R	R		R	
			R	R	R	R	R	R	R		R			R	R	R	R	R	R	R	R	R	R		R	
R	R	R	**R**	R	R	R	R	R	R	R	R			R		R	R	R		R	R	R	R	R	R	
R	R	R	**S**	R	S	S	R	R	R	R	S			R		R	R	R		S	R	R	S		R	
			S	R		R	R	R	R	R				R	S	R	R		R		R	R	S	R	R	
			S	R		R	R	R	R					R	S	R	R				R	R	S		R	
			S	R		R	R	R	R	R				R	S	R	R		R		R	R	S	R	R	
			S	R		R	R	R	R					R	S	R	R				R	R	S		R	
			S	R		R	R	R	R	R				R	S	R	R		R		R	R	S	R	R	
			S	R		R	R	R	R					R	S	R	R				R	R	S		R	
				S	R	R	R	S	S	S	R			R		R	R	R	S	R	S	R	S	S	S	
			R						R														R			
			R						R														R			
			R	R	R	R	R	R	R	R		R	R	R	R	R	R		R		R	R	R	R	R	
			R	R	R	R	R	R	R	R		R	R	R	R	R	R		R		R	D	D		D	
			R	R		R		D	R	R		R		R	R				D		R	D	D		D	
			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
			R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
			R	R	R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	R
			R	R	R	R	R	R	R		R			R	R	R	R			R		R	R			
			R	R	R	R	R	R	R	R	R		R	R	R	R	R	S		R	R	R	R		R	R
			R	R	R	R	R	R	S	R				R	R	R	R		S	R	R	R	R		R	S
			R	R	R	R	R	R	R	R	R		R	R	R	R	R	S		R	R	R	R		R	R
			S	S	R	R	R	R	S	S	S	S	S	S	R	R	R	S	S	S	S	R	R		S	R
			R	S	R	R	R	S	R	S	S	S	S	S	R	R	R	S	S	S	S	R	R		S	S
			S	S	S	R	S	S	S	S	S		S	S	R	S	R	S	S	S	S	R	S		S	
			R	R	R	R	R	R	R		R	S	R	R	R	R	R	R	R	R	R	R	R	R			
			S	S				R	R			S		S	R	R			S	R		R	R			
								S	R			S			R	R			S	R		R	S			
			R	R	R	R	R	R	S	R	R	S	S	R	R	R	R	R	R	R	R	R	R		R	R
			R					R	R					R									R			R
			R					S	R					S									S			S
			R					S	R					S									S			S
			R					R	R					S									S			S
			R					S	R					S									S			
			R					S	R					S									S			
			R					S	R					S									S			
			R					S	R					S									S			
			R					S	R					S									S			

II.B: SELECTED MULTILATERAL AGREEMENTS (REGIONAL) (cont.)

Y = in force S = signed R = ratified D = denounced

		CAN	MEX	USA	JPN
1992 Helsinki	Conv. - Transboundary effects of industrial accidents	S		S	
1992 Helsinki	Conv. - Protection and use of transboundary water courses and international lakes	Y			
1999 London	Prot. - Water and health				
1992 Vienna	Agreem. - Forecast, prevention and mitigation of natural and technological disasters				
1993 Lugano	Conv. - Civil liability for damage resulting from activities dangerous to the environment				
1994 Lisbon	Treaty - Energy Charter	Y			S
1994 Lisbon	Protocol (energy efficiency and related environmental aspects)	Y			S
1994 Sofia	Conv. - Co-operation for the protection and sust. use of the Danube river				
1998 Aarhus	Conv. - Access to env. information and public participation in env. decision-making	Y			
1998 Strasbourg	Conv. - Protection of the environment through criminal law				
2000 Geneva	Agreem. - linternational carriage of dangerous goods by inland waterways (AND)				

Source: IUCN; OECD.

OECD EPR / SECOND CYCLE

Y = in force S = signed R = ratified D = denounced

KOR	AUS	NZL	**AUT**	BEL	CZE	DNK	FIN	FRA	DEU	GRC	HUN	ISL	IRL	ITA	LUX	NLD	NOR	POL	PRT	SLO	ESP	SWE	CHE	TUR	UKD	EU
			R	S	R	R	R	S	R	R	R			R	R	S	R	S	S		R	R	R		S	R
			R	R	R	R	R	R	R	R	R			R	R	R	R	R	R	R	R	R	R		S	R
				S	R	S	S	S	S	S	R	S		S	R	S	S	S	S	R	S	S	S		S	
	S										S			R				S								
							S			S		S		S	S	S			S							
	S		**R**	R	R	R	R	R	R	R	R	S	R	R	R	R	S	R	R	R	R	R	R	R	R	R
	S		**R**	R	R	R	R	R	R	R	R	S	R	R	R	R	S	R	R	R	R	R	R	R	R	R
			S						S		R															
			S	S	S	R	S	R	S	S	R	S	S	R	S	S	S	R	S		S	S	S		S	S
			S	S		S	S	S	S	S		S		S	S							S				
					S			S	S					S	S	S				S						

Reference III
ABBREVIATIONS

AAMA	American Automobile Manufacturers Association
AOX	Adsorbable organically bound halogens
BAT	Best available technology
BMLFUW	Federal Ministry for Agriculture, Forestry, Environment and Water Management
BOD	Biochemical oxygen demand
CFC	Chlorofluorocarbon
CITES	Convention on International Trade in Endangered Species
COD	Chemical oxygen demand
CSA	Committee for Sustainable Austria
DAC	Development Assistance Committee of the OECD
ECMT	European Conference of Ministers of Transport
EIA	Environmental impact assessment
EMAS	Eco-Management and Audit Scheme (of the EU)
EMEP	Co-operative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
EU	European Union
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gas
GNI	Gross national income
HCB	Hexachlorobenzene
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
IEA	International Energy Agency
IMO	International Maritime Organization
IPPC	Integrated pollution prevention and control
IRF	International Road Federation
ISO	International Organization for Standardisation
IUCN	International Union for the Conservation of Nature (The World Conservation Union)

LA21	Local Agenda 21
LPG	Liquefied petroleum gas
MtC	Million tonnes of CO_2 equivalent
MWh	Megawatt hours
NGO	Non-governmental organisation
(NM)VOC	(Non-methane) volatile organic compound
NSSD	National Strategy for Sustainable Development
ODA	Official development assistance
ODS	Ozone-depleting substance
ÖPUL	Programme for Environmentally Friendly Agriculture
PAC	Pollution abatement and control
PCBs	Polychlorinated biphenyls
PFCs	Perfluorocarbons
PIC	Prior informed consent
POP	Persistent organic pollutant
TPES	Total primary energy supply
TSP	Total suspended particulates
TWh	Terawatt hour
UBA	Federal Environment Agency
UNCTAD	United Nations Conference on Trade and Development
UN-ECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added tax
WCMC	World Conservation Monitoring Centre
WTO	World Trade Organization
WWF	World Wide Fund for Nature/World Wildlife Fund

Reference IV

PHYSICAL CONTEXT

Austria is a relatively small country (83 900 km^2) that is *land-locked in central Europe* and shares borders with Germany, the Czech Republic, Slovakia, Hungary, Slovenia, Italy, Switzerland and Liechtenstein. About 23% of the national territory is used as permanent grassland, 18% is arable and permanent crop land and 47% is covered with woodlands (see Map of Austria).

Five main types of landscape can be distinguished: the eastern Alps (63% of total area), the Alpine and Carpathian foothills (11%), the low-lying eastern Pannonic plains (11%), the Vienna basin (4%) and the granite-gneiss Bohemian highlands north of the Danube (10%). About 40% of the national territory lies more than 1 000 metres above sea level. The Großglockner, at 3 797 metres, is Austria's highest mountain.

Austria has *three types of climate*. The continental climate, in the east, has average summer temperatures of around 19 °C and annual rainfall that is usually under 700 mm. The mountain areas' Alpine climate features high rainfall, short summers and long winters. The rest of the country has a transition climate influenced by the predominant westerly and north-westerly winds from the Atlantic, with precipitation of 700 to 2 500 mm, depending on altitude.

The variety of landscape, altitude and climate engenders a *diversity of vegetation*. At lower altitudes, the Austrian forests are dominated by oak and beech; from 500 and 1 200 metres, mixed beech and spruce dominate; above that, there is a gradual change to larch and pine. In the mountains, forests help prevent debris flows, avalanches and flooding. There is also great diversity of vegetation in the grassland and Alpine pastures. Austria's *fauna* includes brown bear, fox, wild boar, roe deer, red deer, hare, pheasant, badger and squirrel.

Most of the country lies in the *basin of the Danube River*, which crosses northern Austria for 350 kilometres on its way from the Black Forest to the Black Sea. The country's largest lakes are also transboundary: Lake Constance (Bodensee) on the border with Germany and Switzerland, and Lake Neusiedl on the Hungarian border. The numerous smaller Alpine lakes are popular summer tourist attractions. In the west, part of Austria lies in the basin of the upper Rhine River, which forms the border with Switzerland. A small part of the country lies in the catchment area of the Elbe River.

Austria's *natural resources* include extensive forests and hydropower, and modest mineral deposits. The country is a large exporter of timber (the second largest component of GDP). Austria's iron ore reserves cover about 35% of its needs. Deposits of lignite, oil and natural gas make up meet about 33% of the primary energy supply. Other mineral resources include lead, zinc, gypsum and clay. The country exploits its extensive hydropower generation capacity to meet some 80% of its electricity demand.

Austria's *location* in the middle of Europe gives rise to specific environmental issues such as environmental pressures (e.g. air emissions, habitat disruption) from intensive freight transit traffic on north-south and, increasingly, east-west routes, which has raised much public concern. Transboundary exchange of acidifying air pollutants and tropospheric ozone precursors is another long-standing issue, especially because of damage to forests and soil.

Reference V
SELECTED ENVIRONMENTAL EVENTS (1995-2002)

1995

- Austria accedes to the European Union.
- Ordinance on separate collection of biodegradable waste takes effect.
- Ordinance on take-back of refrigeration equipment is amended.
- A fifth set of ordinances dealing with wastewater discharges from specific industrial sectors is published.
- The interim secretariat of the International Commission for the Protection of the Danube River is established in Vienna. Use of atrazine as a herbicide is banned. ÖPUL 1995 is initiated.
- The Austrian Council on Climate Change, a scientific advisory board to the federal government, is founded.
- The federation and the nine provinces (Länder) agreed to undertake measures to improve energy efficiency standards of buildings.
- Austria nominates the 58 hectare Rotmoos im Fuschertal site, near Salzburg, as a Ramsar site.

1996

- The Convention for the Protection and Sustainable Use of the Danube River (Danube River Protection Convention) is ratified.
- Parliament adopts the National Environment Plan.
- Austria transposes the EU Framework Directive on Review and Monitoring of Air Quality into national law.
- The national phase-out of CFC use in textile cleaning is completed.
- A new packaging ordinance and a landfill ordinance are issued.
- The EU project "Soft Mobility in Tourism Destinations and Regions", which will later lead to creation of the Austria-based Network for Soft Mobility in European Tourism (NETS), begins.

- The annual water protection report is published, along with a sixth set of ordinances dealing with wastewater discharges from industrial sectors. New guidelines on subsidies for industrial wastewater treatment systems become effective.
- A standardised environmental impact assessment (EIA) procedure, as recommended by the OECD, is developed and has since been systematically applied for all bilateral aid (except the budget line for co-financing).
- Austria nominates the 173 hectare Hoerfeld-Moor site, in Carinthia and Styria, as a Ramsar site.

1997

- The federal government and the provincial governments of Vienna and Lower Austria reach agreement on the foundation and maintenance of the Danube Floodplain National Park. A similar agreement is reached with Upper Austria on the Kalkalpen National Park.
- Austria submits its second National Climate Change Report under the United Nations Framework Convention on Climate Change.
- The second national report on ground-level ozone is submitted to the Parliament.
- The Parliament approves the Ambient Air Quality Protection Act, to take effect in 1998.
- Redefinition of the classification system for hazardous waste is approved.
- The packaging ordinance and packaging target ordinance are amended.
- Austria launches its tourism ecolabel programme, which will include annual events recognising designated tourism enterprises.
- A seventh set of ordinances dealing with wastewater discharges from industrial sectors is published, as are technical guidelines in the field of sanitary engineering works.
- Floods took place in Upper Austria, Lower Austria and Burgenland, and a major flood in the Morava River basin also affected Austria.

1998

- The federal government and the provincial government of Lower Austria reach agreement on the foundation and maintenance of Thayatal National Park.
- The Clean Air Act for Steam Boilers and its ordinances are introduced along with a revision of the industrial code and its ordinances.

- The determination ordinance on hazardous waste is amended.
- "Integrated Quality Management in Tourism", a European tourism forum under Austria's EU Presidency, is held in Mayrhofen.
- Austria signs the Aarhus Protocol on Heavy Metals, the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
- Austria ratifies the Convention to Combat Desertification.
- A constitutional law on a nuclear-free Austria is passed.
- The campaign "Lebende Flüsse – Living Rivers" is launched. The Danube River Protection Convention enters into force.
- Flooding affects all parts of Austria; in Carinthia, the Drau River sees its biggest flood since 1966.
- The Federal Waste Management Plan is published.
- The use of methyl bromide is banned, except for registered pesticides.

1999

- The agreement between the federal government and the provincial government of Burgenland on the maintenance and further development of the Neusiedler See-Seewinkel National Park is amended.
- Austria signs the Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone.
- Austria ratifies the Helsinki Convention on Transboundary Effects of Industrial Accidents.
- An interprovince committee to co-ordinate climate change protection measures in the provinces is established.
- Development of a National Climate Change Strategy begins.
- Ordinances on incineration of hazardous waste in industrial plants and on incineration of hazardous waste are approved.
- The battery ordinance is amended.
- The annual water protection report and an eighth set of ordinances dealing with wastewater discharges from industrial sectors are published.
- Flooding affects many parts of Austria. The water level of Lake Constance reaches its highest since 1890.

- The Austrian Electricity Act enters into force, introducing preferential treatment for renewable energy sources.
- Austria nominates a 13 000 hectare site, composed of Waldviertel ponds, peatbogs and flood plains, as a Ramsar site.
- Austria's third national report on ground-level ozone is submitted to the Parliament.

2000

- Austria signs the Cartagena Protocol on Biosafety.
- The Environmental Impact Assessment Act is passed (amendment of Federal Act No. 697/1993).
- The packaging target ordinance, the determination ordinance on hazardous waste and the battery ordinance are amended.
- The Federal Ministry of Economic Affairs and Labour commissions a study on "Sustainable Development within Austrian Tourism: Basics and Analyses".
- The federal government publishes its programme for further sustainable development in Austrian water policy. A ninth set of ordinances dealing with wastewater discharges from specific industrial sectors is published.
- The International Commission for the Protection of the Danube River becomes the "co-ordination platform" for implementation of the EU Water Framework Directive in the Danube Basin District.
- Austria ratifies the Tourism Protocol of the Alpine Convention.
- Austria completes its phase-out of the use of HCFCs as solvents and as foam blowing and insulating material.
- Refilling of halons in equipment is completely phased out.

2001

- Austria signs the Stockholm Convention on Persistent Organic Pollutants.
- An ordinance on quality requirements for compost made from waste is approved.
- As part of its implementation of the EU Water Framework Directive, Austria participates in the Common Implementation Strategy at Community Level (contributing expertise on groundwater issues and heavily modified water bodies).
- Austria submits implementation status reports on the EU nitrate and urban wastewater directives. Studies on benchmarking and private sector participation are made public and discussed. The system of financial incentives for municipal

water supply and wastewater treatment infrastructure is revised to improve cost-effectiveness in the design of water utilities.

- An Austrian Greenbook on Sustainable development is prepared and presented to the public.
- The Federal Ministry of Economic Affairs and Labour commissions studies on the potential of ecotourism, on national parks and tourism and on an evaluation system for sustainability in tourist regions.
- "Ecotourism in Mountain Areas – A Challenge to Sustainable Development", a preparatory conference for the International Year of Ecotourism and International Year of Mountains (2002), is held in Salzburg.
- Austria participates in the joint European initiative called Voluntary Initiatives for Sustainability in Tourism (VISIT).
- The federal government launches a programme on third party financing (contracting) in energy savings investments for federal buildings.
- The Federal Waste Management Plan 2001 is published.
- Austria's third national climate change report is submitted to the UNFCCC.

2002

- Federal acts on the Gesäuse National Park are initiated.
- The Waste Management Act is approved.
- Ordinances on end-of-life vehicles, waste incineration and mobile waste treatment plants are approved.
- Areas north of the Alps and in the Bohemian massif are hit by disastrous floods. Damage to property is estimated by November at EUR 2.9 billion.
- The Council of Ministers agrees on implementation of the Alpine Convention tourism protocol.
- Austria ratifies protocols to the Alpine Convention on tourism, mountain agriculture, spatial planning and sustainable development, mountain forest, traffic, soil protection, nature conservation and landscape.
- Both chambers of the Austrian Parliament ratify the Kyoto Protocol.
- The federal government adopts the National Climate Strategy.
- The Council of Ministers adopts the National Strategy for Sustainable Development.
- Austria nominates the 2 180 hectare Lafnitztal site, along the border between the provinces of Burgenland and Styria, as a Ramsar site.

- Phase-out of HCFCs in cooling systems of new installations is completed.
- Austria ratifies the Cartagena Protocol on Biosafety and the Rotterdam Convention on PIC.
- The Parliament adopts a new Development Co-operation Act that explicitly defines the contribution to environmental protection and natural resource use as one of the overall goals of Austria's development policy.

Reference VI
SELECTED ENVIRONMENTAL WEB SITES

Web site	Federal Ministries
www.lebensministerium.at	Ministry of Agriculture, Forestry, Environment and Water Management
www.ubavie.gv.at	Federal Environment Agency
www.bmwa.gv.at	Ministry of Economic Affairs and Labour
www.bmaa.gv.at	Ministry of Foreign Affairs
www.bmsg.gv.at	Ministry of Health and Social Affairs
www.bmvit.gv.at	Ministry of Traffic and Transport, Innovation and Technology
	Labour/Industry Chambers
www.arbeiterkammer.at	Chamber of Labour
www.voei.at	Federation of Austrian Industry
www.wko.at	Chamber of Economy
www.oekoland.at	Organic farming industry
www.agrar-net.at	Chambers of Agriculture
www.bergbauern.at	Mountain farmers
	Sites about Nature
www.nationalparks.or.at	Ministerial site on national parks
www.nationalpark.co.at and *www.nationalparks.at*	Additional sites on national parks
www.birdlife.at	Birdlife Austria

Sites about Forestry

www.pefc.at	Pan-European Forest Certification
http://fbva.forvie.ac.at	Federal Forest Agency and Research Center (BFW)
www.walddialog.at	Austrian National Forest Programme
www.boku.ac.at/sfh/	Institute of Forest Sector Policy and Economics

Research Institutes

www.boku.ac.at	University for Agricultural Sciences
www.wifo.at	Austrian Institute of Economic Research
www.eva.wsr.ac.at	Energy Research and Policy Institution

Environmental NGOs

www.oekobuero.at	Federation of Environmental NGOs
www.klimabuendnis.at	Climate Alliance
www.accc.gv.at	Austrian Council on Climate Change
www.gfse.at	Global Forum on Sustainable Energy
www.nachhaltigkeit.at	Sustainable Development in Austria

Web Sites of Provincial Governments

www.bgld.gv.at	Burgenland
www.ktn.gv.at	Carinthia (Kärnten)
www.noel.gv.at	Lower Austria (Niederösterreich)
www.salzburg.gv.at	Salzburg
www.verwaltung.steiermark.at	Styria (Steiermark)
www.tirol.gv.at	Tyrol (Tirol)
www.ooe.gv.at	Upper Austria (Oberösterreich)
www.wien.gv.at	Vienna (Wien)
www.vorarlberg.at	Vorarlberg

TABLE OF CONTENTS

Part III

INTERNATIONAL COMMITMENTS

REFERENCES

LIST OF FIGURES, TABLES AND BOXES

Figures

Tables

Boxes

Signs

The following signs are used in Figures and Tables:
. .: not available
– : nil or negligible
. : decimal point

Country Aggregates

OECD Europe: All European member countries of the OECD, i.e. countries of the European Union plus the Czech Republic, Hungary, Iceland, Norway, Poland, the Slovak Republic, Switzerland and Turkey.

OECD: The countries of OECD Europe plus Australia, Canada, Japan, the Republic of Korea, Mexico, New Zealand and the United States.

Country aggregates may include Secretariat estimates.
The sign * indicates that not all countries are included.

Currency

Monetary unit: Euro (EUR)
In 2002, EUR 1.063 = USD 1.

Cut-off Date

This report is based on data available up to March 2003.

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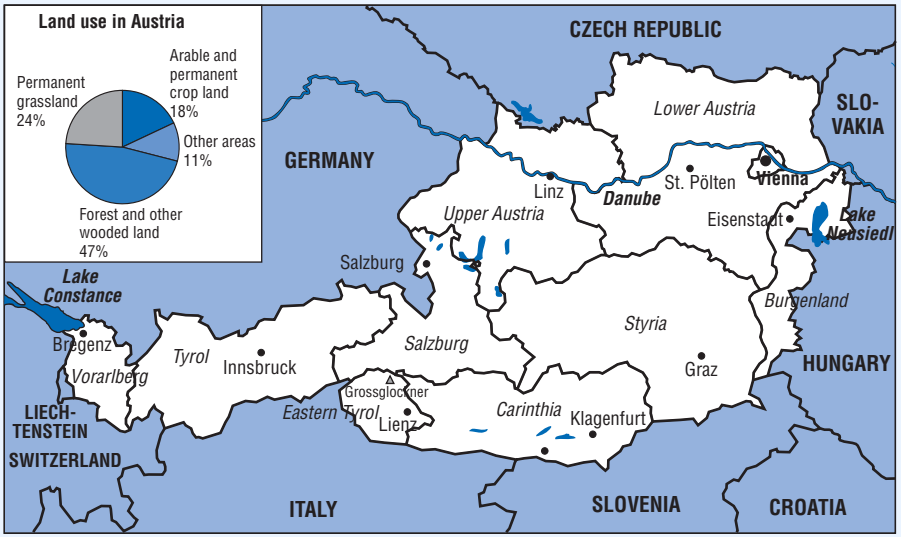
Map of Austria



Source: OECD.