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## **GENERAL INTEREST AND ENVIRONMENT PROTECTION: HISTORIC LINKS**

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## **1 - INTRODUCTION**

This contribution focuses on Austria as an example of the links between services of general interest and environmental protection, and of the issues raised by liberalisation, deregulation and privatisation. In addressing this topic, there is no alternative to the use of indicative evidence due to the short history of these issues and the fact that few studies have yet been made into them.

The close links between services of general interest and environmental protection are not surprising. Since the late 19<sup>th</sup> century services of general interest have been run by the public sector because they generally have long-term impacts but are seldom very profitable in the short run. In Austria as in most other countries, since the 19<sup>th</sup> century essential environmental services like urban water management and waste management have largely been provided on a municipal basis because of their public interest objectives and the long payback periods of the related investments. Most were established to serve the public interest, especially in connection with preventive health measures (epidemic hygiene), but have taken on environmental functions in the past few decades. This has been reflected in the costs associated with them. The public sector accounts for some 60% of Austrian environmental expenditure (OECD 1995b, p. 86).

The advent of environmental policy explicitly formulated as such in the early 1970s accelerated progress in urban water management and waste management, also resulting in the adoption by other municipal services and public sector enterprises — ahead of the private sector — of environmental standards that were long an example to the rest of the world. Austria's unusually large public sector<sup>1</sup> played a part in this, as government control facilitated early implementation of environmental policies through these enterprises.

## **2 - ENVIRONMENTAL PROTECTION ACTIVITIES BY SERVICES OF GENERAL INTEREST**

### Water supply

Virtually all of Austria's water supply systems have been municipal utilities since their inception, and are still either owned by local authorities or run by them.<sup>2</sup> From 1953 onwards action has been taken to expand the country's central drinking water supply systems (and wastewater disposal systems) by providing state funding averaging one-third of the investment cost. These support payments are intended to spread the cost of this long-term infrastructure over the generations benefiting from it, and to promote the pursuit of social policy goals. Annual investment in water supply and wastewater disposal averaged some €1 billion (bn) or about €120 per capita between 1993–2001.<sup>3</sup>

However state funding has since been drastically reduced in the interests of compliance with the Maastricht convergence criteria, and investment is thus likely to decline. The quality of Austria's drinking water, most of which is natural spring water, is regarded as very high by both international and European standards, though the charges for users are only mid-range for Europe (Lauber 2002, pp. 145–147).

### Municipal wastewater disposal services

The rate of connection to municipal wastewater treatment plants with capacities of over 50 person equivalent (PE) has risen from 57% in 1981 to 85% of all households today.<sup>4</sup> Apart from a few small pilot projects in which private interests have invested (some 1% of total capacity) all the facilities concerned are the property of local authorities, associations or cooperatives.<sup>5</sup> The purification efficiency of the plants is very high by international standards.<sup>6</sup>

### Municipal waste disposal services

Household waste collection and treatment cost Austria ATS 10.5bn in 1995 (approx. €750 million [m] or €95 per capita. Goldschmid and Hauer, 1997, p. 12). Municipal services accounted for 76% of this expenditure, and private packaging management organisations for most of the balance. The waste disposal market is dominated by four groups of companies, which generate about one-quarter of total turnover. There are also three other groups, as well as a municipal utility in Upper Austria and enterprises owned by Vienna City Council. Four of the seven largest waste disposal groups, as well as some of the landfills and waste incinerators are controlled by energy supply companies.<sup>7</sup> Many small local authorities have contracted out their waste collection services to private firms; they have often encountered difficulties due to their weak bargaining position vis-à-vis a limited number of large service providers.

By contrast, the position in the area of the industry which is relevant to long-term environmental protection and requires heavy investment — namely, the treatment and disposal facilities — is clear. The household waste incinerators are either municipally owned (Vienna) or, at least at present, still under majority public ownership (Wels).<sup>8</sup> Stricter water and waste disposal regulations have placed increasingly exacting technical demands on the landfills. Public sector operators (local authorities and provincial governments) have been virtually alone in their willingness to accept the risks associated with the heavy investment costs, and the high degree of uncertainty with regard to capacity utilisation, the waste streams and the residual service life of these facilities. In consequence, the list of operators of residual waste disposal sites consists almost exclusively of local authorities (UBA, 2002), while most of the exceptions are provincial energy utilities.

### 3 - ENVIRONMENTAL POLICY SINCE THE 1970s

Since the early 1970s environmental policy has also been closely linked with municipal services of general interest, as well as other enterprises under government influence:

- a) For a long time, environmental protection measures were primarily taken by public enterprises, which thus served as models for the rest of industry. Environmental legislation passed in the 1970s and 1980s tended to set strict standards for areas in which public enterprises were chiefly affected.
- b) Publicly owned service businesses are not only subject to environmental standards in the same way as their private sector counterparts, but have also tended to operate environmental policies that go beyond the legal requirements.

#### Clean air legislation

The Boiler Emissions Act 1980 was the first modern environmental policy instrument in Austria, enshrining the precautionary principle in the form of standards based on the technological state-of-the-art.<sup>9</sup> The main reason why this was possible was the fact that the Act chiefly concerned boilers with large furnaces, operated at publicly owned power stations. The Act was passed in the teeth of opposition from industry which argued that it was "anti-business, prohibitively expensive and therefore a job killer law" (Lauber, V., 1997, p. 611). The formulation on the state-of-the-art drafted for this bill was later included in other legislation (in particular, that relating to water, the licensing of industrial facilities, and waste disposal).

The Boiler Emissions Act was incorporated in the Clean Air (Steam Boilers) Act 1988. The limit values arrived at during the consultation stage, which were relatively strict at the time, were exemplary in comparison with the rest of Europe. This, too, was due to the fact that much of the responsibility for compliance lay with the public sector. Several large publicly owned power stations built in the course of the 1980s were actually equipped with exhaust gas scrubbers before the relevant legal provisions came into force, permitting reductions in SO<sub>2</sub> and NO<sub>x</sub> emissions unparalleled anywhere in Europe.<sup>10</sup> This pioneering role also influenced other plants and companies.

The same explanation applies to the introduction of a dioxin limit of 0.1 nanograms for waste incinerators in the Clean Air Act. At the time, this provision affected the municipal plants in Vienna. Behind it was the negative image of the incinerators and political pressure on the public sector operators. It was not until much later that similar protests were levelled at other — mostly industrial — plants with significant dioxin emissions, and they were muted in comparison. Similar licensing regulations on dioxin

emissions by industrial plants, under the Trade Code, were not enacted until the 1990s.<sup>11</sup>

The direct political responsibility of the operator for the public good probably also explains the improvements to public transport made for environmental reasons. Thus, conversion of the Vienna buses to LPG operation began as early as 1963, and today the city has the world's largest gas driven bus fleet, with 450 vehicles.<sup>12</sup> The public transport network's environmental contribution is shown by the low proportion of road transport emissions for which it is responsible in Vienna. Public transport's share of the modal split for personal transport is as high as that of private motor vehicle traffic, yet buses account for only 0.3% of the NO<sub>x</sub>, hydrocarbon and soot particle emissions caused by road transport. Track based public transport systems are responsible for some 3.5% of hydrocarbon, NO<sub>x</sub> and particulate emissions.<sup>13</sup>

### Clean water legislation

A restoration programme aimed at combatting the eutrophication of Austria's many lakes (especially in the Salzkammergut area and Carinthia) in the interests of tourism was launched in the 1960s and '70s. This chiefly concerned the construction of municipal sewerage systems (ring sewers by-passing the lakes). Many lakes now have water of drinking quality.<sup>14</sup>

A crucial step towards cleaner rivers was taken in 1990 when an amendment to the Water Act introduced the precautionary principle in the form of mandatory state-of-the-art technology, through orders imposing binding standards on emitters. Here, too, the orders were initially only issued for municipal systems, though the government support payments — originally restricted to municipal facilities — were extended to factories in the 1970s.

In theory, the precautionary principle also governs groundwater, in that the latter must be kept clean enough "for ground and spring water to be used as drinking water" (section 30[1] Water Act). The 1990 amendment fleshed out the principle of groundwater conservation, which had already been written into the Water Act 1959. In particular, it created a framework for water restoration measures. Apart from point pollution, mainly by hydrocarbons, non-point sources — chiefly nitrates and pesticides — are the main burdens on Austrian groundwater.<sup>15</sup> In reality, the available legal instruments have had little impact. Beyond the use of subsidies to promote environmentally sound agriculture, action to protect groundwater stems mainly from the water companies' business policies. Relatively extensive use is made of water conservation areas, which cover about 9% of the country's territory (BMLF 2000, p. 103). The reduction in the loading of water bodies by agricultural emissions largely reflects the environmental activities of municipal water companies, which make

agreements with farmers on changes in agricultural methods (Lughofer and Portschy, 1997).

### Mixed picture

At present opposition to the dominant neo-liberal economic and political positions is often couched in purely ideological terms, without referring to actual practice. I do not wish to suggest that public enterprises are always outstanding advocates or pioneers of sustainability. There are plenty of examples to the contrary.

The exemplary exhaust gas purification measures taken by many — publicly owned — thermal power stations in the 1980s have already been mentioned. However there have also been negative examples. Power station planning in the 1980s, when there was a shift to coal in the wake of the “oil shock”, took no account of cogeneration and district heating. (Winkler-Rieder, 1997, p. 625).

Another example is noise abatement. The main airports in Austria are publicly owned, yet the attitude to noise abatement has been diffident and defensive. The same applies to road transport: a relatively hesitant approach has been taken both to passive abatement and to traffic management. The situation in the case of the railways is somewhat better, and noise abatement programmes have been under way for a long time (see Kalivoda, 2000).

## **4 - THE "INVISIBLE HAND" AS THE ULTIMATE ARBITER**

In Austria as elsewhere, the services of general interest have been under attack from liberalisation, deregulation and privatisation policies since the early 1990s. National policies play a part both in the negotiation of international agreements (WTO and EU) and policies (OECD) and in their implementation. Thus as regards telecommunications, electricity and gas liberalisation, Austria is in some cases well ahead of the EU's schedule. There have also been local debates such as those touched off by the recommendations of the commission of inquiry into the reform of government responsibilities (BMOLS [Ministry of Public Services and Sport], 2001) or the PricewaterhouseCoopers report on urban water management (PricewaterhouseCoopers, 2001) commissioned by Ministry of Agriculture and Forestry, Environment and Water Management. The report of the commission of inquiry recommends legal changes in wastewater and waste disposal aimed at promoting private sector investment (BMOLS, 2001, p. 40), but does not advocate such measures for the water industry, presumably because of the explosiveness of the issue and fear of the media hostility. The PricewaterhouseCoopers report does however come out in favour of privatisation of this industry, too, recommending a concession based system (PricewaterhouseCoopers, 2001, p. 77).

In this respect Austrian policy resembles that of the European Commission. Here, official assurances that no further liberalisation is planned and that the question of property is not affected by the EC Treaty are at odds with the activities of DG Competition which wishes to extend competition to additional areas. EU liberalisation policy is reflected not only in the opening of specific sectors to competition (telecommunications, electricity and gas) but also in cross-sectoral measures (Treaty establishing the European Community, Arts. 81ff and 86 on the competition rules, Arts. 87 and Art. 88 on state aids; rules on public procurement; transparency directive, etc.).

It is often argued that the introduction of market mechanisms in the public sector is likely to lead both to improved efficiency and to improved effectiveness due to concentration on a narrower range of tasks. According to this view environmental goals should be explicitly set as part of the framework in which enterprises operate (the "visible hand" which would nevertheless be required: see directive 96/92 EC concerning common rules for the internal electricity market, preamble paras. 4, 13 and 28 and Art. 3 [2]). Supporters of liberalisation also suggest that it has positive effects on the environment. For instance, the European Commission believes that environmental protection and electricity liberalisation can be mutually beneficial by ensuring that only efficient generators remain on the market (Geil 1999, pp. 24f). In an equally positive vein, the Langen Report, adopted by the European Parliament after a long battle, calls on the Commission to "submit expert opinions and proposals with regard to waste management to ensure that waste is disposed of safely and recycled ecologically ... by establishing a market economy framework" and "takes the view that ... a good many specific measures providing limited openings to the market ... will impact favourably on ... the protection of ground water and the environment." (European Parliament, 2001, paras. 65 and 68)

#### Characteristics of the paradigm shift

The policies of the 1970s and '80s, described at the start of this paper, were essentially a product of the now beleaguered welfare state which emerged in the postwar period. Put simply, in environmental terms they were characterised by:

- A large public sector and services of general interest provided by public authorities;
- Strict legal regulation in the interests of social and thus also environmental goals;
- Implementation of the "polluter pays" principle via prevention costs resulting from legal regulation;
- The precautionary principle (minimisation of environmental impairment).

Since the swing towards conservatism in the 1980s the neo-liberal free market model has held sway, leading to a paradigm shift in environment policy which now stresses:

- State withdrawal from virtually all economic activities including the provision of services of general interest;
- All-encompassing competition aimed at optimum resource allocation (environmental protection: efficiency rather than the precautionary principle);
- Deregulation and — at least in theory — regulation by the market, mainly through the internalisation of externalities (“polluter pays” principle);
- Voluntary self-regulation as an instrument of environmental policy.

The course of Austrian environmental policy in the past decade has shown that internalisation of externalities as an answer to “market failure” has had little success. This much cited concept is mainly used as an argument against legal regulation, but little has been done to put it into practice. For instance, during the long drawn-out debate on the introduction of a wastewater tax industry cited legal regulation as a reason for opposing the proposal.<sup>16</sup> Voluntary self-regulation has proliferated without having any significant impact, and the specifically Austrian variants, which involve little in the way of disclosures, have even been criticised by the OECD (OECD 1995, pp. 95–98 and 163).

## **5 - EFFECTIVENESS OF THE "NEW" INSTRUMENTS**

### Competition

- 1. *In many areas of the services of general interest there is little or no competition***, especially where capital intensive infrastructure leads to natural monopolies. Here, privatisation results in a move from a public to a private monopoly, or in the case of concessions or licences, to very limited competition between oligopolies.<sup>17</sup> This means that there is little pressure on operators to take environmental policy of the new kind seriously. At the same time, the “customer” cannot reward environmentally responsible behaviour because there is no choice of service providers. By contrast, the former public model at least contained incentives for the political decision-makers to act responsibly.



2. ***Competition tends to settle at the level of minimum standards.*** In a competitive market, the aim is to supply the “product” at the lowest possible cost whilst conforming to explicit requirements such as environmental standards. This has already had a feedback effect on national standards. Previously, it was in the interests of Austrian industry to lobby in Brussels for regulations as strict as those in the home country, so as to remove any competitive disadvantages. However this pioneering role has since given way to the argument that Austrian companies now face stiffer competition. Few companies are now leading the way by complying with standards before they enter into effect or by over-fulfilling them.<sup>18</sup> In recent years the lead of national over EU law has narrowed considerably, and Austrian environmental policy is today marked by a tendency to adopt (minimum) EU standards. By rolling back the precautionary principle (e.g. by watering down the state-of-the-art principle in a number of amendments to sections 33b and 33c Water Act since 1996) standards have actually been lowered.
3. ***Environmental protection can only partly be captured by measurable standards.*** Compliance with technically defined standards can be assessed, but this is scarcely the case with the environmental policies to which companies refer in their environmental performance reports. This greatly limits the impact of the regulatory framework that is meant to enforce environmental protection in competitive markets. The same applies to the benchmarking so favoured by advocates of privatisation — for services of general interest, too — which is restricted to only a small number of economic and technical parameters. Efficiency is assessed, but effectiveness is largely ignored because it is measured only in terms of the benchmarking parameters.
4. ***Services of general interest are to be “liberated” from current environmental policy.*** Other means are to be found of attaining the objectives of this hived-off environmental policy discussion of which forms part of the privatisation debate, e.g. in relation to the water industry (agreements with the agricultural industry, conservation areas, requirement to minimise concentrations of harmful substances, and resource conservation).<sup>19</sup> However, there are few takers for the environment on its own, as a public good.<sup>20</sup> Hiving off environmental goals can thus ultimately mean abandoning them. In the light of declining public expenditure, particularly by local authorities, it is unrealistic to expect special public funding of environmental services spun off at the time of privatisation.

It is frequently argued that responsibility for municipal services remains with local authorities even when they are outsourced to private contractors, so that this is merely a matter of a change from direct provision to public responsibility for ensuring that services are provided. However, in so doing the risk of market failure is transferred from the public sector to the “customer”. This is because unless all shortcomings can be contractually excluded the public responsibility model ultimately accepts market risk (Holoubek, 2002).

## REPLACEMENT OF LEGAL REGULATION BY ECONOMIC LEVERS?

1. ***Deregulation weakens control.*** Deregulation means not only dismantling legal controls<sup>21</sup> but also reducing the number of controllers. Compliance with the regulatory framework thus becomes increasingly difficult to check and enforce.
2. ***Economic regulation is not intrinsically efficient or effective***
  - The example of the Austrian **Packaging Order**: This points up a number of problems (Hochreiter, 1995). Citing internalisation of environmental costs (“polluter pays” principle and use of market mechanisms) through surcharges on product prices, a complex system was installed in place of municipal collection. However the targets established for the Packaging Order were not based on scientific study by ecologists. The collectors face scant competition, and have an effective monopoly. The administrative costs are relatively high. To date the system appears to have had little impact on behaviour. In response to a massive increase in the use of non-returnable packaging, particularly for drinks, the targets have been significantly reduced by amendments to the law, and legal regulation has been supplemented by voluntary self-regulation.<sup>22</sup> The real aims of the Packaging Order were probably those of giving the private sector’s a bigger share of the waste disposal pie, making a symbolic gesture (collection as a salve for environmental consciences) and concealing the cost (consumers now pay charges hidden in product prices instead of municipal waste collection charges).
  - The example of **electricity**: If the model whereby externalities are included in the prices of products with negative environmental impacts were taken seriously, then there would have to be surcharges on nuclear power and electricity generated by emission intensive power stations. In reality, however, the opposite is the case, as is seen with “green power”<sup>23</sup> and CHP plants.<sup>24</sup>
  - The example of **road goods traffic versus rail**: Social and environmental dumping is subject to virtually no control, and has led to a vast increase in road transport. Hitherto, no use has been made of the economic instrument of internalisation of environmental externalities.

***To sum up, there is a discrepancy between the reality of the situation and the — ideological — theory. Public ownership and regulation still appear to play a crucial role in environmental protection.***

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<sup>1</sup> Role of the public sector in the Austrian economy in 1985 (averages for the then “Europe of the 12” in brackets): employment 18% (11.5%); GDP 24% (13.4%); gross fixed capital formation 28% (21%); average of the three criteria 23.3% (15.3%).

In 1995 the average for Austria was 13.3%, and that for the EU 15 10.4%; in 1998 it was 12.0% (EU 9.0%). CEEP, 1987, pp. 119–120; CEEP, 1997; CEEP, 2000.

<sup>2</sup> There are about 4,000 central water supply systems in Austria, of which only some 200 supply areas with more than 500 inhabitants. Of the centralised supply systems some 1,900 belong to local authorities and 165 to water associations (established under the Water Act or as municipal associations under the Federal Constitution Act); the rest are cooperatives. About 10% of the population obtain their drinking water from their own wells or from small cooperative systems. Of the water supply companies in the nine federal capitals, which together currently supply 43% of the population with drinking water (including the areas surrounding these cities), as of 2001 seven were municipally owned (one directly owned enterprise in Vienna, and six public or private limited companies), and two were associations owned by provincial governments. One of the associations, NÖSIWAG (which supplies approx. 460,000 people), was sold to the energy company EVN — then owned by the provincial government — in 2001, at which time its public interest status was abolished. (ÖVGW [Austrian Association for the Gas and Water Industry], 1997; ÖVGW, 2001; Stadtwerke, 2002; QUANTUM, 2002).

<sup>3</sup> BMLFUW (Ministry of Agriculture and Forestry, Environment and Water Management) (2001b, p. 15). According to the ÖVGW approx. €1.5bn were invested up to 1999 (ÖVWG, 2001) but on an inflation adjusted basis, at 1999 prices, the amount was approx. €2.8bn: According to Schönback (1995, p. 99) a cumulative total of ATS 25.5bn at 1991 prices was invested up to 1991.

<sup>4</sup> BMLF (Ministry of Agriculture and Forestry) 1996; BMLFUWa 2001

<sup>5</sup> Of Austria’s wastewater treatment plant capacity of 18m PE, 68% is owned by local authorities (including enterprises with private sector type legal forms), 24% by associations, 7% by cooperatives and 1% by wholly or partly privately owned companies (BMLFUW, Umwelt und Wasserwirtschaft [Environment and Water Management Report] 2001). For information on pilot projects see ÖWAV (Austrian Water and Waste Management Association), 2001.

<sup>6</sup> Of the 17.5m PE of capacity in place in 1999, 11% was accounted for by all-biological plants, 16% by plants with additional phosphorus elimination processes, 10% by plants with additional nitrogen elimination processes, 7% by plants with nitrogen and phosphorus elimination processes, 8% by plants with additional denitrification processes and 48% by plants with nitrogen and phosphorus elimination and denitrification processes (BMLF 1999, pp. 4–6).

<sup>7</sup> Federmair (2001, pp. 121–131); UBA (Federal Environment Agency), 2002.

<sup>8</sup> Vienna has the Flötzersteig (200,000 tonnes/year) and Spittelau (250,000t/y) plants. A majority in the 60,000 t/y incinerator in Wels is still held by the provincial government and (as of now) the provincial energy utilities, and there are private minority shareholders. A number of projects — mainly promoted by energy supply companies — with a total capacity of approx. 900,000t, are at the planning or implementation stage.

<sup>9</sup> “The state-of-the-art in the meaning of this Act is the state of development of advanced technical processes, facilities and modes of operation, based on the relevant scientific research findings, whose functioning has been tried and tested. The state-of-the-art shall, in particular, be ascertained by reference to comparable processes, facilities and modes of operation.” This formulation is significantly tighter than the definitions and interpretations of “best available technology” (BAT) and “economically viable application of best available technology” (EVABAT), drawn from the English-speaking world, which have been incorporated in EU regulations.

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<sup>10</sup> SO<sub>2</sub>: between 1980–1993 SO<sub>2</sub> emissions were cut by 82%, placing Austria top of the league in Europe and the OECD. In Europe as a whole SO<sub>2</sub> emissions were reduced by only 53%. Austria was closely followed by Sweden and Finland, with falls of 80% and 79% respectively, but both countries started out from considerably higher per capita emissions. Austrian per capita SO<sub>2</sub> emissions declined from 53kg to 9kg, and the European average from 63kg to 30kg. By 1993 only Switzerland had lower per capita emissions (5kg), but its emissions had been lower than those of Austria in 1980.

NO<sub>x</sub>: between 1980–1993 SO<sub>2</sub> emissions fell by 26%. Here, too, the rate of reduction placed Austria at top in Europe and the OECD, while overall European NO<sub>x</sub> emissions were unchanged. Austrian per capita Nox emissions dropped from 33kg to 24kg, and the European average remained at 35kg. By 1993 Switzerland was the only country with lower emissions (23kg), and here again, it started from a lower base in 1980. (OECD 1997, pp. 19–28; own calculations)

<sup>11</sup> The orders governing iron and steel production (Federal Law Gazette II 1997/60) and iron ore sintering (Federal Law Gazette 1997/163) were issued in 1997. The former set the limits at 0.25ng/m<sup>3</sup> of dioxin or 0.4ng/m<sup>3</sup> for plants in existence in 1997, from 2002 onwards, and at 0.1ng/m<sup>3</sup> from 2006 on; the latter established a limit of 0.5ng/m<sup>3</sup> applicable only to new plants from 2004 on.

<sup>12</sup> Public-Transport

<sup>13</sup> The only change between the modal split in 2000 — with a 38% share for public transport, 37% for private motor vehicle traffic, 5% for bicycles and 20% for pedestrians — and 1986 was a shift between bicycles (then 3.2%) and pedestrians (then 22.8%). Conversion of the bus fleet — the gas engine's emission values are well below the Euro 5 limits due to enter into force in 2008 — has led to a fall in the share of particulate emissions accounted for by regular bus services from 8.5% to a mere 0.2% between 1980–2000. (Deussner and Mollay, 2002, pp. 17–23).

<sup>14</sup> UBA 2001, p. 226.

<sup>15</sup> The 2001 BMLFUW environment report classed 52% of all congruent water bodies as “at risk” due to the pollutant input levels. UBA, 2001, p. 200.

<sup>16</sup> Of Austrian eco-taxes as defined by the EU and OECD, totalling €5.4bn in 2000, 78% comprised motor vehicle related taxes (petroleum tax, vehicle tax, engine size related insurance tax and fuel consumption tax), 10% electricity and gas taxes, and 8% land tax (Statistik Austria 2002, p. 252).

<sup>17</sup> See the comments, above, on the concentration in the Austrian waste disposal industry; see also the reports of the French court of audit in 1997 and 2000 (Cour des comptes, 1997 and 2000) and the report of the French Senate (Senat, 2000), excerpts from which are quoted by Lauber (2002, pp. 119– 137).

<sup>18</sup> A comment based on the author's own observations at the Austrian Environmental Fund which provides financial support for measures going beyond the current state-of-the-art and/or legal standards.

<sup>19</sup> Hansen et al (2001, pp, 20–24); Böckels et al (1998).

<sup>20</sup> "Public goods such as defence, law or environmental protection are not only provided by private markets. Since everyone automatically enjoys their benefits, no one is prepared to make special payments for them. However the State can ensure that they are provided and can impose the cost on the taxpayer." (Eschenbach, 1993)

<sup>21</sup> For instance, factory inspections under section 82b Trade Code can be dispensed with if the facility is EMAS certified.

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<sup>22</sup> In the case of drinks the share of the market accounted for by returnable packaging has fallen from 80% in the 1980s to some 50%. The reduction in the recycling target took place partly through cuts in the percentage recycling rates, but mainly by replacing weight ratios for specific packaging materials by a single percentage for overall weight. As a result a decline in the collection and recycling of plastic packaging can be offset by increased collection of glass packaging, which is much heavier, without infringing the target rate. In this way one glass bottle collected can make up for some 20 non-returnable plastic bottles than land in the dustbin. (BAK [Austrian Federal Chamber of Labour}, 2000).

<sup>23</sup> See <http://www.eva.wsr.ac.at/projekte/gruenerstrom.htm>

<sup>24</sup> Another example of this problem is the heated debate on an electricity surcharge to pay for the additional cost of CHP capacity in Vienna.

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