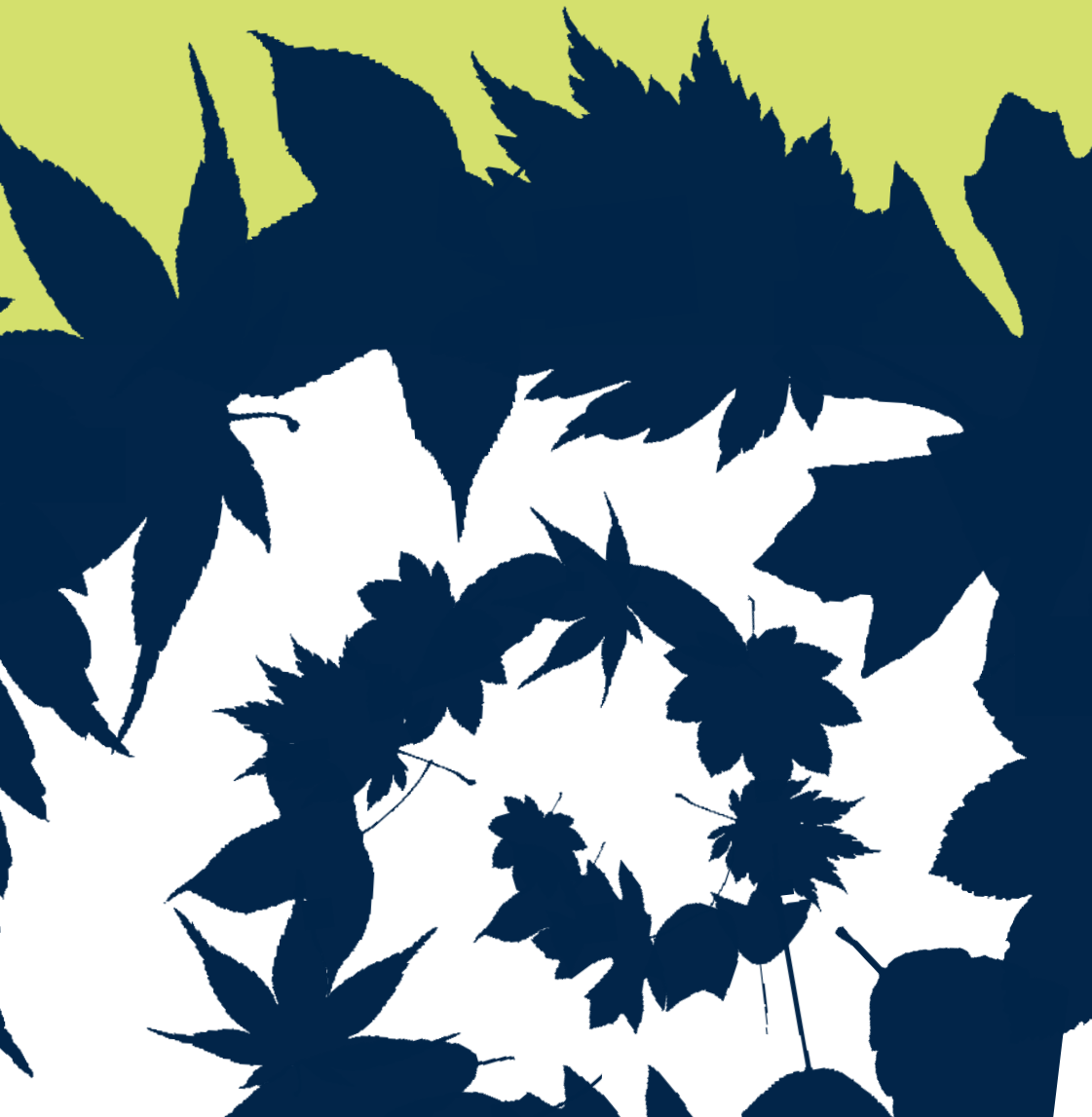


‘Greening’ the tax system

Summary

An exploration of ways to alleviate environmental pressure by fiscal means



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Summary

¹ This publication comprises a translation of the full text of the first chapter and the boxes incorporated in the official report of the Second Dutch Green Tax Commission.

Being the child of famous parents can present special challenges. Expectations will be high, as was the case for the Second Dutch Green Tax Commission charged with exploring ways of 'greening' the Netherlands' tax system, i.e. of finding ways in which environmental impact could be lessened by fiscal means. Following an interval of over two years, a new commission was appointed in May 2000 as successor to the first, which had been set up in 1995. The first group, known by the name of its chairman Jacob van der Vaart (of the Ministry of Finance) presented its third and final report in November 1997. The reports of this group contained many recommendations by which environmental objectives could be furthered through the tax system. The second working party was formed under the chairmanship of Jan de Waard and included members of the former group. Its task was to define new possibilities, to evaluate the measures taken thus far, to identify any tax expenditure that may have a detrimental effect on the environment, to define the anticipated effects of new measures and to incorporate all these aspects in an agenda for the next government period. As a full list of options should be available when the political parties compile their manifestos for the 2002 general election, the Commission was requested to produce its final report by mid-2001.

The members

As in the first Commission, the members of the second Commission were chosen for their different backgrounds, rendering a wide-ranging dialogue likely. They represent various walks of life: tax experts, representatives of employers' and employees' federations, agricultural and environmental organizations, the world of science, research agencies, former parliamentarians and serving officials from the Ministry of Finance, the Ministry of Housing, Spatial Planning and the Environment, the Ministry of Economic Affairs, the Ministry of Transport, Public Works and Water Management and the Ministry of Agriculture, Nature Management and Fisheries. The respective ministers acted as joint 'commissioning client' for the Commission's activities and reports.

Approach

The Second Dutch Green Tax Commission was given a very broad mandate, based on which it made efforts to take stock of existing ideas and suggestions from all sections of the community, where these had not yet been examined in detail by its predecessor. It also examined environmentally harmful fiscal measures as identified by a separate working party. In the early stages of its deliberations, the Commission faced a list of over eighty measures to be investigated.

Based on clear criteria enjoying broad support, and with the assistance of specialist research agencies, these measures were then closely considered and their advantages and disadvantages weighed against each other. This evaluation process took over a year and resulted in a refined set of recommendations by which a further 'greening' of the Dutch taxation system may be brought about. The proposed measures are both practical and practicable, and can be independently implemented by the Netherlands. Some can be implemented immediately; others call for further study but have clear potential nonetheless. The various recommendations are presented in the second part of this summary.

Reservations

To carry on where someone else has left off has both advantages and disadvantages. Much of the pioneering groundwork has already been done. The path has been cleared, as it were. Yet it is not enough to equal previous achievements: if possible, they must be surpassed. The process of fiscal 'greening' proved to be no exception. The first Commission had not only developed practical selection criteria, it had plucked some of the low-hanging fruit. The most obvious options had already been examined, presented and in some cases, implemented. In many instances, the measures left for the second Commission proved to be, upon closer inspection, of insufficient scope to allow any effective implementation of a tax-measure. The resultant legislation would either lack focus or it would simply be ineffective. The 'law of diminishing returns' applies equally to fiscal instruments, especially when we consider that concerted efforts have been made to maximize those returns in recent years. Moreover, several important proposals relating to new forms of taxation were already being evaluated in a broader context. They include the 'kilometre levy', a direct charge on car usage, and the 'open space levy', a charge intended to promote efficient utilization of scarce space. As the report of the Second Green Tax Commission neared completion, work in these areas was still ongoing. The Commission therefore confined itself to a number of recommendations addressed to those persons directly involved in the relevant fields.

Europe

The countries of Europe now enjoy somewhat less individual freedom in devising their own fiscal policy and legislation. Increasingly, measures to promote environmental objectives by fiscal means must be coordinated with other nations. However, as yet there is no international legislation which actually prohibits the introduction of any form of environmentally-related tax. In fact, we can observe an international trend whereby individual countries are encouraged to set an economic price on environmental impact by means of their national taxation system. Domestic users and businesses are thus encouraged to limit the pollution they produce and companies are encouraged to act in a socially responsible manner, taking general interests into account in their decision-making processes. Because the Netherlands is a member of the European Union, its national legislation must be assessed against the European rules and guidelines.

The scale and international nature of environmental issues now demands a collective, multilateral approach. This is fully realized by the the Second Green Tax Commission. Certain options were rejected because they threatened to exceed the limits faced by national policy-making. Should a third commission ever be appointed to consider the relationship between taxation and the environment, it will be required to conduct its activities on a somewhat different level. In fact, it may be worthwhile considering the appointment of a commission at European level. Aspects which are particularly relevant to the pan-European context are examined elsewhere in this document.

Limitations

Since 1995, the Netherlands has been tirelessly and painstakingly examining opportunities for using fiscal means to strengthen its environmental policy. In the intervening period, many tax-bases contributing to further fiscal greening have been developed. The Netherlands is now one of Europe's frontrunners in this regard. The current report represents the conclusion of the inventory phase, at least for the time being. Most of the more obvious options have now been implemented, or have at least been fully examined and described. Further exploration of the opportunities will call for new debate concerning the possibilities and limitations of fiscal policy itself. This will no doubt highlight the apparent conflict between the budgetary function of taxation (i.e. raising funds for the public purse) and its function in influencing behaviour. One variable can only in a limited way be used to achieve two objectives. Where levies are imposed as part of the fiscal system, this may be seen to be in the nature of sanction. As with a rope, one can pull but one cannot push! This is why the original Van der Vaart commission recommended

maintaining a careful balance between levies to discourage environmentally 'unfriendly' behaviour and allowances to encourage environmentally responsible behaviour. In recent years, considerable emphasis has been laid on the fiscal instrument as a means of promoting environmental awareness. The political climate allowed little room for actually increasing expenditure. Several members of the De Waard Commission believe that it would now be appropriate to look beyond fiscal possibilities alone. Giving money in 'payment' for environmentally friendly behaviour may sometimes be more effective than imposing penalties. A more extensive use of subsidies will offer greater room for positive stimuli. However, as with levies, we must remain alert to distortion of normal market forces which subsidies may entail.

The Commission's approach involved exploring means of contributing to a better environment by means of fiscal incentives. The boundaries of its own mandate were frequently reached. In such cases, it is useful to seek points of convergence with existing environmental policy and to take a specific environmental problem as the starting point upon which to test a broad range of instruments. This promotes a 'cross-border' attitude in which the various disciplines are integrated, while problems caused by the superimposition of solutions one above the other can be avoided.

How 'green' is the Dutch taxation system?

Over the past fifteen years, the Netherlands has done much to arrive at a 'greener' system of taxation. A number of specific levies were introduced in the 1980s to finance certain aspects of environmental policy. In 1988, these levies were integrated under the General Environmental Provision Act. In 1992 the resulting levy was transformed into the first official environmental tax on the statute books, that on the use of fossil fuels (Fuel Tax). In 1995, further environmental taxes (on waste and groundwater) were introduced. In 1996 a Regulatory Energy Tax, also known as 'ecotax', was introduced by taxing the small-use of natural gas, heating oil and electricity and reducing direct income tax at the same time. From that year to the present the shift towards more 'green' taxes continued. It is certain that the recommendations of the original Van der Vaart Commission played a role in this shift. In its three reports, this Commission made 54 proposals of a qualitative or quantitative nature. Undoubtedly, the most notable recommendation was that which called for a three-stage increase in the Regulatory Energy Tax to be accompanied by a reduction in direct income tax. The final stage in this process came as part of the radical overhaul of the Dutch tax system which took effect on 1 January 2001.

These measures have resulted in a far 'greener' tax system. When taxes on motor vehicles (sales tax and road excise duty) and fuel duty is taken into account, the proportion of green taxes in overall tax revenue has risen from 8.6% in 1990 to 14.1% in 2001. This figure refers only to taxes which benefit the national exchequer. Taxes that are used to finance environmental expenditure directly are not included. Nor are the local taxation measures.

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Revenue from 'green' taxes, 1985 - 2002 (in eur x billion)

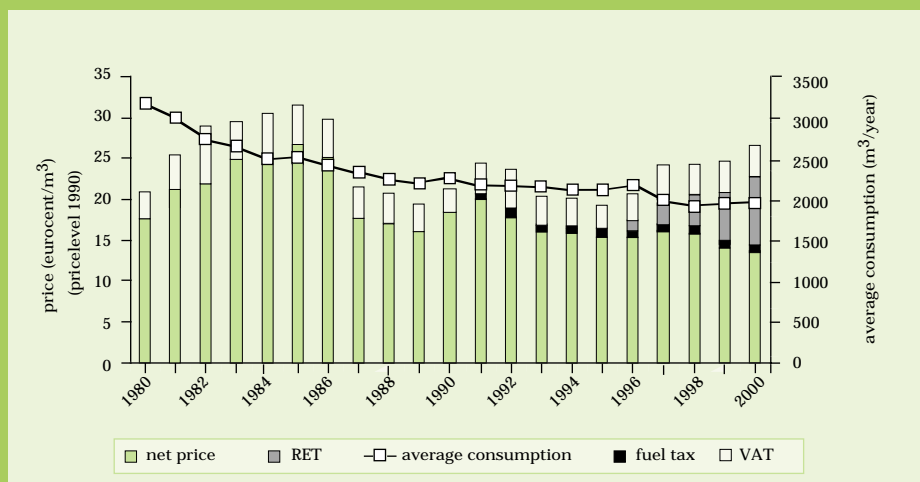
	1985	1990	1995	1998	1999	2000	2001	2002
	€	€	€	€	€	€	€	€
Duty on mineral oils/derivatives	1.8	2.5	4.3	4.9	5.2	5.2	5.6	5.8
Vehicle taxes	2.1	2.9	3.9	4.2	4.8	5.1	5.3	5.4
Environmental taxes	0.0	0.0	0.9	1.7	2.2	2.8	3.8	3.9
Total 'green' taxes	3.9	5.4	9.1	10.8	12.3	13.1	14.7	15.1
Total government taxation	44.6	61.9	69.7	81.5	87.8	94.3	103.4	109.6
Gross Domestic Product (gdp) against market prices	193.1	234.5	333.7	354.2	373.9	400.6	433.9	454.5
Green as % government taxation	8.7	8.6	13.0	13.3	14.0	13.9	14.1	13.7
Green as % gdp	2.0	2.3	2.7	3.1	3.3	3.3	3.4	3.3

(Source: Budget Memorandum, 2001).

However, it must be remembered that the 'greening' of the tax system entails more than simply introducing or increasing taxes on environmentally unfriendly behaviour. As Van der Vaart made clear, it is equally important to provide positive incentives to environmentally friendly behaviour. Attention has been devoted to this aspect by means of various regulations and schemes. They include the *Vrije Afschrijving Milieu-investeringen* (accelerated depreciation of environmental investments; *vamil*), the *Milieu-investeringsaftrek* (environmental investment allowance; *mia*), the *Energiebesparings-investeringsaftrek* (energy reduction investment allowance; *eia*), and a 'green fund' scheme which provides tax-free interest on certain environmental investments. Recent developments include the *Energiepremieregeling* (Energy Premium Scheme) and schemes which encourage the use of cleaner or more economical cars.

The effects of environmental taxation manifest themselves in various ways. There may be lower consumption, more environmentally friendly production methods, different patterns of conduct, or more research into alternatives. One indicator of the effectiveness of taxation is the spending patterns of domestic households. Are they more cautious in their use of gas, water and electricity - and in their production of waste - as a result of environmental taxation? An extensive evaluation is required to answer this question. In the section 'Trust is good, measurement is better' more attention is paid to this topic. In this section the Commission presents a simple account of price development and sales volume for a number of commodities subject to environmental taxes.

Figure 1: price and average consumption of natural gas (households)



The above figure shows the price development and average household consumption of natural gas. Consumption (the line on the chart) shows a clear downwards trend. In 1980, the average household consumed some 3,145 cubic metres per year. By 1998, average consumption had fallen to 1,910 cubic metres, although there has since been a slight recovery to 1,965 cubic metres in 2000. The high price has no doubt contributed to more economical use. Between 1980 and 1985, the net price of gas rose from 13.85 euro cents to 25.23 cents per m³ in prices of 1990. Prices have since gradually fallen to around 18 cents per m³. Of course, the reduction in consumption is not due to prices alone. Additional factors having an unmistakable effect are the use of double pane windows and that of high-

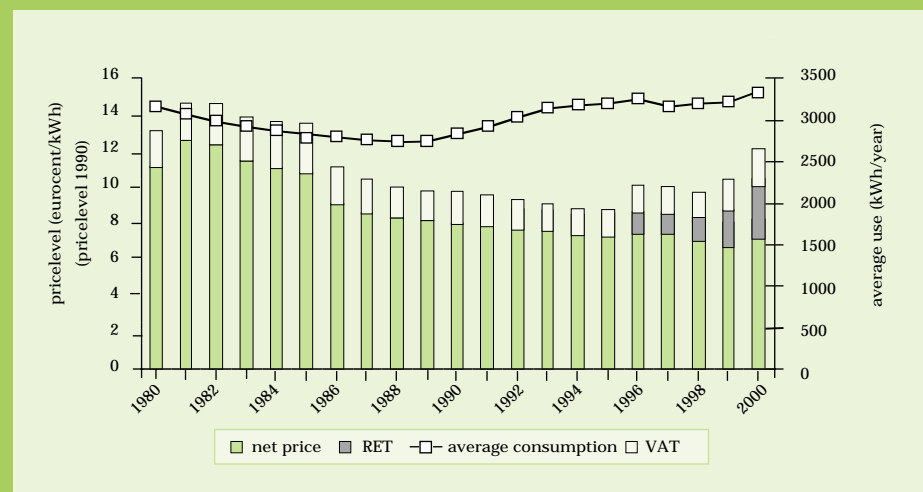
efficiency boilers, together with public awareness campaigns and other measures.

Figure 2 shows the average electricity consumption per household and tells a different story to that of gas. The average family used 3,152 kwh in 1980 and this figure remained more or less constant over the next two decades, being 3,220 kwh in 1999. There was a slight reduction of approximately ten per cent in the years to 1989, but thereafter consumption rose once again. The net price per unit remained remarkably stable throughout: 8.77 eurocents in 1980 and less than one half cent higher in 2000. In real terms, the price can thus be seen to have fallen. The 'Regulatory Energy Tax' (ecotax) has reversed this reduction, we can now speak of an increase. Just how far this increase will curb the rise in electricity consumption cannot yet be stated. A recent study by seo² suggests that, without ret, consumption in 1999 would have been 6.3% greater. In any event, we must remember that general prosperity has increased greatly in recent years and household electrical appliances have become less expensive (in real terms). The combination of the two factors exerts a marked upwards pressure on electricity consumption.

The form of the Figure 3 deviates from that of the other figures in that it shows the price development of drinking water in four Dutch regions as a line, with average consumption shown by bars. The price development clearly reflects the introduction of a tax on groundwater

² Drs. P.H.G. Berkhout, mw. drs. M.S.A. Ferrer-i-Carbonell en drs. A.L. Huskens: *Het effect van de REB op huishoudelijk energiegebruik, een economische analyse, eindrapport, seo, Amsterdam, May 2001* (in Dutch).

Figure 2: price and average use of electricity (households)



use in 1995. The effect was somewhat less marked in the western Netherlands than in the rest of the country, since here a smaller proportion of groundwater is used in the production of drinking water. Household water consumption has been reasonably stable. Recent studies have shown that the link between price and consumption is less marked in the case of water than with energy. The figure does not show the possible effects on the water consumption of enterprises.

Figure 3: average price and total use of tapwater

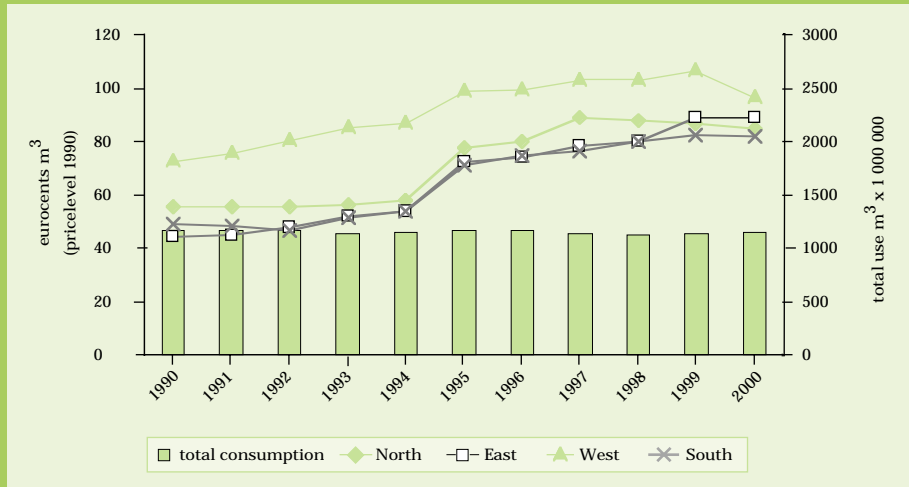
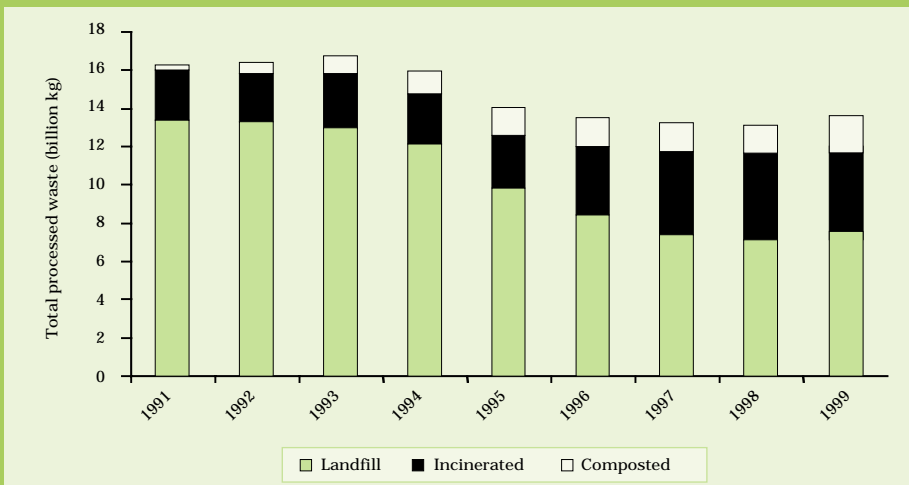


Figure 4: transported and processed waste



The final environmental tax considered is that on the (landfill) dumping of combustible waste. The working party was unable to find any historical timeseries concerning dumping fees. The figure therefore shows the development in the total quantity of waste transported and processed. It can be seen that the quantity actually dumped has fallen as a result of the policy designed to discourage the practice. The tax on waste is part of that policy.

Objectives

The restrictions cited above made the work of the Second Green Tax Commission more complex, but they did not discourage. The Commission considers it most important to stress that the objective was not to raise some pre-determined amount in additional tax revenue, nor was it to attain any pre-determined environmental gain. The objective was solely to identify the contribution which fiscal policy can conceivably make to achieving greater environmental quality and sustainability. The success of the Commission must not be judged according to the number of positive suggestions it has been able to put forward, but rather by the degree to which it has been able to present the ideas and suggestions from within society in a systematic and substantiated manner. The proposed measures are nothing more than the results of a sifting process. Whether those measures receiving a positive recommendation from the Commission are ever to be implemented will require further – and broader – consideration. That is the job of the politicians. The job of the Commission has been to provide the basic ingredients for the ensuing decision-making processes. It is in view of this understanding of its responsibilities that the group chose not to devote time or attention to any further intensification of measures previously taken.

Working methods

The breadth and variety of the members' backgrounds has been reflected in the breadth and variety of topics examined. Each member of the commission was able to put forward proposals which, in his or her own view, were relevant. The selection of topics for closer examination can be classified on the basis of four topics whereby the taxation system could be made more 'environmentally aware': broadening, greening, innovation and incentives. Here, 'broadening' refers to the process whereby existing taxes are extended to cover new groups, while 'greening' refers to the process of assessing existing taxes according to their influence on the environment, and increasing the scope of their positive effect wherever possible. 'Innovation' refers to the introduction of new taxes, while 'incentives' refers to certain financial inducements to alternative behaviour on the part of producers or consumers.

Assessment criteria This approach resulted in a long list of areas to be investigated. Some topics were immediately discarded from the list, either because they were already being examined elsewhere (such as some form of corporation tax for public sector departments engaged in semi-commercial activity) or because their introduction had already been agreed (as in the case of the railway infrastructure surcharge). It was felt that the most efficient manner of working would be to arrange the various topics into clusters. Such a broad-based approach calls for a relatively narrow decision-making framework. In the earliest phases, the working group therefore devoted close attention to the development of a suitably clear framework. It found the criteria of the original commission to be particularly useful in that the central consideration was the environmental effect to be achieved, which Van der Vaart thought should be both demonstrable and calculable. While endorsing this view, the Second Green Tax Commission opted for a somewhat more flexible approach: it would be enough for an environmental effect to be arguable, i.e. likely given the balance of probabilities. Further important criteria included public support, technical feasibility, economic impact and potential gains (whether financial or otherwise). A more detailed account of the considerations involved is given in the section headed 'The commission's approach and working method', below.

Despite the increase in the number of criteria upon which proposals would be assessed, the actual environmental effects continued to play a decisive role for the Commission. The question remains: how can taxes be used to influence environmental matters by means of market mechanisms? There are two possibilities. One may choose to adopt the stance that those causing pollution must pay an amount proportionate to the damage they cause. A 'price ticket' is attached to any emission or discharge, corresponding with the harm or inconvenience suffered by the community. Alternatively, rather than taking the damage caused as the basis for the charge, one might derive the taxrate from environmental goals. (We know that usage of many products falls as their price increases.) Whichever approach is adopted, the environmental costs, formerly outside the sphere of control of the manufacturer or producer, are internalized. However, potential internalization of costs was not sufficient for the commission to arrive at a positive recommendation. Therefore, the Commission required the measure to have a well-reasoned direct environmental effect. Measures which may contribute to internalize environmental costs could therefore still be disregarded, in case they do not sufficiently influence the behaviour of those who would be required to pay the relevant charges.

Evaluation

Existing 'green taxes' and incentive schemes have been subject to various evaluations, some of which are still ongoing. In many cases, the evaluation methods used display certain shortcomings. The Commission therefore sought an infrastructure whereby studies which are less susceptible to these shortcomings can be conducted. In the case of domestic households, the infrastructure seems to be in place - at least for energy consumption and mobility studies - although continuity can not be assured. The collection of representative data in the commercial sector poses a far greater problem. The section headed 'Trust is good, but measurement is better' examines the effect of environmental taxes and the precise measurement of these effects.

The Commission's approach and working method

The commission attempted to collect and collate the many ideas which exist with regard to the further 'greening' of the taxation system. Mature ideas were deliberately allowed to nestle alongside the fresh. As previously stated, the broad interpretation which the commission chose to give its terms of reference called for relatively narrow selection criteria. The yardstick against which proposals were to be placed must be clear and accurate to avoid all concerned becoming bogged down in a morass of proposals. Use was made of the first Green Tax Commission's assessment guidelines, adapted slightly following the second Commission's early deliberations.

The first Green Tax commission had adopted the environmental effect to be achieved as its most important assessment criterion. Its follower adopted a slightly more flexible approach involving four sets of criteria, including such considerations as public support and technical feasibility. Besides the short-term effects of any proposed measure, its long-term effects were also considered in greater depth. Further, the original commission had taken the stance that any measure must have a quantifiable positive environmental effect. The second commission refined this to become a well-reasoned positive effect, i.e. one which may be assumed to exist on the balance of probabilities.

A flowchart was drawn up in which the various criteria appear in no particular order of importance, but in chronological order of analysis and consideration. There must be a positive result in each of the boxes if the measure is finally to be recommended. As a general rule, the criteria within one and the same box are of equal importance. However, if two or more criteria conflict, they are then balanced one against the other, whereby there is a clear 'pecking order'. For example, 'environmental effect' will always weigh more heavily than

'taxation revenue'. Having been assessed in each sub-category, the measure is subject to a yes/no decision. Only if it 'passes' one box it can go on to the next.

The boxes

The boxes through which proposals must pass during the assessment process seek to answer a number of questions.

The first asks: Why has this measure been proposed? The following aspects will then be considered

- What are the (likely) environmental effects? Where possible, these effects must be quantified, but in any event the effects must be arguable (qualitative);
- What are the environmental effects in the long and/or short term?
- What will be the taxation revenue in the long and/or short term?
- What justification or general support exists for this measure?

The second box asks: What form will this tax take? Here, the further considerations include:

- the legislative and legal aspects of the measure at national, European and international level;
- the actual practical implementation of the measure (feasibility and costs);
- What administrative burden will be involved in implementing and enforcing the measure?

The third box is concerned with the consequences of the measure, to include:

- economic effects including effects on allocation, income, employment and competition;
- 'knock-on' effects, such as enhanced expertise as a result of incentives to environmental technology, or less congestion as a result of a reduction in the number of cars on the roads;
- the possibility of neutralizing any negative effects (such as fiscal redistribution or compensatory subsidies).

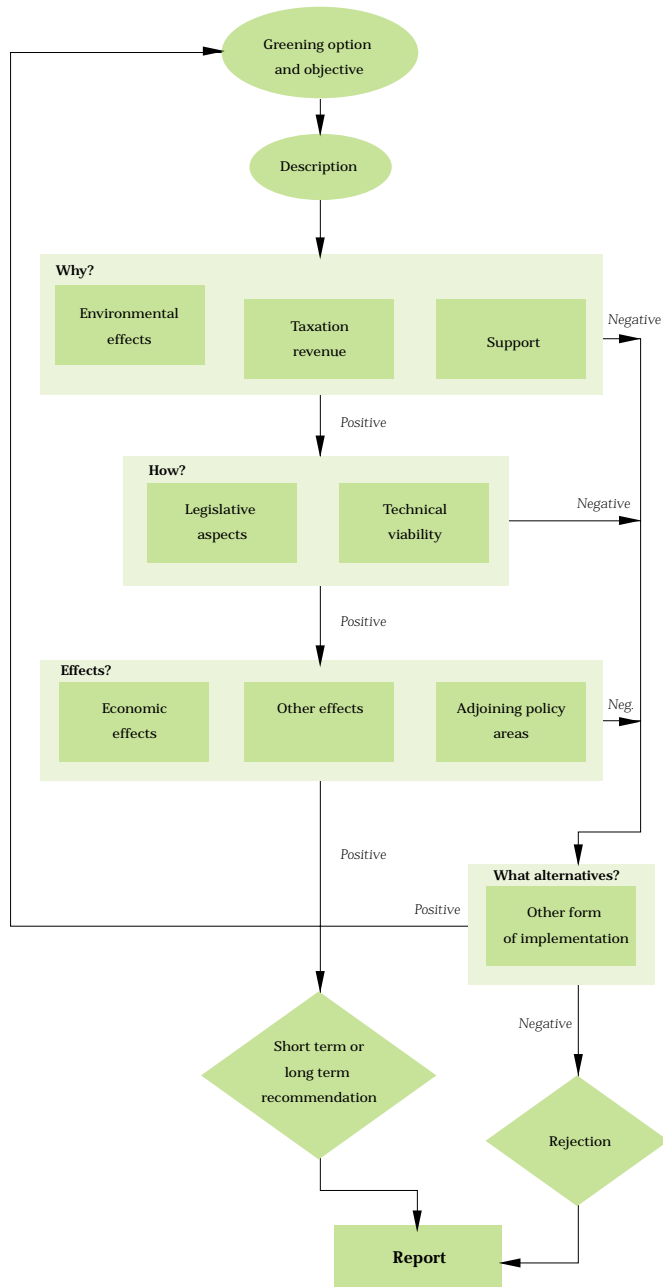
If a measure achieves a negative assessment in any of these boxes, it may be amended (the rate, the tax base, etc.) or may be replaced by some other measure as part of an overall package, whereupon the assessment can be conducted once more. This possibility is shown in the fourth box (alternatives). Possibilities of clustering and combining measures may also be sought, whereby it becomes possible to ensure that smaller measures are not automatically rejected when they could be clearly effective in combination with others. Any adapted

measure must go through the entire assessment process from the beginning. If the result is once again negative, it will be rejected outright. Where the measure is able to pass through the entire assessment process with positive results, the commission's long-term or short-term recommendation will follow.

The correlation between the commission's selection criteria and the 'polluter pays' principle

Under current environmental policy, the 'polluter pays' principle applies. This principle is a mainstay of the pricing policy formulated by the government in the National Traffic and Transport Plan. It is to be seen in efforts to reflect the actual social costs of certain behaviour in the prices paid, by means of taxation. Recent traffic and transport policy has made significant advances in calculating the exact level of these social costs. Many transport modalities have been subject to an assessment of their cost to society as a whole. Here, not only environmental impact is taken into account but also the costs for financing and maintaining infrastructure, congestion and road traffic accidents. Although the assessments have not been able to look at every form of environmental impact, it is possible to arrive at an indication of whether the various social costs of the modalities are, or can be, recouped by means of taxation. It may be possible to adjust the level of a particular tax to ensure appropriate repayment of the social costs. The 'on-charging' of these costs has become a basic principle of policy under the National Traffic and Transport Plan. The principle is also described as a 'quest for efficient pricing structures'.

Like its predecessor, the second Green Tax Commission sought to establish its own position with regard to this discussion. It would have been possible to take the view that any proposed measure which helps to recoup the environmental costs of a given activity ought to be recommended by the commission. However, the commission itself took a rather narrower view, whereby the measure must have a well-reasoned direct influence on the environment. Accordingly, measures which may contribute to internalizing environmental costs could still be disregarded, in case they do not sufficiently influence the behaviour of those paying the relevant charges.



Part 2

Recommendations

The commission examined a large number of proposals, applying the criteria and methodology described in the previous section. Its most significant conclusions are presented here.

Energy

The table below shows the increases in rates for each of the possible variants, as calculated by the Central Planning Office (cpb). The apportionment of the taxation burden between domestic and business users is also shown.

Broadening of Regulatory Energy Tax to include large scale energy consumption

Variant	2001 Rate	Increase in rate by variant				
		1	2	3	4	5 (CPB)
Comparative burden domestic/commercial	60:40	70:30	50:50	50:50	30:70	30:70
Rate (increase) gas (eurocent/m ³)						
0-5,000 m ³	12.03	4.2	3.0	3.0	1.8	1.8
5,000-170,000 m ³	5.62	0.95	1.2	2.3	3.7	1.7
170,000-1 million m ³	1.04	0.95	3.4	2.3	3.7	1.7
1 million-3 million m ³	0	0	0	2.3	3.7	1.7
>3 million m ³	0	0	0	0	0	1.7
Rate (increase) electricity (€ ct/kWh):						
0-10,000 kWh	5.83	2.1	1.5	1.5	0.9	0.9
10,000-50,000 kWh	1.94	0.3	0.4	0.7	1.1	0.5
50,000-10 million kWh	0.59	0.3	1.0	0.7	1.1	0.5
>10 million kWh	0	0	0	0	0	0.5

- The broadening of the Regulatory Energy Tax was considered by the commission to examine whether this can be a useful measure if the results of the Dutch climate policy are not in line with the stated aims. Several variants were investigated, with the burdens and revenue calculated separately for domestic consumers and commercial users.

* The projected level of CO₂ emissions in the Netherlands in 2020 is 227 Mton.

- The Commission concludes that the Regulatory Energy Tax has a positive environmental effect. According to the cpb calculations, any broadening of the scope of the tax or an increase in its rate to achieve additional revenue of eur 1.4 billion, will result in an environmental effect equivalent to a CO₂ reduction of between 1.7 and 2.2 Mton*. There will also be a rather more uncertain effect in terms of the use of sustainable energy, equivalent to a CO₂ reduction of between 0.7 and 6.5 Mton. The environmental and macro-economic effect is linear up to a revenue of eur 5.5 billion.
- The Commission further concludes that the scope of the environmental effect will not vary between the variants, with the possible exception of the effect in terms of sustainable energy. According to the cpb, the macro-economic effects of all variants will be negligible, being no more than 0.1% of gnp (cumulative to 2020).
- Nevertheless, various effects (both positive and negative) may become visible at micro-economic level. The extent to which they can be compensated by fiscal redistribution has not been investigated by the Commission.
- The Commission considers it important that existent long-term agreements and benchmarking covenants are strictly observed, while noting that several interpretations of these agreements are possible.

The Commission has been unable to reach unanimous agreement on any broadening of the Regulatory Energy Tax. Two main standpoints are held.

One group within the Commission is of the opinion that a broadening of the energy tax to include major industrial users would entail a specific alteration to the structure of the ret as it has existed since 1996. Such an alteration would be regarded by industry as being contrary to the terms of the long-term agreements and the energy efficiency benchmarking covenant entered into with the government, and could be seen as just cause for such agreements to be revoked. Any environmental gains to be had from the broadening of the ret could, in the opinion of this group within the Commission, be negated.

Others on the commission believe that a modest broadening of the ret, such as that provided by variants 3 and 4, would be useful if the Dutch climate policy fails to achieve the intended results. Such a broadening would, say its proponents, be in line with the development in the rate structure of this tax since 1996, and would help to ensure appropriate balance in efforts to realize the aims of climate

policy among all categories of energy consumers. The supporters also considered a moderate broadening, whereby enterprises under the benchmarking covenant would be unaffected, to be in line with the agreements made under that covenant and the other long-term agreements. However, in view of the incompatibility perceived by the sections of industry concerned, they did advise careful prior consultation with those involved concerning the nature and significance of the proposed measure.

Tax on the use of fossil fuels for purposes other than generating energy

The commission advised against the introduction of a tax on the use of fossil fuels for purposes other than generating energy. Large investments have been made in the past in an attempt to arrive at the efficient use of natural resources. To generate any new environmental effect would require an extremely high rate of taxation which, in all probability, would lead to production being moved abroad.

Tax on residual heat

The commission believes that a tax on residual heat is interesting, at least in theory, in that it would provide an incentive for the reduction of industrial energy consumption. A well-designed tax could discourage the production and discharge of excess heat, and encourage both energy efficiency and process innovation. However, research has shown that many considerations attach to such a tax, especially in terms of effectiveness, practical feasibility and controllability. Certain questions arise, such as whether the discharge of residual heat can be accurately measured, whether it is possible to escape liability by means of heat discharges which can not be measured, and how the burden of any such tax would be divided. At this stage it is not possible to make any firm statements with regard to feasibility or desirability. The commission therefore recommends further research, with particular attention to the question of whether fiscal instruments which rely on output can be effective. A tax on residual heat is so clearly aimed at large-scale industrial energy use that industry would possibly claim that it contravenes the terms of the benchmarking covenant and could therefore lead to the annulment of that covenant.

Incentives to use of sustainable energy

The commission welcomes the many policy initiatives which have now been introduced to encourage the use of sustainable energy. It points out that this process will, in future, take place in a liberalized market and within the environmental state aid framework. The current policy approach – generic, demand-led and controlled by market forces – is endorsed by the Commission. The system of ‘green certificates’ which just have been introduced is regarded as very promis-

ing, not least because it offers further opportunities to tailor fiscal measures to the individual type of sustainable energy. As current policy initiatives have yet to run their course and the awaited government memorandum on this topic has yet to be produced, the Commission considers it premature to make any further proposals with regard to fiscal measures designed to encourage the use of sustainable energy. This is seen to be prudent given that all initiatives are shrouded in uncertainties which originate in Brussels. Certain Dutch environmental support measures are now being investigated in order to ensure that they conform with European legislation and do not distort competition.

Abolition of the lower rate of vat for energy in the glasshouse cultivation sector

The Commission advises against the application of the general rate of vat for energy in the agricultural sector as a means of 'greening' the taxation system, since the environmental effect of a change in the rate of vat will be of extremely limited extent. The higher rate of vat would merely be deducted from vat charged to others, as is currently the case, or would be offset via an increase in the flat-rate compensation for farmers. There would therefore be neither environmental effect nor any pricing stimulus.

Abolition of lower ret rate for glasshouse cultivation sector

Given that the rate for the glasshouse cultivation sector is related to that for businesses in other sectors with comparable energy intensity, that no compensatory measure is in place when applying the normal rate, and that long-term agreements with regard to the reduction of energy consumption in the glasshouse cultivation sector already exist, the Commission sees no reason to discontinue the lower-rate ret scheme currently in place. However, any general broadening or increase in the rate of ret would also affect the rate for the glasshouse cultivation sector.

The European context

The Netherlands is not entirely free to draw up its own legislation with regard to taxation. All legislation must comply with certain agreements made in the European context. The assessment of whether this is indeed the case is made by the European Commission, which examines whether any new legislation is in line with the terms of the European Union charter. To avoid the necessity of having each additional measure assessed anew, the European Commission may attempt to draw up pan-European agreements on certain matters. These 'directives' must be approved by the European Parliament and the council, whereupon they become binding on all countries and serve to determine the framework within which national legislation is devised.

Such considerations apply equally to the 'greening' of tax systems. Measures proposed in this regard must either be assessed by the European Commission or must fit within an existing directive. In its interpretation of the relevant Treaty, the European Commission relies on various resources, including the Community guidelines on state aid for environmental protection, designed specifically for this purpose. It also examines whether a proposed measure is likely to disrupt or distort the functioning of the internal market.

The internal market was created with the intention of removing all obstacles to trade between the member countries of the European Union. Taxation can have an effect on the manner in which the market operates and can thus cause obstacles or distortions. To avoid any such situation, it is necessary to reach a certain level of coordination between the various European taxation systems. In areas in which such coordination has not yet been achieved, such as the greening of the tax system itself, it becomes necessary to examine whether the proposed measure is likely to have any detrimental effect such as excluding foreign competition or giving domestic parties some unfair advantage. If this is the case, remedial action must be taken.

There can be a conflict of interests between the internal market and environmental objectives. An example is seen when the 'polluter pays' principle is reversed: in the absence of pollution, there is no payment to be made. This is the case when 'green energy' is exempted from all energy taxes. There is indeed a clear environmental benefit, but if the exemption itself leads to a competitive advantage, it threatens to distort the free internal market. A compromise is indicated and in this case can be achieved by limiting the level of exemption to the difference in cost price between conventional energy and the more expensive 'green' energy. Further to the community guidelines on state aid for environmental protection, any fiscal incentive must therefore strive to maintain the 'level playing field'.

The production of an eu directive may serve to resolve any conflict of interests. Provided all countries apply the same (rate of) tax, there can be no question of market distortion. However, the production of a directive can be a very lengthy process. The proposed directive for taxation of energyproducts is a good example. Member states have been trying to reach agreement regarding levies on electricity, gas and other energy products since 1997. Most member states already have such levies, but there are significant differences between them in terms of liability to pay, the rate and permissible exemptions.

Given that individual countries' efforts to arrive at a more environmentally aware taxation system rely on political alliances and agreements which can themselves be difficult to achieve, reaching pan-European agreements is far from easy. However, given the rapid development and planned expansion of the internal market, such agreements are becoming increasingly extremely desirable.

Introduction of the kilometre levy

Mobility

For motorists, the most significant development of the next few years will be the introduction of a 'kilometre levy'. This measure is intended to lead to a gradual fall in the costs of car ownership, with a simultaneous increase in the costs of car use. It is hoped that motorists will then think more carefully before each journey, considering alternative means of transport with less environmental impact. The kilometre levy will bring about both more efficient use of the roads and a reduction in the emission of pollutants.

The De Waard Commission contends that, in view of the measure's intent, the methodology adopted allows only a provisional assessment to be made. The environmental effects can not be predicted with any certainty, and will depend very much on the actual form of the measure. This has yet to be defined. Nevertheless, on the basis of the research conducted thus far, the Commission is confident that an appropriate form can be found whereby the kilometre levy can generate positive environmental effects. It is likely that a system of differentiation, both in terms of environmental characteristics and in terms of time and place further to the demands of an efficient mobility market, will contribute to the realization of these positive effects. Accordingly, the Commission recommends that these options should be included in the process of preparing the definitive legislation. If the current system is replaced, partly or wholly, by a kilometre levy, it is essential that comparable - or greater - environmental incentives are generated at each stage of its introduction. The Commission therefore recommends that this aspect is given every due consideration when designing the measure. It also recommends that the retention of certain existing measures alongside the kilometre levy be considered, particularly fuel duty and vehicle excise duty (mrb) and special vehicle sales tax (bpm) where applicable.

Fiscal equality for various types of vehicle

The link between taxation and the motor vehicle has a long history. Various motives have played a part, such as the need to raise funds for the construction of the nation's roads and the non-essential nature of the private car. Because commercial vehicles such as delivery vans have traditionally been regarded as a business resource,

they have been taxed at a lower rate. No bpm (vehicle sales tax) is payable on these vehicles at time of purchase and the applicable rate of vehicle excise duty (mrb) is also lower. Such differences did not come into being for environmental reasons. As a result, there is considerable divergence in the fiscal treatment of vehicles which cause equal environmental impact. The Commission has therefore examined whether positive environmental effects can be expected from standardization of the fiscal treatment of private cars and (small) commercial vehicles, and discontinuation of the exemptions currently enjoyed by taxis and vehicles older than twenty-five years.

Vans and other small commercial vehicles

The Commission considers it reasonable to assume that positive environmental effects will indeed be seen if the use of small commercial vehicles is subject to taxation in the same manner as that of private vehicles, where external effects (including environmental impact) are comparable. The extent of the positive environmental effect is uncertain. However, what is certain is that an increase in the variable costs will be more effective than any increase in the fixed costs. The Commission advises that taxation on the use of small commercial vehicles should gradually be increased to a level which reflects the actual costs (including environmental impact) of such use, and calculated in the same manner as for other forms of transport. The introduction of taxation measures for commercial vehicles should, the Commission believes, be closely linked to that of the kilometre levy and with it the introduction of the mobility market. A gradual approach is necessary to allow businesses the opportunity of adapting to the new taxation rates. In order to achieve an appropriate level of support, it is desirable to redistribute the extra revenue derived into amenities which can be seen to benefit those sectors of industry which make particular use of the commercial vehicles affected.

In broad outline, the Commission sees three possibilities for the introduction of the appropriate measures. The first involves the phased increase of mrb in the short term, whereupon this will be replaced by a kilometre levy when generally introduced ('variabilization'). The disadvantage of this approach is that mrb must first be increased, only to be decreased or abolished entirely after a few years. The second option is to introduce the kilometre levy for commercial vehicles at the same rate as that for private vehicles and at the same time. The disadvantage here is that the increase in taxation on commercial vehicles will be sudden rather than gradual. Furthermore, this approach conflicts with the policy intention of introducing the kilometre levy in such a way as to have no immedi-

ate budgetary effect for road users, although the compensatory channelling back of revenue would indeed provide some budgetary equilibrium for the commercial sector. The third possibility is to introduce the kilometre levy first, whereupon the existing mrb on commercial vehicles can be replaced by the kilometre charge ('variabilization'). In this approach, the kilometre charge for commercial vehicles would at first be significantly lower than that for private vehicles. The charge would then be gradually increased until it reaches the level at which it reflects the actual costs of vehicle use.

In each of the three options, it would remain possible to decide at a later stage whether bpm is to be introduced for commercial vehicles, if after the introduction of the kilometre levy it is decided to maintain a fixed component of this nature in the overall taxation system. The amount payable would then be calculated in the same manner as for private vehicles. However, no studies into the environmental effects of the introduction of bpm on commercial vehicles are known to have been conducted, and so the Commission is unable to make any statement regarding the desirability of such a measure.

Taxis

The same arguments apply to the abolition of taxis' current exemption from vehicle excise duty (mrb) and vehicle sales tax (bpm). Here too, the Commission takes the view that ultimately the taxi sector must pay the external costs of vehicle use in exactly the same way as any other sector. Nevertheless, the Commission advises against raising the taxation burden on taxis at this time, in view of the place occupied by taxis in the public transport chain and the current state of flux in which the industry finds itself following its recent deregulation. Against these considerations, the Commission considers the environmental gains to be made at this time to be too small.

Vintage and collectible cars

Vehicles older than twenty-five years are deemed to be 'vintage' and are currently exempt from vehicle excise duty. However, because such vehicles do not have a catalytic converter, the pollution they cause is much higher than that of modern vehicles. The useful working life of cars has increased in recent years. It is now possible to keep older vehicles on the road much longer without excessive maintenance. The Commission proposes that the age limit for vehicle excise duty exemption should therefore be raised to thirty years. For vehicles with an lpg installation, the exemption should be discontinued altogether. By equipping his vehicle with an lpg installation, the owner has indicated that he intends to make considerable use of that vehicle; it is not merely a collector's item (for which the exemption is intended).

Incentives to participation in shared car schemes

The Commission has examined ways in which the shared (pooled) use of vehicles could be encouraged by fiscal means. An analysis of measures revealed that a subscription to a shared vehicle scheme is already very much less expensive than maintaining a vehicle for ones' personal use. Nevertheless, many people choose to purchase their own car. This suggests that substantial incentives will be required to persuade people to join a shared car scheme. Abolition of, or exemption from, vehicle excise duty and sales tax for such vehicles will not be enough, as such costs represent only a very small proportion of the subscription charge. Based on these considerations, the Commission foresees only very slight impact on car use, and hence similarly small environmental effect. Accordingly, no positive recommendation can be made.

Similar considerations prompted the Commission to arrive at a negative recommendation with regard to incentives relying on direct taxation, such as some form of income tax deduction or lower rate of vat on subscription charges. Here too, the price is not the main obstacle to more widespread use of such schemes.

Introduction of a 'mobility package' for business travellers

An increasing number of motorists now drive a company car, i.e. one provided by their employer. The private use of company cars is taxed under the income tax at a percentage of the car's value. For users of company cars, there are often no greater costs attached to driving longer distances. The Commission examined the environmental consequences of this trend and arrived at three possibilities whereby it can be curbed by fiscal means. Firstly, the Commission considered reducing the taxable value of the company car where this forms part of a larger mobility package. This approach is subject to numerous objections. The environmental effects are difficult to gauge. For example, it is perfectly possible that the drivers of company vehicles will accept the mobility package purely to achieve the lower taxable value for the vehicle, and thereafter make no use of the other transport modes. With a lower taxable value the employee will have even less incentive to select a less expensive, and hence more economical, vehicle. Neither does this measure have very much to recommend it from the fiscal point of view. The user of a company car already enjoys some advantage over the owner of a private car. The introduction of the mobility package will only serve to widen the gap between them. Accordingly, the Commission advises against adoption of this measure.

A second possibility is a system of differentiation, whereby the taxable value of the company car is set according to the 'energy label' recently introduced. This may result in company cars becoming more

environmentally friendly. However, the Commission sees little promise in this measure. First, the results of the already announced measures to encourage the purchase of more economical cars in general should be studied. These measures come into effect on 1 January 2002 and company cars will also be able to benefit from the new system. Once the system is in operation, it will be relatively simple to determine whether its effect is the same for company cars as it is for privately-owned vehicles. If it then becomes apparent that further measures are required to encourage the use of more economical models for business use, the preferred approach would be by means of the vehicle excise duty or sales tax, not through direct income tax. This would ensure that one and the same vehicle does not benefit from two separate 'tax breaks'.

The third possibility is an increase in the taxable value of the company car on the income tax return. As the amount of the company car supplement to taxable income was increased from 20% of the cars value to 25% on 1 January 2001, the Commission sees no reason to call for a further increase at this stage.

Adjustment of the tax-free kilometre allowance

Finally, the Commission considered whether there were sufficient arguments for lowering the tax-free kilometre allowance for business use of a private vehicle. Further to the recommendations of its predecessor the Van der Vaart Commission, the current Commission advises freezing the allowance at its current rate of 28 eurocents per kilometre. By maintaining the same level, there will be a reduction in real terms due to inflation.

Incentives to optimization of fuel mix

In promoting the higher environmental efficiency of motor vehicles, a crucial part is played by the fuel mix of the national fleet of cars. The Commission considered two measures whereby this factor can be influenced: equalization of the fiscal treatment of the various types of fuel, and measures to influence the fuel mix of small commercial vehicles and taxis. Little is known regarding the effects of various fiscal measures on the choice of fuel or the fuel mix. Policy with regard to the optimum fuel mix is to be evaluated this year. This may have implications in terms of the objectives and the means deployed to achieve those objectives. Such considerations prompted the Commission to refrain from making any recommendation with regard to fuel mix at this time.

Incentives to use of low-noise tyres and sulphur-reduced fuel

The Commission takes a positive view of a (fiscal) premium to encourage the use of low-noise tyres. Use of such tyres also reduces fuel consumption. However, a reliable certification system for the tyres must first be in place, with an efficient premium scheme to follow. Furthermore, reliable estimates of the response rate to various levels of premium must be made before any fiscal measure of this nature is introduced.

The Commission also recommends incentives to the use of sulphur-reduced fuel by means of a lower rate of excise duty. However, the success of this measure will depend in part on the availability of this type of fuel in neighbouring countries. Only when sales potential is seen to be great enough will the oil companies consider the introduction of sulphur-reduced fuel on any large scale.

Speed limiters in small commercial vehicles

The Commission advises against the introduction of fiscal incentives to encourage (or impose) the use of speed limiters in small commercial vehicles. If the problem of speed is indeed greater for small commercial vehicles than for cars, the Commission advises the introduction of a lower speed limit specifically for small commercial vehicles. If the speed limit is reduced, and depending on the extent to which that limit is observed, there will be some environmental effect without the necessity of fitting speed limiters. The step of a lower speed limit being taken, one option is the installation of speed limiters in all new small commercial vehicles. The compulsory use of a speed limiter in order to qualify as a 'commercial' vehicle has significant advantages in that many of the requirements now in place to prevent unauthorized use of a commercial registration could then be dispensed with. However, both measures fall outside the sphere of competence of the current Commission, in that neither is strictly fiscal in nature. They would also entail greater enforcement efforts on the part of the traffic police.

The Commission also considered alternatives, such as a premium scheme going somewhat further than the existing *vamil* and *eia*. Such a scheme could be introduced without reducing the speed limit for small commercial vehicles. Little can be said at this time about the most appropriate form for such a scheme or about its likely results. The Commission's view is that, before further premiums are considered, the effect of existing premiums should be studied in greater detail. The results of an ongoing demonstration project will be useful in this regard. The differentiation of vehicle excise duty according to the rate of fuel consumption used, or the introduction of a diesel price stabiliser, are not seen to have any great potential environmental effect.

Taxation on parking

The main other taxation measure considered was a national tax on parking. The Commission ordered a separate study into taxation on parking on the employer's own premises. This revealed a negligible environmental effect, certainly in relation to the effect on the purchasing power of those required to pay such a tax. The Commission notes that recent government policy memoranda propose the decentralization of parking policy to local authority level. Any taxation on parking imposed at national level would therefore be at odds with such measures.

The Commission has also been unable to find any convincing arguments in favour of a national tax on parking on the public roadway. If time and place are left out of the equation, such a tax is nothing more than an increase in vehicle excise duty ('road tax'), for which parking considerations offer too slender an argument. If time and place are taken into consideration, central government would again be interfering in a local authority responsibility.

Imposition of 'property tax' on public highways

Under the Local Authorities Act, public roadways and railways are exempt from municipal property tax (ozb). The Commission examined the environmental effects abolition of this exemption would have. The revenue from such taxes goes directly to the local authority. The imposition of the ozb tax on road owners will therefore create funding flows within local authority areas, from provincial authorities to local authorities, and from the central government to local authorities. Such funding flows will imply no direct effect on existing roads, and it must be asked whether the prospect of ozb liability will influence the decision to build new roads and broadening existing ones. Moreover, such a measure would result in extensive and undesirable redistribution of funds between the various levels of government. The Commission therefore advises against this measure.

Selective exemption from property transfer tax

The Netherlands has a system of 'transfer tax' (known elsewhere as Stamp Duty) whereby a person purchasing an existing property must pay six per cent of the sale price. The original Green Tax Commission requested a study into the effects that modifications to this system would have on commuting habits and hence on the environment. It concluded that selective exemption from transfer tax for those moving to a house nearer their place need not be considered further. It was motivated by the complexity of such measures and the large loss of tax revenue for relatively minor environmental gains. The current Commission concurs, seeing no reason to revise this opinion.

Employee public transport levy

A number of cities in France have imposed a levy on companies and government organizations with more than nine employees, the amount being directly related to the number of persons working for the company. The revenue raised goes directly to public transport operators. The primary objective of this scheme is to encourage use of public transport (rather than the private car) by keeping the price of public transport low and by enabling new services to be created. The environmental effect of this measure is not a direct result of the fiscal measure, but rather of the application of the revenue to the maintenance and expansion of services. Accordingly, such a measure falls outside the Commission's remit. Similarly, any scheme whereby employers would be obliged to pay fifty per cent of the costs of their employees' season ticket was not considered.

Taxation of mopeds and powered bicycles

Mopeds (and other light powered two-wheelers) are responsible for 12% of emissions of volatile organic substances within the built up area. The noise they cause is one of the prime sources of noise nuisance, with 22% of adults aged 16 and over claiming to have experienced serious nuisance from these machines. Taking all aspects into consideration, the Commission concludes that the relatively high contribution to environmental problems made by mopeds and powered cycles calls for measures to be taken. In the first instance these will be geared to making the machines themselves more environmentally friendly. If any form of taxation is to be introduced, this must certainly be differentiated according to environmental characteristics. However, the Commission does not wish to go so far as to advise the introduction of a tax at this time. Further studies are required to determine ways in which the purchase and use of environmentally friendly (or friendlier) models can be encouraged. In this context, means of tightening existing legislation and the effects of the already announced registration system must also be examined. For the most part, the necessary research falls outside the fiscal sphere.

Taxation of motorcycles

Motorcycles emit more carbon monoxide (co) and volatile organic substances (vos) than cars. Recently, the European environment ministers decided to introduce more stringent emission norms for all new motorcycles, to take effect in 2006. The Commission ordered an investigation into the effect of stimulatory measures whereby motorcycles complying with these new norms will be available some time sooner. The Commission believes that fiscal measures to facilitate use of clean motorcycles may usefully take a similar form to those for cars. However, before such measure can be introduced, further study into the most appropriate form is required. In particular, attention must be devoted to attaining an ongoing effect.

Motorized machinery

In the Netherlands, the current taxation (duty) system distinguishes between diesel fuel used for road transport and recreational sailing and that used for other purposes, notably agricultural and other motorized machinery. The latter form is less expensive and has a red dye added, whereby unauthorized use can be readily detected. The Commission considered the likely effects of applying the standard rate of taxation and duty to all forms of diesel fuel. This would entail a significant price increase for 'red diesel' in the order of 16.6 euro-cents per litre (excluding vat), being approximately thirty per cent. The Commission believes that such an increase would have a clear environmental effect. However, there are problems in justifying such measure. Furthermore, earlier measures have already resulted in a significant increase in the price of red diesel. In 1995, the Regulatory Energy Tax was not yet in existence. By 2001, this levy had served to bridge almost 45% of the difference in duty between standard diesel and red diesel. Accordingly, the Commission advises against any further increase in the duty on diesel fuel at this time.

Taxation on rail transport

In considering rail transport, the Commission takes a positive view of differentiating the fees which railway operators must pay for the use of the infrastructure according to the environmental impact they cause. However, this must be seen as a long-term measure. At present there is insufficient information about the nature or extent of the effects to enable such differentiation. The system of usage fees is itself too new and the institutional context of rail transport is currently somewhat unsettled. The Commission concludes that, in principle, usage fees present a good instrument for 'greening' but that it is too soon to take any concrete measures. The recommendation is that this topic should be further elaborated when determining the national pricing policy for transport and traffic. The Commission further concludes that fiscal instruments would be less suitable in trying to encourage conversion from diesel-driven trains to some more environmentally efficient technology.

Taxation on diesel fuel for inland waterway transport operators

Various countries have agreed not to levy taxes on diesel fuel used by vessels on the Rhine and its tributaries. The introduction, nevertheless, of such a tax therefore calls for concerted action on the part of several countries. Given that increased duty is likely to result in marked environmental gains, the Commission advises the Dutch government to enter into further international negotiations in order to achieve the stated aim.

A subsidy scheme is now in preparation whereby the owners or operators of inland waterways vessels will be offered assistance in purchasing cleaner engines. This will render unnecessary any extension of existing fiscal incentives for the near future. Vessels used solely for recreational purposes have not been considered by the Commission, since the general licensing and taxation arrangements for such vessels are already subject to government review.

Taxation on air movements

Any fiscal measures affecting aviation must, in general, be taken in the international context. The Commission supports the proposals within the eu for some form of tax based on distance travelled in combination with certain environmental characteristics. This is occasionally referred to as the 'en route levy'. The Commission notes that there are also opportunities to impose unilateral taxes in the form of charges for aircraft take-offs and landings. However, the Commission also notes that there is little information concerning the legal and economic ramifications of such charges. Further research is recommended. Finally, the Commission wishes to state that the proposed increase in vat on domestic air tickets is likely to have an extremely slight environmental effect.

How green is the other man's grass?

Many European countries have started work on the process of 'greening' their taxation systems. Since the early 1990s, several countries have combined environmentally motivated tax reforms with decreases in traditional forms of taxation. The Netherlands and the Scandinavian countries are among the frontrunners in this regard. They all have a set of instruments which has continued to expand and has gained in importance over the years. Since 1999, other countries within the eu – including Germany, Italy, the United Kingdom and France – have taken various measures independently of each other. Given the differences in their economic structures and re-investment opportunities, they have each arrived at a different system of environmental taxation. The absence of any European agreements in this regard has resulted in the differences becoming even more marked, as illustrated by the chart on the following page..

Taxable commodity	AT	BE	DK	FI	FR	DE	GR	ICE	EIR	IT	LU	NL	NO	PT	SP	UK	SW
Energy																	
CO ₂			'92	'90	'01	'99				'99		'92	'91			'01	'91
Transport																	
Differentiated annual vehicle tax																	
Sulphur in car fuel																	
Water effluents																	
Waste																	
Hazardous waste																	
Tires																	
Disposable razors																	
Drinks containers																	
Disposable cameras																	
Raw materials																	
Packaging																	
Plastic bags																	
Disposable tableware																	
Pesticides																	
CFCs																	
Batteries																	
Lightbulbs																	
PVC/phtalates																	
Lubricating oil																	
Fertilizers																	
Paper, cardboard																	
Polyethylene																	
Solvents																	
Aviation noise																	
NO _x																	
SO ₂																	
Minerals (P,N)																	

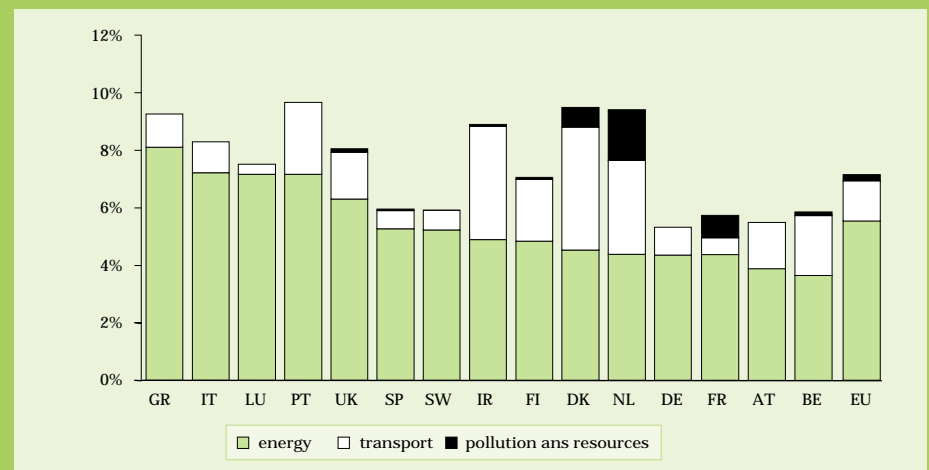
1996 2000

Source: EEA: Environmental taxes: recent developments in tools for integration, Environmental Issues no. 18, Luxembourg, Office for Official Publications of the European Communities (2000)

The relative importance of environmental taxes varies by country. It is no simple matter to compare the taxes one with another. The Organization for Economic Cooperation and Development (oeso) and the eu apply the rather broad term *environmentally-related taxes*, which goes beyond environmental taxes alone. The definition of *environmentally-related taxes* is 'obligatory financial contributions to the national exchequer imposed in the form of taxes and having major significance in terms of the alleviation of environmental impact.'

Throughout the eu, such taxes account for between five and ten per cent of total tax revenue. The greater proportion of this revenue is from duty on petrol and diesel fuel. In the transport category, taxes on car ownership and use include in the Netherlands bpm and vehicle excise duty. These environmental (or environmentally related) taxes can also be expressed as a proportion of the Gross Domestic Product (gdp). As a proportion of gdp, environmentally related taxes now account for between 1.7% and 4%. According to the oeso definition, the Netherlands has achieved a proportion of 3.5 per cent. It is noteworthy that most of the countries which introduced environmental taxes at a comparatively early stage now gain a roughly equal proportion of tax revenue from the environmentally-related taxes. However, it should be noted that the chart below serves a general guide only. Comparison between this table and that included in the section on the Netherlands reveals a number of differences in definition.

Figure 5: Environmentally-related taxes in the eu as a percentage of total tax revenue



Source: EEA 2000 (1997 data)

Taxation on withdrawal of space from unbuilt space

The use of space and the residential function

At present, the Netherlands has no direct tax on the use or occupation of space. Attempts are, however, being made to optimize the use of space through legislative means such as the local area development plan. Little use is being made of financial means to achieve optimum allocation. Capital gains achieved through change of designated purpose are not specifically taxed as such. One avenue of approach would be to ensure that capital gains are significantly pruned away if the quality of space usage deteriorates from the social perspective. The Commission examined two options whereby this aim could be achieved. One is a single tax or levy applied upon a change in designated usage of undeveloped land. The other is a tax on space usage in the form of an annual charge based on the actual use of premises at the reference date; not only the area but also the form and content of the buildings would be of significance. Both forms of taxation are considered workable. Nevertheless, the Commission has refrained from making any recommendation in this regard, it being considered advisable to await the results of current research into the open space levy proposed in the government memorandum on Land Allocation. To avoid placing too heavy a demand on the limited expertise in this field, the Commission has refrained from initiating its own research. However, it has made two suggestions with regard to points which do not currently form part of the terms of reference for ongoing research. The first of these is the introduction of an annual tax on space usage. The second is a valuation system based on the loss of natural values for areas with different usage designations. The Commission suggests that these options should be included in any research into any tax on open spaces and the chairman of the relevant consultative committee has been informed accordingly.

Incentives to maintenance and expansion of the 'National Ecological Network'

A specific and recurring topic in all discussions concerning the optimum use of space is the problem of realizing or retaining sufficient green amenities. This problem has now been addressed in that it has been decided to create a contiguous network of large high-quality nature areas throughout the Netherlands, to be known as the 'National Ecological Network' (nen). By the year 2018, this total area of the parklands involved is to be some 700,000 hectares. To achieve this objective, 5,800 hectares of agricultural land must be purchased each year. The Commission has investigated whether fiscal measures can be applied to facilitate the transfer of land. Three possibilities were studied, the first of which involves the easing of tax liability upon permanent discontinuation of agricultural activity. Secondly, to promote the sale of agricultural land, the existing exemption from

transfer tax ('Stamp Duty') may also be extended. Finally, consideration has been given to the rolling-over of assets and goodwill of agricultural business which are relocated to allow the extension of the 'National Ecological Network'. However, there is a problem in that the 'National Ecological Network' is being created on a purely voluntary basis: there are no compulsory purchase schemes. Fiscal incentives by means of the 'roll-over' rule will only become possible if the Ecological Main Structure is given a greater legislative basis. Once this has been achieved, the Commission advises extending the roll-over rule to all businesses which are displaced to make way for the nen. The Commission also sees some opportunities in the extension of exemptions to transfer tax. The percentage of the land which must form part of the NEN before exemption is permitted for the entire business could, the Commission believes, be reduced from its present level of 50%. However, care must be taken that the balance between the effectiveness of the scheme in terms of the creation of the nen and the inevitable 'overshoot' is always borne in mind. The introduction of the proposed business retirement relief for hidden assets and goodwill is, in the view of the Commission, not desirable. The gains (in the form of a larger nen) do not justify the major modification of the fiscal system this would entail, while effectiveness is likely to be seriously eroded by a number of 'free riders'.

Fiscal incentives to the creation of public footpaths

Not only the extent of the green areas and the connections between them can be seen as problematic: the accessibility of open spaces and nature must also be addressed. To bring about improvements, the government wishes to promote the creation of public footpaths. Accordingly, consideration is being given to a fixed-rate deductible allowance of 1.4 euros per metre's length of path. The Commission requested research into this proposal. This revealed that only a very small percentage of agricultural landowners would be prepared to lay footpaths for this level of remuneration. The Commission therefore concludes that the proposed fiscal instrument is not the best manner to promote this objective. An important consideration here is that there would be no direct relationship between the proposed deduction and the actual costs of constructing and maintaining the footpath. According to the research findings, those who would actually be asked to make use of the scheme feel likewise.

Lifting of ozb exemption for agricultural land

Under the Local Authorities act, cultivated land in use for agriculture or forestry is exempt from the local property tax (ozb). The Commission investigated whether lifting this exemption would lead to any positive effect for the environment. The conclusion is that this effect would be too small to justify a positive recommendation.

In terms of traditional agriculture, the measure would have a neutral or even negative environmental effect. If the exemption is applied only to farmers employing 'biological' production methods, a positive environmental result may be expected. However, at present fewer than one per cent of arable producers fall into this category. Furthermore, it must be asked whether an exemption for biological producers can be justified against the principle of equality.

Fiscal incentives to soil decontamination

It is the government's aim to ensure that all soil decontamination work which has been designated 'urgent' is completed by 2023. There are currently various fiscal measures to support this process. However, neither the commercial sector nor private individuals seem particularly keen to make use of such measures. The Commission has therefore examined means whereby extra pressure can be brought to bear by fiscal means. These might include subjecting fiscal benefits for future decontamination work, to a strict time limit. The Commission concludes that there are sufficient arguments in favour of such measures. A covenant between government and the commercial sector has now been entered into with regard to the decontamination of soil on industrial premises. That this covenant applies only to land in the Netherlands is an argument for further measures. Nevertheless, the Commission does not advise the immediate introduction of the measures suggested here, since it is not seen as desirable to make major amendments to the legislation so soon after the introduction of the covenant itself. A proposal whereby the 'green investment' scheme would be extended to include companies liable to soil decontamination under the covenant was rejected by the Commission. Because it is a compulsory measure, no additional environmental effect may be expected and the 'green investment' scheme is not intended to provide general compensation. The Commission notes that some companies taking decontamination measures over and above those actually required of them by law, may be entitled to 'green credits' even under existing regulations.

The Commission also considered a proposal whereby private homeowners would enjoy tax relief on the costs of soil decontamination further to the removal of an underground oil storage tank. Here too, the Commission's recommendation is negative. Soil decontamination is, like all major maintenance costs, covered by the existing taxation for private home ownership. Furthermore, experiments in Rotterdam suggest that the response to such a scheme would be quite small.

Revision of rateable value and ozb rates

A discussion which regularly arises whenever the environment and the taxation system are considered in tandem is that concerning the method of assessing the rateable value property (for the purposes of the ozb property tax) and the percentage rate of local property tax (or 'rates'). It is often suggested that this tax effectively penalizes environmentally friendly behaviour, in that investments in soil decontamination or measures to increase energy efficiency serve to raise the value of the property. This is then reflected in the rateable value upon which taxation is to be paid. Measures to adjust valuation criteria in line with environmental policy are frequently proposed. Such measures include discounting any increase in value further to soil decontamination. The Commission believes that any fiscal advantage gained through such measures would be slight, as would any resulting environmental advantage. The negligible environmental gains would not justify the significant modification in methods of valuation required.

The Commission also examined means whereby the rate of the ozb tax could be varied according to environmental characteristics. Here too, the Commission finds insufficient arguments for doing so. It is not clear how any reduction in rate could be related to any environmental investment. Furthermore, the environmental issues concerned are frequently at a level above that of the local authority, at which the rate of ozb is actually determined. Finally, no study of the effectiveness of such measures is known to have been conducted.

Incentives to sustainable construction

The Commission studied two proposals designed to promote sustainable construction. The first of these involves including in the Energy Premium Scheme any new residential property with higher energy efficiency than that laid down by building regulations (Bouwbesluit). The second involves making commercial property eligible for 'green loans', provided stringent conditions of sustainability are met. The Commission takes a cautiously positive view of both proposals.

However, when considering the award of an energy premium for energy efficient new homes, the Commission asks whether it would not be more effective to direct policy towards those constructing the homes, rather than those who are to occupy them. With regard to the green investment proposal, it is seen as extremely important that the projects are financed on the basis of lower market returns due solely to their 'green' character. The Commission has been unable to decide whether this is the case under the current proposal. Furthermore, it is not possible to state the behavioural and environmental effects of such measures, whereby there are doubts concerning their effective-

ness. A positive environmental effect does, however, seem likely. The Commission therefore believes that any measures should be introduced on a temporary basis, allowing time for thorough evaluation.

Products, emissions and processes

Taxation on drinks containers

The Second Covenant on Packaging strives to ensure the minimum quantity of waste packaging material to be dumped at landfill sites or incinerated. In 1999, the total quantity of dumped or incinerated waste was 939 Ktons, of which the largest single category was drinks containers (96 Ktons). Single-use green glass containers (notably wine bottles), 0.5 litre pet bottles for water and soft drinks, and cans (beer and soft drinks) are the most conspicuous causes of environmental impact. The main environmental effects of such drinks containers are the greenhouse effect of their incineration and the vast quantity of non-degradable material dumped in landfill sites. It would therefore seem logical to direct any taxation on packaging to these products in particular, at least in the first instance. A taxation on drinks containers could later be extended to include other types of packaging.

The Commission concludes that a national tax on drinks containers is technically feasible. This would have to be framed in line with the relevant eu legislation. The Commission believes that a system of drinks containers taxation based on the 'shadow pricing method' (i.e. one in which the marginal costs involved in compensating for certain negative environmental effects are charged on to the consumer) will not lead to a significant well-reasoned environmental effect. To achieve such an effect will, the Commission holds, require a much higher rate of taxation. This would entail a price increase in the order of 2 to 5.5 eurocents for a paper carton, and of 11 to 37 eurocents for a wine-bottle. (Similar rates are currently applied in Denmark and Norway).

The final form of the tax must be determined in part by the policy and instruments chosen with regard to packaging in general. There may be overlap of (or interference between) instruments, as in the case of covenants on the one hand and a deposit scheme on the other. Some of the Commission's members believe it likely that the introduction of a tax will lead to the abandonment of the existing covenant. Additional studies are required into certain aspects, such as the implementation of the tax (to include the administrative burden for the private sector), the legislative framework (determining the basis and the criteria for taxation), the economic effects and the ramifications in terms of eu legislation.

Taxation on privately used fireworks

Further to the debate concerning the appropriate government response to the Oosting Commission report (into the Enschede firework disaster of May 2000) a motion was submitted to the Lower House calling for the government to deter the use of fireworks with every means at its disposal. It was proposed that a specific tax might be a suitable means. In theory, an environmental tax on fireworks can be justified in terms of the vast amount of litter produced and the risks to human health. Other environmental effects are negligible and cannot be used to support arguments for taxation. It appears impossible to devise a form of taxation which specifically addresses these two deleterious effects. Other instruments would appear more effective in this regard, such as adequate legislation (a revised Firework Decree), more stringent enforcement of the legislation, agreements with the private sector parties concerned, and better public information.

With regard to a tax to regulate the extent of firework use, two possible rating options have been identified. The first is a rate which would increase the retail price of fireworks by some fifteen to twenty per cent, a rate which would reflect the 'polluter pays' principle. This would send a message to firework consumers, but has the significant disadvantage of offering only a very limited regulatory effect. The second option is a rate a few times higher, which may indeed be expected to have a marked regulatory effect. The Commission believes that it would be possible to devise such a tax, but that it would probably lead to a marked increase in illegal foreign imports. Depending on the exact level of the increase, the tax could be counterproductive, since illegal fireworks generally account for higher emissions of hazardous substances and pose a greater risk to public health and safety.

Because controls at the national borders are no longer permitted, the Commission considers it unlikely that it will be possible to staunch any increase in illegal imports by means of more intensive checks and enforcement, particularly if the Netherlands introduces a high-rate firework tax. This was seen as the decisive reason for advising against the introduction of a firework tax with a regulatory rate. Some members of the Commission think it worthwhile to consider a tax which would internalize the social costs of firework use and express the general social undesirability of fireworks. These members believe that supplementary study with regard to elasticity and costs of enforcement is necessary. The disadvantage of a tax based on external costs is that its environmental effects will be very small, certainly in relation to the costs of its introduction. Some costs have already been internalized by such means as local authority waste collection charges.

Reduction of water consumption by the brewing industry

The Dutch brewing industry produces almost 25 million hectolitres of beer annually, of which just under half is exported. The total water consumption of the breweries is in the order of 150 million hectolitres. Among the larger breweries, water consumption is between five and seven litres for each litre of beer produced. This water is both product water (that which goes into the end product) and process water (used for cleaning bottles and equipment). Water is also used to generate electricity from steam. The Commission has investigated fiscal instruments whereby the breweries can be encouraged to use less process water. Measures considered include an industry-specific increase in water taxes (for both groundwater and tap water), with a temporary reduction in the duty payable on beer to neutralize the budgetary effect.

Although this combination of fiscal measures is likely to have a positive environmental effect, the Commission has advised against introduction. There are major objections to any industry-specific tax in terms of the principle of equality. Reduction of duty on beer could also send a politically undesirable measure in terms of public health.

An alternative, albeit one with a more limited effect, would be to include specific investments designed to reduce (process) water consumption on the list of technologies subject to environmental investment deduction facilities (mia and vamil). This would also be somewhat easier to implement.

Taxation on wood, with exemption for that derived from sustainable sources

The Netherlands has an extensive wood trade. The country does not produce a large quantity of wood itself, but its imports and exports of wood are significant: annual imports account for eur 4.5 billion while exports account for some eur 2.5 billion. In 1995, the Netherlands was the world's seventh largest wood importer (by value). Only a very small proportion of the wood currently traded is derived from sustainable forestry sources. Of that actually used in the Netherlands, four per cent comes from sustainable resources. The tempo of deforestation is increasing. According to figures produced by the Food and Agriculture Organization of the United Nations (fao), 83% of wood is taken from the primary forest resources, whereby it may be deduced that some 250,000 to 500,000 hectares of tropical forest has been lost for Dutch imports alone during the last ten years - a figure which excludes wood used for paper production. To encourage the use of sustainable resources is therefore seen as a matter of urgency. The Commission concludes that the use of sustainable wood can be encouraged by a variety of means, including pricing measures

directed at the consumer. However, a number of considerations must be taken into account:

- The Commission believes that any tax on wood, with an exemption for that certified as derived from sustainable sources, will have a positive environmental effect. No research has yet been conducted into extent of this effect, but it may be assumed to be substantial.
- The tax on wood will only be viable if there is a recognized, possibly obligatory, certification system for that derived from sustainable sources.
- The Upper House is (at time of writing) considering the Vos proposal for a mandatory system of labelling. If passed by the House, the proposal must then be ratified by the appropriate European bodies. However, the European Union has expressed opposition to the proposal, whereupon its future is uncertain. The Commission therefore proposes that no further action be taken until such times as the European Court has passed its verdict. Developments will be actively followed.
- If the Vos proposal is not adopted or if it fails to receive ratification, further possibilities should be examined with regard to a tax on wood, with exemptions based on a guaranteed but voluntary certification system. However, it must first be determined whether taxation in the eu or wto context will provide any perspective. The eu has reservations with regard to any 'extra territorial' environmental protection, i.e. that of which the intended effect will be seen outside the eu itself, in this case the tropical rainforests.
- The Commission notes that a tax on non-sustainable wood will be markedly more effective if implemented at European scale and based on a European system of certification. This would also resolve a number of the legislative difficulties. The Commission therefore recommends approaching fellow European countries with a view to gaining support for this measure, although it is realized that this can have results only in the long term.

Taxation on NO_x emissions (large permanent sources)

The emission of nitrous oxides (no_x) is a significant and persistent environmental problem. Such emissions contribute to the acidification and eutrophication of the environment, and to the formation of ozone in the lower atmospheric levels. To reduce such emissions, the government is currently defining appropriate measures in consultation with large industry, which is responsible for some 25% of the no_x emissions. A voluntary agreement has been reached, whereupon the introduction of a tax on no_x emissions would seem inappropriate at this time. There would be no extra gains to be made from such a

tax if the voluntary agreement itself results in a reduction in no_x emissions.

Taxation on use of perchlorethylene detergents

per (perchlorethylene) is a substance used as a detergent by some 95% of commercial laundries. It has environmental effects in terms of soil contamination, with levels in excess of the Maximum Permissible Concentration (mpc) having been detected at many locations. Given that legislation has been passed whereby all existing installations must comply with mpc requirements from 2005, the Commission sees no reason to introduce a tax on the use of per.

Taxation on diffuse emissions (heavy metals and zinc, tin and copper compounds)

Further to the framing of the Surface Water Pollution Act in which a water contamination levy was introduced, investigations took place to determine whether it is possible to tax discharges into surface water. At that time it was concluded that any taxation with regard to diffuse emissions must meet three requirements:

- there must be an actual discharge of substances subject to the contamination levy;
- it must be possible to identify an individual person or legal entity causing the contamination and hence liable to payment of the tax;
- it must be possible to make a direct relation between the amount charged and the degree of contamination caused.

The latter two requirements are, in general, particularly difficult to meet.

Nevertheless, three types of diffuse emission were examined in detail by the Commission, which concludes that a tax is appropriate in none of the three cases at this time.

In the case of a tax on zinc (plate), the effects are not expected to be significant. Firstly, this is because alternatives (e.g. polyester) are less expensive and a tax is therefore of little practical use. Secondly, the Netherlands has only one producer of zinc plating, who would experience considerable competitive disadvantage were any tax to be imposed on this commodity.

In the case of excess emissions ('overspill') by sewage treatment plants, the discharge of copper and zinc residuals is significant. Central government and a number of local water management authorities already impose the watercontamination levy on these excess emissions. However, the regulatory effect of this would appear to be low. Any levy would have to be particularly high to ensure that

the capacity of the waste water treatment installation is expanded to prevent overspill. Legislation would appear a more effective avenue of approach.

In the case of copper (or largely cuprous) antifoulings, the Commission aligns itself with the recommendations of its predecessor, the Van der Vaart Commission. The use of such antifoulings is likely to be subject to restrictions in the near future. The introduction of a levy on private use may lead to imports of the taxed products. Accordingly, the introduction of a specific tax is not seen as desirable at this time.

Taxation on diffuse emissions (other greenhouse gases)

The term 'other greenhouse gases' refers to those identified alongside co₂ itself under the Kyoto Protocol. They are: n₂o, sf₆, hfc's, pfc's and methane. Research has shown that the emissions of such gases are too low to warrant a tax being imposed. The Commission concurs, but notes that a tax directed at the larger emissions of other greenhouse gases, rather than just diffuse emissions, may prove useful. However, since no studies have yet been conducted in this regard, it is not possible to make any firm statement.

Modifications to the vat system to promote the use of environmentally friendly goods and services

Modification of the existing system of Value Added Tax is frequently cited as a means of 'greening' the overall tax system. At first sight it would seem relatively simple to transfer certain types of goods and services from the higher band of vat to the lower and vice versa. In practice, it is not quite so straightforward, since vat is subject to a high degree of harmonization in the European Union context. Nevertheless, in certain specific circumstances, differentiation of vat bands in favour of more environmentally friendly products will be a first step in achieving the 'polluter pays' principle on the demand side of the market. However, European legislation allows only very limited possibilities for this at present. With the publication of its Green Paper on Integrated Product Policy, the European Commission wishes to re-open the debate on this issue. The Commission believes that this is a positive development and sees considerable long-term opportunities, assuming a generic differentiation.

The Commission also aligns itself with the conclusions of its predecessor, namely:

- in exceptional cases, a sustainable product will become less expensive than the standard equivalent due to the application of a lower rate of vat;
- application of the lower rate of vat will be expensive and will not be effective if the market penetration of the sustainable product

has already reached a reasonably high level. The loss of tax revenue will then be too high compared to the sustainability effect achieved.

The Commission appreciates the validity of its predecessor's approach, as well as that of a fully integrated approach.

The reduced vat rate to sustainable goods and services

It would not be beyond the bounds of thought to create a vat system in which all goods, including primary requirements such as food and clothing, are subject to the general (higher) rate of vat. Member states would be allowed to impose a lower rate of vat only on the available sustainable versions of goods or services, or on those which cause relatively little environmental impact.

The Commission is of the opinion that a lower rate of vat applying only to sustainable goods and services has some potential, but is also subject to a number of significant objections. It is not possible to reach a firm conclusion due to the absence of data. However, it is clear that such possibilities can only be successful if introduced at European level. The success will only be reached in the long term. It is therefore recommended that the Netherlands should take an active part in the talks instigated by the European Commission.

Abolition of reduced rate of vat on meat

The Commission concludes that the transfer of meat to the general (higher) band of vat, while maintaining the reduced rate for biologically produced meat will have positive environmental effects, and is also likely to be beneficial in terms of animal welfare. Such a move would therefore play a role in achieving the intended restructuring. However, the Commission is unable to assess the exact extent of the positive effects, nor that in terms of the restructuring effect. Further study is required to prevent unnecessary cummulation of policy instruments and to ensure an appropriate level of support. As an alternative to the imposition of the general rate of vat on meat, a specific 'meat tax' has been proposed, with exemption for that certified as having been sustainably produced.

Reduced rate of vat on maintenance services for woodlands and nature areas

Woodlands and other nature areas require regular maintenance to counter the negative effects of acidification, eutrophication and the depletion of water resources on their environmental values and vitality. At present, maintenance activities with regard to nature areas other than certain forested areas are subject to the general (higher) rate of vat. No possibility exists to charge these activities at the lower rate. This would require formal modification of the Sixth Directive on Value Added Tax, which is not practicable in the short term. Given a positive outcome of the current evaluation of labour-

intensive services, the Netherlands would do well to place this topic on the European Commission's political agenda as the next step in the relevant process.

Abolition of automatic deduction of prepaid vat for businesses conducting environmentally hazardous production processes

Businesses are entitled to deduct the amount of vat already paid to others (e.g. suppliers) from their own vat liability. The Commission was asked to consider an amendment whereby this right would be removed from those businesses whose production processes cause excessive levels of pollution. Such a measure, it is claimed, would send a clear message that we wish to discourage environmentally harmful production processes in the Netherlands. In the Commission's view, the measure should not be supported. It would represent too great a break with the current principles of the system of value added tax.

Measures to encourage biological agriculture are all directed towards the producer. Means by which sustainable choices can be influenced could equally be directed towards the consumer. One possibility is the introduction of a 'sustainable consumption deductible allowance', which would entail lower liability to income tax for those consumers who purchase biologically-produced products. It would therefore be an incentive to buy 'eco'-labelled foodstuffs derived from environmentally responsible growers.

Sustainable consumption deductible allowance

It may be concluded that, despite the probable positive effect that such an instrument would have in terms of the sales of biological produce, its introduction would undoubtedly meet insurmountable problems of a technical nature. The introduction of such a allowance requires an electronic system to register 'sustainable' purchase from different suppliers for each consumer. For example, not all retailers of biological produce have the electronic equipment for such a system. For some retailers, such as market stallholders and small independent outlets, any form of electronic registration would be wholly inappropriate. Furthermore, the customer's personal tax number would be required for each purchase to prevent fraud. The Commission therefore foresees problems with regard to privacy legislation.

An alternative would be to examine the means offered by vat to encourage eco-production. Another possibility would be direct incentives in the form of premiums. Given that such a measure has no direct relationship with fiscal matters, it falls outside the sphere of competence of the present Commission.

Expansion of the sustainable business deductible allowance

The proposed sustainable business deductible allowance (doa) for biologically-produced agricultural produce is awaiting the approval of the European Commission. The De Waard Commission recommends that developments in Brussels should be closely monitored and, as and when the allowance is approved, to investigate whether its expansion to include other sectors would be appropriate.

Incentives to production and use of solvent-free paint

The negative environmental effects of paints based on chemical solvents are well known. They contribute to smog and inhalation of their fumes can result in degenerative disease of the nervous system. Since 1 January 2000, professional painters have been prohibited from using solvent-based paint indoors. Ways of further encouraging the use of solvent-free alternatives are now being investigated. Incentives to the production of such alternatives by such means as the vamil and mia schemes would seem most suitable. However, it will be important to exercise due care and consideration when revising the lists of production goods to be encouraged by means of vamil and/or mia. The Commission recommends that this process is undertaken with appropriate caution, whereby consideration is given to the relative merits of existing incentive possibilities. For example, offering incentives by means of applying the lower rate of vat would seem very roundabout and is likely to be successful only in the long term.

Incentives to production and use of biodegradable lubricating oil

The total annual lubricants market is in the order of 150-200 million kilograms. Current estimates are that only one or two per cent of the oil used can be described as 'environmentally friendly'. Alongside further public information, means to further encourage the use of biodegradable lubricating oil include incentives to its production (using the vamil and mia schemes). This would also be possible by such means as applying the reduced rate of vat to the more environmentally friendly lubricants, a proposal made by the Van der Vaart Commission. In its third report, this Commission states that this measure could lead to a rise in the market share of environmentally-friendly lubricants to around ten per cent, which would mean a reduction in the dumping of the environmentally unfriendly variety of around three metric tons per year. However, this will require amendments to legislation at European level. The measure can therefore be implemented only in the longer terms. An alternative would be to introduce a separate form of taxation on non-degradable lubricants, a proposal made by the original Van der Vaart Commission and still under consideration.

Evaluation

For various reasons, past evaluations of environmental impact of the introduction of green taxes have often been unable to arrive at any firm conclusions. This shortcoming prompts the Commission to recommend that far greater care and attention should be devoted to future evaluations when introducing new environmental taxes. In particular, not only the fact that there will be some evaluation must be stated, but an indication must be given of how that evaluation is to take place. Those responsible for the implementation and administration of the tax-measure should be better informed concerning the desirability of monitoring certain data over time. In general, there is a significant requirement for data when evaluating any 'greening measure'. At present, there are adequate sources of data enabling in-depth analyses into energy consumption and mobility in the domestic (private user) sector. However, it is not certain whether these sources will continue to exist. Accordingly the Commission recommends establishing contact with EnergieNed with a view to continuing the focus group ('panel') studies of the domestic use of natural gas and electricity. This will ensure the greatest possible level of continuity. The Commission also recommends that the questionnaires used in cbs surveys should be expanded to include questions relating to 'greening'.

There seems to be a lack of consistent data concerning environmental behaviour of commercial enterprises. The Commission therefore recommends that the Central Bureau of Statistics (cbs) should undertake a pilot study for the introduction of an 'environmental behaviour monitor.' Several members of the Commission have indicated that the organizations they represent would be willing to cooperate in raising the level of support for such a measure.

'Trust is good, measurement is better'

How effective are environmentally-related taxes? This question is raised whenever a new measure is introduced. And the answer is almost always disappointing: the attainment of environmental objectives can rarely, if ever, be directly linked to a particular individual measure. As a rule, good results will be derived from a package of measures, all geared towards the same overall objective. It is often impossible to isolate the effects of any one measure within that package. While understandable, this could be seen by some as unsatisfactory, especially in a society which regularly calls for the policy adopted to be justified 'to the letter'. The Commission has therefore been requested to develop a suitable means whereby the results of 'greening' measures can be measured after the event, thereby establishing the efficiency of the policy adopted. In response to this

request, and in view of its own conviction that this approach is indeed necessary, the Commission has conducted an exploratory study into means by which the appropriate instrument can be developed.

A number of complicating factors are present. Let us first consider the field of research, whereby the first thing to strike us will be its *breadth*. Every possible avenue of approach and theme will arise sooner or later: mobility, use of space, the residential function, employment, consumer behaviour, energy consumption, and so forth. Both the domestic setting and commercial use must be considered. To a greater or lesser extent, both will play a role in determining how the various elements relate and are affected by measures to increase environmental awareness, decrease environmentally deleterious behaviour, or achieve some other environmentally-related aim. For example, the Regulatory Energy Tax is primarily directed towards private households and small businesses, while taxes on groundwater usage and waste production are aimed more at the larger industrial companies. The difference in scope between the various regulation is therefore a second complicating factor when examining their efficiency.

The form of the evaluation itself will present complications. The main considerations are time, scope and the size of the sample used. Time is a particularly important variable. A study commenced shortly after the introduction of the relevant measure is unlikely to reveal much useful information, since the effects of the 'greening' measure have yet to take full hold on investment patterns. In most cases, the incentives available are insufficient to prompt immediate replacement of capital assets such as boilers, cars or refrigerators. Only when the relevant article is due for replacement anyway, the user will be stirred into environmentally-friendly action. The tempo of the desired change in behaviour is therefore dependent on a number of factors. A second consideration is the (desired) comprehensiveness of the study. In general, the terms of reference of any evaluation study are framed with a view to quantifying the specific influence of one measure among a large range of other measures. This requires a significant amount of background information; many variables must be measured both before and after the measure is introduced. The requirement for significant amounts of information calls for significant numbers of observations, which in turn calls for large samples.

It will surprise no one that many evaluation studies collapse in the face of the problem: bad design, incompleteness of the question-

naire, irregular measurements (or too frequent measurements), too small a sample group, insufficient time between implementation and evaluation, too little coordination with other studies. Perhaps the measure has been introduced so cautiously that its effects are barely noticeable and are lost entirely in the sample's statistical margin of error. The researcher's lot is certainly not a happy one! In view of these factors, the Commission believes it is not enough for policy-makers to promise an evaluation; they must also give due consideration to the exact form which the evaluation will take. It is not merely a question of there being an evaluation, but of *how* that evaluation is conducted.

In order to avoid any accusation of impetuosity and to take full advantage of a new foundation for research, the Commission has examined whether it will be possible to alleviate the shortcomings described above in a structural, ongoing manner. Two research agencies were approached to conduct exploratory studies. Their conclusion was that most problems are bound up with the collection of adequate data. Provided sufficient information is to hand, the production of models to enable further analysis is a relatively straightforward undertaking. The agencies therefore suggested that two new studies should be set up, one involving a panel of domestic users and the other a panel of commercial users. Each would have a sample size of approximately five thousand respondents. The project has been dubbed the 'Environmental Behaviour Monitor' (in Dutch, the *Milieuedragsmonitor* or *mgm*). The project will provide an infrastructure within which the relevant policy questions can be examined. In the Commission's view, the project should be developed in phases, the most obvious approach being to begin with a module on mobility and one on energy consumption.

Questionnaires have now been compiled to investigate these specific areas and exploratory talks have been held with the Central Bureau for Statistics (*cbs*). In any study of domestic consumer behaviour with regard to mobility of energy consumption, it would appear that the *cbs* is in a position to supply all necessary data. However, this is not the case for commercial and industrial users. Almost no information is available concerning the behaviour of this group and general familiarity with the measures in place. Furthermore, little experience has been gained in obtaining such information. The problems faced when approaching the commercial sector are very different from those faced in the domestic setting; within a company, the questionnaires must generally be completed by more than one person, for example. Questions must be addressed to the appropriate persons,

and those persons must be willing to actually answer the questions. In some cases, such willingness must be fostered. The feasibility of setting up the panel of five thousand commercial and industrial users is therefore subject to further research. The Commission recommends that the CBS be approached to conduct a pilot study for the entire Environmental Conduct Monitor for the commercial and the industrial sector. After all, trust is good but measurement is better!

While it may not do justice to the Commission's argued conclusions and recommendations to present them in the form of a one-dimensional list, it is nevertheless felt that a brief summary will be worthwhile as an *aide memoire*.

The Commission's recommendations at a glance

The Commission has reached a largely positive conclusion regarding the measures listed below. It should be noted that in many cases the positive recommendation should be regarded as conditional for one reason or another, such as when implementation will only be worthwhile in the European context or where a measure's effectiveness will be long-term in nature. These considerations are described in the main text of the report.

- Higher exemption qualification limit for vintage vehicles;
- Abolition of vehicle excise duty exemption for vintage cars with LPG installations;
- Incentives to use of low-noise tyres;
- Incentives to use of sulphur-reduced fuel;
- Introduction of the kilometre levy;
- Fiscal equality for commercial vehicles and private vehicles; (with regard to environmental costs); to be phased in and in close relation to the kilometre levy;
- International tax on diesel fuel for use in inland navigation;
- International levy on air movements, based on distance (en-route-levy);
- Expansion of exemption from transfer tax for agricultural property (National Ecological Network);
- Expansion of carry-over regulations for hidden assets in agricultural sector (National Ecological Network);
- Energy premium scheme for (constructors of) new homes;
- 'Green' financing for sustainable commercial property;
- Taxation on drinks containers;
- Differentiation in usage fees for railway infrastructure;
- Taxation on wood with exemptions for that certified as having been sustainably produced;

- Introduction of time limit for tax deductibility of soil decontamination costs;
- Incentives to ecological production by means of lower VAT rate;
- Incentives to production and use of solvent-free paint;
- Incentives to production and use of bio-degradable lubricating oil.

The Commission remains divided on the question of expanding the Regulatory Energy Tax ('eco tax') to include major industrial users.

In the case of the other measures listed below, the Commission feels that insufficient information is currently available to permit a firm recommendation to be made. The research ongoing in these areas is largely outside the strict field of fiscal research.

- Taxation on residual heat;
- Incentives to production and use of sustainable energy;
- Incentives to achieve the optimum fuel mix;
- Taxation on mopeds and powered bicycles;
- Incentives to purchase and use of cleaner motorcycles;
- A national levy on aircraft take-offs and landings;
- Open space levy;
- Taxation on use of space;
- Lower rate of VAT for sustainable goods and services;
- General (higher) rate of VAT for meat;
- Expansion of sustainable business deductible allowance;
- Taxation on primary metals;
- Taxation on PVC/plastic softening agents;
- Taxation on SO₂ (major permanent sources);
- Taxation on VOCs and solvents (major permanent sources);
- Taxation on mineral input;
- Taxation on other greenhouse gases (alongside CO₂).

The Commission is predominantly negative concerning the following measures. In certain cases, some members took a positive view but were in the minority. The minority views are described in full in the main text of the report.

- Taxation on use of fossil fuels for purposes other than the generation of energy;
- Abolition of lower rate of VAT on energy for the glasshouse horticulture industry;
- Abolition of lower rate of VAT for the glasshouse horticulture industry;
- Adjustment of fiscal arrangements for taxis to bring them in line with private vehicles;
- Incentives to membership of shared car schemes;

- Fiscal inducements to adoption of mobility package by company car users;
- Differentiation of taxable value of company car according to energy label;
- Amendments to taxable value percentage rates for company car users;
- Amendments to tax-free kilometre allowance for business use of private vehicle;
- Speed limiters in commercial vehicles;
- Taxation on parking on employer's premises;
- Government taxation on parking on the public roadways;
- Imposition of ozb (property tax) on public highways;
- Selective exemption from transfer tax when moving closer to one's place of employment;
- Employer's levy for public transport;
- Compulsory employer's contribution to costs of public transport season ticket ;
- Abolition of differentiated duty on diesel fuel (motorized machinery);
- Fiscal incentives to use of cleaner diesel trains;
- Tax exemption on discontinuation profits for agricultural businesses (National Ecological Network);
- Fiscal incentives to creation of public footpaths;
- Abolition of property tax (ozb) exemption on agricultural land;
- Expansion of green investment scheme for soil decontamination;
- Tax deductibility of soil decontamination work for private (income) taxpayers;
- Corrections to rateable value of property to reflect soil decontamination work and energy efficiency measures;
- Variable rate of property tax (ozb) according to environmental characteristics;
- Taxation on fireworks for private use;
- Incentives to reduced water consumption in beer production;
- Taxation on diffuse emissions;
- Lower rate of vat on maintenance activities for woodland and other nature areas;
- Abolition of automatic vat deduction entitlement for businesses with environmentally harmful production processes.

