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GREEN PAPER

on market-based instruments for environment and related policy purposes

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(Text with EEA relevance)

1. INTRODUCTION

The EU is a leading force in the world in taking action on environmental sustainability and, in particular, on climate change. This has been confirmed recently through the adoption of the energy and climate policy package¹ as endorsed by the Spring European Council² in which the EU repeated its commitment to addressing climate change internally and on an international scale, to promoting environmental sustainability, to reducing dependence on external resources and to ensuring the competitiveness of European economies. In addition, halting loss of biodiversity, preserving natural resources that are under pressure and protecting public health also require urgent action.

Without public intervention and the strong commitment of all actors, these ambitious objectives cannot be reached. The EU has increasingly favoured economic or market-based instruments (“MBI”) – such as indirect taxation, targeted subsidies or tradable emission rights – for such policy purposes because they provide a flexible and cost-effective means for reaching given policy objectives³. The more intensive use of MBI has also been advocated in the EU’s 6th Environment Action Programme (6th EAP) and the renewed EU Sustainable Development Strategy⁴ as well as the renewed Lisbon Strategy for Growth and Jobs⁵.

This paper launches a discussion on advancing the use of market-based instruments in the Community. In line with the announcement in the Action Plan on Energy Efficiency⁶, the green paper explores possible ways forward with the Energy Taxation Directive⁷ with the aim of launching its announced review. In this sense the paper fits into the framework set by the new integrated energy and climate change agenda⁸ where market-based instruments and fiscal policies in general will play a decisive role in delivering the EU's policy objectives. The paper

¹ In particular Communication from the Commission *An energy policy for Europe* - COM(2007) 1, 10.1.2007 - and Communication from the Commission *Limiting Global Climate Change to 2° Celsius: the way ahead for 2020 and beyond* - COM(2007) 2, 10.1.2007.

² European Council 8/9 March 2007, Presidency conclusions.

³ In addition to the market based instruments discussed in this paper, other important market-based instruments are implemented in the framework of the Common Agricultural Policy (*i.e.* the agri-environmental measures of the Rural Development Policy) and under Cohesion Policy actions in the environment and energy sectors. Where the use of MBI may involve state aid, they have to comply with the Community rules and have to be notified to the Commission under Article 88 EC Treaty. A review of the Community guidelines on state aid for environmental protection is currently under way. Therefore, this green paper will not address issues of state aid assessment.

⁴ OJ L 242, 10.9.2002, and Council document 10917/06 of 26.6.2006.

⁵ Council Recommendation 2005/601/EC of 12 July 2005 on the broad guidelines for the economic policies of the Member States and the Community (2005 to 2008).

⁶ COM(2006) 545.

⁷ Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for taxation of energy products and electricity (OJ L 283, 31.10.2003 p. 51); Directive last amended by Directives 2004/74/EC and 2004/75/EC (OJ L 157, 30.4.2004, p. 87 and p. 100).

⁸ As underlined recently by the European Council of 8/9 March 2007.

also explores options for a more intensive use of market-based instruments in different areas of environmental policy at both Community and national levels.

2. USING MARKET-BASED INSTRUMENTS FOR COMMUNITY POLICY PURPOSES

2.1. The case for using market-based instruments as policy tools

The economic rationale for using market-based instruments lies in their ability to correct market-failures in a cost-effective way. Market failure refers to a situation in which markets are either entirely lacking (e.g. environmental assets having the nature of public goods) or do not sufficiently account for the "true" or social cost of economic activity. Public intervention is then justified to correct these failures and, unlike regulatory or administrative approaches, MBIs have the advantage of using market signals to address the market failures.

Whether by influencing prices (through taxation or incentives), or setting absolute quantities (emission trading), or quantities per unit of output, MBI implicitly acknowledge that firms differ from each other and therefore provide flexibility that can substantially reduce the costs of environmental improvements⁹. MBI are not a panacea for all problems. They need a clear regulatory framework in which to operate and will often be used in a policy mix with other instruments. But if the right instrument is chosen and appropriately designed, MBI¹⁰ carry certain advantages over regulatory instruments:

- They improve price signals, by giving a value to the external costs and benefits of economic activities, so that economic actors take them into account and change their behaviour to reduce negative – and increase positive - environmental and other impacts¹¹.
- They allow industry greater flexibility in meeting objectives and thus lower overall compliance costs¹².
- They give firms an incentive, in the longer term, to pursue technological innovation to further reduce adverse impacts on the environment ("dynamic efficiency").
- They support employment when used in the context of environmental tax or fiscal reform¹³.

2.2. Market-based instruments in the EU context

Besides their merits in helping achieving specific policy goals, the EU has used market-based instruments to avoid distortions within the internal market caused by differing approaches in

⁹ See Commission Communication *"Bringing our needs and responsibilities together – Integrating environmental issues with economic policy"* - COM(2000) 576, 20.9.2000.

¹⁰ COM(2000) 576, 20.9.2000. OECD studies show growing evidence of the efficiency of market-based instruments. See *Environmentally Related Taxes in OECD Countries – issues and strategies*, 2001.

¹¹ This idea is often expressed by objectives such as "getting the prices right", "internalisation of external costs", "expanding the supply of non-marketed environmental services".

¹² Cf. EEA, Effectiveness of urban wastewater treatment policies in selected countries: an EEA pilot study, 2005. The study compares approaches between several MS and demonstrates how the use of market-based instruments will help meet environmental objectives at lower costs.

¹³ Cf. Commission Communication "European values in the globalised world" - COM(2005) 525, 20.10.2005.

individual Member States, to ensure that a similar burden falls on the same sector across the EU and to overcome potential adverse competitiveness effects within the EU. Common action also makes the EU stronger when confronting external competition from its trading partners.

At the EU level, the most commonly used market-based instruments are taxes, charges and tradable permit systems. In economic terms these instruments work in similar ways. However, they also differ in notable aspects.

Firstly, quantitative systems, such as tradable permit schemes, provide more certainty as regards reaching specific policy objectives, e.g. emission limits, (subject to effective monitoring and compliance) compared to purely price-based instruments, such as taxes. Price-based instruments, in turn, provide security regarding the cost or the price of policy objective and tend to be easier to administer¹⁴.

Secondly, they differ when it comes to the aspect of revenue generation. Taxes (and in a more limited way charges) have increasingly been used to influence behaviour, but they also generate revenue. Tradable permit systems can generate revenue if the allowances are auctioned by public authorities. Tradable permit systems using auctioned allowances have therefore similar features to a tax (the regulatory and compliance aspects differ). Charges, on the contrary, are usually a payment in return for a clearly identified service or cost, and therefore lack the flexibility for the public budget to use such revenue.

The above features have, to an important extent, influenced the ways and areas that the EU currently uses market-based instruments at Community level, thus leading to the introduction of instruments such as the EU Emission Trading Scheme (“the EU ETS”)¹⁵, the Energy Taxation Directive, and, in the field of transport, the Eurovignette directive¹⁶. These aspects have to be taken into account should the EU consider using market-based instruments further at EU level, in such a way as to make the best use of each of them in the most appropriate field and avoid overlaps. In principle, Community decision-making rules should not have an influential role to play in this context. Nevertheless the unanimity requirement in the tax area means that the possibility of using taxation as an instrument differs from other instruments in some respects¹⁷.

What are the areas and options for the further use of market-based instruments at EU or national level?

Could market-based instruments be used in a way that promotes competitiveness, and does not impose an undue burden on consumers, in particular citizens with a low-income, but at the same time ensures revenue for public budgets?

Should the EU more actively pursue taxation to further Community policy purposes (in addition to fiscal objectives)? Is this the right response to current global challenges and the fiscal needs of national budgets?

¹⁴ See COM(200) 576.

¹⁵ The Commission is currently preparing a comprehensive review of the experience with the EU-ETS. This point will therefore not be addressed in this Green Paper.

¹⁶ Directive 1999/62/EC (OJ L 187, 20.7.1999) as modified by Directive 2006/38/EC (OJ L 157, 9.6.2006, p. 8).

¹⁷ Despite some flexible institutional solutions provided for in the EC Treaty such as enhanced cooperation.

2.3. Growth, jobs and a clean environment – the case for environmental tax Reforms

The EU is strongly committed towards ensuring environmentally sustainable development as well as promoting the Growth and Jobs agenda. An environmental tax reform (ETR) shifting the tax burden from welfare-negative taxes, (e.g. on labour), to welfare-positive taxes, (e.g. on environmentally damaging activities, such as resource use or pollution) can be a win-win option to address both environmental and employment issues¹⁸. At the same time, a long term tax shift will require relatively stable revenues from the environment related tax base¹⁹.

ETR can also help to alleviate the possible adverse competitiveness effects of environmental taxes on specific sectors. If the action is closely co-ordinated at the Community level, these impacts can be further reduced compared to unilateral actions by Member States. Reductions in labour taxation or social-security contributions which tend to benefit lower-income households, can counterbalance any possible regressive effect from environmental taxes. Finally, with an ageing population, which increases pressure on public expenditure, and globalisation that makes taxation of capital and labour less viable, the shift of tax burden from direct taxation towards consumption and, in particular, environmentally damaging consumption, may provide considerable benefits from a fiscal perspective.

As well as discouraging environmentally damaging behaviour through taxation, Member States may also use fiscal incentives such as subsidies to encourage green behaviour, facilitate innovation, research and development, provided that public resources are first generated in some other way (e.g. by taxing environmentally damaging behaviour) or that spending is reduced (e.g. by removing environmentally harmful subsidies). This approach is particularly relevant in the context of the ambitious objectives of the climate and energy agenda of the EU, notably to achieve the reduction of greenhouse gas emissions by at least 20% by 2020, the binding target of 20% renewables of energy production by 2020, and the target of 10% biofuels.

In the first place the Commission considers that it is for **Member States** to find the right balance between incentives and disincentives in their tax systems, while respecting overall fiscal constraints and fiscal neutrality. The Commission would like, however, Community tax policy to facilitate this balance (cf. Chapter 3).

There may be scope to improve the structured exchange of information between Member States on their best practices in the area of MBI in general and environmental tax reform in particular. While specialised structures exist in some areas there is no horizontal forum available. In this respect, one option could be the establishment of an MBI Forum.

Should the EU more actively promote environmental tax reforms at national level?

How could the Commission best facilitate such reforms? Can it for example offer some kind of co-ordination process or procedure?

¹⁸ The Commission raised this issue already in 1993 in its White Paper on Growth, Competitiveness and Employment - COM(93) 700, Chapter 10 - and again more recently in its recent communication on the European social model or in a paper on the links between employment policies and environment policies. Cf. COM(2005) 525 and SEC(2005) 1530. Ex-post evidence from the Nordic countries as well as the results of model-based studies indicate the existence of both types of benefits.

¹⁹ The relationship between revenue generation and the incentive effect of taxation is further addressed in the staff working document.

Would the establishment of the abovementioned MBI Forum be useful to stimulate exchanges of experience/best practice on Environmental Tax Reform between Member States? How could it be organised in an optimal way? How should it be composed to avoid potential overlap with existing structures?

How does the need to reduce the tax burden on labour in many Member States fit with the objective to promote innovation and to support research and development in order to shift towards a "greener" economy? How can this be achieved while at the same time respecting the budgetary neutrality? Would a more significant tax shift towards environmentally damaging activities be the right answer?

2.4. Reform of environmentally harmful subsidies

Many subsidies are not only economically and socially inefficient but can also adversely affect the environment and human health²⁰. They can also counterbalance the impact of market-based instruments applied for environmental or health purposes and can generally hinder competitiveness²¹. While their reform or removal could contribute public funds to an environmental fiscal reform, it is also justified in its own right²². The Commission intends to work with Member States on reforming environmentally-harmful subsidies, both at Community and national levels. Dialogue with stakeholders will be important to ensure all issues are considered. The European Council has asked the Commission to prepare a roadmap for reform, sector by sector, by 2008²³.

What is, in the light of national experiences, the best way to advance the process of reforming environmentally-harmful subsidies?

3. OPTIONS FOR FURTHER APPLICATION OF MBIs IN INFLUENCING ENERGY USE

Energy is currently at the top of the EU priorities since it represents a major challenge, as regards environmental sustainability, as well as security of supply and competitiveness. In order to make European energy use more sustainable, secure and competitive, the Commission has been calling both for more efficient energy consumption and the mobilisation of resources for the take-up of cleaner energy, investment in new technologies and innovation. These objectives were recently endorsed by the EU Heads of State and Government in the form of the integrated climate change and energy agenda. Fiscal policies, taxation in particular, and the further refinement of the EU ETS will have an important role to play in achieving these objectives.

Although primarily serving the internal market, Community tax policy and more specifically the Energy Taxation Directive come into play in this context. This Directive sets common rules for taxing energy consumption and integrates environmental and energy objectives.

²⁰ Cf. for example OECD, Environmentally-harmful subsidies – challenges for reform, 2005, and the literature quoted in the document.

²¹ The OECD (1998) defines environmentally harmful subsidies as: ‘all kinds of financial supports and regulations that are put in place to enhance the competitiveness of certain products, processes or regions, and that, together with the prevailing taxation regime, (unintentionally) discriminate against sound environmental practices’.

²² This was also emphasised in the renewed EU Sustainable Development Strategy.

²³ Review of the EU Sustainable Development Strategy, Council Document 10917/06 of 26.6.2006.

Traditionally energy taxation contributes to the objectives of energy efficiency, security of supply and competitiveness.

3.1. Streamlining and developing the Energy Taxation Directive

Energy taxation offers the potential for the EU to combine the incentive role of taxation in favour of more energy-efficient and environment-friendly energy consumption, with the ability to generate revenue²⁴.

However, the current rather flexible and general approach of the Energy Taxation Directive may not in all cases enable the objectives of energy efficiency and environment-friendly energy consumption to be effectively integrated into the harmonisation established at EU level. Therefore there may be a case for a clearer linking of energy taxation to the relevant EU policy objectives.

One option might be to divide the Community minimum levels of taxation into energy and environmental elements (or counterparts), which would be mirrored at national level in the form of an energy tax and an environmental (emissions) tax. This would build on the existing approach in energy taxation but would make it more coherent, while refining its environmental aspects.

In order to represent an effective and uniform incentive towards efficient energy consumption, without creating distortions between energy products, all fuels should be taxed in the first place in a uniform way according to their **energy content**, developing further the approach already existing in the heating fuel area and for electricity. In addition, taking into account the fact that the emissions generated during combustion differ from one fuel to another, taxation could in the second place reflect the **environmental aspects** of energy (by differentiating between greenhouse gas and non-greenhouse gas emissions). Such an approach would allow for a more automatic and straightforward tax differentiation in favour of more environmentally-friendly energy sources, notably renewables, as compared to what is the current situation. Amongst other functions energy taxation would explicitly recognise the environmental and security of supply benefits of renewables.

There are several aspects to be taken into account which are further explored in the accompanying Commission staff working document. Most importantly:

- Fuels used for heating and fuels used as propellants are traditionally treated in a different way for tax purposes, reflecting in particular the indispensable nature of fuel used for heating. There may be a justification for further differentiating taxation according to use.
- The CO₂ emissions derived from most electricity production are currently addressed by EU ETS, whereas electricity production is, in principle, exempt from energy tax in accordance with the Energy Tax Directive. An additional environmental counterpart in form of taxes, reflecting the same environmental aspects as those addressed by the EU ETS might not seem to appear appropriate in this particular instance.

The Commission intends to further explore these ideas for the possible revision of the Energy Taxation Directive.

²⁴ Three quarters of revenues from environmentally-related taxes comes from taxes on energy (see the Staff working document).

Should the Energy Taxation Directive be reviewed to make a clearer link to the policy objectives the Directive integrates, in particular in the field of environment and energy? Would this make energy taxation a more effective instrument by better combining the incentive effects of taxation with the ability to generate revenue?

Is splitting the minimum levels of taxation between energy and environmental counterparts the best way for doing so? What would be the pros and cons and the main practical aspects of such an approach? Would the environmental incentive created by energy taxation be a sufficient and adequate response to reflect the objectives of the energy policy in the field of biofuels, including the creation of a market-based incentive for second generation biofuels?

Is there a need for additional taxation addressing the remaining environmental aspects of electricity production (if any)? Is the proposed approach sufficient to favour uptake of electricity of renewable origin? What is the impact of such a Community framework for electricity of nuclear origin (bearing in mind the differing approaches at national level towards the use of nuclear energy)?

3.2. Interaction of energy taxation with other market-based instruments, in particular the EU-ETS

Of the different Community market-based instruments existing in the field of energy, transport and environment, energy taxation is, perhaps, the most cross-cutting with impacts in all three areas and directly interacting with all other instruments.

The review of the Energy Taxation Directive would allow these aspects to be taken into account by clarifying the aspects covered by harmonised energy taxation. In practice, the explicit identification of an environmental element in the minimum levels of taxation (differentiating between greenhouse gas and non-greenhouse gas emissions) would enable energy taxation to complement other market-based instruments better at EU level.

The EU ETS currently applies to emissions from certain combustion and industrial *installations*, while energy taxation applies instead to *fuel uses of energy*²⁵, while leaving the most energy intensive sectors (currently covered by EU ETS) outside its scope in an important number of cases. The Commission considers that this rule could be explored further to see whether sectors covered by EU ETS could be excluded from the scope of the environmental element of the Energy Taxation Directive to the extent that their greenhouse gas impact is adequately addressed by EU ETS (in other words so that the relevant environmental elements of the minimum levels of taxation would not be applicable to them, while the energy based element would remain as well as other environmental elements). On the contrary, for situations when certain operators do not participate in emission trading due to small size or other considerations, the environmental counterpart of the minimum levels of taxation would ensure a more widespread application of the polluter pays principle. These rules could effectively apply both to the industrial sector and to aviation.

²⁵

In particular energy taxation does not normally apply to energy products (and electricity) used as raw materials in industrial processes, nor to energy products used in the production of energy products (most commonly in the case of refineries) or as inputs for electricity generation. This result is brought about through various techniques. For details, cf. Articles 2(4), 14(1)(a) and 21(3) and (6) of the Energy Tax Directive.

Excluding the environmental impacts addressed by EU ETS from the scope of the Energy Taxation Directive might be a viable solution that could also resolve the problem of potential overlap between the two instruments while ensuring that the remaining objectives of energy taxation are observed. Such a solution could also avoid difficulties stemming from the differing features of EU ETS (uniform price across the EU that however varies over time) and energy taxation (different prices reflecting the freedom of Member States to set tax rates above the minima as they see fit, that tend, however, to be rather stable over time). However, any move towards such a solution merits further in-depth analysis, especially if the EU ETS is significantly broadened in scope.

Whichever the solution, it needs to be seen in a global perspective. There is an increasing global recognition that environmental protection needs to be integrated into economic decisions in order to ensure long term sustainable development. This will lead to an extended application of MBI by national authorities and their use should be promoted at the global level. The EU should actively engage in dialogue with other countries, to promote the use of market-based instruments that allow policy objectives to be met in a cost-effective way.

But as long as this is not the case and the EU and third countries apply different levels of carbon taxation or other methods of reducing greenhouse gas emissions (such as the ETS), it is important to provide the necessary incentives to encourage the EU's trading partners to undertake effective measures to abate greenhouse gas emissions. The feasibility of all policy measures for this purpose should be analysed. This has already led to the beginning of a debate on the application of carbon equalisation mechanisms, such as border tax adjustments. At the same time, it is recognized that this approach is subject to legal and technical constraints, which need to be further examined.

Would the suggested changes to the Energy Taxation Directive and the proposed approach to its scope be the best solution for ensuring coherence between the Directive and EU ETS? Are there other options to achieve this objective?

What are the potential options that should be explored in order to provide the necessary incentives to encourage the EU's trading partners to undertake effective measures to abate greenhouse gas emissions?

4. OPTIONS FOR FURTHER USE OF MBI IN ENVIRONMENT POLICY

4.1. Tackling the environmental impact of transport

Transport is a major contributor to air pollution and CO₂ emissions and the trend in emissions is increasing. For instance road transport was responsible in 2004 for 22 % of total CO₂ emissions, aviation and shipping account for about 3-4% of total GHG emissions, and aviation emissions in particular have grown rapidly (by 86% from 1990 to 2004). There has been some use of MBI at EU level to address the negative environmental impacts of the different modes of transport, substantial as they are. This contrasts with the national and local levels where several different types and designs of MBI have been used and are in the process of being developed.

Several initiatives were adopted recently by the Commission or by other institutions in order to tackle transport emissions. The introduction of a CO₂-dependent element in the tax base of both annual circulation and registration taxes in the Commission's proposal for passenger car

related taxes²⁶ would encourage car buyers to take energy efficiency and CO₂ emissions into account. Once adopted, and together with the legislative framework to reduce CO₂ emissions from cars²⁷, and energy taxation, this will help the EU reach its climate change objectives by reducing CO₂ emissions from cars. In the context of the forthcoming review of the EU ETS, the European Council invited the Commission to consider a possible extension of the scope of the ETS to a number of other sectors that include surface transport.

The Commission has proposed to include aviation emissions under the EU emissions trading scheme (ETS) and announced its intention to present a proposal to address nitrogen oxides emissions by the end of 2008²⁸.

As concerns shipping, the evaluation of proposals to promote low-emission shipping has been mentioned as one of the targets of future maritime policy²⁹. Any MBI in this area would have to be carefully designed so as not to conflict with the provisions on charging in the United Nations Convention on the Law of the Sea (UNCLOS)³⁰. In addition, there are further key issues, including legal and political requirements, geographic differentiation, monitoring and compliance mechanisms that need to be investigated in order to develop specific proposals to promote low-emission shipping.

What would be the best MBI to tackle emissions from shipping, taking into account the specific nature of maritime transport? How could it be best designed?

Apart from CO₂ emissions, road use has other effects on the environment, such as air pollution by SO₂, NO_x or particulate matter, and also noise pollution and congestion. Beyond partially harmonised annual circulation taxes for heavy goods vehicles the "Eurovignette directive" provides a charging framework on trans-European road networks. Germany and Austria have introduced distance-based differentiated infrastructure charges for heavy-duty vehicles. Although average charges can only cover infrastructure costs and thus exclude external costs, Member States have to differentiate charges by Euro emission class from 2010 onwards, and may apply further differentiation to combat environmental damage and address congestion. If such charging systems were integrating differentiation of environmental damage in the overall costs, this would lead to more efficient infrastructure use³¹. The Commission shall present, after examining all options including environment, noise, congestion and health-related costs, a generally applicable, transparent and comprehensible model for the assessment of all external costs to serve as the basis for future calculations of infrastructure charges. This model shall be accompanied by an impact analysis of the

²⁶ COM(2005) 261, 5.7.2005

²⁷ Cf. Commission Communication *Results of the review of the Community Strategy to reduce CO₂ emissions from passenger cars and light commercial vehicles* - COM(2007) 19, 7.2.2007. The Commission is also undertaking a study on ways to improve the performance of heavy-duty vehicles in terms of greenhouse gas emissions.

²⁸ COM(2006) 818, 20.12.2006.

²⁹ Cf. Green Paper Towards a future Maritime Policy for the Union: a European vision for the oceans and seas - COM(2006) 275. A consultation process is underway until 30 June 2007.

³⁰ For details see a 2004 study on this issue:

http://www.europa.eu.int/comm/environment/air/pdf/04_nera_report.pdf

³¹ Outside the EU, this approach has been followed in Switzerland, where charging systems for heavy duty vehicles also include the external environmental costs. From an economic point of view, charges should be modulated according to those external costs and the place and time of driving, in order to improve the efficiency of infrastructure use.

internalisation of external costs for all modes of transport and a strategy for a stepwise implementation of the model for all modes of transport³².

Community law also allows Member States to vary infrastructure charges on railways according to external environmental impacts. They shall not raise the overall level of income accruing to the infrastructure manager in the absence of any comparable level of charging environmental costs on other competing modes of transport³³.

How can infrastructure charging, including considerations related to environmental costs, best be applied to transport modes? Should this model apply to all transport modes, or take into account specificities of each transport mode? To what extent should the Eurovignette directive be used in this respect?

Local charging systems have been applied in a number of EU cities, such as London and Stockholm, to improve traffic conditions, inter alia to reduce urban congestion³⁴. Recent appraisals show that this objective was reached, increasing average traffic speeds while significantly decreasing the emissions (PM, NOx and CO₂) and energy consumption of road traffic within the charged area³⁵. There are even discussions at national level, e.g. in the UK and also in Germany, on extending congestion charging to all roads. The Commission will continue to support existing information exchange networks and investigate the need for supportive action on EU level in the frame of the Green Paper on Urban Transport in 2007.

4.2. The use of MBI to address pollution and protect resources

The EU also encourages Member States to use taxation and other MBI in the framework of its environmental thematic strategies. Member States have made use of these possibilities, but to very different degrees, and have gained experiences in applying different designs. Beyond environmental considerations, there might be a need to harmonise at EU level in those cases that have cross-border dimension and where taxation has increasingly been used at national level and may have an impact on the functioning of the Internal Market.

4.2.1. Water

Water needs to be managed in a sustainable way. The Water Framework Directive³⁶ (WFD) provides an overall framework for action. It requires that Member States introduce by 2010 water-pricing policies that encourage efficient water use. This will make all users bear costs (incl. external environmental and resource costs) under the "polluter pays" principle, which in certain cases is not yet fully applied³⁷. Member States also have to report on the steps they take to implement these provisions in their river-basin management plans by 2009.

Several Member States already apply taxes or charges on groundwater and/or surface water abstraction or on water consumption, which have reduced consumption, leakage, and pollution. The Commission considers the use of MBI essential to meet the requirements of the

³² Article 1.9 of Directive 2006/38 of 17 May 2006.

³³ Directive 2001/14/EC of 26 February 2001 and COM(2001) 307.

³⁴ The revised Eurovignette Directive explicitly mentions the scope for MS to use such schemes (Article 9).

³⁵ Cf. EEA 2006, p. 57.

³⁶ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000).

³⁷ EEA, *Market-based instruments for environmental policy in Europe* (EEA Technical Report 8/2005).

WFD. It will continue the close cooperation with the Member States on these issues as part of the Common Implementation Strategy as agreed with the group of water directors of the competent national authorities.

How can the Commission most effectively ensure implementation of the water pricing policies set out in the Water Framework Directive? What options could be explored to reinforce the links between investments in national water projects and the introduction of corresponding water pricing to provide incentives for users and avoid distorting competition?

4.2.2. Waste management

The main aim for the waste prevention and management enshrined in the 6th EAP is to decouple waste generation from economic growth, and there are signs that this is beginning to happen.

While landfill tends to be the worst option from an environmental perspective³⁸, market signals often favour it as they do not take environmental impacts into account. Furthermore, while taxing disposal, particularly landfill, can be an effective way of correcting this distortion and encouraging waste recycling and recovery³⁹, differences in national tax levels could lead to purely tax-induced shipments of waste and distorted competition between waste management operators.

The Commission has therefore encouraged Member States to exchange information on their approaches to landfill taxes and to keep the Commission informed⁴⁰. Beyond this, a further step to address the second issue could be to establish common criteria, including environmentally-effective minimum rates, to design landfill taxes based on proven best practice.

If there is insufficient progress to divert waste away from landfill, should the Commission consider proposing a harmonised landfill tax with EU-wide minimum rates?

The environmental impact of different packaging materials or of different products in the same category, e.g. batteries, differs. Market-based instruments differentiated according to the products' impact would therefore encourage more sustainable consumption. Under Community law, MS can adopt national measures to reach targets, such as preventing packaging waste or encouraging the use of returnable packaging or for the collection and recycling of waste batteries as well as to promote the use of batteries containing less polluting substances⁴¹, thus implementing the "polluter pays" principle. In all cases these measures need

³⁸ Cf. Commission Communication *Taking sustainable use of resources forward: A Thematic Strategy on the prevention and recycling of waste* - COM(2005) 666, 21.12.2005.

³⁹ This has been applied in several Member States. Cf. EEA 2006. However, a recent OECD study also points out that in a few Member States the tax now significantly exceeds the estimated externality costs. Cf. OECD, *Sustainable Development in OECD Countries*, 2004.

⁴⁰ COM(2005) 666, 21.12.2005.

⁴¹ Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (OJ L 266, 26.9.2006).

to respect the Treaty obligations (in particular rules on internal market and non-discrimination, incl. Article 90 EC⁴²).

Many of them have used MBI like taxes, deposit-refund systems or tradable permits for packaging waste in general or specific types (e.g. drinks containers or plastic bags)⁴³. Denmark has adapted its packaging tax to reflect the differences in environmental impact of each material, and Latvia has also introduced differentiation according to material⁴⁴. The Commission is prepared to support a structured exchange of information between Member States on their approaches.

Does the Community legal framework provide sufficient scope for Member States to use MBI to address waste management issues? Should the Commission facilitate the application of MBI in this area, e.g. through supporting exchanges of information?

4.3. The use of MBI to protect biodiversity

The use of MBI to protect biodiversity is gaining acceptance as a means of integrating conservation into the decision-making of economic actors and cost-effectively reaching objectives for conservation and sustainable exploitation of resources, such as those in the EU Biodiversity Action Plan and in the common fisheries policy⁴⁵. All three standard types of MBI – taxes/charges/fees, subsidies and tradable permits – are in use, mainly for habitat and ecosystem conservation, but also for the protection of specific species.

MBI can be efficient instruments to encourage landowners to maintain forests or wetlands, or to compensate for the unavoidable harm that development projects do to biodiversity by creating similar habitats elsewhere to ensure no net loss of biodiversity (biodiversity offsets).

Charges and fees, such as hunting and fishing permits can help limit the use of the biodiversity resource to a sustainable level. There are also cases where financial support is granted in the form of "Payments for Environmental Services" (PES), e.g. agri-environmental measures of the Common Agricultural Policy, to compensate landowners for maintaining forests or wetlands that filter water, act as reservoirs or provide habitats for insects that pollinate neighbouring plantations, because they will be giving up revenue for the common good⁴⁶. Finland has used auctions where recipients bid for the minimum subsidies they

⁴² Directive 94/62/EC on packaging and packaging waste (OJ L 365, 31.12.1994), as amended by Directive 2004/12/EC (OJ L 47, 18.2.2004), in particular Article 15. See also the Commission's implementation report on the Directive COM(2006) 767. Naturally, quality requirements for packaging have to be respected as well.

⁴³ For details, see the OECD/EEA database on economic instruments used for environmental policy and natural resources management: <http://www1.oecd.org/scripts/env/ecoInst/index.htm>.

⁴⁴ Cf. EEA, Using the market for cost-effective environmental policy, 2006.

⁴⁵ COM(2006) 216. A further example is fisheries management where management systems involving market-based instruments, such as individual transferable fishing quotas, are more common. Cf. OECD, Using market mechanisms to manage fisheries – smoothing the path, 2006. Cf. COM(2002) 181, 28.5.2002 and COM(2006) 103, 9.3.2006 as well as the recent Communication on the use of rights-based management tools in fisheries to protect biodiversity. See COM(2007) 73, 26.2.2007.

⁴⁶ When only small groups are involved, such compensation schemes can also be established directly between private parties. PES are also advocated internationally, inter alia as an instrument to protect tropical forests. Cf. World Bank, *At loggerheads*, 2006. PES may involve state aid and in this case would have to be notified under Article 88 EC Treaty.

require to carry out biodiversity protection measures, as a way of avoiding setting subsidies too high⁴⁷.

Another example for the use of MBI is habitat banking, a trading instrument first developed in the US (in this case, wetland banking) in the context of liability regimes. Such schemes transform environmental liabilities into marketable assets, thus changing incentive structures and behaviour by assigning property rights and creating markets. Specialised companies create wetlands and then sell wetland credits to developers. This ensures that environmental objectives are met with no net loss of total value and at the same time leads to a competition among companies to establish new wetlands cost-effectively. Like tradable permit schemes in general, such schemes help to integrate conservation objectives into mainstream business, thus helping to overcome business resistance. However, equivalence of habitats must be maintained and there must be measurement criteria. In the case of protected areas, compensatory measures for habitat loss should only be applied as a measure of last resort.

Should the Member States make a more intensive use of these types of instruments? Should, in particular, "payments for environmental services" be used more intensively to achieve environmental objectives? And should the scope for introducing systems of biodiversity offsets at Community level, e.g. wetland banking, be further examined?

4.4. The use of MBI to address air pollution

Air pollution damages human health and the environment. The need to deliver cleaner air has been recognised for several decades. While action at national and EU level led to significant improvements, serious air pollution impacts persist which are addressed by the Community thematic strategy on air pollution.

Several Member States use market-based instruments to address air pollution, in particular taxes and charges on NO_x and SO₂. More recently, national systems of emission trading have been introduced to reduce problems from conventional air pollutants. While trading will of course be more efficient on a larger market, environmental sensitivity to these pollutants varies across Europe and so care must be taken that emissions trading does not lead to serious local pollution ("hot spots") or leads to deterioration of the natural environment through acidification, eutrophication or ozone.

The Commission is analysing whether optional cross border emissions trading schemes between groups of Member States could increase flexibility and lower compliance costs while maintaining a high level of environmental protection:

- When reviewing the National Emissions Ceilings Directive⁴⁸, the Commission will consider how emissions trading could cost-effectively reduce emissions further⁴⁹. The Netherlands and Slovakia could give valuable lessons from experience with their own NO_x

⁴⁷ Cf. study *The Use of Market Incentives to Preserve Biodiversity* (<http://ec.europa.eu/environment/enveco/studies2.htm#market>). Australia has also used this approach.

⁴⁸ Directive 2001/81/EC of 23 October 2001 (OJ L 309, 27.11.2001).

⁴⁹ In its proposal for a directive on ambient air quality and cleaner air for Europe - COM(2005) 447, 21.9.2005 - the Commission referred to the use of emissions trading schemes by Member States as instruments for air pollution abatement at regional or national level. They could use these to demonstrate efforts towards Community air quality standards even if they needed to request a time extension.

and SO₂ emissions trading schemes to Member States that want to use this instrument, possibly even linking national systems⁵⁰.

- The Commission is also examining the scope for emissions trading for NO_x and SO₂ in its review of the Integrated Pollution Prevention and Control Directive⁵¹. It is already possible for Member States to set up schemes that allow trade in the emissions remaining after implementation of Best Available Techniques (BAT). A further issue is whether they should be allowed, either individually or jointly, to opt for emissions trading instead of BAT-based permits⁵².

Do you see scope for using cross border emissions trading schemes between groups of Member States to combat conventional air pollution through SO₂ and NO_x? How should such a system be designed to fit with national taxes and charges that are applied in several Member States?

5. CONCLUSION

The Commission believes that alongside regulation and other instruments, there should be increased use of MBI, including trading schemes, taxation measures and subsidies, as a cost-effective tool to achieve environmental and other policy objectives, both at Community and national levels. This would be in keeping with the Sustainable Development, Lisbon and Better Regulation Agendas.

The new energy and climate policy agreed in Europe implies nothing less than a new industrial revolution over the next 10 to 15 years. It will require a substantial change in the way Europe deals with energy with the final aim of achieving a real low carbon economy. Several policy areas - at the national as well at the European level - will have to contribute and to be adapted in order to lead to this ambitious objective. Market-based instruments will be important parts of the efforts to achieve real change through changing incentives for businesses and consumers. On top of this important long term role, these market-based instruments also carry important advantages for fiscal, other environmental and allocative purposes addressed in this paper.

By means of this paper the Commission would like to generate a discussion about more active contribution of Community market-based instruments to these objectives, in particular when it comes to indirect taxation. Furthermore, a number of further areas for the application of MBIs have been identified in this paper where the Community could play a facilitating role to advance exchanges of best practice. The Commission seeks reactions to the ideas and specific questions included in this paper as well as comments on the kind of MBI best to be chosen in order to combine a maximum of potential positive effects.

⁵⁰ The UK intends to introduce a trading scheme for both NO_x and SO₂, as well as dust, from 2008 onwards.

⁵¹ Report of the Commission on the implementation of Directive 96/61/EC concerning integrated pollution prevention and control - COM(2005) 540, 3.11.2005.

⁵² In answering this question, it will be important to consider not just the issues of varying environmental sensitivity and avoidance of "hot spots", but also the risk that the integrated approach of the IPPC Directive could be distorted by introducing trading for selected pollutants. The existing monitoring and enforcement system of the IPPC Directive must not be weakened either. This would need to be evaluated against the extent to which emissions trading schemes could lead to more cost-effective emissions reduction than under the present system.

Replies to the consultation should be sent to Green-paper-mbi@ec.europa.eu by 31 July 2007.