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Annex 1 Biodiversity Action Plan habitats: summary of potential impacts

The attached table summarises current factors affecting important habitats as described in the Biodiversity Action Plan (BAP). It covers a selection of most, though not all, habitats included the BAP. Note that this may not cover all impacts on all habitats. Those marked * are taken from the Broad Habitat Statements in the Biodiversity Action Plan; the remainder are from the costed action plan for priority habitats. Note that impacts relating to Biodiversity Action Plan species are not included in the table below.

Habitat Action Plan or statement	Air pollution	Climate change / SL rise sea level rise	Drainage / abstract. abstraction	Built development	Roads / boats / ships	Mineral extraction	Landfill / waste	Land cover change	Nutrients	Pesticides etc	Other land manag.	Lack of manag. / neglect	Fishing	Recreation	Sewage / Other pollution	Other natural / human
Reedbeds		✓	✓									✓			✓	
Saline lagoons		✓	✓						✓						✓	✓
Cereal field margins										✓	✓					
Chalk rivers			✓		✓			✓	✓		✓		✓	✓	✓	✓
Fens			✓					✓	✓			✓				
Ancient / species rich hedgerows				✓				✓	✓	✓	✓	✓				
Lowland heathland				✓				✓	✓		✓	✓				
Grazing marsh	✓	✓	✓	✓		✓			✓	✓	✓	✓			✓	✓
Upland oakland	✓				✓	✓		✓				✓				✓

Habitat Action Plan or statement	Air pollution	Climate change / SL rise sea level rise	Drainage / abstract. abstraction	Built development	Roads / boats / ships	Mineral extraction	Landfill / waste	Land cover change	Nutrients	Pesticides etc	Other land manag.	Lack of manag. / neglect	Fishing	Recreation	Sewage / Other pollution	Other natural / human
Reedbeds		✓	✓									✓			✓	
Saline lagoons		✓	✓						✓						✓	✓
Cereal field margins										✓	✓					
Chalk rivers			✓		✓			✓	✓		✓		✓	✓	✓	✓
Fens			✓					✓	✓			✓				
Ancient / species rich hedgerows				✓				✓	✓	✓	✓	✓				
Lowland heathland				✓				✓	✓		✓	✓				
Grazing marsh	✓	✓	✓	✓		✓			✓	✓	✓	✓			✓	✓
Upland oakland	✓				✓	✓		✓				✓				✓

Habitat Action Plan or statement	Air pollution	Climate change / SL rise sea level rise	Drainage / abstract. abstraction	Built development	Roads / boats / ships	Mineral extraction	Landfill / waste	Land cover change	Nutrients	Pesticides etc	Other land manag.	Lack of manag. / neglect	Fishing	Recreation	Sewage / Other pollution	Other natural / human
Unimproved grass*				✓				✓	✓		✓					
Lowland calc. grass	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓			✓		✓
Lowland wood pasture			✓	✓	✓			✓	✓	✓	✓	✓		✓	✓	✓
Wet woodland		✓	✓	✓			✓	✓	✓			✓			✓	✓
Upland mixed ash		✓				✓		✓	✓		✓	✓				✓
Lowland beech	✓	✓		✓	✓							✓				✓
Lowland raised bog*			✓			✓		✓			✓					✓
Rivers & streams*			✓	✓					✓			✓			✓	✓
Canals*			✓	✓					✓			✓		✓	✓	

Habitat Action Plan or statement	Air pollution	Climate change / SL rise sea level rise	Drainage / abstract. abstraction	Built development	Roads / boats / ships	Mineral extraction	Landfill / waste	Land cover change	Nutrients	Pesticides etc	Other land manag.	Lack of manag. / neglect	Fishing	Recreation	Sewage / Other pollution	Other natural / human
Unimproved grass*				✓				✓	✓		✓					
Lowland calc. grass	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓			✓		✓
Lowland wood pasture			✓	✓	✓			✓	✓	✓	✓	✓		✓	✓	✓
Wet woodland		✓	✓	✓			✓	✓	✓			✓			✓	✓
Upland mixed ash		✓				✓		✓	✓		✓	✓				✓
Lowland beech	✓	✓		✓	✓							✓				✓
Lowland raised bog*			✓			✓		✓			✓					✓
Rivers & streams*			✓	✓					✓			✓			✓	✓
Canals*			✓	✓					✓			✓		✓	✓	

Habitat Action Plan or statement	Air pollution	Climate change / SL rise sea level rise	Drainage / abstract. abstraction	Built development	Roads / boats / ships	Mineral extraction	Landfill / waste	Land cover change	Nutrients	Pesticides etc	Other land manag.	Lack of manag. / neglect	Fishing	Recreation	Sewage / Other pollution	Other natural / human
Open sea water*					✓								✓		✓	
Shelf break*													✓		✓	

Definitions and key economic concepts

1. **Economic instruments (EIs)** are measures which aim to change behaviour by changing prices or creating new markets, altering the cost to users of environmental resources and of the goods and services obtained from them, and thus providing financial incentives to avoid wastage or damage.

Externalities and other characteristics of market failure

2. The theoretical basis for economic instruments lies in the idea of **market failure** which is a well established concept in 'welfare economics'. Market failure exists where the supply and demand interactions of a market deliver a situation which may be optimal to the participants in that market but is not **socially optimal**. Economics defines a socially optimal solution as one which allocates available resources in a way which maximises overall welfare or 'utility' (well-being) to society as a whole. Note that it takes no account of the consequences of different distributional patterns relating to this total welfare. Complete and perfectly working markets will deliver the socially optimal position. However, where there is a discrepancy between privately optimal positions and the socially optimal position, this indicates market failure. A variety of characteristics of and reasons for market failure can be identified, including:

- Externalities and inadequately defined property rights
- The 'public good' problem.

These problems are explained below.

3. **Externalities.** A **negative externality** exists where the actions of an economic agent (eg a producer) imposes either direct costs or loss of well-being to another agent (either another firm or a household), and where these costs are not reimbursed by the initiator to the sufferer. For example, Figure 1 attached depicts an area in which various economic activities are taking place. A market for paper exists whereby a paper mill produces paper and this is retailed in a stationary shop. The retailer and eventual household buyers pay a price for the product which will be related to its production costs. However, this production cost does not take account of the pollution by the paper mill into the water course which creates the following negative externalities: financial costs on the fishing permit business downstream as a result of damage to fish stocks (through lower permit prices that people are now willing to pay for), financial costs on the water industry (through increased water cleaning costs) and loss of well-being to society through reduced wildlife. Although the latter has no market price (see below), and consequently no associated financial costs, it nevertheless represents an economic cost similar in principle to the financial costs faced by the fishing permit firm and water industry. **Positive externalities** can also occur. For example, the farm in figure 1 is creating negative externality costs in some areas of the farm, through excessive use of agricultural inputs; but in other areas, sensitive management of the land produces marketable food produce and wildlife gains. The latter are positive externalities.

4. **Why externality effects happen.** While negative externalities are a characteristic of

market failure, it is useful to consider why they persist, and why polluting firms are able to avoid facing the costs of such effects. There are 2 main reasons: transaction costs leading to inadequately specified property rights, and the 'public good' problem. Together, these reasons help explain the persistence of externality effects.

5. **Property rights and transaction costs.** Economists use the term 'property rights' to mean legal control over the use of a resource, whatever that resource may be. The problem for the fishing permit business, in figure 1, is that while it may be able to enforce its property rights over fishing in its area, it is less practical to negotiate and enforce property rights over water quality without incurring disproportionate administrative costs relating to monitoring and enforcement (known as **transaction costs**). The existence of significant transaction costs means that property rights over water quality remain ill defined and not enforced. Consequently, the paper mill is able to pollute the water course while avoiding any payment to a third party for the cost of such actions.

6. **Public goods.** For environmental externalities, the transaction costs and property rights problem described above is often compounded by the prevalence of 'public' type goods. Economists define 'public' goods as those with special characteristics which make it difficult to apply the normal market mechanisms which operate for 'private' goods such as cars, houses, etc. These special characteristics are:

- Non-excludability ie where there is no practical way for the supplier to exlude from enjoying the good those that have not paid for it. This leads to 'free rider' problems.
- Non-rivalry in consumption ie where the consumption of the good by one person does not materially diminish the amount available for others, meaning that there is no opportunity cost relating to supplying extra amounts of the good.

Clean air is an example of a 'public good' on each of the above criteria. Biodiversity also has strong public good characteristics. For the above reasons, market based systems for these goods tend to fail to supply or, in the case of biodiversity, protect, the socially optimal level. In the context of externality effects, these are especially likely to persist for public goods since their value is not represented by market prices.

7. The above discussion highlights that externality costs may be **explicit**, as in the fishing permit or water supply industries where the damage costs are easily identified. Conversely, they may be **implicit**, as in the case of habitat damage, where there is a clear loss of well being to society but this is less obviously measurable because of the public good problem and the consequent lack of market prices. Measurement of externality costs by indirect methods is one solution in such cases.

8. **The consequence of externalities.** In the example in figure 1, the consequence is that the market price for paper fails to take account of all production costs, because the externality costs relating to pollution damaged are not factored into the paper mill's costs. Consequently, the market's demand and supply conditions will lead to a higher level of paper production that the socially optimal level. If the paper mill had to pay for its externality costs, the market equilibrium of supply and demand conditions would lead to a lower level of production, and consequently a lower level of environmental damage. The policy principle which advocates that polluters should face the costs of their damaging

operations, is known as the **Polluter Pays Principle (PPP).**

Environmental taxes and optimal levels of pollution

9. **Optimal levels of pollution.** Economists argue that since all activity above a threshold level causes some environmental damage, however limited, the 'no damage' objective seems counter-intuitive unless society's welfare is best served by a subsistence economy. The issue then is about the level of pollution that is appropriate in terms of society's overall well being. Economists developed the concept of **economically optimal levels of pollution**, as being the point where the private costs of further pollution abatement (ie loss of profit from reduced output or costs of pollution abatement processes) equal the further benefits to society from this abatement.

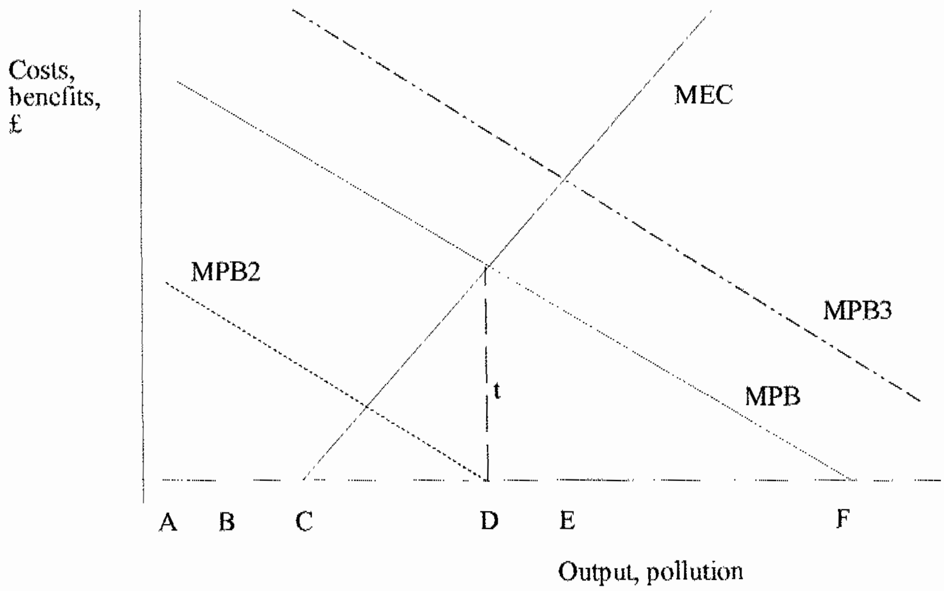
10. Figure 2 describes the optimal pollution level for a firm in a competitive market in a short run analysis. The marginal private benefits (MPB) function describes how profits to the firm change with small increases in output (hence the term 'marginal'). In a competitive market, the firm can not influence the market price of the product, so its marginal revenue is constant and equates to the market price of the product. It is also assumed that marginal costs (ie the variable costs per unit of output) will initially fall as output increases but eventually start to rise. Once they start to rise, the MPB for the firm starts to fall, since its marginal revenue is constant. It is this section of the PB function that is depicted in figure 2. The firm will produce to output level F, where MPB falls to zero.

11. The Marginal External Cost (MEC) function describes the additional externality costs to society related to additional output levels. It is assumed that for low levels of output, any pollution may be coped with by the assimilative capacity of the environment, so that no environmental damage occurs. This is represented by output levels between points A and B. There may also be a level, represented between points B and C, where pollution is occurring beyond the assimilative capacity of the environment, and physical damage is occurring. However, since at this level, the environmental damage may not be noticed by society, there is no loss of 'well-being', at least for the current period of time; in a more dynamic model such costs may be more evident. Consequently, no damage costs are recorded. At output levels beyond C, however, environmental damage is causing loss of well being to society and externality costs are therefore incurred. It is assumed that the marginal rate of damage costs increases with output as the limits beyond assimilative capacity are further and further exceeded.

12. The intersection between the MEC function and the MPB function, at output level D, describes the **economically optimal level of pollution**. If pollution were allowed above this level, then the additional costs to society as a whole would outweigh the private benefits to firms. If the allowable level of pollution was set at a level lower than D, then the additional costs to firms would outweigh the additional benefits to society.

13. **The role of environmental taxation in reducing output to optimal levels.** The role of economic instruments such as environmental taxation is to ensure that the external costs of production are 'internalised' into the economic decision of firms or households. A tax rate set to equal to t in figure 2 will deliver the optimal level of pollution. In the pre-tax situation, firms for example would produce to output level F, which maximises profits. With an environmental tax set at level t, however, they will now reduce output to level

Figure 2 Optimal pollution levels and environmental taxes



D. Output levels between D and F are not rational for the firm as the additional private benefits, measured by the MPB function, are less than the amount paid in tax. Hence the tax works to deliver the economically optimal level of pollution. The effect of the tax on the firm is to move its MPB function downwards to MPB2.

14. **The role of environmental taxes in changing production processes.** The NPB function in figure 2 assumes that firms will react by reducing output, as higher output levels are no longer profitable given the need to pay the tax. However, if the tax is an emissions charge, then firms could also change their production processes in order to reduce emissions. Making such changes will incur costs. It is assumed that the firm's Marginal Abatement Cost (MAC) function will be relatively low initially, but will increase as the firm attempts to reduce pollution to the very lowest levels. Consequently, the firm's MAC function can be thought of as analogous to the NPB function in figure 2. The principles in figure 2 are, therefore, relevant both to reductions in output and to production process responses.

15. **Elasticities**. An important market condition is the price elasticity of demand. Goods are highly inelastic if consumer demand is very insensitive to price changes. This sensitivity depends on various factors, such as the availability of substitute goods. Where there is highly inelastic demand for a good, the above model applies but the shape of the industry demand function will be steeper, leading to a higher equilibrium market price. This has an effect on the position of the NPB function, eg to MPB3 in figure 2.The implications are that the economically optimal level of pollution will be higher than in the former example, and higher levels of tax may be necessary to achieve the necessary reductions in behaviour.

16. **The role of environmental taxes in household behaviour.** When the damage is being caused by a householder, in using a good or service, rather than a firm, then the MPB function is analogous to the demand function for a household, for example for car miles. The most important journeys are represented by a high MPB near point A, since denial of the use of the car for such important journeys would entail a significant loss of well-being. The less important journeys are represented by the journeys near point F, where it is touch and go whether it is worth taking the car or some other means of transport. Thus a product charge (eg on road fuel) can influence household behaviour.

17. By achieving the optimal levels of output and pollution, EIs actually make markets work better by correcting market failures (ie the presence of externalities) and ensuring that prices fully reflect all resource costs (including environmental costs). This ensures a more efficient allocation of resources and thereby helps maximise welfare to society. In the pre tax situation, resources were being inappropriately diverted into higher levels of production of paper (in the river example in figure 1). This is seen as a key benefit by environmental economists, who argue that lack of prices for environmental goods is a major reason for their over-exploitation. Internalising these externalities by reflecting environmental damage costs as part of production costs ensures that output levels are reigned back to 'optimal' levels.

18. The efficiency gains from internalising the externality costs need to be set against 2 categories of costs resulting from the taxation process: these are the *transaction costs* (ie the administrative costs of measuring pollution and administrating an environmental tax system) and the *deadweight costs* (ie the loss of benefits to consumers (consumer surplus)

caused by higher prices due to the tax);

19. **Key assumptions in the model.** This model of optimal pollution and the role of environmental taxes is based on the following key assumptions:

    (1) Perfectly competitive markets. In imperfectly competitive markets, the picture is complicated and the ability of the tax to achieve the optimal pollution level is compromised by the inherent market imperfections;
    (2) Continuous damage functions. The model assumes that marginal damage costs increase with output in a linear fashion. There may be cases, however, where a threshold level is reached above which damage rises exponentially. In such cases, the model will deliver an optimal level of pollution at this threshold point, but in effect this amounts to exactly the same solution as a regulatory approach.
    (3) Ability to set the tax at the optimal level. The assumption of the model is that the authorities have a good knowledge of both the externality cost function and the abatement cost function, since it is the intersection of these that determines the tax level. In practice, this knowledge is rarely perfect.

    For these reasons, the idea of an economically optimal tax level is a useful theoretical construct, but almost impossible to achieve in practice. The best that can be hope for is a tax which moves the market to a position closer to the optimal position than existed in the pre-tax situation.

20. **Tradeable permits.** tradeable permits, which are described in section 5 of the main text, act in principle in the same way as environmental taxes. Perfect trading conditions will lead in principle to a permit price equivalent to the environmental tax and a similar level of pollution.

21. **Hypothecation**. This is the process by which revenues taxes are earmarked for specific services rather than being placed in the general exchequer. An example is the Environmental Bodies Credit Scheme for the UK Landfill Tax.

Typology of economic instruments for pollution control

Type of instrument	General description
Charges	
Emission charges	Paid on discharges into the environment and are based on the quantity or quality of the emission
User charges	Payments for the cost of collective of public treatment of pollution
Product charges	Additions to the price of polluting products
Subsidies	
Grants	Non-repayable forms of financial assistance, contingent on the adoption of pollution abatement measures
Soft loans	Loans linked to abatement measures with lower than market rates of interest
Tax allowances	Allows accelerated depreciation, tax or charge exemptions or rebates if certain pollution abatement measures are adopted
Deposit-refund schemes	Systems in which surcharges are laid on the price of potentially polluting, and a refund of the surcharge is given on the return of the product or its residuals
Market creation schemes	Artificial markets in which actors can buy and sell 'rights' for actual or potential pollution.
Emissions trading (bubbles, offsets, netting & banking)	Within a plant, a firm, or among different firms
Market intervention	Price intervention to stabilise markets, typically secondary materials (recycled) markets
Liability insurance	Polluter liability leading to insurance market

source: adapted from Pearce & Turner (1990).

Annex 3 Suggested criteria for evaluating environmental taxes, charges and tradeable permits for nature conservation

1. Do environmental 'externalities' exist?
    - 1a. Is environmental damage clearly evident and caused by the policy subject?
    - 1b. Is this damage related to nature conservation or other environmental damage?
    - 1c. Can the damage be quantified in physical or monetary terms?

2. Is an environmental tax feasible?

    - 2.1 Can the tax be designed effectively?

        - 2.1.1 Is the damage measurable (in physical or monetary terms)?
        - 2.1.2 Is the damage continuous with economic activity?
        - 2.1.3 Can the indicator be correlated sufficiently closely with the damage?
            - 2.1.3.1 Scientific knowledge sufficient?
            - 2.1.3.2 What are the implications of spatial patterns to the damage?
            - 2.1.3.3 Are the costs of sufficient 'linkage' acceptable?
            - 2.1.3.4 Perverse effects avoided?
        - 2.1.4 Does the design take account of non-price behavioural factors?

    - 2.2 Are market circumstances conducive to behavioural change?
        - 2.2.1 Proportion of tax to product price
        - 2.2.2 Structure of the market - degree of competitiveness
        - 2.2.3 Subsidy effects
        - 2.2.4 Other factors related to elasticity

    - 2.3 Are the tax proposals fair?
        - 2.3.1 Polluter Pays Principle implemented fairly?
        - 2.3.2 Social distributional problems?
        - 2.3.3 Fairness in international competition?
        - 2.3.4 Intra-national fairness between sectors?
        - 2.3.5 Fair implementation timescale?

3. Are tradeable permits or other economic mechanisms preferable to a tax?

    - 3.1 How essential is it to exactly achieve the environmental target?
    - 3.2 Can the alternative mechanism take better account of spatial effects?
    - 3.3 Are tradeable permits practical (eg sufficient 'players')?
    - 3.4 Are they more cost-effective (eg administrative costs)?
    - 3.5 Are othre instruments (eg deposit refund schemes, levies) more appropriate?

4. Are there likely to be benefits for nature conservation?

    - 4.1 Behavioural changes which benefit nature conservation
    - 4.2 Proposals for hypothecated revenues for nature conservation?

5. Is the preferred economic instrument preferable to, or complementary to, other policy alternatives for nature conservation?

    - 5.1 Environmental effectivess
    - 5.2 Specific benefits for nature conservation
    - 5.3 Cost effectiveness and dynamic incentives
    - 5.4 Practical feasibility
    - 5.5 Political feasibility and goodwill issues

Note: questions 4 and 5 are the key issues for English Nature's advice role, but questions 1,2 and 3 provide necessary context.

Evaluation of recent environmental taxation proposals in relation to nature conservation

The following pages summarise an evaluation of current or recent proposals for environmental taxes or related instruments, in terms of potential benefits for nature conservation. However, the attached summary gives only a partial picture of complex issues. For a more comprehensive, and formal evaluation of recent proposals, English Nature's full responses to Government consultation exercises should be referred to.

English Nature criteria for evaluating environmental tax, charging and tradeable permit proposals for nature conservation

Criteria / proposal	Water pollution	Water abstraction	Compulsory Water metering	Landfill Waste	Nutrient	Peat
1. Do environmental 'externalities' exist?	Yes	Yes, mainly relating to old consents	Yes	Yes	Yes	Yes
2.1 Can the tax base be defined appropriately?	Yes, using broad indicator of damage	Yes, but will only roughly reflect damage	Yes	Yes	Difficult to reflect locational factors	Yes
2.2 Will the market deliver behavioural change?	Main 'abators' may be in less damaged areas	Depends partly on regulator pricing	Yes	Problem of linkage to domestic bills	Possible low elasticities	Possible low elasticities
2.3 Are the proposals fair?	Probably	Probably	Social concerns	May favour incinerators	Farmer incomes	Probably
3. Are tradeable permits preferable?	Probably not feasible	Possibly, but difficult for spatial differences	Probably not cost effective	Possibly	Possibly	Probably
4. Will there be benefits for nature conservation?	Magnitude uncertain	Yes, though main benefits may result from new licensing system	Probably	Yes (hypothecation)	Yes, but uncertain in magnitude	Probably; may depend on hypoth.
5. Is the proposal preferable to or complementary with policy alternatives?	SWQOs should be primary instrument for most important sites	Yes, but new licensing system as primary instrument	Full compulsory system not cost effective. Demand management also needed	Yes	Yes	Yes, but planning control as main instr.

English Nature criteria for evaluating environmental tax, charging and tradeable permit proposals for nature conservation

Criteria / proposal	Pesticides	Aggregates	Differentiated VED	Fuel duty escalator	Road user charges	Climate change levy
1. Do environmental 'externalities' exist?	Yes, but difficult to prove	Yes, but balance of + and - effects	Yes	Yes	Yes	Yes
2.1 Can the tax base be defined appropriately?	Possibly; problem with indirect effects	Difficult to take acount of spatially specific effects	Yes	Yes for emissions. Less so for land take	Possibly	Yes, but difficult to link to electricity sources
2.2 Will the market deliver behavioural change?	Questionable given CAP subsidies	Effect on demand expected. magnitude disputed.	Limited	Yes, though low elasticities	Yes, though low elasticities	Yes, though low proportion of co. costs
2.3 Are the proposals fair?	Concerns re. farm incomes & international differences	Mainly yes	Distributional & internat. concerns	International & rural issues	Rural issues	Different treatment of domestic sector
3. Are tradeable permits preferable?	Probably less feasible	Questionable	Not appropriate	Possible option in long term	Possible in long term	May be appropriate
4. Will there be benefits for nature conservation?	Probably but magnitude uncertain therefore hypothecation req'd	Limited benefits from demand management. Hypoth. required.	Limited benefits for climate change	Some benefits for climate change	Possible reduced demand for new roads	Benefits for climate change
5. Is the proposal preferable to or complementary with policy alternatives?	Complementary measures essential	Complementary but secondary to strong MPG. Possible voluntary package	Yes	Yes	Possibly	Yes

[Note: based on proposals at April 1999. Refer to English Nature consultation responses for formal and more comprehensive evaluation]

Alternative evaluation criteria from the literature

Summary of factors influenciong choice of policy mechanism

1. The nature of the discharge: gaseous, liquid or solid form.
2. The receiving medium: air, water or land.
3. Substitutability between receiving media and transport mechanisms eg can the discharge be in either liquid or gaseous form and released into either the atmosphere or the water system?
4. The toxicity of the polluting substance and its persistance in the environment.
5. Detection technology: is pollution detectable by inspection, measurable by installed automatic instrumentation, or does it require laboratory analysis of samples of discharge flows or of the receiving medium?
6. Whether the pollution is sensitive to location of entry into the environment (thus the location of discharge of greenhouse gases is irrelevant but the effects of specific volumes of discharges into rivers varies with location and timing).
7. Whether there are identifiable discharge locations ie whether it is point or non-point pollution.
8. Socio-legal factors: some instruments may be socially unacceptable or legally unenforceable.

Source: Bowers (1997).

Comparison of main mechanisms

Advantages	Limitations	Best practice conditions
Emission charges		
Savings in compliance costs	No. of pollutants covered	Stationary point pollution
Dynamic incentives	Distribution effects	Varying abatement costs
Revenue raising		Where monitoring is possible
Flexible system		Potential to change behaviour
Product charges		
Incentives to reduce use	Poor for critical loads	Products used in large volumes
Incentives to switch products	Low substitution / elasticities	Elastic demand / substitution
Revenue raising	Trade / competitiveness	Identifiable products
Flexibility		
Tradeable permits		
Compliance cost	Limited where >1 pollutant	Differences in compliance costs
Takes account of economic growth	Pollution hotspots	Need enough players
Flexibility	Initial allocation difficult	Maximum ambient concentrations fixed
International application	Administrative complexibility	Fixed pollution sources
		Potential for innovation
Deposit-refund schemes		
Safe disposal / re-use	Set up & distribution costs	Difficult waste components
Flexibility	Possible trade implications	Market for recycling exists
		Cooperative arrangements between users, retailers & and producers

Source: adapted from Turner, Pearce & Bateman (1994)