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Joint Working Party on Trade and Environment

THE POLLUTER-PAYS PRINCIPLE AS IT RELATES TO INTERNATIONAL TRADE

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FOREWORD

This report has been prepared in response to a mandate from the Joint Working Party on Trade and Environment (JWPTE). It is based on a draft prepared by Henri Smets from ADEDE (Association pour le développement de l'économie et du droit de l'environnement, Paris). Natalie Bernasconi from CIEL (Centre for International Environmental Law, Washington D.C.) assisted with revising the draft. The report was finalised by the Secretariat on the basis of input received from JWPTE Delegates.

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Executive Summary

The 1972 OECD Council Recommendation on Guiding Principles concerning International Economic Aspects of Environmental Policies incorporates the first formulation, at the international level, of the Polluter-Pays Principle (hereafter "PPP"). This Recommendation sought to encourage sound environmental management and to harmonise methods for allocating the costs of pollution to avoid distortions in the prices of products entering into international trade. According to this Recommendation, the PPP means that the polluter should bear the expenses of carrying out measures decided by public authorities to ensure that the environment is in an acceptable state. The cost of these measures should be reflected in the cost of goods and services that generate pollution in production or consumption, or both, and such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment.

Initially, the PPP meant essentially that the polluter had to bear the cost of measures to prevent and control pollution to the level established by the government. The goal was to keep new environmental protection measures from having to be financed by governments in the form of subsidies and to prevent differences in subsidies between countries from causing significant distortions in international trade and investment.

But the PPP has evolved since 1972. Initially, the PPP was limited to costs of pollution prevention and control (PPP "in a strict sense"); later, it came to include compensation payments, taxes and charges, and is now evolving in certain instruments towards encompassing all pollution-related expenditure (PPP "in a broad sense"). This evolution is in line with the efficiency objective of both environmental as well as economic policy.

The PPP allows for exceptions, since in certain conditions, it leaves room for aid for pollution prevention and control. Such aid takes a variety of forms: direct subsidies, soft loans, guarantees and tax incentives (such as tax reductions, deferrals, accelerated depreciation and tax exemption). The circumstances in which such subsidies, tax advantages and other government measures may be used consistently with the OECD Recommendations have remained very limited. For the most part, they involve the development of new pollution control technologies, pollution control infrastructure constructed in conjunction with regional development, and control infrastructure targeting existing industries, areas or installations that would face severe difficulties because of environmental policies.

The PPP is not expressly mentioned in any of the WTO Agreements. Nonetheless, the notion of removing market distortions, and, in particular, restrictions on pollution prevention and control subsidies that may create significant distortions to international trade, is broadly consistent with the disciplines on certain subsidies under the WTO Agreements. To this extent, while distinct concepts, the PPP and the WTO’s disciplines on subsidies are often closely related.

There are a number of provisions in the WTO disciplines on subsidies which may allow for subsidies related to pollution prevention and control. The applicable WTO Agreements often do not expressly prohibit the ability of Members to provide such assistance and, in some cases, explicitly permit them. All these situations are significant, as they suggest potential derogation from the basic PPP as defined by the OECD Recommendations. The three main WTO agreements dealing with subsidies are the General Agreement on Tariffs and Trade (GATT), the Agreement on Subsidies and Countervailing Measures (ASCM) and the Agreement on Agriculture (AA).

A few issues arise regarding the application of the PPP, or exceptions thereto, in the context of international trade and environmental protection.

The general expansion of environmental standards; the use of "green" taxes combined with the quest for lower levels of pollution; in some cases, ratification of MEAs which require the implementation of more stringent controls, and transboundary environmental impacts, are all factors which could result in an increase in production costs. If government transfers are used to assist producers in meeting more stringent environmental regulations, this could have implications for the multilateral trading system. Such producers would enjoy a cost advantage over competitors in the same market who have to meet the same standards without the benefit of equivalent government assistance. This could also have implications for the multilateral trading system.

Another area in which the application of the PPP may have an impact on trade is that of transfrontier or global pollution. Initially, the PPP was not designed for cases of transboundary or global pollution. It could be argued that on the basis of the principle of non-discrimination formulated for cases of transfrontier pollution, polluters should be subject to the PPP whatever the type of pollution: national, transfrontier or global. An application of the PPP that is limited to domestic pollution may fail to address many of the transboundary and global environmental pollution challenges of today's increasingly interdependent world and remains an area where commentators have asked for further analytical work.

A further issue of interest is the PPP and its application to developing countries. It could be argued that the exclusion of developing countries from the scope of the PPP (as foreseen in OECD Recommendations) might lead to distortions in the global international trading system in the event that official development assistance helped producers in those countries in complying with national or international pollution standards.

Introduction

This report has been prepared in response to a mandate from the Joint Working Party on Trade and Environment at its November 2000 meeting. The mandate provided that the report should look at current definitions of the Polluter-Pays Principle (PPP), information on the way in which the main elements of the PPP have been incorporated in different laws and practice; analyse the application of the PPP in an international, trade and environment, context and provide an overview of the linkages and relationship between trade and environmental issues.

The report has been structured as follows: It first presents definitions of the Polluter-Pays Principle as they emerge from OECD Recommendations and other international instruments adopted by Member countries, and related developments in the work of international organisations with regard to sustainable development and policy integration. It then looks into the various elements of the PPP, and describes how formulations of the principle have evolved from a "no subsidy" approach towards an approach advocating full internalisation of environmental costs. Examples illustrating this evolution are provided in Annex I. The paper then reviews exceptions to the Polluter-Pays Principle under OECD instruments, and examines pertinent disciplines on subsidies under WTO Agreements. It further provides a brief overview of how the principle has been implemented in OECD countries. Finally, it indicates a number of issues involving the Polluter-Pays Principle and international trade, which could be explored in greater depth. The text of OECD Recommendations dealing with the PPP is provided in Annex II.

The report is based on existing literature and direct inputs from Member countries. It does not summarise the experiences and views of all Members and does not seek to provide a complete and in-depth analysis of the relationship between the Polluter-Pays Principle to international trade. In particular, it does not attempt to assess the actual impacts of the subsidisation of pollution control efforts on international trade.

The Polluter-Pays Principle in OECD Recommendations and other international instruments

In 1972, the OECD Council adopted the Recommendation on Guiding Principles concerning International Economic Aspects of Environmental Policies,[1] (hereafter "1972 OECD Recommendation") which incorporates the first formulation, at the international level, of the Polluter-Pays Principle. This Recommendation sought to encourage sound environmental management and to harmonise methods for allocating the costs of pollution to avoid distortions in the prices of products entering into international trade. It provides that:

> "The principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called 'Polluter-Pays Principle'. This principle means that the polluter should bear the expenses of carrying out the above-mentioned measures decided by public authorities to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment."

Initially, the PPP as defined in the 1972 OECD Recommendation implied essentially that the polluter had to bear the cost of measures to prevent and control pollution to the level established by the government. The goal was to keep new environmental protection measures from having to be financed by government in the form of subsidies and to prevent differences in subsidies between countries from causing significant distortions in international trade and investment.

This definition of the PPP does not imply that the polluter actually has to "pay" anything to anyone. Implementation of the PPP results in reducing or eliminating certain subsidies to encourage pollution abatement. In this sense, it has contributed to the general policy of gradual subsidy reduction advocated by the OECD and other international organisations in order to help remove obstacles to international trade. However, the PPP should not be interpreted as a rigid principle that absolutely rules out any and all subsidies. As some authors point out[2], under certain conditions the most efficient solution to a pollution problem can involve payments from a victim of pollution to the polluter. Moreover, subsidies are sometimes needed to correct market failures (e.g., to boost the supply of under-supplied positive externalities), though, as some authors warn[3], subsides justified on such grounds can, if not carefully designed, create other, unintended, externalities.

Since it was adopted at the OECD in 1972, the application of the PPP has evolved very significantly. This evolution is in line with the efficiency objective of both environmental and economic policy. An activity is efficient when it requires the minimum amount of resources to achieve a given result, or a maximum result from a given amount of resources. The internalisation of costs is essential to achieve efficiency, as it leads to the most efficient use of resources. Prices that are paid by producers and consumers should accurately reflect the full cost of their production and/or consumption (i.e. including the environmental costs). Prices which fail to incorporate costs resulting from environmental damage may lead to inefficient use, often in the form of excessive consumption of natural resources. If the market does not correct these imperfections, government action may be required.

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1. Recommendation of the Council on Guiding Principles concerning International Economic Aspects of Environmental Policies, C(72)128, OECD, 1972 (attached).

2. Baumol W. and Oates W.(1990), *The Theory of Environmental Policy.*

3. Gerritse, R. (1990), *Producer Subsidies: issues and arguments*.

The PPP has become a principle whereby polluters bear an increasing share of the costs of the pollution they cause, or risk causing.[4] The scope of pollution-related costs to be borne by the polluter varies across instruments. Particularly at the domestic level, this scope has increased over time: at first, it involved only the costs of pollution prevention and control; later, it came to include compensation payments, taxes and charges, and is now evolving in certain instruments towards encompassing all pollution-related expenditure.

The concept underlying the PPP existed before 1972 and has influenced environmental policies in OECD countries since then. Over the years, the PPP has become an accepted concept underlying environmental policies in OECD Member countries.

The PPP has also been explicitly incorporated in a number of international environmental instruments and texts.[5] International agreements that make reference to the PPP, without defining it, include the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki, 1992), the Convention on the Transboundary Effects of Industrial Accidents (Helsinki, 1992), the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC, London, 1990), the Convention on the Protection of the Alps (Salzburg, 1991), the Agreement on the European Economic Area (Oporto, 1992) and the Protocol on Water and Health (London, 1999). The PPP is also mentioned in the Declaration on Environment and Development (Rio de Janeiro 1992), in Agenda 21, Chapter 18 (1992), and, most recently, in the Plan of Implementation agreed at the 2002 World Summit on Sustainable Development.[6]

Some international agreements refer to the PPP as "a general principle of international environmental law".[7] Nevertheless, opinions vary as to the precise status of the principle as customary international law or as an emerging rule of law common to civilised nations. The term "principle", as used in the PPP therefore does not pre-judge the latter's status in international law.

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4. Recommendation of the Council concerning the Application of the Polluter-Pays Principle to Accidental Pollution, C(89)88(Final), OECD, 1989 (attached).

5. A "history of the PPP", and detailed references to the PPP in international legal instruments addressing issues of environmental law can be found in Nash, J.R. (2000*), "Too much market? Conflict between Tradable Pollution Allowances and the Polluter Pays Principle"* , Harvard Law Review, vol 24, 465-535, page 468.

6. WSSD Plan of Implementation, paragraphs 14 b), 17 b).

7. International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC, London, 1990). The Preamble states: "Taking account of the 'polluter pays' principle as a general principle of international environmental law". This agreement formally introduced for the first time the PPP in a global instrument, although only in the Preamble. The same expression appears in the Preamble of the Convention on the Transboundary Effects of Industrial Accidents (Helsinki, 1992).

Key elements of the PPP

A full understanding of the meaning and scope of the PPP requires some analysis of its main elements. The following section will look at the various formulations of the PPP in OECD instruments, international environmental instruments, EC Acts and related documents. The focus of this chapter is on the scope of the "costs" of pollution to be borne by the polluter.

Pollution

"Pollution" has been defined in OECD instruments as "the introduction by man, directly or indirectly, of substances or energy into the environment resulting in deleterious effects of such a nature as to endanger human health, harm living resources and ecosystems, and impair or interfere with amenities and other legitimate uses of the environment."[8]

Polluter

In the 1970s, the OECD did not define who the polluter was because, at the time, that seemed fairly obvious: the polluter is the party responsible for the polluting activity, i.e. the party having control over the activity from which the emission of pollutants originates. Since then, no further development occurred, with the exception of the definition of polluter in the context of accidental pollution, where the polluter is the "operator".[9]

However, others have used a more precise definition. For the European Commission, for example, the polluter is "someone who directly or indirectly damages the environment or who creates conditions leading to such damage".[10] In addition, the Commission has stipulated that "the cost of combating pollution should be borne at the point ... which offer[s] the best solution from the administrative and economic points of view and which make[s] the most effective contribution towards improving the environment".[11]

Under this approach, the designation of the polluter is not automatic, but depends on the government's choice, based on considerations of economic efficiency or administrative expediency, and not of equity. As a result, with regard to waste, the polluter is not necessarily the party who disposes of waste in the environment, but may be the producer of the waste, if not the producer of the object that will become waste after being used.

In addition, the European Commission was careful to stipulate that "the concept of polluter ... does not affect provisions concerning third-party liability", making it possible to designate on the one hand a polluter to bear the cost of prevention and, on the other, a third party responsible for the pollution to pay compensation.

8. Recommendation of the Council on Principles concerning Transfrontier Pollution, C(74)224, OECD, 1974.

9. Rec. C(89) 88 final, *op.cit.*

10. Recommendation of the European Commission, OJEC (1975) L194, p. 1.

11. *Ibid.*

The polluter's obligations

From the outset, the PPP was described by the OECD as applying to "measures decided by public authorities to ensure that the environment is in an acceptable state".[12] The PPP is therefore closely tied in with a regulatory regime and assumes that the polluter meets his obligations with regard to pollution control. The PPP is not a principle whereby the polluter that pays is authorised to pollute; it means that the polluter must limit his pollution *and* bear the cost of measures taken to that end.

The various costs of pollution

The main differences between definitions of the PPP revolve around which costs the polluter should pay for. Under some definitions, the PPP is limited to costs of prevention and control. This approach could be characterised as the PPP in a "strict sense", also referred to in the literature as the "Standard PPP". [13] Under other definitions, the PPP comprises all costs related to pollution, i.e. the costs of prevention and control and, if applicable, other costs that the polluter must pay as a result of pollution. This could be seen as a shift towards a PPP "in a broad sense", or "Extended PPP". These two approaches are further described below.

The PPP "in a strict sense"

The formulations of the PPP in various instruments agree in that the costs to be borne by the polluter include costs of pollution prevention and control, along with charges to finance community pollution removal service — primarily treatment taxes or charges (for the collection and treatment of wastewater from industries hooked up to the municipal network), and municipal waste collection and disposal taxes.

In addition, the PPP would include, according to certain formulations, the costs of pollution removal (absorption, cleaning and decontamination after an accidental or chronic spill) and, if applicable, the administrative costs arising from government action to prevent and control pollution (measurement, surveillance, supervision, inspection, etc.).[14]

According to the 1972 OECD Recommendation,[15] the polluter should be responsible for: "costs of pollution prevention and control measures ... decided by public authorities to ensure that the environment is in an acceptable state."

Likewise, the European Commission has stipulated that "natural or legal persons governed by public or private law who are responsible for pollution must pay the costs of such measures as are necessary to eliminate that pollution or to reduce it so as to comply with the standards or equivalent measures which enable quality objectives to be met or, where there are no such objectives, so as to comply

12. Rec. C(72)128, *op. cit.*

13. Pearson C.S., (1994), *Testing the system: GATT+PPP=?*, in Cornell International Law Journal, 1994, 553-575, (1994), quoting J. Pezzey, Market Mechanisms of Pollution Control: Polluter Pays, Economic and Practical Aspects, in Sustainable Development Management: Principles and Practice, 1988.

14. This results from the fact that the definitions use expressions such as "pollution control", "pollution reduction" and "keeping pollution under control".

15. Rec. C(72)128, *op. cit.*

with the standards or equivalent measures laid down by the public authorities". The EC further includes "charges" among the costs to be borne by the polluter.[16]

The notion of "measures" in the above formulation initially covered steps taken by polluters themselves to comply with the terms of operating licences, emissions standards or quotas; later, they came to include measures taken by polluters collectively to comply with quality standards or overall emissions quotas,[17] along with measures taken by other persons involved with pollution prevention, such as government authorities.

Four international conventions (three regional[18] and one multilateral[19]) provide fairly similar definitions of the costs covered by the PPP, based on the definition of the PPP in the 1972 OECD Recommendation.

Following the adoption of these conventions, the PPP has been defined under the domestic law of some countries as involving only the costs of pollution prevention and control. This could be referred to as the PPP "in a strict sense", which would exclude other costs from its scope of application. Under this concept, it is sometimes deduced that a polluter who complies with the PPP and environmental standards has nothing else to pay—neither pollution tax nor compensation for pollution damage at an authorised level (residual pollution).[20]

The PPP "in a broad sense"

While all formulations of the PPP provide that polluters should bear the costs of pollution prevention and control, some recent formulations also cover *other* costs or refer, generally, to "the cost of

16. Rec. of the European Commission (1975), *op.cit.* At the time, these charges were earmarked essentially for pollution removal and to help polluters remove pollution. As a result, they were returned to the polluters as a group. When charges became non-earmarked taxes and thus constituted a net cost for polluters, polluters ceased to support this "new tax".

17. For example, sulphur dioxide emissions in the United States.

18. The Convention on the Protection of Transboundary Watercourses and International Lakes (Helsinki, March 1992) stipulates: "the Parties shall be guided by the following principles ... the polluter-pays principle, by virtue of which costs of pollution prevention, control and reduction measures shall be borne by the polluter".

The Convention for the Protection of the Marine Environment of the North East Atlantic (Paris, September 1992) stipulates: "The Contracting Parties shall apply ... the polluter-pays principle, by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter".

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona, 1995) stipulates: "the Contracting Parties shall ... apply the polluter pays principle, by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter, with due regard to the public interest".

19. The 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972) stipulates: "Each Contracting Party shall endeavour to promote practices whereby those it has authorized to engage in dumping or incineration at sea bear the cost of meeting the pollution prevention and control requirements for the authorized activities, having due regard to the public interest".

20. France for example has written the PPP "in a strict sense" into its Rural Code, through a 1995 amendment: "[They] are inspired, in connection with laws defining the scope, by the following principles: ... the polluter-pays principle, whereby the costs of measures to prevent, reduce and control pollution must be borne by the polluter." Act No. 95-101 of 2 February1995 (the "Barnier Act") on the reinforcement of environmental protection (*Journal Officiel*, 3 February 1995, p. 1840).

pollution". The "other costs" are essentially charges and taxes, and, if necessary, clean-up costs and compensation.[21]

Governments implement the PPP through the application of either command-and-control or market-based regulations, including the imposition of taxes and charges. For example, pollution charges and taxes on polluters are payments in connection with the use of the environment, or damage to the environment and the community, as a result of the pollution emitted. They encourage polluters to protect the environment, although the revenue from these taxes is not necessarily earmarked for environmental protection (e.g., this is the case for most fuel taxes). These economic instruments are means of implementing the PPP and serve to put pressure on polluters to make judicious use of scarce environmental resources.

A special kind of pollution charge is the re-distributive charge that can be interpreted as advance funding for a subsequent pollution-control subsidy—a cross-subsidy that the OECD has deemed may be compatible with the PPP under certain circumstances.[22] Payments for services rendered by the community to polluters (waste treatment or elimination charges) do not fall into this category because they directly finance prevention and control of pollution at the polluter's expense on the basis of the PPP "in a strict sense".[23]

The trend in the 1980s was to emphasise the benefits of holding polluters liable for a fairly large share of external costs and not just a charge earmarked for the costs of pollution prevention and control. It gave rise to the concept of the "PPP in a broad sense", i.e. a fairly extensive principle of internalisation that goes beyond the PPP "in a strict sense", increases liability payments;[24] and includes "green taxes" of varying amounts. The extent of this internalisation varies from one country to another, depending on the degree to which environmental costs are taken into account in public policy. For this reason, trade problems may arise insofar as polluting firms from "high-internalisation countries" are competing with equivalent companies in "low-internalisation countries."

Domestically, States enforce compensation for damage on the basis of their own liability laws, but only some of them actually collect taxes in respect to water or air pollution. In the 1990s, OECD Member countries advocated greater internalisation of pollution externalities. A 1999 Belgian law, for example, states: "The polluter-pays principle means that the costs of pollution prevention, abatement and control, and the costs of repairing any damage inflicted, shall be borne by the polluter".[25] For its part, the

21. These costs are generally paid in the event of non-compliance with permits, or of excessive pollution. Holding the polluter liable for the cost of restoring the contaminated site to its prior state once it has been cleaned and decontaminated (e.g. reintroducing species, replanting, re-vegetation, etc.), and for compensating the victims of the pollution (for direct and indirect economic losses and loss of amenities), is consistent with the purpose assigned to the PPP in the broad sense. However, it derives essentially from liability regulation that determines the responsible party and sets the scale of the payments due for site restoration and compensation for damages.

22. Recommendation of the Council on the Use of Economic Instruments in Environmental Policy, C(90)177/FINAL, OECD, 1991. According to paragraph 7 of the Annex, "financial assistance is incompatible with the Polluter-Pays Principle, except in a few specific cases, for example, ... when applied in the framework of appropriately designed redistributive charging systems."

23. This distinction is rarely made, but it is necessary when examining the PPP and direct or indirect assistance. Treatment charges are in fact generally paid by the polluter, whereas the polluter is rarely subject to a charge for emitting pollutants.

24. Rising payments for civil, administrative or criminal liability constitute an incentive to adhere to standards (compensation, fines, non-compliance charges, excess emissions charges, liability insurance, security deposits, contributions to environmental funds, etc.).

25. Act of 12 March 1999 on the protection of the marine environment in seas under Belgian jurisdiction.

1998 Constitution of the Swiss Federation (Article 74 §2) proclaims that: "The polluters shall pay for the costs of avoidance and removal" [of "harm and nuisance" to "the natural environment"].

A number of countries developed this concept in their national environment programmes and put it into practice when they instituted charges for the use of natural resources or created taxes on energy or on carbon.[26]

From a political standpoint, there is now strong pressure in some countries to internalise the externalities of pollution in the form of "green" taxation. The taxation of fuel shows the way for new applications, e.g. in the form of taxes on energy or on carbon, or sales of negotiable permits.

At the international level, a prominent example is Principle 16 of the Rio Declaration on Environment and Development, which provides:

> "National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment."

Most recently, this approach was reaffirmed in the Stockholm Convention on Persistent Organic Pollutants (2001).

From a formal standpoint, however, there is no binding instrument of international law that lays down a clear and precise basis for the PPP "in a broad sense". For example, there are provisions of international law that govern compensation, but there are no international provisions in force, other than agreements on discharges from ships in Europe, that institute an obligation to pay charges or taxes for environmental pollution.

Annex I provides examples of the shift towards full internalisation of environmental costs in both national and international instruments.

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26. Minutes of the APEC Meeting of Ministers responsible for the environment, Vancouver, 23-25 March 1994 (extract): "The Administrator from the USA noted that the experience with taxes, 'polluter-pays' principle, the Super Fund, etc., illustrated there are a variety of policy tools, not a single solution which must be tailored to the existing economic situation. The ultimate goal of economic measures is to internalize the true costs to the economy of environmental degradation". The Eminent Persons Group report, "Achieving the APEC Vision" (August 1994), makes the following recommendation: "We recommend that APEC seek to advance international acceptance of the principle of internalization of the costs of environmental protection, notably through the most widespread possible adoption of the 'polluter pays principle".

Exceptions to the PPP under OECD Recommendations

From an international trade standpoint, the costs to be borne by polluters can be very different in a country that requires polluters to comply with strict emissions standards, pay high pollution taxes and incur no-fault liability in the event of pollution damage, as compared to another country, where substantial emissions are allowed, regulations are not enforced, pollution taxes are non-existent, liability for pollution damage is difficult to assign and the environment has been allowed to be seriously degraded.

Partly because of these factors, OECD Members have advocated limiting pollution control assistance to correct environmental policy differences which might impact on competitiveness of national firms and therefore pose obstacles to trade, and recommended that environmental policies be raised to comparable levels as fully as possible.[27] Adoption of the PPP is part and parcel of that policy. However, the PPP, as formulated in OECD Recommendations, allows for exceptions, since on certain conditions, it leaves room for aid for pollution prevention and control.

The 1972 Recommendation provides that the PPP "should be an objective of Member countries; however, there may be exceptions or special arrangements, particularly for the transitional periods, provided that they do not lead to significant distortions in international trade and investment".

The 1974 OECD Recommendation on Implementation of the Polluter-Pays Principle (hereafter the "1974 Recommendation"[28]) further developed the circumstances in which government assistance would be considered compatible with the PPP:

> "In exceptional circumstances, such as the rapid implementation of a compelling and especially stringent pollution control regime, socio-economic problems may develop of such significance as to justify consideration of the granting of governmental assistance, if the environmental policy objectives of a Member country are to be realised within a prescribed and specific time;
>
> Aid given for the purpose of stimulating experimentation with new pollution-control technologies and development of new pollution-abatement equipment is not necessarily incompatible with the Polluter-Pays Principle;
>
> Where measures taken to promote a country's specific socio-economic objectives, such as the reduction of serious inter-regional imbalances, would have the incidental effect of constituting aid for pollution-control purposes, the granting of such aid would not be inconsistent with the Polluter-Pays Principle."

The 1974 Recommendation further recommended that the granting of any government assistance in bearing the costs of pollution, whether by means of subsidies, tax advantages or other measures should be subject to conditions. It provides that:

> "The granting of any such assistance for pollution control be strictly limited, and in particular comply with every one of the following conditions:

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27. As recognised in the 1972 OECD Recommendation, it is sometimes appropriate for environmental policies to vary between countries: "Differing national environmental policies … are justified by a variety of factors including among other things different pollution assimilative capacities of the environment in its present state, different social objectives and priorities attached to environmental protection and different degrees of industrialisation and population density." Rec. C(72) 128, para 6.

28. Recommendation of the Council on the Implementation of the Polluter-Pays Principle, C(74)223, OECD, 1974 (attached) (hereafter "1974 OECD Recommendation").

a) it should be selective and restricted to those parts of the economy, such as industries areas or plants, where severe difficulties would otherwise occur;

b) it should be limited to well-defined transitional periods, laid down in advance and adapted to the specific socio-economic problems associated with the implementation of a country's environmental programme;

c) it should not create significant distortions in international trade and investment."

The 1991 OECD Recommendation on the Use of Economic Instruments in Environmental Policy[29] provides, with regard to financial assistance:

"Various forms of financial assistance can be granted to polluters and help and/or as an inducement to abate their polluting emissions. As a general rule, financial assistance is incompatible with the Polluter-Pays Principle, except in a few specific cases, for example, when in compliance with the exceptions to the Polluter-Pays Principle as defined in the two Council Recommendations [C(72)128 and [C(74)223] or when applied in the framework of appropriately designed redistributive charging systems. There may also be circumstances where payments can be made to reinforce other measures designed to achieve appropriate natural resource use."

Since 1972, the circumstances in which subsidies, tax advantages and other government measures have been used under the OECD Recommendations have remained very limited. Assistance has taken a variety of forms: direct subsidies, soft loans, guarantees and tax incentives (such as tax reductions, deferrals, accelerated depreciation and tax exemption). Subsidies have been granted by government (budgetary assistance) via, for example, national environment funds and water agencies; by the European Commission (e.g. the Cohesion Fund, multilateral aid, etc.); and by other international institutions (e.g. the Global Environment Facility).

For the most part, financial assistance has involved the development of new pollution control technologies, pollution control infrastructure constructed in conjunction with regional development, and control infrastructure targeting existing industries, areas or installations that would face severe difficulties because of environmental policies.[30]

Development of new technologies to protect the environment: Aid has been given to finance research into pollution control technologies, development and testing of new pollution control devices, and new processes, technologies or products that generate less pollution. Such aid involved, inter alia, renewable energy, alternative fuels (bio-fuels), electric or GPL-powered vehicles, energy conservation or recycling. In general, the overall volume of such aid has been slight. In some cases, it also served to lay the groundwork for gaining export market shares (sulphur removal from smoke, windpumps, solar panels, etc.).

Regional development: A portion of the aid attributed to lessen serious interregional imbalances has been used to finance pollution control, and in particular to construct purification plants and waste disposal centres. This aid makes pollution control less costly for certain industrial enterprises that receive it without assuming their share of the corresponding investments.

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29. Recommendation of the Council on the Use of Economic Instruments in Environmental Policy, 31 January 1991 [C90)177/Final].

30. The examples in this section are based on OECD (1990) and Smets H., *Les exceptions admises au principe pollueur payeur* (1994), and *Examen critique du principe pollueur- payeur* (1998). See also H-J Kim (2000), *Subsidy, Polluter Pays Principle and Financials Assistance among Countries.*

Special socio-economic difficulties: Environmental aid has been attributed to existing industries, areas or installations that would otherwise face severe difficulties because of the imposition of new environmental constraints, or that are subject to especially stringent pollution control constraints in order to achieve environmental objectives within a specified and mandatory timeframe. This included aid for troubled businesses that were obliged to take preventive measures as a result of newly adopted standards but could not afford pollution control and would create substantial social problems if they were forced out of business.

Pertinent disciplines on subsidies in the WTO

The PPP is not expressly mentioned in any of the WTO Agreements.[31] Nonetheless, the ethos of removing market distortions that lies behind the PPP, and in particular its restrictions on pollution prevention and control subsidies that may create significant distortions to international trade, is broadly consistent with the disciplines on certain subsidies under the WTO Agreements.[32] To this extent, although distinct concepts, the PPP and the WTO's disciplines on subsidies are often closely related. Certainly, the PPP was linked to basic trading principles in the 1972 Recommendation.

As is the case with the PPP, there are a number of provisions in the WTO's disciplines on subsidies which may allow for subsidies for pollution prevention and control. The applicable WTO Agreements often do not expressly prohibit the ability of Members to provide such assistance and, in some cases, explicitly permit them. All these situations are significant, as they suggest potential derogation from the basic PPP as defined by the OECD Recommendations. The three main WTO agreements dealing with subsidies are the General Agreement on Tariffs and Trade (GATT), the Agreement on Subsidies and Countervailing Measures (ASCM) and the Agreement on Agriculture (AA) are outlined below.

Where the General Agreement on Tariffs and Trade (GATT) applies, exceptions to its obligations are available under the GATT's general exceptions clause for measures "necessary to protect human, animal or plant life or health"[33] or "relating to the conservation of exhaustible natural resources".[34] The scope of these provisions is limited by the requirements that such measures are not to be "applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade".[35]

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31. The PPP has been invoked in one dispute under the GATT. See United States – Taxes on Petroleum and Certain Imported Substances (1987), report of the Panel adopted on 17 June 1987, GATT *Basic Instruments and Selected Documents*, (34th Supp.) 136, especially paragraph 5.2.5 where the Panel held that "(t)he General Agreement's rules on tax adjustment thus give the contracting party in such a case the possibility to follow the Polluter-Pays Principle, but they do not oblige it to do so". The issue raised involved the financing of the US Superfund by a tax on pollution-causing chemicals. Insofar as imported products, unlike domestic ones, caused no pollution in the United States, the EEC challenged the tax, invoking the PPP and the fact that the tax financed an environmental protection programme from which US producers alone could benefit. The Panel did not consider whether the tax provisions of the Superfund Act were "consistent with the polluter-pays principle" because there existed a Working Group on Environmental Measures and International Trade that the EEC could ask to look at the environmental issues. More information on this case can be found in S. Charnovitz (1994), *Free Trade, Fair Trade, Green Trade: Defogging the Debate*, Cornell International Law Journal.

32. Articles XVI and VI of the General Agreement on Tariffs and Trade (GATT) are illustrative as they discipline the use of certain subsidies, call for their reduction and allow for countervailing duties to be applied to offset certain undesirable trade effects. A similar rationale underlies the Agreement on Subsidies and Countervailing Measures as well as the Agreement on Agriculture. This, of course, is not to imply that WTO Members are prevented from providing subsidies within the context of those agreements, as is clearly illustrated by Article III.8(b) of the GATT and outlined in greater detail in this section.

33 GATT, Article XX(b).

34. GATT, Article XX(g).

35. GATT, Article XX ("chapeau").

The Agreement on Subsidies and Countervailing Measures (ASCM) originally set out that certain subsidies are prohibited (Articles 3 and 4), others actionable (Articles 5 to 7) and a final category non-actionable (Articles 8 and 9).[36] The category of non-actionable subsidies included environmental subsidies. The respective provisions, however, lapsed five years after their adoption, as explained below.

The question of environmental subsidies was discussed by the negotiating group on subsidies and countervailing measures during the Uruguay Round. It was agreed at that time that environmental subsidies would be placed in the non-actionable category, along with subsidies for research activities[37] and disadvantaged regions.[38] Under Article 8.2(c) of the ASCM, environmental subsidies were allowed for:

> "assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations which result in greater constraints and financial burden on firms, provided that the assistance:
>
> (i) is a one-time non-recurring measure; and
>
> (ii) is limited to 20 per cent of the cost of adaptation; and
>
> (iii) does not cover the cost of replacing and operating the assisted investment, which must be fully borne by firms; and
>
> (iv) is directly linked to and proportionate to a firm's planned reduction of nuisances and pollution, and does not cover any manufacturing cost savings which may be achieved; and
>
> (v) is available to all firms which can adopt the new equipment and/or production processes."

This protection was introduced for a period of five years (until the end of 1999), and has not been renewed.[39] Thus, there is no longer any specific provision "authorising" subsidies to meet environmental requirements under the ASCM. During this five year period, the ASCM required that subsidy programmes in relation to the environment pursuant to Article 8.2 should be notified to the WTO "to enable other Members to evaluate the consistency of the programme with the conditions and criteria" set out in that Article.[40] These notifications were to be updated yearly; however it appears that no notification of a subsidy programme pursuant to Article 8.2 was made. Certainly, the other WTO Members, who had "the right to request information about individual cases of subsidisation under a notified programme", did not use this right during the five years that it was available. Furthermore, a related consultation procedure in

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36 A definition of a "subsidy" for the purposes of the ASCM is provided for in Article 1. It contains three basic elements. A "subsidy" only exists if (a) a financial contribution is provided *and* (b) the contribution is made by a government or a public body within the territory of a WTO Member *and* (c) that contribution confers a benefit.

37. ASCM, Article 8.2(a) allows for assistance for up to 75% of the costs of industrial research and up to 50% of the costs of pre-competitive development activity.

38. ASCM, Article 8.2(b) allows for assistance to disadvantaged regions pursuant to regional development policies.

39. Under Article 31 of the ASCM, the Committee on Subsidies and Countervailing Measures was entitled to prolong or modify the provisions of Article 8.2. While there was disagreement whether to extend the provisions or not, ultimately they lapsed due to a failure to reach consensus in the Committee on Subsidies and Countervailing Measures. See Committee on Subsidies and Countervailing Measures, "Minutes of Special Meeting", 20 December 1999, WT/G/SCM/M/22; and Committee on Subsidies and Countervailing Measures, "Minutes of Regular Meeting", 1-2 November 1999, WT/G/SCM/M/24.

40. ASCM, Article 8.3.

the event of "serious adverse effects to the domestic industry of [a] Member, such as to cause damage which would be difficult to repair" was not used.[41]

The non-actionable category does not, however, exhaust a Member's ability to provide subsidies under the ASCM, which explicitly sets out that the mere fact that government assistance "may not qualify for non-actionable treatment… does not in itself restrict the ability of Members to provide such assistance".[42] In this regard, a Member may still provide "environmental" subsidies within the framework of the ASCM as long as they are not prohibited under Article 3 or cause adverse effects to the interests of other Members. An example would be border tax adjustments, i.e. the application to imports of domestic taxes on like products, and the remission of domestic taxes on exports of like products. WTO rules have been interpreted as generally allowing, subject to agreed disciplines, border tax adjustments on products on the basis of product characteristics or physically incorporated inputs, but not for taxes on imports on the basis of domestic process taxes.[43] Border tax adjustments may be relevant to the PPP where the imposed or rebated taxes were to correct an environmental pollution externality relating to the product.[44]

The definition of what constitutes a subsidy under the ASCM establishes the Agreement's scope of application. That definition together with the criteria establishing whether a subsidy is prohibited or actionable determines the extent to which the ASCM incorporates the PPP and the extent to which the Agreement promotes the internalisation of environmental costs.

Arguably, the definition of a prohibited or actionable subsidy under the ASCM is narrower than the approach used in the OECD Recommendations because the ASCM focuses on avoiding trade distortions and damage caused to other countries, not on the internalisation of costs.

Some have argued that international trade rules should encourage governments to internalise all environmental costs through the use of various trade actions, including countervailing duties. Such duties would be applied to imports that are alleged to be subsidised by their governments through a lack of environmental regulations. OECD members rejected this approach in 1972.[45]

One of the WTO Agreement on Agriculture's (AA) primary aims is for substantial progressive reductions in agricultural support and protection in order to prevent distortions in world agricultural markets.[46] Notably, the agreement disciplines both domestic agricultural support measures as well as export subsidies on agricultural products. In both situations exceptions are available with the potential to allow for pollution prevention and control subsidies. This is particularly the case under the agreement's domestic support regime which is examined below.

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41. ASCM, Article 9.

42. ASCM, Article 8.1 fn 23.

43 See, Report on Trade and Environment to the OECD Council at Ministerial Level, 9 May 1995, COM/ENV/TD(95)48/FINAL, 9-10.

44. Border tax adjustments (BTAs) on the import and export of *final* goods are governed by Article III.2 and VI.4 of GATT respectively.

45 Rec. C(72) 128, *op.cit.* para13: "In accordance with the provisions of the GATT, differences in environmental policies should not lead to the introduction of compensating import levies or export rebates, or measures having equivalent effect, designed to offset the consequences of these differences on prices. Effective implementation of the guiding principles set forth herewith will make it unnecessary and undesirable to resort to such measures."

46. AA, Preamble.

Domestic agricultural support measures are subject to reduction commitments as specified in Member schedules unless maintained in conformity with the various exemption criteria provided for in the agreement.[47] The exemption provided for domestic support measures which are non or minimally trade-distorting (the "Green Box") is perhaps most relevant for the purposes of this study, as it specifically allows for support in response to environmental programmes. Notably, direct payments to producers (or revenue foregone) for the costs or loss of income involved in complying with governmental environmental or conservation programmes are authorised (Annex 2, paragraph 12).[48] Only expenditures relating to agriculture are eligible, however, and must be limited to the extra costs or loss of income involved in complying with the government programme. Therefore, governments may offset the incremental costs of more environmentally friendly measures such as the storage of slurry (liquid manure), but not the construction of the manure storage facilities which is considered to be a normal cost of a livestock operation. Similarly exemptions apply to subsidies for “infrastructural works associated with environmental programmes” (Annex 2, paragraph 2(g)) or subsidies relating to "research in connection with environmental programmes" (Annex 2, paragraph 2(a)).

While these support measures are exempt from financial limitations, they must comply with a number of general criteria. In particular, the measures must have no, or at least minimal, trade-distorting effects or effects on production. This has been defined to require that they must be provided through a publicly-funded government revenue programme (including government revenue foregone), which neither involves transfers from consumers nor has the effect of providing price support to producers (Annex 2, paragraph 1).[49]

Even if a domestic support measure is not categorised under the “Green Box” it may be exempt if it falls under other exemption categories. Two, in particular, that may allow for pollution abatement subsidies are direct payments under production-limiting programmes (the "Blue Box")[50] and any support that falls under the agreement’s general rule-based *de minimis* allowances.[51] Measures falling within these categories would be exempt even if their effects were trade or production distorting. Furthermore for agricultural export subsidies, despite a *prima facie* general prohibition, some specific types are permitted subject to reduction commitments if specified in a Member's schedule. This provides an export subsidy framework within the WTO rules and there is no reason *per se* that subsidies aimed at pollution prevention and control could not be included under it.

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47. Developed countries have agreed to reduce the “total aggregate measurement of support” calculated over the base years of 1986-88 by 20% over the six years from 1995 (13.3% for developing countries and no reductions for least-developed Members).

48. AA, Annex 2 paragraph 12 clarifies the requirements for permissible payments under environmental programmes:

“(a) Eligibility for such payments shall be determined as part of a clearly-defined government environmental or conservation programme and be dependent on the fulfilment of specific conditions under the government programme, including conditions related to production methods or inputs.

(b) The amount of payment shall be limited to the extra costs or loss of income involved in complying with the government programme.”

49. Analytic data on Green Box subsidies has been conducted by the WTO, see Background Paper by the Secretariat “Green Box Measures” G/AG/NG/S/2, 19 April 2000.

50. AA, Article 6.5.

51. Defined as support not exceeding 5% of the value of production of individual products or, in the case of non-product-specific agricultural support, the value of total agricultural production (10% in the case of developing countries), Article 6.4.

Implementation of the PPP in OECD Member countries

Introduction

The environmental performance reviews of OECD Member countries showed that the PPP "in a strict sense" (non-subsidisation of pollution prevention and control) is very widely implemented in all of these countries. [52] Various exceptions to the disciplines on subsidies that used to be provided for all anti-pollution investments by the European Commission or the protection provided under the WTO ASCM's "non-actionable" category have been abolished. On the other hand, however, this assessment might need to be now revised in light of the fact that national and local budgets continue to include various subsidies for anti-pollution measures.

The PPP and exceptions thereto in OECD countries

This section provides selected examples of how the PPP is incorporated in environmental polices and legislation of OECD Member countries. It does not purport to be exhaustive but simply, to provide an overview of different approaches to the PPP, and exception thereto, within the OECD.

A number of OECD countries have introduced pollution charges and taxes to combat water pollution (discharges of organic pollutants into surface or underground water;[53] taxes on phosphates and nitrates, etc.), air pollution (taxes on sulphur oxides, nitrogen oxides, volatile organic compounds (VOCs), etc.), noise (taxes on noisy aircraft), or climate change (taxes on carbon dioxide or greenhouse gases[54]). They have also been introduced to reduce the use of nitrates or pesticides in agriculture or the phosphate content of detergents.[55]

Members of the European Union are subject to specific disciplines on the PPP.[56] The PPP was incorporated into the Treaty Establishing the European Community (hereafter the EC Treaty) through the adoption of the Single European Act (Art. 130R to 130 T), and is included in Art. 174 of the consolidated version of the EC Treaty. Since its introduction into the Treaty, the PPP has not been defined as such in a Community legal act. Community Directives apply the PPP to certain areas (e.g. Directives 75/442, 78/319 and 84/631 on waste). The PPP is a principle of Community law that is part and parcel of the *acquis communautaire*. As such, it is applicable to States of the European Economic Area and to adhering States. It is further found in a number of regional European agreements. The PPP has gradually become a principle of environmental law in EU Member countries.

The criteria formulated by the OECD in 1974 for the provision of certain forms of environmental assistance can be found in the relevant communications of the European Commission. In addition, assistance is subject to the restrictions on State assistance stemming from the Treaty of Rome. However, environmental aid allowed under Community law are more heterogeneous than those allowed under

52. Environmental Performance Reviews, OECD, 1992-2001 (31 countries reviewed).

53. A surface water pollution charge is payable in 16 of the OECD Member countries: Australia, Belgium, Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Korea, Mexico, Netherlands, Poland, Spain and the United Kingdom.

54. Norway, Sweden and Germany are among the countries which have introduced a tax on CO_2.

55. These taxes have an incentive effect. However the income collected is sometimes used for purposes other than addressing pollution (for example to finance the reduction in working hours or social security).

56. O'Connor, M. (1997), *The internalization of environmental costs: implementing the Polluter-Pays Principle in the European Union*

exceptions to the PPP in OECD Recommendations: the rules governing aid are more specific, the aid received must be reported, and the Commission may refuse aid that it deems not to be in compliance with the Treaty.[57]

Environmental aid under EC law was initially limited to firms which could not afford new required investment costs related to environmental protection or when only a State intervention could prevent social or economic problems from arising in certain industries or regions. According to the latest report of the Commission on Community Guidelines on State Aid for Environmental Protection, the "Commission's approach ... consists in determining whether, and under what conditions, State aid may be regarded as necessary to ensure environmental protection and sustainable development without having disproportionate effects on competition and economic growth".[58]

The European Commission has issued guidelines for the maximum allowable amount of environmental aid[59], but the current trend is towards a reduction,[60] since aid for pollution abatement investments is no longer eligible. In general, authorised aid is higher for small and medium size enterprises (SMEs) and for polluting enterprises in disadvantaged regions. The Commission favours aid for investments in pollution abatement equipment, but is not favourably disposed towards aid for the operation of such equipment. Sectors of the economy undergoing particular difficulties may also receive substantial assistance—to control pollution, for example. Such has been the case for the iron and steel industry, shipbuilding and agriculture. Consequently, some pollution prevention and control measures taken by the farm sector have been underwritten under the heading of "agro-environmental measures."[61]

In OECD Member countries of Central Europe, national legislation usually provides for environmental resource pricing. For example, in Hungary, the Act No. L III of 1995 on the general regulation of environmental protection, provides that "all users of the environment are obliged to pay a

57. Article 87 of the Treaty Establishing the European Community (Consolidated version, formerly Article 92.3) states that the following may be considered to be compatible with the common market: "(a) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment; (b) aid to promote the execution of an important project of common European interest ...; (c) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest...". If a measure taken by the Community "involves costs deemed disproportionate for the public authorities of a Member State", the Council can grant temporary derogations and/or financial support from the Cohesion Fund (TEC, Article 175.5).

58. Community Guidelines on State Aid for Environmental Protection (2001/C37/03), *OJEC*, C 37, 1/15 (3 February 2001).

59. For example, less than 15% of the amount of pollution control investments until 2000. Community Guidelines on State Aid for Environmental Protection, OJEC, C 72, 3/9 (10 March 1994).

60. The ceiling was reduced from 45% of investments in 1975-76 to 30% in 1977-78 and then 15% in 1979-80. It remained stable until the end of 2000, when it was cut to zero.

61. In respect of agro-environmental subsidies, see Council Regulation (EC) No. 1259/1999 of 17 May 1999 establishing common rules for direct support schemes under the common agricultural policy, OJEC, L 160 (26 June 1999). Article 3: Environmental protection requirements. "Where agricultural activity within the scope of this Regulation is concerned, Member States shall take the environmental measures they consider to be appropriate in view of the situation of the agricultural land used or the production concerned and which reflect the potential environmental effects. These measures may include: – support in return for agri-environmental commitments, – general mandatory environmental requirements, – specific environmental requirements constituting a condition for direct payments." See also Council Regulation (EEC) No. 2328/91 of 15 July 1991 on improving the efficiency of agricultural structures, OJEC, L 218 (6 August 1991), Council Regulation (EEC) No. 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside, OJEC, L 215 (30 July 1992).

user charge", the amount of which varies "depending on the extent to which the particular element of the environment is used" (Section 61). The aim of this charge is "to encourage users to reduce their use of the environment" (Section 59). Users are required to measure and declare the extent of their use. The monies received are used to cover the costs of the measures taken by the government to reduce environment use. They are paid in part into funds for protection of the environment established at local level. The Hungarian environment plan "*National Environmental and Nature Policy Concept*", adopted by the government in 1995, refers to the PPP in the following terms: "Strict application of the PPP and the UPP is necessary, which means that persons who use, exhaust, pollute or damage environmental resources must be held responsible, including financially responsible". Moreover, it is specified that use of natural resources cannot be exempt from a symbolic payment nor linked to such payment. Users must be obliged to pay a user charge for any activity involving the use of natural resources.

In Australia, under an agreement between the Federated States (Intergovernmental Agreement on the Environment, May 1992, Section 3.5), the State governments have adopted the User-Pays Principle "The parties agree that, in order to promote the above approach (integration of economical and environmental considerations in decision-making processes), the principles set out below should inform policy-making and programme implementation: …the users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of waste". [62]

In Canada, federal and provincial governments endorse and use the PPP in developing their laws and policies. The principle is enshrined in the preamble to the Canadian Environmental Protection Act, 1999. In 1993, the Canadian Council of Ministers of the Environment (CCME) agreed that the PPP should be one of thirteen principles that govern liability of parties that contaminate the environment. Several uses of economic instruments by the Federal and Provincial Governments indicate Canada's endorsement of the PPP. Indeed the Federal Government has already made use of taxation and allowance trading to address environmental problems. Provinces, too, have implemented user fees on products, such as tires, batteries, and motor oil and filters. In addition to deposit-refund schemes, provincial jurisdictions have implemented non-refundable fees designed to cover costs associated with product disposal and/or recycling. A particularly interesting example to note is British Columbia's Waste Management Fees Program..[63]

In Japan, the Second Basic Environment Plan considers four concepts - The Polluter-Pays Principle, Eco-Efficiency, Precautionary Approach and Environmental Risk- to be the basic guidelines for future environmental policies. It states that "the Polluter-Pays Principle is the most basic measure needed to ensure that environmental considerations are applied within the socioeconomic system to promote the

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62.. The User-Pays Principle (UPP) is the principle whereby the user of a resource must bear the total cost of producing, supplying and, in some cases, disposing of the resources used, including the environmental costs of depleting those resources. At the least, the principle suggests a recovery of all costs incurred, and of investment costs in particular. The UPP is identical to the PPP in the broad sense if the user is a polluting enterprise that is required to bear all the costs generated by pollution. In this case, the resource used is the receiving medium (e.g., surface water), which suffers degradation and needs to be protected. The UPP was introduced to extend the PPP, which exclusively involves resources subject to pollution, to the realm of natural resources. See OECD (1993), *Environmental Principles and Concepts.*

63. Permits have been issued since the late 1980's under the Waste Management Act to regulate the amount and type of waste discharged into the air, land, and water. In 1992, permit fees were changed from a flat rate to a differential charge. Fees are calculated based on the type and amount of waste discharged and are designed to act as an incentive for permitees to introduce pollution abatement technologies that will reduce waste discharges. The fee-per-tonne for contaminants are based on the relative risk of each contaminant to the environment. The fee is levied annually with a fixed charge for the basic permit plus a discharge-weighted charge for air emissions, aqueous effluent discharges, refuse, and storage. An additional fee is calculated for acutely toxic effluent (based LC50 only). The permit fees are driven by program cost recovery.

practical and most efficient usage of limited environmental resources. It functions to incorporate the costs related to pollution occurring during the production and consumption processes, into the market price. From this point of view, the Polluter-Pays Principle will be applied as the standard used for cost allocation in all environmental conservation programs."[64] The Plan also refers to financial support for environmental purposes, with specific reference to the PPP. [65]

The PPP is an approach that informs New Zealand's environmental policy, but it has not been implemented in its pure form. New Zealand's approach to environmental management and protection is based on the principle of sustainable management. This is defined in the Resource Management Act 1991 which is the primary legislation that underpins environmental management in New Zealand. [66]

New Zealand has chosen a permissive regulatory approach over others, including those based on economic instruments. Control of pollution is achieved through a system that allows potentially polluting activities to be classified in terms of their impacts on the environment. The classification ranges from activities that are prohibited outright because of their potentially severe effects, through activities that are permitted subject to certain conditions and controls, to activities that have few or no adverse impacts and are permitted without any controls. A system of permits that are linked to environmental standards and 'bottom lines' is used to allow activities to occur within acceptable environmental limits. For example, a permit may be issued to discharge waste into a waterway subject to conditions including treating the waste to render it safe. Where the conditions of a permit are breached (for example, failure to render a waste discharge harmless) there is provision for financial and other penalties to be imposed on the polluter. However, unlike a polluter-pays approach, these penalties are not directly linked to the nature or severity of the pollution. For example, the polluter may be required to pay the costs of clean up, but could not (under current legislation) be required to pay for the total costs of environmental and other damage.

In other areas of environmental management, charges are often levied for the deposition of household and industrial waste in landfills. These charges are related to the costs of operating the landfill, not to the overall costs including any environmental damage that the landfill may cause (eg. methane discharges, ground water contamination, odour etc.).

Application of the PPP to environmental management in New Zealand will require an amendment to current legislation to allow the imposition of charges that are directly related to the nature and severity of any pollution.

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64. www.env.go.jp

65. On subsidies, the Plan states: "Environmental subsidies for business entities are another means to spur the creation of facilities for reducing environmental loads. Through subsidies, economic assistance is provided for investment in pollution prevention measures. Subsidies are distributed based on the understanding that both the recipient's financial situation and budget expenditures will eventually become a burden on the people. In order not to seriously distort international trade and investment, we must keep the OECD's Polluter Pays Principle in mind. While considering these points, we will apply the required and appropriate measures. Furthermore, we will pay attention to the role of subsidies for consideration in the promotion of direct environmental improvement. In the future, subsidies in general, will be utilized more for the reduction of environmental loads.

66. (http://www.mfe.govt.nz/management/act.htm).

The application of the PPP in the context of international trade and environmental protection

This section provides a brief overview of issues that the application of the PPP may raise in the context of international trade and environmental protection.

The PPP in a broad sense and impacts on trade

Full internalisation of environmental costs is likely to imply higher costs for producers and may thus affect their competitiveness. The trade implications of a shift from the PPP as a "no subsidy" principle towards a PPP advocating full internalisation of environmental costs, and the differences of approach among countries competing for trade do not seem to have been studied in depth yet. While the PPP as a "no subsidy" principle is reasonably objective, and compliance with it can be tracked- at least in theory - the PPP as a full internalisation principle is far more complex. [67]

The trade issues arising from different levels of internalisation of environmental costs are similar to those in the debate on differences in national environmental standards and effective enforcement thereof, and their impacts on trade. [68] That debate, which dates back to the 1970s, led to the conclusion, reflected in the 1972 Recommendation, that, "in conformity with the provisions of the GATT, differences in environmental policies should not lead to the introduction of compensating import levies or export rebates, or measures having an equivalent effect, designed to offset the consequences of these differences on prices." [69] Some authors suggest that the solution to such differences and their trade impacts would lie in policy harmonisation[70].

Trade implications of exceptions to the PPP

While OECD governments continue to provide support for the implementation of environmental policies, Member countries have often reiterated the potential distorting effects of subsidies and their possible implications on trade.

OECD Recommendations have addressed the impacts of environmental subsidies on prices of goods and services, and their implications for the trading system. The 1991 Recommendation on the Use of Economic Instruments in Environmental Policy thus states that:

> "Economic Instruments should be designed to facilitate the integration of environmental policy with other policies, in particular through an appropriate adaptation of various economic sectors' pricing and fiscal structures to conform with environmental goals. Removal and correction of governmental intervention failures such as distorting subsidies in the agricultural field or improper pricing of

67. Some authors have looked into the issue of the shift of the PPP towards a principle of full internalisation, without however drawing conclusions on actual trade implications of various levels of cost internalisation. See for example C. Pearson (1994).

68. For more detail on the issue of cost internalisation, domestic environment and trade, see C. Stevens (1994), page 584 and C. Pearson (1994), page 570.

69. 1972 Recommendation, Guiding principles concerning the international economic aspects of environmental policies, annexed to the 1972 Recommendation, paragraph 13.

70. S. Charnovitz, page 508. D. Esty, in "Greening the GATT", 1994, page 178/9 suggests, that, among policy directions to respond to competitiveness concerns, "joint implementation of full-cost pricing, particularly through the polluter-pays principle, offers the most sensible, long-term target for environmental policy co-operation.

transport infrastructure, fuels and services, are of utmost importance for a proper integration of environmental policies with sectoral policies. One fundamental objective of economic instruments is to ensure that the prices of goods and services truly reflect the associated environmental costs. This can be achieved only if intervention failures are first removed."

The Recommendation further specifies that:

"In implementing economic instruments, it is necessary to comply with existing general agreements and principles of environmental policy both at the national and at the international level. One of the most important of these is the Polluter-Pays Principle. Economic instruments, with the exception of financial assistance, are clearly in line with this principle. Principles stemming from trade agreements (e.g., the GATT) should also be respected. When introducing economic instruments, unfair competition and international trade distortion must be avoided. Charges or taxes on final products should not discriminate between domestic and imported products. "[71]

The OECD Council meeting at Ministerial level declared in 1992, that "Ministers remain firmly of the view that every effort should be made to eliminate or bring under enhanced discipline subsidies that have trade distorting effects."[72]

In 1995, the OECD Council meeting at Ministerial level endorsed the Report on Trade and Environment established jointly by the Trade Committee and the Environment Policy Committee, which included the following observations:

"Limited use of environmental subsidies can have benefits in implementing environmental policies, but they need to be subject to certain disciplines or rules since they can distort trade in giving advantages to domestic producers and can conflict with the Polluter-Pays Principle."[73]

Most recently, the OECD Environmental Strategy for the First Decade of the 21st Century, adopted by Environment Ministers on 16 May 2001, recommends that "Policies and measures for environmental sustainability should [also] be implemented in a cost-effective manner, and contribute to the full and consistent application of the Polluter Pays and User Pays Principles".[74]

In accordance with Objective 1 of the Strategy ("Maintaining the integrity of ecosystems through the efficient management of natural resources"), "to effectively manage natural resources and ensure the continued provision of essential environmental services, OECD countries will need to remove or reform subsidies and other policies that encourage unsustainable use of natural resources - beginning with the agriculture, transport and energy sectors - and ensure the internalisation of the full external costs of natural resource use through market and other policy instruments, and reflecting the User Pays Principle and the Polluter Pays Principle..."[75]

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71. 1991 Recommendation, paragraphs 19 and 23 of the Annex

72. Meeting of the Council at Ministerial level, 1992 [SG/Press(92)43].

73. Report on Trade and Environment to the OECD Council at Ministerial Level, OCDE/GD(95)63, 1995, paragraph 77.

74. OECD (2001), Environmental Strategy for the First Decade of the 21st Century, page 6.

75. See also the section on subsidy reform in OECD (2001), Sustainable Development. Critical issues, page 136 ss and the chapter on "Policy packages to address the main environmental problems", in OECD (2001), Environmental Outlook, page 291 ss.

At the 2002 meeting of the Council at Ministerial level, Ministers emphasised "Policies to enhance competition in product and service markets, and the reduction of trade distorting and environmentally harmful subsidies."[76]

The general expansion of environmental standards, the use of so-called 'green taxes,' combined with the quest for lower levels of pollution, in some cases, ratification of MEAs which require the implementation of more stringent controls, and transboundary environmental impacts, are all factors which, in a strict economic sense, could have impacts on production costs and on trade. Limited use of government transfers can be beneficial from an environmental policy perspective and can be used to assist producers in meeting more stringent environmental regulations. However, such producers would enjoy a cost advantage over competitors in the same market who have to comply with the same standards, without benefiting from such transfers. This could also have implications for the multilateral trading system.

Under the 1972 Recommendation, the OECD surveyed financial assistance systems for pollution prevention and control, and between 1975 and 1988, it gathered data on such systems from Member countries. [77] The surveys indicated that global assistance for anti-pollution measures was low as a percentage of GDP. The concluding report however indicates that the procedure on which the surveys were based could only give part of the true picture in terms of trade effects. [78]

The growing recourse to economic instruments to achieve particular environmental outcomes over the past ten years therefore marks a watershed in the experience of OECD members on the issue. The question of the linkage between the PPP, subsidisation, and impacts on production and thus on trade flows, particularly as these affect developing economies, warrants a more in-depth longitudinal examination than can be offered in the current paper. More specifically, one possible area of research might be to assess the evidence of subsidisation of anti-pollution efforts and to indicate what, if any, the impact of this might be on international trade (i.e. on production patterns and flows).

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76. OECD Council at Ministerial level, 15-16 May 2002, Final Communiqué, paragraph 4 [PAC/COM/NEWS(2002)58]. At the 2001 meeting of the Council at Ministerial level, Ministers agreed that the OECD would continue to assist governments by "… identifying how obstacles to policy reforms, in particular to the better use of market-based instruments, and to the reduction of environmentally harmful subsidies, can be overcome, and deepening its analytical work on these instruments." See: "Towards a Sustainable Future" paragraph 15 [PAC/COM/NEWS(2001)48] .

77. Four surveys were carried out under the procedure for Notification of Assistance Schemes (in 1975, 1978-79, 1981 and 1987-88). The results were published in Financial Assistance for Pollution Prevention and Control in OECD Countries, Environment Directorate, Environment Monographs, No. 33 (June 1990). The report acknowledges that it is difficult to draw firm conclusions from the notifications procedure for a number of reasons, which include the fact that the data covered only a limited number of countries and were insufficient, and that the situation in the different countries is extremely diverse and no common trend can be identified between or within countries. See also C. Stevens (1994), pages 583 ss. The OECD also set up a consultation mechanism in connection with environmental aid provided by Members, but no Member country ever asked for any consultation to be organised.

78. The reasons for this conclusion were i) the lack of appreciable overall effects of assistance on trade may hide larger distortions at the sectoral level; these were difficult to evaluate due to lack of data; (ii) assistance aimed specifically at pollution control probably accounts for only a small part of the aid received by industry compared with that from other programmes, such as programmes for employment and regional development; these other programmes may have also been used for assistance in pollution control without it being possible to determine the extent of such assistance; (iii) a potential source of distortion could come from differences in countries requirements (regulations and standards) and also, differences in the actual enforcement of such regulations. See OECD (1990), pages 13-14, and C. Stevens (1994), page 584.

The PPP and implementation of measures to reduce greenhouse gases

The implementation of measures to reduce emissions of greenhouse gases is likely to have an impact on production costs and energy prices. Those sectors most affected by an increase in energy prices are the energy sector itself and sectors which are large consumers of energy (steel, aluminium, chemicals, pulp and paper, etc.).

To support these sectors, governments may be tempted to subsidise new equipment, thus absorbing the difference between the cost of "clean" energy and that of competing processes which emit more carbon dioxides. Less visible cross subsidies are also used to encourage alternative energy sources (such as higher-than-normal electricity purchasing prices).

Some countries have decided to introduce taxes on energy or energy sector emissions without waiting for the international harmonisation of such taxes. As these can affect competition in certain industries which consume large quantities of energy, corrective measures are sometimes introduced such as tax exemptions for whole sectors or border tax adjustments on certain exports.[79]

The PPP and transfrontier or global pollution

MEAS have an important role to play in dealing with PPP-related issues in an international context. That includes identifying the best tools to deal with a given environmental issue. Initially, the PPP was not designed for cases of transboundary or global pollution.[80] However, as early as 1974, it was referred to in the OECD Recommendation on Principles concerning Transfrontier pollution.[81] Moreover, several conventions dealing with transfrontier or global pollution also mention it. Thus, while at its inception the PPP was limited to domestic pollution, the extent to which this is still the case could be examined further.

It could be argued that on the basis of the principle of non-discrimination formulated at the OECD for cases of transfrontier pollution,[82] polluters should be subject to the PPP whatever the type of pollution: national, transfrontier or global. In other words, the fact that pollution affects territories outside national frontiers may be seen as insufficient justification for reducing the polluter's obligations with regard to pollution levels or costs.

79. See earlier discussion on border tax adjustments. Notably, carbon and energy taxes aimed at reducing carbon dioxide and hence climate change appear eligible under the WTO Agreements for border tax adjustments on the import and export of the energy products themselves and, despite a number of uncertainties, on the import and export of other products whose production or distribution involves the use of taxed energy inputs. See generally Raoul Stewardson, "The Case of Carbon Taxes" in OECD Documents: *Trade and Environment: Process and Production Methods* (OECD, Paris, 1994).

80. The scope of the 1972 OECD Recommendation does not include transfrontier pollution.

81. Rec. C(74)224, *op.cit.*

82. Recommendation of the Council for the Implementation of a Regime of Equal Right of Access and Non-Discrimination in Relation to Transfrontier Pollution, C(77)28Final.

Application of the PPP that is limited to domestic pollution may fail to address many of the transboundary and global environmental pollution challenges of today's increasingly interdependent world and remains an area where some have asked for further analytical work.[83]

An example with direct relevance from a trade and environment perspective is transfrontier and global pollution created by international transport. Transport by land, air or sea causes very considerable externalities (including noise, air pollution, marine pollution, etc.) and is often the subject of mode-specific international rules (in particular concerning aviation and maritime transport). The challenge is to encourage systems for allocating costs which guarantee environmental protection at the same time as the smooth functioning of transport operations in a context of lively competition.[84] Variations in standards, taxes, control mechanisms, legal liability regimes, insurance systems, etc., make it more difficult to internalise the external effects of transport that crosses borders, and the environment may suffer as a consequence. Thus, in Europe, when transfrontier road hauliers choose to buy fuel in countries where the taxes are lowest, they have no incentive to reduce their fuel consumption (or the resulting air pollution) throughout their itinerary.

Similar issues arise with regard to combating transfrontier or high seas discharges of ship-generated waste. A number of *ad hoc* solutions have, however, been formulated. For example, the countries bordering the Baltic and those concerned by river transport on the Rhine[85] recently agreed on harmonised financing systems designed to prevent illegal discharges of such waste while, at the same time, ensuring that the costs of disposal in suitable waste facilities are covered. These systems derogate from the PPP, however, as they no longer require direct payment by the vessel bringing such waste (the polluter) and instead share the costs of disposal among all vessels. This exception to the PPP is due to a lack of effective control of illegal discharges by ships.[86]

The PPP and developing countries

In the 1972 Recommendation, it is specified that the Guiding Principles do not cover "possible problems related to developing countries".[87] The exclusion of developing countries from the scope of the PPP might lead to distortions in the global international trading system in the event that official development assistance helped producers in those countries engaged in exports in complying with national or international pollution standards.

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83. As one commentator has put it, "to truly advance… the trade and environment debate, both environmentalists and trade liberalizers must discuss the Polluter Pays Principle as it might apply to the… internalisation and allocation of the costs of pollution… in environments that are shared among countries, namely transboundary and global environmental problems", see C. Stevens (1994), 578. See also H. Smets (1990), *"The PPP in the Early 1990s"*.

84. In 1989, the Ministers of Transport declared in the framework of the ECMT: "… it is necessary, in accordance with the Polluter-Pays Principle, to introduce systems of supplementary charging for environmental damage caused. In principle, each transport mode should pay the full costs caused (for instance, through raising excise duty on fuels and/or road pricing)".

85. Convention on Collection, Discharge and Reception of Waste arising from Rhine and Inland Navigation, 1996.

86. A similar system operates for ports of the European Union although vessels pay for part of the cost of disposing of the waste they bring (polluter in the usual sense of the term), the other part being funded by a redistributive system (paid for jointly by potential polluters). See Directive 2000/59/EC of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, O.J.E.C., L 332 (28/12/2000).

87. Rec. C(72)128, *op. cit.*

In certain cases, development assistance involves financing the construction of facilities to prevent and reduce *local* pollution, such as wastewater treatment plants or hazardous waste disposal facilities. Enterprises, which use these facilities, may, therefore, not pay the full cost of the measures to prevent and reduce pollution.

As regards *global* pollution, at least two international Conventions[88] foresee the possibility to finance certain measures taken in developing countries through international funds (such as the GEF). Thus, as regards protecting the ozone layer, the GEF and the Montreal Protocol Fund finance measures to prevent CFC emissions in developing or transition economies. Similarly, as regards climate change, assistance may be given to increase the energy efficiency of firms in developing countries and reduce their CO_2 emissions. This means that the local polluter may only pay for a small part of the cost of preventing and reducing *global* pollution and, if he is active in international markets, would not be paying certain costs borne by competitors from other countries.

The economic literature indicates that differences in production costs related to environmental protection rarely appear to be determining factors in production decisions, since they are low compared with other differences in economic conditions, such as labour inputs, tax measures, sectoral subsidies and so on.[89] What is less definitive, however, are the cross country comparisons between developed world producers and their developing world counterparts in circumstances where the latter have to meet a standard established by the Governments of the former. Given the rising level of environmental standards, this issue could become increasingly relevant.

88. UN Framework Convention on Climate Change and the Vienna Convention on the Protection of the Ozone Layer.

89. See, e.g., OECD (1998), *Open Markets Matter. The Benefits of Trade and Investment Liberalisation*, p. 105 and OECD (2001), *Sustainable Development. Critical issues*, p. 224

Conclusions

This paper has provided an overview of the evolution of the application of the PPP since its first inclusion in the 1972 OECD Recommendation. According to that Recommendation, the principle means that "the polluter should bear the expenses of carrying out [the above mentioned] measures decided by public authorities to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment." At that time, the purposes of the PPP were to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment. Though the application of the concept has evolved, the purposes of the PPP do not appear to have changed. OECD Members have reiterated their commitment to the principle as a means to contribute to sustainability.

Both the PPP and WTO disciplines on subsidies are distinct concepts. They each allow for environmental support, albeit under limited and specified conditions. The ASCM no longer provides an explicit exemption for environmental subsidies. In order to encourage environmental efficiency and to avoid unnecessary trade distortions, the application of exceptions to the PPP should be transparent and remain limited and targeted, and be carried out in conjunction with other environmental objectives pursued at international level.

According to the OECD environmental performance reviews, the PPP seems to be generally respected in OECD Member countries. Strengthening of environmental policies may lead to higher production costs, and to increased pressure for government support to producers. Limited use of government transfers can be beneficial from an environmental policy perspective and can be used to assist producers in meeting more stringent environmental regulations. However, such producers would enjoy a cost advantage over competitors in the same market who have to comply with the same standards, without benefiting from such transfers. This could also have implications for the multilateral trading system. OECD Governments have emphasised, on numerous occasions, the need to implement effective environmental policies without creating significant distortions to trade. For example, in accordance with Objective 1 of the OECD Environmental Strategy for the First Decade of the 21st Century, "to effectively manage natural resources and ensure the continued provision of essential environmental services, OECD countries will need to remove or reform subsidies and other policies that encourage unsustainable use of natural resources - beginning with the agriculture, transport and energy sectors - and ensure the internalisation of the full external costs of natural resource use through market and other policy instruments, and reflecting the User Pays Principle and the Polluter Pays Principle. This paper has identified some of the linkages between the PPP and international trade. More in-depth research could be carried out in specific areas, such as the impacts of financial support for the implementation of environmental measures, in particular, for the implementation of obligations under MEAS (such as the UNFCCC); the PPP applied to transfrontier pollution; and the implications of extending application of the PPP to developing countries.

Annex I: Overview of formulations of the PPP providing for full internalisation of environmental costs ("PPP in a broad sense" or "extended PPP")

The following section provides an overview of formulations of the PPP in various international and national instruments, reflecting the shift from a PPP providing for internalisation of pollution prevention and control costs ("PPP in a strict sense"), towards a PPP reflecting full internalisation of environmental costs ("PPP in a broad sense")

OECD instruments and texts

In 1972, the OECD Environment Committee deemed that a polluter *could* also be subject to pollution taxes or charges[90] (as an economic instrument conducive to implementation of the PPP in the strict sense) and that the polluter should also bear the costs associated with legal liability regimes applicable to matters of pollution.

The close linkage between the PPP and economic instruments appears in the 1985 Declaration of the OECD Ministers for the Environment, which states that it is necessary to:

> "Seek to introduce more flexibility, efficiency and cost-effectiveness in the design and enforcement of pollution control measures in particular through a consistent application of the polluter-pays principle and a more effective use of economic instruments in conjunction with regulations."

In January 1991, the Ministers of the Environment of the OECD countries declared that:

> "Successful policy integration, and the attainment of sustainable development, is critically dependent on assigning prices to raw materials, goods and services that better reflect their full environmental and social costs."[91]

Following the policy guidelines laid down at that Ministerial meeting, in 1991 the OECD Council adopted a Recommendation stating that the Member countries should "work towards improving the allocation and efficient use of natural and environmental resources by means of economic instruments so as to better reflect the social cost of using these resources."[92] According to this Recommendation:

> "sustainable and economically efficient management of environmental resources requires, inter alia, the internalisation of pollution prevention, control and damage costs"

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90. The *Note on the Implementation of the Polluter-Pays Principle* adopted by the OECD Environment Committee in 1973 (reproduced in OECD (1995), *The Polluter-Pays Principle*) refers explicitly to charges as instruments for the implementation of the PPP and suggests that the appropriate rate is the marginal cost of purification at the chosen level of pollution. If this level is the optimal level of pollution, the rate of charge is the marginal cost of the damage, and the situation is one of total internalisation.

91. Communiqué of the Environment Committee Meeting at Ministerial Level, "An Environmental Strategy in the 1990s", 31 January 1991 [SG/PRESS(91)9]. With regard to agriculture, it was deemed necessary to set "prices for agricultural inputs that reflect more fully their environmental costs".

92. Recommendation of the Council on the Use of Economic Instruments in Environmental Policy, C(90)177/FINAL, OECD, 1991.

This reflects a shift towards a "PPP in the broad sense", i.e. towards internalising the externalities of pollution as much as possible, covering, *inter alia*, types of pollution damage that had previously not been covered by the principle.

Along those same lines, the Ministers of the Environment agreed, in 1998, to ensure "that prices of natural resources as far as possible reflect the **true environmental and social costs** of production, consumption and scarcity."[93]

The same notion of full internalisation is found in "OECD Environmental Strategy for the First Decade of the 21st Century",[94] which recommends that:

> "To effectively manage natural resources and ensure the continued provision of essential environmental services, OECD countries will need to remove or reform subsidies and other policies that encourage unsustainable use of natural resources, and ensure the internalisation of the full external costs of natural resource use through market and other policy instruments, and reflecting the User Pays Principle and the Polluter Pays Principle."

The PPP was recently described as follows in a recent report of the Joint Working Party on Agriculture and Environment:[95]

> "The Polluter-pays-principle states that the polluter should be held responsible for environmental damage caused and bear the expenses of carrying out pollution prevention measures or paying for damaging the state of the environment where the consumptive or productive activities causing the environmental damage are not covered by property rights. This is the principle used for allocating costs of pollution prevention and control measures aiming to ensure a rational use of scarce environmental resources and to avoid distortions in international trade and investment."

The same trend as the one developed at the OECD can be found in other international forums as well. It involves the adoption of policies that confer more accountability on economic agents and introduce deregulation and greater recourse to market instruments to integrate different policies, with a view to sustainable development. In the realm of natural resources, this tendency is reflected through the User-Pays Principle, and in the transfer to economic agents of the cost of public infrastructure which had previously been made available to them free of charge (e.g. municipal purification plants, dams, etc.).

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93. Press release, 1998 Meeting of Environment Ministers This statement reflects the "User-Pays Principle" (UPP) formulated in the OECD Recommendation of the Council on Water Resource Management Policies: Integration, Demand Management, and Groundwater Protection [C(89)12/FINAL]. The complete text of the Recommendation is reproduced in OECD (1989), *Water Resources Management: Integrated Policies.*. During the preliminary work, the phrase "User-Pays Principle" had been used, but later, to avoid any interference with the polluter-pays principle, the experts preferred to refer to "the resource pricing principle".

94. ENV/EPOC(2000)13/REV3, paragraph 17. The Environmental Strategy was adopted by OECD Ministers of the Environment at their meeting on 16 May 2001.

95. "Improving the Environmental Performance of Agriculture: Policy Options and Market Approaches" [COM/AGR/ENV(2001)6], March 2001.

European Union Acts

In 1994, the European Commission described the PPP in the following terms:[96]

> "principle, under which economic agents would bear the full cost of the pollution caused by their activities", and also,
>
> "the polluter pays principle - which requires all environmental costs to be 'internalized', i.e. absorbed in firms' production costs".

In 2001, the European Commission stated [97] that: "If environmental requirements are to be taken into account in the long term, prices must accurately reflect costs and environmental protection costs must be **fully** internalised." The same idea is invoked in the framework directive on water policy,[98] which calls for recovery of the costs of water services, including costs for the environment.

Because of public opinion's increasingly hostile attitudes towards accidental pollution, the PPP is being associated more and more often with repairing the damage caused by pollution. In 2000, the European Union adopted as an objective to "provide for compensation for damage in accordance with the polluter-pays principle".[99] In that decision, as in many statements concerning pollution damage, the PPP is associated with the notion of making polluters pay for all of the damage they inflict (damage to property and to the environment).

Other international instruments

The approach of internalising the externalities of pollution was referred to by the Ministers of Health and of the Environment of the WHO, who stated in 1989 that: "The principle should be applied whereby every public and private body that causes or may cause damage to the environment is made financially responsible (the polluter pays principle)."[100]

An important step towards the recognition of the PPP in a broad sense on a global level was made in 1992 with the adoption of the Rio Declaration on Environment and Development, Principle 16 of which states that:

> "National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment."

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96. Community Guidelines on State Aid for Environmental Protection, *OJEC*, C 72, 3/9 (10 March 1994).

97. Community Guidelines on State Aid for Environmental Protection (2001/C37/03), *OJEC*, C 37, 1/15 (3 February 2001).

98. Directive 2000/60/EC of 23 October 2000 establishing a framework for Community action in the field of water policy, *OJEC*, L 327 (22 December 2000) (Article 9).

99. Decision No. 2850/2000/EC of 20 December 2000 setting up a Community framework for cooperation in the field of accidental or deliberate marine pollution, *OJEC*, L 332 (28 December 2000). The linkage between liability and the PPP also emerges in the preamble to the Lugano Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment (Lugano, 1993).

100. WHO, European Charter on Environment and Health, Frankfurt-am-Main, December 1989.

The Rio Declaration refers to "the cost of pollution", which is a wide-ranging concept, and incorporates the use of economic instruments. It probably constitutes the main reference for the definition of the "PPP in a broad sense", although no effort has yet been made to clarify this principle on a world-wide level.

Likewise, the Energy Charter Treaty (Lisbon, 1994) provides that:

> "The Contracting Parties agree that the polluter in the areas of Contracting Parties should, in principle, bear the cost of pollution, including transboundary pollution, with due regard to the public interest and without distorting investment in the energy cycle or international trade."

Annex II: OECD Recommendations on the PPP

Recommendation of the Council on Guiding Principles Concerning International Economic Aspects of Environmental Policies

26 May 1972 - C(72)128

THE COUNCIL,

Having regard to Article 5 b) of the Convention on the Organisation for Economic Co-operation and Development of 14th December 1960;

Having regard to the Resolution of the Council of 22nd July 1970 establishing an Environment Committee [C(70)135];

Having regard to the Report by the Environment Committee on Guiding Principles Concerning the International Economic Aspects of Environmental Policies [C(72)69];

Having regard to the views expressed by interested Committees;

Having regard to the Note by the Secretary-General [C(72)122(Final)];

I. RECOMMENDS that the Governments of Member countries should, in determining environmental control policies and measures, observe the "Guiding Principles Concerning the International Economic Aspects of Environmental Policies" set forth in the Annex to this Recommendation.

II. INSTRUCTS the Environment Committee to review as it deems appropriate the implementation of this Recommendation.

III. INSTRUCTS the Environment Committee to recommend as soon as possible the adoption of appropriate mechanisms for notification and/or consultation or some other appropriate form of action.

Annex I: Guiding Principles Concerning the International Economic Aspects of Environmental Policies

Introduction

1. The guiding principles described below concern mainly the inter-national aspects of environmental policies with particular reference to their economic and trade implications. These principles do not cover, for instance, the particular problems which may arise during the transitional periods following the implementation of the principles, instruments for the implementation of the so-called "Polluter-Pays Principle", exceptions to this principle, transfrontier pollution, or possible problems related to developing countries.

A. GUIDING PRINCIPLES

a) Cost Allocation: the Polluter-Pays Principle

2. Environmental resources are in general limited and their use in production and consumption activities may lead to their deterioration. When the cost of this deterioration is not adequately taken into account in the price system, the market fails to reflect the scarcity of such resources both at the national and international levels. Public measures are thus necessary to reduce pollution and to reach a better allocation of resources by ensuring that prices of goods depending on the quality and/or quantity of environmental resources reflect more closely their relative scarcity and that economic agents concerned react accordingly.

3. In many circumstances, in order to ensure that the environment is in an acceptable state, the reduction of pollution beyond a certain level will not be practical or even necessary in view of the costs involved.

4. The principle to be used for allocating costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid distortions in international trade and investment is the so-called "Polluter-Pays Principle". This principle means that the polluter should bear the expenses of carrying out the above-mentioned measures decided by public authorities to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would create significant distortions in international trade and investment.

5. This Principle should be an objective of Member countries; however, there may be exceptions or special arrangements, particularly for the transitional periods, provided that they do not lead to significant distortions in international trade and investment.

b) Environmental Standards

6. Differing national environmental policies, for example with regard to the tolerable amount of pollution and to quality and emission standards, are justified by a variety of factors including among other things different pollution assimilative capacities of the environment in its present state, different social objectives and priorities attached to environmental protection and different degrees of industrialisation and population density.

7. In view of this, a very high degree of harmonisation of environmental policies which would be otherwise desirable may be difficult to achieve in practice; however it is desirable to strive towards more

stringent standards in order to strengthen environmental protection, particularly in cases where less stringent standards would not be fully justified by the above-mentioned factors.

8. Where valid reasons for differences do not exist, Governments should seek harmonisation of environmental policies, for instance with respect to timing and the general scope of regulation for particular industries to avoid the unjustified disruption of international trade patterns and of the international allocation of resources which may arise from diversity of national environmental standards.

9. Measures taken to protect the environment should be framed as far as possible in such a manner as to avoid the creation of non-tariff barriers to trade.

10. Where products are traded internationally and where there could be significant obstacles to trade, Governments should seek common standards for polluting products and agree on the timing and general scope of regulations for particular products.

National Treatment and Non-Discrimination

11. In conformity with the provisions of the GATT, measures taken within an environmental policy, regarding polluting products, should be applied in accordance with the principle of national treatment (i.e. identical treatment for imported products and similar domestic pro-ducts) and with the principle of non-discrimination (identical treatment for imported products regardless of their national origin).

Procedures of Control

12. It is highly desirable to define in common, as rapidly as possible, procedures for checking conformity to product standards established for the purpose of environmental control. Procedures for checking conformity to standards should be mutually agreed so as to be applied by an exporting country to the satisfaction of the importing country.

Compensating Import Levies and Export Rebates

13. In accordance with the provisions of the GATT, differences in environmental policies should not lead to the introduction of compensating import levies or export rebates, or measures having an equivalent effect, designed to offset the consequences of these differences on prices. Effective implementation of the guiding principles set forth herewith will make it unnecessary and undesirable to resort to such measures.

B. CONSULTATIONS

14. Consultations on the above mentioned principles should be pursued. In connection with the application of these guiding principles, a specific mechanism of consultation and/or notification or some other appropriate form of action should be determined as soon as possible taking into account the work done by other international organisations.

In adopting this Recommendation, the Council NOTED the interpretation given by the French Delegate to paragraph 12 of the Annex.

Recommendation of the Council on the Implementation of the Polluter-Pays Principle

14 November 1974 - C(74)223.

THE COUNCIL,

Having regard to Article 5 b) of the Convention on the Organisation for Economic Co-operation and Development of 14th December 1960;

Having regard to the provisions of the General Agreement on Tariffs and Trade;

Having regard to the Recommendation of the Council of 26th May 1972 on Guiding Principles concerning International Economic Aspects of Environmental Policies [C(72)128];

Having regard to the Note by the Environment Committee on Implementation of the Polluter-Pays Principle [ENV(73)32(Final)];

Having regard to the possibility, approved by the Council, of holding informal consultations on the Guiding Principles within the OECD [Cf. C/M(74)16(Final), Item 157];

On the proposal of the Environment Committee;

I. REAFFIRMS that:

1. The Polluter-Pays Principle constitutes for Member countries a fundamental principle for allocating costs of pollution prevention and control measures introduced by the public authorities in Member countries.

2. The Polluter-Pays Principle, as defined by the Guiding Principles concerning International Economic Aspects of Environmental Policies [C(72)128], which take account of particular problems possibly arising for developing countries, means that the polluter should bear the expenses of carrying out the measures, as specified in the previous paragraph, to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption.

3. Uniform application of this principle, through the adoption of a common basis for Member countries' environmental policies, would encourage the rational use and the better allocation of scarce environmental resources and prevent the appearance of distortions in international trade and investment.

II. NOTES that:

1. There is a close relationship between a country's environmental policy and its overall socio-economic policy;

2. In exceptional circumstances, such as the rapid implementation of a compelling and especially stringent pollution control regime, socio-economic problems may develop of such significance as to justify consideration of the granting of governmental assistance, if the environmental policy objectives of a Member country are to be realised within a prescribed and specific time;

3. Aid given for the purpose of stimulating experimentation with new pollution-control technologies and development of new pollution-abatement equipment is not necessarily incompatible with the Polluter-Pays Principle;

4. Where measures taken to promote a country's specific socio-economic objectives, such as the reduction of serious inter-regional imbalances, would have the incidental effect of constituting aid for pollution-control purposes, the granting of such aid would not be inconsistent with the Polluter-Pays Principle.

III. RECOMMENDS that:

1. Member countries continue to collaborate and work closely together in striving for uniform observance of the Polluter-Pays Principle, and therefore that as a general rule they should not assist the polluters in bearing the costs of pollution control whether by means of subsidies, tax advantages or other measures;

2. The granting of any such assistance for pollution control be strictly limited, and in particular comply with every one of the following conditions:

a) it should be selective and restricted to those parts of the economy, such as industries areas or plants, where severe difficulties would otherwise occur;

b) it should be limited to well-defined transitional periods, laid down in advance and adapted to the specific socio-economic problems associated with the implementation of a country's environmental programme;

c) it should not create significant distortions in international trade and investment;

3. If a Member country, in cases of exceptional difficulty, gives assistance to new plants, the conditions be even stricter than those applicable to existing plants and that criteria on which to base this differentiation be developed;

4. In accordance with appropriate procedures to be worked out, all systems to provide assistance be notified to Member countries through the OECD Secretariat. Wherever praticable these notifications would occur prior to implementation of such systems;

5. Regardless of whether notification has taken place, consultations, as mentioned in the Guiding Principles [C(72)128] on the implementation of such systems, will take place at the request of any Member State.

IV. INVITES the Environment Committee to report to the Council on action taken pursuant to this Recommendation.

Recommendation of the Council Concerning the Application of the Polluter-Pays Principle to Accidental Pollution

7 July 1989 - C(89)88/Final

THE COUNCIL,

Having regard to Article 5 b) of the Convention on the Organisation for Economic Co-operation and Development of 14th December 1960;

Having regard to the Recommendation of the Council of 26th May 1972 on Guiding Principles Concerning International Economic Aspects of Environmental Policies [C(72)128];

Having regard to the Recommendation of the Council of 14th November 1974 on the Implementation of the Polluter-Pays Principle [C(74)223];

Having regard to the Recommendation of the Council of 28th April 1981 on Certain Financial Aspects of Action by Public Authorities to Prevent and Control Oil Spills [C(81)32(Final)];

Having regard to the Concluding Statement of the OECD Conference on Accidents Involving Hazardous Substances held in Paris on 9th and 10th February 1988 [C(88)83];

Considering that this Conference concluded that "operators of hazardous installations have the full responsibility for the safe operation of their installations and for taking all appropriate measures to prevent accidents" and that "operators of hazardous installations should take all reasonable measures... to take emergency actions in case of an accident"

Considering that such responsibility has repercussions on the allocation of the cost of reasonable measures aimed at preventing accidents in hazardous installations and limiting their consequences and that the Conference concluded that "the Polluter-Pays Principle should be applied, as far as possible, in connection with accidents involving hazardous substances"

Considering that public authorities are often required to take expensive action in case of accidental pollution from hazardous installations and may find it necessary to undertake costly accident preparedness measures in relation to certain hazardous installations;

Considering that closer harmonisation of laws and regulations relating to the allocation of the cost of measures to prevent and control accidental pollution is likely to reduce distortions in international trade and investment;

On the proposal of the Environment Committee;

I. RECOMMENDS that, in applying the Polluter-Pays Principle in connection with accidents involving hazardous substances, Member countries take into account the "Guiding Principles Relating to Accidental Pollution" set out in the Appendix which is an integral part of this Recommendation.

II. INSTRUCTS the Environment Committee to review the actions taken by Member countries pursuant to this Recommendation and to report to the Council within three years of the adoption of this Recommendation.

Appendix: Guiding Principles Relating to Accidental Pollution

Scope and Definition

1. The Guiding Principles described below concern some aspects of the application of the Polluter-Pays Principle to hazardous installations.

2. For the purposes of this Recommendation:

- "Hazardous installations" means those fixed installations which are defined under applicable law as being capable of giving rise to hazards sufficient to warrant the taking of precautions off-site, excluding nuclear or military installations and hazardous waste repositories (1);

- "Accidental pollution" means substantial pollution off-site resulting from an accident in a hazardous installation;

- "Operator of a hazardous installation" means the legal or natural person who under applicable law is in charge of the installation and is responsible for its proper operation (2).

The Polluter-Pays Principle

3. According to the Recommendation of the Council of 26th May 1972, on the Guiding Principles Concerning International Economic Aspects of Environmental Policies [C(72)128] the "Principle to be used for allocating the costs of pollution prevention and control is the so called Polluter-Pays Principle ". The implementation of this principle will "encourage rational use of scarce environmental resources". According to the Recommendation of the Council of 14th November 1974 on the Implementation of the Polluter-Pays Principle [C(74)223] "the Polluter-Pays Principle... means that the polluter should bear the expenses of carrying out the pollution prevention and control measures introduced by public authorities in Member countries, to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption". In the same Recommendation the Council recommended that, "as a general rule, Member countries should not assist the polluters in bearing the costs of pollution control whether by means of subsidies, tax advantages or other measures".

Application of the Polluter-Pays Principle

4. In matters of accidental pollution risks, the Polluter-Pays Principle implies that the operator of a hazardous installation should bear the cost of reasonable measures to prevent and control accidental pollution from that installation which are introduced by public authorities in Member countries in conformity with domestic law prior to the occurrence of an accident in order to protect human health or the environment.

5. Domestic law which provides that the cost of reasonable measures to control accidental pollution after an accident should be collected as expeditiously as possible from the legal or natural person who is at the origin of the accident, is consistent with the Polluter-Pays Principle.

6. In most instances and notwithstanding issues concerning the origin of the accident, the cost of such reasonable measures taken by the authorities is initially borne by the operator for administrative convenience or for other reasons(3). When a third party is liable for the accident, that party reimburses to the operator the cost of reasonable measures to control accidental pollution taken after an accident.

7. If the accidental pollution is caused solely by an event for which the operator clearly cannot be considered liable under national law, such as a serious natural disaster that the operator cannot reasonably have foreseen, it is consistent with the Polluter-Pays Principle that public authorities do not charge the cost of control measures to the operator.

8. Measures to prevent and control accidental pollution are those taken to prevent accidents in specific installations and to limit their consequences for human health or the environment. They can include, in particular, measures aimed at improving the safety of hazardous installations and accident preparedness, developing emergency plans, acting promptly following an accident in order to protect human health and the environment, carrying out clean-up operations and minimizing without undue delay the ecological effects of accidental pollution. They do not include humanitarian measures or other measures which are strictly in the nature of public services and which cannot be reimbursed to the public authorities under applicable law, nor measures to compensate victims for the economic consequences of an accident.

9. Public authorities of Member countries that "have responsibilities in the implementation of policies for prevention of, and response to, accidents involving hazardous substances" (4), may take specific measures to prevent accidents occurring at hazardous installations and to control accidental pollution. Although the cost entailed is as a general rule met by the general budget, public authorities may, with a view to achieving a more economically efficient resource allocation, introduce specific fees or taxes payable by certain installations on account of their hazardous nature (e.g., licensing fees), the proceeds of which are to be allocated to accidental pollution prevention and control.

10. One specific application of the Polluter-Pays Principle consists in adjusting these fees or taxes, in conformity with domestic law, to cover more fully the cost of certain exceptional measures to prevent and control accidental pollution in specific hazardous installations which are taken by public authorities to protect human health and the environment (e.g., special licensing procedures, execution of detailed inspections, drawing up of installation-specific emergency plans or building up special means of response for the public authorities to be used in connection with a hazardous installation), provided such measures are reasonable and directly connected with accident prevention or with the control of accidental pollution released by the hazardous installation. Lack of laws or regulations on relevant fees or taxes should not, however, prevent public authorities from meeting their responsibilities in connection with accidents involving hazardous substances.

11. A further specific application of the Polluter-Pays Principle consists in charging, in conformity with domestic law, the cost of reasonable pollution control measures decided by the authorities following an accident to the operator of the hazardous installation from which pollution is released. Such measures taken without undue delay by the operator or, in case of need, by the authorities would aim at promptly avoiding the spreading of environmental damage and would concern limiting the release of hazardous substances (e.g., by ceasing emissions at the plant, by erecting floating barriers on a river), the pollution as such (e.g., by cleaning or decontamination), or its ecological effects (e.g., by rehabilitating the polluted environment).

12. The extent to which prevention and control measures can be considered reasonable will depend on the circumstances under which they are implemented, the nature and extent of the measures, the threats and hazards existing when the decision is taken, the laws and regulations in force, and the interests which

must be protected. Prior consultation between operators and public authorities should contribute to the choice of measures which are reasonable, economically efficient, and provide adequate protection of human health and the environment.

13. The pooling among operators of certain financial risks connected with accidents, for instance by means of insurance or within a special compensation or pollution control fund, is consistent with the Polluter-Pays Principle.

Exceptions

14. Exceptions to the Polluter-Pays Principle could be made under special circumstances such as the need for the rapid implementation of stringent measures for accident prevention, provided this does not lead to significant distortions in international trade and investment. In particular, any aid to be granted to operators for prevention or control of accidental pollution should be limited and comply with the conditions set out previously (5). In the case of existing hazardous installations, compensatory payments or measures for changes in zoning decisions in the framework of the local land use plan might be envisaged with a view to facilitating the relocation of these installations so as to lessen the risks for the exposed population.

15. Likewise, exceptions to the above Guiding Principles could be made in the event of accidental pollution if strict and prompt implementation of the Polluter-Pays Principle would lead to severe socio-economic consequences.

16. The allocation to the person at the origin of the accident or the operator, as the case may be, of the cost of reasonable measures taken by public authorities to control accidental pollution does not affect the possibility under domestic law of requiring the same person to pay other costs connected with the public authorities' response to an accident (e.g., the supply of potable water) or with the occurrence of the accident. In addition, public authorities may, as appropriate, seek compensation from the party liable for the accident for costs incurred by them as a result of the accident when such costs have not yet been paid to the authorities.

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1. Hazardous installations covered by this Recommendation are as defined in the law applicable in the country of the installation (domestic law and in some instances, European Community law). Countries are not prevented from making provisions under their national laws to the effect that the Guiding Principles also apply to installations excluded under subparagraph 2 a) of this Appendix.
2. The concept of operator is defined in the law applicable in the country of the installation, in which attention may be given to criteria such as ownership of certain hazardous substances or possession of a license or permit.
3. In cases where a party other than the operator has, under the law applicable in the country of the installation, strict liability for an accident, the cost of reasonable control measures taken by the authorities would be charged to that party, not to the operator. Whenever national laws provide a regime of strict liability, this regime would be applied in respect of the reimbursement of costs of control measures taken after the accident.
4. Concluding Statement of the OECD Conference on Accidents Involving Hazardous Substances, C(88)83.
5. Recommendation of the Council of 14th November 1974 on the Implementation of the Polluter Pays Principle C(74)223.

References

Baumol, W. J. and Oates, W. E. (1990), The Theory of Environmental Policy , 2nd edition, Cambridge University Press, Cambridge, UK.

Charnovitz, S. (1994), Free Trade, Fair Trade, Green Trade: Defogging the Debate, Cornell International Law Journal, Vol. 27, 459.

Esty, D.C., (1994), Greening the GATT, Trade, Environment, and the Future, Institute for International Economics, Washington

Gerritse, R. (1990), Producer subsidies: issues and arguments, in Ronald Gerritse (ed.), Producer Subsidies, Pinter Publishers, London and New York.

Kim, H-J. (2000), Subsidy, Polluter Pays Principle and Financials Assistance among Countries; Jounral of World Trade 34(6).

London, C. (1994), Les aides financières en faveur de la protection de l'environnement, Bordeaux.

London, C. (1998), L'entreprise et l'intégration de l'environnement, Bordeaux.

Nash, J.R. (2000), Too much market? Conflict between Tradable Pollution Allowances and the Polluter Pays Principle , Harvard Law Review, vol 24.

O'Connor, M. (1997), The internalisation of environmental costs: implementing the Polluter-Pays Principle in the European Union, International Journal of Environment and Pollution.

OECD (1975), The Polluter-Pays Principle (out of print).

OECD (1992), The Polluter-Pays Principle. OECD Analyses and Recommendations". Available at www.oecd.org/env/docs/gd9281-fr.pdf (this report contains a compilation of OECD Studies and Recommendations up until 1992).

OECD (1993), Environmental Principles and Concepts.

OECD (1994), Agriculture and the OECD Polluter-Pays Principle.

OECD (1998), Open Markets Matter. The Benefits of Trade and Investment Liberalisation.

OECD (2001), Improving the Environmental Performance of Agriculture: Policy Options and Market Approaches.

OECD (2001), Sustainable Development. Critical issues.

OECD (2001), Environmental Strategy for the First Decade of the 21st Century.

Pearson, C.S. (1994), Testing the System: GATT + PPP = ?, Cornell International Law Journal.

Pearson, C.S. (1999), Les principes du pollueur-payeur, de prévention et de précaution, Brussels.

Richardeau, C. (2000), Les Aides à l'Environnement Pour Entreprendre, Grenoble.

Smets, H. (1993), Le principe pollueur-payeur, un principe économique érigé en principe de droit de l'environnement, RGDIP, No. 93/2.

Smets, H. (1994), The Polluter-Pays Principle in the Early 1990s in, The Environment after Rio: International Law and Economics", L. Campiglio, et al..

Smets, H. (1994), Les exceptions admises au principe pollueur-payeur, Droit et Pratique du Commerce International, Vol. 20, No. 2.

Smets, H. (1997), La Communauté européene et l'environnement, La Documentation française, Paris

Smets, H. (1997), Les subventions pour une meilleure protection de l'environnement, Env. Pol. Law, Vol. 27,

Smets, H. (1998), Examen critique du principe pollueur-payeur, in Les hommes et l'environnement, (Mélanges Kiss), Paris.

Stewardson R. (1994), The Case of Carbon Taxes, in OECD: Trade and Environment: Process and Production Methods , Paris.

Stevens, C. (1994), Interpreting the Polluter-Pays Principle in the Trade and Environment Context", Cornell International Law Journal, Vol. 27

Tobey, J.A. and Smets, H. (1996) The Polluter-Pays Principle in the Context of Agriculture and the Environment, The World Economy, 19, No. 1