Voluntary Approaches

ENVIRONMENTAL POLICY RESEARCH BRIEFS

Number 1

Overview

Three broad categories of environmental policy instrument have evolved over the past two decades:

regulatory instruments, whereby public authorities mandate the environmental performance to be achieved, or the technologies to be used, by firms;

economic instruments, whereby firms or consumers are given financial incentives to reduce environmental damage;

voluntary approaches, whereby firms make commitments to improve their environmental performance beyond what the law strictly demands.

These categories are not mutually exclusive, in that some policy instruments exhibit characteristics from more than one of the categories, but they provide a useful general classification.

The Research Network on Market-Based Instruments for Sustainable Development is a Concerted Action involving thirteen European research institutes funded by the European Commission's DGXII under its Environment and Climate RTD programme. The Network is largely concerned with economic instruments and voluntary approaches, which are here collectively referred to as 'market-based instruments'. This initial series of policy briefings reflects the results of six workshops organised by the Network on the following topics:

1. **Voluntary approaches**
2. Emissions trading
3. Non-market valuation
4. Green tax commissions
5. Institutional aspects of market-based instruments
6. Environmental policy and competitiveness
7. Environmental Implications of Market-based Policy Instruments

A further series of policy briefings on different topics will follow in 1998 reflecting the ongoing work of the Network.

This policy briefing is number one in the series, on voluntary approaches for the mprovement of environmental performance.

Summary

There are three main categories of voluntary approaches to the improvement of environmental performance: unilateral commitments made by polluters; environmental agreements formally negotiated between industry and public authorities; and voluntary schemes developed by public authorities such as environmental agencies. They share the characteristic that they are undertakings to improve the environment entered into voluntarily by business, outside the normal processes of law.

Voluntary approaches now have strong support in European environmental policy and have grown rapidly in number in recent years. This is partly due to the costs and difficulties involved in implementing other instruments of environmental policy and partly due to the attractions of voluntary approaches themselves.

Voluntary approaches are an example of the bargaining approach to policy making through which both society and firms can potentially become better off. Society can gain in terms of environmental improvement. Firms can gain enhanced reputation, improve the efficiency of their resource use, and avoid potentially more burdensome environmental legislation.

In order to generate these benefits for society and firms, voluntary approaches must be carefully designed to limit free-riding and strategic behaviour by firms and to generate public credibility and support. This requires that voluntary approaches are the result of a transparent process that involves independent parties in the validation of targets for environmental improvement, and that they include credible independent mechanisms for monitoring and enforcement, and provisions for sanctions in the event of non-compliance.

1. Definitions and Descriptions

Voluntary approaches are commitments from polluting firms or industrial sectors to improve their environmental performance. They can be placed in three main categories:

- Unilateral commitments made by polluters;
- Environmental agreements formally negotiated between industry and public authorities;
- Voluntary schemes developed by public authorities such as environmental agencies. (see Box 1)

Within each category it is possible, following a taxonomy suggested by Storey (1996), to distinguish four major types of voluntary approach or agreement (VA), in decreasing order of stringency:

- Target-based VAs, which set strict quantified targets for environmental performance;
- Performance-based VAs, in which targets are less strictly specified and may relate to operating standards as well as environmental outcomes;
- Co-operative R&D VAs, which concentrate on technological development;
- Monitoring and reporting VAs, which only commit firms to provide information about their environmental impacts.

The common element of voluntary approaches, as the name implies, is that a firm's decision to abate pollution is not required by law. As a consequence, in contrast to laws, voluntary approaches do not apply to all polluting firms. Firms for which the improvement of their environmental performance would entail more costs than benefits will generally not participate in voluntary agreements.

Box 1: Three Catagories of Voluntary Approaches **Source: Börkey & Glachant 1997**

Voluntary approaches cover a large variety of different arrangements. This is reflected by a rich terminology. Self-regulation, voluntary initiatives, voluntary codes, environmental charters, voluntary accords, voluntary agreements, co-regulation, covenants, negotiated environmental agreements, accords de branches, programmi cooperativi e volontari... are just a few of the names used to refer to voluntary approaches.

A key differentiation between voluntary approaches is whether the environmental commitments were set by industry, public authorities or both:

Unilateral commitments. These consist of environmental improvement programmes set up by firms themselves and communicated to their stakeholders (employees, shareholders, clients, etc.). The definition of the environmental targets, as well as of the provisions governing compliance, are determined by the committed firms. Nevertheless, firms may delegate monitoring and dispute resolution to a third party in order to strengthen the credibility and the environmental effectiveness of their commitments (Croci & Pesaro 1996). One example of such a self-regulatory arrangement is the Responsible Care initiative undertaken by the Canadian Chemical Producers' Association. Responsible Care was devised in response to a decline in public confidence in the chemical industry and to a threat of more stringent regulations. The programme contains principles and rules designed to improve a firm's performance in safety and environmental protection. Over seventy companies have agreed to it. Each participant must submit its plants to regular verification of compliance, which is carried out by an external committee composed of industry experts and community representatives. The results of this monitoring are made public.

Public voluntary schemes. Within this type of voluntary approach participating firms agree to standards (related to their performance, their technology or their management) which have been developed by public bodies such as environmental agencies. The scheme defines the conditions of individual membership, the provisions to be complied with by the firms, the monitoring criteria and the evaluation of the results. Economic benefits in the form of R&D subsidies, technical assistance, and reputation (for example by being permitted to use an environmental logo) can be provided by the public body. An example of such a non-mandatory regulation is the Eco-Management and Auditing Scheme (EMAS) implemented within the European Union since 1993. To register under EMAS a firm must establish a company environmental policy; conduct an environmental review of its sites; set and implement an environmental improvement programme and an environmental management system; and have its policy and sites reviewed, and its improvement programme and management system examined, to verify that they meet the requirements of EMAS. Registered firms are then able to use and display a statement of participation.

Negotiated agreements. These are contracts between the public (national, federal or regional) authorities and industry. They contain a target (i.e. a pollution abatement objective) and a time schedule to achieve it. The public authority commitment generally consists in undertaking not to introduce a new piece of legislation (e.g. a compulsory environmental standard or an environmental tax) unless the voluntary action fails to meet the agreement target. The contracts may be legally binding (as in The Netherlands) or not (as in Germany) depending on whether executive branches of government are empowered by national constitutions to sign such agreements with organised interests. Negotiated agreements are the key instrument of the National Environmental Policy Plan in The Netherlands wherein they are called covenants. Covenants related to the reduction of greenhouse gases emissions and other pollutants have been signed with more than fifty industry sectors including industries dominated by large companies such as oil and chemical industries but also sectors dominated by small and medium-sized enterprises such as textiles, leather, dairy, printing and packaging printers.

2. Background and Rationale

Policy context in Europe

The Fifth European Environmental Action Programme adopted in 1992 proposed a new approach to environmental policy. “This new approach implies, in particular, a reinforcement of the dialogue with industry and the encouragement, in appropriate circumstances, of voluntary agreements and other forms of self-regulation.” Four years later, the European Commission reiterated its commitment to voluntary approaches with the adoption of a Communication (COM 96/561) which sets a framework for the use and devising of environmental agreements with polluting industries. About 310 voluntary approaches (about twice the number of environmental charges) are currently inventoried in the European Union. In OECD countries, 350 voluntary approaches specifically related to CO_2 emissions reduction are presently in force (OECD 1997).

Among the reasons for the increasing use of voluntary approaches are the growing administrative costs of direct regulation and the increasing duration of the process of legislation, the difficulties in introducing environmental taxes and the strong support voluntary approaches get from industrial interest groups.

Theoretical context

That voluntary approaches might be efficient and recommendable instruments of environmental policy is rather counter-intuitive. They provide firms with discretionary power in target setting and/or in monitoring and compliance. Therefore they give room for strategic behaviour by industry. For instance, firms may set modest abatement objectives but publicise them as very ambitious targets, or they may self-report false improvements of their environmental performances to be in accordance with their publicly expressed commitments.

According to a well-established theoretical tradition in environmental economics, government intervention is required to remedy the harmful effects of pollution or other environmental damage, where these effects escape the price mechanism because they fall on parties outside the market transaction. Such harmful effects are called externalities. The traditional recommendation is that government action is required either through regulation or environmental taxation in order to ensure that the marginal cost of the environmental damage does not exceed the marginal social benefit provided by the activity that causes it.

The validity of this recommendation depends on government being both willing and able to act so as to increase social welfare in such a situation. However, there are a number of reasons why this outcome might not be achieved: the government may lack information on the abatement costs of polluting firms; its agents may pursue self-interested goals such as gaining bureaucratic power or votes, or may be captured by vested interests; its commitments related to its future actions may not be credible in the eyes of those who would be affected, and as a consequence polluters do not change their behaviour. In such cases, the relevant question is whether the costs associated with government failure are greater than any gains that its policy may achieve. In a nutshell, government intervention may make a bad situation worse.

Policy makers therefore have three broad options for action when faced with market failure: *laisser-faire*, i.e. no action; intervention using traditional policy instruments such as regulation or taxation; or intervention, so as to facilitate private transactions. In the last of these cases, when bargaining costs are high for those affected by environmental damage, perhaps because there are many people affected, government may also directly contract with polluters on the behalf of those who are polluted, in order to reduce these high bargaining costs. Each of these options entails specific costs: laisser-faire incurs the costs of the market failure; intervention entails administrative costs; bargaining entails the costs of negotiation and of agreeing a contract. In addition, both kinds of government intervention - regulation or bargaining - will entail costs of monitoring and enforcement, and may in any case be the result of sub-optimal policy where there has been government failure. These costs of running economic systems, known as transaction costs, depend on the circumstances in particular situations, such as the number of parties, their information, the irreversibility of investments, etc. They vary depending on places and times. As a result, there is no generally preferable policy solution to market failure. The choice between different available solutions (including laisser-faire if all other options entail more costs than benefits) has to be determined on a case by case basis. An example of a voluntary approach which established a precedent in transfrontier pollution law is the Rhine Contract (see Box 2).

Box 2: The Rhine Contract

The Rhine Contract, between the Municipality of Rotterdam and a number of polluters of the Rhine, including the German Association of Chemical Industries (VCI - representing 600 firms), Duisburger Kupferhütte, Berzelius, Deutsch Giessdraht, and Ara Pro Rheno, was entered into in order to achieve certain reductions in toxic emissions by 2010. The base line was established in 1985 by the Amsterdam-based International Centre of Water Studies, and agreed by industry. Co-operation was facilitated by the finding in 1988 by the Netherlands Supreme Court ('Hoge Raad') against the MDPA (French Potassium Mines), in a case taken by Dutch nursery firms, that MDPA's emissions of chloride to the Rhine in Alsace, France - which reached a peak of 22 million tonnes - were contributing to damaging salt water pollution in the Netherlands. After 14 years of litigation, the Dutch court made a judgement against MDPA, in spite of the fact that the French company had a valid licence to emit from the French authorities. This case established the principle that transfrontier polluters could be sued successfully across frontiers, notwithstanding their compliance with the law in their own jurisdiction. The contracts negotiated between Amsterdam and the parties are in many respects confidential. The essential characteristic is the waiver of claims by Rotterdam for damages if the contracts - aimed at an overall reduction of 70 to 90 per cent in toxic emissions - are fulfilled. The modes of dispute resolution in the contract vary. There are indications - based on periodic monitoring - that the objectives specified will be reached.

Insights from micro-economics

For a firm voluntarily to commit to additional abatement efforts, the costs of these efforts must be compensated by benefits. Pollution abatement may be costly for a firm, and a profit-maximising firm will not voluntarily incur expenditures on abatement if they are not counter-balanced with some expected gains. The gains may come from three sources:

- A better use of, and access to, inputs (energy and material savings; easier to recruit employees and to raise money on financial markets thanks to a greener reputation, etc);
- A sales increase because of consumers' willingness to pay more for greener products, which enables firms to increase their price (or at the same price consumers opt for greener products and therefore the greener firm is rewarded by an increase in market share);
- The avoided costs of a public regulation imposing a new standard or a new charge.

The sum of these gains sets the cap on the abatement efforts that may be expected from a firm's voluntary action.

If a company (or individual) can get the benefit of collective action, without incurring the costs, this is called "free-riding". In the absence of enforcement mechanisms, a firm will try to capture the benefits of making a voluntary commitment without bearing the corresponding abatement costs. The best outcome for a polluting firm is to convince everybody that it has abated pollution without actually incurring abatement costs. Such a strategic behaviour enables a firm to maximise its net gain of pollution 'abatement'. For instance, when the voluntary approach involves an industry association, it is to the benefit of each individual company not to implement the environmental programme - to 'free ride' as it is known - because, assuming the collective target is met, it would still benefit from the collective gain in reputation.

This suggests that, for voluntary approaches to result in substantive environmental outcomes, firms' opportunism will need to be limited. Some possible mechanisms are:

- Involvement of third parties in the process of setting environmental targets;
- A monitoring and reporting system guaranteed by an independent party;
- A credible mechanism of sanction for non-compliance;
- A system to limit free-riding in collective agreements.

Oversight can be provided by peers from other firms, green groups, consumers and citizens associations, and public authorities. It is noteworthy that the setting of these barriers to opportunism may be in the interest of industry itself: unfulfilled commitments may accrue more costs to industry in terms of loss of consumer reputation and of imposition of onerous regulations, than no commitments. Moreover, it is not in a firm's interest to enter a voluntary agreement that is not credible to public opinion and the public authorities, for it then runs the risk of incurring costs associated with the agreement without gaining any benefits.

3. Analysis

The performance of voluntary agreements can be analysed across several dimensions.

Environmental effectiveness

The environmental effectiveness of voluntary agreements depends on two factors: the environmental target or objective of the agreement, and whether or not it is met.

It is often argued that voluntary approaches only contain a pollution reduction programme which follows a natural trend, a business-as-usual pattern. When firms are close to their efficiency frontier, they already use efficiently their inputs and exploit extensively their market niches: their margin to profitably reduce their emissions is small. As discussed in the previous section, they have an incentive to do no more than the normal evolution of technology would enable them to do anyway, without extra expense, but to claim this business-as-usual reduction as the result of special environmental efforts. To ensure that the objectives set in voluntary approaches are better than business as usual, the target setting process has to be open and transparent. Consultation with, or contractual participation from, non-governmental representatives and government agencies are a key element in this regard. A regulatory threat or threat of liability (see Box 2) - is generally another necessary ingredient. Only a regulatory threat can make additional actions of pollution reduction beneficial for firms: in the column of gains the avoided costs of a regulation appear as a new 'benefit'. If the threat is credible there is no reason to think that the target would be significantly lower than the environmental objective that the regulation would have set. Conversely, of course, if the threat posed by government is not credible, there is no reason for firms to go beyond the actions which it would be profitable for them to undertake anyway.

Box 3: Business as Usual? The Case of the German CO_2 Agreements

As technology evolves and improves, it 'automatically' increases the efficiency with which natural resources are used, and therefore reduces the emissions per unit of resource used. As economies develop, and old technology is replaced by new, there is a corresponding improvement in environmental performance, which owes nothing to a firm's environmental policy *per se*; it is the automatic consequence of economic development. If the voluntary approach does not advance the target beyond what would have been achieved anyway by this means, then it cannot be said to be environmentally effective.

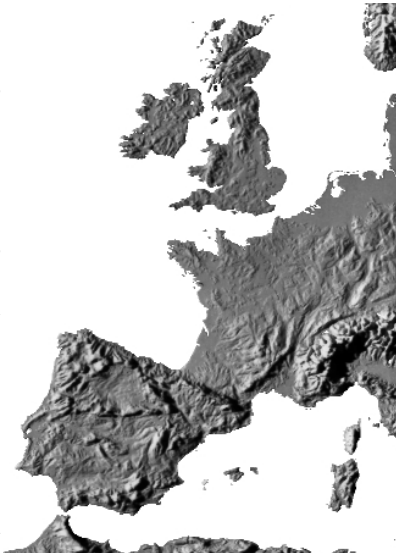
Because of market and technological uncertainties the business-as-usual scenario is difficult to predict. The assessment as to whether an environmental target is adequately ambitious raises controversial issues. An example is provided by the voluntary agreement of the Federal Association of German Industry (BDI). This involved the publication in March 1995 of a *Joint Declaration of the German Industry on Climate Protection* stating their objective to reduce their CO_2 emissions or their energy intensity (energy use per unit of output) 'by up to 20%' by 2005, with reference to 1987 as a base year. The base year was subsequently changed to 1990 and the target modified to 'by 20%'. This objective was agreed by more than 20 industrial and utility associations. In response the Federal Government undertook not to introduce further legislative measures with regard to climate protection.

Although the target seems ambitious, there are a number of reasons for thinking that it actually involves very little reduction above what would have happened anyway. 1990 was before the major restructuring of East German industry, largely as a result of which CO_2 emissions from the industries in the participating industrial associations had fallen by 26% by 1995. In other words, the total 'target' for these associations had been achieved at the time of the Declaration. For the energy supply associations 40-46% of their target had been achieved by 1995, meaning that for German industry as a whole the 2005 target was already 80% achieved when it was announced (Jochem & Eichhammer 1996).

In addition, from 1970 to 1993, energy efficiency in Germany increased at an annual rate of 1.8% whereas the declared objective by BDI corresponds to an annual rate of 1.2% for the period 1987-2005. Industry has argued that this gap does not mean the absence of extra efforts at energy conservation because marginal gains in energy efficiency are now more difficult to achieve, especially in the industries involved in the voluntary initiative. However, another forecasting study (Jochem & Eichhammer 1996) which carried out a detailed technological analysis at the branch level has shown that except for the tiles and glass industries the target is below what might be expected from business as usual. The study also reveals considerable difficulties with monitoring the achievement of the target because of overlaps between the industry associations involved and changes in the official production statistics.

A monitoring system supervised by an independent institution (Rheinisch-Wesfälisches für Wirtschaftsforschung) has now been established, but there continue to be suggestions that the base year should be changed again to be 1995, that the targets should be raised in order to take more account of likely technical progress and that the 'special efforts' of companies that are undertaken by companies purely as a result of the agreement should be more closely monitored.

Once a voluntary approach has been put into place, the initial pressures may dissipate and firms may have the opportunity not to comply with their commitments. To avoid this, the voluntary approach must address all aspects necessary to ensure compliance: clear objectives, unambiguous obligations, monitoring and reporting requirements, a mechanism for dispute resolution, and sanctions for non-compliance.



It is still too early to judge what proportion of the hundreds of voluntary approaches recently adopted in OECD countries will contribute significantly to a better environment. There are signs that voluntary approaches are becoming more tightly defined. While most agreements concluded do not include mechanisms for monitoring and sanctions for non-compliance, this is changing. For example, neither the Canadian Responsible Care programme nor the voluntary agreement of the German industry on climate protection initially included a monitoring system by an independent party, but they were amended and now they do so. Similarly, negotiated agreements with public authorities increasingly contain explicit systems of sanctions. However, comprehensive surveys and ex post assessments will be required in order to get a clear picture.

Cost effectiveness

With voluntary approaches the choice of the means of compliance is left to firms, which are most likely have information about, and have the incentive to implement the least-cost options. In this regard voluntary approaches are likely to lead to cost effectiveness, that is, the achievement of a given environmental improvement at least cost. On the other hand, when voluntary approaches involve industry associations, it is observed that the burden sharing of the environmental objective is more driven by equity considerations than individual costs. Firms are given equivalent targets rather than the reductions being allocated to firms with the lower abatement costs. In such cases voluntary approaches are less efficient than charges or tradable permits.

Stimulation of innovation

Experience seems to indicate that the voluntary approach will only stimulate innovation if its target is more ambitious than business as usual (Ashford 1996). There exists both empirical evidence (Aggeri & Hatchuel 1996) and theoretical arguments (Glachant 1996) that voluntary approaches which involve several firms enable individual companies to share information and experiments on abatement technologies and that such a collective learning process stimulates innovation and decreases its costs.

Viability and feasibility

The large number of voluntary approaches now extant is evidence that it is feasible to develop and implement these instruments. However, it is clear from experience that the design of an effective voluntary approach is far from simple and takes time. Some of the important considerations are discussed in the following section. The biggest political threat to voluntary approaches arises when they lack credibility in the eyes of public opinion and non-governmental organisations. Citizens and environmental groups may perceive that voluntary approaches are being used by firms as well as by government to avoid substantive environmental improvement. At a minimum, to prevent this voluntary approaches should be clearly distinguished from rhetoric by a number of distinctive attributes: a set of verifiable and clearly stated objectives, a monitoring system involving independent parties, and so on. However, even this may not be a sufficient condition for public credibility, if public confidence in industry is low because of bad experiences in the past.

Competition

The industrial co-operation which is fundamental to voluntary approaches raises fears that it will lessen competition within industry and perhaps introduce non-tariff barriers to trade. There is little evidence in this area and only a few claims have been submitted to antitrust authorities. The potential danger of industry collusion is greatest when the voluntary approach concerns a concentrated sector where a relatively small number of firms dominate the market; the potential danger with regard to barriers to trade within European Union would seem to be greatest when voluntary approaches are nationally devised and are championed by departments of industry. However, existing competition laws seem to contain sufficient provisions to cope with anti-competitive collusion and the trade barriers to which voluntary approaches may lead in the future. Furthermore, voluntary approaches may contribute to the equalisation of environmental performance across different countries. It is not possible for a national government to require a company in another country to meet its environmental standards, but a company can require its suppliers and units located elsewhere to meet the standards of its home country. Voluntary approaches can help create an environmental policy which is extraterritorial in effect.

Evidence shows that voluntary approaches are now encountered everywhere. They are flexible and various enough to adapt to different industrial contexts, environmental concerns, geographic jurisdictions, constitutional laws, and so forth. It seems that the following features may facilitate an extensive and effective use of voluntary approaches:

4. Policy conclusions and recommendations

- The jurisdiction in question has an administration in place which can interpret the terms of a voluntary approach such that participants and the citizen understand that the voluntary approach has standing and is not a trivialisation of environmental policy.

- Environmental interests are organised in non-profit organisations and political parties such that they can effectively fulfill a role of watchdog vis-à-vis both government and industry.

- Government and non-governmental organisations are sufficiently informed concerning the environmental performance and potential of individual firms and industry sectors to be able to distinguish between commitments which correspond to genuine abatement efforts and those which follow a business-as-usual pattern.

- Government has a number of tiers of organisation, with agencies close enough to industry to understand both the concerns and potential of business, but in turn under the control of an upper administrative branch to limit the collusion between agencies and industry interests.

As mentioned in the introduction of this paper, there are a number of categories of voluntary approaches and it would be unsound to identify universal principles for designing policy which uses them. However, Box 4 indicates the main issues which always need to be addressed when use of these approaches is being considered.

Box 4: Key Considerations for the Design of Policy Using Voluntary Approaches Source: Office of Consumers Affairs et al. 1997

- Before initiating or participating in a voluntary approach, all parties should thoroughly investigate the advantages and disadvantages of involvement.
- To prevent problems from arising later, as early as possible in the process of developing a voluntary approach, a clear statement should be articulated concerning the roles, rights and responsibilities of all parties.
- Before adopting targets, independent estimates of the business-as-usual trend - what the emission levels or other target variables are likely to be given natural technical progress within the considered industry - should be made to give a 'counterfactual', that is a likely outcome in the absence of a voluntary approach.
- Improvement targets over the counter-factual should be set in discussion with government and/or other interests. They should not only result from internal discussions within companies and industries.
- The targets should be transparent, and known to and understood by the key stakeholders involved.
- Obstacles to restrain free riding, and incentives to restrain it, should be implemented when voluntary approaches involve a collective of firms.
- A system involving concerned parties independent from industry should be established to monitor and verify progress towards and the achievement of targets. In addition, there should be a mechanism for imposing sanctions in the event of non-compliance.
- Successful voluntary approaches require patience and pragmatism. The ideals encountered in academic texts - rigorous terms, 100% buy-in, perfect monitoring and full compliance - will normally be unachievable in practice. Rather, an incremental process may be necessary, involving the use of transition periods, with commitments phased-in over time. Like any other environmental instrument, voluntary approaches are not a panacea.

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Further Information

For further information please contact CERNA. CERNA is leading an international research network on voluntary approaches. The network is aimed at discussing and disseminating empirical and analytical findings on these instruments. It will be organising several theoretical and applied seminars on voluntary approaches during the 1998-2001 period. The network is financed by the DG XII Programme on Climate and Environment.

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The European Union Research Network on Market-based Instruments for Sustainable Development.

The European Commission (Directorate XII), as part of its Environment and Climate RTD programme, "Human Dimensions of Environmental Change", provides financial support for a network of research institutes devoted to the study of the design and use of market-based instruments for sustainable development. A series of workshops have been held, where the latest research on particular market-based instrument or related theme has been presented and discussed by leading scholars and policy practitioners. One of the products of each workshop has been the synthesis of the findings into a research policy brief.

The network is co-ordinated by Frank J. Convery and managed by Sheenagh Rooney, Environmental Institute, University College, Dublin. Web Page address for further information: http://www.ucd.ie/~envinst/index.html.

Author and Editor

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