
ECONOMIC ASPECTS OF ENVIRONMENTAL COMPLIANCE ASSURANCE

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SUMMARY

Discussions about strengthening enforcement systems in the context of designing policies that stimulate economic growth have become a subject of particular interest in the national and international context. These discussions have shown the need to develop and promote a more systematic assessment of the incentive structures facing firms and the need to provide governments with approaches that can generate, and optimize the use of, public and private expenditure on compliance and its assurance. A Conference on Economic Aspects of Environmental Compliance Assurance, organized on 2-3 December 2004 in Paris within the framework of the Organisation for Economic Co-operation and Development (OECD) Global Forum on Sustainable Development, took these discussions further by facilitating a dialogue and exchange of experience and good practices between OECD countries and non-members from transition and developing economies. This paper presents the summary of the discussion held during the Conference.¹

1 INTRODUCTION

Environmental enforcement, or compliance assurance, programs involve a broad array of actions that governmental agencies, alone or in co-operation with other stakeholders to correct or halt behavior of the regulated community that fails to comply with environmental requirements. But even though these programs are comprehensive the compliance rates are still unsatisfactory as detecting and prosecuting non-compliance is complex, time and resource consuming.

Low compliance rates often stem from inadequate incentives provided by governmental regulations. On the other

hand, underlying theoretical assumption is also that perfect (i.e. 100 %) enforcement is not always efficient. The underlying reason for the flawed enforcement programs is often a lack of in-depth analysis of the entire spectrum of economic reasons that influences the decision of the firm to comply, or not, with environmental requirements. This includes, for example, the relations between levels of penalties and compliance monitoring activities (inspections), the selection of an appropriate penalty for non-compliance, the need for a differentiated approach depending on the type of the regulated community, relations between compliance rates and tax breaks and special financing, the size and structure of

firms, the structure and influences of its ownership, etc.

In the recent years there has been a rapid growth in theoretical discussions of the economic framework for environmental compliance and enforcement. However, in-depth analysis of government enforcement policies from the economic angle has been carried out mostly in the OECD countries. In transition and developing countries such analyses are sporadic or often non-existent. Very rarely government agencies consider the economic aspects of enforcement and non-compliance and inadequate attention is paid to answering the following fundamental questions:

- Why do firms comply (or not) with environmental laws?
- What are optimal enforcement strategies and tools that can maximize environmental benefits and minimize costs to the regulators and regulated community? and finally.
- What are the opportunities and limits in the choice, and calibration, of regulatory instruments to deter non-compliance, and the ways to supplement them with information-based and other instruments to induce compliance?

2 OECD GLOBAL FORUM ON SUSTAINABLE DEVELOPMENT: CONFERENCE ON ECONOMIC ASPECTS OF ENVIRONMENTAL COMPLIANCE ASSURANCE

On 2-3 December 2004 in Paris, OECD hosted an international conference to advance policy dialogue between senior government officials, researchers, non-governmental organizations and business people from OECD Member and non-member countries on economic aspects of environmental compliance assurance. The meeting convened around 100 enforcement practitioners, economists, lawyers, scientists and representatives of business and non-governmental community from 37 developed, developing and transition countries. The Conference was financially supported by the OECD, the World Bank, and

the government of Denmark. It was organized in cooperation with the INECE and its partners.

The Conference did not aim to address all the aspects of enforcement and compliance in a comprehensive way; rather the agenda has been structured around four main issues:

- Determining the factors that drive environmental performance and non-compliance behavior of firms vis-à-vis environmental regulation to identify key elements in the **incentive framework for firms to comply with regulations** (Session 1).
- Classifying **government approaches to ensuring environmental compliance** according to behavioral patterns of enforcers suggested by economic and political economy-based literature. The relevance of practice will be asserted in order to make suggestions with respect to types of regulations that induce compliance and can encourage innovation (Session 2).
- Assessing **empirical evidence on how inspectors allocate their limited enforcement budgets**. The aim is to make suggestions to optimize current instruments in compliance assurance programs, focusing primarily on compliance monitoring and enforcement (or non-compliance responses), and their impacts on administrative implementation and firms' compliance costs (Session 3).
- Identifying approaches susceptible of reducing the administrative costs of monitoring and enforcement with a view to **promoting innovative approaches which save administrative and compliance costs** (Session 4).

3 ENVIRONMENTAL COMPLIANCE ASSURANCE - THE "CINDERELLA" OF ENVIRONMENT POLICIES

Although the implementation of environmental policies has played an increasingly important role in many coun-

tries, the enforcement of these policies, and more specifically economic aspects of compliance assurance programs, has attracted less attention. Workshop participants consequently characterized enforcement as the “Cinderella” of the environment policies. Empirical findings reflecting this neglect include:

- i) inadequate consideration of enforcement problems in designing environmental policies;
- ii) lack of empirical analysis of, and hence limited knowledge about, actual compliance rates;
- iii) absence of consideration of economic impacts of enforcement programs by enforcers; and
- iv) lack of ex ante/ ex post cost-benefit analysis of compliance assurance policies and enforcement actions.

To address these problems and to pursue environmental improvements in an economically efficient way, the costs and benefits of compliance and enforcement need to be taken into account throughout the whole cycle of a policy design and implementation. During the concluding session, participants agree on:

- The need for designing policy mixes that are adapted to the specific context, combined with a greater use of economic instruments, when possible, to reduce the costs to the regulated community and also to approach the problems of small polluters. They stressed the need to consider enforcement in the design phase of a policy and hence to increase cooperation between enforcers and policy makers.
- The necessity of more empirical analysis on compliance rates, and especially benefits of compliance assurance, and with this also a need for enforcement and compliance indicators as well as more empirical analysis on types of enforcement policy approaches that lead to more transparency and better performance. The analyses of

funding and efficiency of inspectors work was also raised in this context.

- The importance of creating a proper environment for the involvement of the public (“whistle blowers” protection; transparency; freedom of information; “blame and shame” approaches using public disclosure of information and performance rating that is understandable to third parties; education).
- More dialogue between economists and practitioners as well as between practitioners of different areas (e.g. “brown” and “green” sectors) and countries to learn from experience while being careful in copying other countries’ approaches as the context is crucial for the effects obtained.

The implementation of these recommendations would help countries to obtain greater environmental effects at lower costs overall, to focus scarce resources where they are most needed and where they have the greatest effects, as well as to limit corruption.

The participants considered that the Global Forum on Sustainable Development conference was very timely as very few discussions between enforcement practitioners and economists at the national and international level have been carried out so far on designing enforceable policies. They called for continuation of this dialogue, for more empirical analysis and reviews of empirical evidence and assessments of their policy relevance as well as best practices that can serve as recommendations for countries. The OECD expressed its readiness to provide a platform for further dialogue and analysis, in the framework of OECD work on Eastern Europe, Caucasus and Central Asia and other regions and in co-operation with the INECE and its Partners.

4 FACTORS DRIVING COMPLIANCE WITH ENVIRONMENTAL REGULATIONS AS KEY ELEMENTS OF AN INCENTIVE FRAMEWORK FOR FIRMS

In considering factors that can drive or impede compliance a set of eleven factors was presented by the Dutch Inspectorate which relate to i) spontaneous compliance (knowledge of the regulation, cost-benefit ratio, degree of acceptance of the regulation, loyalty and obedience of the regulatee, informal monitoring); ii) monitoring aspects (informal reporting probability, monitoring probability, detection probability, selectivity of inspectors); or iii) aspects of sanctions (chance of sanctions, severity of sanctions). An ongoing OECD project on impacts of government environmental policies on firm's management revealed a number of factors that can influence compliance, including consideration of the stringency of regulations, place of environmental officers in firm's management hierarchy and the perception of penalties.

An intense discussion during Session I centered on the adequacy of the economist's basic enforcement model that describes firm behavior. Do firms weigh up compliance and non-compliance costs and choose the least cost alternative or do they rather have an intrinsic motivation or self-interest in compliance with environmental regulation? Testimonies from various participants suggest that large, multinational firms work towards high environmental performance standards independent of the location of their sites. Such firms seem to comply not only following the policy of the parent company but also to build their global reputation and image even in countries where environmental regulation is low or absent. Based on this, an OECD Business and Industry Advisory Committee representative suggested that regulators should apply different approaches towards firms aiming at achieving compliance, on the one hand, and towards companies which may be involved in "criminal" activities on the other.

Other participants stressed that the economist's compliance model is not in contradiction to sociological and political explanations of firm behavior (reputation, social norms, etc.). Rather, these explanations are considered as complementary as firms have multiple objectives and react to

multiple signs and incentives. Firms may well aim to improve their environmental behavior even without a punishment. Nevertheless, the model assumes that penalties need to be applied in some circumstance as even law-abiding firms that do not want to violate the law may be subject to random (management) errors that might lead to non-compliance. In that cases enforcement may increase the care they apply. Most participants agreed on this view and suggested that, next to penalties, the monitoring frequency – and non-predictability of inspections and the fact that firms know they are randomly inspected - is an important factor in inducing compliance.

A further discussion addressed the issue of workers' and labor/trade unions' influence on compliance. Can workers be expected to care for environmental needs and compliance, and to influence, or report on, the non-compliance behavior of their employer firms? And what is the role of trade/labor unions? Participants suggested that the influence of workers might depend on the existence of "whistle blowers" (individuals or groups prepared to alert the public and other stakeholders on non-compliance) as well as on the risks coming from the implications of such actions, e.g. a firm closing down owing to environmental problems they uncover. It was also suggested that workers might be less involved when unions are stronger but more involved when there are links between environmental and health effects. The latter aspect points to the usefulness of creating a link between health and safety and environmental inspections. Indeed, the US Environmental Protection Agency (US EPA) plans to share information between the two responsible agencies (US Occupational Safety and Health Administration and US EPA) in the future and to set up joint inspections.

5 CHARACTERISTICS OF ENVIRONMENTALLY EFFECTIVE AND ECONOMICALLY EFFICIENT REGULATION

The discussions in Session II

mainly focused on four broad issues:

- i) the enforceability of environmental policies,
- ii) types of policy instruments and enforcement approaches that encourage firms to comply,
- iii) frequently insufficient interagency cooperation and coordination, and iv) the role and impacts of local discretion of enforcers.

Several speakers stressed the importance focusing not only on the actual enforcement of policies but rather on considering the enforceability of policies. This issue points to a need to assess what part of non-compliance can be attributed to “bad policy” and what part to “bad implementation” and aims to avoid dealing with symptoms without knowing the causes. It is the reasoning, for example, behind the European Union’s “Better Regulation” initiative developed by the Environment Agency of England and Wales. The Agency identifies six principles which demand regulation to be:

- i) transparent (clearly communicated),
- ii) accountable,
- iii) consistent (within and between sectors and over time),
- v) proportionate (risk-based),
- v) targeted (outcome-focused), and
- vi) practicable (proper funding for enforcers and clearness to business about what they have to do).

Interaction between policy makers and enforcers is well developed in the Netherlands where the enforcement agency checks all policies with respect to their enforceability and seeks dialogue with the policy makers where problems are identified, informing them about both problematic and well-working regulatory aspects. Also the US EPA is reported to be usually involved when laws are written. All in all, early interaction between policy makers and enforcers is considered as necessary for enforcement issues to be taken into account when policies are designed

and for creating understandable and enforceable regulation.

With respect to regulatory approaches and policy instruments that further compliance and innovation, participants agreed on the need to apply a policy mix which is adapted to the specific context. In particular, economic instruments, when adequately designed, can reach environmental objectives at lower costs than “command-and-control” type regulation (and additionally drive technology development with which the firms can earn money). Nevertheless, workshop participants pointed at the possibility of “win-win” situations for firms developing environmental technologies also as a result of stringent regulations. While more empirical analysis is necessary with respect to the choice between applying “command-and-control” or economic instruments (such as trading schemes) and voluntary agreements, it was suggested that the involvement of third parties, for example of non-governmental organizations taking on a “watchdog” role, might improve their credible functioning.

As Small and Medium Size Enterprises (SMEs) can significantly impact the environmentⁱⁱ, the choice of adequate instruments for their regulation is important. Shareholder pressure is generally not an important factor for this firm group. Since SMEs have also limited knowledge on better management practices, information provision and compliance promotion is an important starting point and can be supported by translation of legislation into management procedures, advising on how to comply, and making clear what exactly is compliance. But also incentives for compliance should be provided, which can be captured in the formula “help and threaten”. Some participants suggested the application of a “gradual” approach, which starts by soft and voluntary instruments but eventually includes penalties (cf. the “Enforcement Instrument Pyramid” presented at the conference).

Next to the issue of “getting the regulation right”, effective and efficient policy making also requires that different actors coordinate their work. A lack of inter-

agency cooperation was not only reported with respect to policy makers and enforcers, but also between inspectors and prosecutors or the Ministry of Justice and the Ministry of the Environment. It is frequently because the agencies lack a comprehensive view of enforcement and their responsibilities.

The issue of discretion for local regulators was discussed at length with the following conclusions:

- Discretion increases a risk to local regulators as they need to prove that their actions are in line with the regulation. This implies, firstly, that inspectors tend to prefer “command-and-control” regulation and, more generally, that they frequently focus more on “activities” than on “outcomes,” while the opposite would be preferable from an economic point of view.
- On the other hand, enforcement agencies at the local level may have better knowledge of the local situation. Some advantages of local discretion exist as it allows enforcement effort to be better targeted and carried in a more efficient way. In practice, however, these agencies cannot be expected to perform cost-benefit analyses with respect to each action taken. This results in agencies to focus on ensuring that the costs of their operations are (re-)covered.
- On a more negative side, discretion may open the ways to corruption. It was argued that incentives must be set correctly to prevent corrupt behavior of inspectors. This should involve local enforcers to be properly paid and corruption cases punished (including imprisonment). But where a lack in capacity is at the origin of corruption training and capacity building (including negotiation and making settlements skills just as lawyers are trained for correctly setting up contracts) may be more important.

A related issue addresses a question of how to best finance enforce-

ment agencies. However, as state budgets face serious constraints enforcement agencies are frequently under-funded. To address this issue, agencies should work towards covering their costs where possible (although an ultimate goal is to receive adequate resources from the state budget) but not have their budget linked to income from enforcement actions (penalties). As a positive example, the UK Environment Agency partly recovers the cost of its Occupational Pensions Regulatory Authority scheme through permit charges which reflect the risk and therefore the regulatory effort involved.

6 THE OPTIMIZATION OF COMPLIANCE MONITORING AND ENFORCEMENT

The discussions during Session III showed that there remains a difference between the economist’s and the practitioner’s view with respect to the meaning of the “optimization” of enforcement activity. Whereas practitioners seem to favor a view according to which enforcement should focus on where the pollution problems are the biggest (i.e. highest non-compliance risk), economists would advocate to target problems to achieve the biggest return on resources invested (“the biggest bang for the buck”). As an example the Dutch Inspectorate’s compliance strategy was discussed which distinguishes two dimensions when determining priority tasks: the present state of risk and of non-compliance. From an economist’s point of view economic aspects (the environmental benefits attainable through compliance assurance compared to the costs necessary to reach compliance) should be included as a third dimension. And even though the marginal impact of a unit of enforcement resources spent is difficult to measure, enforcement agencies should reflect this issue and adjust their activity accordingly.

Most participants agreed, however, that in order to optimize enforcement the available resources need to be focused on situations that achieve considerable improvement. This also requires some level of local discretion. In this context, the

UK reported that enforcers tend to receive direct enforcement assignments from the Environmental Agency and therefore cannot use the resources with flexibility which can take account of their perception of priorities.

The participants stressed the need to recognize “decent” operators (firms that are willing but maybe unable to comply) and distinguish enforcement approaches from those which do not want to comply and can be characterized as “environmental criminals”. With this aim in mind, the UK Environment Agency is currently building the mindset of inspectors that they can also promote compliance and help firms to address their environmental problems, and to refocus enforcement and non-compliance response towards those who avoid compliance.

An important point highlighted with respect to limited enforcement resources is the asymmetry in information that can work in favor of the regulator. Using this information asymmetry, (partly by “bluffing” on the side of enforcement agency - “blitz and bluff”) deterrence can be created. Helpful in this respect may also be publishing information on enforcement and non-compliance measures taken.

Participants acknowledged a need for better data to assess whether/where enforcement results justify enforcement (cost-benefit analysis). Additionally, more empirical research is necessary on the impacts of different enforcement approaches. It was suggested that both extremes, an “aggressive” style and a “cooperative” approach, might be counterproductive. To the extent that this is true, there is a point for the earlier mentioned approach that works in a gradual way, starting with information provision and persuasion, but applying severe penalties where this is not sufficient (“compliance promotion/ non-compliance response pyramid”). This approach can also be compatible with the claim that the enforcement style should be aligned with the respective corporate attitudes.

7 INNOVATIVE APPROACHES THAT HELP SAVE ADMINISTRATIVE IMPLEMENTATION AND FIRMS’ COMPLIANCE COSTS

Session IV focused on empirical examples of information disclosure programs (“shame and blame” approach and subsequent community pressure) and their relative importance with respect to “classical” government-led enforcement taking account firms’ concern about their reputation and potential sanctions from consumers and clients.

Several participants reported positive experience from their countries. In the US, the ECHO (Enforcement Compliance History Online) Internet site, together with the “freedom of information act” and the possibility for citizens to sue companies after informing the US EPA has been effective in improving the enforcement system. In Japan citizens and the mass media have a “watchdog” role (demonstrations against polluting industries played an important role in the 1960s and 1970s). Also the European Union aims at a stronger involvement of non-governmental organizations and the general public, which is reflected in its engagement in the UN/ECE Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (the Århus Convention). By granting the public access to justice and thus promoting private litigation, the European Union aims at strengthening the role of national courts in enforcement.

Indonesia’s PROPER program,³ and similar approaches applied in India and China, is another well-known examples of effects of wide disclosure of information about the pollution, and enterprises environmental performance rating, to the public. Such approaches were by workshop participants as an easy to develop and powerful ways of co-operating with various stakeholders. The PROPER program, under which firms are rated based on compliance checks with the regulation, can be considered as a complement to the enforcement agencies’ work. Where

PROPER shows that no improvements take place, environmental inspectors check and eventually take enforcement actions. Participants also suggested that the involvement and use of multiple sources of information within the PROPER program might provide a way also of handling corruption.

Discussing the relative importance of traditional enforcement versus public pressure, participants warned that community pressure should not be seen by the government as a sign that they can do less. It was suggested that "green" consumers and public pressure can help but will never be sufficient to solve entirely existing environmental problem. Therefore, traditional enforcement and public pressure will need to be considered as complements. Furthermore, it was suggested that involving the public might be more difficult in some areas (where no-self interest exists) than in others. And finally, the role of non-governmental organizations was considered as particularly important in informing enforcement agencies about problems and possible solutions in the OECD countries. Therefore, this co-operation should

be pursued in developing countries where regulation and enforcement are less robust. Empowering non-governmental organizations and providing the public with information can be considered as crucial tasks.

8 REFERENCES

- ¹ A Background Paper on Economic Aspects of Environmental Compliance Assurance which provides an extensive analysis of the theories and practical examples of consideration of economic aspects of environmental compliance assurance is available on the OECD conference web site: <http://www.oecd.org/ccnm/sustdev>. In addition to the background paper all the presentations made at the conference and other background materials are available on the above-mentioned web site.
- ² For example, 20 million of SMEs account for 60% of pollution in the EU.
- ³ Program for Pollution Control Evaluation and Rating (PROPER)