

# **IFA Technical Conference**

The Hague, The Netherlands 6-8 October 1992

# EXISTING AND FORTHCOMING ENVIRONMENTAL

## REGULATIONS IN EUROPE

D. Heather, FMA, United Kingdom and F. Samec, Grande Paroisse, France

## **ABSTRACT**

Existing and forthcoming EEC regulations are analysed as to their impact on the European fertiliser industry. Special consideration is given to the fifth Community programme of policy and action in relation to the environment aimed at changing the present way-of-life by application of different instruments, mainly financial, to achieve an environmentally sustainable development. Specific regulations related to energy-CO<sub>2</sub> tax, waste, integrated pollution control, eco-audit and eco-labelling are dealt with.

#### **FOREWORD**

Even though the scope of this presentation has been limited to concentrate on fertiliser production rather than use, the task of trying to squeeze EC environmental regulations into a nutshell proved to be a daunting one. Especially since regulations currently in draft are subject to last minute amendments for the June Rio de Janeiro meeting, and thus must be considered with caution.

Existing regulations have been dealt with in a presentation given at the IFA meeting in Venice in 1990 so these will be mentioned only when necessary to show the starting point of future regulations. Thus the basic documents considered are the Council resolution for the fifth "Community programme of policy and action in relation to the environment and sustainable development", its companion paper; "Towards Sustainability" and several new or draft directives.

This is not the first time in official and public documents that the words, sustain, with all its associated words, environment and development, appear directly linked together. The declaration of Heads of State and Government of June 26 1990 calls for a further action programme for environment to be elaborated on the basis of the principles of sustainable development, preventive and precautionary action and shared responsibility. By the same token, the 1987 report "Our Common Future", drafted by the Bruntdland Commission links progress and environment through "sustainable development". Unfortunately the derived concept is not unambiguously defined.

With this in mind-and-with our experience of the implementation of earlier legislation we must identify future areas of concern. Before this however we must consider the legal basis of the environmental regulations now in force or in preparation.

#### LEGAL BASIS OF EC REGULATIONS

It is interesting to note that there is no reference to the environment in the 1958 Treaty of Rome. Thus, the first three programmes for the environment initiated by the Commission, have no real legal basis. This was changed in 1986 with the introduction, through the Single Act, of three new articles (130R, 130T, 130S) spelling out the basic principles of prevention, subsidiarity, and polluter pays. Amendments have been made through the "Treaty on European Union" (Maastricht) and will become effective if the Treaty is ratified by all the Member States.

Major changes are in the decision making process and international involvement. Decisions will require unanimity for not only fiscal aspects but also, among others, energy. However an "opt-out" clause has been introduced which may lead to decisions being taken by qualified majority vote. Decisions requiring qualified majority voting only can already be taken by the Council on pluriannual policies including priority objectives.

Added to the three basic principles mentioned above is a fourth which calls for involvement and cooperation of the Community in international environmental matters. It is stipulated also that environmental policies will be carried out and financed by Member States.

Thus it is clear that all decisions can be taken on the basis of article 130S which, for the moment, requires unanimity. When the Commission anticipate opposition to proposals it prefers to invoke article 100A concerning free trade and harmonisation measures. This allows a decision to be adopted by qualified majority.

#### 5TH ENVIRONMENTAL PROGRAMME

An EC Council resolution on a programme of policy and action in relation to the environment and sustainable development acknowledges that many current activities are not environmentally sustainable. It recognises that existing measures do not appear to be sufficient to meet the ever increasing pressures on the environment. The achievement of sustainable development will require significant changes from current patterns of development, consumption and behaviour. The resolution declares that such changes cannot be achieved without all levels of society sharing responsibility. To achieve this a new range of instruments to complement normative legislation including, inter alia, market based instruments (economic and fiscal) will be required. In short, the intention is to change the late twentieth century practices by manipulating financial instruments.

The resolution endorses the strategy of tackling key sectors with special attention to industry, energy, transport, agriculture and tourism. It finally approves the general approach and strategy of the programme "Towards Sustainability" and invites the Commission to forward proposals based on that programme.

#### "TOWARDS SUSTAINABILITY"

This document, after an executive summary of 8 pages, develops, in three parts and 16 chapters, the future framework of the Commission's activities.

Whereas in the Bruntdland report, sustainable development is defined as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs";-the new-document;-goes much further. While defining development as being "real" only if it improves the quality of life, it goes on to mention part of article 2 of the Treaty of European Union which refers to the promotion of "a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment".

The Commission then goes on to identify the characteristics of sustainable development which

- maintain the overall quality of life,
- maintain continuing access to natural resources, and
- avoid lasting environmental damage.

To accomplish this while addressing major environmental issues such as climate change, acidification, water pollution, soil degradation and erosion, waste management and so on, the strategy is to "create a new interplay between the main groups of ACTORS (government, enterprise and public) and the principal ECONOMIC SECTORS (industry energy, transport, agriculture, tourism) through the use of an extended and integrated range of INSTRUMENTS". Consideration is also given to the management of risk and accidents, the broadening of the range of instruments and last but not least, implementation and enforcement.

As actors, public authorities in particular would control industrial pollution through the responsible use of planning permissions, emission discharge and operating licences, clean technologies and waste management. This would be achieved by enforcing, in ranking order, prevention, re-use and recycling, combustion as fuel, disposal by incineration and finally landfill. The "enterprise", besides having certain of its sectors singled out for action, seems not to be given any specific role in the "interplay" other than having to comply. Its participation in Non Governmental Organisations (NGOs) seems to pass into oblivion whereas, the general public, also considered as polluters, will be given the opportunity to influence policies and decisions by their participation in NGOs.

Target sectors have already been mentioned. The most important to be considered by the fertiliser industry are manufacturing and energy. For manufacturing, a dual approach of high environmental standards combined with positive incentives will be applied from "cradle to grave" with special emphasis on research and production. This will be done through an integrated package of measures comprising in the main of improved production process control including a system of licensing (renewable operating licenses) coupled with integrated pollution prevention and control, environmental auditing, environment valuation and accounting, best available technology (BAT) and the introduction of a market-based pricing system. It is worth noting that the acronym for new technology used to be BATNEEC (best available technology not entailing excessive cost) - the NEEC has now disappeared from the text. The production control package will also include measures concerning quantities and type of waste, reclamation of waste products by original producers or importers and standards for landfill sites. The impact of products during their life cycle is to be minimised through ecological labelling and various forms of self-regulation. At the same time the involvement of social partners and the general public is to be stepped up by providing relevant information and access thereto. Small and medium enterprises would be paid special attention in order not to impede their creation or development.

As for energy, the challenge will be to ensure that economic growth, efficient and secure energy supplies and a clean environment, remain compatible objectives. Key elements of any strategy would be the improvement in energy efficiency, (as engineers know, there is a limit imposed by thermodynamics) and movement towards a less carbon intensive energy system which included renewable energy options. Among different measures envisaged is the introduction of economic instruments which would require that the total cost of energy is passed on to the user—as, for instance, a CO<sub>2</sub>/energy—tax—on-fessil-fuels. The whole scheme is summarized in figures 1, 2a, 2b and the table in the annex.

#### TOPICS AND TARGETS OF THE PROGRAMME

The following topics are of main interest to our industry; climate change, acidification and air quality, waste management and, last but not least, management of risk and accidents. Water quality has its importance also but, in our case, we must consider it from the point of view of waste. For each topic mentioned only the principal products concerned will be used to highlight special items of interest.

# Climate change

For us, the dominant feature will be the  $\mathrm{CO}_2$  problem with the related tax if this is adopted. The aim here is to stabilise emissions by the year 2000 at the 1990 level. To a lesser extent nitrogen oxides will also be involved. All previous models for the greenhouse effect were based on homogeneous reaction systems only, but some relatively recent findings indicate that the heterogeneous reactions taking place in the upper atmosphere seem to influence the course of actual events in a way not foreseen before. This whole issue seems now to be in a state of flux with scientists demanding more time in order to establish a better understanding of what is really going on. They wish also to study sulphur oxides and particulates in the context of addiffication and air quality.

#### Acidification

Deposition diagrams have been developed for S0x and N0x for the year 2010 with the introduction of the concept of a "Critical Load". This is defined as the quantitative estimate of an exposure to one or more pollutants below which, according to present knowledge, significant harmful effects on specified elements of the environment do not occur. Such ideas have to be watched very closely since this may be completely arbitrary. Ammonia and "heavy metals" also fall within the scope of these topics.

#### Air quality

Consideration will be given to amendments to existing legislation for SO<sub>2</sub> and NO<sub>2</sub> and values suggested as recommendations by WHO will become mandatory.

Carbon monoxide, sulphur and nitrogen compounds, cadmium and other "heavy metals" are to be scrutinised with a view to identifying existing and potential problems before 1997 or 1999.

# Waste management

This is considered to be the key task of the 90's. Particular attention will be given to the current upward trends in waste. This will be aimed at prevention, encouragement towards recycling and the development of an EC-wide infrastructure for safe disposal. Fiscal instruments (charges and levies) will be used to achieve these objectives, together with specific directives on packaging, incineration of industrial and toxic waste and, probably the most controversial, a directive on civil liability for environmental damage!

## Risk management

This is an ongoing issue since new entries are continuously added to the list of products subject to the "classification and labelling of dangerous substances" directive. New directives related to risks associated with noxious emissions to the air, discharges to water and management of toxic and dangerous wastes will be introduced. Of all the existing chemicals (dangerous or not), 2000 high production chemicals, including probably ammonia, sulphuric and nitric acids and some others used in fertiliser production will be chosen for data collection and preliminary assessment. 10% of these will be due for a detailed assessment while 50 chemicals will be subject to risk reduction programmes before the year 2000. As far as accidents are concerned, the need to improve emergency responses in the face of the growing risks arising from large industrial concentrations point to the importance of mutual assistance procedures, but as of yet no specific schedule has been set out.

#### RANGE OF INSTRUMENTS

The Commission feels that existing tools will not match the task. Therefore a broadening of legislative instruments is proposed. The limiting factor for economic and social developments is related to the environment's tolerance level. As yet this is not clearly defined and in order to formulate a suitable policy the environmental base line, indices and advanced monitoring systems need to be established through long term strategic and scientific research. In other words, we do not know enough to plan and regulate properly.

It is also stated that all environmental expenses and risks will have to be taken into account, le "getting the prices right". This should lead to the development of meaningful cost-benefit analysis and the redefinition of accounting concepts, rules, conventions and methodology. Economic and fiscal incentives will be aimed at internalizing all environmental costs incurred during the lifetime of a product. The main proposals are:

- fiscal "incentives" comparable to duties on motor fuels or the proposed carbon/energy tax will be used.
- state aids such as direct and indirect subvention systems or fiscal deductions for environmental expenditure.
- market based instruments such as the proposed environmental audit.
- an integrated Community approach to environmental liability. Such liability is considered to be the essential tool of last resort to punish those polluting the environment.

In theory, as with the  $\mathrm{CO}_2$ /energy tax, these tools should not add to the existing sum of all charges and thus should be neutral from the fiscal point of view. However, it is not clear as to whom the charges will be levied; is it the individual, the enterprise, the state or the Community? Also unanswered is the question of international competition and in particular the pricing of imports into the Community?

The above are not the only instruments considered. Others, like all the Community's structural funds, would fall into the "financial support mechanisms" category or the Community Financial Instrument for the Environment (LIFE). In the latter case the principle task will lie in defining and promoting models of production in line with sustainable development coupled with a practical demonstration of the technical viability and economic efficiency of any chosen model or action. A Cohesion Fund, aimed mainly at making financial contributions to projects in the fields of environment and transport in Greece, Ireland, Portugal and Spain will also be instituted. The European Investment Bank will be involved as well.

Part of the document outlining the environmental programme is devoted to the implementation and enforcement of measure adopted. The most important items to be considered are the proposal to establish a Consultative Forum for information exchange, an Environmental Policy Review Group, the development of an accessible and efficient facility designed to handle complaints at all levels from local to national and the implementation of the proposed directive on civil liability for damage to the environment caused by waste.

Part II of "Towards Sustainability" is devoted to the Community role in the international arena, the main objectives being involvement in the control of global warming (CO<sub>2</sub> and CH<sub>4</sub>), protection of the ozone layer and of forests (reforestation, maintenance of forests at the 1990 level at least) and the promotion of sustainable development.

Finally, Part III considers priorities, the cost of the programme and its' review. The following priority items are deemed important to the fertiliser industry:

- sustainable management of natural resources
- integrated pollution control
- prevention and management of waste
- reduction in consumption of non-renewable energy
- improvement of health and safety with special emphasis on industrial risk assessment and management.

Horizontal measures to change, as a matter of priority, patterns of consumption and behaviour, and designed to ensure the global coherence of future Community action are as follows:

- improvement of data basic information, trends, indicators,
- "getting the prices right" internalisation of external costs through valuation and costing mechanisms, cost/benefit analysis, economic/fiscal incentives, environmental auditing civil liability,
- information, education and training (of everybody),
- full integration of environment and other policies,
- strict implementation and enforcement

Everything so far may sound rather esoteric or philosophical so in order to see where we might be heading, here are some actual examples of what is already on the table or in the final draft stages.

# i) CO<sub>2</sub> tax

This item is, in fact, the only part of the iceberg above water. At the same time it is the most controversial part of the scheme to completely reorientate energy use in the EC. The whole concept is contained in a Communication from the Commission to the Council; entitled "A Community Strategy to limit Carbon Dioxide emissions and to improve energy efficiency". It fits into the fifth environmental Community programme.

Briefly, the Gommunication proposes that the EC part of the global ohallenge of the greenhouse effect be tackled by dealing with the related energy/ $CO_2$  problem by means of measures designed to stabilise  $CO_2$  emissions at the 1990 level and to push for a change in energy sources from non-renewable to others. The three proposed are as follows:

- specific measures including R & D programmes, sectorial measures, regulatory and voluntary measures
- fiscal measures
- complementary national programmes.

Existing R & D programmes (THERMIE, JOULE) will be enlarged and sectorial measures will fall under the SAVE programme for energy efficiency or the ALTENER programme for renewable energy. A directive is under consideration on "least cost planning" which will create incentives for energy utilities.

Industry, in order to make improvements in energy consumption, will be subject to energy audits and, for some energy intensive sectors, to voluntary agreements. It is stated that such measures will not be sufficient to reach the stabilisation target. Therefore fiscal measures are deemed necessary. These include the above-mentioned energy/carbon dioxide tax.

The proposal is to apply a tax to all energy consumed except renewable energy and that used as feedstock. 50% of the proposed tax would be directly related to the CO<sub>2</sub> content and 50% on the energy content. Thus nuclear energy would be taxe. It half of what would be its natural gas equivalent. The final tax proposed is 10 US\$/bares of crude oil in year 2000, to be introduced gradually starting with 3 US\$/barrel in 1993 and then 1 US\$/barrel/y. This is to be implemented at the Community level and is considered as the minimum. Member States will collect the tax and it is understood that they will be free to impose more stringent measures. On the other hand this tax should be fiscally neutral.

In order to maintain the competitiveness of European Industry, conditional exemptions or the reductions could be introduced if formal commitments are made towards energy reduction in energy-intensive industries. Fiscal incentives such as tax benefit write-off of energy saving investments can also be considered for each enterprise. Unfortunately no Member States' finance minister has made a commitment as to the tax relief or repeal he would offer in exchange for the proposed tax. This is probably due to the critical fact that the proposed directive has a built-in opt-out clause which means that it will come into force only if countries outside the EC agree to apply similar measures. Stately this means the United States and Japan, but China has also been asked to conformable it is one of the biggest coal consumers.

Even though the Commission has modified its original proposals it is no surprise that the concept of such a tax has caused considerable disquiet throughout the Chemical Industry. For example, CEFIC proposed the alternative of a voluntary undertaking of a 15% reduction of energy consumption in exchange for a tax repeal. However, whilst this might be acceptable to certain chemical sectors it is unlikely to be achievated by all. On this basis the sectors most penalised would, in fact, be those which currently have the best record.

The main concern for the fertiliser industry would be ammonia production. Given that part of the natural gas consumed is used as feedstock rather than energy, one might expect a tax exemption for that part. Unfortunately this gas is not used for its C content as in other chemical processes but solely for its hydrogen, thus leading to unabated CO<sub>2</sub> emission. The worst case scenario indicates an increase in price of about 35-40% over the past international price and more than 50%-over present-pricing. Most European ammonia units are of relatively modern design which, compared to the best and most efficient technology now available, do not offer a potential of energy saving which would match the CEFIC 15% reduction proposal. Whatever the case, revamping of existing plant is not the solution and rebuilding from scratch must be considered. No fertiliser company in the EC can financially handle such an undertaking so, if the tax goes through with some Non-EC ammonia producing countries not taking part in the global tax agreement, the only option left will be closure and the buying of ammonia in the open market. This would have no benefit whatsoever for the global greenhouse effect.

## ii) Waste

In 1989 the Commission elaborated a global Community policy on waste aimed at: prevention, recycling disposal, transport, and decontamination. There are at least five items to be considered under this general waste policy which are of direct interest to the fertiliser industry.

The main one is the initial waste directive 75/442 which has been fundamentally amended by directive 91/156. This must be implemented by Member States by 01.04.93. It is the general framework directive applicable to all waste excluding gaseous effluents and, where covered by other legislations, contaminated water effluents. The objective is to reduce waste production and enhance waste recycling.

The second is the hazardous waste directive 91/689, derived from 75/442, as modified, and which lays out the definition of haz-waste with different categories and how these should be disposed of. For instance an oxidiser such as ammonium nitrate, if contaminated or not deemed suitable for fertiliser use as such, can only be disposed of in a specific way. Gaseous effluent washing slurries containing fluorine compounds, with the exception of calcium fluoride, must receive special attention if not recycled in the process.

The draft directive for landfill disposal aims for the harmonisation of environmental and technical rules for landfill waste disposal in Member States. It aims to give high environmental protection by making landfilling a costly operation. Tough minimal requirements will be spelled out for all landfill waste storage categories together with site operating rules including post closure surveys. The scope would include haz-waste as well as any other which is lanfilled. Since waste categories have yet to be finally established phosphogypsum may be included.

Not to be forgotten, since most fertiliser delivered to farmers in the EC is bagged, is the draft directive on packaging and packaging waste. This sets a target of packaging waste per capita in ten years after entry into force that will not exceed 150kg/year. Furthermore it sets out targets for recovery of packaging waste, recycling, and final disposal which should not exceed 10% of packaging waste output at the end of the 10 year period. Sensibly enough, the definition of recoverable packaging allows for the use of any such waste as an energy source. This means that, provided the waste has a calorific value above a given minimum, it can be burned for energy recovery. Economic instruments will be used by Member States to attain defined targets and a provision is made for specific marking of packaging in order to facilitate waste management. Clearly, nobody yet has a clear picture of what will happen with packaging in the fertiliser sector since this will depend on rules set out by individual Member States. It is safe to say that it will cost money since the economic instruments will not be designed to be fiscally neutral. Who will have to pay is another, but very different, question.

Last, but not least, is the draft directive on-civil liability for damage-caused by waste. Still in the draft stage, this is as emotive as the CO<sub>2</sub> draft directive since it imposes liability on the waste producer regardless of whether or not the producer is in control of the waste. In fact, producer liability, the ill-defined concept of environment impairment and compensation thereof, compulsory insurance and responsibility for third-persons, and non-existence of ceilings of liability transform the "polluter pays" principle into "producer pays". Banks and insurance companies have some real questions to be answered regarding their involvement and share of responsibility in such a scheme. Thus it is clear that industry is not the only sector concerned.

Finally, nobody knows who will have to pay for a site abandoned today which will be shown to "impair" the environment a hundred years on.

# iii) Integrated Pollution Control

This is the logical continuation of the waste topic since this draft framework directive is aimed at preventing or minimising emissions arising from installations listed in an annex which singles out the fertiliser industry and basic mineral chemicals. Definitions in the draft are very broad since pollution is defined as the introduction of substances or energy to the environmental media of air, water or land which MAY contribute to or cause; hazards to human health, harm living resources, ecosystems or material property, or impair or interfere with the environment!

Best Available Technology Not Entailing Excessive Cost (BATNEEC) is definitely out since it is replaced by Best Available Technique (BAT!) The latter is defined as technology, design, construction maintenance, operation and decommissioning of an installation which must be industrially feasible from the technical and economic point of view. One of the main features of this draft is a five year operating permit, renewable provided updated BAT is systematically applied, delivered by the Competent Authority entitled to control all stages of the operation. For that control the operator must provide the competent authority representatives with the necessary assistance to enable them to carry out all their tasks.

Emission values are to be fixed by the EC Council based on BAT after Commission consultation with a Committee. Stricter measures may be imposed by the competent authorities of a Member State in certain cases. In short, thou shalt live with an ever-growing Sword of Damocles over your head - and pay for the sword!

#### iv) Eco-audit

This is, for the moment, only a draft proposal for a Council regulation. The objective is to promote improvement in the environmental performance of industrial activities by voluntary periodical evaluation of their performance and information to the public. This would be done through the establishment of a standardised environmental management system designed to provide environmental statements validated by accredited auditors. Compliance with the regulation will allow a registered company to use, in relation to audited activities, a special Eco-audit logo.

## v) Eco-label

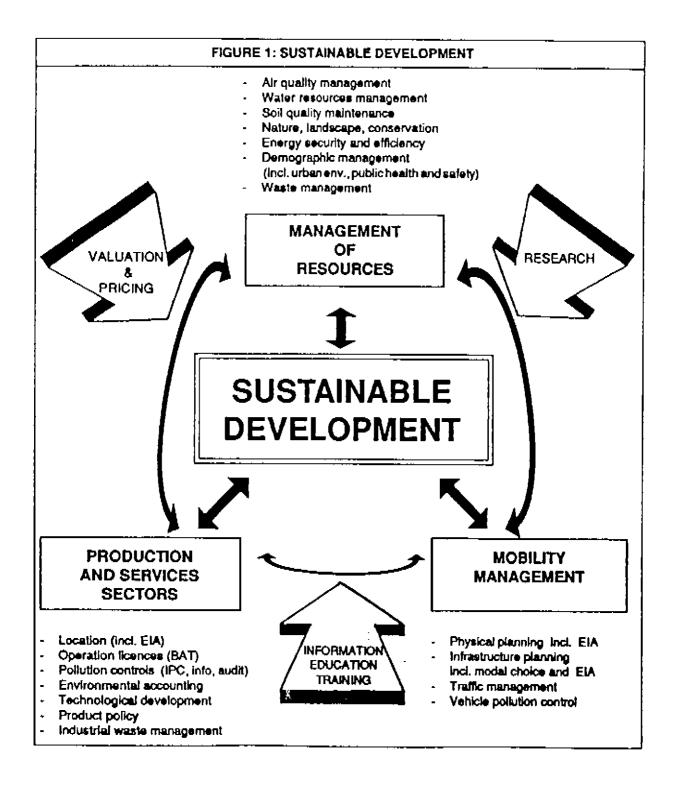
This is a Council regulation (880/92 of 23.03.1992) and is immediately applicable. Member States have six months to inform the Commission of measures taken to comply with the regulation. National competent bodies will be in charge of a green label award process subject to rules elaborated for groups of products under some form of Commission supervision. Labels and rules are not permanent but subject to periodical revision of the "cradle-to-grave" product group matrix. This is one of the market-oriented instruments proposed in the fifth environment plan, with the same aims as the Eco-audit logo.

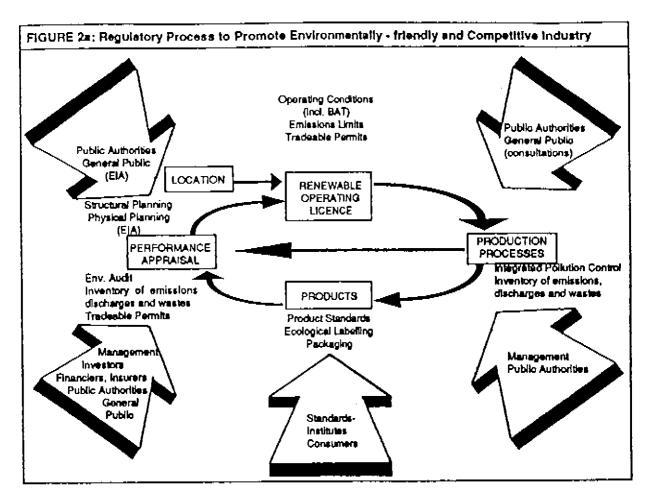
## CONCLUSION

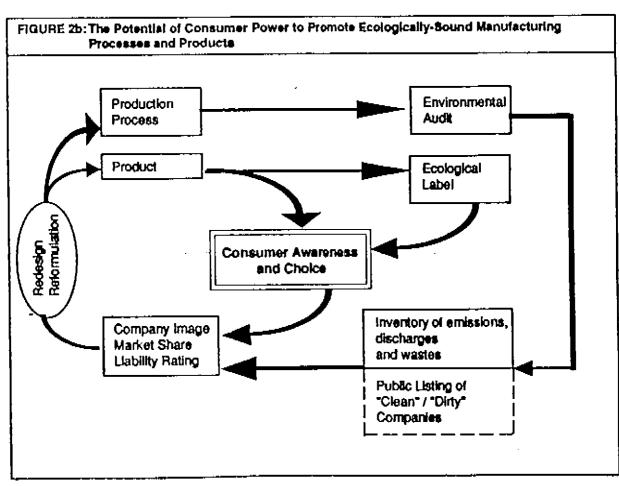
It is clear that the intent of the Commission is to change the present way of life inside the Community and even outside, mainly through the application of financial instruments, in order to maintain an elusive environmental status quo ante.

Equally clear is the fact that if all the proposed financial instruments are not absolutely neutral for every part of the industrial sector, EC industry will lose any competitive edge it may have today with regard to the rest of the world.

For the EC fertiliser industry this may simply prove to be the "coup de grace" after its protracted losing battle against heavy outside odds.







INDUSTRY	ENERGY	TRANSPORT	AGRICULTURE	TOURISM	
Integrated Pollution Control - operating licenses - emission inventory - env. audits - env. charges - Clean and low waste technology	Reduction in Polintion  - specific targets for CO <sub>p</sub> SO <sub>p</sub> NOx  - econ & fiscal incentives  - safe disposal of nuclear waste	Cleaner Cars & Fuels  - emission limit values  - economic & fiscal incentives  - vehicle testing  - reduction of evaporation	Ecologically sustainable farming - extensification - reduction of chemical inputs - organic farming - consumer information - econ & fiscal incentives	Sust. Tourism, Land-use, Infrastructure - drinking water - bathing water - waste management - sustainable mobility	SECTORAL
Reduced Waste/Better Waste Management  - inventory of wastes - econ & fiscal incentives - deposit/return system - high standards for disposal - civil liability	Development of Renewable Sources  R&D and promotion of: - biomass, wind, wave, solar, hydro, geothernal	Rationalization of Infrastructure  - network planning - inter-modal choice - bottlenecks - communications	Forest Development  - systematic planting  - fire protection  - sustainable harvesting	Protection of Coastal Zenes & Natural, Man- made or Built Amenities - descrification - cultural heritage - forest fires - nature trails	RESOURCES
Ecologically-friendly Products - eco-label - product standards - consumer information - tax differentials	Reduction in Energy Consumption - econ & fiscal incentives - cons. info & educ SAVE, THERMIE, JOULE - regulatory instruments - volunt, agreements	Improved Driver Behaviour - info & education - econ & fiscal incentives - choice of modes - traffic management	Rural Development - land management - control - rural tourism - inland fishing	Breader Consumer Choice - broader choice of options - better information - better seasonal spread of tourism	HAVIOUR

N.B.: The instruments indicated above are not exclusive to the sectors in which they appear; they have been inserted in the sectors in respect of which they have the most obvious potential.