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ЭКОНОМИЧЕСКИЕ АСПЕКТЫ ЭКОЛОГИЧЕСКОЙ ПОЛИТИКИ В РОССИИ

ИЗБРАННЫЕ МАТЕРИАЛЫ СЕМИНАРОВ

Tacis Project
"Harmonisation of Environmental Standards, Russia"

ECONOMIC ASPECTS OF ENVIRONMENTAL POLICY IN RUSSIA

SELECTED PAPERS OF SEMINARS

Под редакцией
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1. FOREWORD BY VLADIMIR GRATCHEV, CHAIRMAN OF THE ECOLOGICAL COMMITTEE OF THE STATE DUMA

With the economic development and growth now taking place in the Russian Federation, the timing seems right for taking Environmental protection and especially the Integrated Pollution Prevention Control as a case study in approximation. The EU funded Tacis project "Harmonisation of Environmental Standards, Russia" is conducted by a project team of international and Russian experts and will mostly focus on one sector, but try to look at it in depth and include all important enforcement issues. On the advice of the project partners and of the EC Delegation Moscow, industry was the sector selected.

The acquis concerning industry includes directives, which set standards for industry, with regulations on polluting emissions to air and water, on waste disposal, on urban waste water disposal, on risk management, and with the Integrated Pollution and Prevention and Control Directive (1996) which covers ambient monitoring, best available techniques, permitting and reporting on those industrial sectors listed in the Directive. Under the project, the team investigates the system of environmental permitting in Russia and formulates recommendations to harmonize it with the European system. The State Duma (Ecological Committee under chairmanship of Vladimir Gratchev) is the beneficiary of this project.

Specific objectives of the project are mentioned in the Terms of Reference and are for example:

- To analyse and compare EU and Russian environmental legislation in the industrial sector in order to determine the appropriate response to the EU legislation
- To develop a policy paper on options for convergence of legislation towards specific EU directives, including the priorities for transposition of environmental legislation, relevant institution building needs, enforcement requirements and **economic implications**
- To make recommendations on the development of legislation on a federal and regional level, concerning industrial pollution and permitting. Three suitable pilot regions (oblast) should be selected to run related pilot projects as far as possible
- Most project partners have only a general understanding of European environmental law and policies related to industry. It has been observed, however, that project partners are looking frequently for specialist advice on these matters. In response, the Project will provide ad-hoc advice on legislative and policy issues related to EU Harmonisation for Russian legislators, environment institutions and industry (a so-called 'stand-by facility').

In order to comply with these specific objectives (mentioned in "bold letters") as mentioned in the Terms of Reference of the project, it has been decided to organize in 2003 several seminars on topics concerning Environmental Protection. For these Seminars International and Russian speakers were invited to present their papers. At one of these seminars, during the Seminar on Economics of Integrated Prevention and Pollution Control on 14 March 2003, it was suggested by the beneficiary of the project to publish the papers on economics of environmental protection of that seminar. As also during other seminars excellent papers on economics have been published, we decided to include and select the best papers on economics of environmental protection presented during the 2003 seminars.

Vladimir Gratchev

2. WHAT IS TACIS? THE RESULTS OF A TACIS PROJECT BY ALFRED E. KELLERMANN, TEAM LEADER, "HARMONISATION OF ENVIRONMENTAL STANDARDS" PROJECT

Strengthening economic links between the EU and Russia: Increasing EU – Russia environmental cooperation will provide a benefit to the Russian Industry and Citizens

Improving the quality of environmental legislation is an important topic in the field of strengthening of economic links between the EU, the EU Member States and Russia. Through its support for this Tacis project, the EU is seeking to strengthen its overall political ties with Russia as well as with the NIS countries.

The Partnership and Cooperation Agreements (PCAs) are the instruments linking the EC and its Member States with most countries from the former Soviet Union, the so-called Newly Independent States (NIS)[1]. These agreements were signed and concluded between 1994 and 1998. The Preambles to the PCAs intentionally omit any reference to certain phrases that can be found in the Europe Agreements (EAs), such as the "process of European integration"[2]. The PCAs have as their objective only the development of close political relations, promotion of trade, investment and harmonious economic relations and support of a PCA country's efforts to complete its transition to a market economy. The support for this transition is given by Tacis (Technical Assistance for Common Wealth of Independent States), which is also supporting this publication on the initiative of the Tacis project Team.

The Tacis objectives are fairly clear. Restructuring of public administration, legal assistance, including approximation of legislation and in particular the strengthening of the civic society are among the indicative areas.

The Tacis Programme is a European Union initiative for the New Independent States and Mongolia, which fosters the development of harmonious and prosperous economic and political links between the European Union and these partner countries. Its aim is to support the partner countries' initiatives to develop societies based on political freedoms and economic prosperity.

Tacis does this by providing grant finance for know-how to support the process of transformation to market economies and democratic societies. In its first six years of operation, 1991 – 1996, Tacis has committed ECU 2,807 million to launch more than 2,500 projects. Tacis works closely with the partner countries to determine how the funds should be spent, thereby ensuring that the Tacis funding is relevant to each country's own reform policies and priorities.

As part of a broader international effort, Tacis also works closely with other donors and international organisations.

1 EU Enlargement The Constitutional Impact at EU and National Level, T.M.C. Asser Instituut, The Hague, Editors Alfred E. Kellermann et al. - Hillion p. 215 – 227 Christophe Hillion, T.M.C. Asser Press, 2001

2 Handbook on European Enlargement, T.M.C. Asser Instituut, Edited by Andrea Ott et al. - R.Petrov p. 175 – 197, T.M.C. Asser Press, 2002

Tacis provides know-how from a wide range of public and private organisations, which allows experience of market economies and democracies to be combined with local knowledge and skills. This know-how is delivered by providing policy advice, consultancy teams, studies and training, by developing and reforming legal and regulatory frameworks, institutions and organisations, and by setting up partnerships, networks, twinnings and pilot projects.

Tacis is also a catalyst, unlocking funds from major lenders by providing pre-investment and feasibility studies.

Tacis also promotes understanding and appreciation of democracy and a market-orientated social and economic system by cultivating links and lasting relationships between organisations in the partner countries and their counterparts in the European Union.

The main priorities for Tacis funding are public administration reform, restructuring of state enterprises and private sector development, transport and telecommunications infrastructures, energy, nuclear safety and environment, building an effective food production, processing and distribution system, developing social services and education. Each country then chooses the priority sectors depending on its needs.

Only nine of the eleven PCA agreements are in force, because the political situations in Belarus ad Turkmenistan prevent their PCAs, which were signed in 1998 from entering into force. The agreements concern in alphabethical order the following countries: Armenia; Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, the Russian Federation, Tadjikistan (not yet signed), Turkmenistan, Ukraine, Uzbekistan. These so-called EECCA countries (Eastern Europe, Caucasus and Central Asia) deserve special attention from the OECD in approximation of environmental legislation.
The common legal bases for their approximation of laws can be found in the respective articles (with nearly identical provisions!) from the PCAs, signed and concluded by the EU and its Member states. We organized a joint EU- OECD conference in April 2003 in Moscow, which was devoted to this subject.

Approximation of laws, by the PCA countries, of their existing and future legislation to the "acquis communautaire" is an important means of strengthening the economic links between EU and NIS countries and may be considered as a common and identical effort for all NIS countries. This joint conference might therefore stimulate an exchange of experiences between all participants with regard to the joint effort of harmonisation of environmental legislation.
However, like Russia, the PCA countries only "endeavour to ensure" such compatibility. They are encouraged to approximate their laws to those of the EC but have opted for a process of voluntary harmonisation. Since the Treaty of Amsterdam a new instrument of the Common Foreign and Security Policy (CFSP) has been adopted. This instrument is the so-called Common Strategy (CS) which is an important tool designed to deepen relations with the PCA countries. In 1999 Common Strategies (CSs) towards Russia and Ukraine were adopted. The EU Common Strategy on Russia approved by the European Council in June 1999, included environmental protection and the sustainable use of natural resources as common challenges, requiring common responses and solutions from both EU and Russian sides.

The Agreement with Russia is perhaps understandably the most extensive Partnership and Cooperation Agreement and it is this agreement, which will act as a model for all eleven PCAs and provide the basis of analysis and comment. The Partnership and Cooperation Agreement (PCA) between the Russian Federation and the EU and its Member States came into force in December 1997. The PCA established the legal and institutional framework for a partnership between the EU and Russia with the aim of strengthening political and economic links with trade; political dialogue; economic co-operation; justice / home affairs and institutions.

For our Tacis project "Harmonisation of environmental standards, Russia", the following PCA Articles are relevant:

Article 55 of the PCA (Legislative cooperation) states that "an important condition for strengthening the economic links between Russia and the Community is the approximation of legislation " and that "Russia should endeavour to ensure that its legislation will be gradually made compatible with that of the Community".

Article 69 of the PCA (Environment) "

1. Bearing in mind the European Energy Charter and the Declaration of the Lucerne Conference of 1993, the Parties shall develop and strengthen their cooperation on environment and human health
2. Cooperation shall take place particularly through improvement of laws towards Community standards"

The PCA may be considered as an alternative to the Europe Agreements, which are instruments preparing for accession to the EU. The institutional structure of the agreement resembles that of the association agreements. It further provides for consultations at the highest level between the President of the Council of the EU and the President of the Commission on one side and the President of the Russian Federation on the other. This "Summit" practice has also developed in relation to Ukraine, although not explicitly provided by the PCA.

At a lower level, the Cooperation Council is, in principle, in charge of monitoring the implementation of the Agreement. Once a year the Members of the Council of the EU and Members of the Commission on the one hand and Members of the Partner's Government on the other hand convene. The Cooperation Council can adopt recommendations on further developments and interpretation of the Agreement. A Cooperation Committee implements the Cooperation Council's recommendations. It consists of representatives of the Council and the Commission and the PCA government at senior servant level. Parliamentary Cooperation Committees provide dialogue between parliamentarians and consist of members of the European parliament and members of the PCA partner parliament. It may require information on the implementation of the PCA.

Project Recommendations

The Tacis project team "Harmonisation of Environmental Standards, Russia" has for more than one year investigated the Russian legal system and practice of environmental protection, organized conferences and meetings and tested the results of its findings with authorities and industry in the regions of Moscow, Archangelsk and Penza. The results of these investigations are laid down in the report "Improving Russia's environmental permitting regime for

industry. Recommendations on harmonisation of Russia's Environmental Law and Practice with that of the EU". This report and its recommendations have been presented to the Chairman of the State Duma Committee on Ecology of the Russian Federation, Dr Vladimir Gratchev. The Recommendations and other materials can be found on the project's website at the internet address http://www.envharmon.msmu.ru. At the end of this publication, the Summary of the Recommendations is printed as an Annex.

In short. The project Recommendations suggest to change the present system of environmental permitting in Russia towards harmonisation with the EC IPPC Directive. This implies providing for an integral permit and for permit conditions and emission limit values based on BAT and on pre-fixed emission limit values for specific substances. Such change necessarily will include a review of the system of environmental standards in Russia, as limitations of emissions form one of the major conditions of permits in Russia. The project results have been discussed at the final project conference held on Friday 21 November 2003 at the President Hotel in Moscow. The debates focused on the recommendations of the project team and on opportunities, possibilities, next steps and strategies to implement the Project recommendations at Federal and Regional level.

Russia is not obliged to implement these recommendations. These recommendations do not have the same legal effect as the Community Directives in the European Community, where the European Court of Justice can order the Member States to pay a penalty for not complying with or implementing environmental directives. The European Court of Justice for example ordered Spain on 25 November 2003 (Case C-278/01) to pay to the Commission a penalty payment of EUR 624 150 per year considering that the penalty payment must not be imposed on a daily basis but on an annual basis, following submission of the annual report relating to the implementation of the Directive by the Member State concerned and 1% of bathing areas in Spanish inshore waters which have been found not to conform to the limit values laid down under Directive 76/160. That amount of 624 150 per year must be multiplied with 20 (= EUR 12. 483 000 per year) to include all the areas where the bathing water did not comply with the EC Directive.

Although Russia is legally not obliged to implement the recommendations of the Tacis project team, and although there is no legal sanction nor penalty payment in order to guarantee that Russia will adopt these recommendations, there is an economic sanction for not implementing these recommendations!.

According to calculations and estimates made by economists of the Tacis project team adopting these recommendations by Russia will raise even more economic profits and benefits for Russia than the amount of the penalty payment to be paid by Spain in the above-mentioned case.
It is estimated that the implementation of the project recommendations to apply European environmental Standards as for example Integrated permitting, resource efficiency and simplification of procedures, will lead to many savings and will provide a benefit to Russian Industry and citizens by protecting Human Health and improving Environment in Russia.

Alfred E. Kellermann

3. PRESENTATIONS

3.1 THE IDEOLOGY, CONCEPT AND METHODOLOGICAL PRINCIPLES OF HARMONISING RUSSIA'S ENVIRONMENTAL LEGISLATION BY PROF. ALEXANDER ASTAKHOV

3.1.1 Introduction

The recommendations for harmonising Russia's environmental legislation with that of the EU are in line with the following basic requirements:

1. Environmental safety must be given top priority in the course of any industrial or other activities that adversely impact the environment.
2. Political and industrial decision-making processes at any management level and for all stages, from design and construction to operation, must comply with the requirements for environment protection
3. The type of production technology used in industrial activity may have an impact on the environment and therefore has to be regulated.
4. Ensuring environmentally safe activities, through the use of the following basic regulatory instruments: relevant laws; regulations; guidelines; compliance checking; and enforcement measures. These instruments have to be formulated and amended in coordination.
5. The process of natural resource use consists of two components, both equally important in terms of industrial impact on the environment:
    - On the one hand, exploitation and consumption of mineral, energy, land, water and biological resources for industrial activity could offset the natural balance, thereby leading to a general depletion of natural resources;
    - On the other hand, industrial activity produces and releases the resulting wastes into the environment, which leads to contamination of air, water and land.

Both these components are inseparable and therefore, the development and implementation of measures to minimise environmental pollution and methods for managing the use of natural resources must be considered together.

The principal underlying idea for the project can be expressed by the following base-line points:

- The objectives of reforming the existing legal base for environment protection have to be regarded as components of a wider system of a rational use of natural resources, and thus have to be addressed and resolved, specific to the context of such a system.
- The underlying reason for reshaping the legal requirements relating to industrial pollution is the principle of **a single system of the natural resource use,** which calls for an integrated approach to all of its components, based on the "inflict no harm" principle.
- The reshaping of environmental laws have to be aimed at a general **humanisation of the relationship** between man and its social and natural environment. In this context, priority should be given to the ethical component of such relationship.

3.1.2 GENERAL CONCEPT AND METHODOLOGICAL PRINCIPLES

3.1.2.1 Formulating the Issue.

The environment considerably influences the quality of human life and, in turn, is impacted by various human activities. Therefore it is in humanity's interest to minimise the adverse impact from its' activities. The principal objective of harmonising Russia's environmental legislation is to reduce environmental pollution down to the level of EU Member States.

3.1.2.2 The Concept's Underlying Postulates.

The following postulates are offered as the basis of reasoning for the proposed concept:

1. Changing the current environmental situation is one of the highest priorities for both today and in the long-term, an issue that has long outgrown national borders and acquired **a global character**.
2. The severity of the current environmental of problem may jeopardise the current and future well being of humans.
3. Conceptual principles for the scientific basis used for formulating current environmental policies **need to be completely revised** and **new methodological foundations and legal regulations** developed. Harmonising of Russia's environmental legislation has to proceed in parallel with the commitments made as per the provisions of the Kyoto protocol.
4. Reshaping of Russian industry related environmental legislation is a consequence of the unstable nature of the national economy resulting from a protracted **period of transition to a market economy.**
5. Summarising the above, it should be emphasised that harmonisation of Russian industry related legislation with its EU equivalent requires a **sufficiently large-scale approach** to goal setting. Otherwise, decisions made from a narrower perspective, could be adversely affected by the fact that the expected outputs are difficult to achieve.

3.1.2.3 Methodological Principles of the Proposed Concept

1. The underlying methodological statement relating to the issue of harmonisation of environmental legislation would be that "**the environment is of an unmatched importance to humanity as the source of necessary material and energy resources, as its natural habitat providing a certain level of life quality".**
2. Russian environmental legislation needs to be reshaped into an integrated system of laws built on a single ideology and common methodological principles. Aligning these laws and regulations with relevant EU legislation can be viewed as one of the most important issues in the overall restructuring of Russia's archaic environmental legislation, an issue that has to be addressed in conjunction with other related issues.
3. Russian legislation proclaims the right of both current and future human generations to the use of natural environment in its untarnished condition. In order to ensure that this right can be properly exercised, environmental legislation provides for a procedure whereby any violating operator is obliged to ensure the necessary measures aimed at rehabilitation of ren ewable natural resources.
4. The legislation has to orient the society's industrial activities to **a beneficial relationship with nature,** preventing all action that could harm the **natural equilibrium or** the sustaining capacity **of the environment**.

5. Special attention should be paid to ensure that legal provisions are in place for preventing activities from having a **long-term negative effect that gradually accumulates** until it develops into major environmental or public health problems.
6. Bearing in mind the high risk stemming from the lack of knowledge we have about the complex cause and effect environmental processes, caution should be exercised when building environmental legislation. This means that the use of the "inflict no harm" principle and a general orientation to legal options, could adapt to unforeseen changes in the environment easily.
7. Although, the transition to a market economy, reduces the **industry related regulatory action by the government** to a reasonable degree, it is not fully eliminated. This concerns the areas where business interests run contrary to those of society, for example, environmental protection. Regulatory functions by the government relating to environmental protection have to be based on the provisions of relevant legislation.
8. The programs for an environmentally safe industrial development should be based on a close inter-relationship between two underlying components – **ecology** and **economy**. Both are reflection of objective yet opposing interests of society and both have to be taken into consideration in the course of productive activity, reflecting the relative importance of environmental issues in recent years.
9. The system of a rational use of natural resources is based on two main management instruments – **legal regulations** and **economic incentives.** Although pursuing the same goal, that is efficient use of natural resources, both instruments differ in terms of their relative stringency. A law is based on an absolute prohibition of certain activities. Economic incentives do not contain an explicit prohibition but put the industrial installation into a situation where violating the ban becomes unprofitable. However, the available legal means have to **be flexible** enough to take into account the natural course of scientific and technological development. They have to provide opportunity for relatively prompt restructuring in case of breakthrough changes in production technology or other significant aspects of the environment. On the other hand, the legislation also has to ***be long-term*** and **stable**.
10. The limit values specified for releases of pollutants to air, water and soil have to rely upon an **integrated, multi-criteria approach**. Emission limit values should be set on the basis of a regulatory impact analysis taking into account the environmental, economic, social, managerial, international-operations and sanitary consequences that might arise from the norms proposed.
11. When justifying emission limit values and environment protection measures, **both direct and indirect costs, outputs and effects** should be taken into consideration.
12. The national environmental legislation should also take into account the basic provisions of the Russian Federation Concept of the national security.

3.1.3 BRIEF OVERVIEW OF THE CURRENT SITUATION AND GAPS IDENTIFIED

A review of the economic aspects of environmental legislation currently in force in Russia has demonstrated the following:

1. The existing system of environmental legislation relies on the reasoning that some sort of regulatory action from the government is necessary even in the period of Russia's transition to a market economy. Whilst this position may be objectively correct, it should also be based on **specific, clearly defined and, justified criteria for government action,** in case of a conflict between the goals of long-term development and the objectives of specific interest groups. A clearly defined justification of the scope of regulatory government action has yet to be seen both in the legislation and the existing practice of natural resource use.

2. The existing Russian legislation does not sufficiently addressissues that are important from an economic point of view. For example, **the economic aspects of efficient use of natural resources** have received little coverage in the existing legislation, whereas, industry specific norms for the use of natural resources have received relatively in-depth coverage Other areas that have received more coverage include: The limits specified for releases to air, water and, soil, based on the principle of maximum allowable emission values, similar to that adopted by EU legislation; Industry specific methods of calculating the maximum sustainable yield for raw materials, mineral and, land resources; and certain indirect industry specific consequences of industrial impact on the environment.

The resulting indicators for economic appraisal of natural resources are widely used in designing, planning and management practices for both existing and planned industrial installations. These indicators are supported by relevant guidelines and regulations.
A large part of these legislations need to be revised due to the transition of controlling functions from the government to private business.

The following are a few examples of the shortcomings of current legislations:

- Definition of the **distribution and interaction of management functions performed by selected participants** in the overall process of the natural resource use is needed. There are two kinds of instruments available – legal prohibitions and economic incentives. However, the scope of their rational use as defined in current legislations, lacks precision and detail.
- The system of the state and private environmental expertise is well developed. However, only new installation, restructuring and decommissioning projects are actually subject to the process of state environmental expertise. The **control of compliance and audit at existing industrial facilities** as yet remains fragmentary and underdeveloped.
- Privatisation of Russian industry resulted in a total destruction of the extensive Soviet-era **system for gathering statistical information.** As far as industry is concerned, this system is now virtually non-existent. This may affect attempts to make activities of private business more transparent to the public and the government bodies of control.

3. The shortcomings mentioned above originate from two reasons for the lack of efficiency in Russia's economy. The first reason is: **frequent and unpredictable changes in the management rules** as specified by the legislation. Quite often such changes are radical and ill prepared, resulting in volatile and high risk environments that scare away potential investors into Russian industry. The second reason is: the desire to place all operators, including minor installations, under the government's operational control. This may lead to destroying the idea of an **effective control** over strategically important installations and decisions.
4. The gaps to be eliminated in the process of harmonisation (see table 1), between **Russian industry related environmental legislation and its EU equivalent** are as follows:

?. Permitting procedure:

- The absence of rating techniques for selected legal provisions relating to their priority and feasibility from a point of view of harmonisation;
- There is no requirement for an integrated approach to the procedure, in other words, the issue of a single license for the use of all types of natural resources;
- The size and form of penalties imposed for non-compliance with environmental regulations are inadequate and have a low deterrent capacity.

b. Emission standards:

- The use of best available techniques (BAT) is not clearly prescribed;
- Environmental and hygiene standards for maximum allowable emissions and discharges need to be more clearly defined with regard to identifying particularly vulnerable industries and geographic areas, imposing special environmental regimes for the most hazardous polluting substances and circumstances.

c. Government and public control:

- The forms and procedures for statistical reporting by industrial installations do not conform to the requirements of the government environment protection policies;
- The current legal provisions for public participation in environment protection activities under specific circumstances of today's Russia are insufficient and lack precision.

Table 3.1 Gaps to be eliminated in the process of harmonisation

Current Status	Shortcomings
1. Regulatory action by the government	• Scope is not clearly defined for regulatory action by the government; • Frequent and unpredictable changes in the management rules; • Desire to directly control the activities of both major and minor industrial installations; • Absence of an integrated permitting procedure similar to that existing in the EU; and • No public participation in environmental decision-making by the authorities.
2. A wide use of economic indicators. The availability and use of specialized techniques and norms in design, planning and, management activities.	• Poor conformity of the existing regulations to the requirements of a market economy; and • Insufficient coverage of the distribution and interaction functions as parts of the management process carried out by selected participants
3. The use of a wide range of legal prohibitions and economic incentives	• Scope and boundaries for a rational use of prohibitions and incentives are not clearly defined; and • Low efficiency of the existing incentives.
4. A developed system of expertise	• Only new installation projects are covered, which leaves aside control and audit for already existing industrial installations; and • Rating techniques of environment protection indicators and measures (with regard to their relative importance) are poorly developed.

3.1.4 ECONOMIC ASPECTS OF HARMONISATION OF ENVIRONMENTAL LEGISLATION

3.1.4.1 LEGAL PROHIBITIONS AND ECONOMIC INCENTIVES:

1. The system of environmental management relies upon the combination of two possible methods – **legally specified prohibitions** and **economic incentives**. Whilst both pursue the same goal, they, achieve it in different ways. The methods also have their own scope of application that rarely overlaps, depending on the circumstances of the situation. Both the methods are widely used for environmental enforcement in Russia.
2. ***The method of legally*** **specified prohibitions** is founded on mandatory prescriptions that must be complied with and strict subordination to the relevant regulations

adhered to. Legal prohibition appears more reasonable than economic incentives in the following cases:

- When hazards resulting from environmental damage are of a scale, that applying financial penalties may not be enough to justify them;
- When the boundaries for what is and is not acceptable are not in dispute, and therefore can be determined by a precise calculation. Such situations could occur when there is a lack of precise information coupled with incomplete understanding of the complex mechanism of nature's cause and effect processes.

Legal restrictions can be regarded as an important instrument for government regulation of business activities. At present, the legal basis for the use of natural resources is incomplete and its modernization could be carried out along the following lines:

- The underlying principles and requirements for environment related activities, both for legal entities and individuals, should be incorporated in the Constitution of the Russian Federation;
- The norms of environmentally responsible behavior as specified by the legislation and relevant regulations, must be formulated in the form of absolute rules that rule out the possibility of their violation; and
- Controlling actual compliance with the above regulations is to be regarded as the most important goal of environmental monitoring at all levels and if needed, enforcement cases have to be taken care of by the public prosecution office and the court.

3. ***The method of economic drivers*** in Russia, relies upon a basic methodological reasoning that the value of natural resources can be expressed in money terms, making it possible to build a system based on a financially oriented approach. Ideally, a system like that should direct the activities of operators towards the most efficient use of valuable natural resources. The system incorporates both types of financial drivers – encouragement and punishment. Encouragement takes the form of financial incentives to achieve the desired results. As for punishment, it involves payments imposed for errors or activities causing damage to the environment. Both, incentives and penalties, do not prescribe to a categorical ban on unwanted activities, but make these activities unprofitable, for the employee and the employing company. This approach is more flexible than a direct ban and in many cases also more effective, since it is based on an independent choice of action rather than just complying with a law. More concisely, the role and interaction of legal and economic drivers is shown below:

The role and interaction of legal and economic drivers

	Legal Instruments:	**Economic drivers:**
Goal:	Prevent unwanted action and consequences	Promote convergence of the parties' interests and provide a general motivation for a common final output
Means of achieving the goal:	*Imposing taboos*	*Creating drivers*
Nature of impact:	**Rigid - «a stick»**	**Flexible - «a carrot»**

The possible scope of application

High chance of errors resulting in serious environmental consequences or major hazards	Low probability of errors, minor potential consequences
Sparse information and poor understanding of the environmental cause-and-effect mechanism, therefore high risk of major	Required information is readily accessible, situation scenario is well known, therefore low risk of major errors
Clearly-specified boundaries between the acceptable and the unacceptable	Same boundaries are eroded or specified symbolically
A potential hazard of destroying or damaging unique or endangered species or objects of the environment	No such hazard is likely

3.1.5 METHODS OF ENVIRONMENTAL AND ECONOMIC APPRAISAL OF COSTS AND OUTPUTS FROM HARMONISATION

1. The system of environmental legislation (this is also the case for any economic system) should be geared to maximise performance efficiency. The general definition of an effect is interpreted as the total value of output (O) that exceeds the costs (C) involved to achieve that output, that is, E = O – C. Both costs C and outputs O are to be accounted for throughout the sequence of processes relating to the development of the environment protection part of a planned industrial activity project:
    - ❖ Project assessment and designing;
    - ❖ Environmental and economic appraisal;
    - ❖ Environmental expertise;
    - ❖ Permitting procedure;
    - ❖ Current monitoring;
    - ❖ Motivation for competitive and environmentally safe productive activity; and
    - ❖ Company policy with regard to innovations and other components of the single system.
2. **Costs.** Two differing approaches are possible to determine the restructuring efficiency of environmental legislation. The first one interprets *system restructuring costs* as largely administrative, that is the costs of actual development, coordination and approval of the text of new legal provisions. The second approach includes in the costs, all economic expenses that relate to the implementation of new legal provisions, such as the costs of reconstructing process units and changing their operation modes, the costs of introducing new regimes for the use of natural resources, maintenance costs for environmental enforcement and government control services, and so on. The actual selection of the cost definition for achieving the goals specified depends on the objective nature of the given activity.

3. The costs of implementing legal regulations associated to the use of natural resources consist of **startup investment costs** and **current expenses**. Both are attributed to costs that:
    - Directly relate to environment protection activities and equipment; and
    - Although relate to general production costs, also include increase in costs related to their environmental protection components.

4. Environment protection costs can only include the increases in costs directly related to environmental activities. Such increases in costs can be calculated by one of the following three methods:
   - Conventional methods used in designing;
   - The method of group expertise; or
   - Using earlier calculations made for similar industrial installations (appropriately adjusted to the conditions at a given facility).

   Calculation of accompanying costs can be done with less stringent requirements to precision and specific detail. Such calculations could take care of the installation as a whole or be broken down into major process functions / units.

5. **Outputs.** Quantifying the outputs resulting from environmental protection activities is a problematic issue. The basic outputs from environment protection activities are the elimination of hazards to public health and well being associated with the negative influences from the environment. . However, a considerable part of these outputs can only be evaluated in terms of various *physical* units of measurement that cannot be translated into money terms. This may render useless attempts to evaluate the bottom-line efficiency of environmental projects in purely economic terms, bringing about instead, a number of diverse appraisal criteria. Each of the individual criteria is expressed in its own units of measurement and the totality of such criteria – in abstract points.

6. Of significance are the environment protection activities that are either, directly or otherwise, related to prevention of harmful effects on human health. In the first instance, these measures should be aimed at eliminating the following consequences of industrial pollution:

   - Rising death rate coupled with a reduced average life expectancy;
   - Increased sick rate of the local population;
   - Deterioration of the quality of life;
   - Reduced intensity of production;
   - Drop in labour productivity;
   - Reduced fertility of agricultural land;
   - Reduced fertility of wild and domestic animals and vegetation;
   - Degradation of biota;
   - Disruption of environmental circulation processes and metabolic processes;
   - Reduced human immunity to diseases; and
   - Significant changes in hereditary material, leading to mutations.

7. **Environmental and economic models of impact.** Despite the importance of environmental safety, the scope for applying economic criteria to environment protection activities is rather limited. As a matter of fact, economic indicators are only used in combination with a number of purely environmental indicators (criteria). The most relevant combinations of such indicators would be:
   - Mathematical models that, apart from economic efficiency criteria, include a number of additional environmental requirements (restrictions);
   - Using the so called integral (vector) efficiency criteria; and
   - Minimizing the costs of environmental activities, provided that the environmental protection effect to be achieved is in no way compromised.

All the above methods are commonly applied in Russia. Their basic practical shortcomings are as follows:

- The bottom-line of environmental and economic assessment stops short of its logical final result – no license is issued upon completion of the procedure; and
- Insufficient coverage of the complex mechanisms of indirect cause-and-effect processes that accompany the direct impacts from environment protection activities.

In sum, the legislative system has to:

- Be based on modern scientific views about the mechanism of both direct and indirect impact on the environment;
- Clearly specify the position of every party in the process of the natural resources use and the role it plays in causing and, alternatively, preventing adverse impact on the environment;
- The environment protection activities of a given installation have to be closely linked to its production and commercial activities; and Provide motivation for the users of natural resources to seek a reasonable compromise between the production-oriented objectives and the resulting environmental consequences.

3.1.6 DEFINING ENVIRONMENTAL AND ECONOMIC PRIORITIES FOR HARMONISATION OPTIONS

1. **Integral (vector) criteria** can be viewed as the basic indicator for an integrated environmental and economic evaluation of specific measures with regard to harmonisation of environmental legislation. This criterion is composed of an array of diverse appraisal indicators (specific criteria) that cannot be generally expressed in money terms and are therefore expressed in abstract points. The use of integral criteria makes prioritising and ranking individual measures possible, in accordance with their importance.

2. The totality of **specific criteria** to be taken into account when setting priorities for harmonisation options includes the following indicators:

   - Environmental effect;
   - Economic efficiency;
   - Social outputs;
   - Reducing the risk of potential negative impact;
   - Elimination of adverse impact situations or hazards;
   - The territory subject to positive impact;
   - Elimination of long-distance pollution;
   - The scale of environmental impact;
   - Minimised risks of large-scale hazards;
   - The availability, type and degree of indirect positive impact;
   - The proximity of the moment for the impact to take effect;
   - Controllability ;
   - The size of population subject to the impact;
   - The level of start-up costs (initial investments);
   - The level of accumulated environmental impact; and
   - The degree to which actual level of environmental pollution exceeds the set emission standards;

The actual combination of specific criteria used depends on the objectives to be achieved.

3. The most beneficial areas for environment protection activities are determined using **integral criteria** of comparative environmental and economic efficiency. The value of an integral criterion is made up of up to 15 various environmental and economic constituent criteria. All of them, including the integral one, are calculated **in abstract points**. A preliminary calculation of points is to be made using the well-known **Delphi method.** The resulting values of integral criteria make possible the determination of **relative parity** with regard to selected legal provisions and create **sequences** ranked by diminishing parity. The highest-parity activities are given top priority for implementation, the others – are positioned as per their order of priority. The actual amount of environment protection activities in a given year or the number of years needed to complete the harmonisation process will be determined subject to government financing of environmental protection activities.

4. The proposed method for financing the activities related to harmonisation of environmental legislation has a number of advantages and, in our opinion, could be useful to implement. The method could be used for environmental and economic assessment and prioritizing options for harmonisation between Russian environmental legislation and its EU equivalent. To the same extent, it is suitable for addressing similar goals when planning environmental protection activities as a whole. The advantages of the above method are as follows:
    - Clearly-specified priorities for selected activities depending on their environmental and economic efficiency index;
    - Linkage of time-frame specified for reshaping of environmental legislation with probable sources of financing for these activities; and
    - Addressing the options for harmonisation of environmental legislation in relation with productive activity in general.

3.2 PRESENTATION ON THE PRACTICAL IMPLEMENTATION OF THE KYOTO PROTOCOL AND THE BENEFITS FOR THE RUSSIAN FEDERATION BY VINCENT PIKET, *DEPUTY HEAD OF THE EC DELEGATION, MOSCOW*

3.2.1 Ecological Benefits for Russia

Possible detrimental environmental effects of climate change in Russia include the following:

- Rise in sea level that would affect many of the port cities and military bases located on the coast;
- Rise in overall temperature that would affect the natural cycles of rivers and streams draining into the Arctic Ocean, and would decrease precipitation thereby may affecting the agricultural productivity of the western area of Russia, the country's breadbasket;
- Melting permafrost would make infrastructure more vulnerable to erosion, mudslides, and subsidence in vulnerable areas.

The positive effects of the Kyoto Protocol on environmental processes is that it would encourage the development of energy-saving and energy-efficient technologies, leading to a rational use and conservation of natural resources and a move towards the use of alternative and renewable natural sources of energy, and a development of forestry and land use leading to the reduction of environmental pollution and increasing the level of protection of human health and improves the state of flora and fauna. It is also in Russia's interest to use the Kyoto flexibility mechanisms to attract Western investment into the fuel and energy sector and introduce new energy-efficient technologies.

3.2.2 Economic Benefits for Russia

From an economic perspective, the measures used to implement Kyoto could be a driving force for a more efficient economy. Ratification of the Protocol will enable Russia to benefit from emissions trading between governments, as Member States would be able to buy assigned amounts from the Russian government. Russian companies may also benefit from emissions trading with the establishment of a national system that could be linked to the EU emissions trading scheme.

The EU is putting in place a wide range of measures to meet its commitments under the Kyoto Protocol, including those on energy efficiency, renewables, industrial gases, transport, and an EU-wide emissions trading scheme, to facilitate cost-effective emission reductions.

Action to reduce emissions in Russia will bring greater economic efficiency and substantial opportunities for economic operators that invest in less carbon-intensive technologies and processes, in particular for "first-movers". Investments in Joint Implementation projects will lead to the transfer of environmentally sound and modern technologies to Russia. Strengthening the EU / Russia co-operation in this field is clearly a matter of common interest.

3.2.3 Once ratification is completed the EU sees a number of areas for economic co-operation on the implementation of the Kyoto Protocol

The Kyoto Protocol provides for the use of the following "flexibility mechanisms" on which we will be able to cooperate:

- Joint Implementation (JI) – projects, introducing technologies to ensure the reduction of GHG emissions - partnership of developed countries;

- Clean Development Mechanism (CDM). Projects to reduce emissions in developing countries. Partnership of developed and developing countries; and

- International GHG Emissions Trading.

As to this emissions trading: the expected annual excess of Green House Gas emissions (demand for emissions trading) in 2008-2012 is estimated to be approximately 150 million tonnes of CO_2 for EU countries and about 350 million tonnes of CO_2 for Japan, Canada, Norway and a number of other countries. However, the real demand for emissions trading in the first budget period will probably not exceed 400 million tonnes of CO_2 equivalent.

This is a demand that Russia has the capacity to meet. On average, the annual difference between Russia's emissions and commitments would be 600 million tonnes of CO_2 equivalent. Therefore, the sooner Russia develops its own national emissions trading scheme, the better the chances it will have to be linked to the EU scheme and allow companies to profit from it.
In addition, EU donors have committed substantial amounts (around 11 million Euro) to provide institutional support for Russia to set up necessary organisational and technical measures in order to ensure the participation of the Russian Federation in the implementation of the mechanisms and goals of the Protocol.

3.2.4 Political imperative

I have talked about both the environmental benefits and the economic benefits of the Kyoto Protocol for Russia. In addition to these benefits, there is also the political benefit that Russia would derive in ratifying the Protocol. This is so because, notably in the framework of the Marrakech Accords, the EU has shown great flexibility in accommodating the wishes of several countries, Russia in particular, with regards to the implementation arrangements of Kyoto. On the side of the EU we have therefore a ground for Russia to move on its side.

Equally, the EU and Russia share one and the same European continent. In anticipation of the EU's enlargement in 2004, we are talking of new neighbour or proximity policies and will reflect about strengthening our cooperation framework. It is simply unthinkable that we would be blocked from including environmental cooperation in this dialogue, as would be the case if Russia does not ratify the Protocol. In such a case, the dialogue would be handicapped and truncated. The Kyoto Protocol is an international instrument that will become the basis for the formation of a new international policy in the field of addressing global environmental issues. Russia and the EU need to part of that together.

3.3 ECONOMIC ASPECTS OF THE (PARTIAL) IMPLEMENTATION OF THE IPPC DIRECTIVE IN THE RUSSIAN FEDERATION, BY JOCHEM JANTZEN INSTITUTE FOR APPLIED ENVIRONMENTAL ECONOMICS (TME), NETHERLANDS

3.3.1 Introduction

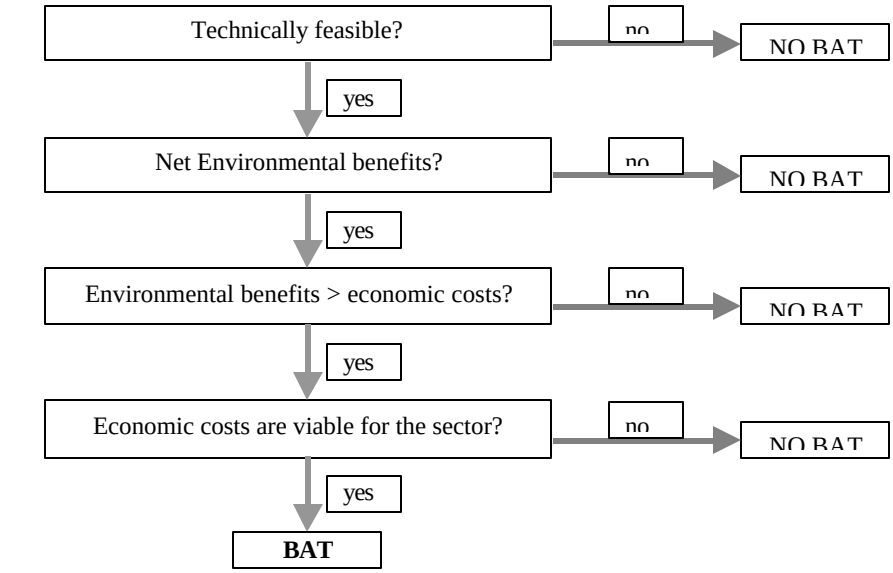
Sustainable development is the main objective of economic, environmental and social policy in many countries in the world. To achieve sustainable development it is necessary to continuously improve the way in which we produce and consume. In the market economy there is a continuous drive to improve efficiency, by creating more value added with less use of resources. In countries with a long market economy tradition (like most EU countries), this has lead to high levels of production and consumption. Due to trade unions the increased welfare has been spread amongst the whole population, avoiding large differences in income.
In the 1970's it became clear that high levels of production and consumption had negative effects, especially on the environment. So many countries with market economies started to develop and implement environmental laws to protect the environment from over exploitation.
To create a level playing field amongst member states, many basic environmental laws have been developed by the EU. The IPPC directive can be seen as sort of crown of this process of EU law making. The IPPC directive aims at implementing the best available production techniques throughout large industries in the EU. It applies for instance to the power sector, refineries, heavy metal industry, larger landfills, pig farms, etc. It also aims at integrating different environmental aspects in the permitting process, so as to avoid pollution increases in other areas due to measures to reduce pollution in one area.
From an economic point of view the concept of "Best Available Techniques" (BAT) is amongst the most important issue of the IPPC directive. This paper investigates some of the economic aspects of the IPPC directive in general and the possible consequences thereof for the Russian Federation. First attention is given to the definition of BAT and especially the economic dimensions thereof. Thereafter some aspects of the application of BAT in Russia are discussed.

3.3.2 Best Available Techniques

The concept of BAT is not easy to understand without further guidance (as is for example the case with the Russian law on Protection of the Environment). As all of us know technology continuously develops. In medieval times the best way to move from one town to another may have been the horse, later maybe a ship via a canal, in the 19th century a steamtrain and currently a car or a high speed train.
Although technology is always developing, which makes it impossible to tell exactly what "best" means, it is sort of possible, given a not too long a period, to decide amongst distinct and well-defined technologies what is best. But to determine what is "best" one needs to have criteria, which are dependent on subjective decisions. For example: if one has the choice of either taking the car, the train or the bicycle to travel from one place to another, criteria may be: time, comfort, costs and most important in this framework: environment. If only environment would matter, the bicycle would be the best, it also would have a good score for (direct) cost. However, if time is limited the train or the car might be best. And when comfort is to be considered, the car might be best for the ones who cannot stand the company of others

or the train, if one would like to read a book or sleep during travel. Therefore, even in this simple example "best techniques" may be different for different individuals.
The same goes for large production facilities, for instance a power plant. From an environmental point of view electricity produced with solar cells may be best, but it may be too expensive, or even impossible to implement if there is little solar radiation. If coal is abundant and cheap, the best way to produce electricity may be a coal powered installation, though this would be rather polluting.
These problems have been anticipated by the Institute for Prospective Technological Studies (IPTS), Seville, a joint research centre of the EU that is in charge of defining BAT. To avoid the kind of discussion as shown above, the starting point is not so much the production technology, but the environmental characteristics of production technologies. In the case of the coal-fired power station taken as given, "best technique" this would mean a coals fired power plant with relative good environmental characteristics. In such case the power plant with fluegas desulpherisation and low NOx technologies and double electrostatic filters is the best way to produce electricity out of coal. A power plant on natural gas would have even better environmental characteristics.
In the IPPC directive this problem has been anticipated by defining "best" as "most effective in achieving a high level of protection of the environment as a whole" and also taking on board economic aspects by stating that "available" also means that costs and advantages of techniques should be considered and that conditions should also be "economically viable".
The approach of the IPTS is of course practical, but still does not give "hard guidelines" to decide what BAT means in individual situations. To "solve" this problem, the Belgian institute VITO has developed a decision tree to assess BAT. In this tree, a logical stepwise process is followed to decide on BAT, which is shown in the graph (see VITO, 2001).

A decision tree to assess BAT



Source: Vito, 2001

The first step is to investigate whether a technique is technically feasible. This may involve answering questions like: Is it proven technique? Does it not have negative influence on the quality of the product (for example water based paints in stead of solvent paint use)? Does it

not negatively affect health of workers? Positive answers to these questions would enable a pass in this first test.
The second step focuses on the overall environmental benefit: it would not make sense to reduce air pollution by means of a certain technology if that itself would lead to an enormous increase in water pollution and hazardous waste production. It should be stipulated that (a) there are no objective criteria to weight different environmental problems and (b) that the local environmental situation may play a role. If we assume that the problem of weighting of different environmental problems can be overcome, for example by means of assessing toxicity of different substances, or by putting priorities through expert judgement, this second test can also be passed.
Passing the second test still does not mean that we already can decide whether a proposed technique is the "best". The third test focuses on financial costs to implement the technique in comparison with the overall main environmental benefits. If environmental benefits are small and costs are huge, it clearly is not a BAT. In addition, there exists a problem in general that it is not easy at all to value environmental benefits against the costs. Only if there were objective ways to conclusively decide the value of the environmental benefits could this test can be carried out without discussion. Although certain methods have been developed to partially assess the economic value of environmental benefits, real objective methods do not exist, leaving at least part of the result of this test subjective.
But even if the environmental benefits are judged to be higher than the costs this does not automatically mean that the technique is BAT. This is the case, only if the costs are viable to industry. If due to competition or due to the scale of a facility, the company would run out of business due to the application of the technique, it should not be regarded as BAT. For example, fluegas desulphurisation is nowadays a BAT for large coal fired power plants. However this may not be the case for all coals fired plants: if it is already an old plant with a relative short lifetime left, investment costs may be exorbitant compared to the result or compared to other, newer, plants. And when competing on the world market, it may well be that refinery processes with the lowest possible CO_2 emissions are not feasible, even if environmental benefits of reducing CO_2 emissions would be much larger than the costs to reduce CO_2 emissions.

From the foregoing analyses of BAT through a stepwise process, it is clear that determining what is BAT in a particular case is not easy. In the last three steps, environmental economic assessments need to be made to select a BAT.

From a legislative point of view, it would have been an option just to define environmental standards for each production technique and apply them everywhere in Europe. But as any larger factory is different from other comparable factories, flexibility in technical, environmental, economical and organisational terms is needed to arrive at an optimal solution, also in the light of local circumstances.

3.3.3 BAT and Russian environmental law enforcement

The concept of BAT explained in the last paragraph, implies that both (permitting) authorities and industries are well equipped to implement BAT. Given the poor implementation of environmental law in the Russian Federation, the complexities of implementation, inconsistencies, corruption and the lack of resources, it would not be realistic to assume that the BAT concept can be implemented "overnight" in Russia. First of all, laws enforcement

needs to be implemented in a proper way, so as to ensure a "level playing field". Without this "level playing field", which implies that industries are treated in the same way, the implementation of the BAT-concept will be cumbersome. Only when this precondition is met, it is useful to think of further steps towards a sound environmental legislation and implementation thereof.

As this precondition currently does not exist in the Russian Federation, the complete implementation of the BAT concept is not feasible. Also the lack of knowledge (concerning the environmental impacts, concerning potential measures to reduce pollution, etc.) will not be helpful to implementing improvements. In this sense, the BAT reference documents prepared by the IPTS in Seville may give guidance to the Russian authorities involved in implementing BAT in the Russian Federation.

However, industries that anticipate the (near) future, and that want to be competitive on the world market, should not focus too much on the current circumstances. For example, current low energy prices in Russia will not give much incentive to reduce energy use in industry. International statistical comparison shows that the energy efficiency in Russia is still rather low (World Bank, 2002). As Russia will play an important role in the world energy market in the coming decades, energy companies will increasingly adapt themselves to the international price levels, which in the end will imply higher energy prices in Russia as well. Industries that anticipate these changes at an early stage will benefit thereof. So at least industries could start to investigate resource efficiency in their production. Experience from the EU has shown that this leads to less resources use (and thus production costs) with higher outputs.

3.3.4 Integrated prevention and pollution control in the context of the Russian Federation

The Best Available Technique concept is developed in the European Union, where industries already have achieved efficient ways to produce goods. High resource prices (energy, water) give a continuous incentive for industry to look for more efficient ways of production. In the Russian Federation such incentives are only partly present, as resource prices are (much) lower than in the EU. The BAT concept adds more incentives to industry, not only looking at efficiency but also forcing them to reduce pollution as much as possible.

The foregoing paragraph shows that determining BAT is partly a process of subjective decision making and should take economic arguments on board as well. Now, how would this apply in the context of the Russian Federation?
Of course, one could suggest that the Russian Federation in the end should apply the same concepts as are being imposed on the EU industry. But would that make sense? And would it be economically viable for the Russian Federation as a whole or to individual industries in the Russian Federation in the short term?

Given the relative low per capita income in Russia, and the relative short period of experience with market economy in the Russian Federation it only would make sense if adapted to the economic situation.

Estimates for Central and Eastern Europe show that on average the per capita investments in environment (including a rough assessment of IPPC-investments) would be about € 700 (RIVM/ /NTUA/TME, 1999). Spread out over a time period of 10 years this would imply that

about 2% of GDP should be spent on environment in these countries. Compared to EU countries this already is high, as in the EU currently 2 - 2.5% of total GDP is spent on environmental protection, including operational costs (which are about 50% of total expenditures). If we would assume that in the Russian Federation, around € 700 per capita is needed (for all main directives including IPPC), this would lead to about 4% of GDP, as per capita GDP in Russia is about half of the CEE GDP. It seems that this would be a too high burden in the short term for the Russian society, taking into consideration that operation of all environmental facilities would lead to another 4-5% of GDP.

The fear that environmental expenditures would be a too high a burden for society does not only exist in Russia, but also in EU countries, where industry is aware that cheaper ways of achieving a high level of environmental protection need to be investigated. This is most obvious with the implementation of the Kyoto protocol, where EU allows trade with non-EU states so as to achieve the same reduction at lower costs, seeking the most cost-effective reductions all over the world. But also for the "traditional" environmental problems like acidification, industry becomes aware that the traditional "command and control" policy would lead to enormous costs and that other more market oriented approaches should be considered. For example, in the Netherlands serious attempts are undertaken to implement tradable permits as to reduce costs and still achieve the same level of protection. Studies (TME, 1997) show that up to 50% of total costs (which are in the order of € 0.5 bln per year) can be saved, interesting enough to develop a new law (VROM, 2003).

Therefore, instead of setting strict emission standards for industry, it may be better to introduce a system that would give the same sort of benefits to the Russian society and industry as the Dutch tradable permit system will do. A start could be made by implementing certain reference prices for different pollutants, instead of rigid standards as described in the BAT reference documents. Industry would then be obliged to implement reduction measures up to those prices. If an industry can prove that further reductions would be more expensive than the reference price, it should not be obliged to take further measures. However, if they can achieve relative cheap reductions they should take measures.

Alternatively, the Russian environmental tax system can be improved. To achieve some incentives from this system, the levels of these taxes should be increased. For example, currently the tax for 1 ton of SO_2 is about € 1. This hardly gives an incentive to reduce pollution, as cheapest techniques to reduce SO_2 emissions already would cost at least € 100 per ton. However, the major drawback of such a taxation scheme instead of the proposed system of reference prices would be that industry actually would have to pay for pollution, which might be a problem if the revenues of the taxes would not be recycled to industry.

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3.4 COSTS AND INVESTMENT ANALYSES OF APPROXIMATION IN EU CANDIDATE COUNTRIES BY KRZYSZTOF BERBEKA, CRACOW UNIVERSITY OF ECONOMICS, KRAKOW, POLAND

The analysis of direct and indirect costs as a result of the implementation of the EU environmental acquis in the candidate countries[1] has been a subject of several research projects all over Europe. However, the results of these projects have not been very popular, due to several reasons:

a) Due to political pressures, the emphasis in each candidate country, before the EU referendum, was aimed at highlighting the benefits of accession, whereas the problem of any associated costs was kept in the shadow;

b) A large number of cost estimations were used during the process of negotiation for membership conditions (transitional periods), these working documents were not published at all;

c) The use of complicated economic models for cost estimations, limited the understanding of assumptions and results to a sample of experts only; and

d) Even in the instances where, information was disseminated, the results were subject to misinterpretation or misunderstandings because of a lack of basic economic education.

Based on these reasons, there is a need for an appropriate understanding of the term "costs of approximation". The basic approach distinguishes between direct and indirect costs of approximation. The direct costs are identified with investment outlays, operations and management costs or consequences for the budget. While such a specification may not be consistent, it does distinguish between the main categories that are treated as costs of approximation[2]. The assessments of indirect costs are not as popular as those for direct costs, due to a much more complicated methodology based mostly on the general equilibrium model.

The main categories analysed in the context of implementation of the environmental acquis are:

a) Effects on labour market,

b) Prices of energy sources,

c) Competitiveness of the economy,

d) GDP changes,

e) Household welfare.

[1] The term *candidate country is* not proper for the 10 CEEC in the whole period of accession negotiations. In fact depending on the time period the term *candidate countries*, *accession countries*, *the countries expected for the membership* should be used. However, changes of the terminology for the same sample of countries do not improve the visibility, or level of understanding of the text. Therefore, simplified terminology using *candidate countries* is only applied. The sample *candidate countries* analysed in this paper consists of: Bulgaria, The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

[2] In fact the *investment outlays* according to the accounting principles cannot be qualified as *costs*. Only the depreciation of the assets – these assets, which are results of investments processes, are *costs* in principle. Nevertheless, for the purpose of this paper the simplified terminology is adopted, and the sophisticated differences between costs and outlays are skipped.

Whilst, the most common category, investment outlays, is in many studies, treated as full (or minimum comparable) costs of approximation, it does not give a full picture of the financial burdens caused by implementation of the EU legislation because of lack of exploitation costs of new environmental facilities. A Limited budget or methodological approach has led in many cases to skip other categories of approximation costs altogether. Therefore, this paper focuses on investment outlays only.

The main aim of the paper is to give an overview of the history of approximation costs in CEEC with the corresponding methodology being developed. Furthermore, the importance of using of an appropriate method is illustrated on the basis of single case studies.

The final section goes on to present the comparison of results between several countries and some conclusions for future estimation.

The methods of investment outlays estimation have changed over the period of pre-accession negotiations. The simplest approach was based on transmission of the results from other countries in "costs per capita" format and multiplied by the number of inhabitants. The next steps of methodology development are presented in Table 1.

It should be noted that the description does not necessarily present a typical historical path, it is more connected with the execution of quality of the calculation or available budget for such estimations. It means that sometimes the less advanced researches were a continuation of really sophisticated programmes.

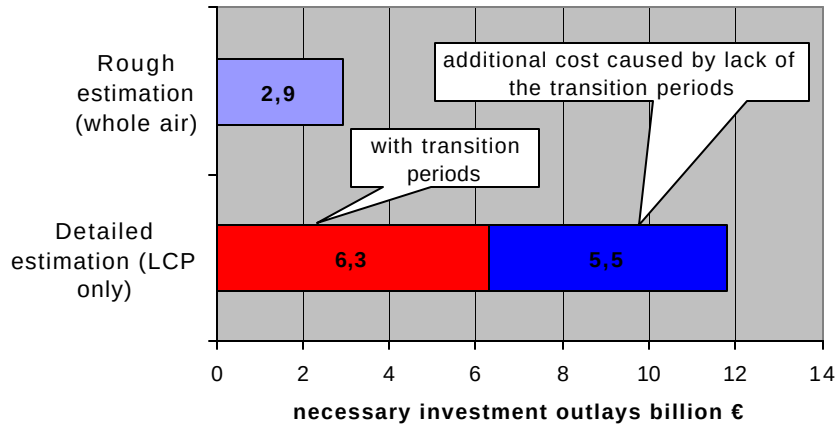
Table 1 The most common approaches of investment outlays estimation

Methods	Remarks
Transmission of the unit investment outlays per "capacity of the installation" or per "unit of pollutant" multiplied by an amount of necessary investments estimated in macro scale (general statistical data)	• Transmission of the unit investment costs skips prices differentiation across the countries, • Estimation of the investment needs in macro scale skips the local differentiation of the abatement technology,
Correction of the unit investment outlays (local condition) and multiplied by amount of necessary investments	Still the local differentiation of the abatement technology is ignored
Source by source review of the required abatement calculation using individual cost estimation	Expensive, time consuming, necessary willingness for co-operation of the industry sector

Source: Own work for the purpose of the present TACIS project

The real differences between outputs of specified methods are illustrated in Figure 1. This figure presents the estimation of investment outlays necessary for meeting the air-related directives in Poland. The first bar represents the result – the effect of rough estimation. The second one present the detailed calculation based on plant-by-plant technical and economic data. The difference, independent of the units (% or billions €), is very significant. Furthermore, the picture highlighted the importance of proper scheduling (or postponing) the investment processes.

Figure 1 ***Estimation of the investment outlays related to the air protection in Poland***



Source: Comparison on the basis of DISAE projects and Polish implementation programme for LCP directive.

In all the CEE countries, the main programs aimed at assessment of the approximation costs in the area of environmental related directives are:

- World Bank research studies,
- DISAE,
- PHARE, } EU programmes
- PEPA,
- Implementation programmes (prepared separately per each country and per each directive)

These projects are characterised by:

- Lack of co-ordination between specified programmes, lack of responsible authorities, lack of complex vision of the estimation,
- Different methodologies (see *Table 1*),
- Difficult access to the previous results (to avoid copying the previous estimation),
- Lack of co-ordination between actors: Ministry of Environment, (or Agriculture), Enforcement Agency, Statistical Office, Industry Chambers and experts. Most of these institutions tried to sell the data instead of allowing them freely.

The comparison of the necessary investment outlays across the CEE countries is presented in Table 2.

It should be stated that such a comparison has to be interpreted with the care as there are several reasons that limit it. The most important are the following:

- Different number of directives included in the calculation;
- Different purchasing power parity of local currency to euro; and
- Lack of unified methodology for estimation the costs of IPPC directive.

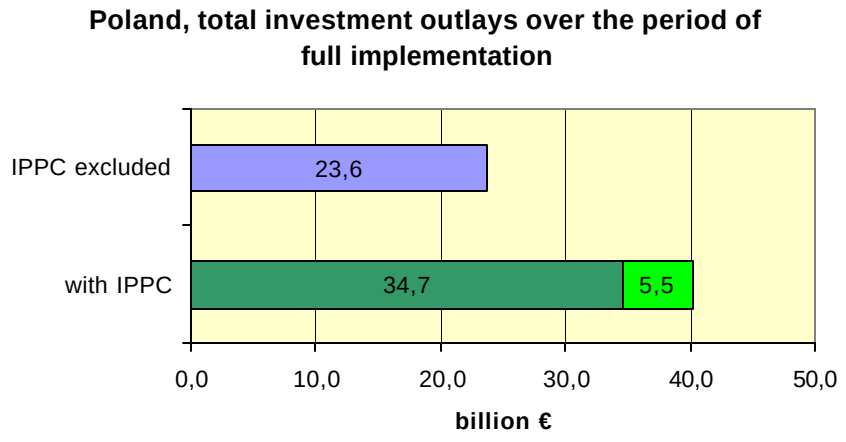
Table 2 Comparison of the total investment outlays necessary for implementation the EU environmental acquis in CEE countries over full period of implementation

Country	Necessary investment outlays over the period of implementation, billion €	
	DISAE calculation	according to the implementation programmes
BULGARIA	8,61	
ESTONIA	4,41	2,21
HUNGARY	10	
LATVIA	2,36	2,0
LITHUANIA	1,60	1,0
POLAND	42,8	31,3
ROMANIA	22	
SLOVAKIA	4,81	
SLOVENIA	2,43	2,72
CZECH REP.	9,40	

Source: DISAE programmes and national calculations

Of these, the last reason seems to be the most important. The cost of implementation of the IPPC directive in comparison to the total environmental approximation costs is illustrated in Figure 2 below.

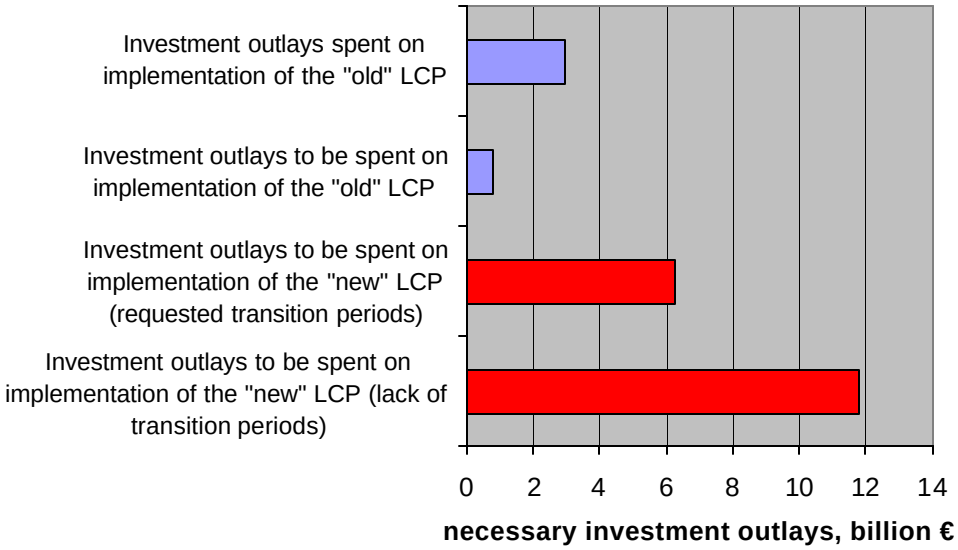
Figure 2 The role of IPPC directive in total environmental approximation costs



Source: Implementation programme for new LCP directive. Poland 2002.

The detailed analysis indicates that some industrial sectors are more sensitive to the new regulation, which leads to doubling of the necessary approximation costs. The power sector based on coal fired thermal plants belong to the most sensitive (on the environmental regulation) branch of the economy.

Figure 3 Analysis of necessary investment outlays in Polish power sector



Source: Implementation programme for new LCP directive. Poland 2002.

The estimation of approximation costs plays an important role independent of all indicated discrepancies and weaknesses. The main advantages are the following:

- ✓ Estimation enables the verification of the affordability of assumed environmental targets,
- ✓ Gap in investment capital creates the need of complex management of public support provided to the environmental activities,
- ✓ Correct assessment provides strong arguments during the negotiations of transition periods.
- ✓ The incremental price for EU accession

Taking into account that the process of evolution, the EU environmental law has a continuous, permanent character, most of the arguments mentioned will be actual in a long time scenario.

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3.5 LEGAL AND ECONOMIC ASPECTS OF ENVIRONMENT PROTECTION IRINA VOLKOVA, ADVISOR TO THE STATE DUMA COMMITTEE ON ECOLOGY, AND ? AXIM V. GRATCHEV, POST GRADUATE STUDENT, MOSCOW FINANCE & LAW ACADEMY

3.5.1 Introduction

In the period of Russia's transition to a market economy, the significance of using economic methods to regulate industrial impacts on the environment is becoming increasingly apparent. To a large extent, the efficiency of such methods would depend on their consistency with the relevant legal base and their coverage of all areas of activity related to environment protection. The economic mechanism of environment protection is an aggregate of these methods, with its main function, to develop economic incentives and to identify limitations that would influence the decision-making process of market players within the boundaries of market freedom, as specified by legislation.

Since the adoption of the Russian Federation's Constitution in 1993, a number of legal regulations and federal laws addressing various aspects of economic activities and the use of natural resources have been developed, thereby enabling regulatory actions with regards to environment protection. Examples of such regulations are: the Russian Federation Urban Development Code; Russian Federation Forest Code; Russian Federation Water Code; and Russian Federation Taxation Code. Following are examples of federal laws on: industrial safety of hazardous industrial installations; industrial and household waste; and safe circulation of pesticides and poisonous chemicals. Of special significance among the federal laws is the law on environment protection that became effective in 2002.

Under the conditions of a market economy, using the methods of command and control would be too costly, since regulations would have to be enforced through a vast bureaucratic mechanism. They would also be ineffective as what matters in a market economy context, are the economic interests of the market players. Therefore, under this system, regulations could be better enforced using a systemic economic mechanism. Current legislations, whilst covering most aspects of social relations, do not, mention or even lay down a concept for building economic mechanisms. The reasons for the lack of such mechanisms include, for example: a lack of a sufficient scientific basis for the issue; contradictory views and definitions with regard to the subject; and a conflict of interests. Taken together, they may complicate the process of ensuring legal support for economic regulation of environment protection activities and ensuring environmental safety.
To build an effective (that is systemic) economic mechanism, a number of key points have to be addressed:

- Identifying who (that is, the government, the public, legal entities and private individuals) is responsible for the state of the environment and to what extent;
- Identifying who is responsible for inflicting damage to the environment and therefore be held responsible for providing full compensation for damages caused and to what extent;
- Identifying financial sources available, to provide cover for environment protection expenditures and devising the scheme for securing such sources;
- Identifying ways of bringing these sources into operation.

The objective of addressing the imperfections in the existing legislation highlighted in the previous paragraphs is to ensure that economic activity is environmentally safe. This can be realized along two directions: the first, to develop measures to rehabilitate the environment that has already been damaged; and the second, to develop measures to prevent further adverse impacts on the environment. The first direction would involve substantial costs, and therefore would be a financial burden on the economy. The second option focuses on preventive measures by incorporating environmental protection activities into economic growth strategies. Restructuring the existing nature of the Russian economy (there is a large share of environmentally "dirty" industries and the state of the environment is heavily influenced by this) would also require substantial financial resources. However, coupling the goals of technical and technological streamlining of industry, with the goals of resource saving and environment protection in concentrated efforts, would produce a parallel multiplication effect, both in the social and environmental fields. Therefore the second method of preventing adverse impact on the environment in parallel with continued economic development is preferred over the first method of just environment rehabilitation measures.

Finance could be secured from various potential sources, for example:

- Subsidies and credits from the state budget;
- Tax benefits;
- Environmental taxes and levies
- Environmental amortization
- Use of financial provisions of the environmental insurance system;
- Co-financing of investment projects by small-scale private investors;
- Attracting foreign investments; and
- The realization of a compensation scheme to make good for environmental damage caused to Russia from the transnational economy.

Various sources of finance could be combined and focused on specific issues to resolve the problem of financial constraints.

3.5.2 How economic regulation of environment protection activities has been addressed

So far the economic regulation of environment protection activities have been addressed in accordance a "socialist" tradition, despite Russia's transition to a market economy. In such a tradition, the entity responsible for the state of the environment is not the owner of activity that damages the environment, but the end user of the product that is the result of such an activity, the consumer.. It is consumer demand that encourages the exploitation and processing of natural resources (adversely affecting the environment) to make consumer goods (which, once consumed, also produce waste). It is true that some 90% of Russian population is relatively poor. However, this is only the case of Russia. The people of the countries involved in the system of transnational economy (consuming Russia's natural resources) enjoy an incomparable standard of living – and they can also be regarded as a source of compensation. As long as the well being of Russian citizens depends on the performance of national economy rather than on aggregate effects from the transnational economic system, it's the people of Russia who would have to take the environmental consequences of economic activity.

The same is true for environmental pollution charges because the implementation of the "polluter pays" principle typically results in a situation with the polluter including his

expenses for compensating the damage caused to the environment to production costs. As a result, it is the consumer, i.e. the people of Russia who have to pay the pollution charges.

3.5.3 The circumstances, under which environmental pollution charges would be justified

- When the polluter cannot calculate in advance, the environmental damage from his activities and therefore add it to his production costs. This can be implemented within the framework of liability payments made under civil law – by imposing injunction orders to demand compensation for the damage caused to the environment by the polluting company.
- When the revenues from environmental pollution payments are specifically allocated to the purposes of environmental rehabilitation and prevention of potential damage to the environment.
- When an injunction order demanding compensation is imposed, but any funds paid, remain at the disposal of the industrial facility to be subsequently used for introducing best available techniques.
- When economic categories and notions take account of the natural environment, the state of the environment serves as the basis for adjustment of economic performance indicators and assessment of product life cycle takes into account the costs of waste disposal or neutralization of adverse impact on the environment from productive activity. (How is this a circumstance?)
- When damage caused to the environment affects the well being (as a combination of material, social and environmental benefits) of people.

Following the initiative by chairman V. A. Gratchev, The State Duma Environmental Committee devised a draft federal law "On payment for causing damage to the environment" aimed at creating economic incentives for environmental rehabilitation of productive activities. This was in response to the debate on the lack of clarity in the definition of environmental tax introduced in the Russian Federation Taxation Code.
The main provisions of draft federal law "On payment for causing damage to the environment" are as follows:

The draft law proposes to discontinue the use of sanitary maximum allowable concentrations for calculating environmental pollution charges and change the system by orienting it to the use of best available techniques. Instead, the draft law proposes to use the values typical for best available techniques. Moreover, the use of BAT at an industrial facility would exempt it from environmental pollution charges (provided that the quality of the environment is preserved). If the enterprise is not using BAT, the payment is to be levied only for actual environmental impact that exceeds the limit values specified. In this case payment is to be calculated using a standard rate per ton of pollutant, taking into account the relative danger of the pollutant in question for the environment. If an injunction order is imposed, the industrial facility may not have to pay it in full. Should the enterprise in question incur any costs directly related to the process of introducing BAT or carrying out other environment protection activities, these costs are to be deducted from the total amount of environmental charges. If a number of industrial facilities located in a given region (say, within one catchment area) are using BAT with no apparent positive impact on the quality of the local environment, then the limit values for release of pollutants are to be further reduced. For environmental emergency zones or extremely hazardous substances limit values could be set at as low as zero.

The basic change needed in the approach to creating an economic mechanism based on the polluter pays principle would be orienting the payment to technological performance rather than sanitary standards which are justly considered as inadequate for the purpose. Another important aspect is ensuring that, once levied to the budget, environmental payments are used for the purposes they were initially intended for, in particular as a source of financing the operators' own environment protection activities. The third principal difference is creating incentives for industrial installations to start using best available techniques. In addition, the draft law lays down procedures that simplify the inter-relation of enforcement authorities in charge of environmental payments and industrial operators. For example, payments are to be calculated on the basis of pollution figures declared by the industrial facility in question in accordance with the technical documentation for the project.

The transition from sanitary standards for maximum allowable concentrations, to the system based on firms' technological performance indicators, is scientifically justified and economically viable, since any productive activity has to be oriented within the scope of economy where it belongs rather than public health care standards. Mixing up the interests of two different fields of activities could produce an overall zero result.

There exists another pitfall that has so far escaped the attention of the interested parties. The point is that the 2003 federal budget does not actually quantify the amount of revenues to be levied from payments for causing damage to the environment. Besides, none of the federal laws in force today specify that the revenues from such payments be to be allocated for environment protection purposes.

In reality this means that with the existing procedure for levying the payment, any quantitatively unspecified revenues from environmental payments coming to the budget could be used at the government's discretion for purposes having nothing to do with environment protection. Unless properly taken care of, this development could potentially aggravate the environment protection situation.

3.5.4 Postscript

As of 12th June 2003, the Russian Federation Government adopted Decree No.344, stating "On limit values for air emissions from stationary and mobile sources of pollution, discharges of pollutants to surface and underground water bodies and disposal of industrial and household waste".
The Decree:

- Lists the relevant polluting substances and payment rates calculated per ton of each type of pollutant. Payment rates are lower if releases of pollutants to air and water are below the limit values specified for a given industrial installation; if air emissions and waste water discharges come close to the specified limit values, the rates go up.
- Lists payment rates for all types of waste, depending on the hazard class and for various fuel types, when levying payment from mobile sources of pollution.
- Sets out coefficients to be applied together with the payment rates, depending on actual environmental situation in a given area, that is the condition of ambient air, soil, water bodies on the territory of Russia's economic regions and, marine and river basins.

The previous federal-level economic mechanism ensured that the payments levied for causing adverse impact on the environment were accumulated in the Russian Federation Federal environmental fund for subsequent allocation to environment protection programs and activities. In contrast, revenues from environmental pollution payments collected under the present regulations will not have to be allocated for environment protection purposes. The present regulations also do not provide for deducting the costs of firms' own environment protection activities from the amount of environmental pollution payments, thus significantly undermining motivation for Russian industry to introduce best available techniques.

3.6 ENVIRONMENTAL PERMITTING AND ENFORCEMENT IN THE RUSSIAN FEDERATION BY VALENTIN V. LUTSENKO (COUNSELOR TO DIRECTOR-GENERAL OF GEO-ECOLOGICAL CENTER AFFILIATED TO RUSSIAN ACADEMY OF NATURAL SCIENCES) AND MAXIM V. GRATCHEV (POST-GRADUATE STUDENT, MOSCOW FINANCE & LAW ACADEMY)

3.6.1 Introduction

The large numbers of departmental regulatory documents currently in force in Russia are abound in vague definitions. What is worse is that the interpretation of these definitions remains at the discretion of individual officials and this situation is widely believed to be the main constraint to further development of small and medium business.

In theory, government control is to be ensured at the expense of collected taxes. However, in practice one can see a trend for commercializing the state control system whereby certain activities by the regulating bodies well within the scope of their authority are interpreted as paid services (for example, fees for permit issuance). Another common phenomenon is what could be classified as a latent commercialization of the state control system whereby various expert assessment procedures are made mandatory for the managerial decision-making process to go ahead.

An example of latent commercialization is the requirement to provide an environmental expertise review from a specialized commercial organization (to be submitted along with the permit application in the course of the permitting procedure). In this case we are talking about actually handing the state control functions over to an organization operating on a commercial basis and charging commercial rates for its services. The resulting expenses incurred by the proponent are considerably higher than the charges for permit issuance officially prescribed by law.

This leads to the situation when every taxpayer has to pay twice for the functioning of the inefficient state regulating system: first when paying taxes and duties and another time when paying for various "mandatory" services that relate to the functioning of the government control system.

3.6.2 Let's review the advantages and disadvantages of the national environmental permitting and enforcement procedure

One of the key components of environmental permitting and enforcement procedure in the Russian Federation is the State Environmental Expertise. The legal base for the state environmental expertise was meant to create provisions for ensuring environmental safety. However, let's take a closer look at its practical application and assess its efficiency (that is, the time and resources needed to obtain the expertise review for differing levels of negative impacts on the environment).

When considered from this angle, it turns out that the existing system abounds in artificially created bureaucratic barriers with the project proponent having to get his application endorsed by various controlling authorities, each charging fees for their services. Formally it is supposed to be a system of collective responsibility; more precisely it should be qualified as a system for collective extortion. All this demonstrates poor efficiency of the implementation mechanism, since it requires considerable time and resources, especially in the case of small and medium industrial installations, which can only cause insignificant adverse impact on the environment.

The basic reason for poor efficiency lies in the absence of criteria and procedure for classifying new industrial facilities under different categories depending on the expected level of their impact on the environment. Another reason is the absence of specific methodological guidelines for regulating the environmental expertise, depending on the expected levels of environmental impact. The officials in charge of devising relevant regulations under the disguise of environmental safety are striving to expand, as far as possible, the list of legal entities subject to the state environmental expertise, viewing this as the expansion of the customer base for the services they would be able to sell.

This leads to the situation when decisions are largely made on the basis of a subjective opinion of an individual official, which makes the whole system vulnerable to corruption.

The establishing of organizations that provide environmental expertise services on a commercial basis is ostensibly meant to ensure an unbiased approach to the applicants' projects. In reality, such commercial organizations are closely related to the state executive bodies in charge of environmental control.

The absence of classification criteria for new projects effectively means that almost all projects could be designated as subject to mandatory environmental expertise. This inevitably results in a situation when a disproportionate share of environmental expertise activities is devoted to small and medium-size installations that are capable of causing only an insignificant impact on the environment.

The project's proponent is placed in a position when the decision on whether to classify his installation as one subject to mandatory environmental expertise is made on an arbitrary basis, thus breeding bureaucratic red tape and creating the conditions for mass corruption.

In practice, the absence of criteria for selecting and classifying the projects subject to the state environmental expertise means that the small number of expert staff currently involved in the SEE activities are for the most part occupied with the huge number of comparatively small projects instead of paying more attention to the installations capable of producing a major environmental impact.

The costs of state environmental expertise incurred by small and medium industrial installations that do not represent any substantial risks for the environment are disproportionate in relation to potential environmental damage from their activities.

Poor efficiency of the system stems from a large number of unreasonable requirements leading to disproportionately high costs, especially in the case of small installations incapable of causing considerable impact on the environment.

3.6.3 Another important aspect of environmental permitting and enforcement procedure in Russia is issuing permits for the disposal of hazardous waste

In order to obtain a permit for waste disposal, new industrial facilities are also required to go through the process of mandatory state environmental expertise.

The problems similar to those listed above can also be identified for this branch of the permitting and enforcement activity. In particular, they are:

- The absence of requirements with regard to classification of the supporting documents depending on the expected level of environmental impact from waste disposal;
- A desire of the officials in charge of devising relevant regulations to involve the largest possible number of companies into their field of action;
- Setting up a maximum number of bureaucratic obstacles for the applying companies;

- A ”collective responsibility” approach, resulting in a large number of regulating bodies involved in the process; and
- The lack of clearly defined regulations, their actual interpretation being the prerogative of individual officials.

As an example, let us take a concrete regulation, namely the Ministry of Natural Resources Order “On Methodological Guidelines for permitting procedure relating to the disposal of hazardous waste on the territory of the Russian Federation” dated 2 December 2002.

As per the provisions of this document, practically any company *or* individual entrepreneur involved in commercial activities would be required to obtain a permit. In other words, this MNR order requires every street-sweeper to obtain an operating permit on the grounds that he “is producing waste” in the course of his sweeping. In a similar manner, the mechanic in a car-repair shop would need to get an operating permit, since he would inevitably produce some waste during his work. Accordingly, in order to be able to start a legitimate operation, both of them would be required to come up with a relevant expert statement from the state environmental expert.

The permitting procedure is excessively complicated and requires numerous endorsements from various regulating bodies.

To prepare for the state environmental expertise before applying for the waste disposal permit, the proponent is required to submit corresponding supporting documents that have to contain:

- A detailed description of the waste disposal process;
- Description of measures to be taken in emergencies;
- Process equipment to be utilized, its production capacity; and
- The size of the sanitary protection zone, etc.

Other documents needed for application processing include:

- An assessment of expected environmental impact from waste disposal;
- Reference to the environmental standards related to safe waste disposal (including international agreements ratified by the Russian Federation, relevant federal and regional legislation, GOSTs, regulations, guidelines and requirements) to be used by the applying company in the course of its business activities;
- Statements (endorsements) for all supporting documents from a number of state supervision bodies, executive authorities, local authorities and environmental audit; and
- The public environmental review.

It has to be noted that the above Methodological Guidelines did not go through the registration procedure in the Ministry of Justice and were never officially published. Therefore, this document can’t serve as a legitimate foundation for enforcement measures applied to individuals, employees and companies for non-compliance with the provisions contained therein and can’t be officially referenced to when taking environmental enforcement cases to court.

Furthermore, some provisions of the Methodological Guidelines violate the existing Russian legislation, including the Russian Federation Constitution. The following relate to a few examples:

A) The federal legislation does not set any specific criteria for classifying waste as hazardous waste, which would be subject to the permitting procedure. According to Article 55 of the RF Constitution, setting this regulation (which is in fact a direct restriction of civil rights and liberties) is the competence of the federal legislation.

However, the authors of the Methodological Guidelines eliminated this legislative gap in their own way, having set such a regulation on their initiative and expanding the category of companies having to go through the permitting procedure to the maximum. According to the existing Russian classification system, all wastes fall into classes of hazardousness (ranging from non-hazardous to extremely hazardous). To suit their own permitting purposes, the authors of the Methodological Guidelines put all waste categories in one basket. They ignored the provisions of the Basel Convention on control of the transboundary shipment and disposal of hazardous wastes (ratified by the Russian Federation), which provides a classification of hazardous and non-hazardous wastes. They did this because, the adoption of the international classification of hazardous and non-hazardous wastes would have substantially narrowed down the category of companies and individuals having to go through the permitting procedure, i.e. the customer base for the services sold by the officials.

B) The absence of classification requirements for the supporting documents (depending on the expected level of environmental impact from waste disposal) leads to the situation when small and medium companies, capable of only a minor environmental impact, have to bear substantial costs of preparing the supporting documentation and going through the environmental expertise process. These costs are disproportionately high compared to the potential environmental impact from their activities.

C) According to the Methodological Guidelines, permits are to be issued to legal entities and individual entrepreneurs whose activities involve the disposal of hazardous waste produced in the course of their day-to-day productive activities and who are annually given specific waste disposal limits by the state environmental control authorities.

D) Such artificial expansion of the category of companies and individuals who have to go through the permitting procedure runs contrary to federal law "On licensing selected types of activities", which says that licensing can only be applied to those activities that *cannot be regulated otherwise*. At the same time, the annual procedure of setting limits for waste disposal is part of the government regulatory process and in this case, waste disposal does not have to be licensed.

E) The Methodological Guidelines specify that in order to obtain an operating permit, the applicant is to submit to the permitting authority, a positive environmental expertise statement on the applicant's documentation relating to the planned waste disposal activities. At the same time, the Guidelines provide no definition of "the planned waste disposal activities", thus creating an ambiguousness, which could be interpreted by an official of any level to his own favor, i.e. as *any* waste disposal activities that previously was not to be licensed.

In fact, such an interpretation is contrary to federal law "On environmental expertise" which specifies that the state environmental expertise is to be carried out only for the planned activities that precede a managerial decision the implementation of which could cause negative impact on the local environment. In practice this provision means that the business activities of the existing industrial installations that involve the measures for waste disposal implemented in accordance with the waste disposal limits that are annually set by the state environmental control authorities, are *not subject* to the state environmental expertise. However, insufficient understanding of legal issues on the part of both the regional environmental authorities and Russian industrial enterprises leads to the situation

when applicant companies comply with the groundless requirements of the regional environmental authorities and go through the permitting procedure. It's true that anyone can seek justice in court, however, not too many people would go ahead with that, since in the future they would have to deal with the same official having at his disposal plenty of vaguely defined regulations like the above-mentioned Methodological Guidelines, the use of which can bring anyone down to his knees.

Such artificially created government control of the waste disposal activities leads to an unjustified concentration of the human and financial resources at the disposal of environmental authorities on the activities having negligent environmental impact. As a result, the industrial facilities worthy of special attention due to a major hazard they represent to the environment and human health are left unattended. An approach like that results in excessive financial expenditures to ensure the specified requirements and creates serious bureaucratic obstacles to productive activities, breeding mass corruption, however, in most cases causing no apparent influence on the state of the environment in a given region. An approach like that fully demonstrates the inefficiency of the whole system of government regulation.

The above review can be summarized by saying that the Methodological Guidelines create the impression of having been devised for the purpose of maximizing the workload both for the desk officials in charge and for the experts involved in the permitting procedure for waste disposal – irrespectively of the fact whether the applicant's activities would cause any environmental impact or not. The most striking thing here is that almost any regulation created by officials would display the same characteristic features as the above Methodological Guidelines. A typical bureaucratic modus operandi that manifests itself in a vast number of documents meant to regulate everyday life can be justly considered as the principal reason for the inefficiency of the state regulating system that is significantly slowing down Russia's economic development.

Another example testifying to the inefficiency of the state environmental control system in the part relating to setting and collecting charges for causing damage to the environment:

Figure 1 A typical structure of charges paid in Russia for adverse environmental impact by 2002

Receiving Media	Environmental charges, %		
	Within ELVs	Up to TAR level	Exceeding TAR level
Water bodies	50	31	19
Ambient air	45	30	25
Ground	-	75	25

The above data can be alternatively presented as the proportion of polluting substances released to air, water and soil – bearing in mind that the payment rates for releases up to TAR are 5 times higher than those within emission limit values. Similarly, the payment rates for releases that exceed the TAR level are 25 times the rates set for releases within emission limit values. The above table will then look as follows:

Figure 2 The proportion of polluting substances released to the environment

Receiving Media	Proportion of Pollutants Released to the Environment, %		
	Within ELVs	Up to TAR level	Exceeding TAR level
Water bodies	87,8	10,9	1,3
Ambient air	86,5	11,6	1,9
Ground	-	93,75	6,25

As can be seen from the above table, approximately 87% of the physical amount of all polluting substances were released to ambient air and water bodies within the emission limit values, another 11% of all pollutants released were up to the level of temporarily agreed releases and only up to 2% of the pollutants released exceeded the officially specified TAR levels.

Since some 87 % of all pollutants released to ambient air and water bodies were within emission limit values (meaning environmental payments at significantly reduced rates), this could signify one of the following:

- Russia's environmental problems have already been resolved, since 87% of all pollutants released are within emission limit values or, in other words, do not cause any damage to the environment;
- The existing system for setting limit values for releases to air and water is incorrect and should be revised; or
- The system of the state environmental control is vulnerable to corruption.

In fact the analysis indicates an important feature of the environmental regulation system currently existing in Russia – with only 1-2% of the total physical amount of pollutants released to air and water exceeding the level of temporarily agreed releases.

Specific to this case, the inefficiency of the state control system is demonstrated by the fact that considerable financial and time resources are spent by regulators to deliver the conclusion that only some 2% of pollutants released all over Russia exceed the specified limit values. Not a very impressive performance.

The real significance of the above is that in the absence of clearly specified criteria for classifying environmental impact, actual decision-making with regard to such classification remains at the discretion of the officials.

3.6.4 An important aspect of the procedure for collecting environmental charges is defining the list of pollu ting substances to be monitored

Russian Federation Government Decree No.344 of 12 June 2003 "On limit values for pollutants released to ambient air by stationary and mobiles sources, discharges to surface and underground water bodies, and disposal of industrial and household waste" specifies no less than 210 air quality criteria and an additional 142 water quality criteria.

Moreover, in accordance with the existing regulation titled "Methodological guidelines for the procedure of collecting environmental pollution charges", officials are entitled to the right *to expand the above list at their discretion*, i.e. the existing legislation provides the official with an opportunity to act at his own choosing. In practice this means that an official could require the applying company to submit a documented proof for the presence (or absence) of any

polluting substances in its emissions or discharges, not just those listed in the regulation approved by Russian Federation Government Decree No.344.

An analysis of the structure of environmental pollution charges collected for specific pollutants made by the RF Ministry of Economic Development in 2002, has shown that some 95% of all payments come from 50 pollutants emitted to ambient air, with another 20 pollutants discharged to receiving water bodies. In other words, these substances constitute an overwhelming share of all pollution released to air and water. The logical conclusion from that would be to reduce the number of pollutants in the list of polluting substances subject to the state environmental control – to help reduce non-productive costs of unnecessary analyses and excessive work to substantiate the standards of permissible impact for these substances. However, nothing like that happened in reality despite the fact that the payment rates for releases to air and water which were actually prolonged by RF Government Decree No.344 abound in absurdities.

Let's take a few examples of such absurdities:

1. The payment rates for emission of toluol, benzol and diethylbenzol are set at 3.7, 21.1 and 410 rubles per ton respectively. The rate set for diethylbenzol is a staggering 111 times higher as compared to toluol despite the fact that all three substances are homogenetic, i.e. they all produce the same (or similar) effect on biochemical processes and bio-systems. In other words, their negative impact on the environment has got to be virtually the same. Accordingly, the payment rates for them have to be the same or at least similar.
2. The payment rate for emission of hydro-cyanic acid is set at 205 rubles per ton – the same rate as for valeric acid. However, hydro -cyanic (prussic) acid is a highly toxic substance that inhibits oxidation and fermentation processes, causes a paralysis of respiratory centers resulting in suffocation and is officially recognized as a chemical weapon. On the other hand, valeric acid is obtained from the roots of valerian and is used by the pharmaceutical and food-processing industries. Placing these two substances on the same level in terms of their negative impact on the environment can be viewed as nothing but an absurdity.
3. The rate for discharges of bi-valent iron (Fe^{2+}) is specified at 55096.2 rubles per ton, the rate for discharges of soluble lead salts (Pb^{2+}) – at 2755.4 rubles per ton, and for discharges of cyanides – at only 5509.6 rubles per ton, i.e. the rate for the discharge of such extremely dangerous substances as soluble lead salts and hydro-cyanic acid is respectively 20 and 10 times less than the payment rate specified for the same amount of soluble salts of bi-valent iron. This can only testify to the absence of any criteria for classifying hazardous substances as well as to the inability of the federal bodies of state environmental control to correctly formulate such criteria.
4. The payment rate for discharges of petroleum and petroleum products is set at 5509.6 rubles per ton. However, the rate for fuel oil is set at 27548.1 rubles per ton, or five times the rate for petroleum products. Why fuel oil, which is nothing but a petroleum product, deserved such special treatment by the regulating authorities is an anomaly.
5. The payment rates for discharges of alkali metal salts are as follows: for discharge of sodium (Na^{+}) – 2.5 rubles per ton, potassium (K^{+}) – 6.2 rubles per ton and rubidium (Rb^{+}) – 2755.4 rubles per ton. However, it is well known that all these

substances fall into the category of alkali metals, similar in their physical and chemical characteristics. Being in the same group, these metals produce similar effect on various biochemical processes, therefore their detrimental impact on the environment is the same or at least similar.

Similarly, the reason for a more than 1000-fold increase in the payment rate for rubidium is also an anomaly.

The application of sanitary standards as environmental safety criteria for the procedure of setting payment rates for causing negative impact on the environment (i.e. to specify the value of economic damage) is incorrect, since the danger represented by particular pollutants from the sanitary standards point of view poorly correlates with the actual danger the same pollutants represent to the environment.

3.6.5 Conclusions

Concrete measures to be introduced in order to improve the existing environmental permitting and enforcement system are as follows:

1. A revision of the legislation relating to economic activities and elimination of artificially created bureaucratic barriers that require substantial resources to overcome is considered as the key element in the dismantling and reshaping of the existing inefficient state control system in the Russian Federation. Such restructuring has to ensure that the system to be built on the basis of new legislation would not be vulnerable to corruption.
2. The trend for commercializing the state control system - whereby the activities of government bodies undertaken within their scope of authority are interpreted as paid services – needs to be stopped. Federal law "On State Environmental Expertise" must be amended to include the provision for the state environmental expertise as a service provided free of charge to the applying companies. This activity has to be carried out at the expense of the state budget.
3. The installations subject to the state environmental expertise must be classified by the level of their negative impact on the environment in accordance with clearly defined criteria. Simplified SEE procedures have to be established for the installations with medium and insignificant impact on the environment.
4. The requirements specified for the supporting documentation to be submitted for the state environmental expertise are to be revised to relieve the applicant from having to get his project documentation endorsed by various regulating authorities. The bodies in charge of the state environmental expertise could use specially allocated budget funds for carrying out their expert assessment, required endorsements and the like, relying on the professional judgment of their own experts. This arrangement would promptly reduce the amount of unnecessary activities within the permitting and enforcement procedure – cutting the number of companies having to go through permitting as well as the number of installations subject to the state environmental expertise. In other words, once the permitting procedure and the state environmental expertise are de-commercialized, the need for building the "customer base" for the services provided by government officials on a commercial basis will promptly and permanently evaporate.

5. The system for setting emission limit values has to be cardinally revised. The basic principle for setting the permissible levels of environmental impact has to be the conformity of the industrial facility to BAT specified for a given industry sector by basic pollution indicators typical for the technological process used by the facility (including monitored integrated indicators for which an appropriate control system is in place). The list of polluting substances to be controlled has to be significantly reduced.
6. The permissible standards of negative environmental impact for individual installations should be aligned with the technological standards for best available techniques that ensure a minimum environmental impact at the existing level of scientific and technical development. In this case, the work to substantiate the permissible environmental impact levels (when preparing documents in support of the permit application) would become unnecessary.
7. The senseless procedure for substantiating the limit values for releases of pollutants to air, water and soil has to be abolished, since, as demonstrated by the above-mentioned data, its effectiveness is close to zero.
8. All releases of polluting substances to air, water and soil that exceed the set limit values have to be classified as negative impacts for which the polluters must be charged accordingly.
9. As base-line conditions for the transition to BAT, the limits for causing environmental impact should be set at the level of actual impact the industrial facility in question is causing to the environment.
10. The industrial facilities whose activities cause adverse impact on the environment should be required to develop and implement stage-by-stage programs listing the measures to reduce negative environmental impact for the period of their transition to best available techniques. The regulatory role from the state is to be restricted to controlling compliance with the above programs.
11. The programs of a stage-by-stage reduction of environmental impact from the activities of a given company should take into account the costs of specific environmental measures, the actual technical situation at the company and its financial capacity to afford the specific measures suggested in the program.
12. The paying installations must be entitled to the right of using the environmental charges for negative impact imposed on them to finance their own environmental clean-up activities as part of their program for transition to BAT and reducing their environmental impact. This is in the interest of the state, which is to guarantee its citizens' right to a favorable environment.

3.7 LEGISLATIVE SUPPORT FOR ECONOMIC MECHANISM OF ENVIRONMENTAL PROTECTION BY DMITRY KOLGANOV, ENVIRONMENTAL RESOURCES MANAGEMENT, MOSCOW

3.7.1 Introduction

The economic mechanism for environment protection was legally established in 1992 with the adoption of Russian Federation Law "On Environmental Protection". The said mechanism made provisions for:

- Payments for the use of natural resources,
- Setting up a system of special off-budget funds to accumulate the payments levied from polluters and to allocate the raised funds to environmental protection, and,
- The introduction of a special tax on products believed to be harmful for the environment.

Further to the above law, the Russian Federation Government passed other regulations specifying the procedure for setting out and levying the payments for environmental damage (Russian Federation Government Decree No.632, 1992) as well as the scope of activities of the off-budget environmental fund system, subordinated to the RF Federal environmental fund (Russian Federation Government Decree No.442 of the same year.)

In an attempt to cut down the budget deficit, as from 1995, the RF Federal environmental fund was consolidated into the federal budget. Then, in the 1996 Federal Law "On Budgetary Classification", the payments for the authorized and over-the-limit emissions, discharges, waste disposal and other activities causing adverse impact to the environment were classified as tax yields for the budget.

The draft Taxation Code of the Russian Federation, introduced to the State Duma in 1997, contained an article on environmental tax that provided for transforming the payments for damage caused to the environment into a tax. At the same time, a Russian Federation Finance Ministry document, entitled "Draft Taxation Code of Russia in diagrams" was being circulated among the State Duma deputies with the apparent intention to illustrate the differences of the proposed taxation system from the one in force. The document specifically replaced the definition of "the payment for the damage caused to the environment" with the definition of "an environmental tax" and proposed to consider the loads in emissions / discharges as a taxation base.

Subsequently, draft federal laws relating to the 1997 and 1998 federal budgets by the Russian Federation Government did introduce the definition of the environmental tax - as a budget tax yield line relating to the payment for the damage caused to the environment. However, following a number of amendments in the course of debate, the final wording of both laws retained the old definition, i.e. "the payments for the authorized and over-the-limit emissions, discharges, waste disposal and other activities causing adverse impact to the environment".

In 1998, the definition of the environmental tax was legally adopted following the passing of Part 1 of the Russian Federation Taxation Code. Notwithstanding, the actual definition of the environmental tax was not given in this document, since it was supposed that it would be provided in an appropriate article of Part 2 of the Taxation Code.

With the abolishment of the RF Federal environmental fund in 2001, the federal-level system of payments for damage caused to the environment was fully subordinated to regulation by budget legislation.

The 2002 Federal Law "On Amendments and Changes to the Federal Law On Budgetary Classification" officially defined "the payments for the authorized and over-the-limit emissions,

discharges and waste disposal" as a budget line no.1050600 within the tax revenues section of the federal budget".

The norms regulating the form and procedure for setting out and levying the payments for the damage caused to the environment, had been removed from the text of the draft Federal Law "On Environmental Protection" prior to the Duma debate – during the process of the draft law's development and finalizing with the Russian Federation Government and the Presidential administration. The reason being, in the opinion of the coordinating authorities, that this payment was under the jurisdiction of the budget and tax legislation. The Law that came into force in 2002 provides that specifying the form of payment is within the competence of federal law, and the procedure for setting out and levying the payments is within the competence of the Russian Federation legislation.

In March 2002, the Russian Federation Supreme Court repealed the Government Decree No.632 "On the procedure for setting out the limit payments for environmental pollution, waste disposal and other activities causing adverse impact to the environment" that recognized this payment as an environmental tax. However, the Supreme Court ruling appears to be poorly justified, since the federal budget laws do specify a tax form for it. In addition, the Russian Federation Government decrees related to the procedures for setting out and levying the payment are also part of the Russian legislation. As one can see, in this case there is no contradiction to the Federal Law "On Environmental Protection" either.

The biggest difference between the environmental tax and the payment for environmental damage is specified in the Russian Federation Taxation Code itself. Despite the fact that article 13 of Taxation Code Part 1 lists the environmental tax in the roster of federal taxes and duties, part 2 of the Taxation Code has no specific chapter that would further elaborate on the substance of the tax. On the other hand, article 25 "Corporate profit tax", chapter 254 "Expenditures", item 1, paragraph 7 does specify that "the payments for limit values of emissions / discharges to the environment are expenditures to be deducted from the taxable base when calculating the profit tax". With a view to the above, it becomes obvious that the definition of the environmental tax is not identical to the notion of the payment for environmental pollution, this position being clearly specified in the Russian Federation Taxation Code. Why the Supreme Court ruling chose to ignore this remains a mystery.

As a result, what we have at hand is a certain imaginary legal collision, which can be overcome once the gaps in legislation, relating to the regulation of the economic mechanism of environmental protection, have been eliminated. The following sections consider the reasons for the problem, and the ways to resolve it in more detail.

3.7.2 The Issue of Forming An Economic and Legal Support Mechanism for Environmental Safety

3.7.2.1 Approaches to Improving the Environmental Safety Economic Support Mechanism in a Market Economy

The importance of improving the economic mechanism for environmental protection and natural resources management is steadily gaining ground during Russia's transitional period to the market economy. However, resolving this requires an assessment of the efficiency of the current environmental legislation. The achievement of the development goals, preferably from the public's social and environmental points of view, depends largely on the completeness and consistency of the legal basis of this mechanism.

As already mentioned, legal support for the economic mechanism of environmental safety and the use of natural resources plays a key role within the conditions of a market economy. The freedom of business to choose their manufacturing methods should be restricted within a market economy. These restrictions should be imposed by the use of tangible incentives to comply with the environmental safety requirements, as opposed to command-and-control methods. The objective of a modern legislation is, therefore, to create certain conditions or a legal framework for economic freedom, which would make the mere efficiency of business directly dependent on its compliance with environmental safety requirements.

Let us assume that a certain list of activities exists that is rated in accordance with environmental safety criteria. From an environmental point of view, the general public is interested in enhancing the degree of environmental safety with regard to the allocation and development of its productive forces; hence it is interested in the implementation of the part of the list that satisfies the above-mentioned criteria to a maximum. The economic interest of a business to comply with the requirements of environmental safety has to be determined by an opportunity to gain certain benefits from the taxation regime and budget protectionism – and these provisions must be clearly specified by the federal legislation.

At present, the economic mechanism of environmental protection and the use of natural resources is undergoing a significant change for objective reasons. Initially the foundation for this mechanism was exclusively based on the environmental legislation. Then, as from 1995, a number of environmental protection-related regulations were introduced to the budget legislation.

Finally, an attempt was made, through the introduction of a corresponding chapter to Part 2 of the Russian Federation Taxation Code, to finalize the process of a market-oriented transformation of the said mechanism.
The following sections attempt to identify the development trend for this transformation in order to make it possible to assess its efficiency from an environmental safety point of view.

3.7.2.2 Review of the Changes in the Economic and Legal Support Mechanism for Environmental Safety

The formation of the off-budget mechanism of levying payments for emissions and discharges of effluents, waste disposal and other activities causing adverse impact to the environment, began in the early nineties. The raised funds were accumulated in a three-tier system of the off-budget environmental funds and subsequently allocated to finance the implementation of environment protection activities at the federal, regional and municipal levels. In addition, 10% of all payments went straight to the federal budget to finance the maintenance of territorial divisions of the government organizations in charge of environmental protection.

Of the 90% remaining at the disposal of the environmental fund system, another 10% were, as from 1995, transferred to the federal budget, and the Federal environmental fund of the Russian Federation received the status of a budgetary fund-in-trust. It is noteworthy that in 2000-2001 the actual provision of financial resources for the fund exceeded the set target values by as much as 150%. At the same time, audits carried out by various financial control inspectorates discovered that there were no cases of the funds having been allocated to purposes other than environmental protection. Despite this, the RF Federal environmental

fund ceased to exist in 2001.In conjunction with this, all environmental regulations relating to the payments for causing adverse impact to the environment were, with regard to the RF Federal environmental fund, suspended.

The law on the 2002 federal budget made a provision for collecting a total of 1.6 billion roubles in environmental payments to the federal level (to be levied at a 19% rate). Simultaneously, a total of only 1.2 billion roubles were allocated to finance various environmental protection activities. It is obvious that the resulting balance of 400 million roubles was to be channelled to purposes other than environmental protection. This kind of situation arises because ensuring environmental safety is not currently regarded as a priority for the budgetary policy at the federal level. At the same time, the suspension of the environmental regulations with regard to the RF Federal environmental fund, and allows for reallocation of environmental funds to finance and other budget expenditures. In summary, the abolishment of the RF Federal environmental fund has meant that resources can be allocated to purposes other than environmental protection, as this is no longer prohibited.

3.7.2.3 The Constitutional Base for Implementing Public and Private Right to a Favourable Environment

Let's consider the current situation from the point of view of the constitutional right to a favourable environment, and the constitutional norms regulating the joint authority of the Russian Federation and the Russian Federation subjects, with regard to environmental protection and the use of natural resources. Any environmental issue is always geographically defined and, depending on its scale, can be classified as local, regional, inter-regional, trans-frontier or global. Examples of global environmental issues would be the emission of gases contributing to the greenhouse effect, holes in the ozone layer and other man-created phenomena.

Resolving environmental problems at any level requires an adequate legally-supported economic mechanism capable of preventing, localizing and eliminating adverse impact on the environment or, in other words, ensuring resolution of environmental and economic issues at various levels.

Due to objective uncertainty of the current transitional period to a market economy, it is impossible to make a strict quantitative assessment of the required degree of state support (through the federal budget) for environmental protection. Under the current circumstances, it seems fair that the responsibility of the environment is shifted from the state to businesses. At the same time, the government retains the right to define the degree of such responsibility and establish institutional and legal mechanisms to facilitate or motivate environmental protection activities at the enterprise level.

As a general rule, the lack of working capital at the enterprises becomes a major constraint for technological streamlining, together with modernization and repairs of pollution abatement facilities. As a result, despite an overall industrial downturn of more than 50% in the last decade, there has been no positive change in the state of environment. The economic growth observed in the last few years is based on obsolete technical and technological foundation, which in itself creates risks of further deterioration of the environmental situation. It's obvious that the environmental safety of the economic mechanism currently being formed will, to a

great extent, depend on the degree to which its environmental factors have been taken into account.

The economic mechanism for environmentally safe activities and rational use of natural resources has to feature the instruments for regulating the functioning of all subjects of social relations, both the producers and consumers alike. At the same time, this mechanism has to ensure that sufficient resources are available to be used for the prevention, localization and resolution of various-scale environmental issues. Only a small amount of these funds can come from the budget, a majority of the resources will have to be provided by off-budget sources. In addition, the economic mechanism has to incorporate certain elements of budgetary protectionism, as well as strict tax norms to restrict the development of environmentally unsafe technology. Also, granting tax benefits could encourage society to engage in activities aimed at building an environment-compatible economy.

The aforesaid confirms the theory that in a transitional period the role of government participation in environmental protection activities is naturally narrowed down to a functioning one, with regards to environmental control and monitoring.

3.7.2.4 Raising the Efficiency of the Budget Provisions for Environmental Protection

At present a legal provision exists for users of natural resources economic responsibility for any damage that they may cause to the environment. This responsibility translates into polluter for emission and discharge of pollutants, waste disposal and other negative impacts on the environment. A mere expansion of the list of environmentally harmful activities will increase the amount of financial resources levied as environmental payments. In parallel with that, a similar increase could be achieved by bringing the environmental payment index factor in line with the inflation level. At present, the said index factor is on average only about 5% of what it should be across various sectors. As an example, let's assume that just a free-fold increase of the payment index factor will ensure an additional 3 billion roubles to the federal budget in 2002 alone.

With regard to this issue, the State Duma Environmental Committee requested that the Russian Federation Government reconsider the above index factor. In response, the Committee received an official letter from the RF Ministry of Finance (No.02-02-01/06-4111 dated November 9, 2002, based on the Russian Federation Government order ? ? -? 9-18473 dated October 23 of the same year). The letter regarded the Duma Environmental Committee 's proposal to increase the environmental payment index factor in 2002 as unsubstantiated. The following is a quotation from the letter:

"The environmental payment index factor of 1.18 as specified for 2002 by the draft federal law "On Federal Budget for 2002" has been calculated on the basis of individual deflator factors forecast by the Ministry of Economic Development for mo st polluting industry sectors. The above index factor has been coordinated with the Ministry of Natural Resources and the Ministry of Economic Development and Trade. The increase of the environmental payment index factor as proposed by the State Duma Environmental Committee will result in shrinking of the taxation base when calculating the corporate profit tax and, in the long run, will reduce the budget revenues at all levels".

A counter argument relating to this position is that the extract quoted testifies that the matter is only concerned with the industry sectors considered most environmentally polluting.

Therefore, the budget revenues from profit tax levied from less polluting sectors will not be affected. It is also necessary to examine the prospective shrinkage of the taxation base when calculating the corporate profit tax for polluting industries and what effect it is likely to have on budget revenues at all levels. It is noteworthy that the arguments cited in the Ministry of Finance letter show no substantiating calculations or quantitative characteristics. According to the Ministry of Natural Resources, the actual share of the payments from polluting installations only constitutes a few per cent (!) of total tax revenues - a negligibly small value.
Therefore, A three-fold increase in the payment will not significantly affect the financial state of these enterprises. Another circumstance that the Ministry of Finance seems to overlook is that the environmental payment for pollution within the set limitations is actually charged to production price. Allocations from profit are made by polluting enterprises, but only when the set emission limit values have been exceeded. Therefore, such allocations from profits should be regarded as punitive sanctions for damage caused to the environment that is beyond the authorized limitations.
The next counter-argument can be illustrated by a simple calculation of the percentage allocated to the federal budget. Let's assume that the corporate profit tax is charged at 35 %, and the environmental payment – at 4%. The share of corporate profit tax is then calculated from 96% of the total taxation base for a given enterprise. This share is equal to 32%. If it is added to the 4% share of the environmental payments, we get a total of 36% - a value greater than 35%. It is obvious that an increase of the environmental payment share to 4% will not result in reduced tax revenues to the state budget. It is also obvious that the position of the Ministry of Finance relating to this issue is poorly substantiated from a quantitative perspective. As for its "firmness", it is most likely to originate from purely technical difficulties in the implementation of this proposition.

3.7.2.5 Economic Regulating for Ensuring Environmental Safety

The mechanism of payment for environmental pollution is based on the polluter pays principles. Even if further improved, this mechanism will not be sufficiently adequate and fair to ensure the environmentally safe use of the natural resources. It's obvious that the development of market economy creates objective conditions for a more extensive consumption of products. As a result of such consumption, the society produces huge amounts of waste that needs to be disposed of or recycled. However, businesses lack the starting capital to construct and commission waste disposal facilities. It's clear that in this case, a redistribution of part of the public income for the purpose of financing the above goals seems perfectly justified.
A question arises: "how can this kind of redistribution be carried out?" In the first instance, a new tax is needed for intermediate and end-user products that cause adverse environmental impacts or produce excessive waste, for which there are currently no environmentally safe substitutes. Examples of such products would be chemical fertilizers, pesticides, detergents, products destroying the ozone layer, etc. Such a tax should be based on the consumer pays principle. In effect, it is an indirect excise-duty tax to be included in the product price. This should be at a rate necessary to eliminate the adverse consequences of consuming such a product. To make such a compensation mechanism work, the funds levied, as environmental tax should be channelled to finance the activities related to waste processing and disposal. These funds can also be used to encourage the production of new, environmentally safe products. Chemical fertilizers and pesticides could then be substituted for their organic and

biological environmentally safe analogs. Synthetic substances should be phased out and substituted with their biodegradable analogs.

The RF Federal environmental fund served as an important element of the economic mechanism that ensured appropriate allocation of funds to financing environmental protection activities of a fundamental character. Following its abolishment, a new federal-level structure needs to be established. It should be capable of coordinating the investment activity with regard to environmental protection, including waste disposal issues. One of the ideas currently in circulation proposes the establishment of an Environmental Investment Corporation, its main purpose being to raise funds to be subsequently allocated to finance environment protection activities in various industrial sectors. In addition to providing the state budget with environmental protection funds, the proposed institution is supposed to function as a lending agency, and use varied financial and economic tools to provide guarantees. This is in order to attract funds from off-budget sources (both within and outside Russia) to finance the implementation of environmental protection activities.

However, this institution can only prove effective if it can raise enough financial resources to fulfil its proclaimed objectives. The total requirement is estimated at 1-2 billion roubles in investment credits, and a further 300-400 million roubles in grants to the regions.

In summary, the above-mentioned funds could be raised through a balanced taxation policy that would include imposing environmental tax on selected products and commodities.

3.7.2.6 Environmental-oriented Reform of Tax Legislation

When working on Part 1 of the Russian Federation Taxation Code before its introduction to the State Duma by the Russian Federation Government, the authors committed the error of replacing the notion of environmental payments (compensatory by its character) with the notion of environmental tax. This resulted in distorting the very nature of a tax as an economic category. In accordance with the classical definition, the tax is a mandatory payment levied subject to profits gained (direct tax) or an excise duty included in the product price (indirect tax). The process of taxpaying involves the alienation of part of the taxpayer's material values. In the case with the environmental tax as interpreted by the Ministry of Finance, the rate was based on load of emissions, discharges, waste disposal and other kinds of adverse impact on the environment, such as noise, vibration, and electromagnetic radiation, which have no consumer value and hence cannot be expressed in monetary terms.

There emerges another logical contradiction: environmental payments were introduced as a diminishing return, taking into account a long-term interest of the society in a cleaner environment. As for taxes, they have a special function of being a stable source of long-term budget revenues. How can this contradiction be overcome under the present circumstances? The way we see it, payments for adverse impact on the environment should be regarded as non-tax budget revenues. However, addressing the tendency to confuse the notion of environmental payment with environmental tax currently seems somewhat unlikely due to mainly subjective reasons. In particular, resolution of this issue has long been hampered by the resistance from the Russian Federation Ministry of Finance. Similar objections were voiced by the Ministry of the Economic Development, which were probably based on the absence of opinion on the issue in question. The position of the State Duma Environmental Committee was in principle supported by experts from the Ministry of Natural Resources, the Tax and Revenues Ministry, and executive government bodies in charge of environmental protection in the Russian Federation subjects. It is most remarkable that attempts of revising the notion of environmental tax drew threats of dismissal on the heads of dissidents – and we

are talking about the present time! However, the prolonged struggle for the triumph of the common sense with regard to environmental taxation did bring small victories –for example, an amended definition of relevant tax revenue budget lines for the 2001 and 2002 budgets, which read "payment for emissions, discharges…" instead of environmental tax.

More time elapsed before the necessity of breaking the resulting impasse became widely accepted. In that time, the notion of environmental tax ceased being associated with the notions of payment for causing damage to the environment and environmental tax on products. Finally, on June 6, 2002 the Russian Federation Government decided to recognise environmental payments as non-tax budget revenues. Development of the draft federal law "On Payments for Causing Adverse Impact on the Environment" was included in the Russian Federation Government plan for lawmaking activities.

Along with the isolation of environmental payments as non-tax budget revenues, it is necessary that only environmental tax on products remains part of the environmental law. The funds levied both from environmental payments and environmental tax can be a constant (or set) value. At the same time, the proportion of each of the two components acquired from payments for environmental damage could gradually decrease as the industry sectors become environmentally conscious. The lists of products subject to environmental taxation have to be annually approved by the Russian Federation Government, following submission by a specially authorized executive government body in charge of environmental protection issues. The Russian Federation constituents can also implement the said approach to a certain point that is still not contradicting the federal legislation. Experience indicates that with the abolishment of the RF Federal environmental fund, which controlled the system of regional environmental funds, there is uncertainty to the prospect of their further existence. In some of the Russian Federation constituents, the regional environmental funds have been consolidated into the budget, whilst in others they retain their status of off-budget special purpose funds. Finally, in some of the regions they have been completely abolished. In other words, it's a complex and painstaking process.

Notwithstanding, the replacement of command-and-control methods in managing environmental issues with a more economic-oriented approach seems inevitable. To ensure a smooth transition, we must create a legal base for a balance to be achieved between economic interests and restrictions imposed on the free market, with a view to environmental protection.

3.7.2.7 Macroeconomic Aspects of Environmental Safety

It's widely accepted that the macroeconomic indicators, which are the basis for budget legislation, can only serve as guiding lines in formulating a correct social and economic policy when the environmental factors for the allocation and development of productive forces are taken into account to the maximum. The inclusion of the effects from environmental pollution into the gross domestic product is absolutely intolerable from a scientific point of view. Can the load of pollutants really be regarded and taken into account as a positive useful result of economic activity? Despite the sheer absurdity of it, this kind of situation still occurs.

This leads to logical fallacies in the determination of the cause and effect chain in other areas of social and economic forecasting, and hence sets out the priorities for further development. As a result, we concentrate on an everlasting and costly struggle with the consequences instead of a less costly and smooth elimination of the causes. The environmental component has to be taken into consideration, both in the calculation of the GDP and when determining the value of the national wealth. This is because Russia's environmental resources are part of

its total natural resources potential, which are quite correctly defined as invaluable, and will allow Russia to restore its status of one of the world's richest nations. In its turn, it can form the foundation for tackling the issue of the nation's external debt using the "environmental compensation" scheme, and attract international investments for environment-oriented streamlining of the Russian economy.

Russia's nature is a stabilizing factor for environmental processes on our planet. Therefore, the environmental good supplied by Russia to the rest of the world should be assessed quantitatively and taken into account in the process of the nation's entry to the international community.

The issue of providing legal support for the use of natural resources should be considered separately, since special emphasis has to be made on their rational and fully efficient use, from the position of the national interests. The issue of private property for natural resources, especially the land, water and forest resources, has sparked fierce debate. A recent idea, generating wide acceptance, is rental taxation for the use of natural resources, with the government acting as the title owner of the natural resources, while various rights for their use become the subject of the market relations. This approach will allow the government to generate substantial rental income, which in a long-term perspective could replace inefficient taxes such as VAT or taxes on labour and capital. On the whole, transferring the tax burden to the environmental resource component of the social relations is an issue worth attention. The focus should be on a detailed development of the practical implementation mechanism, since its theoretic foundation has been sufficiently elaborated on by the Russian Academy of Science economists. Especially noteworthy is the theoretic contribution to this matter by academician D.S.Lvov of the Russian Academy of Science.

3.7.2.8 Legal Support for Ensuring Environmental Safety

Currently there exists no integrated regulation for addressing the issue of legal support for the economic mechanism with regard to environmental protection and the use of natural resources. Is this good or bad? It is good that the mechanism itself is already in place and continues to develop though the adoption of various specific regulations.

However, it is bad that a systemic understanding of its complexity is only possible for someone possessing an extensive knowledge of a complex of necessary environmental, economic and legal issues. In reality such experts are very difficult to come by. As a result, distortion of the economic mechanism could be very likely due to poorly-justified, forcible, albeit alluring at first sight, decisions – an example of such would be the substitution of the notion of payment with the definition of the environmental tax.

Another unfortunate development could be an imperative (political) introduction of the institution of private property for the lands occupied by residential settlements, industrial installations and transport establishments with no consideration for wider prospects of town planning. This would mean dire consequences for the said prospects. Unfortunately, instances of this kind are aplenty but their adducing is not the goal of the present article.

The complexity of understanding the subject of legal regulation is largely predetermined by a non-linear character of the cause-and-effect relations between various components of its multi-level structure. The legal norms relating to the economic mechanism for environmental protection and the use of natural resources should be applied to a number of regulations targeting specific issues, as opposed to a single legal document. This concept prevailed in the development of the Russian Federation Forestry and Water Use Codes, the federal law "On protection of the atmosphere", and the federal law "On Environmental Protection".

3.7.2.9 Water Regulation

In particular, the laws on water use provided for two types of payment:–

(i) The payment for the use of water bodies, and;

(ii) The payment channelled to finance the conservation and protection of the water bodies.

At a later stage, both types of the payment were incorporated in the notion of the water tax. This then resulted in confusion about an allegedly double taxation for the discharge of effluents and the use of water bodies, and water use tax. The confusion spread as far as the Sate Duma, when a number of deputies introduced a legislative initiative to eliminate this imaginary deficiency in the relevant regulations. In reality, it was not a case of a double taxation, since the deputies failed to understand that in the former case the user is paying for load of effluents contained in the waste water discharged into the environment, and for the latter – the user is paying for the amount of the water resources used. Fortunately, in this case of an allegedly double taxation in water use, the legislative initiative was withdrawn by the authors prior to its consideration by the State Duma.

3.7.2.10 Forest Regulation

The economic mechanism of the forest regulation is also undertaking a substantial change. For instance, according to a new procedure adopted in 2002, all forest tax rubles exceeding the minimum rate for cut timber were directly allocated to the federal budget (before that, the funds were to remain in the regions to be used for purposes of forest restoration). In addition, the new procedure specified rental payments for the use of forest resources, including changing the forestland status to that of non-forest, and requisitioning the forestland. A question arises: "what will happen to the forestland in case of a forest fire?" As these territories are rich in minerals, it would not be unreasonable to expect if the forestland status is changed to a non-forest category, it will be subsequently sold on to private owners. The forest will grow again after people leave – or perish in an environmental catastrophe due to the destruction of the planet's "green lungs". And does it really matter what the reason for the end of mankind – whether the lack of resources or contamination of the environment? Such an end seems inevitable if we continue the existing paradigm of development.

3.7.2.11 The Way Out

The way out requires the implementation of a flexible and smooth economic mechanism designed to incorporate the environment into the market model of society. What does this mean?

(i) A quantitative economic assessment for all parameters of environmental resources available and their contribution to life support of society at the local, regional, national and international levels.

(ii) Accounting the environmental effects of production (positive or negative) when calculating the gross domestic product and the value of the national wealth.

(iii) The introduction of payment system for the use of environmental resources – payments for causing damage to the environment, and environmental tax on certain products should be the first step in that direction.

(iv) A "green reform" of the current taxation system to transfer the tax burden from labour and capital to the environmental resource component of social relations.

This would stimulate the development of high-technology industries and the increase of their share in the economy. On the other hand, it will create constraints for the further development of extractive and processing industries such as metallurgy, petrochemistry, etc., which make the largest contribution to environmental pollution.

(v) An environmentally oriented modernization of basic production facilities, the introduction of closed production cycles, and the application of alternative sources of renewable energy.

(vi) Propaganda of an environmentally conscious way of life – and not only for the so-called "golden billion". To the question: "where does the money come from?", there is an answer. The need for financial resources will be much smaller, provided that the economic model based on the principles of monetarism is replaced with another built on physical principles.

Such a transition would require the development of a system of economic indicators, which could serve as a new foundation for social relations, corresponding to the purpose of a stable and environmentally safe development of society.

3.7.3 Review of Proposals for Improvement of Environmental Payment Regulations

3.7.3.1 Review of Federal Draft Laws on Payments for Environmental Pollution

As of November 4, 2002, the Russian Federation government was working on three draft laws related to the payments for causing damage to the environment, namely, a revenue draft law by Duma deputy G.B.Kulik (submitted on October 16, 2002), a non-tax draft law by deputy V.A.Grachiov, and another version of non-tax draft law submitted on October 18 by the Ministry of Natural Resources.

Draft Law by Duma Deputy G.B.Kulik Draft federal law "On Payments for Causing Adverse Impact to the Environment" introduced by deputy G.B.Kulik to the Russian Federation government for review was a verbatim replica of the corresponding chapter in the Russian Federation Taxation Code that had been developed and submitted for government review on April 29, 2002 by the RF Finance Ministry. The only difference being that the version of deputy Kulik provides for 100% of all levied payments to remain at the disposal of the Russian Federation regions (the Finance Ministry version makes a similar provision of 80%).

Following its introduction in April, the draft chapter never went past the coordination stage in any of the Ministries involved (namely, the Ministry of Natural Resources, the Ministry of Economic Development and Trade and the Tax and Revenues Ministry), since it proposed a strict 5-6-fold increase of payment rates with no clauses for any compensation, tax deductions or fringe benefits, and no motivating or regulating provisions. Besides, the draft law drew a generally negative response from the Presidential administration and the Institute for legislation and comparative law affiliated to the Russian Federation Government.

The meeting in the Minister of Finance A.L.Kudrin office held on June 5, 2002 decided against the introduction of the environmental tax. This was the first time that the Russian Government rejected the draft. By this time, the Russian Federation Government arrived to yet another negative conclusion with regard to the draft law introduced by deputy G.B.Kulik.

Draft Law by Duma Deputy V.A.Gratchev (Non-tax Version)

This version of the draft law links the payment rates to loads exceeding emission limit values. The draft law does feature certain motivating provisions and ensures a regulatory function of payments for causing damage to the environment. The draft law specifies a system of

compensations based on declarations from the enterprises. No payment is required for any emissions within the set emission limit values.
No registration is required if the installation causes no adverse impact on the environment. Environmental payments are charged to production price. No payment is required for the waste deposited by installations to own specially equipped waste disposal sites. There is a provision for retaining 81% of the levied payments in a given Russian Federation region, with the remaining 19% allocated to the federal budget.
On the other hand, the draft law does not feature any specific payment rates. It lists neither environmental protection activities subject to subsequent payment compensation nor any specific emission limit values. This is an indirect draft law referring to other relevant regulations by the government.

3.7.3.2 Draft Law by the Russian Federation Government

A direct law with no references to other relevant regulations. This version was developed by the RF Ministry of Natural Resources (as per the 2002 Russian Federation Government plan for lawmaking activities) with the participation of the Ministry of Finance, the Ministry of Economic Development and Trade, and the Tax and Revenues Ministry.
The latest version of this draft law contains the basic elements of the former system of environmental payments:

- Charging the environmental payments for adverse impact within the set emission limit values to expenditures discounted in the calculation of corporate profit tax;
- A provision for reduction of payments – the so-called payment compensation taking into account the costs of own environmental protection activities at a given installation;
- A declarative character of the procedure for becoming entitled to payment compensation (the specific list of environmental protection activities by a given enterprise that entitle it to reductions of payments is shown in the text of the draft document);
- As compared to 2002, the proposed payment rates are increased by no more than 1.5 – 1.8 times.

The draft law contains 18 articles, 18 pages of text and 6 appendices listing specific payment rates for emissions, discharges and waste disposal and a closed list of pollutants (a total of 411 items).
Payment rates are based on adjusted load of pollutants and actually deposited waste. On October 22, 2002 this version of the federal draft law was reviewed at the session of the Russian Federation Government Committee for lawmaking activities.

3.7.3.3 Draft Law by the Chamber of Commerce and Industry

The basic provisions of this draft law are in general similar to those laid down in the draft submitted by Duma deputy V.A.Gratchev.
The difference is as follows:

- The draft law does not provide for allocation of levied payments to the federal (19% in the draft law by deputy V.A.Gratchev) and regional level (81%) with a reference to the Russian Federation Taxation Code
- The payment is not charged to production price,
- The appendices feature two lists of pollutants (a 19-item list for emissions and a 14-item list – for discharges) with specific payment rates shown.

As compared to the Russian Federation Government Decree No.632 as of June 26, 1992, the payment rates for emissions to the atmosphere have been reduced by 8 times. On the other hand, the rates for waste disposal have been increased by 2.5 times on average with the greatest increase specified for toxic waste of class 5 in processing industries – 5.5 times. Any further independent proceeding with this version of the draft law now seems meaningless.

Table 1 Changes in Payment Rates for Causing Adverse Impact to the Environment as Compared to those Currently in Force

	Version by Deputy V.A.Gratchev	**Version by Deputy G.B.Kulik**	**Version by Russian Federation Government**	**Version by Chamber of Commerce and Industry as of October 9, 2002**	**Version by Chamber of Commerce and Industry as of October 25, 2002**
Emissions	To be determined by the RF government	450%	140%	5%	12,5%
Discharges		550%	180%	45%	115%
Waste Disposal		300%	170%	100%	100%

Table 2 Changes in Payment Rates for Causing Adverse Impact to the Environment

		Draft Laws					
	Russian Federation Government Decree No.632	Version by Chamber of Commerce and Industry as of October 9, 2002	Version by Chamber of Com-merce and Industry as of October 25, 2002	Version by Deputy G.B.Kulik	Version by Russian Federation Government	Version by Deputy V.A.Gratchev ?????? ?. ?.	
						Taxation Code	Payment
Total Emissions Including:						To be determined by Federation government i.e as per Decree No. 632	
Carbon monoxide	2,5	1,0	2,5	12	3,5		
Nitrogen oxides	207,5	100	250	200	291		
Sulfur dioxide	165,0	100	250	800	235		
Methane	2,0	-	-	0,8	2,8		
Petrol	5,0	2	5,0	28	7,0		
Benzapilene	8 250 000	40000	100000	20 000 000	11 550000		
Total Discharges Including:						To be determined by Federation government	
Cadmium	221 750	80000	200 000	3 400 000	130440		
Copper	1 108750	80000	200 000	3 400 000	1 884880		
Mercury	1 108750	800 000	2 000 000	3 400 000	1 884880		
Cyanides	22 175	-	-	68000	37700		
Carbolic acids	1 108750	200 000	500 000	3 400 000	1 884880		

3.7.4 Comments to Finalizing the Draft Federal Law "On Payments for Adverse Impact on the Environment" by State Duma Deputy V.A.Gratchev

We recommend that, when finalizing the draft law, provisions for stimulating a "compensation payment' system be taken into account to compensate own expenses of the enterprises for environmental protection activities. We also recommend that a new article entitled "Stimulating the polluters to reduce adverse impact on the environment" be added to the draft law with the following contents:

1. The funds allocated and used by the installation for environmental protection activities as specified in appendix 1 to the present federal law, are subject to deduction from the environmental payment calculated as per provisions of the present federal law.

The validity of environmental payment reduction shall not be linked to the actual timeframe of a given environmental protection activity. The reduction shall be based on the total sum of funds spent by the installation on such activity.

2. The funds channelled by the installation to finance environmental protection activities, shall ensure reduction of emissions, discharges and waste disposal, which shall be taken into account when calculating the reduction of environmental payments. The actual amount of the funds and the timeframe for environmental protection activities shall be indicated in the application declaration.

The installations willing to exercise their right to environmental payment reductions, shall submit all necessary documents in support of their claim as specified by appendix to the present law to the authorized government bodies in charge of environmental control and monitoring.

3. On expiry of 12 calendar months following submission of the declaration of environmental protection activities by a given installation, it shall, at the latest by the 20th day of the month that follows, submit to the authorized government bodies all relevant documentation in support of actual expenses for the implementation of the said environmental protection activities within the period specified.

4. If the installation fails to complete or start the execution of the environmental protection activities within the timeframe specified, environmental payment shall be calculated in full and paid at the latest by the 20th day that follows the last month of the specified timeframe. Simultaneously the installation in question shall forfeit the right to environmental payment reduction for the period of the next 12 calendar months.

5. The polluter having arrears of environmental payments calculated as per the provisions of this Law shall not be entitled to "environmental payment reductions".

We also recommend that item 6 of article 5 of the draft law (Taxation base) be split in two separate items 6 and 7 and supplemented with a new item 8 having the following contents:
"8. When depositing non-toxic waste (hazardous substances of class 4 and 5) within the specified disposal limits at special landfill and waste disposal sites equipped in accordance with specified requirements and located on the territory legally owned by the waste producer – the payment rate is multiplied by a factor of 0.3? ." Following is the List of environmental protection activities to be used for adjustment of environmental payments and the List of pollutants contained in emissions and discharges.

3.7.5 Appendices: Proposed List of Environmental Protection Activities to be Taken into Account when Adjusting the Rates of Environmental Payments

1. Protection and Rational Use of Water Resources

1.1. Construction of main and local treatment plants for industrial wastewater equipped with an appropriate collector system.

1.2. Practical implementation of recycle and internal-drainage water supply systems of various kinds.

1.3. Implementation of activities with regard to the reuse of waste and drainage water, improving its quality with no negative side effects for receiving environment, such as collectors, settling tanks, installations and devices for water aeration, biological treatment plants, biological channels, etc.

1.4. Construction of installations for the development of new methods of waste water treatment and disposal of sludge.

1.5. Modernization or liquidation of sludge collectors.

2. Protection of the Atmosphere

2.1. Installation of add-on air pollution control devices for catching and neutralizing pollutants in exhaust gases from process units and ventilation air prior to their release to the environment.

2.2. Construction of experimental installations using latest available solutions for the reduction of pollution in exhaust gases.

2.3. Equipping internal combustion motors with neutralizers for exhaust gases, systems for reducing the toxicity of waste gases, application of fuel additives for reducing the toxicity and smoke in exhaust gases.

2.4. Establishing laboratories for the control of emissions to the air.

2.5. Installation of incinerating devices for burning tail gases prior to their release to the air.

2.6. Equipping installations with devices for recovery and recycling of waste gases.

2.7. Purchasing, fabrication and replacement of higher-efficiency fuel burning units, improving fuel combustion regimes.

3. Disposal of Industrial and Household Waste

3.1. Construction of waste processing and waste incineration plants as well as landfill sites for the disposal of industrial and household waste.

3.2. Purchasing and application of installations, equipment and machinery for the collection, processing and transportation of household waste in cities and other residential settlements.

3.3. Construction of installations and sites for waste recovery and recycling.

4. Other Activities

Practical application of the results of scientific research aimed at reducing adverse impact on the environment.

3.8 PERMITTING AND ENFORCEMENT EXPERIENCE IN RUSSIA: THE ENFORCEMENT AUTHORITIES STANDPOINT BY ALEXEY KLIMENKO, REPRESENTATIVE OF THE RUSSIAN MINISTRY OF NATURAL RESOURCES, MOSCOW

A peculiar feature of today is a growing awareness amongst the international community and politicians of the fact that the development of modern civilization and the issue of environmental protection are inseparable.

Mankind is only a subsystem in the biosphere of the Earth therefore, the parameter of stability is all too important to it. The impact of the transformed natural environment on man must not lead to irreversible negative effect with regard to human health nor provoke lasting damage that could cause adverse genetic changes for the future generations.

Protecting the biosphere's stability forms the basis of a new, civilized development model for the mankind – the development model. In his book *Russia: Safety and Development* (Moscow, 1998), A.D. Ursul defines the basic idea of this model as "surviving and a continuous (stable) development of the civilization in the form of co-evolution (co-development and mutual adaptation) of man and biosphere. Such evolution would simultaneously mean progressing towards the domain of intellect, which would ensure a rational management of the relationship between human society and the nature".

The 1992 Rio de Janeiro Declaration on environment and development formulates 27 principles to be followed by the international community in the course of devising a new civilized strategy. One of these principles states that: "Forming a new legislative base and new management principles… in the field of environmental protection and a rational use of the natural resources… capable of making all areas of industrial and social activity environmentally-sensitive".

With the adoption of the new Federal Law "On environmental protection" as of 10 January 2002, the Russian Federation in effect declared its devotion to the principles of a sustainable development strategy. Article 3, the Basic Principles of Environmental Protection, states that "industrial and other activity of the state, municipal authorities, legal and natural persons that causes impact on the environment is to be carried out in accordance with a number of principles… such as a scientifically-justified balance of environmental, economic and social interests of the individual, community and the country as a whole in order to ensure stable development and favorable environment".

The implementation of the above principle of Russia's state environmental policy involves resolution of many issues, including the development of an efficient government enforcement system, one of its components being the mechanism of *norm-setting* and control with regard to the quality of the environment.

"Environmental norm-setting is carried out with the purpose of regulating the impact from industrial and other activity on the environment to ensure environmental safety and preservation of a favorable environment", says Article 19 of the Russian Federation Law on environmental protection as of 10 January 2002.

The Law defines environmental emission limit values as "specified norms with regard to the quality of the environment and allowable environmental impact which, when complied with, ensure stable functioning of natural ecosystems and preservation of biological diversity".

Environmental norm-setting is viewed as one of the techniques for the realization of economic and financial state control mechanisms in the field of environment protection and the use of natural resources. The "Polluter Pays" principle cannot be implemented without ensuring that the rate of the environmental payment is proportionate to the risks presented by a given emission, discharge or waste to the environment and human health.
However, being an administrative method, the management of negative environmental impact can only, to a certain extent, relieve the existing environmental tensions and is largely useless in resolving the main contradiction - between striving for economic growth and the need for protecting the environment.

The administrative-and-command approach has to be replaced with an economic and legal mechanism providing for compensating most of the operator's environmental costs at the expense of non-complying enterprises. The principles of environmental norm-setting have to be brought into line with the specifics of today's development process underway in Russia as part of the international community. At the same time, these principles have to be in conformity with a stable development strategy.

Resolution of the set goals will require strict compliance with the specified environmental quality standards aimed at preserving a favorable environment, i.e. the stability of such subsystem parameters as health and human genotype.

However, regulation and continuous control over acceptable environmental impact becomes essential for identifying possible risks of upsetting the stable condition of the environment and assessing the scope of such risks.

Environmental management is implemented through controlling the operations of individual or corporate bodies involved in industrial or other activities that might cause negative impact on the quality of the environment.

The state's goal would be setting forth the rules for the user of the natural resources, establishing an institutional structure filled with adequate norm-setting and compliance procedures as well as the mechanism for motivation and enforcement. The operator cannot but be influenced by the contradiction between environmental costs and economic profit. The state's environment protection policy has to be based on the principle of ensuring that environmental considerations of a given operator prevail over his efforts to maximize profits.

Due to a number of various reasons, the implementation of the said goal cannot be viewed as an event likely to happen in the short-term. However, a step-by-step movement in that direction will surely take place.

Setting the limits of negative environmental impact can be regarded as one of the basics of environmental management. Norm-setting – specifying limit values for air emissions, discharges to water bodies and disposal of industrial and household waste – is an economic method for regulating industrial and other activities that might cause adverse environmental impact.

Article 16 of the Federal Law "On environment protection", states that "operators shall pay for negative environmental impact", is implemented on the basis of specified norms (emission limit values) for emissions, discharges and waste disposal.

The procedure for calculating the payment rates is yet to be developed by the Russian Federation Government, however, let's consider this fact as a temporary legislative gap which will be filled in the nearest future.

As stipulated by Article 5 of the Federal Law "On environmental protection", setting environmental emission limit values (for emissions, discharges and waste disposal) lies within the jurisdiction of federal bodies of authority. In the Russian Federation, such a body is the RF Ministry of Natural Resources (RF Government decree No. 726 "On the statute of the Russian Federation Ministry of Natural Resources" as of 25 September 2000).

The norm-setting procedure has been specified by the Russian Federation Government (RF Government decrees "On the rules for regulating and approving waste generation and disposal limits" of 16 June 2000 (No. 461), "On limit values for the emission of polluting substances into ambien t air and the resulting adverse impact" of 2 March 2000 (No. 183), "On the procedure for developing and approving maximum allowable adverse impact on water bodies" as of 19 December 1996 (No. 1504).

The procedure for setting and approving the maximum allowable emissions, discharges and waste disposal requires that the operators – both corporate bodies and individual entrepreneurs – develop draft ELVs on their own. The said draft calculations are to be developed as per specified relevant methodology and recommendations.

Since complex calculations that require further data processing with the use of specialized software packages can be too difficult a task for many unsophisticated industrial operators, a typical scenario would today involve a specialized external organization subcontracted for this job.

After entry into force of the Federal Law "On licensing of selected activities" of 8 August 2001, the calculation of draft ELVs is not regarded as an activity subject to mandatory licensing, therefore, the law provides for no restrictions with regard to the organizations involved into the said activities.

Each Russian Federation subject has a territorial body authorized to approve maximum allowable values for air emissions, discharges to water bodies and waste disposal in accordance with specified procedure.

The total number of corporate bodies and individual entrepreneurs involved in diverse and different-scale activities in the Moscow oblast exceeds 20,000. Gross understaffing of the government agencies in charge of norm-setting translates into a significant workload on the available workforce. The ELV approval procedure involves both the review of the calculations submitted and the authenticity verification of the baseline information on maximum allowable concentration of emissions, discharges and limits for waste disposal. Besides, the state environmental control agencies have to monitor the operators' compliance with the set ELVs, which is directly related to the amount of incoming environmental payments.

In the course of on-site inspections of operators' industrial activities, inspectors use the emission limit values specified as the basis that enables both the identification of an environmental infringement and the assessment of its gravity. The limited cadre of inspectors employed by the territorial environmental agencies is obviously insufficient for ensuring adequate government control. Therefore, close cooperation between different-level enforcement bodies – federal, regional and municipal – has to be ensured. Besides, a number of regions have established their own environmental police - a special department within the Interior Ministry to control compliance with the environmental legislation.

Norm-setting with regard to adverse environmental impact lies within the competence of a federal body of authority – the territorial division of the Ministry of Natural Resources. Passing the responsibility for approving ELVs for air emissions, discharges and waste disposal

over to other enforcement agencies would be unreasonable, since it might lead to attempts to resolve regional economic and environmental problems at the expense of neighboring administrative regions.

This is quite a serious issue for the Moscow oblast – practically all the waste generated in the city of Moscow is disposed to the landfills located on the oblast territory. Regulating the Moscow region's basic environmental issue – waste disposal – can only be ensured by a federal authority which can take into account and link the interests of neighbouring administrative regions.

A similar situation can be observed with regulating air emissions and discharges to water bodies.

At the same time, bearing in mind that setting emission limit values represents only part of inter-related procedures of economic management with regard to the protection of ambient air, water resources and waste disposal, one has to recognize that the norm-setting process as an environmental management technique cannot be carried out without the participation of the authorities representing a given Federation subject.

As an example, along with the setting of waste-disposal limits, the waste management process has to include a reasonable tariff policy aiming to ensure economic stability and viability of a given industrial enterprise. That is the competence of the regional authorities and their proper cooperation with the territorial body of the MNR would be essential to achieve the set goal – an efficient waste management on the Moscow oblast territory.

When deciding on a waste disposal limit for a specific landfill, we have to remember that being a basic function of municipal economy, the waste disposal process always depends on the local budget. An increase in costs resulting from waste's transportation to a landfill located in a neighbouring administrative district (following the closure of the local landfill) would be compensated for by reducing the finance of other community needs in the budget. And more often than not, the budget has no possibility to raise any reserve funds or reallocate the funds earmarked for other, other than environment protection purposes.

Limited financial resources and the impossibility of carrying out all necessary environmental protection measures – which are regarded as low-priority, especially by industrial enterprises that are major employers in a given town or locality – are normally the arguments advanced to justify the operators' failure to stay within the set emission limit values.

As a rule, this kind of situation is not unexpected. Having at its disposal the baseline information on draft maximum allowable concentrations in air emissions, discharges, waste disposal limits as well as relevant data on prior on-site inspections and remedial action taken by the operator, the territorial environmental agency can far in advance notify the operator in question that the submitted ELVs could not be endorsed.

In cases like that, it would be reasonable to ensure that both the municipal and the regional-level authorities are notified about the arising environmental problem with regard to industrial installations of vital importance for the economy of a given town or community.

In order to prevent violations of the environmental legislation that are likely to lead to tax and financial irregularities, avoid major budget costs relating to the elimination of possible consequences (such as an increase in transport costs of trans-regional waste disposal or clean up costs of contaminated wastewater discharges), the municipal authorities and the bodies at the level of the Federation subject have to participate in environment protection activities.

Through this, a new economic mechanism of environmental management is introduced – one that is more efficient than an administrative command method – and which can be used for managing both industry and the government bodies.

However, the above mechanism – as well as environmental norm-setting as a whole – can only make sense once the 'Polluter pays' principle has been ensured.

In order to efficiently organize the processing of the submitted draft emission limit value calculations and the decision-making process with regard to specific ELVs (air emissions, discharges to water bodies and limits for waste disposal), the following has to be ensured:

1. The baseline information submitted by corporate bodies and individual entrepreneurs in support of their calculations of proposed emission limit values has to be verified for authenticity.
2. The endorsement procedure for the documentation submitted by corporate and individual bodies has to be simplified.

The Statute of the MNR Main Directorate for Central Federal Okroug says that the basic scope of activity of this federal body lies in "performing analytical measurements… to support the government environmental monitoring process", "verification of on-site environmental inspection findings and preparation of materials on compliance with specified environmental emission limit values", and "organization and maintenance of a monitoring process with regard to specific sources of pollution".
Interaction between the federal authorities and the Main Directorate, whose activities involve the monitoring of pollution sources and analytical control, is implemented through using the findings of relevant analytical sampling and monitoring – bearing in mind the limited own capabilities of the federal environmental enforcement body.
Economic improvements of the waste management system are to be achieved through a set of inter-related mechanisms that take into account the specifics of various investment process stages. One of its components would be the system of waste disposal fees and investment outlays needed to ensure a proper operation of a landfill for industrial and household waste.
From the days of the administrative command economy, the landfill financing procedure was never oriented to using advanced technology.

In a market economy, the mechanism of financing various waste disposal facilities should differ significantly. First of all, the 'Polluter Pays' principle should be introduced. In case of waste disposal, it means that all fees for waste disposal, transportation, neutralization and burying are to be paid by local enterprises and the community. Another consequence of this is that there are no more irretrievable loans from the government. Investors are represented by financial institutions, which can only provide commercial loans for the construction of necessary facilities.
In these conditions, the investment, innovation and operation cycles of a given facility have to be closely interlinked, which should also be reflected in the structure of the payment meant to ensure the facility's economic stability and viability. Besides, payment rates imposed in a market economy have to be supported by corresponding legislative and regulatory base. The requirements and norms specified by law correspond to the quality of the environment, which the society is capable of supporting and willing to support at a specific stage of its development.
A condition of crucial importance for the above-mentioned scenario of the waste management system development would be a strict regulation of the waste flow. The important thing here would be to ensure norm-setting in its original sense – which is defined as "staying within the

adverse impact limit (in our case – the limit for waste disposal) ensures compliance with the norm set forth for preserving the quality of the environment".

This principle of a strict waste flow regulation, which in our case translates into setting specific waste disposal limit, should stimulate adequate support for the landfill development process.

When directing waste flow to the landfills, the sites that meet all modern requirements with regard to environment protection should prevail over the poorly technically equipped landfills.

Setting a waste disposal limit for a specific landfill should undoubtedly be a priority for the system of strict waste management. The set limits should be subject to annual review and correction in accordance with actual waste disposal situation. It would be reasonable to introduce a Permit for a waste disposal limit with a term of validity of one year and with entry into force timed to the start of the bidding procedure for waste disposal at specific landfills.

Organizing the natural resources use should take into account environmental and economic specifics of the locality in question and coordinate the effort in terms of prioritized resolution of pressing environmental issues for a given area.

An important condition for ensuring the efficiency of these activities would be a further capacity building of environmental enforcement agencies, a division of enforcement and executive functions, strengthening the role of economic motivation in the environmental management process.

Despite the current problems constraining the norm-setting process (basically related to gaps in the existing legislative and regulatory base), this administrative management method is a basis for starting up one of the most efficient economic management techniques – the system of payments for adverse environmental impact.

The Environmental Doctrine of the Russian Federation declares "the natural resources use on a commercial basis" as one the main principles of the state environmental policy. It also specifies the ways and means for the implementation of the state policy – developing a state system for the management of environment protection activities and the natural resource use with its basic objective being "the development of state norm-setting and control procedures with regard to the quality of the environment".

3.9 PROMOTING COMPLIANCE: AN ENVIRONMENTAL AUDIT PROGRAMME BY WIM VAN BREUSEGEM, ENVIRONMENTAL RESOURCES MANAGEMENT, LONDON

3.9.1 Introduction

Environmental requirements contained in legislation and permits are an essential foundation for environmental and public health protection, but they are only the first step. The second essential step is compliance, i.e. the full implementation of the environmental requirements. It is important for the government to recognize that compliance does not happen automatically, once environmental requirements are issued. Achieving compliance usually requires enforcement to compel and encourage thebehaviour changes needed to achieve compliance.

Enforcement by the government usually includes inspections, and when necessary, legal action. Enforcement can also include Compliance promotion to encourage voluntary compliance with environmental requirements. Compliance promotion can include, amongst other things, the provision of technical assistance measures and of regulatory incentives. These can be provided trough the development of an Environmental Audit Programme, promoting compliance.

In my presentation, I will first briefly describe the wider context of compliance and enforcement and subsequently I will outline the essential elements of an Environmental Audit Programme that promotes voluntary compliance with the environmental requirements.

An EAP can be defined as a programme, which comprises all the actions undertaken by the government to encourage industries and businesses to conduct environmental audits and to correct any problems that are identified during the audit.

I will give particular attention to the regulatory incentives that can be created by the government to stimulate enterprises to conduct environmental audits on a voluntary basis. I will also indicate some of the most common barriers to eco-auditing for enterprises.

3.9.2 The wider contect of compliance and enforcement

Russia, like most countries, is taking action to protect public health from environmental pollution and to restore and protect the quality of its natural environment.

Russia has developed and is developing at both federal and regional level, management strategies to prevent or control pollution. These strategies involve legal requirements that must be met by individuals and facilities that cause or may cause pollution. These requirements are an essential foundation for environmental and public health protection, but they are only the first step.

The second essential step is compliance, i.e. the full implementation of the environmental requirements. Compliance occurs when the requirements are met and when the desired changes are achieved, e.g. practices change so that for example, waste is disposed of at approved sites

It is important for the government to recognize that compliance does not happen automatically, once environmental requirements are issued. Achieving compliance usually requires enforcement to co mpel and encourage the behaviour changes needed to achieve compliance.

Enforcement can be defined as the set of actions that the government or others take to achieve compliance within the regulated community (individuals and facilities that cause or may cause pollution) and to correct or halt situations that endanger the environment or public health.

Enforcement by the government usually includes:

- Inspections to determine whether a facility respects the environmental requirements or not
- Negotiations wit h individuals or facility managers who are out of compliance to agree on a schedule and approach for achieving compliance and thus to respect the requirements
- Legal action, where necessary, to compel compliance and to impose some consequence for violating the law or posing a threat to public health or environmental quality

But enforcement may also include compliance promotion to encourage voluntary compliance with environmental requirements.

The command-and-control approach, consisting of strict control of compliance with detailed environmental requirements and penalisation of violations, was the exclusive approach in the former Soviet Union. The promotion of environmental compliance is thus a new area of activity for the enforcement institutions in Russia. It should be noted that before promotion activities can be considered, an effective legal and policy framework has to be established.

Most compliance strategies involve both activities to enforce and to promote requirements. The government must determine the most effective mix of compliance promotion and enforcement response.

Experience has shown that that promotion alone is not effective. Enforcement is important to create a climate in which members of the regulated community have clear incentives to make use of the opportunities and resources provided by promotion. However, experience in several countries has also shown that enforcement alone is not as effective as enforcement combined with promotion.

This is particularly true when:

- The environmental inspectorates do not have sufficient resources to inspect all facilities on a regular basis;
- When there is a large number of industrial facilities that are regulated and that should be inspected

Thus, promotion is an important element of most enforcement programs. Compliance promotion can include

- Technical assistance, through for example cleaner production programmes and training programmes for corporate environmental managers;
- Publicizing success stories;
- Providing economic incentives;
- Providing regulatory incentives.

3.9.3 Tomsk EMS project

This presentation takes into account the experience we gained in Tomsk Oblast through a DFID funded project that aimed at improving environmental conditions through an integrated approach in strengthening environmental management systems in Tomsk Oblast. In May 2003, a seminar providing an overview of project results closed the project.

The project had several components, including an "Environmental Auditing and Cleaner Production Component", which focused on the voluntary improvement of environmental management within Tomsk enterprises through the provision of technical and other assistance.

The EA & CP component demonstrated through implementation in 7 selected enterprises:

- An approach to improving enterprise environmental management standards and
- That improving environmental management standards is not only good for the environment, but also for business;
- That by improving their environmental management systems, enterprises can make a significant contribution to improving environmental conditions.

Cleaner Production projects were implemented in 7 selected enterprises which provided 8 Tomsk auditors with the necessary work experience to enable them to register with IEMA, an internationally recognised organisation that sets and monitors auditor competence standards.

An Environmental Audit and Management Centre was established, developed and strengthened to support enterprises in their environmental management. It obtained all necessary licenses and became operational in December 2001.

The Centre works with enterprises to improve their environmental management. Recommendations from a meeting of Environment Ministers in Arhus for the formation of environmental management centres to support enterprises were followed in the setting up of the centre.

The Centre is supported by the environmental authorities, who provide the Centre with separate accommodation within their offices. The Centre continues to work with enterprises to improve their environmental management and has become self supporting with regards staffing costs through fee paying contracts for industry. The Centre is ensuring the sustainability and replicability of the work, which is undertaken under the Tomsk EMS project.

The EA & CP component was supported by a Regulatory Component, under which:

- The institutional and regulatory aspects of establishing an environmental audit programme at regional level were determined and discussed with the Oblast authorities;
- A draft regional law on eco-audit was developed

Emphasis was put on drivers for enterprises to conduct eco-audits on a voluntary basis and incentives were included in the draft law on eco-audits.

3.9.4 An Environmental Audit Programme

3.9.4.1 Definition of environmental audit

An audit is the necessary first step for an enterprise to improve its environmental management and is a process of examining a facility to:

- Acquire an understanding of its environmental situation and impact;
- Determine how well its operations are complying with local, Oblast and federal environmental regulations
- Identify and quantify the sources of pollution;
- Identify opportunities to reduce the environmental impact of the operations, while realising cost savings, through savings in energy, raw materials, water and waste water;
- Enable to set targets for the reduction of the environmental impact and the realisation of cost savings;
- Enable the development of actions plans to achieve these targets.

3.9.4.2 Obligatory or voluntary environmental audit

An environmental audit can be either obligatory or voluntarily:

- Obligatory audits: the legislation can provide that certain companies are required to conduct a periodical environmental audit and that the audit report has to be submitted to the government. The law would have to clearly define which categories of companies would fall under the obligation; typically this obligation would be restricted to companies that represent a significant threat to human health and the environment, if they are not managed in an environmentally responsible way.
- Audits can also be conducted on a voluntarily basis by enterprises within an Environmental Audit Programme developed by the Government.

3.9.4.3 Purpose of an Environmental Audit Programme

The purpose of the establishment of an Environmental Audit Programme (EAP) by the government is to promote improvement of the environmental performance of enterprises that participate in the programme, through environmental audits and environmental action programmes in which corrective and improvement measures are proposed.

At a later stage, once the EAP is well established, the government could consider to extend the EAP to a full Environmental Management System, in line with ISO 1400 or the European EMAS-Scheme.

As part of its participation in the EAP, an enterprise could adopt an environmental policy that includes its commitment to:

- Comply with legislation,
- Strive for continued improvement in environmental performance,
- Aim at the reduction of environmental impacts.

3.9.5 Regulatory aspects of the establishment of an EAP

The Law should define the context of an environmental audit programme (EAP). Some of the key elements of an EAP that should be regulated include:

- Minimal requirements for audits; reference can be made to the international standard ISO 14012 "Guidelines for environmental audits. Qualification criteria for environmental auditors".
- Reporting: an enterprise should submit a report to the government summarizing the results of the audit. The law could define the minimum content of the report, i.e. in a general way define the elements that have to be covered in the report. A standard form could be developed, to guarantee a minimum content and a minimum quality, but this standard form should not be included in the legislation, because it will regularly be improved or updated.
- Confidentiality: the full audit report should not be disclosed to the public, because it may contain details on the production process, which an enterprise does not want to reveal to the large public. However, an enterprise participating in the EAP should publish an "environmental statement" that includes details of the environmental impact of its operations. This in line with the provisions of the constitution of the Russian Federation that provides that citizens have to the right to environmental information.
- Commitment of the enterprise to actually improve its environmental management, within a certain period of time:
    - Submitting a report in itself is not enough. An enterprise should also commit to work on its environmental management and to improve its environmental performance. As such, reports from smaller facilities must certify that the owner of operator has examined pollution prevention opportunities, while larger facilities must also submit the summary of a pollution prevention plan. The law could define the broad content of the pollution prevention plan (PPP).
    - The law could provide that an enterprise, which has identified problems in its audit report, must correct these problems within a certain period of time, or submit a performance schedule to the government and describe the steps that will be taken to prevent a recurrence of the problems.
- Periodicality of the audits: It could be provided that an enterprise has to provide an initial audit report and subsequent periodic progress reports. For example, an update every three years. A periodical audit, allows checking progress in environmental performance.
- Licensing / accreditation of auditors:
    - The establishment of a system under which auditors are licensed / accredited by the government of by a body recognized by the government.
    - Under this system, the requirements to be met by professionals that want to be accredited / licensed as an environmental auditor have to be determined; qualification requirements for environmental auditors are provided by the above mentioned ISO 14012 standard;
- Conditions under which an enterprise can voluntarily participate in the environmental audit programme;

- Procedures: different procedures will have to be defined, such as the procedure to be followed by an enterprise that wishes formally participate in the environmental audit programme;
- Formal participation: an enterprise that wishes to participate could conclude an auditing agreement with the government. Through this auditing agreement, an enterprise formally participates in the EAP and is bound by the provisions of the law, which defines the content of the EAP.

And of uttermost importance, regulatory benefits should be granted to companies that voluntary participate in the programme, i.e. that conduct environmental audits. I will describe these regulatory benefits further in my presentation.

3.9.6 Practical aspects of establishing an EAP

Obviously, the establishment of an EAP requires more than just legislation, and the government will need to take several implementing actions, which could include:

- Promotion of the EAP: the EAP should also be promoted and publicised by the competent authorities;
- Development of tools: the government could develop several tools, such as an audit checklist, a compliance audit protocol, that cover a number of areas such as hazardous waste, water, energy, air, storage tanks…. While a general checklist could be developed, checklists tailored to specific industries could also be provided.
- Qualified and trained auditors: the Government should not only establish a system under which auditors can be licensed / accredited, but they should also ensure that if they develop an EAP, there are also qualified and trained auditors to support the implementation of the programme. International projects have been implemented in Russia that specifically aimed at training auditors, such as the project that was implemented in 2000 in Khabarovsk Krai ("Training Environmental Auditors in Russia Far East").
- Establishment of a support centre: the Government could establish or support the establishment of a centre of expertise, that organises training of auditors and that works with industry to improve its environmental management. Obviously, such centre should not compete with private consultancy firms, and should play a different role.

3.9.7 Drivers for the authorities to develop an EAP

Within an Environmental Audit Programme, the government encourages enterprises to conduct environmental audits of their facilities and to correct any problems they may discover.

The establishment of an E AP has several benefits for the authorities:

- The EAP is an efficient way for the administration, which has limited enforcement resources, to help companies to comply with the environmental requirements. For example, the need to regularly inspect companies that participate in the EAP, will be reduced.

- Companies that conduct environmental audits are likely to take the necessary actions to correct problems before they can develop into major environmental or public health issues. Having this in mind, the program should focus first on technical assistance and compliance, rather than enforcement.

3.9.8 Drivers for companies to participate in an EAP

Why would an enterprise participate in an EAP? Below possible regulatory compliance drivers are listed, as well as other common other drivers.

3.9.8.1 Regulatory compliance drivers

Improved compliance

An environmental audit will reveal non-compliance with environmental regulations and will improve the ability of the enterprise to comply with environmental legislation. This will also lead to a better relationship between the enterprise and the authorities.

Reduced inspections

The need to inspect enterprises that demonstrate that they are environmentally responsible through participation in an EAP, is lower. The Environmental Inspectorate will therefore less frequently inspect such enterprises.

Extended time for correction

If non-compliance is disclosed through a voluntary audit, the authorities can grant the enterprise more time to correct.

Reduced penalties

Enterprises that meet the EAP requirements and that find a violation could benefit from reduced penalties, as opposed to penalties that are inflicted upon enterprises where the environmental inspectorate finds violations.

Protection

Organizations that meet the EAP requirements and that find a minor violation could be granted limited immunity from fines and penalties. This limited immunity means that they will not be penalized and may receive protection from enforcement action, fines and other penalties, if they voluntary and promptly disclose.

However the amnesty provisions should not apply to enterprises:

- Involved with activities that cause serious harm to the environment.
- Involved in criminal activities
- That have committed violations providing a substantial economic ben efit

The following conditions have to be met before an enterprise can benefit from protection:

- Systematic discovery through an EA or an environmental management system (EMS);
- Voluntary discovery;
- Prompt disclosure;
- Discover and disclosure independent of Government or Third-Party Plaintiff, Correction and remediation;

- Prevent recurrence; no repeat violations;
- Cooperation with the authorities.

Other drivers

- Public relations drivers: an enterprise may benefit from improved image in the eyes of the public and customers if it voluntary environmental audits. Under the EAP, the government could organise that an enterprise, which meets successfully the requirements of the EAP, may display an Award for 3 years. The adoption of a visible and recognisable EAP logo to allow enterprises to publicise their participation in the EAP, would contribute to its success.
- Financial drivers: Environmental audits will identify opportunities to reduce inputs (energy, water and materials) and to reduce zero or negative value outputs (waste and effluents). This will increase the efficiency of the enterprises' operations. Also, an enterprise that pays attention to its environmental situation will have to pay less environmental fees and fines. All this will result in cost savings.

- Prevention and risk minimisation: find and correct problems before they can develop into major environmental or public health risks or before they can come major liability issues

3.9.9 Barriers to an environmental audit programme

Several barriers to environmental auditing can be identified, whether they are real, or just perceived to be obstacles. The most common barriers, which obviously do not apply to the same extent to all regions or enterprises, are listed below:

- Insufficient institutional capacity of the government to develop and implement an EAP programme;
- Lack of strong commitment of the government to really promote environmental auditing and to publicise the EAP; the administration could meet companies, write articles in magazines, disseminate leaflets, etc…
- Lack of interest or awareness from enterprises
- Lack of trust between the enterprises and the authorities, and reluctance to cooperate with the authorities and to participate in an EAP.
- Lack of environmental consultants with sufficient and proven professional experience and knowledge;
- Cost: the cost of participating in the EAP should be kept low to encourage higher participation. The uptake and success of the EAP will be heavily dependent on whether the EAP is able to deliver the potential benefits, without entailing excessive human or financial resources;
- Lack of funds for improvements: the environmental audit will identify environmental improvement and cost saving opportunities, but there may be a lack of funds to implement the proposed improvements/corrective measures. However, it should be emphasized that to achieve environmental improvements, new investments are not always necessary and that a change in operating practices can result in significant improvements;
- Bureaucratic management structures with enterprises which keep key staff of having ownership of environmental problems and solutions;
- Lack of information on the environmental aspects of the business, and on the inputs and outputs in particular;

4. *CONCLUDING REMARKS BY WYBE TH. DOUMA, SENIOR LEGAL EXPERT, "HARMONISATION OF ENVIRONMENTAL STANDARDS, RUSSIA" PROJECT*

This collection of essays dealt with economic aspects of Russia's environmental policy. This is an important topic since environmental policy can only be effective if it takes the economic reality into account, and since the aim of environmental policy is to achieve sustainable development, i.e. economic development while taking the protection of the environment into account.

Environmental policy can be defined as the deliberate steering of developments with regard to the protection of the environment by the authorities in a country. These authorities have several instruments at their discretion in order to give shape to an environmental policy. Experience in the European Union shows that only following a command and control strategy will not result in an effective environmental policy. Rather, a mix of instruments is to be used. The command and control instruments are to be complemented by economic and communicative instruments. The latter type of instruments will need to raise awareness amongst citizens and companies, and can consist of media campaigns, ecological education programmes at schools, round table discussions with industry and voluntary agreements (covenants) between industry and the government about achieving environmental results. The economic instruments are to be used to give effect to the 'polluter pays principle', i.e. to ensure that those responsible for pollution get to pay for the pollution. Even if companies increase their prises so that in the end, it is the consumer that pays, this still would be a step in the right direction since other companies which can produce cleaner and thus cheaper will get a competitive advantage.

Another economic aspect of environmental policy is the cost effectiveness of legal instruments. Some legal instruments can achieve goals only when a lot of human resources are used. Other legal instruments will be able to reach the same goals but at much lower costs for society – and especially for industry. The contributions dealt with various theoretical and practical aspects of these issues from the perspective of industry, policy makers, ministries, consultants and academics. Together, they give a critical overview of some of the hurdles that need to be taken before Russia's environmental policy can become more effective than it is today.

The book opens with a foreword by Vladimir Gratchev, chairman of the Ecological Committee of the State Duma and beneficiary of the Tacis project "Harmonisation of environmental standards, Russia". He gives an overview of the objectives of the Tacis project and explains how the seminars on Economics of IPPC initiated the suggestion to publish the presented papers in a book, as a result of that project.

After that, the team-leader of the project Alfred Kellermann explained why and how the Partnership and Cooperation Agreement between Russia, the Member States and the EC, and the Technical assistance programme for the CIS, Tacis in other words, include both stimulating economic development and protection of the environment. As an example of such Tacis Programmes, he reviews the recommendations of the Tacis Project "Harmonisation of Environmental Standards, Russia" and its suggestions to change the system of permitting in Russia, which will provide economic benefits for Russian industry and environmental benefits for Russian citizens. I would like to point out once again that the Recommendations of the

project and other documents can be found at http://www.envharmon.msmu.ru, and that a summary of the Recommendations can be found in the Annex to this publication.

The third contributor is professor Alexander Astakhov, who provides the readers with a solid theoretical background for harmonisation projects while stressing the need to take the economic aspects of efficient use of natural resources. The author is of the opinion that Russia's archaic environmental legislation needs overall restructuring, and that harmonising it with EC law forms a good way of achieving such improvements.

The Deputy Head of the EC Delegation in Russia, Mr Vincent Piket, discusses the ecological and economic benefits for Russia of ratifying the Kyoto Protocol. The benefits are related to the improved performance by Russian industry. Since this contribution was finalised, a heated debate about the presumed negative influence of ratifying Kyoto and increasing Russia's GDP has started. On the one hand, there is an economic adviser to President Vladimir Putin, mr. Andrey Illarionov, who claims that Kyoto's emission limits for 2008-2010 would constrain the goal of doubling Russia's GDP. On the other hand, there are convincing counterarguments explaining that by increasing the energy efficiency of Russia's industry, Russia could still double its GDP without being hindered by Kyoto limits.[1] The following contribution also confirms this.

Mr Jochem Jantzen, one of the international economic experts of the projects, investigated some economic aspects of the IPPC Directive in general and of the introduction of a system of integrated permitting based on BAT in Russia. In general, he explains, establishing BAT is not an easy process, notably because it involves evaluating the costs to implement specific techniques and weighing these costs against the overall environmental benefits from introducing such techniques. Thus, applying a BAT approach implies that both permitting authorities and industry are well equipped. Given the present situation in Russia, he concluded that a BAT approach could only work well in Russia only after improvements are introduced in this respect. He foresees that Russia's industry will be interested to learn more about BAT because this knowledge is important if it wants to become more competitive in the world market, notably by increasing its energy-efficiency. He also argues that if the BAT were to be introduced in Russia, it would need to be adapted to the Russian situation.

Another international economic expert, Krzysztof Berbeka, discusses the costs of harmonising national environmental legislation with that of the EU, focussing on the IPPC Directive and Large Combustion Plants (one of the pilot industries in the Tacis project). In addition to what he explains, it can be noted that Tacis Project translated into Russian key parts of the document "Cost and investment analysis of approximation in Poland" (available at the above-mentioned Project's web-site).

In a joint contribution, Ms Irina Volkova and Mr Maxim Gratchev explain that in present day Russia, the main aspects of the protection of the environment are covered by laws imposing limitations, bans and mandatory commitments, in other words follow a command and control method. They point out that this is a costly method since it relies on enforcement through "a vast bureaucratic mechanism" and also ineffective since markets respond in the first place to economic interests. A systematic economic mechanism would form a more appropriate way of

[1] Prof. Michael Grubb, Jumping to conclusions on Kyoto, The Mowcow Times, 9 January 2004.

protecting the environment, the authors' claim, while acknowledging that at present, Russian law does not provide for such a mechanism. The authors explain why this is the case and what should be done to improve this situation. Inter alia, focussing on priority areas is advocated. As for the financing of new policies is concerned, special attention is paid to environmental pollution charges, its present status and the difficulties surrounding the adoption of new legislation on this issue. Especially the latter aspect makes for an interesting look into the kitchen of the Russian lawmaking practice.

The next contribution is also a joint one. This time it is written by Mr Valentin Lutsenko and Mr Maxim Gratchev, who discuss the weaknesses in the system of environmental charges, in that with regard to permits for the disposal of hazardous waste and in that of State Environmental Expertise. The latter instrument is described as artificially creating bureaucratic barriers and as a system of collective extortion, because paid services are created that are closely related to the state executive bodies in charge of environmental control. As the system of SEE stands today, too many endorsements by too many regulating authorities are demanded. The authors point out that in general, Russian legislation suffers from vague wording, which opens the doors for corruption, and from an abundance of red tape significantly slowing down Russia's economic development. They also plead for a major revision of the system of setting emission limit values, using Best Available Techniques (BAT) as a basis. The authors demonstrate with the help of numerous examples the absurdities of payment rates that are without any correlation to the actual danger that the pollutants represent to the environment, and advocate letting companies use the environmental charges to finance their transition to BAT.

The latter recommendation is in line with some of the legislative proposals for improvement of environmental payment regulations discussed by Mr Dimitri Kolganov from ERM Moscow. This author first discusses the background of the system of environmental charges, their legislative history and the court cases on their legality.

The representative of the Ministry of Natural Resources, Mr Alexey Klimenko, explains how the 2002 Federal Law on Environment Protection forms the Russian way of giving effect to the concept of sustainable development. Like Mr Valentin Lutsenko and Mr Maxim Gratchev, this author is of the opinion that the rate of environmental payments is to be proportionate to the risk presented by a given emission, discharge or waste to the environment and human health. In his view, norm-setting and compliance procedures are not likely to improve in the short term, but a step-by-step movement in the right direction is likely to take place. The absence of a procedure for calculating payment rates is described as a temporary legislative gap, which will be filled in the nearest future. Where ELVs are concerned, Mr Alexey Klimenko explains why external organisations play such an important role here and why adequate government control cannot be ensured. With the help of the example of waste management in the Moscow oblast the author shows the need for changes to the present system, notably where it concerns the endorsement procedure for documentation submitted (again, in line with ideas put forward by Mr Valentin Lutsenko and Mr Maxim Gratchev) and in order to stimulate using advanced technology.

Mr Wim van Breusegem, a consultant from Belgium, discusses another instrument with vast experience in Russia. It concerns environmental auditing. Based on experiences gathered in a DFID (Department of International Development of the United Kingdom) funded project in

the Tomsk Oblast, the author explains what environmental auditing amounts to, how it fits in with steps towards a full environmental management system like ISO 14000 and EMAS, what authorities can do to stimulate environmental auditing, and which barriers and drivers exist.

The authors seem to agree on one thing: there is a need for change, because Russia's industry is faced with many unnecessary bureaucratic and financial hurdles before they can obtain their permits and licenses, and start operating. The demands as they are worded now are arbitrary and leave too much room for corruption. Also, the system as it stands today is not cost-effective: the environmental benefits it brings about, if any, come with too high a price tag. Several contributors showed how difficult it could be to adopt legislation in practice with the help of the example of the legislative proposals with regard to environmental charges. It will be in the interest of both industry and the general population of Russia to adopt more efficient instruments of environmental policy. Experiences made in the European Union can help in this respect. After all, it makes no sense to reinvent the wheel when it comes to making the concept of sustainable development operational.

Wybe Th. Douma

ANNEX

Improving Russia's environmental permitting regime for industry. Recommendations on harmonisation of Russia's environmental law and practice with that of the EU

Executive Summary

This paper presents recommendations for improvements to Russia's environmental law and practice. It has been prepared in the framework of the European Community (EC) Tacis project "Harmonisation of Environmental Standards, Russia". The project is based on the commitment expressed in the Russia-EC Partnership and Cooperation Agreement (PCA) to harmonise with EU law and practice. Further, this project is in line with the Ecological Doctrine of the Russian Federation. As Russia's economy is growing significantly, and Russia wants to strengthen its economic links with the EU, this provides an optimum timing to improve the environmental protection system.

The project concentrated on industry pollution issues, as these have major human health impacts and represent one of the main environmental problems of Russia. One of the most important EU legislative acts in this field is the Directive on Integrated Pollution Prevention and Control (IPPC). This directive was central to the comparison between Russia's environmental protection regime and that of the EU, and formed the basis for the recommendations on harmonisation. The IPPC Directive requires that an integrated permit is issued for the most polluting sectors of industry, i.e. a permit covering all important environmental impacts. It is to be based on Best Available Techniques (BAT) worked out in so-called BAT Reference documents (BREFs) for the individual industry sectors and processes. The IPPC system has the following benefits:

- It makes most efficient use of scarce human and financial resources of permitting and enforcement authorities by focusing on highly polluting industry sectors. Small and medium sized enterprises (SMEs) do not fall under the IPPC regime. They can be regulated through general rules set in legislation and/or simplified procedures, as they form less severe environmental problems;
- It ensures flexible and realistic permit conditions as it involves a combined approach for setting emission limit values for individual installations based on BATs and compliance with environmental quality standards. BAT-based conditions are sector and installation specific, they take into account local factors, economic aspects and technical progress;
- By introducing BAT at enterprises, awareness is raised of performance standards for the industry and enterprises are provided with benchmarks for process inputs and discharges. Benchmarks will identify the cost savings and increased profit potential from implementing BAT, e.g. through reductions in raw material inputs, in emissions, discharges and waste generation volumes;
- It results in a high level of protection as it covers all important environmental impacts i.e. not only emissions to water and air but also energy use, noise and vibration, waste minimisation, accident prevention, monitoring, and after-closure remediation;
- It takes into account the environment as a whole as all trade-offs between different environmental effects are considered;

- The integrated permit is granted by one single permitting authority or, when more than one authority is involved, conditions and procedure are fully coordinated;
- It provides for public information through access to applications, permits and emission data, and enhances mechanisms ensuring participation in the permitting procedure.

The adoption of an IPPC approach in Russia will therefore improve the current permitting system, the efficiency and effectiveness of which is hampered by a number of key weaknesses. The comparison between the Russian and EU system showed, inter alia, that in Russia:

- There is very limited coordination between the different authorities involved in the permitting process with, when they exist, rather formalist coordination mechanisms, leading to complicated and lengthy permitting procedure, as well as potentially contradictory requirements;
- An identical permitting system applies to all enterprises without regard to their size and polluting potential and thus places an unjustified burden on both permitting and enforcement authorities and on industry including SMEs, especially when permit conditions are reviewed on a yearly basis;
- Different permits are required for air emissions, water discharge and waste disposal while some aspects are usually not covered e.g. waste minimisation, energy efficiency, and the use of raw materials;
- Emission limit values are set on the basis of too strict and numerous environmental quality standards, and are not linked to techno logies, while temporary agreed releases are becoming the norm;
- Public participation in the permitting process is very limited as is public access to the permit and data on industry activities;
- There is a lack of incentives to introduce cleaner technology and innovation in general.

Account was taken of the main obstacles to the introduction of BATs in Russia's industry, notably the poor conditions of many installations, oversize and inefficient operation of most state owned and former state owned enterprises, the lack of funds for improvements, the lack of and uncertainty of business, the lack of management skills / information systems.

The recommendations were discussed at numerous conferences, seminars and meetings with permitting and enforcement authorities, industry and Non-Governmental Organisations (NGOs). The recommendations were investigated and tested through case studies in three pilot regions (Moscow Oblast, Penza Oblast and Arkhangelsk Oblast). The key recommendations thus developed are supported by the main stakeholders and are the following:

Main Recommendation:

The Russian Federation should introduce a system of integrated permitting based on BAT for those branches of industry, which are the main polluters. This system would stimulate resource efficiency, innovation and more effective protection of human health and the environment.

Specific Recommendations:

- The permitting system should apply to the main industry sectors with a high pollution potential (listed in Annex I to the IPPC Directive);

- General binding rules prescribing requirements for certain categories of enterprises or processes should be developed, especially for SMEs – this would lessen the burden falling on permitting and enforcement authorities;
- The integrated permit should cover not only water, air and waste, but also additional requirements, e.g. noise, energy efficiency and the use of raw materials;
- One single integrated permit should be granted by one authority, the Ministry of Natural Resources (MNR) and its regional branches (i.e. a 'one-shop-approach'). The MNR should continue to deal only with water, air and waste aspects and the MNR should ensure coordination with other permitting authorities for additional aspects;
- The validity duration of integrated permits should be at least five years;
- The new permitting system should apply immediately upon the entry into force of the legislation to new installations and transition periods should be set up for existing installations;
- Environmental quality standards (PDK) should be reviewed and set at more realistic and achievable levels. The review should be prioritised, concentrating in the short-term on a set of pollutants of main concern, based on hazardousness or volume in order to focus efforts;
- The existing principles and methodology for setting up ELVs should be drastically revised to move towards a system where ELVs will be determined based on BATs; for specifically hazardous substances, emission standards should be fixed in legislation;
- Guidance notes on BAT should be developed on the basis of the EU BREF notes, in close consultation with stakeholders;
- General technical requirements with regard to measurements of emissions, schedule of sampling etc. should be set up in legislation;
- Public access to information and participation in the permitting process should be improved, through detailed requirements in the legislation; in particular, information on permit applications, permit conditions and emissions should be made easily accessible to the public;
- The inspection authorities must be strengthened in terms of capacity, training, and laboratory analysis capability as the integrated permitting regime will not be effective unless it is properly enforced;
- Enforcement capacity must be improved in particular by setting up proportional, persuasive and effective penalties for breaches of permit conditions.

The implementation of these recommendations will entail corresponding changes in legislation and practice. It is proposed to introduce these through the development of a new Law on Integrated Permitting (to be developed under the current Law on Environment Protection). Implementing sectoral and horizontal regulations should be prepared under both laws and under the Law on Technical Regulation. In addition, it will be necessary to prepare detailed guidance documents on the integrated system and on what is BAT for the different industry sectors. It will also be necessary to revise current institutional arrangements, clearly defining the responsibilities of the relevant institutions and departments. All necessary legislation, including implementing regulations, and guidance documents will have to be in place before the integrated permitting system comes into effect. Finally, the establishment of an IPPC Centre of Excellence in charge of many of the activities required for the development and implementation of the integrated permit system is recommended.