EAP Task Force

# REVIEW OF ENVIRONMENTAL PERMITTING SYSTEMS IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA

**FINAL, APRIL 2003**

## FOREWORD

1. Environmental permitting has been a vital tool for reducing pollution and preventing major industrial accidents in OECD countries. Since they were first established more than a century ago, permitting systems have evolved in step with economic, technological and social developments. Every next stage of development was possible due to the maturity of its predecessor; finally, permitting resulted in systems that make full use of opportunities offered by mature markets, technological innovation and high environmental awareness in OECD countries.

2. The countries of Eastern Europe, Caucasus and Central Asia (EECCA) are now challenged to adapt their environmental management systems, including permitting, in the transition to market-based democratic societies. This will necessarily be a step-wise, iterative process requiring a good understanding of reference models, development goals and actions to be taken during the reform.

3. This volume describes and analyses existing permitting systems in EECCA countries and possible measures to improve them. These measures were discussed at an expert workshop in December 2001 and at the annual conference of environmental policy makers and regulators from the EECCA region in October 2002.

4. The review has been developed within a regional project on environmental permitting. This project forms part of a broader programme to strengthen environmental policies in EECCA countries conducted by the EAP Task Force. The EAP Task Force is an inter-governmental body established within the "Environment for Europe" process in 1993. OECD provides the Secretariat for the EAP Task Force.

5. The main objective of this regional project was to create momentum for improving environmental permitting systems, through analysis of the existing situation, comparison with best international practice, development of recommendations and inter-governmental dialogue and networking. The project team involved experts from ECCA countries, as well as Central Europe and OECD member countries. The project built upon the results of a previous effort to review environmental permitting systems in the OECD countries. Financial support was provided mainly by Sweden, with some inputs from the Netherlands and United Kingdom.

6. The report is issued under the responsibility of OECD Secretary General; it does not necessarily reflect the views of OECD or its member countries.

## EXECUTIVE SUMMARY

7. Environmental permitting is a fundamental tool of environmental management. In OECD countries it is evolving as a way to prevent and control the impacts on human health and environmental risks associated with industrial facilities in a comprehensive manner. Drawing on the experience gained in OECD countries and elsewhere, this review analyses some of the common weaknesses of the permitting systems that EECCA countries have largely inherited from the Soviet period, and suggests how they could be overcome.

8. In OECD countries, permitting programmes acted as a catalyst for movement toward pollution prevention and provided an entry point for dissemination of best practices in environmentally sound management of industrial sites. Permits are granted based on environmental, economic, technological, territorial and other criteria; they also address accidental releases of harmful substances. In addition, permitting systems aim at ensuring fair competition and encourage public involvement. Finally, their adequate administration and enforcement is a matter of permanent attention and improvement.

9. Environmental permitting systems in EECCA countries generally are oriented to end-of-pipe controls, focus on single media, require substantial administrative resources while being institutionally fragmented, and are opaque to the public. Permits are treated as the outcome of an administrative procedure that "authorises" pollution, rather than as a tool to prevent and where necessary control emissions. Emission Limit Values (ELVs) constitute the core permit requirements. They are calculated to meet maximum allowable concentrations of pollutants in the receiving media. However the economic consequences of compliance with ELVs are not considered and sometimes they are not technically feasible. Less stringent temporary ELVs are usually applied to lower the compliance hurdle. Negotiating the levels of temporary ELVs involves the exercise of considerable discretions by competent authorities and often results in *ad hoc* if not corrupt decision-making.

10. Environmental permits in EECCA countries do not consider how pollution control may result in transferring pollution from one medium to another. Nor do they provide incentives to reduce resource or energy intensity – which are very high in EECCA countries – or to identify least cost ways of preventing or controlling pollution. The linkages between permits and other environmental procedures and policy instruments are not coherent and mutually reinforcing. The same permitting procedures, with limited variation, are applied to both large and small enterprises. Obtaining a permit can take up to three years and must be renewed every one to three years. In many cases, enterprise managers prefer to avoid the permitting process and take their chances in negotiating "acceptable" sanctions.

11. Despite these fundamental flaws, there are several forces promoting reform of the permitting system in some EECCA countries; in fact reforms are underway in Armenia, Kazakhstan, Kyrgyz Republic, Moldova and Ukraine. Driving forces for reform include: the need to establish clear and transparent regulations to attract foreign investors; the exposure of enterprises in some sectors to competition and the resultant need to reduce costs *inter alia* through greater resource efficiency; pressures to reduce pollution as levels increase with the resumption of economic growth in most EECCA; the interest of some EECCA to begin a process of convergence with EU environmental requirements as part of a strategy to accede to the EU.

12. A major conclusion of this review is that EECCA countries should reform their permitting systems into more functional tools of environmental management but they should do so gradually by building on the positive features of the existing system. Thus, the major environmental impacts are covered. Case-by-case permitting of large industry is already applied and several criteria are used for decision-making on ELVs. The division of responsibilities among major stakeholders is close to more advanced systems. Permit application process is quite comprehensive and the supporting infrastructure, *e.g.*

specialised consulting companies, is developed. EECCA countries have used “environmental passports” that have promoted concepts like energy and resource intensity; etc.

13. The review suggests that, in the first instance, EECCA permitting systems for large industry should aim to acquire the following characteristics:

- Focus on environmental performance and case-by-case regulation of a facility throughout its entire life cycle, i.e. design, construction, operation and decommissioning;
- Prescribe feasible and enforceable permit conditions,
- Use several criteria to set ELVs, including a combination of environmental quality standards and best available techniques;
- Minimise administrative burden;
- Adopt clear, accountable procedures and establish transparent relations with stakeholders;
- Become better co-ordinated with other environmental procedures and policy instruments.

14. These characteristics reflect international trends; in particular, they are close to the integrated permitting model, which is gradually being adopted in many OECD countries. However, countries choosing to introduce this model should carefully assess its advantages and disadvantages, and relate them to local conditions. Potential benefits of integrated permitting include internal efficiencies for the facility, streamlined application and reporting processes, incentives for pollution prevention and resource efficiency, reduced pollution control costs and enhanced relationships with the general public. At the same time, integrated permitting can involve significant administrative and implementation costs.

15. The review discusses the use of environmental quality standards in combination with Best Available Techniques (BAT) – a concept that is central in the EU Integrated Pollution Prevention and Control Directive. The review warns that BAT should not be interpreted as «best technology». The primary value of this concept for EECCA is rooted in its broad definition that covers facility design, construction, operation, maintenance and decommissioning, as well as the requirement of choosing «available» techniques, i.e. those developed on a scale that allow implementation under economically and technically viable conditions. Application of BAT as one of criteria to define ELVs should not mean that the competent authority restricts the permitee’s flexibility in choosing appropriate techniques, whatever their national origin.

16. At the same time, the scope of permitting should be carefully revised. Uniform approaches to regulate large industry and small and medium-sized enterprises should be avoided. For the latter, procedural simplification and compliance assistance will be crucial.

17. The most practical way of conducting reforms is a gradual adjustment of the existing systems over a longer period. «Co-existence» of different models may also be favoured to assess effectiveness and implementation problems. A «revolution» requires strong political will and high investment and is not considered feasible in the EECCA region.

18. The review suggests several short-term actions to be taken within the evolutionary scenario: (i) refine permits’ content and prolong their validity; (ii) improve the decision-making process; pursue institutional integration and adopt permitting procedures that are consistent across different media; (iii) provide specific guidance to, and establish a meaningful dialogue with, the enterprises; and (iv) ensure transparency of permitting for the general public. Medium and long-term actions are proposed as well. An example of an implementation schedule for reform of permitting is presented.

19. There are many obstacles to successfully reforming environmental permits. Perhaps the major challenge will be to develop mutual trust and respect between environmental authorities and enterprises. This will depend in part on developments beyond the control of the environmental sector, but there are important steps that they can take, notably to apply realistic and affordable standards, equitably and transparently. There is evidence that many enterprises in EECCA countries have adopted techniques and are meeting environmental standards comparable with international benchmarks.

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## ACRONYMS

| | | |
|---|---|---|
| BAT | – | Best Available Techniques |
| BREF | – | BAT Reference Document |
| CEE | – | Central and Eastern Europe |
| EAP | – | Environmental Action Programme |
| EIA | – | Environmental Impact Assessment |
| EECCA | – | Eastern Europe, Caucasus and Central Asia |
| EIS | – | Environmental Impact Statement |
| ELV | – | Emission Limit Value |
| EMAS | – | Environmental Management and Audit Scheme |
| EMS | – | Environmental Management System |
| EPA | – | Environmental Protection Agency |
| EQO | – | Environmental Quality Objectives |
| EQS | – | Environmental Quality Standards |
| EU | – | European Union |
| HELCOM | – | Helsinki Commission |
| IPPC | – | Integrated Pollution Prevention and Control |
| ISO | – | International Standards Organisation |
| MAC | – | Maximal Allowed Concentration |
| MPC | – | Maximum Permissible Concentration |
| MPD | – | Maximum Permissible Discharge into water body |
| MPE | – | Maximum Permissible Emission into the air |
| NIS | – | Newly Independent States |
| NISECEN | – | NIS Environmental Compliance and Enforcement Network |
| OECD | – | Organisation for Economic Co-operation and Development |
| SER | – | State Environmental (Ecological) Review |

# INTRODUCTION

## Definition and critical elements of environmental permitting

1. According to its traditional definition, the environmental permitting system is an administrative procedure by which an authorisation is granted to a facility or individual to perform an activity under specific legal conditions deemed necessary to ensure the protection of environmental quality and public health. In the OECD countries, this public permission takes the form of licenses (permits) granted by government authorities on the basis of a variety of environmental, economic, technological and territorial criteria.

2. The permitting process seeks to ensure the environmentally sound operation of the permitted facility. It helps ensure fair competition under environmental and other regulations. Permits also address safety issues, notably in the event of an accidental release of harmful substances. In addition, permitting encourages public involvement in decisions concerning plant construction and operation.

3. There has been a clear trend from pollution control to pollution prevention, and from single-media permitting to integrated permitting in the OECD countries. Traditional focus on “end-of-pipe” pollution control equipment is increasingly being replaced by cleaner production technologies and techniques, which prevent pollution upstream of the discharge point. By adopting a precautionary approach in setting environmental requirements, permitting strategies acted as a catalyst for the movement toward prevention.

4. Effective and efficient environmental permitting systems require and reflect a mature regulatory framework. Such a regulatory framework has, at least, to identify precisely the industry subject to permitting, the requirements to be met by industry (*e.g.* ambient and other kinds of standards or limit values), the notion of "being in compliance" and the sanctions for non-compliance.

5. In the context of pollution prevention and integrated permitting, the Best Available Techniques (BAT) are applied in conjunction with Environmental Quality Standards (EQS). BAT, Environmental Quality Objectives (EQO) and EQS are conceptual instruments used by most permitting authorities to arrive at the Emission Limit Value (ELV) for pollutant emissions stipulated by the permit. BAT and EQO are generally considered as complementary approaches.

6. Collection, assessment and comparison of data on environmental quality helps prioritising key issues in the framework of environmental permitting and provides the rationale for adopting reduction and prevention measures. Since the permitting process is based on the detailed environmental assessment of industrial facilities, various actors had to gain sufficient knowledge about different industries. In this respect, governments have set up investigative programmes. The European Union's Reference documents for BAT (BREFs), that describe most advanced technologies and techniques, can serve as an example.

7. Frequently, plant operators' ignorance about environmental requirements and ways to meet them are major impediments to an appropriate functioning of environmental permitting and implementation of permit requirements. Information barriers are being eliminated through identification and dissemination of best practices. In OECD countries, this helped to achieve substantial improvements, in particular through the on-site introduction of low-cost "good housekeeping" practices.

8. Monitoring, information management and participation mechanisms provide for transparency of permitting to the general public. Whatever the circumstances, the appropriate involvement of the public is an increasingly important factor in permitting. Public access to the permitting process must be comprehensive and systematic so as to ensure transparency and legitimacy. This is particularly critical for the surveillance of site-specific requirements. The use of informational instruments, such as Pollutant Release and Transfer Registers and other disclosure mechanisms, is a valuable action in this regard.

9. The capacity to actually enforce requirements is crucial. In this context, the enforcement tools/responses and staff training has to be put in line with the permitting system. Information management systems and steady information flows from policy and lawmakers to executors and vice-versa are being insured.

10. The combined use of permitting with other policy instruments (environmental management systems like Environmental Management and Audit Schemes (EMAS) and ISO 14000, economic instruments, voluntary agreements, etc.) is important as well. Among others, precise accounting of costs incurred for environmental protection becomes an element of facility management. Environmentally oriented cost accounting systems contribute to increasing knowledge of material and energy flows in a given industrial process. For instance, they help identify the quantity and type of waste streams, thus allowing better management of treatment and disposal costs. They can as well provide guidance and prioritisation schedules for pollution prevention and control policies by generating environmentally oriented cost indices.

11. If properly administered and enforced, the permitting procedure can be a continuous policy process enabling all involved parties to contribute to improving social understanding of the environmental issues to be addressed and the solutions to be implemented. As illustrated in Figure 1, the permitting system is a dynamic, ongoing process, rather than a merely administrative procedure.

**Aim of the review**

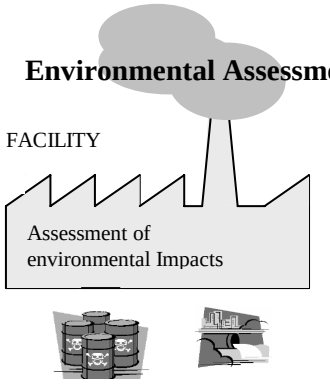
12. The current document describes the key features of environmental permitting systems in Eastern Europe, Caucasus and Central Asia (EECCA) as compared to international practice, and proposes measures to improve these systems. The comparative analysis takes into account approaches to environmental permitting, which are used in OECD and Central European countries, and the latest trends in permitting development. This review covers, primarily, permits for pollution emissions into the air, pollution discharge into water, and industrial waste disposal permits, or a combination of the above – all these in the context of industrial or large agricultural production.

**Overall context and problem identification**

13. A Task Force was established at the 2nd Pan-European Conference of Environmental Ministers (Lucerne, 1993) to facilitate the implementation of the Environmental Action Programme (EAP) for Central and Eastern Europe (CEE). This programme was developed to tackle priority environmental problems of countries with economies in transition, and its geographical coverage broadened from Central and Eastern Europe to the states that formerly were part of the Soviet Union.

14. In late 1999 the EAP Task Force established a regional Environmental Compliance and Enforcement Network (known as NISECEN) that comprised environmental regulators and enforcers from the EECCA countries. Network members, during their Second Annual Conference in November 2000 and a follow up expert meeting in December 2000, identified the need to address problems in environmental permitting, and defined the aim and expected results of the activities in this domain. This led to the formulation of a project on environmental permitting, which was subsequently implemented by the EAP Task Force Secretariat in the framework of its 2001-2003 work programme.

**Figure 1. Environmental permitting as a dynamic process.**




RESPONSE TO COMPLIANCE FAILURES

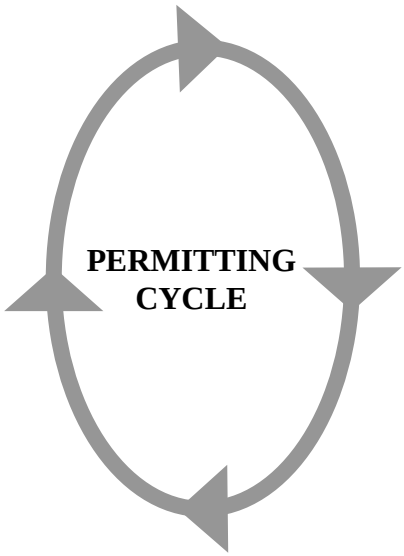
- Investigation of problems and discussion with permitting authority
- Adoption of new measures to ensure compliance

**INFORMAL DISCUSSION OF PERMIT APPLICATION OR RENEWAL**

- Disclosure of plant information on operations and production and future projections
- Identification of environmental issues of concern
- Presentation of monitoring or investigation results

**MONITORING AND ENFORCEMENT**

- Monitoring of operations, end-of-pipe control and environmental impacts
- Investigations on releases and plant operations
- Inspections
- Charges and penalties related to pollutant releases




**APPLICATION PROCEDURE**

**Facility application**

- Identification of type and amount of pollutant releases and other environmental impacts
- Description of proposed alternative measures to reduce environmental impacts

**Public hearing and expert assessment**

- Technology assessment
- Assessment of environmental needs
- Economic assessment, including assessment of implementation-related costs

**IMPLEMENTATION OF PERMIT CONDITIONS**

- New and on-going investments for environmental improvements
- Accumulation of experience
- Environmental management procedures and accounting
- Internal environmental studies (self-monitoring, self-audit) and reporting

**PERMIT AWARD**

**Stipulation of permit conditions**

- Emission limit values
- Other environmental requirements
- Monitoring programmes and reporting requirements
- Other conditions

*Source*: Adapted from «Environmental Requirements for Industrial Permitting», OECD, 1999.

15. The strong and direct impact of permitting practices on the effectiveness of environmental policy implementation and enforcement efforts made it necessary to initiate this project in the framework of the NISECEN. The circle of project participants included policy makers, regulators and experts from EECCA and OECD countries. Together they formed the Working Group on Environmental Permitting.

16. The Working Group recognised that major problems existed in industrial pollution regulation across the EECCA region. These problems affected both the conceptual and procedural aspects of environmental permitting systems and led to high administrative burdens and systematic non-compliance. In order to make more effective use of resources and ensure a better compliance with environmental requirements, as well as to facilitate investments, the environmental permitting systems should be upgraded. Such a reform could be based on models and experience from OECD and CEE countries.

17. The adoption of new approaches and practices in the EECCA region was considered as challenging. The existing capacity is by far not enough in terms of resources within the regulating agencies and regulated community. In this context, the assessment of actual situation and potential was needed, followed by the development of recommendations to improve the permitting systems.

**Structure of the review**

18. Part 1 describes the current situation in the EECCA region, particularly examining policy and legal frameworks, institutional and procedural aspects, links to other environmental policy instruments, as well as analysing the contents of the application forms and permits themselves.

19. Part 2 formulates a possible goal – an improved environmental permitting system, based on an integrated approach, which respects the interests of all parties involved. Approaches to make the change happen are proposed and examples are presented – mostly from CEE and OECD countries – which show various opportunities for improving environmental permitting systems and possible models to follow. Particular attention is given to the Integrated Pollution Prevention and Control (IPPC) and related regulatory mechanisms.

**Terminology**

20. Certain terminological difficulties arise from the fact that permits and licenses, and permitting and licensing processes can be and frequently are used as synonyms, *e.g.* in the Russian language environmental law literature. Thus, Brinciuk M. (2000), a leading Russian environmental lawyer, argues that a «permit» is nothing else than a type of licence due to the similarity of functions. Many environmental regulators and lawyers in the EECCA countries, however, prefer to make the distinction between the terms «permit» and «licence».

21. Therefore, to keep the report's language in line with environmental authorities' terminological customs, the distinction is kept between (i) a permit that grants rights/establishes limits for emission and discharge of pollution or disposal of waste, and (ii) different kinds of licences that grant rights to carry out various types of activities, whether they are related or not to the use of natural resources. As mentioned above, this review covers only permits for pollution emissions into the air, pollution discharge into water, and industrial waste disposal permits, or a combination of the above. «Environmental permitting» refers to the entire process by which governments authorise operation of industrial facilities.

**Data sources**

22. The Review is mainly based on the analysis of the Country Profiles prepared by the experts from several EECCA countries in response to a comprehensive questionnaire circulated by the EAP Task Force Secretariat in May 2001. Reports were received only from five countries. Some

additional questions were clarified by the EECCA experts during the Expert Meeting held on 17-18 December 2001 in Paris. Additional data, addressing overall national systems of environmental enforcement, were received in autumn 2002 from all twelve countries. Relevant data, extracted from existing bibliographical sources, and results reported by bilateral and multilateral demonstration projects have been used as reference.

23. Furthermore, a number of presentations from the National Workshop on Integrated Pollution Prevention and Control (25-26 January 2001, Chisinau, Moldova), "Prevention and Control of Industrial Pollution: International Conference on Policy Approaches" (25-26 May 2002, Seville, Spain), and from the Regional Workshop on Environmental Permitting (12-13 September 2002, St. Petersburg, Russia) have been used. The recommendations build upon the results of a previous effort to review the environmental permitting systems in OECD countries[1].

24. The authors would like to mention that, with the data available form the EECCA countries, it is hardly possible to give a statistical assessment of the effectiveness and efficiency of environmental permitting systems. Data collection systems usually are insufficient, basic information is missing in a number of countries, data are not reliable, and comparison between different parameters is difficult due to the used units or methods of aggregation. Therefore, the review is mostly based on anecdotal information. Additional in-depth analysis may be needed to validate the findings of this report.

1 . «Environmental Requirements for Industrial Permitting», OECD, 1999.

# 1. KEY FEATURES OF CURRENT SYSTEMS

25. In the EECCA region, environmental permitting needs to become a performance-oriented and dynamic process that addresses current problems and long-term environmental targets effectively and efficiently, in the context of economic upturn. Does sufficient potential exist to undergo such a change? The permitting systems that exist in the EECCA region are analysed below to answer this question. Certainly, each country's system has its particularities but common features can be identified. Such commonalties, either positive or negative, are described and, where possible, are compared with international practice.

## 1.1 Role of permitting in the framework of environmental regulation

### *Aims of permitting*

26. As elsewhere, the permitting systems in the EECCA region aim at ensuring environmentally sound operations in industry. Typically, they establish the authorised limits for pollutant emissions into air and water, and disposal of waste. These limits constitute the core requirements of single-medium permits, regardless of their type. Also, they provide reference levels to calculate environmental charges and taxes to be paid by industries, thus contributing to the internalisation of pollution costs.

27. Due to economic reforms and more intensive international exchange, the understanding of the role played by permitting systems has further developed in the EECCA region. In a new economic context, the permits (licences) are believed to potentially fulfil a number of other functions besides the traditional ones[2], such as:

- Secure that private and public interests are respected;
- Guarantee that incentives to protect the environment in an effective and cost-efficient way are provided to the regulated community;
- Stipulate the kind of non-compliance responses to be taken in the case of a breach of permit requirements;
- Contribute to a favourable investment climate;
- Stimulate technical innovation and adoption of cleaner production;
- Provide a mechanism to identify the regulated community and keep track of its environmental performance;
- Play the role of an asset that can be transferred to another owner.

28. Despite this move within academic circles towards a wider understanding of permit functions, both environmental authorities and industry still regard environmental permitting as a purely administrative procedure that grants government authorisation for emitting pollutants up to a certain level.[3]

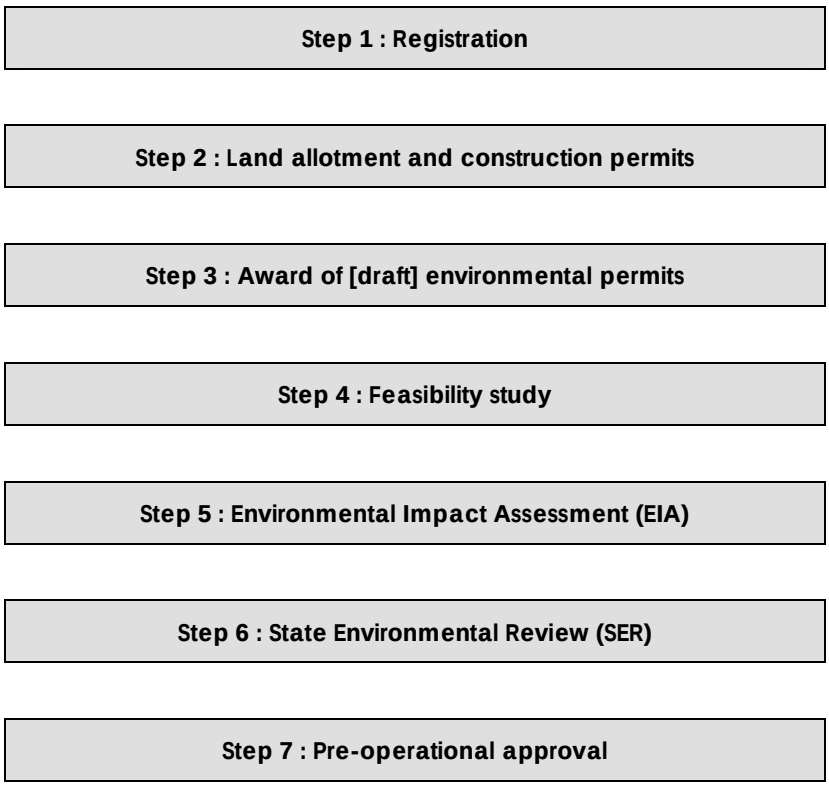
2 . Komarov *et al.*, 1999.; Brinciuk, 2000.

3 . The narrow understanding of pollution regulation can be illustrated by the fact that some environmental law textbooks published in the Russian Federation (*e.g.* Kuznetsova N., 1999.) contain only the notion of a «limit (for emissions or nature resource use)» and say nothing about «permits».

*Permitting as an element of environmental assessment*

29. In the EECCA region, awarding of environmental permits is part of a more **comprehensive process** of environmental assessment and approval of economic activities (see Figure 2). This process has several other phases, including feasibility studies, the Environmental Impact Assessment (EIA) and the State Environmental Review (SER). It is preceded by registration of an economic activity, land allotment and issue of a construction permit. Environmental authorities are quite often asked to endorse such kinds of decisions. Moreover, cases exist where local authorities have the right to allocate the land for a new facility only after the environmental permitting, EIA and SER is conducted.

**Figure 2. A «typical» approval process of a new facility.**




*Source*: Investor's Guidebook, EBRD 1999.

30. Assessment of environmental impacts of industrial activities and identification of environment protection measures are commonly known in the EECCA countries as the SER. In certain cases, «environmental permitting» is understood to be an amalgam of the SER and permit award. Therefore, before discussing details of a permit award procedure in the EECCA region, it is worth describing briefly the other phases in order to understand how various phases interact. The latter task is really challenging, since none of the reviewed Russian language literature explicitly indicates the sequence of and linkage between permit award and EIA and SER.

31. Permit award is the first phase in the process of approval of an economic activity. It requires that Emission Limit Values (ELVs) are calculated based on Maximum Allowable Concentrations and compiled in ELV Volumes or Protocols for air and water (see more details in section 1.3 below). Waste disposal limits have to be defined as well. In the majority of cases, industry develops permit applications with proposed (draft) ELVs. The applicant may be asked to revise its application when proposed limits do not fit local environmental conditions. If the environmental authorities agree with the proposed limits, environmental permits are awarded already at this early stage of environmental

assessments and approvals (*e.g.*, in the Ukraine and Moldova)[4]. However, **permits become effective only after the SER is performed**, *i.e.* when the entire process of approvals is completed.

32. A very early permit award can have several explanations. It may indicate that environmental authorities are trying to define whether a new facility can be sited at all under given local environmental conditions. In such a case, it would be legitimate to call this process an «ELV award» and not a «permit award». Another interpretation can be that permits are not instruments to prevent and reduce pollution; their function is rather to allow pollution. The discussion of the ELV setting procedure and wide application of temporary ELVs provides facts that support the latter thesis.

33. The **Environmental Impact Assessment** (EIA) is quite a new element of environmental regulation that was introduced in the EECCA region in the mid–1990s. It aims at assessing the potential impact of a proposed economic activity and defining mitigation measures, including through alternative technical solutions. Public hearings are usually part of the EIA. The EIA process can result in either a «Statement» (*e.g.* as Moldovan law foresees) or a «Conclusion» by the developer on the acceptability of environmental impact (*e.g.* as Russian law requires).

34. The EIA is closely linked to SER. The environmental research and studies, which are carried out by the developer or consultants on the developer's behalf, are called EIA, and the process of reports review of the above studies by the environmental authorities, is called SER. For a long period the SER was believed to fulfil the EIA's functions, although it rarely implied assessment of alternative solutions at an early stage of project design.

35. The **State Environmental Review** (SER) has been in place since the late 1980s. This procedure applies to new developments and, to a very limited extent, to reconstruction or change in technology. SER can be required for draft legal acts or draft local/regional development programmes. Draft permits can also be subject to SER (*e.g.* in Kyrgyz Republic, Ukraine, Moldova and other countries). The SER is based on several principles as follows[5]:

- Presumption of potential environmental hazard of any (new) economic or other activity;
- Mandatory environmental assessment prior to launching a certain activity;
- Integrated assessment of potential impact;
- Accuracy and exhaustiveness of information;
- Independence of experts conducting SER;
- Transparency of the SER process and public participation;
- Accountability of parties involved in decision-making.

36. In the framework of the SER, a panel of experts, appointed by environmental authorities, evaluates the proposed economic activity. The SER is conducted at quite an advanced stage of project preparation, after the feasibility study is completed. The proposed design (blueprints) and environmental protection measures foreseen by the company are compared with numerous regulatory requirements, in particular, construction, technical, sanitary-hygienic and environmental standards.

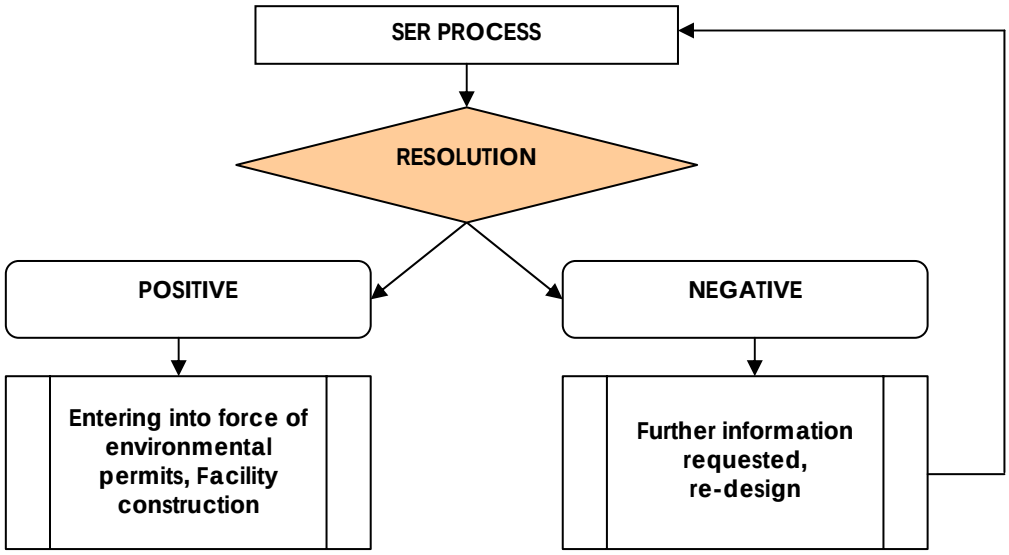
37. After evaluating a proposed activity, the environmental authority has to deliver a «SER Resolution», which can be either negative or positive. Accordingly, the proposed project is either accepted or rejected. Unlike the EIA documentation, the SER Resolution is a legal document that allows an activity to be launched. It is one of the pre-requisites for awarding environmental permits (see Figure 3), that in many EECCA countries become effective only after undergoing SER, although they can be issued at the very beginning of the approval process.

4 . EBRD, 1999.

5 . Korshunov N., Eriashvili N., 2001

38. The SER has shown to be a very rigid procedure and rarely considers alternative solutions to a proposed activity. Even after the EIA introduction, the original rigidity of environmental assessments and approvals persisted in the EECCA countries, mainly due to the inertia of experts involved in the overall approval process. In general, the delineation between the EIA and SER, and the SER and environmental permitting, is blurred and confusing. This issue requires an in-depth analysis in the future.

**Figure 3. State environmental review (SER): Decision-making flowchart**




*Source*: Based on Country Profiles.

39. In some countries, the completion of the SER and the permitting procedure does not automatically mean that the developer is entitled to start facility operations. An additional step, the so-called «pre-operational approval» may be required. As soon as the facility is built, a State Commission for Pre-Operational Approval is appointed by the decision of the local authorities or the government in the case of large projects. This Commission brings together representatives from authorities in charge of hygiene, fire, labour safety and environment protection. They inspect the facility and check whether all requirements were fully observed during its construction. If so, a Protocol of the State Commission is signed and operations may begin.

40. The **sequence of phases** within the entire environment assessment and permitting process may be quite peculiar and leads to a high level of rigidity in choosing an alternative scenario for an economic activity if the main developer's proposal is not environmentally acceptable. The EBRD Investor Guidebook (1999) mentioned that an EIA is conducted after the feasibility study[6]. This way of assessing environmental impacts may have another unpleasant consequence – a substantial increase in pre-operational costs, since a certain design option (at the stage of blueprints) can be rejected, even after the company has already invested serious money in the feasibility study and other kind of assessments.

6 . This might be one of several possible interpretations.

41. In Russia, a **special agreement for nature resource use** may be required in parallel with other environmental approvals. Such an agreement is signed with local authorities[7] and, in principle, have the same scope if compared with licences and permits – regulation of nature resource use and environment pollution as part of economic activities. Brinciuk (2000) explained the particularities of these agreements. Unlike licences and permits, which are instruments of administrative law, they belong to civil law. They were introduced to address the need for local authorities' participation in environmental management, although it remains unclear why this can not be done at the procedural level rather than introducing yet another instrument of regulation.

42. Thus, the paperwork related to the whole process of environmental assessment and approval is impressive. It can be illustrated by a short quote: The list of permits of Kuznetsk Metallurgical Works (Russian Federation) consists of 78 documents. Above that, the facility has to keep inspection-related documentation, technical and technological descriptions, reporting forms and other types of documents. All these add on the list some fifty items.[8]

43. In sum, within the environmental assessments and approval process of economic activities, environmental permitting in EECCA countries seems to be perceived literally as «issuance of environmental permits/emission limit values». In the following sections one can see that even such a simple «issuance of permits» can become an extremely complex and administratively loaded process.

### 1.2 Policy and legal framework

44. The theoretical approaches to industrial pollution regulation in EECCA countries followed international patterns: from pollution control in the 1970-1980s, through pollution prevention in the 1990s, to the adherence to the sustainable development concept during the last decade. In practice, however, the regulation did not go beyond pollution control. Incentives for applying pollution prevention are very few and an implementation mechanism is missing. The sustainable development concept is welcomed but not translated into specific actions, although sustainable development strategies have been officially adopted and reports on their implementation have even been prepared (*e.g.* in Moldova).

45. The basic **policy principles**, that form an important pre-requisite for effective environmental permitting, were integrated in national policy documents and legal acts. The "polluter-pays" principle was first mentioned in policy documents of 1987[9]. After gaining independence in 1991, the EECCA countries acknowledged this principle as one of the cornerstones of their national environmental policies. Once proclaimed, this principle showed itself to be unappealing politically[10] in some countries. Other principles, adopted as indispensable to permitting systems are pollution prevention and access to information. They also remain quite frequently only on paper.

46. A distinct weakness of environmental policy making, which negatively influences the development of permitting systems, is the lack of clear **targets and priorities**. The National Environmental Action Programmes (NEAPs) or other policy documents only vaguely formulate the desired changes in terms of environmental quality or level of emissions, and the timeframe to achieve

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7 . Erofeev B., 2001.

8 . Guseva *et al.*, 2002.

9 State of Environment in USSR in 1988: Inter-departmental report. Moscow, 1990.

10 . For instance, pollution taxes neither provide a sufficient incentive to reduce emissions nor adequate revenue since they are set at a very low level. Industries are rather inclined to pay symbolic amounts than to invest in cleaner production or effective end-of-pipe technologies. One reason why governments do not raise the level of taxes is to prevent a lot of companies from going bankrupt (most importantly heavy industries giants). This is a direct consequence of fears of generating social tensions as a result of possible unemployment (which is already quite high in the EECCA countries) that, sometimes, has artificially been magnified because of vested interests.

such targets. Without these policy decisions, one can hardly advance and monitor the effectiveness and cost-efficiency of permitting systems.

47. For a long period, no political pressure or incentives existed to improve environmental permitting. National environmental policy documents do not elaborate much on permitting systems. With few exceptions, the NEAPs adopted in most of the EECCA countries do not require substantive improvements of permitting systems. These systems are seen as sufficiently developed. In addition, their reform is less politically appealing in comparison with the introduction of market-based instruments. This led to the perpetuation of the Soviet system and did not give a «green light» to reform permitting or to introduce new effective policy instruments.

48. The **environmental legislation** in the EECCA countries has been expanding over the last decade to better regulate industrial pollution, but examples are rare of laws focusing on environmental permitting. Generally, the foundations of permitting systems are part of umbrella laws on environment protection. Permitting requirements find further development in the medium-specific laws (*e.g.*, on air or water protection, use of mineral resources, etc.). This leads to differences in approaches and procedures as applied to various media. An exception to this general rule is in Georgia, where a special Law on Environmental Permitting was adopted in 1996 (see Box 1).

**Box 1. Several examples of legal frameworks governing environmental permitting.**

***Georgia.*** The umbrella Law on Environment Protection and two specialised laws – on Environmental Permitting (1996) and on State Ecological Review (1996) – set the framework for environmental permitting. The Law on Environmental Permitting required an integrated permit to be issued, and described the permitting procedures. Industries were grouped in four categories according to their potential impact on the environment, each being subject to environmental assessments and public consultations with a different level of sophistication. The Law also provided for the format and contents of a permit application and the permit.

***Ukraine.*** The umbrella Law on Environment Protection (1991) stipulates that permits must be obtained for air emissions, wastewater discharges and waste disposal. Air emission permits are further regulated through the Law on Atmospheric Air Protection (1992) and the Governmental Decision on Permitting of Air Emission from Stationary Sources of Pollution (1995). The Water Code (1995) addressed wastewater discharge permitting. A Governmental Decision of 1996 described the procedures to set limit values for discharges and provided the list of regulated substances. Waste permitting received a legal basis in 1995 when the Government Decision No. 440 described various requirements for waste handling, including industrial waste. In 1998 the Law on Waste was enacted to develop waste regulation.

49. Usually, the **primary legislation** stipulates key regulatory principles, identifies the regulated community, and defines the basic notions used in environmental permitting. Also it sets the institutional framework by defining the rights and responsibilities of various stakeholders, including those of competent authorities, regulated community and the general public.

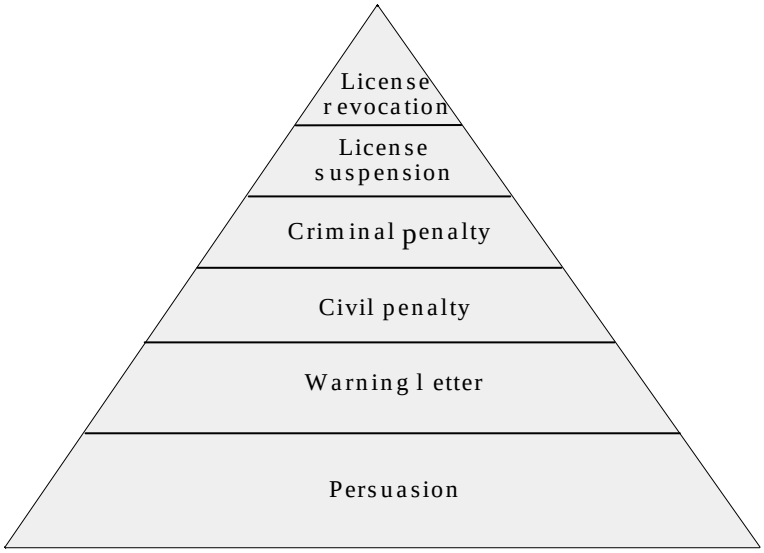
50. Permitting criteria (although not referred to as such) are listed in primary legislation. Quite often the law requires members of the regulated community to implement advanced technologies, in particular, those associated with low input of natural resources, energy efficiency and waste minimisation. Site and technology maintenance measures are also legally required[11]. All these requirements, however, are difficult to enforce: as a rule, they are not included in permit conditions.

51. Sanctions for non-compliance with permit requirements are stipulated in either environmental laws or administrative and penal codes and there is a hierarchy of non-compliance responses. This hierarchy, having some country particularities, is quite close to enforcement pyramids for business regulation in the OECD countries. In such a model, measures of persuasion are used first without compromising the use of harsher measures at a later stage (see Figure 4). Among the latter,

11 . For instance, Art. 32 of the Moldovan Law on Environment Protection (1991).

fines are imposed for minor infringements. Then pollution may result in a certain restriction of production or shut down of the entire enterprise. Besides, polluters have to compensate for the damage they have caused. Penal codes stipulate sanctions for severe and persistent non-compliance, including imprisonment of official persons (*e.g.* in Kyrgyz Republic, Ukraine, Russian Federation).

**Figure 4. An enforcement pyramid for business regulation.**




*Source*: Ayres, I. & Braithwaite, J. (1992), *Responsive Regulation: Transcending the Deregulation Debate*, Oxford University Press, New York, p. 35.

52. None of the country profiles indicated that operations without a permit was penalised. Although sanctions do exist for such cases, this fact is symptomatic: the enforcement authorities in the EECCA countries mostly respond to the fact of pollution rather than try to prevent it.

53. Gaps, duplication and inconsistencies in provisions of different legal acts are seen as important impediments to an effective functioning of the permitting systems. An illustration of gaps in environmental legislation is the lack of definitions of some terms that are fundamental for permitting. Experts from several countries (*e.g.* Ukraine and Moldova) reported that existing legislation may not explain such terms as permit, licence, existing or new installations, operator, change in operation or substantial change in operation, facility, etc. As a result, the very legal status of a permit may be corrupted and its enforcement becomes difficult. Institutionally, the permitting systems have a medium-specific orientation, characterised by unclear delineation of functions and by innumerable endorsements required from various authorities.

54. Government regulations and instructions (**secondary legislation**) establish the permitting procedure in more depth. They include detailed descriptions or even sample forms for applications and permits, provide numerical values for environmental quality standards and describe the approaches in emission limit values. Most of these legal documents are only slightly amended Soviet guidelines, instructions, and standards. Some countries reported that neither environmental quality standards nor techniques for calculations of ELVs and their usage in decision-making were updated and officially endorsed after gaining independence. Many regulators who were involved in the review process also stated that their countries lack an adequate secondary legislation (see Box 2).

**Box 2. The need to develop secondary legislation in Kazakhstan.**

The Law on Environmental Protection requires secondary legislation (*e.g.* regulations) to be developed before it can be fully implemented. Many of these are still missing, especially those that provide operational procedures. This creates many problems, leads to inconsistency in the implementation of environmental policies and limits their effectiveness. Of particular importance are operational regulations on environmental monitoring, on procedures for environmental review [and permitting], on environmental auditing, on environmental insurance, on public access to information and participation, and on procedures for certification, and on handling emergencies.

*Source*: Based on the Environmental Performance Review of Kazakhstan, UNECE 2000.

55. The regulated community and the general public are frequently confused by the large number of regulatory documents governing the permitting process. Often, requirements in laws and regulation are nebulous, sometimes controversial, and difficult to understand. Moreover, the access to permitting-related regulations, standards, legislative documents, orders, etc. remains limited. Many countries try to solve this problem and at least primary legislation is becoming available through public web sites (*e.g.* in Russia) or commercial databases (*e.g.* in Kyrgyz Republic and Moldova). Guidelines for investors were developed by international organisations (see the EBRD series of Investors' Guidebooks for Environment, Health and Safety) or national authorities (*e.g.* in Georgia). These guidelines described the essential steps and requirements of environmental permitting. In some cases, non-governmental organisations play the role of independent information centres.

### 1.3 Approaches and scope of environmental permitting

56. The EECCA countries employ mainly a **case-by-case single-medium permitting for water, air and waste**, the scope of regulation including a vast number of substances and industries. Typically, the permits for emissions into air and wastewater discharge set Emission Limit Values (ELVs) for individual facilities as core requirements. Many criteria influence the decision on the numerical value of ELVs, most notably environmental quality standards, technology standards, siting requirements and local environmental conditions. This section describes the permitting approaches in the light of these and other criteria.

#### *Types of environmental permits*

57. In the EECCA countries, three types of documents are considered relevant to environmental permitting:

i. Permits for (direct or indirect) pollutant emissions into the environment;

ii. Licenses for use of natural resources (mineral resources, land, water, forest);

iii. Licenses for carrying out environment-related activities, *e.g.* waste processing, environmental audits, designing of environmental facilities, computer modelling to define emission limit values, etc.

58. The first type – single-medium permits to control pollution – is a derivative of the model introduced in the Soviet Union at the end of the 70s/early 80s[12], and the differences among the countries of the region are minor. These permits regulate separately air emissions, wastewater discharges and waste handling. The current review is dedicated to this kind of permit.

59. The second type – nature resource use licensing systems give the right to use, *e.g.* mineral resources, and establish allowances for their extraction. They were established mostly after the

12 . Water use and wastewater discharge permits were introduced at the beginning of the 1970s; air pollution permits in 1981-1982; and, lately, waste permits have been required.

disintegration of the Soviet Union and are developed to a different extent in different countries. The third type of licences reflect the attempts to ensure a certain level of professionalism of the experts or companies providing specific environmental services. They are not, strictly speaking, environmental permits. These two kinds of permits are not covered by the current review.

60. Although separate permits for different media largely prevail in the EECCA region, political decisions and concrete steps were made in the last couple of years to move towards **integrated approaches**. Some countries (like Georgia, Kazakhstan and Kyrgyz Republic) have integrated separate permits into a single document. Similarly, the Russian Federation introduced the **Licence for complex use of natural resources** but did not yet begin its application in practice due to contradictions with other legal acts, lack of secondary legislation and problems in institutional co-ordination (see Box 3). Its phased introduction is foreseen over a period of three years, which is an approach that corresponds to good international practice. Other countries (like Ukraine and Moldova) seriously consider a possibility of introducing a fully integrated permitting system that would address cross-media transfer of pollution.

**Box 3. Particularities of the complex (integrated) licensing in the Russian Federation.**

The License for complex use of natural resources is a document that states the environmental requirements of conducting an economic activity. It should bring together all environmental permits, all documents related to the environmental assessment and approval of an economic activity, including the positive SER resolution. The licence should set out the limits of natural resource use, ELVs, inputs of energy and prime materials per unit of production, environment protection measures and their funding. It also states the penalties for non-observance and describes actions to be taken when the site is decommissioned. The licence is issued by the territorial authorities of the Ministry of Natural Resources. Its validity period is five years. The **local authorities are entitled to issue a land allotment and construction permit only when the developer presents a valid license for complex use of natural resources**. However, licences for complex use of natural resources are not currently issued due to legal obstacles. Draft procedures for issuing complex licences has been developed, but not yet adopted. Instead, permits (licences) are issued in each case separately by respective competent authorities according to laws regulating use of subsoil, forests, land, wildlife, etc. Separate procedures have been established for each of these separate licences and a co-ordinated (complex) approach has yet to be developed.

*Source*: Erofeev B., 2001; Krasnova I., 2002.

61. In the early 1990s «environmental passports» were introduced in all EECCA countries to ensure that environmental data and documentation are consolidated in one file. Many experts consider this instrument as a first attempt to develop an integrated approach to the permitting system. The development of passports required large industrial enterprises to be assessed from such perspectives as energy and resource intensity, material flows, including water and waste flows (see Box 4). Passports were based on self-assessments.

**Box 4. Brief description of the GOST 17.0.0.04-90 "Ecological Passport".**

Apart from introducing the requirement to assemble a passport and procedures of its development and approval, the GOST "Ecological Passport" provided an outline for ecological passports that had the following elements:

- Title page;
- General information about the enterprise, including contact data for plant managers, plant designers and inspecting authorities; bank details, and statistics identification codes;
- Description of workshops and installation's production modules (names, products, product code, units of measurement, planned and actual production output);
- Description of land-uses (main and auxiliary production units, administrative buildings, warehouses, landfill areas, wastewater reservoirs, land under pipes, etc.);
- Use of raw materials (chemical composition according GOSTs, output product, use of prime material per unit of final product, total use per annum);

- Use of energy resources (total use and use per product of electric energy, petrol, gas and other kind of fuel, heat consumption, including through waste recovery);
- Characteristic of air emissions (description of source, source identification number, polluters emitted, volumes of emission per year, add on devices and their key parameters, investment in add on controls, emissions per unit of product, purified versus non purified emissions, etc.);
- Water use (limits of intake per year, actual intake, kinds of water uses, volume of leakage);
- Wastewater characteristic (approved average generation of wastewater, chemical composition, effluent limits and actual effluents);
- Description of the wastewater treatment plant (capacity, effectiveness of treatment per ingredient, design and actual treatment, technology description);
- Description of water re-use in production processes;
- Description of waste (sources, hazard category, physical and chemical description and waste flows).

*Source*: GOST 17.0.0.04-90

62. Environmental passports remained just a form of integrated reporting that, often, simply duplicated permit information. For many industries, especially for SMEs, the decision on passportisation was never fully implemented. The main reason for this was that the costs of obtaining passports were additional to those associated with obtaining of single-medium permits. A study conducted in the Yaroslavl region of the Russian Federation showed that fixed administrative costs for obtaining passports could be at least 15 times higher than annual pollution charges[13]. All countries, except Armenia, Russia and the Ukraine, abolished them in the late 1990s because of the high administrative burden and the low impact on the regulatees. In Russia, the old GOST 17.0.0.04-90 was updated and required, *e.g.* to review the passport every five years (some sources indicate that annual renewal is required).

***Setting the Emission Limit Values (ELVs)***

63. Each process at a given site, ending in pollutant release from a stack or pipe, must receive individual Emission (effluent) Limit Values (ELVs). The original scientific concept of emission regulation was based on the so-called Maximum Permissible Environmental Load. This concept was introduced back in the 1970s[14] in the Soviet Union. Its main thesis said that due to the limited carrying capacity of natural ecosystems they can be "loaded" by pollutants only up to a certain extent. To translate this concept into practical terms, the assumption was made that if concentrations of key pollutants in the environment do not exceed environment quality standards, then the load is not exceeded. Such concentrations were those causing no adverse effects on individuals for their whole lifetime and all subsequent generations (i.e. a «zero risk» human health protection criteria).

64. Maximal Allowable Concentrations (MACs, which are frequently called also Maximum Permissible Concentrations or MPCs) were introduced to bring the theory and scientific research into the legal practice. These environment quality standards are set for such receiving media as air (ambient and in working areas, see also Box 5), water (surface water for sanitary-hygienic purposes and fishery, drinking water and ground water which is normally assessed as a potential source of drinking water) and soil (agricultural land). More severe requirements apply to certain areas, *e.g.* in the vicinity of nature reserves.

13 Tacis, 1999. Initial consideration on how to implement BAT in Russia.

14 . Glazovsky N.F., 1976; Israel Yu.A., 1984

**Box 5. Maximal Allowable Concentrations (MACs) for air quality in the Russian Federation.**

Two major types of MACs are used as regards air quality – standards for working areas (i.e. workplace) and standards for the ambient air. MACs for **working areas** are established to guarantee that being exposed to such an environment every day, for eight hours a day, for the whole working life an employee does not suffer from any related disease. There are approximately 1,000 such standards in Russia.

Ambient standards (for settlements) are divided into single exposure and daily limit standards. **Single exposure** MACs reflect concentrations of substances that should not cause any harm to a human within 20 minutes of exposure. MAC **daily average** is defined as a concentration that should not cause any adverse effects on the inhabitants of the settlement for the whole lifetime of each individual, and all subsequent generations. Since these standards are aimed at whole populations, which include children and the elderly, these limits tend to be tighter than others. There are approximately 400 of these standards.

*Source*: Guseva *et al.*, 2002.

65. Maximum Permissible Emissions into the air (MPEs) and Maximum Permissible Discharges into water bodies (MPDs) are introduced for enterprises based on the requirement that after being released into the environment these amounts will not result in concentrations exceeding respective MACs in receiving media. MPEs and MPDs hereinafter will be referred to as Emission Limit Values, or ELVs, to avoid terminological inconsistency.

66. Environmental quality standards and approaches to ELV setting are mostly based on the group of GOST[15], "Environmental Protection" (developed in 1977-1981), and on a set of guidelines and methodologies on calculating the ELVs (developed in 1986-1987). These reference documents are still in force (Box 6). The Guidelines for ELV calculation are complicated, require a lot of input data and are meant only for experts.

**Box 6. Reference documents used in Armenia to calculate ELVs (2001).**

Armenia did not change environmental standards and emission limit values since it regained independence. Still GOST "Environmental Protection", as well as the guidelines, "Set of methodologies for calculation of emissions from different producers" (1986), "Methodology for setting the norms for industrial emissions into the air" (1986), Designer's Handbook "Sewage systems of settlements and industrial enterprises" (1981), "Methodology of calculation of Maximal Permitted Discharges of wastewater to watercourses" (1990), etc. are used for defining requirements of permits for wastewater discharge, special water use, and emissions into the air.

67. As mentioned, several **criteria** influence the ELV setting. Background concentrations, local conditions, and total volume of emissions from other facilities and potential synergetic effects in the toxicity of substances should be taken into account when defining these limits. The ELVs should not be exceeded when the facility works at full capacity. Input information also should refer to parameters of add-on devices, non-source and fugitive pollution, meteorological conditions, influencing pollutants' dispersion, data on possible accidental releases of pollutants and demographic information. The required information is extremely comprehensive, but the credibility of input data is questionable due to the inadequate accuracy of measurement and, at the same time, important data (*e.g.* the age of infrastructure) may not be taken into account.

68. Some other criteria are used in setting ELVs. For instance, technology-based requirements (standards) were recently introduced by the Russian legislation. Belarus uses energy-intensity standards. In Georgia, best available techniques should be considered when issuing permits. Certain particularities exist in applying these notions (see Box 7), especially when comparing to international

15 . GOST: Government Standard.

practice. For instance, they may have a very rigid or narrow interpretation, lack a basis for implementation or, when such a basis exists, utilise outdated information.

**Box 7. New approaches to set the ELVs**

**Belarus.** Energy efficiency is regulated through the "norms of energy resources use", which establish consumption per unit of production "*of a given quality in some planned conditions of production*" (i.e. under pre-defined operation conditions). Each sector received its own standards, specified in several instructions (reference documents). Furthermore, energy efficiency should correspond to the indicators whose values are listed in the "Regulation on the Use of Fuel, Thermal and Electrical Energy in the People's Republic of Belarus" (1991).

**Georgia.** The notion of Best Techniques (BT) has been introduced in the Law of Georgia on Environmental Permits and in the Law of Georgia on Environmental Protection (1996). It is quite similarly defined if compared with the Best Available Techniques – a concept used in the European Union (see Chapter 3). The BT concept seems, however, not to be used proactively as in the EU to prevent pollution to the extent possible and to avoid increasing concentrations of pollutants in the environment. The basic principle of the Georgian legislation is instead to allow pollution up to the environmental quality standards. Only when the standards are violated, the BT concept is used in such a way that additional emissions are allowed if the polluter is using best technologies and techniques.

**Russian Federation**. The recent Federal Act "On Protection of the Atmospheric Air" (1999) introduces a rather elaborated concept of environmental standards. It establishes the concept of "**technical standards**" as standards for pollutant emissions into the air that are established for stationary and mobile sources of pollution, technological processes, equipment and reflect ELV per unit of performance – unit of final product, capacity, driving distance for transportation means, etc. If an industry meets technical requirements, but can not meet Maximum Permissible Emissions, and if it has approved plans for improvement of its environmental performance, the industry can apply for temporary limits that are higher than MPE, but less than the current amount of emissions.

The competent authority (at the time of writing – the Ministry of Natural Resources) is responsible for developing and approving technical standards as criteria for ELV setting. However, the decision to introduce such standards was not backed by any funds in federal or regional budgets. As a result, the whole process of setting technical standards was slowed down. Since 1999, only two sectors have technical standards for a few activities: bakery (for bread production) and energy production (for some types of boilers).

*Source*: (Belarus) Tchelnokov et al., 2001. (Georgia) Georgian Legislation. (Russian Federation) Guseva, 2002.

69. Sets of ELVs are usually assembled in so-called **ELV Volumes or Protocols**. These documents can be hundreds of pages long. Each large industrial enterprise is required to develop and to get approved its own ELV Protocols – for air and for water. Smaller facilities might be exempted from developing them (see Box 8). The scope of an ELV Protocol can be larger than a specific facility and cover a certain municipality or even a river basin. For instance, the ELV Protocols of each facility in Obnisk city (Kaluga Region of the Russian Federation), must take into consideration the «municipal ELV Protocol»[16], which defined the carrying capacity of the territory.

16 . Lukiancikov N., Potravnyi I, 2002.

**Box 8. ELV Protocols for air emissions in Belarus**

The need for ELV protocols is a direct function of the "hazard category" of a certain facility. A special formula, which makes the relation between the actual volume of air emissions and environmental quality standards, is used to range industrial facilities into four categories of potential hazard. Category 1 and 2 facilities possess the highest hazard, and requirements for calculating ELVs are respectively very comprehensive. During ELV setting, exhaustive assessments should be conducted, including site visits. Category 3 facilities are the most numerous, with an average level of hazard. Their ELV protocols may be developed through a "reduced" programme. Authorities would inspect these enterprises once every couple of years. Insignificant polluters form the Category 4 facilities. Their ELVs are set at the level of actual emissions and they may be exempted from the development of ELV Protocols.

*Source*: Tchelnokov *et al.*, 2001.

70. Computer modelling is used to calculate ELVs for air and, less frequently, for water. As a support tool to calculate pollutants' dispersion in a given area, standard (and, in many countries, government-licensed) computer software is used. Various computer applications are based on a regulation issued back in 1986[17]. The reliability of these applications is low since they were tailored to new facilities using specific technological solutions and input materials. Nowadays, the choice of technologies or input product is much larger and will only increase together with trade development. The consequences might be paradoxical: cases were reported when permits were not awarded to companies that intended to modernise their production processes[18].

71. Although designed with good intentions and containing many sound elements, the described approach leaves no room to assess technical and economic feasibility of ELVs. In theory, it also means that ELVs need revision in a given locality for all facilities as soon as a new facility applies for permits. Besides, an exclusively technocratic ELV setting excludes any opportunity for public screening.

72. Often, limit values are unrealistically high, difficult or impossible to achieve even technically[19] and, in order to cope with their stringency, a system for **temporary ELVs** has been adopted in some countries. The temporary ELV provides some relief for enterprises that cannot meet strict environmental objectives at the time of permit granting and allows a more relaxed approach of up to one year to comply with the requirements. This may provide a phased approach to meeting objectives[20].

73. However, this instrument is very often overused and can lead to justification of persistent non-compliance. The discretion of decision making may also result in corruption and distortion of the level playing field. For instance, a peculiar interpretation of «economic considerations» results in tougher ELVs for good economic performers[21] and lax regulation of poor performers[22]. The latter are

17 "Method of calculation of concentrations of pollutants emitted by enterprises in the atmospheric air". USSR State Committee for Hydrometeorology and Environmental Monitoring. 1986.

18 Dorozko, S., 2002.

19 . This is a direct consequence of MACs stringency. The current report does not discuss this subject matter. For further reading: OECD/EAP Task Force reports «Environmental Regulatory Reform in the NIS: the Case of Water Sector» (2000) and «Developing Effective Package of Policy Instruments in the EECCA Region: Experience and Directions for Reform» (2002).

20 . Also environmental authorities may have wide discretion to issue charge «waivers», i.e. to reduce their required charge or fine payment by the amount of their pollution abatement and control investments. This system, helping to increase the acceptance of a charge system, showed to be a disincentive for pollution prevention.

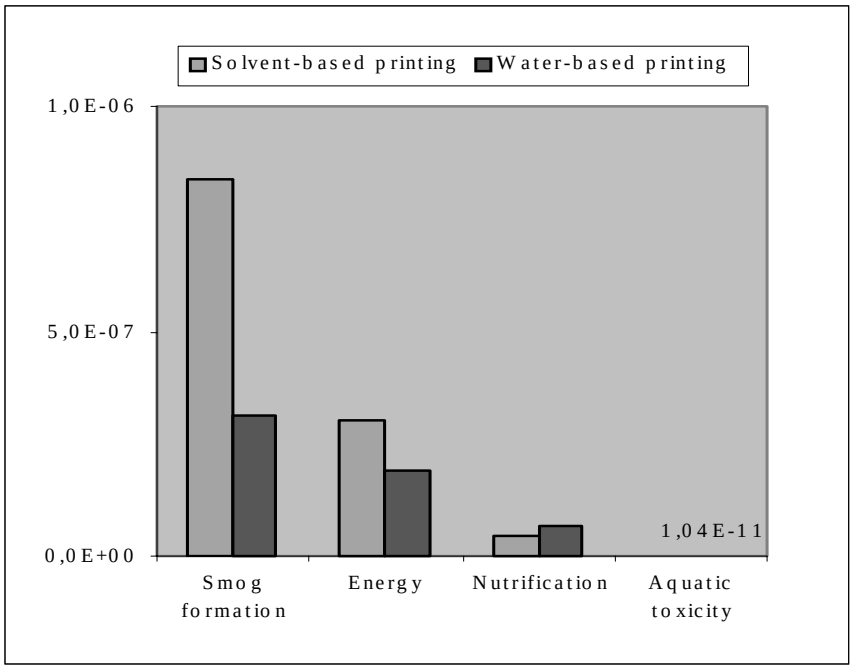
21 . I.e. companies that are financially sound, not necessarily those who would have lower abatement costs.

22 . I.e. nearly bankrupt companies.

considered not able to pay costs of compliance therefore they can obtain less stringent ELVs which later on may not even be enforced. This situation may be especially acute in countries with a large share of state owned enterprises. To address the issue of trade-off between environment and economic development, clear understanding and valuation of costs and benefits should exist.

74. As the permits in the NIS are mostly oriented towards limiting total emissions, this directs the polluters towards traditional and simple **end-of-pipe solutions** rather than pollution prevention. The legislation rather requires reconstructing add-on devices than apply cleaner technologies when the industry intends to increase its production capacity[23]. Incentives to decrease resource/energy consumption or pollution per unit of production are low due to the resource taxation and tariff setting policy. Also the single-medium approach allows transfer of pollution between media, as cross-media aspects are neglected while, as Figure 5 shows, there could be trade-offs between media when selecting different technology options. The little consideration given to cross media transfer of pollution is also illustrated by a poor regulation of fly ash or wastewater sludge handling in most of the EECCA countries.

**Figure 5. Variations in medium-specific impact of the solvent-based and water-based printing.**




*Source:* Wolsdorff, C., UNICE, 2002.

### *Industrial waste regulation*

75. One type of environmental permit concerns waste disposal by facilities. These permits are usually based on «Waste Generation Limits» and «Waste Disposal Limits», but the approaches to set these limits vary significantly, and describing many different systems is not feasible in this report. A few points have to be highlighted, however.

76. The regulatory framework for industrial waste permitting is developed to a very different extent across the EECCA region. It is quite limited in some countries (*e.g.* in Georgia, where a law on waste still needs to be drafted, or Uzbekistan where the law was approved recently). Other countries (*e.g.* Kyrgyz Republic, Moldova, Russia, Ukraine) established more advanced regulatory frameworks that, among others, introduced limits of hazardous waste generation within production processes,

23 . Tchelnokov A., 2001, p.195.

defined the responsibilities of the regulated community, required waste registration and permitting, compliance control and enforcement, and defined sanctions for non-compliance.

77. A system of division of waste into several categories of hazardous, plus non-hazardous waste, is used in the waste permits. The system is primarily used for setting the environmental tax – the more hazardous waste, the higher the tax. Enforcement is quite poor and many enterprises dump their waste illegally to avoid paying taxes for waste storage.

78. International co-operation plays an important role in waste management. EECCA countries ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Within the region itself, noteworthy is the development of an inter-state GOST 17.00.05-94 'Environmental protection. Environmental passport of waste'. This is a document that contains information about the quantitative and qualitative makeup of a batch of hazardous waste. The hazardous waste passport is drawn up on the basis of data on the components and properties of the hazardous waste, and an evaluation of its degree of hazard. The passport applies to the transport of waste. It is prepared by the producer of the waste (usually the enterprise) and must be approved by the environmental protection authorities[24].

***Regulated substances***

79. EECCA countries make considerable efforts to regulate as many pollutants as possible. The trend is to further expand their number rather than to focus on a few priorities. This leads to a continuous proliferation of MACs, up to 3 000 substances in some countries (*e.g.* Uzbekistan or Russian Federation, see Box 9). Although a large number of pollutants are regulated, it is impossible to catch up with the developments in the chemical industry and the appearance of new substances. As a result, MAC development becomes a never-ending story, which adds a high research and administrative burden but does not meet the ultimate objective of decreasing environmental risks.

**Box 9. Environmental Standards in Uzbekistan**

Uzbekistan inherited its standards from the former Soviet Union. Many are outdated and inconsistent with WHO guidelines, and are not backed by realistic implementation plans and targets. Since 1994, the country has been revising its system of air and water quality standards, based on Maximum Allowable Concentrations (MACs), which are defined as the maximum permitted concentrations of toxic substances in air, water and soil that are not harmful to human health. These MACs are set by the Ministry of Health according to their measurement frequency and toxicity. There are 479 air quality standards, 1 138 safety standards and 1 050 MACs for water. Discharge or emission limits for enterprises are listed in their operating permits and are derived from MACs. Different standards apply to drinking water, surface water, groundwater, effluent discharges, and fisheries; air quality standards, specified as MACs; soil standards, including standards for toxic substances in soil; safety standards, which oblige all industrial enterprises to incorporate environmental and safety features in their design plans.

*Source*: Based on the Environmental Performance Review of Uzbekistan, UNECE 2001.

80. At the same time, the number of regulated substances usually cannot be clearly identified in the permits due to the way legislation regulates pollution. A typical example of such an approach is shown in Box 10. If literally interpreted, the legislation may suggest that any organic synthesis substance must not be released into the environment until a MAC is established, since such a substance would not be present in background concentrations (which are used as MACs in their absence).

24 . Erofeev B., 2001.

**Box 10. A quote from the "Rules of Surface Water Protection"[25]**

"It is **forbidden to discharge** into watercourses:

3.2. ...Wastewater, containing substances, which do not have MAC established, or for which analytical control methods do not exist...

3.2.6. Wastewater, containing ... substances in concentrations higher than MAC or natural background concentrations, if the MAC is not established..."

*Source*: Country Profile Kyrgyzstan, 2001.

81. Often permits do not cover some marginal types of pollutants like fly ashes, which are by-products of cleaning the air emissions, or wastewater sludge. The replacement by process operators of regulated substances with non-regulated ones is not taken into account during the permitting process. Furthermore, many of the substances regulated by permits are not monitored either because of lack of adequate instrumentation or because limit concentrations can be lower than the actual limit of detection. Finally, many toxic substances, for which adequate monitoring capacity is missing, are put in the category where «analytical control methods do not exist» and their discharge may therefore be forbidden.

***Industries subject to permitting***

82. The approach taken regarding the **number, types and size of regulated enterprises** is rather different throughout the EECCA region. In a few countries (like Azerbaijan, Belarus or Kyrgyz Republic) there is a requirement that all enterprises affecting the environment need to apply for environmental permits and the same procedures would be applied for any kind of facility, including small and medium-sized ones. In the countries where environmental permitting is associated with the SER system (like Armenia, Ukraine, or Uzbekistan), national legislation specifies industrial sectors, where enterprises are obliged to apply for environmental permits, and sometimes even thresholds related to the production capacity (Table 1). In Georgia, the Law on Environmental Permits grouped industries in four categories and for each of these categories the permitting procedure is different (see details in section 1.4).

**Table 1. Sectors where enterprises are obliged to apply for environmental permits in Armenia**

| Sector | Installation | Production capacity threshold |
|---|---|---|
| **Chemical industry** | Production of detergents and chemicals for domestic use | > 50 tons p.a. |
| **Metallurgy** | Metal surface treatment | 2 000 $m^2$ p.a. |
| **Electric appliances and radio electronics** | Production of: | |
| | Generators | > 500 pieces p.a. |
| | Electric engines | > 3 000 pieces p.a. |
| | Power transformers | > 1 000 pieces p.a. |
| | Mobile electric stations | > 300 pieces p.a. |
| | Batteries | > 1 000 pieces p.a. |
| | Other electric appliances | > 5 000 pieces p.a. |
| | Semiconductors-containing appliances | > 1 000 pieces p.a. |
| | Electric lamps | > 3 000 pieces p.a. |
| | Luminescent lamps | > 1 000 pieces p.a. |
| | Electric cables | > 1 km p.a. |

25. The wording presented in this Box can be considered typical for the legislation of the EECCA countries.

| Sector | Installation | Production capacity threshold |
|---|---|---|
| **Wood processing and paper industry** | Production of: | |
| | Parquetry | > 10 $m^3$ p.a. |
| | Planking | > 1 000 $m^2$ p.a. |
| | Furniture | > 20 $m^3$ p.a. |
| | Cardboard | > 2 tons p.a. |
| | Paper | > 1 ton p.a. |
| **Light industry** | Production of: | |
| | Cloth and knitwear | > 3 000 $m^2$/month |
| | Socks and stockings | > 5 000 pairs/month |
| | Natural leather | > 0.5 tons/month |
| | Synthetic leather | > 15 000 $dm^2$/month |
| | Furs | > 1 000 $m^2$/month |
| | Carpets and rugs | > 3 000 $m^2$/month |
| | Ready-made clothes, incl. fur cloths | > 3 000 pieces p.a. |
| | Silk | > 1 000 $m^2$ p.a. |
| **Food industry and fish farming** | Fish farming | > 1 000 tons/day |
| | Fish processing | > 1 ton/day |
| | Production of: | |
| | Confectionery | > 0.5 tons/day |
| | Pasta | > 15 tons/day |
| | Bakery products | > 10 tons/day |
| | Flour | > 10 tons/day |
| | Fodder | > 5 tons/day |
| | Meat and meat products | > 1 ton/day |
| | Fat | > 0.5 tons/day |
| | Tinned fish | > 2 000 tins/day |
| | Tobacco | > 0.5 tons/day |
| | Brandy and vodka | > 250 decal/day |
| | Beer | > 500 decal/day |
| | Mineral water | > 1 000 decal/day |
| **Building industry** | Construction | > 1 000 $m^2$ |
| **Agriculture** | Irrigation, re-cultivation, drainage, anti-erosion measures | > 100 ha |
| **Infrastructure** | Construction of: | |
| | Roads and pipelines | > 1 km |
| | Constructions of water supply and sewage systems | With diameter > 300 mm |
| | Electric lines | > 35 kV |
| | Fuel storages | > 20 t |
| | Storages for chemicals | > 5 t |
| | Storages for fertilizers | > 10 t |
| | Storages for pesticides | > 1 t |
| **Services** | Trade centres and fairs | > 5 000 m2 |
| | Hotels and camping facilities | > 500 beds |
| | Restaurants, canteens and cafes | > 500 seats |
| | Fuel stations | all |

83. Both **existing and new industrial facilities** are subject to permitting. In principle, new facilities should receive their permits upon the decision of the SER, and existing facilities should apply for permits on a regular basis, when previous permits expire.

84. **Ownership** does not influence the permitting process. This means than both public and private facilities are required to have permits. Permits are issued to a facility, rather than to the facility owner. In turn, change in the ownership in many countries may not require any specific actions. A difficult ownership-related problem is the fragmentation of giant facilities into smaller ones, with different operators. In such cases, in principle, all operators must apply for permits independently. The real situation may be different. In Kazakhstan, for instance, a system used to be in place where

application forms from several enterprises-members of a corporation or association were regarded as one. Thus, an incomplete application from one enterprise could stop the process of permitting of several other enterprises.

85. Regardless of the fact that the regulated community may be clearly defined, permitting authorities usually have difficulty in answering the questions about, for example, the number of enterprises subject to permitting or, sometimes, even about the number of issued permits[26]. Statistical information about industrial enterprises, particularly small and medium sized ones, is far from being perfect in the EECCA region. Moreover, statistical data do not always reach environmental institutions in due time.

### *Facility siting*

86. Among the permitting criteria, there are siting requirements that should be observed by industries. For instance, new facilities should not be sited in localities with a high pollution level, i.e. where MACs are exceeded. To follow this principle, the Russian Federation would need to restrict economic activities on as much as one third of its territory[27] where MACs are already exceeded. Local conditions, especially wind direction and relief should be taken into consideration when selecting a site, in particular for chemical industries.

87. Siting requirements found a more elaborated expression in the so-called **sanitary protective zones**. Their aim is to create a barrier between housing areas and enterprises and other sites, which are sources of harmful chemical, physical and biological influences on human health and the environment. The width of sanitary protective zones around enterprises ranges from 50m to 1000m, depending on the nature of the enterprise and includes factors such as its production capacity and technological processes, the nature and the extent of the negative impact on human health and the environment[28]. Under certain conditions, the width of the zone can be increased by a factor of three. The sanitary protective zone cannot be used for the expansion of the industrial site itself. A green belt must be planted on the territory of the zone. Besides being a permitting criterion, the creation of these sanitary zones is an element of urban planning and the development of inhabited areas.

### *Permit requirements other than ELVs*

88. Environmental permits do not consider cross-media transfer of pollution, emergency cases, accidents, technological changes or shutdown and de-commissioning of the enterprise. Self-monitoring schedules and reporting obligations, as well as conditions of revision or withdrawal, are rarely set in permits; sometimes, they are stipulated in laws. Neither the operation nor maintenance aspects are reflected. Permits do not regulate resource and energy intensity of the technological processes, even though these are extremely high in the EECCA region.

89. Certain impacts, that in OECD countries are regulated within environmental permitting, may be addressed in permits issued by various governmental authorities. For instance, noise level is often regulated by Sanitary Epidemiological Services (SES). The risk of industrial accidents is addressed through industrial safety declarations.

90. In order to compensate for some gaps in environmental permitting, “industrial safety declarations” are required, for instance in Russia and Moldova, to prevent and manage potential industrial

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26 The USAID “Central Asia Natural Resource Management Project” reported that in 1998 the Kazakh Ministry of Natural Resources and Environmental Protection did not even know how many permits were issued. Recently the situation with keeping record of issued permits has improved. It shows that the administrative load is very high, since 7 000 permits were issued in 1999 and 12 000 in 2000.

27 . Lukiancikov N., Potrabnyi I., 2002, p.99

28 . Bogoliubov S., 1999.

accidents. An industrial safety declaration in Russia is a statement covering the environmental safety policy of the industrial enterprise, analysis of the existing situation, and plans for improvement[29]. Such a declaration is prepared under the responsibility of the company's manager. It has to be submitted to central government and municipal authorities, NGOs, and be available to the general public. All enterprises dealing with hazardous substances must produce such declarations.

***Validity and permit revocation***

91. Permits have **validity** for a limited time period, usually for three to five years. In some countries (*e.g.* Kyrgyz Republic) a permit renewal is requested on a yearly basis, while ELVs can be valid for a longer period, up to five years. Both industry and, more recently, environmental authorities consider this system extremely inconvenient and time-consuming. In fact, under this system the annual renewal of permits is rather a kind of re-registration within the environmental authorities. While the feedback from enforcers is limited, the renewal of permit validity every year has even less meaning.

92. Permits can be **revised** under the following circumstances: (i) if the environmental situation in the region gets worse irrespective of the facility's operations; (ii) if industrial technology or production capacity was changed and this was not foreseen under old permit requirements; and (iii) if environmental norms/standards have been changed. Permits can be **revoked** in the case of (i) decommissioning of the facility; or (ii) violation of permit requirements that resulted in an extreme degradation of the environment.

## 1.4 Institutional aspects of permitting: stakeholders, organisation and procedures

93. Environmental authorities (regulators), industry and the general public are all recognised as important **actors in the framework of permitting**. Authorities are responsible for setting permit conditions through a permit award procedure and for monitoring compliance with these conditions. Industry is responsible for initiating the environmental permitting procedure and applying for permits, delivering all information required by authorities during and after the permit award and implementing permit conditions. The general public has rather rights than responsibilities, most importantly to be informed and have access to the decision making process. Besides, the permitting process requires certain involvement from other authorities with a regulatory and enforcement function and consulting bodies. The interaction among all stakeholders is institutionalised, i.e. it happens in the framework of certain organisational structures and procedures. The current section aims to discuss these aspects.

***Role of competent authorities***

94. While major stakeholders, involved in environmental permitting, are the same across the EECCA countries, institutional arrangements for permit award dependent upon national administrative systems (see Box 11 for examples). Some common characteristics can be revealed, however:

- Environmental ministries (state committees) or their subdivisions (environmental inspectorates) have the overall responsibility for environmental permitting and are entitled to take the final decision on permit award. Thus, they are responsible for checking the content of applications, they issue the permit, register it, and supervise the permit holder;

- Usually, separate units exist for air, water and waste permitting. These units rarely co-ordinate their efforts, thus intra-institutional segregation is one of the major impediments in preventing pollution and its cross-media transfer;

29 . Brinciuk M., 2000, p. 281.

- To approve a permit, endorsements are required from other authorities, *e.g.* fire inspection, veterinary inspection, sanitary-epidemiological centres, etc. Permit award, however, can be a collective decision, with participation from all relevant authorities (as it is the case in Georgia, where Permitting Committees exist, in particular at the territorial level);

- The responsibility for permitting is quite often split between the central and regional environmental authorities, in particular where enterprises are grouped in several categories according to their potential impact on the environment;

**Box 11. Organisation of environmental permitting in different EECCA countries.**

**Armenia.** The Ministry of Nature Protection issues environmental permits. The State Environmental Inspectorate carries out compliance control.

**Azerbaijan.** Permits for water use, wastewater discharges and handling of solid wastes are issued by the regional inspectorates for land and water resources (upon approval of the Deputy Head of the Regional Committee of Environmental Protection). National government issues permits for the largest enterprises. There are no differences in the permitting procedure at national and regional level.

**Kyrgyz Republic.** Regional environmental enforcement authorities issue permits after receiving approval from the SER department and environmental health authorities. Environmental Control Department (at a national level) also has a right to issue permits and send a copy to the regional agency afterwards.

**Moldova.** The Environmental Assessment and Permitting Department of the State Inspectorate issues permits for hazardous installations; the territorial environmental agencies of the State Inspectorate handle all other installations. In order to receive water use permits, permit approvals have to be obtained from the institution responsible for management of water resources and local sanitary-epidemiological services. In some cases also from the Fish Inspectorate, Geological Service and the institutions responsible for the drinking water supply and wastewater collection network. Compliance control is undertaken by the State Inspectorate and its territorial units (departments and divisions, that are not involved in the permitting process).

**Kazakhstan.** The Central Environmental Authority or territorial Environmental Departments, depending on the classification system of pollution loads, issue permits. The Central Authority issues the permits in the following cases:

- Emission of pollutants of more that 1,000 tons/year (100 tons/year for the oil and gas industry or all enterprises of the 1$^{st}$ and 2$^{nd}$ categories of hazardousness;
- Pollutant discharges of more that 1,000 tons/year;
- Disposal of waste of more than 10,000 tons/year (3$^{rd}$ and 4$^{th}$ level of toxicity) or 1,000 tons/year (1$^{st}$ and 2$^{nd}$ level of toxicity);
- Polluting activity directly influences one of the following regions: Baikonyr spaceport, Caspian Sea or transboundary rivers: Irtysh, Ural, Ili, Tobol or Syr Darya.

**Tajikistan.** There are no differences in the permitting procedure at national and regional level. Differences, however, exist in «who is doing what». The tasks are distributed depending on the «category of the control subject (classification criteria: importance, production capacity, category of risk, etc) ». National Specialised Inspections (air or water) deal with bigger and more risky enterprises while territorial branches (committees for environment protection) deal with smaller facilities. Permitting and inspection are not institutionally separated but they involve different personnel.

**Turkmenistan.** The Ministry of Environment Protection issues permits for polluting emissions into the air, for use of flora and fauna (except fish), and for waste disposal. It also coordinates the permits for special water use and wastewater discharges, performs the environmental expert evaluation and issues construction permits.

**Uzbekistan.** Permits for water use and wastewater discharges as well as for the handling of solid wastes are issued by the regional/territorial inspections for land and water resources (upon approval of the Deputy Head of the Republican Committee of Environment Protection). National environmental enforcement authority issues permits for the biggest users. Permits for discharge of pollutants with the effluents are issued only upon a positive decision by the State Environmental Review (SER) that has to assess the impact of wastewater on water bodies and water courses. The same (positive decision of the SER) applies to permits for air emissions. There are no differences in the permitting procedure at national and regional level.

95. There are differences in institutional models adopted within the EECCA region. In some countries, the division of functions between permit-writers and inspectors is a strict requirement, in particular at the national level. At the territorial level this delineation exists but can be less clearly defined, and both permit award and inspection can be the function of one institution, usually the environmental inspectorate. Still, a certain separation exists at the level of structural units within one organisation. Another type of institutional arrangement is when the same individuals can be involved in either permitting or inspection. The latter is commonly viewed as generating conflict of interest, and leading to lax compliance control and reluctance to uncover infringements of permit conditions; and problems in the way these conditions were formulated.

96. As mentioned, both national and sub-national authorities are involved in environmental permitting. Responsibility for controlling activities with greater environmental impact or higher pollution risk normally lies with central authorities. This is more characteristic of systems where industries, enterprises, or installations are divided into several categories and/or a system of production capacity thresholds is in place. Accordingly, the procedures may differ depending upon the category of a facility. This is a laudable and increasingly used approach. For example, in Georgia, permits are issued by a national authority (Department of Permitting within the Ministry of Environment and Nature Resources Protection) or regional environmental committees depending upon the category of the activity (see Table 2; 1st category has the highest environmental impact; 4th category the lowest).

**Table 2. Institutional arrangements and procedural steps for environmental approval of different categories of industry in Georgia.**

| Steps /Authorities involved | 1st category | 2nd category | 3rd category | 4th category |
|---|---|---|---|---|
| **EIA** | ✓ | | | |
| **SER** | ✓ | ✓ | ✓ | ✓ |
| **Public participation** | ✓ | ✓ | ✓ | |
| **Issued by the national authority** | ✓ | ✓ | | |
| **Regional bodies** | | | ✓ | ✓ |

97. Even though permit writers and inspectors are often part of the same institution, serious lack of communication in issuing and controlling permits has been reported, with the inspectors not being adequately informed about the detailed contents of permits granted to the enterprises. This leads to a reduction in the ability of inspectors to check the compliance and undermines their credibility. On the other hand, permit writers are also less effective when they do not receive feedback about compliance with permit requirements. Moreover, the entire system is compromised since data about the realism and enforceability of permit conditions are difficult to track and assess.

98. In many countries (*e.g.* Azerbaijan, or Uzbekistan) governmental bodies are allowed to provide paid consulting services to the enterprises in the process of permitting – mostly delivering information on background pollution values or an evaluation of the draft ELVs. Also laboratories, belonging to environmental authorities, are frequently paid for participation in inventories of

emissions and discharges. Sometimes inspectors provide paid services to enterprises to assist in the preparation of permit applications. In such cases there might be a need to assess whether there is no conflict of interest between the regulators and the regulated community.

99. The human, material, and financial resources available to environmental authorities, do not ensure the adequate functioning of the actual permitting system. Most country reports indicate lack of trained personnel, inadequate wages, as well as numerous problems in co-operation and information flows within environmental authorities. Regarding the relations between the permitting authorities and the industries, there is little experience in conducting negotiations, providing technical assistance or establishing partnerships between them.

***Role of industry***

100. Industry has an important role to play in permitting and large enterprises are used to going through the permit application process. Industry is required to initiate the permit application process and is responsible for supplying true information. Enterprises also have to propose mitigation measures in cases where standards are likely to be exceeded (which is mostly the case). However, their proposals are traditionally limited to the end-of-pipe measures like air filters and wastewater treatment plants. Facilities also ensure limited monitoring and reporting to authorities. The industries are generally co-operative during the permitting process and the degree of such co-operation has been increasing over the last few years. At the same time, the regulated community is poorly identified and country overviews on companies subject to permitting are usually incomplete (if any).

101. Industrial enterprises are responsible for the preparation of applications themselves, but in most cases this work is subcontracted to consultants. The consultants are usually represented by research or design institutions. Other more academically oriented institutions, which date from the Soviet period, are used as well. Sometimes industry sub-contracts recently established consulting companies. In many countries the consultants are required to have licenses in order to qualify to carrying out calculations necessary for ELVs. Consultants usually do not only undertake calculations, but also necessary measurements and analyses, as well as the collection of all necessary support letters, approvals from different organisations, etc.

102. As part of the permitting process, industries may have the obligation to develop annual "Plans of environment protection measures". Such plans include actions to address environmental problems and may refer to facility construction, re-construction, or technological changes. They are mainly oriented toward end-of-pipe solutions. The content of the plan is negotiated between the industry and regulators, and in some countries is considered as an initial form of voluntary agreements. While environmental plans are a potentially good instrument, many problems were noted in their development and implementation. For example, industry tends to include in these plans actions that only mimic environment protection. Clearer benchmarks and performance indicators are needed to make this instrument effective. Also it might be useful to include some representatives from the general public so as the process of negotiation is transparent and all parties are accountable for their actions (or inaction).

103. After the permit is issued, the enterprise has to monitor the emissions and discharges, provide regular reports to regional environmental authorities and pay environmental fees, taxes or fines. The industries are required to carry out self-monitoring, but the tendency is to overstress the importance of instrumental monitoring and undervalue the use of production-related data. Industries' instrumental and human capacities to carry out monitoring are varying highly. Newer installations are as a rule better equipped than older ones, where the efficiency and quality of monitoring is often altered. Inconsistencies can be frequent between state and industry monitoring although the law requires that industry applies accredited methodologies. Emission monitoring is directly linked to the ELVs set in environmental permits. In few countries is self-monitoring of emissions considered reliable, since the analytical laboratories of the industries are certified by the national agency for standardisation. Sometimes even there, there are discrepancies between the self-monitoring results

and data obtained by inspectorates' laboratories. In most countries, self-monitoring results are generally considered unreliable, but the insufficient laboratory instrumentation leads to the lack of evidence of non-compliance and consequently the impossibility to apply sanctions.

104. In the EECCA region, environmental information is reported by private entities to the state statistics agencies. There are several reporting forms: «Report on the protection of atmospheric air», «Report on current expenditure on the environment», «Report on the use of fuel and energy resources», and so forth. These documents may lend a certain understanding of compliance with permit requirements. However, self-reporting by industry is believed not to be accurate.

105. Large facilities are required to establish and maintain so-called «Environmental Divisions». At most industrial enterprises (*e.g.* in Russia, Kazakstan and Uzbekistan), they occupy a very modest position in the overall decision-making system of industry. The potential of their specialists is undervalued by higher management. In fact, the top management regards these people as administrative assistants ensuring that fees are calculated, reports are completed, submitted and approved by respective authorities. Such problems as resource and energy losses, desired technical improvements providing also for environmental benefits are very seldom discussed with the Environmental Division. These Divisions are associated almost exclusively with the management of environmental (end-of-pipe) installations (stack gases treatment equipment, the waste water treatment section, etc.) while the overall production line opportunities in terms of environmental performance are rarely considered.

***Public participation***

106. There are very limited opportunities for public information and participation in the environmental permitting process. Legislation contains provisions for public participation in the EIA, SER, and environmental enforcement. Following the ratification of the Aarhus Convention, several EECCA countries are now improving related legislation and establishing the procedures and infrastructure required to effectively ensure public access to information, decision-making and justice. For the time being, environmental permits and conditions thereof are not aften available to the general public. Some channels to keep the public informed and involved exist, as shown in Box 12.

**Box 12. Public participation in the environmental permitting procedure in Georgia**

There must be public participation in the decision-making process for the issue of the environmental permits. For the first and second-category activities, within a maximum period of two months after receipt of the application, the Ministry of the Environment must hold a public discussion of the activity with the participation of the Investor, the Ministry of Environment, local administration bodies and public representatives. Within 10 days following receipt of the application, the Ministry of Environment of Georgia must:

- Ensure that the application and a brief annotation, including the date and venue of the public discussion of the issues related to the implementation of the activity, is published in the press;
- Ensure that written comments from the public are received and discussed within 45 days following publication of the information on the activity.

For a third-category activity the regional bodies shall ensure publishing the information on the activity in the form of a brief annotation along with the application, also within 10 days of receipt.

A copy of the application shall be kept by the relevant bodies at the place where public representatives would be able to review the application (with the exception of the part containing commercial, industrial and state secrets).

107. An important issue to resolve in the context of public participation is the confidentiality of information. In many countries, industry can ask authorities not to disclose the information they submit as part of the permitting process. Such a request can be granted if information is confidential. While it is normal practice to protect commercial secrets, the legislation says little about what is

necessary criteria are to label certain data confidential. At the same time, the current technical knowledge available to environmental authorities may not be sufficient to distinguish between confidential and non-confidential information.

108. Meaningful participation is required, where all parties understand that they have the same ultimate targets. In this context environmental awareness becomes important. It is particularly important to translate the technical language of permits into messages that are clear to the general public and to explain the costs and benefits of a certain decision to the society as a whole.

### 1.5 Phases of permitting

109. Continuing on from a description of the roles of different parties in permitting procedures, this section will try to systematise the information about the phases of permitting and present some other relevant details, *e.g.* the duration of permit award, input and output documentation. In the EECCA countries, the procedural steps of permitting basically have not changed over the last decade. They include preparation of permit application, review of application by environmental authorities and permit award, implementation of permit conditions, and compliance control and enforcement. The main elements of these phases are presented in Figure 6.

**Figure 6. Key phases of environmental permitting and their elements.**

| | |
|---|---|
| **PHASE 1**<br>***Preparation of Permit Application*** | ➢ Inventory of all emissions, discharges, and waste flows<br>➢ Preparation of the ELV Protocols for air emissions and water discharges<br>➢ Development of the set of norms for waste generation and disposal<br>➢ Compilation of data in an application form<br>➢ Collecting approval letters from various authorities (human health, resource management agencies, local authorities, etc.) |
| **PHASE 2**<br>***Application Assessment*** | ➢ Site visits<br>➢ State Environmental Review<br>➢ Public hearings (as part of SER) |
| **PHASE 3**<br>***Permit Award*** | ➢ Approved ELVs or temporary ELVs<br>➢ Approved Plan of Environmental Actions<br>➢ Other permit conditions |
| **ENTRANCE INTO FORCE OF PERMIT CONDITIONS** | |
| **PHASE 4**<br>***Implementation of Permit Conditions*** | ➢ Capital investment<br>➢ Self-monitoring<br>➢ Reporting |
| **PHASE 5**<br>***Monitoring and Enforcement*** | ➢ Administrative and on-site inspections<br>➢ Ambient monitoring<br>➢ Non-compliance response<br>➢ Citizens' environmental monitoring and enforcement |
| **PERMIT RENEWAL [REVOCATION/TERMINATION]** | |

110. The preparation of a permit application is quite time-consuming. An inventory of all pollution sources can take up to one year, depending on their number, since it may imply some sampling and laboratory analysis. Drafting ELV protocols can take from one month to one to two

years depending on the number of sources and emitted pollutants. As mentioned, these are the responsibilities of the applicant (enterprise), but are usually undertaken by a third party (design or research institutes or consulting companies, sometimes licensed).

111. After applications are submitted, competent authorities have to assess whether information is complete and accurate. When it comes to the permits of existing facilities, this task is difficult to perform, since permit writers rarely have the opportunity to visit the site because of resource shortage within environmental authorities. This problem could be less serious if permit writers and inspectors had ensured a steady flow of information on permit requirements and compliance with them. This information now is missing in many countries.

112. National legislation sometimes sets a time limit for assessment of permit applications by competent authorities – usually 30 days. In practice, the permit can sometimes be prepared in one day; most frequently, a couple of weeks. Table 3 compares the legally defined time-frame for preparation of permits in six different countries.

**Table 3. Number of days allocated for issue of permits in various countries.**

| Country | Air | Wastewater discharge and water use | Waste disposal |
|---|---|---|---|
| Moldova | 3 months | 45 days | N/a |
| Kazakhstan | 15 days (1)<br>30 days (2)<br>or 30 days (3) | 15 days (1)<br>30 days (2)<br>or 30 days (3) | 15 days (1)<br>30 days (2)<br>or 30 days (3) |
| Ukraine | 1 month | 1 month | 1 month |
| Kyrgyzstan | 1-5 days | 1-5 days | 1-5 days |
| Armenia | Up to 3 months (4) | Up to 3 months (5) | Not set (6) |
| Georgia (7) | Up to 3.5 months | Up to 3.5 months | Up to 3.5 months |

(1) Preliminary review by the Territorial Departments to check for compliance with the standards and environmental requirements.
(2) Review by the Central Authority and issue of permit.
(3) The Territorial Department reviews the application and issues the permit.
(4) Estimated time includes also elaboration of Maximal Permitted Emission Protocol (approximately 1.5 months).
(5) Estimated time includes also elaboration of Maximal Permitted Discharge Protocol (approximately 1.5 months).
(6) Only for hazardous waste. The Law on Licensing does not define time for issue of license.
(7) Integrated permit that includes also EIA procedure for the 1st and 2nd category

113. Permit conditions enter into force immediately. Since the ELVs are hardly ever achievable, temporary ELVs were introduced to solve the problem. Enterprises are allowed to operate for a certain time (*e.g.* one year) using the temporary limits and take action to adapt to the ELVs. Once again, with good intentions at the basis, this system simply encourages persistent non-compliance: enforcement of deadlines for temporary ELVs is lax and non-compliance response is either missing or has no deterrent effect on industry. In addition, poor financial performance is often used as an excuse for not meeting permit requirements. Thus, temporary ELVs are kept from one year to another and sequential phase in of requirements never takes place.

### 1.6 Documentation: Application and Permit forms

114. **Application forms** vary from country to country. For example, Armenia and Moldova have neither a standard application form, nor even requirements for its content. However, enterprises have access to the sample applications and permits, as well as a list of documents, which have to be submitted with the application. On the other hand, in the Ukraine, enterprises can get both standard application forms and sample applications on paper and electronically (Box 16).

115. **Permit forms** are established in all EECCA countries. In some countries, the forms even have individual registration numbers. The permit consists of one-two title pages and appendices. The title pages indicate the issuing authority and permit holder, validity and conditions. The appendices indicate the types of pollution released by the operator, the amount and concentration of emitted pollutants (ELVs), as well as a list of mitigation measures. Annexes refer to the ELVs and MACs.

**Box 13. Application and permit forms in the Ukraine: summary of the contents.**

**Application** for a permit for pollution emission from stationary sources:

Date, name of the enterprise, institution, organisation, or private person, who carries out the activity

Address and telephone number of the applicant

Information about the installation: existing or new; reconstruction or technology change, property form (private, state owned, etc.)

Application for the first permit or renewal of permit No. … dated …

Annexes:

A. Information on actual emissions for previous year by stationary sources, for which compliance measures were planned (Table: Name of substance, Source No., Emission volume (g/s))

B. Information on exceeding ELVs during previous year by stationary sources (Table: Source No., Name of substance, ELV (g/s), Actual maximal emission (g/s), total duration of emission exceeding the ELV, hours)

C. Proposals for permitted emissions according to the accepted ELV protocol (Table: Name of substance, Source No., Emission volume (g/s) per year (separately for each source), Maximal permitted emission volume (ELV), g/s)

D. List of measures for achieving the ELVs (Table: Measure, Deadline, Name of substance, Source No., Emissions before the measure is taken (g/s, $mg/m^3$), Emissions after the measure is taken (g/s, $mg/m^3$), Allowed emissions (g/s), Effectiveness of the planned measure (tons p.a.)

E. Plan for self-monitoring (Table: Source No., Control point No., Department, shop, line, Name of substance, Allowed emissions (g/s, $mg/m^3$), Interval between controls, Reference to methodology and equipment type, Organisation, which will carry out measurements.

**Permit** for pollution emission from stationary sources:

Name of the enterprise, institution, organisation, or private person, who carries out the activity, address

Issuing authority

Period of validity

Special conditions

Date of issue, signature and stamp

Annex – a table with the following columns:

A. Name of substance

B. Source number

C. Emissions volume (g/s) per year (separately for each source)

D. Maximal permitted emission volume (ELV, g/s)

## 1.7 Costs related to permitting

116. There are costs related to permitting in all countries. Only a few countries have established a fee for issuing the environmental permit (*e.g.* Kyrgyzstan – around 0.5 USD). There are more examples when a permit is issued free of charge. However, there are more costs related to the preparation and, sometimes, evaluation of the application.

117. The most significant expenditures are related to the preparation of ELV protocols by external consultants. Inventory of emissions can cost from 40 to 500-1000 USD; ELV protocols for air emissions and water discharges, between 100 and 2000 USD. These costs are market-regulated. They depend on various factors like the number of pollution sources and of pollutants, ability of the enterprise to pay, availability of the qualified or licensed consultants on the market, etc.

118. If the authorities carry out a SER process before issuing the permit, more costs may arise. In most countries, the SER state authority has the right to involve external experts. The fees for these external experts are charged to the enterprise. In some cases, environmental health authorities also charge reasonable fees for the assessment of the application and related ELV protocols.

119. When environmental permits are issued, the regulatees may face other costs, which are linked to investment, economic instruments such as pollution taxes, and fines for violations of the ELVs, and damage compensations. Absence of a permit is penalised based on the rates applicable in the case of non-compliance with ELVs. Pollution taxes are paid for agreed levels of emissions, and companies exceeding the limit values that are set in permits, are fined. However, financial incentives to apply for and respect conditions of a permit are weak due to low levels of pollution fees and fines, the erosion of their value by high inflation, and low fee collection rates. Pollution reduction costs might exceed these payments even 100 times, so fees and fines do not play the role of proper policy instrument, as they do not provide the polluter with the incentive to reduce pollution. In some countries, pollution fees and fines have not been changed since 1992, while annual inflation is high throughout the entire region.

## 1.8 Links to other policy instruments

120. Interaction with other policy instruments exists but lacks coherence; some important instruments are absent. Permitting of new facilities is closely linked to EIA and SER; changes in operation might be subject to SER. Only sporadically are the same technical documents used at all these stages of regulation. The information gathered during inspection or ambient monitoring is also utilised to decide on a permit award, but the flow of information is intermittent and the compliance control or self-monitoring programmes are quite limited.

121. A very important factor in issuing environmental permits is the information about the ambient quality of environment. Permitting processes in the EECCA region do not properly take into account ambient monitoring data. There are provisions in the methodologies for calculating ELVs to take into account background concentrations of main air and water pollutants, yet the figures used are rarely based on ambient monitoring data. There are no links between ambient and emission monitoring or such links are weak. Ambient monitoring is carried out by state hydrometeorological services and agencies (see Box 14), which are frequently a part of the overall environmental protection system in these countries. Procedural requirements to provide ambient monitoring data to environmental permitting and enforcement institutions are lacking.

**Box 14. Environmental quality monitoring in Kyrgyzstan**

Environmental quality monitoring is carried out by the enterprise Kyrgyzhydromet, which since 1997 is a part of the Ministry of Ecology and Emergency Situations. Analytical control of emissions/discharges and the effectiveness of pollution abatement measures for separate enterprises are carried out by the environmental monitoring services, which are incorporated in the structure of regional environmental boards. Despite the fact that both Kyrgyzhydromet and regional environmental boards belong to the same system, there is no direct information flow between them. The link between general changes in environmental quality, compliance with the provisions of permits, and enforcement activities is not properly established: ambient environmental monitoring and compliance with ELVs set for individual enterprises are completely separate.

122. **Compliance monitoring** in EECCA countries mostly focus on random emissions check-ups. The law provides for several types of compliance monitoring: state, industrial and public. As mentioned above, self-monitoring is the responsibility of industries, but this does not exclude the possibility of undertaking state monitoring to check compliance with permit conditions. Emission monitoring during on-site inspections is carried out by employees of laboratories established within enforcement authorities or institutionally linked to them.

123. **Compliance assistance** explaining permit requirements and procedures is not offered. Very poor access to exhaustive information on permitting maintains the high demand for paid consulting services, which sometimes are offered by government-owned enterprises.

124. **Economic instruments** as such and their links to permitting are poorly designed. The current level of resource pricing, pollution charges and non-compliance fees serves mainly the revenue-raising purpose and directs the regulatees toward end-of-pipe solutions. Permitting requirements are closely linked to environmental taxation in all EECCA countries, but their current set up provides an incentive to emit pollution rather than reduce it. The reason is that until recently all countries had the same model: emissions, which are within the agreed ELVs listed in the permits, are charged at basic fee rates, while all amounts of pollution that exceeds the ELVs are charged at a rate 5-10 times higher. Due to the high inflation rate, low ability to pay, and very rare revision of the environmental taxes or charges, basic fees are very low. Thus industries are interested in negotiating permits with as high ELVs as possible and then pay charges on a regular basis, rather than taking the risk of exceeding them and having to pay fines. Such schemes do not provide enterprises with an incentive to reduce the pollution.

125. A number of **non-regulatory instruments** are gradually being introduced. For example, self-audit is becoming widely known but is not applied properly, as governments tend to request its compulsory use. An application of Environmental Management Systems (like ISO 14001) by industries as a voluntary measure is not widely spread in the EECCA region. Even in the cases where industry has been adopted the system, it rarely sees EMS as a tool to monitor and report pollution levels. Opportunities that EMS creates for improving permitting, enforcement and monitoring processes are not clear for the environmental authorities either. A few instruments that have a high potential to increase effectiveness of permitting, are missing (for instance, environmental accounting).

# 2. PROSPECTS FOR FUTURE DEVELOPMENTS

## 2.1 Development goal

126. The previous chapter demonstrated that the regulation of large industry in the EECCA region needs improvement; several countries intend or already have taken the path of reforms. The goal of this improvement could be a model corresponding to the following characteristics:

> **Focused on environmental performance and case-by-case regulation of a facility throughout its entire life cycle, i.e. design, construction, operation and de-commissioning:** Permits should offer incentives that encourage pollution prevention, energy efficiency, resource-saving solutions, waste minimisation and avoidance of cross-media transfer of pollution. Permit requirements should be consistent with local development goals, and set technically and economically realistic targets while ensuring a high level of environment protection. Self-monitoring schedules should be specified. Site de-commissioning and accident management should be regulated. More attention should be paid to environmentally sound operation and maintenance techniques. Permitting and investment cycles should be co-ordinated, when possible.
>
> **Entailing less administrative burden:** The reform of permitting procedures should lead to a greater predictability in the process and, at least, a medium-term validity of permits. Where possible, the required data should be consistent across regulatory phases and requests for same data in a different format should be avoided. Electronic capabilities for application and reporting should be assessed and fostered. The range of industry subject to requirements should be clearly identified, with procedural differentiation between large industry and smaller enterprises.
>
> **Accountable, clear and transparent to stakeholders:** The permitting process should be transparent and respect interests of the general public. Mechanisms to improve public information and participation, which currently exist on paper, should be put in application. At the same time, uniform requirements of public participation that add burden to the process without adding value (*e.g.* repetitive public hearings at several stages of regulation – EIA, SER and permitting) need to be avoided. Commercial confidentiality needs to be taken into account, but not in a manner that restricts public access to information.
>
> **Better co-ordinated with other policy instruments:** Permit conditions (including ELVs) should be based on and target the achievement of feasible environmental quality standards and/or objectives. Permit conditions should be enforceable; failure to meet permit requirements or operation without a permit should be sanctioned. Public resources should not be wasted on replacing the self-monitoring systems of the enterprises by the state-operated monitoring networks (as it happens currently) – these systems should complement each other. A better co-ordination should be ensured with environmental inspectorates and other compliance monitoring and enforcement agencies.

127. The permitting system should be based on realistic requirements. In the EECCA region, a pre-requisite for effective functioning of the permitting systems is addressing the number of controlled substances and the numerical values set in the current ambient standards (MACs). This may require a lot of advocacy– many experts, scientists, and environmental and health officials are

convinced currently that this number should be as high as possible regardless the capacity to meet, monitor and enforce the MACs.

128. Establishing an atmosphere of mutual understanding with enterprises, which is another important factor of improvement of permitting systems, does not require much resource: just political will and preparedness for compromises. The enforcement agencies engage a direct dialogue with facility operators, but command and control traditions are restricting these practices. This dialogue should be subject to certain decision-making policies and made transparent. Improved dialogue with operators would allow their increased responsibility for meeting the environmental requirements. Also it has some potential to advance the quality of self-monitoring by industry and reduce costs and efforts for governmental compliance monitoring.

129. Industries may need assistance from the authorities, but they should be explicitly asked about their needs. Usually there are good reasons why they cannot cope with the environmental requirements. Again and again, they should be reminded about the need to shift from «end-of-pipe» solutions to pollution prevention measures – it could be justified economically.

130. The general public should receive more information about the dialogue between the regulator and regulated community. Many countries have successfully started to build up public participation experience in the field of SER and EIA – the same approaches can also be applied to the permitting process.

131. Certain regulatory traditions are present and should be not neglected. The existing human potential within environmental authorities should be further upgraded. Incentives should be provided for an influx of professionals that are not only well trained in the technical aspects of regulation, but also understand the overall economic and social context of regulation and are able to absorb new ideas, knowledge and skills.

132. There is sufficient international experience for the benefit of those willing to “digest” it and adapt to concrete conditions existing in a country. Every opportunity of foreign aid can be used to ensure training and capacity building of decision-makers and regulators at all levels. Another very important target group are environmental professionals – scientists, experts, engineers and consultants, who have grown up with the Soviet MAC-based system and can form a strong opposition to changes. This target group should be given a lot of attention through relevant information provision and proper training.

## 2.2 Drivers to improve environmental permitting

133. Recently, several EECCA governments (*e.g.*, in Georgia, Moldova, Ukraine, Kazakhstan and the Kyrgyz Republic) have given higher priority to the reform of permitting. In most cases, their **main driving force was to create a better investment climate** that would sustain the economic growth and good performance in the region. This need covers equally domestic and foreign investors. In the latter case, introduction of regulatory approaches that are known and trusted may be a good way of attracting investment. In this context it will be important, however, to be careful and not distort the level playing field in the disfavour of domestic industries and investors.

134. The goal of ensuring fairness of regulation is slowly moving higher in the agenda of environmental authorities and governments as a whole. A recent study conducted by the European Bank for Reconstruction and Development (EBRD) and the World Bank (WB) confirmed this trend and indicated improvements in the business environment in the EECCA region, *e.g.* a decrease of discriminatory practices towards entrepreneurs and corruption. However, concerns remain in the field of business regulation and judicial systems’ functioning, where progress has been slow. “Onerous regulation and arbitrary bureaucratic interference in business decisions continue largely unabated in many countries of the region”, concluded the study.

135. Several examples can be presented where regulatory barriers are gradually being removed in the EECCA region. Quite often governments themselves engaged in reforms, as it happened in

Kyrgyz Republic, Russia or Ukraine; in other cases, for instance in Kazakhstan, industry, in particular joint stock companies or multinational enterprises, gave the initial impetus (see Box 15). Regardless of the way reforms have been initiated – through a top-down or bottom-up approach, it will be important to sustain them.

**Box 15. Two examples of bottom up and top down initiatives to reform permitting systems.**

**Kazakhstan.** In June 2001, the reform of the permitting system in Kazakhstan was launched at a stakeholder meeting that brought together officials from the Ministry of Natural Resources and Environmental Protection (MNREP) and four of its sub-national departments, representatives of the Parliament, oil and gas industry and the scientific community. During the stakeholder meeting, it was agreed that the current system of air quality regulation needs substantial improvement. Specifically, the MNREP practices for setting pollution limits needed to be improved. Representative of oil companies mentioned that the process they have to go thorough every year to obtain permits is too cumbersome.

A Working Group was established with participation of representatives from authorities and industry and elements of its working plan developed. The WG received the mandate to review the environmental permitting procedures and come up with recommendations for their improvement. As a result, proposals for secondary legislation were developed. Among others, the document called "Rules Concerning Issuing Environmental Pollution Permits" was drafted to describe procedures for issuing and registering of the environmental pollution permits. The Rules were enacted through a government decision.

**Kyrgyz Republic.** The need to decrease the regulatory burden on business led to an overall reform of permitting practices. A Presidential Order to conduct a regulatory reform launched this initiative. The government authorities with permitting functions established a joint governmental commission identified actions to improve the process of regulation. The list of permits was shortened from 200 permits to some 125 types of permits.

Important actions were taken in order to avoid duplication of functions and pursue institutional integration. In the past, numerous endorsements were required to award a permit and enterprise's representatives used to spend extremely long time on visiting relevant agencies and collecting endorsement letters from them. After the reform is fully implemented, the enterprises will have to submit the application to the main authority, which then will collect all endorsements from other authorities.

*Source*: (Kazakhstan) Central Asia Natural Resource Management Project, 2002

136. In the EECCA region, as worldwide, regulators have learned that **institutional integration of environmental permitting is highly desirable from the perspective of industries**. The industries voiced support for this change at various forums. Where there reforms occurred, the industry confirmed its positive attitude, as it is the case of the Union of Industrial and Employers' Confederations of Europe[30] (UNICE) or Eurasian Industrial Association.

137. Another important driver to reform the environmental permitting is **the need to achieve a higher environmental effectiveness**. After decades of "pollute now, clean up latter" approach, environmental authorities try to eradicate the practice of investments that neglect environmental requirements. Therefore, besides administrative streamlining and institutional integration of permitting, they look for models that potentially can provide higher environmental results, with due consideration of costs. Kazakhstan may serve as an example, where the Ministry of Environment Protection now tries to assure more consistently the compliance with environmental requirements in the framework of large investments. This issue was discussed during a special session of the State Security Council that shows also a high-level political will and support.

[30] Wolsdorff, C., 2002. For more information, consult www.unice.org

138. In the EECCA region, the increase in the level of pollution is clearly coupled with economic development. The total air emissions are increasing as the industrial production is recovering, for example, as was observed after the economic upturn in Russia. This may pose a serious threat to human health, since many urban agglomerations evolved around major industrial facilities. Cases of unbearable air pollution, where people are forced to use respirators in their daily life, are publicised by mass media and potentially may create public pressure on the government to correct the situation.

139. A well-designed permitting system may potentially contribute to a more sustainable development of the region. It is not a secret that EECCA countries are far behind OECD countries in environmental efficiency and are characterised by extremely high resource and energy intensity. The OECD report "Environment in the Transition to a Market Economy" (1999) presented many facts to demonstrate this thesis. For example, at the start of the transition, EECCA countries consumed much more energy per unit of GDP than market based economies. In 1990, "excess" energy consumption – the level above the international average – was equivalent to more than 80% of the total in Ukraine and 70% in Russia. The indicators of sustainable development (which were introduced, for example, in Kazakhstan in 2001) clearly signal that this situation still requires attention and action.

140. As **competition and trade increase**, enterprises will be more motivated to adopt resource-saving technologies. Expected changes in **energy and water tariffs** will re-enforce this move, but their slow reform may require additional incentives to be provided through the reform of permitting.

141. In several EECCA countries, the change of **umbrella legislation on licensing** has been an important factor stimulating the development of environmental permitting systems, most noticeably as concerns the procedural aspects. Where such legislation was developed, it covered many important aspects of permitting as a regulatory instrument: principles, criteria, competencies, validity, procedures, etc. (see Box 16).

**Box 16. Outline of the Russian Federal Law on Licensing and its relevance to environmental permitting**

The Law on Licensing was approved by the Russian Duma on August 8, 2001 and entered into force on February 10, 2002. Among others, this law regulates "*the use of natural resources, including underground, forestry fund, flora and fauna*" (Art. 1). Furthermore, Art. 4 indicates that "*subject to licensing are any activities that may impact citizen's rights, interests and health...*", which may bring environmental protection under the umbrella of this law. The outline of the law, presented below, is generic for the legal acts of this character in the EECCA region. Such an outline might be useful as a checklist when improving the legal basis and procedural aspects of environmental permitting.

*Article 1*. Scope of the Law
*Article 2*. Basic Terminology
*Article 3*. Key Principles of Licensing
*Article 4*. Criteria of Licensing
*Article 5*. Government Competencies in Licensing
*Article 6*. Licensing Authorities' Competencies
*Article 7*. Validity
*Article 8*. Duration of Validity
*Article 9*. Licensing Procedure
*Article 10*. Content of the Document Certifying the Existence of a License and the Decision to Issue the License
*Article 11*. Conditions of License Re-registration
*Article 12*. Compliance Monitoring
*Article 13*. License Suspension or Withdrawal
*Article 14*. Maintenance of Licenses' Registers
*Article 15*. Charges for Licensing
*Article 16*. Financing of the Licensing Procedure

*Article 17*. List of Activities Subject to Licensing
*Article 18*. Transitional Terms
*Article 19*. Abrogation of Earlier Legal Acts
*Article 20*. Entry into Force

*Source*: Law on Licensing of the Russian Federation, 2001.

142. Several EECCA countries aspire to **European integration**. Expectations exist that the concepts that are at the core of the European Union's permitting system may be effectively and efficiently adapted to the conditions in the EECCA region. Selected elements of this system are being introduced on an experimental basis in the Russian Federation. Its legal basis is being studied for possible approximation in Moldova (see Box 17) and Ukraine. Relying on international assistance, many EECCA countries are strengthening the existing systems, *e.g.* Armenia, Kazakhstan and the Kyrgyz Republic.

**Box 17. Experience gained in the Republic of Moldova in harmonising with European Union's environmental legislation as applies to environmental permitting**

Two projects that are relevant in light of harmonisation have been implemented in 2001-2002 in Moldova: (i) "Preparatory Approximation Work of the Republic of Moldova in Integrated Pollution Prevention Control and Waste Management" and (ii) "Environmental Approximation in the Western NIS", which were funded by the European Commission's Directorate General for Environment. The Partnership and Co-operation Agreement between the European Union and the Republic of Moldova provided a general policy framework for these projects. Both projects aimed to assist Moldova in bringing its legislation, monitoring and enforcement practices closer to those of the European Union. In particular, the following activities were conducted: a detailed legislative gap analysis and preparation of Tables of Concordance, development of proposals for new legislation or amendments, assistance in preparation of an Implementation Strategy for the Approximation of the Integrated Pollution Prevention and Control (IPPC) Directive, rapid assessment of institutional capacity and formulation of needs for follow-up activities.

A number of gaps were identified and the Ministry of Environment and Territorial Development plans to address them. In this context, in was proposed that, among others, the Ministry should do the following:

– Assess the number and categories of installations that may be subject to the IPPC regime;

– Establish a Pollution Release and Transfer Register;

– Include, at least, the definitions of Best Available Techniques (BAT) and Emissions Limit Value (ELV) in the legislation;

– Provide guidance on BAT and establish a system for obtaining information on BAT and its development. For that, at the first stage it will be necessary to establish in the Ministry a BAT National Committee or an agency/ bureau to handle this information;

– Clearly define the responsibilities of competent authorities for issuing permits and inspection of compliance with their conditions;

– Establish the system for permit revision;

– Ensure public participation in environmental permitting and make data available to the public on permits issued.

*Source*: www.envnis.org , REC Moldova, 2002

## 2.3 Scenarios for reform: Evolution, co-existence or revolution?

143. The reform of permitting systems can be conducted in different ways. It can be done gradually, step-by-step, by introducing relatively small, easy to do and to accept adjustments to the existing permitting systems. Alternatively, one may promote a parallel use and co-existence of two different permitting systems – so that introduction of a new system of permitting starts in a limited territory or a smaller group of enterprises. Finally, there is an option of radical reform of the permitting system in the country, which would simultaneously address a broad range of issues from development of new laws and regulations to institutional restructuring to wide-range training programmes.

144. The most practical way of conducting a reform of permitting is a gradual adjustment of the existing systems over a longer period. As part of the **«evolution»**, small and easy steps can be made to achieve slow but sure improvements in the areas regulated by the Ministry of the Environment, which do not require parliamentary decisions. At the very beginning of the process, the assessment of actual situation and potential is needed. This should be followed by the development of recommendations to gradually improve the permitting system based on available models and international good practice.

145. In addition to this evolutionary development, **«co-existence»** of different models may be favoured to test effectiveness and implementation problems of a new system in a certain jurisdiction, a group of pilot enterprises or a sector. Many countries introduced a new permitting system through pilot exercises. For example, this approach was largely applied in the EU accession countries, where the political pressure accelerated the reform of the permitting system.

146. An example of **introducing a more advanced permitting model on a regional basis while keeping the old requirements in force** comes from a city of Ventspils, Latvia (Box 18). A permitting system similar to those used in EECCA countries was used in Latvia until 2001 when integrated permitting system was adopted. At the same time, the Ventspils City Municipality that was very concerned about environmental quality in the city introduced a parallel system in 1994 due to the authority to set higher environmental requirements than those foreseen by national legislation.

**Box 18. Permitting procedure in the city of Ventspils, Latvia.**

Facilities operating in Ventspils had to apply for and receive permits required by national legislation AND an integrated environmental licence required by Municipal Regulation on Environmental Protection Licensing in Ventspils City. The principles of permitting used in the Netherlands formed a basis for the system in Ventspils.

The permitting process included the following steps: (1) submission of application according to a pre-defined form; (2) assessment of the application form by the Municipality and the decision on the admissibility of application; (3) publishing of information about the licence application and its public discussion in the local newspaper; (4) preparation of a draft licence by involving of other relevant state, regional and municipal institutions; (5) public hearings; (6) preparation of the licence and issuing the licence not later than six months after the date of acceptance of the licence application; (7) informing the public about the decision.

The information to be presented in the **Environmental Licence Application** included:

– Name and address of enterprise;
– List of environmental permits and authorisations already received;
– Complete list of activities;
– Principal scheme (map) of enterprise and location of enterprise in the city (map);
– Description of technological processes, used equipment, input materials, products and waste;
– Production turnover and capacity;
– Information about toxic, chemical, physical and fire hazard properties of products;
– List of waste sources;
– Volume and type of air emissions;
– Volume and type of water emissions;

– Volume and type of soil pollution;
– Amount of pollution per unit of product;
– Information on type of waste, waste collection scheme, reuse and recycling possibilities, storage facilities;
– Water consumption;
– Electricity consumption;
– Information about heat suppliers;
– Description of fire safety measures and emergency measures;
– For existing enterprises, a copy of the State Fire Safety Department rules;
– Information about enterprise's environmental policy;
– Information about monitoring frequency, used methodology, laboratory (if certified laboratory is in place);
– Development plans for the next 5 years.

147. Ventspils example shows that two differently organised permitting systems can function side-by-side. Now, when Latvia finally has transposed provisions of the IPPC directive into national legislation, implementation of the new requirements in Ventspils is smooth and easy, because both companies and authorities are used to the new regulatory regime. Similar approach can be fruitfully replicated where particular jurisdictions or specific industrial sectors need particular attention and, at the same time, have sufficient capacity to handle two systems. The risk exists, however, that a concomitant use of two systems will involve a lot of duplication, overload administratively the environmental authorities and industry, and provoke resistance from the regulated community.

148. A **«revolution»** requires high investment at once and is hardly feasible in the EECCA region. Another major precondition for revolutionary changes is a strong political will, which may be lacking.

## 3. ELEMENTS OF AN EVOLUTIONARY IMPROVEMENT OF PERMITTING

### 3.1 Short-term targets

149. Significant improvements in the existing environmental permitting systems can be done without global reform of the system. In the short-term perspective, EECCA countries need to **optimise the current permitting approaches and improve procedures** by making them more consistent across media and institutionally integrated, clear to the industry and transparent to the general public. Also improved access to modern tools that assist the preparation of permit applications (like pollution dispersion modelling software) should be considered at an early stage.

150. Application forms and permits can be amended with requirements to address procedures in cases of emergency situations and accidents or describe decommissioning procedures. Permitting authorities can broaden the scope of the permit by adding more detailed self-monitoring requirements and reporting obligations, management and staff training, requirements for emergency information systems, as well as laying down responsibility of the operator for compliance with the permit conditions. Energy efficiency and resource conservation may also be taken into account. Box 19 contains a checklist that could be used by an environmental authority while considering an application and preparing a permit.

**Box 19. Some issues to be addressed when developing and issuing permits.**

- ❑ Is the regulated process clearly defined?
- ❑ Are terms, definitions, etc, clearly indicted?
- ❑ Is the length of time of the validity of the permit clearly stated?
- ❑ Does the permit state requirements relating to changes in process operation and ownership?
- ❑ Are conditions, terms, etc., consistent with the law?
- ❑ Are all requirements, etc, measurable and able to be assessed?
- ❑ Are all exceptions clearly described?
- ❑ Is the permit able to incorporate easily any necessary changes?
- ❑ Are all monitoring (including self-monitoring) requirements stated precisely, with specific methodologies, reporting and quality assurance?
- ❑ Are all reporting requirements sufficient to allow a timely response to violations?
- ❑ Does the permit clearly state what constitutes compliance and non-compliance?
- ❑ Does the permit clearly state who is responsible for ensuring compliance?
- ❑ Are clear time limits imposed?
- ❑ Are the consequences (including to individuals) of non-compliance stated in the permit?

151. Prolonging the standard duration of permits' validity may start administrative simplification. Thus, permits may become valid for 5-7 years as compared to existing 1-3 years standard validity period in many EECCA countries. This change should be based on much better communication with environmental inspectorates, otherwise the risk of overlooking important changes in production processes and environmental impacts is high.

152. Competent authorities may need to establish permitting committees to exchange information and co-ordinate decisions taken by different environmental units regulating air, water and waste, and even with other regulators. Permit registers and intra-agency or cross-agency electronic networks can and should be developed to track medium-specific activities and make this information available to other regulators.

153. The efforts to co-ordinate the decision-making more effectively should lead to **consistency of procedures across all media and institutional integration** through «one-stop shopping» system, when the applicant deals with one person from a competent authority who ensures co-ordination with all other regulators. Even more procedural simplification is needed in the case of small and medium-sized enterprises (SME). EECCA countries might want to study the existing experience in this field, for instance the use of general binding rules, before starting reform of SME regulation.

154. To make the systems clear to the regulated community and the general public, the competent authorities may develop guidelines that would comment in simple words the existing procedures and application forms. Higher priority should be given to information supply to SMEs, i.e. to those that do not have enough capacity to deal with environment protection aspects. Web sites may be used to disseminate these guidelines, as well as to offer electronic application forms and post concrete applications or permits. Public participation mechanisms need to be strengthened and become a routine practice.

155. Industry can try using the reference documents that are available from OECD countries[31] as a source of updated information on the latest developments in a certain sector; the regulators may suggest that applicants consult these documents during project development.

156. "One-stop shopping" agencies or centres can be organised both to ensure public access to information and to streamline the single-medium environmental permitting process, as it was done, *e.g.*, in the United States. Such units may assist applicants to obtain all the information needed about environmental permits (requirements, forms, guidance for filling in of forms, fees), submit application (electronically or personally) and receive a permit when all preconditions are fulfilled.

### 3.2 Medium-term targets

157. In the medium-term perspective, **links with and design of related policy instruments should be improved and institutional capacity has to be built for changes in the philosophy of regulation**. An improved permitting system requires better staff training and integrity. A vast training programme should be prepared for both civil servants, who are responsible for permitting, compliance and enforcement on all levels, and environmental experts (consultants), who are traditionally dealing with the preparation of ELV protocols. The environmental authorities should be able to assess a permit from various angles, including from an economic point of view. Access to information on best international practices is critical. With the expanding Internet, the opportunities to retrieve relevant data grow and regulators from EECCA countries will need to be adequately prepared to use these resources. While knowledge and skills can be improved based on internal resources or through technical assistance, integrity is a fundamental issue that needs changes in the overall social-economic framework and decent remuneration of the personnel.

[31] Some of them are: EU BAT Reference Notes; Environment Canada's Codes of Good Practice; USEPA's Sector Notebooks.

158. Regulators should remember that a pre-requisite for effective permitting is a rational system of environmental quality standards. Making them feasible and enforceable should be a pre-condition for medium and long-term actions.

159. It will be important to optimise the system of compliance monitoring, including self-monitoring by enterprises, ambient monitoring, inspection and community monitoring. Further development will need self-auditing and environmental management systems. Establishing environmental accounting systems will be an additional incentive to adopt environmentally efficient solutions in capital investment and operation. The introduction of pollutant release and transfer registers (PRTRs) will help to ensure the transparency and fairness of permitting systems, and will exercise more pressure on bad environmental performers. Using voluntary agreements before the permitting system becomes effective is premature.

160. Under certain conditions, tradable permit systems could provide an additional cost-effective mechanism of pollution control and reduction. In the framework of such a system, polluters that emit less than the permitted level of a specific pollutant can sell the unused portion (the «allowance» to another polluter, which can then emit the equivalent amount above its permitted level. While total emissions remain capped, industry gets the chance to adjust costs to their ability and willingness to pay for meeting emission limit values. In urban areas with high levels of pollution total emissions can be capped and new facilities can be sited only if they buy allowances from existing ones. The tradable permit system has been used mainly in the United States and few members of the EU recently introduced it, mostly on an experimental basis (for example the UK and the Netherlands).

161. As strong monitoring and enforcement is necessary (emission levels have to be measured accurately), domestic emissions trading works best when the number of pollutants and the number of facilities involved are relatively limited. The enabling conditions for this policy instrument also require effective information management systems and mechanisms to access the information. Such conditions are rare to found in the EECCA region. Furthermore, in many cities the pollution level is too high and the use of other instruments may be more appropriate to protect the local environment before the necessary conditions are reached to put in place a trading scheme.

162. However, if the compliance monitoring systems are upgraded through substantial investments in laboratory facilities and reporting systems, in the long run EECCA countries might want to consider using tradable permits as part of a coherent mix of environmental policy instruments. In medium-term perspective, pilot studies may be conducted to see how feasible the tradable permits are in this region.

163. From the institutional point of view, current regulatory systems force applicants to deal with a variety of departments during business development, only some of which might include: building, planning, fire, public works, finance, engineering, environmental or public health and others as appropriate to the project being reviewed. Depending on the organisation and layout of the jurisdiction, this can require the applicant to go to a variety of different offices, buildings or even to different towns to get all necessary approvals and letters of support for just one application (permit). In order to streamline application and permitting procedures, jurisdictions (cities, districts, and regions) may be encouraged to provide, in medium-term perspective, a unique entry point where all of the departments involved in business development review are available to the applicant.

## 3.3 Long-term targets

### *A possible reference model for long-term development of permitting systems*

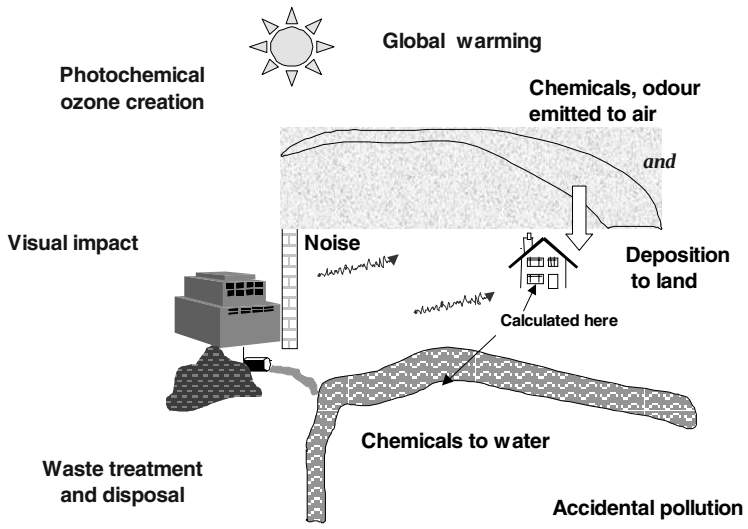
164. The totality of elements forming the development goal, which was described in section 2.1, is close to the model of integrated permitting. Many countries adopted or intend to adopt this system to move away from narrow end-of-pipe toward a broader preventive approach, which considers cross-media transfer of pollution and aims at protecting the environment as a whole (see Figure 7).

165. In the framework of the integrated approach, the end-of-pipe control technologies, which might result in transfer of pollutants from one media to another, is only the last resort if the problems cannot be solved by preventive solutions. The integrated permitting is about preventing and reducing pollution according to the following hierarchy:

- Process design/redesign to eliminate or reduce emissions to air, water and land, reduce formation of waste and energy consumption;
- Substitution of fuels, chemical, raw materials etc. by les environmentally harmful ones;
- Minimisation and reduction of pollution by means of process control, maintenance, end-of pipe technologies, etc.

166. Potential benefits of integrated permitting include internal efficiencies for the facility, streamlined application and reporting processes, incentives for pollution prevention and resource efficiency, reduced pollution control costs and enhanced relationships with the general public. At the same time, integrated permits might be administratively and cost intensive but this should be considered in comparison with potential benefits.

**Figure 7. Environmental problems to be addressed in the framework of integrated permitting.**




167. Some countries have already introduced integrated permitting, others are still determining the demand for this system. For instance, the European Union (EU) adopted in 1996 the Directive on Integrated Pollution Prevention and Control (IPPC) that is seen as a reference legal act establishing integrated permitting. In the United States, the attempts to adopt multi-media permitting are made on a pilot basis and the "Action Plan for Achieving the Next Generation in Environmental Permitting" of 1999 sets, among others, the goal of "moving toward a more integrated permitting system". The United States Environmental Protection Agency decided to seek out the views of industry, states, and environmental and community groups to establish the entire range of advantages and implementation problems.

168. Several EU member states had used the concept of integrated permitting even before the EU introduced the IPPC Directive. Sweden seems to be the first country in the world (before Australia in 1971) that introduced a law, the Environmental Protection Act of 1969, based on an integrated approach, the use of BAT, and case-by-case permitting. Denmark introduced integrated permitting legislation in 1974, the UK in 1990 and Ireland in 1992.

169. The IPPC Directive may be a **possible reference model** for long-term development of permitting systems for large polluters in the EECCA region. Its major features are as follows:

- Permitting on a case-by-case basis considering local conditions;
- An integrated approach protecting the environment as a whole, avoiding the transfer of pollutants from one media to another;
- The efficient use of energy;
- The application of "waste management hierarchy", which means avoiding, recycling, reuse, recovery and safe disposal of waste;
- Accident prevention and minimisation of the consequences of accidents;
- The return of the site to a satisfactory condition when the installation is closed;
- The use of Best Available Techniques, which takes into account the consumption of water and other raw materials;
- Focus on pollution prevention rather then end-of-pipe solutions.

170. The IPPC Directive requires that all installations covered by its Annex I obtain a permit. The regulators should set the relevant permit conditions. The Directive indicates those **categories of industrial activities** that are subject to integrated permitting. These are the following: energy industries; metal processing; mineral industry; chemical industry; waste management; other, that includes such activities as pulp, paper and board production, pre-treatment/dyeing of textiles and fibres, tanning of skins and hides, slaughterhouses and food production, animal carcass processing, intensive poultry or pig rearing, surface treatments and carbon production. All these industries are developed in the EECCA region and constitute important polluters.

171. The Directive foresees that **emission limit values** (ELVs) should be used for pollutants likely to be emitted from the installation in significant quantities and having potential to transfer pollution from one medium to another (water, air and land), in particular for the pollutants listed in its Annex III. These limit values can be supplemented or replaced by equivalent parameters or technical measures. For instance, the permit can include requirements intended to ensure protection of soil and ground water and safe management of waste generated by the installation. In addition, threshold values are given for some of activities. The threshold values commonly refer to production capacity or outputs. The use of media-based sector emission standards is not favoured when implementing the IPPC directive.

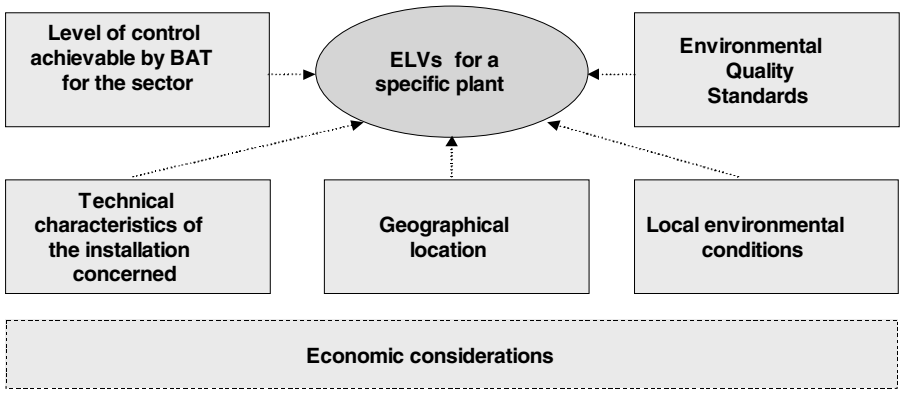
172. The Directive demands that a permit should contain suitable emission monitoring requirements. The permits consider also noise, odour, vibration and energy effectiveness. Measures related to conditions as start-up, leaks, malfunctions, etc. should be part of a permit. Finally, the competent authority might set other conditions as necessary.

173. The concept of **Best Available Techniques (BAT)** is fundamental to integrated permitting in its EU interpretation. BAT is the most effective and advanced stage in the development of activities and their methods of operation. It indicates the most practical suitability of particular techniques for providing in principle the basis for emission limit values. **Techniques** include both the technology

used and the way in which the installation is designed, built maintained, operated and de-commissioned. **Available** means those techniques developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into account the costs and advantages whether or not the techniques are used or produced inside the EU member state as they are reasonably accessible to the operator. **Best** means the most effective method to achieve a high, general level of the environment protection as a whole.

174. The BAT requirements are used in combination with European Union-wide **environmental quality standards**, which were established through air and water directives. The quality standards are based on available data on negative effects on human health and/or the environment. For ambient air, there are limit values for $NO_X$, $SO_2$, lead, particulate matter, benzene and carbon monoxide. For water, some limit values exist and more will be introduced in the next 3 to 5 years. Quality standards provide a framework for emission limit values. If an installation makes a significant contribution to local pollution and if the use of BAT is not enough to meet an EU or national quality standard, then even more far-reaching measures must be taken.

**Figure 8. Key factors influencing the decision on facility-specific ELVs.**



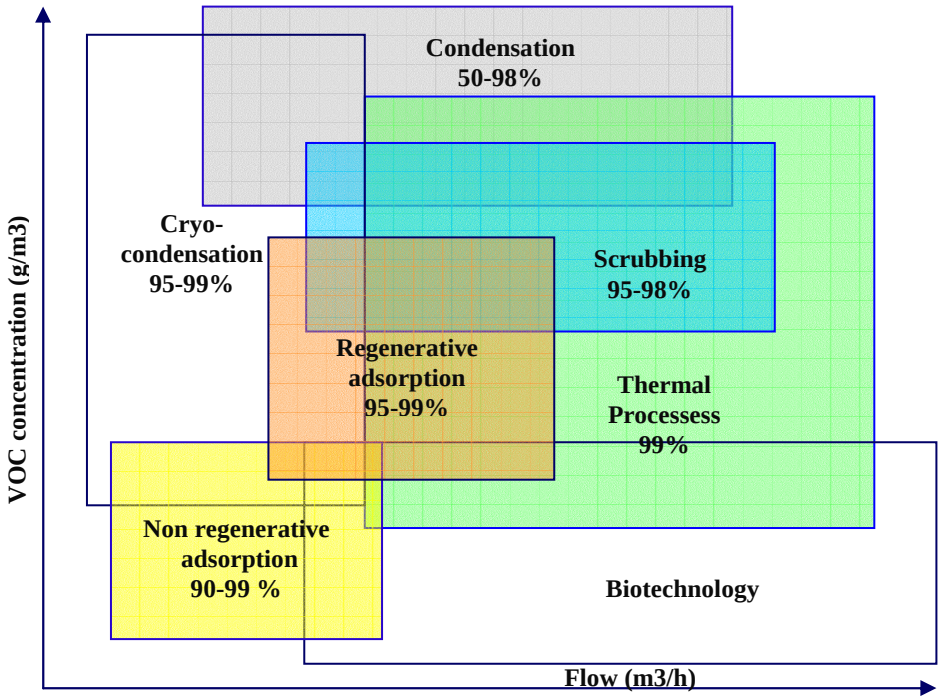

175. The BAT is a cornerstone concept of the IPPC Directive but also one of the most **controversially interpreted**; its understanding differs even among EU member states. In addition, many concerns are evoked that BAT requirements hinder technical innovation and competitiveness, and miss coherence with some other policy instruments, *e.g.* with domestic emission trading schemes.

176. In relation to the **BAT impact on technical innovation**, the response is more or less simple: integrated permits do not prescribe concrete technologies/techniques or their providers, the company itself can choose them. In contrast, IPPC expressly forbids authorities to prescribe the use of any specific BAT in permits issued to operators. This is done to ensure flexibility and to encourage technological and operational innovation. The Directive also specifies that installations used for research, development and testing of new products and processes are exempted from having an IPPC permit[32].

177. The flexible approach recognises the fact that different techniques can be applied or combined to achieve equivalent environmental performance. As Figure 9 shows, different techniques can be used to achieve a same concentration of volatile organic compounds.

[32] Fryer, L., 2001.

**Figure 9. Results of different techniques used to limit the emissions of Volatile Organic Compounds.**




*Source*: Wolsdorff, C., 2002.

178. The issue of **BAT impact on competitiveness** is more complex and difficult to address. A recent study showed that there was no evidence that BAT precluded those companies using BAT and achieving good environmental standards from remaining competitive both nationally and internationally. Many plants with strong environmental performance are able to use this as a competitive strength. The very choice of BAT by the EU IPPC Bureau is based on plants that have adopted BAT competitively. Even though there is no evidence that BAT disadvantaged those plants that have already implemented the techniques, it does not follow that others will implement BAT successfully. The economic impact of BAT, as the study in pulp and paper industry showed, is linked to several factors, as described in Box 20.

**Box 20. The impact of Best Available Techniques on the competitiveness of European industry**

Under the auspices of the Directorate General Enterprise of the European Commission, a report was developed that examines the impact of the implementation of BAT on the competitiveness of existing plants. The study focused on three industries: cement, non-ferrous metals, and pulp and paper. The principal methodology adopted is a case study approach contrasting the economic performance of plants that have adopted most elements of BAT with the performance of other "non-BAT" plants in the various industries. The findings of the studies show that plants that have already adopted BAT and achieve good environmental performance are viable in the long run.

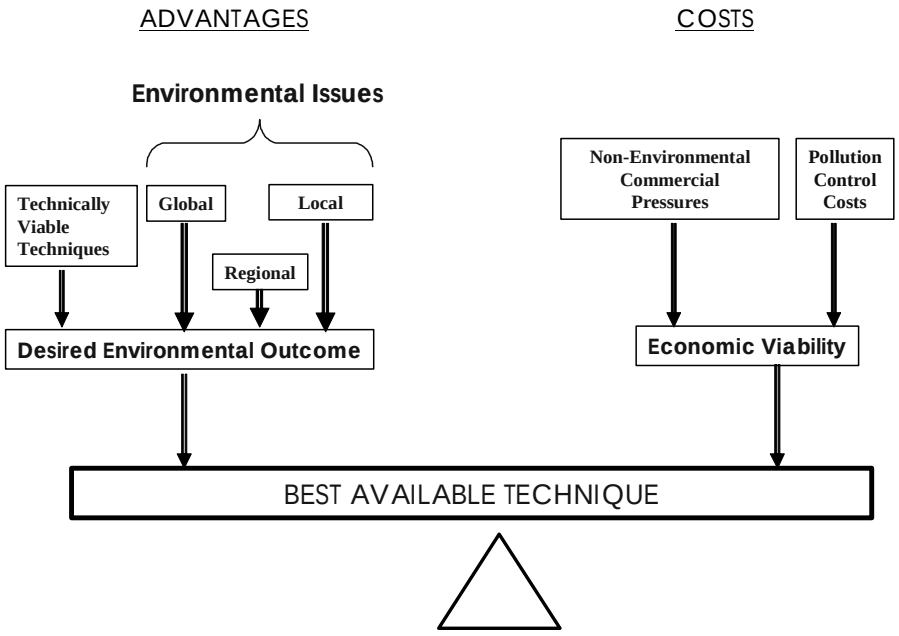
The economic impact of BAT on individual plants is tightly linked to their past competitive performance and technical characteristics, especially, in this study, in the kraft pulp and paper sector. Hence, for example, mill size, age, productivity level, growth and research and development capacity have been shown to be factors which can be important in minimising the cost of BAT implementation. The characteristics of vulnerable mills have also been identified and these include mill age, size, product cost and quality, and current environmental performance which is below average. All these difficulties vary according to the industry in question and BAT under consideration.

The findings point to the need for a prudent approach in order to retain economic viability. For example, viability is likely to be related to careful planning and timing and the need to sequence BAT implementation to make the best use of business opportunities for investment. The most successful firms are already good at this planning, while others might need help to find the optimal solution for them. In some countries, the average plant has "too far to travel" to raise environmental standards quickly without consequent economic harm.

*Source*: Hitchens, D. *et al.*, 2002

179. It follows from the definition of BAT that in order to avoid disproportionate costs, the selection of BAT in a specific case could be described as a **balancing exercise** that considers advantages versus costs. The Environment Agency of England and Wales has applied this approach as shown in Figure 10. The site-specific approach also might be needed if several candidates for BAT exist, or because of local environmental conditions and technical constraints. Sufficient data from applicants would be needed in order to make a well-grounded decision. Cost estimates will be obtained from operators and examined for credibility. Then the regulator will assess whether costs are excessive, based on criteria of economic viability and environmental benefits to be obtained. The financial assessment might be done for several options, so that the decision is more meaningful.

**Figure 10. The BAT balancing act**




*Source*: H1, Modules 5-6, Environment Agency of England and Wales

180. The issue of coherence between IPPC and tradable permits scheme has been of a high concern among stakeholders, including authorities of Member States, industry associations and NGOs. The Department of Environment, Food and Rural Affairs has signalled[33] that the IPPC

[33] Derwent, H., 2002.

Directive may severely limit or even preclude trading in any other pollutant emission because of the requirement to set BAT-based ELVs. This concern was expressed by other countries, for instance the Netherlands, who are interested to establish a domestic trading emission scheme. Proposals were worked out to accommodate domestic trading under the IPPC Directive[34] and, most likely, the European Commission will address both concerns and proposals in the forthcoming Communication on implementation of the IPPC Directive. Thus, EECCA countries will need to monitor the way in which the EU will resolve the divergences between the BAT approach and tradable permits.

181. Using BAT to set the permit conditions is a crucial moment but also quite complicated to be addressed by EU member countries individually, within reasonable time period. Therefore, common guidance documents have to be developed, as foreseen by the Directive. The role of these guidance papers is played by the so-called **BAT Reference Documents** (BREFs). BREFs are being produced for each industrial sector covered by the IPPC Directive. They contain processes and techniques applied in the sector; current emissions and consumption levels; techniques to consider in the determination of BAT; conclusions on what is to be considered BAT in a general sense; emerging technologies; economic aspects and sources of techniques. It is planned to produce 23 BREFs. BREFs do not favour techniques or technologies of a particular national origin. For instance, they recommend techniques used either in the EU member states or in China, Indonesia, Korea, etc. The European IPPC Bureau was established in Seville at the Joint Research Centre to manage this information.

182. However, it should be stressed that BREFs do not take into account local and specific factors in each country. As a result, some countries produce their own guidance on permitting. This guidance could be a different form, for example, guidance notes developed on BREFs' base; translation of BREFs; use of existing guidance and/or rules developed to support national pollution prevention legislation. When using BREFs, it is also important to remember that they do not interpret the IPPC Directive, do not define or alter legal obligations, do not suggest ELVs and cannot be exhaustive.

183. Several member countries are now considering the revision of their sector-wide emission standards based on the BREFs with a target to meet the IPPC requirements. The result is likely to be more stringent emission standards than the earlier used, but the approach per se is considered by some experts to be risky. The BREFs are very uneven in quality. Conclusions made by the working groups, for different sectors, at least as expressed in the summaries, might not represent the last development in technologies. The box below discusses the example of the Iron and Steel BREF.

**Box 21. BAT as a rapidly moving target: The example of Iron and Steel BREF.**

The conclusion in the BREF is that BAT for the dust concentration after filters from existing electric arc furnaces is 15 mg/Nm3. Information collected during the BREF work indicated that over two thirds of 45 installations in member countries already in 1994 were below that figure. Three of four reported German furnaces had emissions below 2 mg/Nm3 in the primary gas from the furnace, a figure that also is quite common as a binding condition in licenses given to Swedish steelworks more then ten years ago. The conclusion is obvious, 15 mg/Nm3 does not represent BAT. Thus, the BREFs need to be carefully read and used; it should be understood that the information in the oldest of them represented the situation six to seven years ago. BAT is always a moving target.

*Source*: Hans-Roland Lindgren, 2002.

184. The first step in the **permitting procedure** is the submission by the operator of an application form, which is a set of comprehensive information about the installation and its activities, various environmental data and environmental impacts, proposed prevention and abatement techniques, etc. The permitting authority needs to review the application form. During this review, environmental impacts of local, non-local and trans-boundary character are assessed. As already mentioned, the regulator also takes into account the costs and benefits of pollution prevention and control measures and makes sure that they are in line with best available techniques.

[34] Dutch Ministry of Housing, Spatial Planning and Environment (2002).

185. The IPPC directive does not require full institutional integration, when one permit is delivered by one agency. Instead, it requires that decisions are fully co-ordinated if several authorities are involved in permitting (as it is the case in the Netherlands).

186. An important element of permitting procedures is the **transparency for the general public**. Permit applications and permits themselves must be available to the general public, who has the right to participate in permitting decisions. An inventory of pollutants' release and transfer has been established to ensure even more transparency. Finally, to address transboundary effects, the Directive provides for notification and consultation between countries in cases where there are significant transboundary emissions. These aspects will be further strengthened due to the Aarhus Convention.

187. With some common elements in place, permitting procedures might be different, however, in different countries. Particularities can be found, for instance, in institutional arrangements, links to other policy instruments or existence/lack of trial periods (see Box 22).

**Box 22. Swedish procedures to grant integrated permits.**

Sweden has had a system of integrated pollution prevention and control since 1969. A new Environmental Code that regulates permitting system is in force since 1999. All industrial activities are divided into 3 categories: Class A, B and C installations. Class A and B installations have to receive integrated permit, but Class C installations have to notify on their activities.

The Swedish EPA that is the central authority responsible for environmental issues is not, however, a licensing authority. Permits for Class A installations are issued by five decentralised environmental courts (each is made of up of four people) that involve technical experts from the Swedish EPA. The total number of Class A installations is between 300 and 400. 21 regional state authorities – County Administrative Boards – are responsible for issuance of integrated permits to Class B installations, which there are about 7000. In average they decide on 1000 Class B applications spending around 2 weeks on each. Operators of Class C installations have to notify the Health and Environmental Board of their activities within each municipality (in total 300). The permit procedure for construction of a new plant, in case of plant expansion or substantial changes to the process is very closely connected with EIA, and public participation is foreseen.

The use of BAT is a key consideration when deciding on permit conditions. During the decision-making process, the benefit of precautionary measure has to be compared with the expenses of applying it. For existing facilities, a certain transitional period is granted for installation of equipment corresponding to BAT. It is also possible to grant a trial period under which the applicant investigates the best ways to reduce emissions.

188. All EU Member States, except Sweden, have developed and use standardised application forms that in almost all cases are available on the Internet. Sweden does not use a standard application form because activities to be regulated through integrated permits are too diverse. Instead, the Environmental Code specifies the type of information that is required in a permit application. More specific guidelines on the information requirements have been published by the Swedish EPA.

189. The IPPC Directive has been used as a reference model to reform permitting in accession countries. The path to integrated permitting was also paved through IPPC piloting in the "second wave" candidates. The desire to better address environmental issues within sector policies, for instance, in Bulgaria, accelerated the application of the integrated approach (Box 23).

**Box 23. IPPC implementation in Bulgaria.**

Bulgaria is not expected to fully comply with the IPPC Directive until it becomes a member of the EU[35]. However, the National Development Plan's priority to integrate environment into sector policies called for the regulators to begin implementing the IPPC principles quickly. A timetable was adopted, including development and adoption of legislation, institutional changes, and piloting integrated permitting. Full approximation of the legislation has been expected by the end of 2002.

On a trial basis, integrated permits will be issued to those facilities that substantially comply with the IPPC requirements. In the medium term, pilot integrated permits will be issued to about 80% of the enterprises in the metallurgical and chemical sector. By the end of 2009, BAT will be adopted in main industrial sectors. All integrated permits will be issued by 2012.

*Source*: World Bank 2001.

190. The integrated permitting is a new tool even in EU member states and the **timing** of its introduction is very important. The majority of countries that are in the process of transition to the integrated permitting developed schedules of implementation. The need for schedules is dictated by administrative intensity of integrated permitting, but also might take into consideration of compliance. The deadlines for introducing integrated permitting are set very clearly in the IPPC Directive. As from October 1999, the IPPC permits are required in EU for all new and substantially modified installations before they can operate. The IPPC permits will be required for existing installations by October 2007. Transitional periods have been foreseen for existing installations (see Table 4). In the United Kingdom, the timetable was agreed with industry representatives and required some 8,000 operators in each of 48 defined industrial sectors to submit their applications within a specified three-month window in the overall period from December 2002 to March 2007. Certainly, this helps the authorities to cope with a highly intensive administrative process.

**Table 4. Elements of the transition timetable for existing installations in the UK**

| Activity Sectors | Periods for Installation Applications(*) |
|---|---|
| Combustion | 1st January to 31st March 2006 |
| Ferrous Metals | 1st June to 31st August 2001 & 1st May to 31st July 2003 |
| Non-ferrous Metals | 1st October to 31st December 2001 & 1st May to 31st July 2003 |
| Cement and Lime | 1st June to 31st August 2001 & 1st April to 30th July 2003 |
| Chemical Fertilisers | 1st June to 31st August 2005 |
| Pharmaceuticals | 1st January to 31st March 2006 |
| Disposal of Waste by Incineration | 1st June to 31st August 2005 |
| Intensive Farming | 1st November 2006 to 31st January 2007 |

(*) Different requirements may be introduced sequentially, as can be seen in the table.

191. Many stakeholders noted that it is a demanding task to implement the IPPC Directive in most countries within the time period available, especially in the interpretation that requires both permits and BAT measures to be in place by year 2007. Sweden and some other countries have argued that extra time may be needed to meet the conditions in a permit issued as of 2007.

[35] An event, which is expected for year 2007.

***Aspects to be considered as part of integrated permitting introduction***

194. EECCA countries do not have to copy the EU approach *ad literam* and transpose the IPPC Directive directly. This Directive is just one possible reference model. Successful and well-organised models of permitting can be developed in the EECCA region, which would take into account lessons learned during IPPC implementation in Western and Central Europe.

195. Another point to remember is that integrated permitting cannot solve all environmental problems, even those of industrial pollution, therefore environmental authorities should adapt approaches to obtain better environmental results in their particular conditions. Thus, using integrated permitting for major industry should not exclude other approaches in the case of smaller enterprises. For instance, the permitting framework only covers around 2% of the 3.7 million registered businesses in the United Kingdom. All businesses are, however, covered by general requirements for example to use a "Duty of Care" with regards to waste management, to avoid pollution of water and use the best practicable means to prevent regulated nuisances. This case is not exceptional: many countries introduced IPPC only for major industries (largest polluting installations). In this context, a careful definition of the **scope for permitting** is absolutely necessary. Such a choice would mean getting a clear understanding of substances and industries subject to integrated regulation.

196. «One could say that the greatest strength of the IPPC Directive is at the same time the greatest risk for its effective implementation. In the European Union a principle called the subsidiary principle is applied. This means that the Union should not take action unless it is more effective than action taken at national, regional or local level. In the specific case of the IPPC Directive the application of this principle has resulted in a permitting system whereby strong executive powers are in the hands of the permitting authority. This is basically a wise approach because it is only this authority that can have the understanding and detailed knowledge of individual sites, which is so vital for the successful implementation of the system. But on the other hand, putting so much responsibility in the hands of the authority is also associated with a number of risks».[36] This affirmation is even more valid in EECCA countries where concerns about regulators' integrity are high. Below, some other **risks associated with the IPPC introduction** in this region are described.

197. The political will and human capacity within environmental authorities in EECCA countries might not be sufficient to propel and implement reforms. Many decision-makers and experts involved are content with the present permitting systems and might reject any changes fearing to lose jobs, influence or income, in particular when the labour market is down.

198. The permitting authorities are often suffering from outside pressure. In Western Europe (as in many other regions), examples existed how political pressure has forced environmental authorities to put employment concerns above environmental concerns or give higher priority to local pollution than to long-range pollution. The political, social and economic situation in the EECCA region is of a very different nature in comparison with that of its Western neighbours, and the concern is obvious that immediate interests of economic growth may eclipse environmental concerns. Sectoral integration and general orientation toward sustainable development are potentially ways to address the risk of political pressure.

199. Furthermore, EECCA environmental authorities are not equipped with a sufficient number of skilled and experienced staff. There is currently a shortage of highly qualified staff, and salaries are symbolic; at the same time, these are important prerequisites for making the best use of the flexibility that the integrated approach offers.

200. The warning has to be made on a potentially narrow interpretation of BAT and use of this concept in its outdated interpretation, with a narrow definition as best available «technology». Also there might be an attempt to define a BAT as best technique neglecting the **availability** issue. Availability very much depends on the cost. This is especially true for many EECCA industries,

[36] Gislev, M. (2002).

which do suffer from poor access to sources of financing. Therefore, attention to pollution prevention measures of low cost should be paid in the first place.

201. Also disputes might arise on the confidentiality of data and information, enterprises trying to hide their actual environmental performance and potential for improvement. Authorities will need to be able to recognise what indeed constitutes a commercial secret.

202. The lack of clear criteria, accountability and a culture of mutual respect when discussing with industry representatives the permit requirements is not easy to address. Irrespective of the type of permitting systems used, staff of permitting authorities should develop a co-operative relationship with stakeholders.

203. Opposition to and disregard for environment issues from industry might continue in the future. Although the regulated community is likely to have a positive attitude if requirements become feasible, there might exist a vested interest to keep the situation in the EECCA region unchanged, since paying taxes and fines is often easier than investing in the infrastructure or staff training. The current environmentally careless attitude is unlikely to change, if short-term investment interests continue to dominate. Also companies may continue ignoring environmental requirements because they understand that they are too many to control effectively. Thus, creating a deterrence atmosphere will be extremely important.

204. The immediate applicability of the BAT-based integrated permitting might be over-estimated or scholastically interpreted. Insufficient ability of some enterprises to invest in infrastructure does exist and might hinder adoption of BAT. The inability to pay, however, is not universal. Many firms are able to meet BAT-based requirements and some of them, as experience shows[37], adopted techniques that are comparable with those described in the EU's BREFs.

205. The reform of environmental permitting systems needs well-targeted and implemented technical assistance. The experience existing in the EECCA countries suggests this has not always been the case. On the one hand, recipient institutions should be more precise in identifying their priorities and more accurate in meeting their own engagements. On the other hand, tighter quality control and quality assurance is required at the stage of assistance programme design and implementation.

***Transition to integrated permitting: Main actions***

206. Adopting integrated permitting requires taking several actions, most importantly:

- Regulatory impact assessment, including analyses of costs and benefits; definition of finance sources and implementation of pilot projects to understand better the way integrated permitting functions;
- Adjustment of the regulatory framework: improvement of primary and secondary legislation;
- Identification of introduction time-scale and sequence of industries;
- Development of guidance for industry; as well as --
- Institutional and human capacity building (discussed above).

[37] The results of a rapid assessment of environmental compliance and enforcement capacity in Georgia have shown that well performing plants exist in this country alongside with very poor performers. Poor environmental performance was coupled with poor economic performance.

207. **Costs of compliance and regulation** should be assessed before launching reforms of current permitting systems. Both government and industry might face the need to make considerable investment [capital and in terms of human resources] to adopt BAT-based integrated permitting. It is rather difficult to assess administrative costs of IPPC implementation, since the "baseline" in the EECCA countries is different from EU member states or accession countries. The costs of IPPC administration in Bulgaria have been estimated in the range of 67-227 thousand euros per year. In total, the public sector will have to invest around 4 million euros to administer the changes relating to the IPPC Directive (Phare, 1999). In Estonia, the annual costs of managing the IPPC system were expected to be in the range of the 3-5 million EEK (192-320 thousand Euros) (Pallo, T., 2001). However, any estimates of this nature should be analysed in comparison with the current expenses. Given the very complex process of regulation in the EECCA region, the cost of administering integrated permits should not be substantially higher than the current costs, on the condition that the regulators receive initial training based on technical assistance and furthermore have a good access to the results of investigative programmes on BAT, internationally and domestically.

208. Compliance costs are much larger, but most of the BAT bring benefits through resource and energy savings, and decrease in charges for pollution. Capital investment might be balanced with lower operational costs (see an example in Box 24).

**Box 24. Compliance costs and benefits of IPPC implementation in Estonia.**

**Compliance costs:** Assessment of the costs of bringing existing industry in line with the BAT requirements were carried out by interviewing enterprises subject to IPPC regulation. Companies presented their estimates of the needs for investment that amounted to about 20 billion EEK (1,3 billion euros). By comparison, the Estonian State budget in 2000 was 28,5 billion EEK. The number of existing installations which are covered by IPPC was estimated as about 130. However, one should take into account that this figure includes compliance with all other environmental requirements, not just the IPPC directive.
*Source*: Pallo, T., 2001

**Benefits brought by BAT implementation:** The Vasar Electroplating plant in Estonia was constructed during the Soviet era based on standard specifications and could serve as an example. Suggested wastewater volumes were 12 000 m3/month and the wastewater treatment plant was designed for that capacity. The treatment plant was oversized already from the beginning. When Vasar decided to participate in a cleaner production program to prepare for meeting the future BAT conditions in the IPPC the water consumption was 2 500 m3 per month. This was reduced to 800 m3 per month for an investment cost of 13 000 EEK saving 84 800 EEK per month on the water bill and at the same time reducing heavy metal emissions by two thirds.

*Source*: Lindgren, H.-R., 2002

209. **Pilot projects** can be a useful tool to assess, among others, costs of implementation and understand its benefits. Pilot application of the integrated permitting can be recommended particularly for large new investments where enterprises would have sufficient capacity to address new requirements and will not yet be "used" to the old permitting system. In general, criteria for choosing pilot industrial sectors (or facilities) may include the magnitude of expected environmental results, FDI inflow, average age of infrastructure and likelihood of a large renovation waive, trade intensity and export orientation, etc. Financial performance should be a critical criterion.

210. Many pilot projects have been implemented during the pre-accession period in the new members of the European Union, and recently started in the EECCA region. The first thesis to be demonstrated as part of these projects was the feasibility of BAT in transition economies. Examples of this can be provided by projects implemented in Moldova and Russia.

**Box 25. Application of the BAT concept in Moldova and Saint Petersburg area (Russia)**

**Moldova.** Technical assistance was provided for a pilot study in the power generation sector to examine the feasibility and conditions to regulate the power generation sector based on the requirements of the EU IPPC Directive and the latest Large Combustion Plant Directive. The final report mentions that investment in combined cycle gas turbines, which is the BAT in EU, is not a realistic immediate option because of a shortage of capital for major investment. Accordingly, in terms of the implementation of best **available** techniques in Moldova, the use of gas in conventional power stations, together with combustion optimisation, may be considered as representing BAT.

**Russian Federation.** Non-realistic ELVs imposed on the regulated community for a long discouraged its members to be in compliance with permit requirements. Most illustrative is the difference between the HELCOM requirement of 15 mg/l for BOD5 and 3 mg/l for BOD20 (*i.e.* 0.6 mg/l BOD5) according to regulations inherited from Soviet period. To address this problem, a pilot scheme for pollution discharge permitting was put in place and covered four selected enterprises. This scheme allows setting more realistic ELVs that take into account HELCOM recommendations on BAT. Besides, it requires that participants prepare integrated application for a permit and obtains the permit through a procedure that in addition to assessment by government authorities involved presupposes public hearings. An independent Environmental Court, as practiced in Sweden, took the final decision on permit award. This pilot project is at a mid-way of implementation but its participants recognised the high value of inter-agency co-operation and public involvement generated during the preparation of application forms and issuance of permits to those five volunteers from the regulated community. Of course, the true acid test will be passed when the pilot enterprises actually meet the permit requirements.

*Source*: (Moldova) www.envnis.org; (Russian Federation) Korovin, L. (2002)

211. **Identifying gaps in current legal acts** should be carried out at an early stage through a comprehensive assessment of environmental regulatory framework, as well as laws and regulations that govern business development, taxation, building requirements and public access to information. Adjustments might be needed to both primary and secondary legislation of EECCA countries. These adjustments, however, do not mean any major changes in the existing primary legislation, which quite fairly sets the overall regulatory framework. More effort will be required to either change or enhance the secondary legislation.

212. The **primary legislation** will need to be amended. It should include definitions that are indispensable to permitting systems in general and integrated permitting, in particular, such as permit, integrated permit, best available techniques, confidentiality, competent authorities, etc. The mandate of competent authorities should be clarified to avoid duplication, blind areas of responsibility or conflict of interest in issuance of permits, compliance monitoring and enforcement. Categories of industries subject to integrated permitting need to be defined; the environmental authorities may want to simply review the already existing lists and categories of industries there where such identification of the industry subject to permitting exists.

213. Basic obligations on operators are quite developed already in legal acts. It will be useful, however, to make sure that environmental legislation requires them to prevent pollution, apply best available techniques, avoid waste generation and effectively manage waste, use energy in an efficient manner, prevent accidents and carry on post-operation clean-up. General requirements to apply for, and be in compliance with, permits need to be stipulated by law alongside with more specific obligations that would state that a permit is mandatory for plant operation, that operators are obliged to comply with permit conditions and conduct self-monitoring, as well as to inform the competent authorities of planned changes in operation. Stipulating penalties for operating without a permit, non-compliance or providing false information will be extremely important. This step is to be done regardless introduction of an integrated permitting system.

214. Other issues will need to be decided and amendments introduced, when necessary, into the primary legislation. These issues might refer to the timing for bringing existing installations into the integrated regime, set up of an emission/pollutant register and define general binding rules for certain categories of installations or for specific activities. The public participation requirements will have to be expanded on the permitting procedures.

214. The **secondary legislation** will need major improvements. Most importantly, ambitious but also feasible environmental quality standards need to be put in place. The current report will not discuss this issue, since several other EAP Task Force documents addressed it. Regulations will need to be developed to specify details of the application for permit. Detailed outline of the permit is quite important and the secondary legislation, besides providing such an outline, could include a standard permit form. Reporting requirements need to be improved to ensure, at least, consistency of data.

215. **Guidance notes** for industry will be required. Since the investigative programmes are quite resource-intensive, the EU BREFs can be used in the EECCA region. They may and should be enriched with techniques available in the EECCA region, a task that can be fulfilled by numerous research institutes in co-operation with industry and environmental authorities. Development of country-specific BATs can be required in cases when the industry branch is rather unique and the number of enterprises makes the effort worth doing. The first experience with translation into Russian of BREFs suggests that this is a time and resource-consuming exercise with doubtful outcomes in terms of quality of translation (BREFs are written in a technical language) and timeliness of information. This underlines the importance of training within environmental authorities, including on such issues as knowledge of foreign languages.

216. The **timing of the introduction** is very important. The majority of countries that are in the process of transition to the integrated permitting have developed schedules of implementation. The following sections will address this issue; it will commence by presenting a possible overall reform schedule for short-, medium- and long-term targets and after that it will describe two approaches for transition to integrated permitting.

### 3.4 Implementation schedules for reform of permitting

217. At the very beginning of the reform process, the assessment of actual situation and potential is needed in each country. This should be followed by the development of country-tailored implementation schedules. It will be crucial to remember that all stages of the reform will require active dialogue with industry and the general public.

#### *Building a framework for the next generation of permits: An example*

218. Below, specific actions and implementation timeframe developed in 1999 by the US Environmental Protection Agency to improve the permitting system is presented. This example only illustrates HOW an implementation schedule can look like and is not meant to suggest WHAT individual countries can include in such a schedule: the latter is a country's decision.

**Table 5. Implementation schedule to introduce the next generation of permits in United States.**

| SPECIFIC ACTIONS | TIMEFRAME |
|---|---|
| **MANAGEMENT OF OVERALL EFFORT** | |
| 1a. Establish cross-agency management group to meet periodically, oversee progress on plan implementation | 1 month |
| 1b. Develop system for tracking media-specific and cross-media activities. | 1 month |

| SPECIFIC ACTIONS | TIMEFRAME |
|---|---|
| **BUILDING A FRAMEWORK FOR THE NEXT GENERATION OF PERMITS** | |
| **2. Consistent Administrative Processes** | |
| 2a. Identify and compare administrative differences across all media permit programs, focusing on procedures for issuing permits. | 6 months |
| 2b. Develop options and recommendations for harmonization based on analysis above, taking into account whether changes can be made within current regulations, would require regulatory change, or raise statutory issues. | 6 months after completing 2a |
| 2c. Obtain management direction on approach to be pursued. | 2 months after completing 2b |
| 2d. Issue guidance on changes that can be made within existing regulations. | 6 months after completing 2c |
| 2e. Propose rule for harmonizing requirements where necessary. | 1 year after completing 2c |
| **3. Better Public Participation** | |
| 3a. Review existing public participation requirements for all permit programs. | 3 months |
| 3b. Develop draft cross-agency guidelines on public participation activities for various scenarios. Work with stakeholders to identify best practices. Obtain management direction on approaches to pilot. | 6 months after completing 3 a |
| 3c. Pilot draft guidelines and evaluate results. Obtain management direction on final approach. | 1 year after completing 3b |
| 3d. Issue final guidance on public participation in permitting. Identify and propose any necessary rule changes to allow guidance to be implemented. | 6 months after completing 3c |
| 3e. Post web page on environmental permitting for citizens. | 1 month |
| 3f. Obtain feedback and update web page to maximize value for public. | 1 year after completing 3e |
| 3g. Pilot and evaluate an electronic repository for permits in a geographic area. | 1 year |
| **4. Customer Service in Permitting** | |
| 4a. Prepare Customer Service Implementation Strategy for Permitting | 9 months |
| 4b. Prepare user- friendly Toolkit of customer service processes and techniques | 9 months |
| 4c. Initiate effort to establish customer service improvements throughout Agency permitting programs. | 12 months |
| **5. Performance-based Permitting** | |
| 5a. Carry out current media-specific efforts to achieve more performance-based approaches within current programs | Varies depending on initiative |
| 5b. Using previously developed sample permits, review tools for providing permit flexibility. Identify any barriers to use and issues needing resolution to support efforts under 5a. | 6 months |
| 5c. Working with state, industry and environmental stakeholders, develop better understanding of industry concerns that many permits are overly prescriptive. Based on this evaluation, refine definition of performance-based permitting. | 12 months |
| 5d. To the extent warranted based on results in 5c, evaluate need and potential | 12 months after completing 5c |

| SPECIFIC ACTIONS | TIMEFRAME |
|---|---|
| for greater use of performance-based permitting across agency programs, identify legal or practical barriers, and identify any appropriate changes in policy or regulations beyond those made under 5a. | |
| 5e. Establish schedule for issuing any policy or rule changes identified in 5d. | 1 month after completing 5d |
| **6. Multi-media Permitting** | |
| 6a. Establish more consistent administrative processes across media and improve models for effective public participation (per steps 2 and 3 above) | See steps 2 & 3 |
| 6b. Conduct stakeholder outreach to evaluate demand for multi-media permits, cost implications, suggestions for making multimedia permits less costly. | 6 months to conduct initial outreach; 12 months to complete outreach |
| 6c. Assess extent to which stakeholder multimedia concerns will be addressed by work under 6a. | 3 months after completion of 2b and 3b. |
| 6d. Track and monitor experience under multimedia permits (the extent of this effort will depend on demand evaluation in 6b.) to the extent warranted, evaluate benefits and costs of existing multi-media permits, and circumstances in which they are most or least useful. | 18 months from completion of 6c. |
| 6e. Initiate steps to increase use of multi-media permits in selected areas where pilot projects studied in 6d indicate high likelihood of success. | Upon completion of 6d |
| 6f. Determine desirability of broad-scale use of multi -media permitting, and if desirable the changes in policy, rules or statutes that would be appropriate. | 48 months |
| **7 Continuing and expanding experiments** | |
| 7a. Evaluate lessons learned from pilot performance-based permits, identify approaches that can be used more broadly, and develop enabling guidance and training programs to encourage those approaches. | Continue ongoing effort |
| 7b. Examine opportunities to apply lessons learned during pilot projects in future rules, and to incorporate more flexible approaches into the permitting | Continuously, during ongoing rulemakings |
| 7c. Evaluate possibilities for broader application of performance-based permits. | 24 months |
| 7d. Explore sector-based approach to improving the permitting system | |
| (A) Select two or more industries for sector-based permitting reform pilots | 6 months to select first sector; 18 months to select second |
| (B) Conduct diagnostic analysis of each selected sector, focusing on permitting issues and the role that permitting can play as a leverage point for improved environmental performance. | 8 months after sector selection |
| (C) Decide whether to proceed to follow-up activities. If so, identify potential actions that EPA, states, industry and other stakeholders can take to address each sector's priority permitting issues, and develop multi-stakeholder consensus on a strategic plan. | 1 year after sector selection |
| (D) Initiate pilots, policy development, technical assistance, training and/or other actions for each selected sector, in accordance with the strategic plan in (C). | 18 months after sector selection |
| (E) Compile lessons learned from actions in item (D) and apply successful results broadly across each selected industry sector. | 3 years after sector selection |
| (F) Refine sector-based permitting reform model and evaluate possibilities for application to other sectors. | Ongoing, with final report in 4 years. |

***Approaches to scheduling the implementation of integrated permitting***[38]

219. Two different approaches may be taken to implement integrated permitting: stepwise approach – based on different industrial categories; and successive approach – based on the expiry of the existing permits. The **stepwise approach** is based on the idea that the different sectors of industry (metallurgy, petrochemical industries, energy production, oil and mineral extraction, lights and food industries, etc.) become subject to integrated permitting sequentially over a period of time. This approach requires a decision to be taken on the priorities in determining the order in which each industrial sector is brought under the integrated permitting system.

220. There are a number of advantages in applying the stepwise approach. For example, by targeting different industrial sectors it is possible to prioritise which sectors become subject to integrated permitting first: *e.g.* based either on the high polluting sectors first, so as to obtain a faster reduction in overall pollution in the country, or on their economic importance to the country and the need to attract foreign investment, or based on the production of BREFs for specific sectors.

221. Furthermore, by concentrating on specific sectors of industry the experience of issuing permits can be more easily shared thereby leading to a faster processing of the integrated permitting applications. Finally, the training of the environmental enforcement agencies staff in BAT for different sectors can be spread out over several years.

222. Of course, there are also some disadvantages of the stepwise approach. This approach is more focused on existing installations and does not take into account the need for new or "substantially changed" installations to be subject to integrated permitting. It also does not take the business planning of industry into account. If an installation receives its 5-year permit say in 2005, and integrated permitting is to be introduced for that sector in 2006, then there will be a waste of resources of both the installation and the enforcement agency in assessing the two different permitting processes in a short period of time.

223. The **successive approach** is based upon the concept that the installation will have to apply for an integrated permit when the existing permit expires. New installations and "substantially changed" installations will require an integrated permit before they can begin operations.

224. The advantages of the successive approach are:

- The number of permits issued each year will probably not change from present levels – although the complexity of the permits will increase which may require additional resources be granted to the environmental enforcement agencies
- There will not be the waste of resources in requiring two permits to be obtained in a short period of time.
- The permitting authority will build up a broad knowledge of issuing integrated permits over the whole range of industrial categories.

225. There are also some disadvantages of the successive approach. The permitting authority will have to assess integrated permit applications from many different industrial sectors at the same time. This may result in the authorities not being able to use the specific sector experience gained in the first few years of the transition period. Another disadvantage of successive approach is that two installations in the same sector may be regulated differently – one under integrated permit and the other under the old regime because its permits have not yet expired. Therefore, one will have to comply with BAT while the other will not.

226. It is suggested that a decision on which approach to adopt can only be taken once the full status and numbers of installations involved has been assessed.

[38] Based ob Sheridan, N. (2001).

## CONCLUSIONS

### Aim and definition of permitting in the EECCA region

227. Over the last three decades, the aims and theory of industrial pollution regulation in EECCA countries have developed in line with international patterns, but the mechanism of regulation did not go beyond single-medium permitting. As world wide, the permitting systems in the EECCA region aim at ensuring environmentally sound operation of the regulated community and contribute to internalisation of pollution costs. The proclaimed approaches to industrial pollution regulation in these countries followed international patterns: from pollution control in the 1970-1980s, through pollution prevention in the 1990s to the adherence to the sustainable development concept over the last decade. The Polluter Pays Principle, pollution prevention and public access to information have laid the policy and legal foundation of regulation. In practice, however, the evolution of permitting systems did not go beyond pollution control through separate permits for air emissions, wastewater discharges and waste handling. Corollary, environmental «permitting» is being defined exclusively as an administrative procedure to grant government authorisation for emitting pollutants up to a certain level.

### Legal framework

228. Legal frameworks are in place and sufficiently developed to accommodate an eventual reform of environmental permitting without major amendments to the primary legislation. The legal framework for environmental permitting is set by the umbrella laws on environment protection, laws on Environmental Impact Assessment (EIA) and State Environmental Review (SER), air and water protection, waste management and use of mineral resources, etc. Laws declare key regulatory principles, identify, in general terms, the regulated community, define such notions as environmental quality standards, emission limit values and technological requirements, set the institutional framework and stipulate sanctions for non-compliance. The secondary legislation describes permitting procedures and provides numerical values for environmental quality standards, construction or technological standards for pollution control facilities, etc. Both primary and secondary legislation is insufficiently explicit and coherent, or even underdeveloped, but it provides a basis for improvements.

### Approaches and scope of permitting

229. Case-by-case permitting is applied through a technocratic calculation of Emission Limit Values (ELVs). Each process at a facility, ending in pollutant release from a stack or pipe, must receive individual ELVs. These constitute the core permit requirements. The ELVs are calculated using obsolete guidelines and computer models developed in the Soviet Union in the mid-1980s. The objective of the modelling is to find a value that would ensure that the environmental quality standards (so called Maximum Allowable Concentrations, MACs) are met when the facility works at full capacity. Background concentrations, local conditions and emissions from other facilities are taken into account, but the credibility of input data is low. Although designed with good intentions, the described approach leaves no room to assess technical and economic feasibility of ELVs. In theory, it also means that ELVs need revision in a given locality for all facilities as soon as a new facility applies for permits. Besides, this way of ELV setting does not allow for true public screening.

230. ELVs proved to be difficult to achieve technically and/or economically. Less stringent temporary ELVs are being applied to address this issue. Their value is subject to negotiations with regulators; this process implies a lot of discretion, since the criteria of setting temporary ELVs are not always being clear.

231. Most EECCA countries established a broad scope for permitting and regulate hundreds of substances and a large number of industries. This led to a proliferation of MACs, up to 3 000 substances in some countries. Many of the substances regulated by permits are not monitored at all, or ELVs can equal a value that is lower than the limit of analytical detection. If the legislation is to be followed literally, almost any new economic activity, regardless of its size and potential environmental impact, should be individually permitted. Existing industrial facilities are also subject to permitting. However, their permitting does not require in-depth assessments. At the same time, identification of the regulated community is poor. Nation-wide registers of permits exist rarely, although permit registration is mandatory.

232. Some important aspects or requirements are not addressed in environmental permits. Environmental permits do not consider cross-media transfer of pollution, emergency cases, accidents, technology changes or shutdown, and decommissioning of the facility. Self-monitoring schedules and reporting obligations, as well as conditions of revision or withdrawal, are rarely set in permits. Neither the operation nor maintenance aspects are reflected. Permits do not provide incentives to reduce resource and energy intensity of a process, while those are extremely high.

233. Partially, those aspects are taken into account through other instruments. «Environmental passports» were introduced in the early 1990s and required enterprises to be assessed from such points of view as energy and resource intensity, material flows, cross-media interactions, etc. Although they can be considered as a first step toward cross-media integration and environmental efficiency, passports remained just a form of reports duplicating permit information. All countries, except Armenia, Russia and the Ukraine, abolished them in the late 1990s because of a high administrative burden and low impact on the regulatees. Recently, yet another document called «industrial safety declaration» was introduced in several EECCA countries to prevent and manage industrial accidents.

**Procedures and stakeholders**

234. The role of actors and the key stages of permitting are comparable with international practice, except for dialogue and participation opportunities. Regulators, industry and the general public are all recognised as important actors in the framework of permitting. The industry must initiate the permitting process, prepare permit applications that include proposals for ELVs. Third parties (private or quasi-government agencies) are sub-contracted to prepare the applications. Competent authorities (different for air, water and land) are responsible for reviewing the applications and issuing the permits. Depending upon the potential impact of a facility, responsibility for permitting may be divided between central and territorial agencies. With some degree of variation, approaches and procedures are similar for major industry and small and medium-sized enterprises.

235. After the permits are issued, the enterprise is required to monitor the emissions and discharges, provide regular reports to environmental and statistical agencies, and pay environmental fees/taxes. Environmental enforcement agencies control compliance with permit requirements. Fines and other sanctions are applied in cases of non-compliance.

236. Although there is room for «negotiating» when setting temporary ELVs in the permit, current procedures hardly allow for a meaningful dialogue with the regulated community. The reasons explaining this fact are at two extremes: (i) failure to change the command-and-control mentality and (ii) exposure and weak resistance to lobbying by powerful industry.

237. Opacity for the general public is common. Legal requirements to inform and involve the general public exist but their implementation mechanisms are weak.

238. Poor interaction between regulators issuing permits is typical. A serious lack of communication between authorities issuing permits and those assessing compliance has been reported. This reduces the ability to check the environmental compliance and undermines regulators' credibility.

239. The separation of the permitting procedures for different media forces industry to follow fragmented, time and resource consuming application processes. In total, up to three years can be

spent to obtain environmental permits, while their renewal is requested once every one to three years. ELVs have to be recalculated every five years. This approach transformed the annual renewals of permits into a courtesy visit to the regulator, which does nothing other than consume time of both regulators and industry.

**Links to other instruments**

240. Interaction with other policy instruments exists but lacks coherence; some important instruments are absent. Permitting of new facilities, in principle, is closely linked to EIA and SER; substantial changes in operation might be subject to SER. Only sporadically are the same technical documents used at all these stages of regulation. The information gathered during inspection or ambient monitoring is utilised to decide on a permit award, but the flow of information is intermittent and the compliance control or self-monitoring programmes are quite limited.

241. Compliance assistance explaining permit requirements and procedures is not offered. Very poor access to exhaustive information on permitting maintains the high demand for paid consultancy services, which sometimes are offered by «state enterprises».

242. Lax enforcement accompanies the permitting systems. Many managers prefer not applying for permits at all; compliance with the permit requirements decreases as well, while sanctions are difficult to enforce against enterprises operating without a permit or in breach of its conditions.

243. The current level of resource pricing, pollution charges and non-compliance fees serves mainly the revenue-raising purpose and directs the regulatees toward end-of-pipe solutions. Cases were reported of administrative costs of permitting being higher than pollution charges and fines. Given the unachievable ELVs, the use of temporary ELVs is rather a rule but exception, therefore pollution taxes are frequently calculated at a higher rate. This design makes the industry consider that the current regulatory system creates a perverse financial incentive for governments. Lately, large companies have challenged this system in court.

244. Non-regulatory instruments are being gradually introduced. For example, self-audit is becoming widely known but is not applied properly as governments tend to request its compulsory use. ISO-certified environmental management systems are not yet widespread and many regulators believe that industry adopts these systems only for the sake of image improvement. A few instruments, which have a high potential to increase effectiveness of permitting (for instance, environmental accounting) are missing.

**Potential and driving forces for improvement**

245. Improvements can build upon the strengths of current permitting systems. There are strengths in the current systems: they are in place; major types of pollution are covered, and accident risks started to be regulated; prevention, energy and resource intensity and mass flows at a facility have been introduced as concepts by environmental passports. The responsibilities of major stakeholders are defined, and the existing institutional set-up can be optimised. Existing technical expertise is advanced enough, in particular if supplemented with a better access to information on innovation worldwide. Economic expertise is growing. Finally, both authorities and industries started to recognise the need for having effective permitting systems. Thus, relying on international assistance, many EECCA countries (*e.g.* Armenia, Kazakhstan and the Kyrgyz Republic) already strengthen the existing permitting systems.

246. Several EECCA countries aspire to European integration. Expectations exist that the concepts that are at the core of the European Union's permitting system may be effectively and efficiently adapted to the conditions in the EECCA region. Selected elements of this system are being introduced on a pilot basis in the Russian Federation. Its legal basis is being approximated in Moldova and the Ukraine.

247. The need to regulate environmental impacts more effectively is another driving force. In the EECCA region, the increase in the level of pollution is clearly coupled with economic development. The statistics show that air emissions are increasing as the industrial production is recovering. This

poses a serious threat to human health, since many urban agglomerations evolved around major industrial units.

248. Furthermore, EECCA countries are far behind OECD countries in environmental efficiency and are characterised by extremely high resource and energy intensity. As competition and trade increase, enterprises will be more motivated to introduce resource-saving technologies. Expected changes in energy and water tariffs will re-enforce this move, but their slow reform may require additional incentives to be provided through permitting systems.

249. The restructuring of permitting systems is already urged by the political objective to deregulate economies in EECCA countries and ease investment. In particular, foreign direct investment stimulates the need to achieve a certain level of convergence with regulatory regimes that are known and trusted by potential investors.

**Possible reference models**

250. Regulatory reforms in many countries targeted consistency, administrative simplification, compliance assistance, transparency and accountability. In the North-American countries, substantial efforts were put to provide a better public service within single-medium permitting programmes. Recently, codes of practices for certain industrial sectors have been introduced in Canada; the United States have developed a special guide to improve customer service in permitting. In several regions, institutional integration took the form of «one-stop shopping» permits.

251. Integrated permitting, which regulates cross-media transfer of pollution, is considered as the one achieving best results in protecting the environment as a whole, though its implementation remains a challenge. Many countries already use or gradually adopt this approach. For example, the European Union (EU) enacted in 1996 the Directive on Integrated Pollution Prevention and Control (IPPC) that aims at large installations. In the United States, the «Action Plan for Achieving the Next Generation of Environmental Permitting» of 1999 sets, among others, the goal of «moving toward a more integrated permitting system». Some countries introduced integrated permitting as a pilot exercise; most largely this approach was applied in the EU accession countries. In pursuing reforms in the EECCA region, this experience might help to motivate and prepare changes.

**Objectives and ways for future development**

252. The permitting systems in the EECCA region need improvement and the long-term goal of improvements in the regulation of large industry could be a model corresponding to the following characteristics:

- Focused on environmental performance and case-by-case regulation of a facility through-out its entire life cycle, i.e. design, construction, operation and decommissioning;
- Entailing less administrative burden;
- Accountable, clear and transparent to stakeholders;
- Better co-ordinated with other policy instruments.

253. In EECCA countries, a pre-requisite for effective permitting is a rational system of environmental quality standards. Making MACs feasible and enforceable will enable effective reform in medium- and long-term perspective.

254. The most practical way of reaching the development goal is a gradual adjustment of the existing systems over a longer period. In addition to this evolutionary development, «co-existence» of different models may be favoured to test effectiveness and implementation problems of a new system in a certain jurisdiction, a group of pilot enterprises or a sector. A «revolution» requires strong political will and high investment at once, therefore is not feasible in the EECCA region.

255. At the very beginning of the reform process, the assessment of actual situation and potential is needed in each country. This should be followed by the development of country-tailored

implementation schedules. It will be crucial to remember that all stages of the reform will require active dialogue with industry and the general public.

256. At a minimum, the current single-medium permits need to be improved in a short-term perspective. Among others, permits need to:

- Describe permit conditions in legally enforceable terms;
- Set requirements for good operation and maintenance of the facility;
- Specify monitoring schedules and reporting requirements;
- Indicate sanctions for non-compliance and false reporting;
- Describe actions in the case of any changes in production or incidents affecting the environment, and change of ownership;
- State actions to be taken for the facility's decommissioning;
- Be consistent in terms of requirements across all regulated media.

257. Deregulation may begin by prolonging the standard duration of permits' validity. This change should be based on a much better communication with environmental inspectorates, otherwise the risk of overlooking important changes and impacts is high.

258. Permitting procedures and institutional arrangements need improvement. Procedures need to be streamlined and elaborated; in particular, decision-making policies will need serious development. The competent authorities might establish permitting committees to exchange information and co-ordinate decisions taken by different environmental units regulating air, water and waste, and even with other regulators. Permit registers and intra-agency or inter-agency electronic networks can and should be developed to track media-specific activities and make this information available to all regulators. The efforts to co-ordinate the decision-making more effectively should lead to consistency of procedures across all media and institutional integration through «one stop shopping» system, when the applicant deals with one person from a competent authority who ensures co-ordination with all other regulators. Even more procedural simplification is needed in the case of small and medium-sized enterprises (SME), and EECCA countries may want to use the existing experience in this field.

259. To make the systems clear to the regulated community and the general public, competent authorities might develop guidelines that would comment the procedures and application forms. Higher priority should receive information supply to SMEs. Web sites may be used to disseminate these guidelines, as well as to offer electronic application forms and post concrete applications or permits. Informally, industry may be advised to use guidance documents, available from OECD countries, as a source of updated information on the last developments in a certain sector. Public participation mechanisms need to be strengthened and become a routine practice.

260. Links with and design of other policy instruments should be improved. It will be important to optimise the system of compliance monitoring, including self-monitoring by enterprises, ambient monitoring, inspection and community monitoring. Further development will need self-auditing and environmental management systems. Introduction by industry of environmental accounting systems will be an additional incentive to adopt environmentally efficient solutions in capital investment and operation. The creation of pollutant release and transfer registers (PRTRs) will help to ensure the transparency and fairness of permitting systems, and will exercise more pressure on bad environmental performers. Using voluntary agreements before the permitting systems become effective is premature.

261. Improved permitting systems require better staff training and integrity. While knowledge and skills may be improved using internal resources or through technical assistance, integrity is a fundamental issue that needs changes in the overall social and economic framework.

262. In the long-term perspective, permitting systems need to be oriented toward cross-media integration. Countries choosing the integrated permitting as a reference model for a long-term development should carefully assess its advantages and disadvantages and relate them to actual

conditions. Potential benefits of integrated permitting include internal efficiencies for the facility, streamlined application and reporting processes, incentives for pollution prevention and resource efficiency, reduced pollution control costs and enhanced relationships with the general public.

263. At the same time, integrated permits and compliance with them can be administratively and cost intensive. The disadvantage of an increasing administrative intensity for industry may not be valid in the overly regulated economies of the EECCA region. As per administrative load of competent authorities, the current extremely large scope of permitting will paralyse regulators if they continue applying uniform procedures and approaches for large industry and SMEs.

264. Concerns related to compliance costs might be more acute due to a poor economic situation and investment climate in the EECCA region. However, most of the BAT bring benefits through resource and energy savings, and decrease in charges for pollution; thus high capital investment might be balanced with lower operational costs.

265. In the framework of integrated permitting, the Environmental Quality Objectives/Standards are used in combination with Best Available Techniques (BAT) to regulate industrial pollution. Application of BAT as one of criteria to define permit requirements should not mean that the authority restricts the permitee's flexibility in choosing techniques or implementing technical innovation.

266. The BAT concept should not be rigidly interpreted as «best technology»; besides technologies, it involves a range of procedures, techniques, and issues such as plant maintenance, operation, etc. Economic aspects of permitting are reflected by the requirement of choosing «available» techniques, i.e. those ones developed on a scale which «allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into account the costs and advantages». Finally, BAT should not favour techniques or technologies of a particular national origin.

267. In general, the environmental authorities should adapt approaches to obtain better environmental results in their particular conditions and avoid "universal" use of a single policy instrument. Thus, using integrated permitting for major industry should not exclude other approaches (*e.g.* single-media permitting or general binding rules) in the case of smaller enterprises. If the compliance monitoring systems are upgraded through substantial investments in laboratory facilities, reporting and information systems, the EECCA countries may want to consider using tradable permits.

268. Pilot studies may be conducted to see how feasible the tradable permits are in the framework of immature markets. In any case, EECCA countries will need to monitor the way in which the EU will resolve the divergences between the BAT approach and tradable permits; this problem has been raised and is being addressed.

**Aspects that need consideration during the reform's design and implementation**

269. The political will and human capacity within environmental authorities in EECCA countries may not be sufficient to propel and implement reforms. Many decision-makers and experts are content with the present permitting systems and may reject any changes fearing to loose jobs, influence or income. The lack of clear criteria, accountability and of a culture of mutual respect when discussing with the permit requirements is not easy to address. Dispute on the confidentiality of data and information might arise, enterprises trying to hide their environmental performance. All these emphasise the need for competent, well-rewarded staff.

270. BAT-based integrated permitting is tailored to a certain overall economic and social framework, and its immediate applicability should not be over-estimated. Insufficient ability of some enterprises to invest in infrastructure does exist and might hinder adoption of cleaner production. The inability to pay, however, is not universal. Many firms can meet BAT-based requirements and some of them, as experience shows, adopted techniques that are comparable with those described in the EU's BAT reference documents.

271. Opposition and disregard from industry might continue. Although industry is likely to welcome feasible requirements and more effective permitting, vested interests may exist to keep the

situation unchanged, since paying taxes and fines is often easier than investing in infrastructure or staff training. In general, the environmentally careless attitude is unlikely to change if short-term investment interests continue to dominate. Companies may also continue to ignore environmental requirements because they understand that they are too many to control effectively. Thus, creating a deterrence atmosphere will be extremely important.

272. The reform of environmental permitting systems needs well-targeted and implemented technical assistance. The experience existing in EECCA countries suggests this has not always been the case. On the one hand, recipient institutions should be more precise in identifying their priorities and more accurate in meeting their own engagements. On the other hand, tighter quality control and quality assurance is required at the stage of assistance programmes' design and implementation.

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