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GUIDING PRINCIPLES OF EFFECTIVE ENVIRONMENTAL PERMITTING SYSTEMS

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PREFACE

Environmental permitting is a key instrument for reducing industry's environmental impacts, facilitating its compliance with environmental requirements and promoting technological innovation. Integrated environmental permitting addresses all significant environmental impacts of major industrial installations in order to protect the environment as a whole. Since the early 1970s, integrated permitting systems have been introduced in most OECD countries.

Many transition and emerging economies are now exploring possibilities of progressively moving toward an integrated permitting system that would replace the current cumbersome and ineffective multitude of permits and licenses for air emissions, water abstraction, wastewater discharges, waste generation, storage and disposal, and other environmental impacts. The countries of Eastern Europe, Caucasus, and Central Asia (EECCA) plan to use the approach of the European Union's Integrated Pollution Prevention and Control (IPPC) Directive (96/61/EC) as the principal benchmark for this purpose. However, each country will need to devise permitting systems that best suit its legal and institutional arrangements and social, economic and environmental priorities.

This document presents the key principles of improving environmental permitting systems by introducing integrated permitting for large industry and simplified permitting for small and medium-sized enterprises. It is based on the comprehensive *Integrated Environmental Permitting Guidelines for EECCA Countries* prepared and published, as is this document, under the auspices of the EECCA Regulatory Environmental Programme Implementation Network (REPIN). REPIN is part of the Environmental Action Programme (EAP) Task Force, for which the OECD Environment Directorate serves as Secretariat.

The Guidelines, which include strategic and procedural advice for environmental authorities, were a result of two year-long collaboration with EECCA country officials and experts.

The purpose of the "Guiding Principles of Effective Environmental Permitting Systems" is to:

- create a reference that will help governments to identify key features of an effective and efficient permitting system;
- generate high-level political and institutional support for permitting reform in individual countries;
- guide the gradual transition to a new environmental permitting system; and
- facilitate international cooperation on environmental permitting.

The views expressed in this document are those of the authors and do not necessarily reflect the official position of the OECD or its Members.

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Definitions

Best Available Technique (BAT) is a concept introduced by the European Union's IPPC Directive (96/61/EC) and is defined as follows: "*Technique*" means both the technology and the way the installation is designed, built, maintained, operated and decommissioned. "*Available*" means techniques developed on a scale which allows them to be used in the relevant industrial sector, under economically and technically viable conditions, taking into account the costs and advantages, and which are reasonably accessible to the operator. "*Best*" means most effective techniques for achieving a high level of protection of the environment as a whole.

Emission (Effluent) Limit Value (ELV) is a figure specifying the concentration or load of a pollutant allowed to be emitted or discharged to the environment from a specific installation in a given period of time or per unit of production.

Environmental Quality Standard (EQS) is a measure of the state of a specific environmental medium, in regard to a specific pollutant, representing an upper limit of acceptability based on the medium's carrying capacity, designed to protect human health or some element of the ecosystem.

General Binding Rule (GBR) is a set of standard conditions stipulated in a statutory document, covering operational aspects of an installation that all regulators should prescribe in relevant permits.

Installation means a stationary technical unit where one or more activities are carried out on the same site and that could have a negative environmental impact. Several "technical units" on the same site should be considered as one installation if they carry out successive steps in one integrated industrial activity, one of the activities is directly associated with the other, or both units are served by the same directly associated activity (located on the same site). *Existing installation* is an installation that has been legally operating at any time before the submission of the current permit application. Other installations are considered to be *new installations*.

Integrated Environmental Permit is a written authorisation to operate an installation, according to pertinent legislation, subject to conditions covering all of the installation's known environmental impacts that are considered significant by the permitting authority.

Integrated Pollution Prevention and Control (IPPC) is a concept that includes measures and procedures to prevent (wherever practicable) or minimise environmental impacts from industrial installations so as to achieve a high level of protection of environment as a whole.

Operator means a natural or legal person who is the owner or the manager of the installation and has the authority and ability to ensure compliance with the permit. Prior to an installation being put into operation, the person who will have control over its operation is treated as the operator, and that after an installation has ceased to operate, the person who holds the applicable permit is treated as the operator. If two or more operators run different parts of an installation, they should obtain separate permits.

Statutory ELVs are emission limit values stipulated in a statutory document (usually, in secondary legislation). Statutory ELVs may be generic or industrial sector-specific and represent minimum requirements (the least stringent ELVs) that may be set in installation-specific permits. Statutory ELVs are based on the state-of-the-art techniques at the time of their promulgation.

1. Evolution of Environmental Permitting

The overall goal of environmental permitting is to protect human health and the environment by defining (in a transparent, accountable manner) legally binding requirements for individual sources of significant environmental impact. Typically, permits issued by regulatory authorities establish limits for pollutant emissions into air and water and for generation and management of waste, together with any other environmental conditions that are specific to an individual installation.

Single-medium permitting – the traditional regulatory approach – derives from the way that environmental regulation developed as specific environmental problems (for air, water protection, waste management, etc.) needed to be addressed. As a result, an industrial installation may be required to obtain a large number of environmental authorisations from a variety of separate authorities that do not necessarily operate in a coordinated or cooperative way.

In this form of control, the levels of pollutants in discharges from installations are normally set on the basis that the environmental medium (water, air or land) into which they discharge must be protected to a defined level represented by an environmental quality standard (EQS). The EQS-based single-medium permitting essentially constitutes “end-of-pipe” regulation: it does not address issues such as waste minimisation through appropriate design and operation of the installation.

Under a single-medium permitting system, polluting substances may be transferred between different environmental media, and a solution to an air pollution problem (e.g., scrubbing of a gaseous emission) may create a water pollution or a soil contamination problem, and vice versa. Also, dilution and dispersion of releases to the environment in order to solve a local environmental quality problem may lead to environmental harm at greater distances. The consequent need to view the environment as a whole and to regulate it accordingly is what is now driving the evolution of an *integrated approach to prevention and control of environmental pollution*.

Integrated permitting means that emissions to air, water (including discharges to sewer) and land, as well as a range of other environmental effects, must all be considered together. It also means that regulators must set permit conditions so as to achieve a high level of protection for the environment overall. These conditions are commonly based on use of the concept of “Best Available Techniques” (BAT) which balances the benefits to the environment against the costs to the operator and emphasises pollution prevention and reduction rather than end-of-pipe control.

Integrated permitting was introduced in Sweden in 1969, in Denmark in 1972, and in the United Kingdom in 1990 before being mandated across the European Union in 1996 by Directive 96/61/EC on Integrated Pollution Prevention and Control (IPPC). The basic principles of IPPC were laid out in the OECD Council Recommendation on Integrated Pollution Prevention and Control C(90)164 of 1991.

In the EU, integrated permitting in general, and the BAT approach in particular, targets large and complex installations described in the IPPC Directive as having “significant potential for pollution,” including trans-boundary pollution. At the same time, small and medium-sized enterprises are usually regulated through simpler permitting schemes.

2. Fundamentals of a Permitting System

Principle 1: Permitting of All Stationary Sources of Significant Pollution

All stationary sources of significant pollution must be required by law to obtain an environmental permit as a precondition to their operation. The provision of environmental permits to industrial installations is a fundamental element of the regulatory process addressing pollution. A coherent permitting system is also necessary to ensure that economic competition at both domestic and international levels remains fair under environmental regulations and that economic development proceeds in a sustainable way.

Principle 2: Integrated Permitting for Large Industry

Large industrial installations, as defined in the national legislation, should be subject to integrated environmental permitting on a case-by-case basis, with the use of BAT being a fundamental requirement. The BAT concept suggests that the environment is a disposal route of last resort, to be used only to the extent that it is not practically and economically feasible to do anything else. There is sufficient flexibility in the BAT definition to recognize the importance of industry's economic and technical viability as well as difference of approach to new versus existing installations.

However, in situations where several installations, even equipped with BAT, may combine to threaten a local environment, compliance with EQSs becomes a primary consideration in setting individual emission limit values (ELVs).

Principle 3: Simplified Permitting for SMEs

Small and medium-sized enterprises (SMEs) should be subject to a simplified permitting regime as these businesses are unlikely to have sufficient resources and technical expertise to address the relatively complex requirements associated with integrated environmental permitting. In addition, the large number of SMEs makes integrated permitting too labour-intensive for the regulators.

There are various options to simplify the permitting regime that may ensure appropriate control of environmental impacts and at the same time allow environmental permitting authorities to devote more of their effort to the regulation of bigger installations with a greater potential to pollute the environment. These include general binding rules (see Principle 14) and registration (see Principle 15).

Principle 4: Appropriate Permitting Authority

It is essential to define in the law the administrative level to conduct permitting of certain categories of facilities: national or regional level for large industrial installations subject to integrated permitting, and regional or municipal level for small and medium-sized installations. Integrated permits may be considered by either one or several competent authorities, depending on the country-specific institutional setup. "One-stop shopping" systems, where the applicant deals with one designated competent authority that ensures coordination with all other stakeholder agencies, should be encouraged. It increases the consistency and predictability of the permitting process and reduces the administrative burden on both government and industry. The designated permitting authority may need to establish a dedicated *environmental permitting department* to exchange information and coordinate decisions between different internal units and communicate with the regulated community and other competent authorities.

Principle 5: Public Participation and Access to Information

The public should be given an opportunity to comment on permit applications before the competent authority reaches its decision and have access to the permit-related information after the permit has been

awarded. For the purpose of consulting the general public, it is appropriate to maintain a *permit register* accessible to the public, where applications and, eventually, permits would be placed, subject to consideration of commercial confidentiality or national security.

Principle 6: Extensive Stakeholder Involvement

Permitting requires a transparent process for involving all institutional stakeholders. Stakeholder consultations should be part of both the development of the regulatory framework for permitting (procedures, rules and guidance) and the permit determination process itself. Depending upon the requirements of national legislation and institutional arrangements, the permitting authority need to consult other authorities with related responsibilities or interests (other departments of the environmental agency, the environmental inspectorate in particular, health authorities, sectoral ministries, local authorities, etc.). Permit registers and interagency electronic networks should be developed to facilitate such coordination.

Principle 7: Outreach to the Regulated Community

Environmental authorities should make substantial effort through trade associations, environmental and industry newspapers or journals, industry seminars, etc. to ensure that operators are aware of its obligations under the environmental law. The environmental permitting authority may hold pre-application discussions with the operator before it submits a formal application in order to clarify relevant requirements. Nevertheless, it is the responsibility of operators to know the law that applies to their activities and to understand whether they require a permit for operation of any installation. Ignorance of the law is no defence against legal enforcement action for operation without a relevant permit.

Principle 8: Close Interaction with Environmental Assessment (EA)

While both EA and environmental permitting follow structured systematic procedures of identifying and analysing significant environmental impacts and making decisions related to the economic activity in question, EA has broader coverage, applies at an earlier stage of project planning, and considers a wider range of alternatives and mitigation measures. EA and permitting should be applied so as to maximise their effectiveness and avoid overlap. This should be achieved through:

- using EA findings in preparing and evaluating permit applications;
- including EA recommendations on mitigation measures, where appropriate, in permit conditions; and
- using permitting requirements to determine the scope of EA.

3. Permit Requirements

Principle 9: Clear and Enforceable Permit Requirements

No new or existing installation should be allowed to operate in a way other than authorised in a permit granted by the relevant authority. This permit must contain conditions that are unambiguous and, most importantly, enforceable. The key to simple, effective and consistent permitting is to base permit conditions on standards and technical guidance that have been agreed by all stakeholders and that are available to all, including the public.

The permit should either set conditions that refer to details contained in the operator's permit application or reproduce material from the application in the permit. The former approach has the advantage that the permit may be a relatively short document without a great deal of technical detail. However, its drawback is that the permit is not a "stand-alone" document and, for the technical detail, needs to be read in conjunction with the operator's application. The practice on this point varies from country to country.

Principle 10: Comprehensive Scope of an Integrated Permit

An integrated permit should contain conditions covering the following issues:

1. **The Permitted Installation.** This section of the permit should identify and describe all the activities at the installation that are covered by the permit. The land area on which the permitted activities may take place (the installation's site) should also be defined.
2. **Operational Matters.** Conditions related to operational matters must be based on BAT, as described in relevant technical guidance, taking account of the technical characteristics, geographical location and local environmental conditions of the installation. They should either confirm the operator's proposals or specify any further requirements. Conditions for operational matters should cover the following aspects:
 - Use of raw materials and water;
 - Prevention and control of emissions and waste;
 - Waste management;
 - Energy use and efficiency;
 - Emergency preparedness;
 - Monitoring systems; and
 - Decommissioning and site remediation
3. **Emission Limit Values.** ELVs are usually proposed by the operator and then amended, if necessary, and validated by the permitting authority. For large industry subject to integrated permitting, ELVs should be set based on the *combined approach* (see Principle 11). Conditions concerning ELVs for the regulated pollutants likely to be emitted in significant quantities should address the following:
 - Emissions to the atmosphere;
 - Discharges to surface waters;
 - Discharges to the sewer or wastewater treatment plant;
 - Discharges to the ground (unless they are banned by the law);
 - Noise; and
 - Other (odour, electromagnetic) impacts, if applicable.

4. **Off-site Conditions.** Subject to the provisions of national legislation, the permit may include a condition requiring an operator to carry out work (e.g., monitoring) on land not forming part of the site of the installation (subject to permission for access to that land). Off-site conditions should be directly relevant to operation of the permitted installation.
5. **Improvement Programme.** When the regulatory authority accepts an argument from the operator of an existing installation that it cannot afford an immediate move to a BAT, an improvement programme to achieve the BAT should be stipulated in the permit. The relevant technical guidance may give an indicative timeframe for the improvement programme's implementation.
6. **Records.** A permit should include conditions for making, keeping, and providing access to appropriate records. Typically, it should require the maintenance of monitoring results and of a log record of any failures that had, or could have had, an effect on the environment. The latter is necessary for accident investigation, for identifying environmentally critical equipment and for assessing the operator's maintenance performance.
7. **Reporting and Notifications.** The permit should specify reporting requirements for the installation, including parameters to report and the frequency of reports, based on the information provided in relevant technical guidance. In addition to matters concerned with the reporting of routine information, there should also be arrangements for notifying the regulatory authority about such events as exceedance of ELVs, accidents, temporary or permanent cessation of operations.
8. **Payment of Environmental Taxes and Charges (if applicable).** If the operator of the installation must pay taxes or charges for its polluting activities (air emissions, wastewater discharges, or waste disposal) or the use/extraction of natural resources (including water abstraction), the requirements for making such payments should be specified as permit conditions.
9. **Validity and Provisions for Renewal and Variation.** The permit should specify the date of its entry into force and the validity period. The permit should instruct the operator as to when he should apply for a renewal of the permit, when he is required to apply for a revised permit, and when the competent authority reserves the right to initiate the revision process. Small changes to operating techniques on an installation may be accommodated by way of a relatively simple, but formal, agreement in writing, without the need to apply for a revision (variation) of the permit. However, there should be a condition in the permit that sets out the requirements for implementation of such a provision.

Principle 11: Combined Approach to Setting Emission Limit Values in Integrated Permits

Setting ELVs in integrated permits should be based on a combination of the environmental quality-based approach and the technique-based approach. The *environmental quality approach* uses modelling to calculate the ELVs that would ensure compliance with the applicable environmental quality standards (for water or air). The *technique-based approach* aims at setting ELVs that correspond to the technical solutions that are capable of delivering a high level of environmental performance. Technique-based ELVs may be derived from a consideration of BAT for an installation, in accordance with the relevant technical guidance, or fixed in a regulation (statutory ELVs). Where compliance with an EQS requires stricter ELVs than would be derived from consideration of BAT, the EQS should take precedence and the stricter ELVs must be included in the permit.

In using the combined approach, the permitting authority should undertake the following steps:

- 1) Assess the BAT-based ELVs proposed by the operator in the permit application.
- 2) Consider whether applicable statutory ELVs are defined in the legislation, and if so, ELVs in the permit must at least comply with such fixed ELVs.

- 3) Calculate the ELVs that would be required to ensure compliance with the respective EQSs.
- 4) Set ELVs in the permit. If an EQS cannot be achieved even by the use of BAT at a particular installation, the regulator must either take measures to reduce discharges from other installations in the area (thereby ensuring compliance with the EQS) or refuse the permit in question.

The combined approach requires sound *management decisions* on the part of an environmental permitting authority, based upon careful case-by-case evaluation, to ensure that the ELVs that are ultimately included in an integrated permit satisfy both the BAT and EQS criteria and comply with any applicable statutory ELVs.

Principle 12: Availability of Technical Guidance

Consistency of approach to integrated permitting and to the setting of appropriate permit conditions depends on the availability of relevant technical guidance on what constitutes BAT. The operator in formulating his application and the regulatory authority in assessing it should both be informed by the same guidance on BAT. Without technical guidance, there would be substantial room for repeated disagreement between operators and regulators with respect to the identification of BAT, and judgements could vary widely between permitting authorities.

One useful source of such technical guidance is the European Union's BAT Reference Documents (BREFs), produced by way of a Europe-wide consultation process involving industry, EU Member State regulatory authorities, and relevant NGOs. The sector-specific BREFs cover technical and operational features associated with BAT for the sector, together with appropriate ELVs. There are also BREFs that address cross-cutting themes such as monitoring systems and economic and cross-media issues in integrated permitting. The EU BREFs may be translated into the national language and used directly or adapted to country-specific conditions and include locally available techniques to constitute a set of *national BAT guidance documents*.

Principle 13: Discretion of the Permitting Authority

Permitting authorities should be provided (in the legislation) with sufficient discretion to identify integrated permit conditions as there is no simple algorithm for determining BAT in any specific case, even in the presence of technical guidance. Informed judgement by experienced regulators is a crucial element of the permitting process. BAT guidance is neither prescriptive nor exhaustive, nor does it take account of local conditions, so permitting authorities always have to make site-specific decisions. However, if permitting officers deviate from the technical guidance substantially in setting permit conditions, they must justify their decisions in a detailed written explanation.

Principle 14: General Binding Rules for SMEs with Significant Environmental Impact

Standard permit conditions can be stipulated for distinct categories of installations with similar production processes through so-called general binding rules (GBRs). This system is used in several OECD countries (e.g., the Netherlands, Germany). GBRs should include both statutory ELVs based on "state-of-the-art" techniques for that category of installations and requirements for certain operational matters, as well as monitoring, record-keeping and reporting conditions. GBRs should also stipulate simplified application forms requiring operators to demonstrate compliance with the standard requirements.

The following criteria should apply before consideration is given to the use of GBRs:

- GBRs must cover a sufficient number of installations in a particular category to make the development of GBRs cost-effective (this is a matter of judgement by the regulator).

- The current status of technology and techniques in that category of installations must not be fast moving, as GBRs cannot be updated frequently.
- Installations must have a similar impact on the environment.
- The category of installations subject to GBRs should be covered by a well-organised trade association to ensure that requirements of the GBRs are practicable and acceptable.

Principle 15: Registration of Installations with Low Environmental Impact

The preferred regulatory option for many installations that intrinsically have no potential to cause significant pollution would be simple registration with local or environmental authorities, proving their low environmental impact. Such installations by their very nature have only negligible impact on environment and do not have to rely on pollution control measures to minimise that impact. Regulating them more extensively is unlikely to add benefit for the environment.

4. Procedural Aspects of Permitting

Principle 16: Transparent Permitting Procedure

Developing and issuing an environmental permit should involve the following general stages:

1. ***Pre-application activities***, focused on helping the applicant understand the nature of his obligations and what needs to be included in an application. The regulator must not imply any advance agreement as to the outcome of any application at this stage.
2. ***Preparation and submission of application by the operator***. For new installations and significant changes in existing installations, operators should apply for a new permit when they have drawn up full designs, but before starting construction work. There may be an application processing fee required, which may depend on the installation's size and on whether a new permit is requested or a revision of an existing permit.
3. ***Receipt and initial check of application by the regulatory authority*** to ensure that the application is valid, i.e., complete in a legal sense. If the application lacks essential information, the regulator may deem the application not valid and return it to the operator.
4. ***Consideration of commercial confidentiality***. The operator must demonstrate in a commercial confidentiality request (to be approved by the regulator) that revealing certain information, or its inclusion in a public register, would prejudice his commercial interests to an unreasonable degree. Similar arrangements need to be made when there are national security concerns.
5. ***Consultation on the application with other authorities and the public***. Following receipt of a valid application, the regulatory authority should solicit comments from other stakeholders and the general public in order to gather facts and opinions that would contribute to the determination of the application.
6. ***Assessment of the application and determination of permit conditions***. When the regulatory authority is satisfied that all information relevant to the application has been assembled, it should assess the application, using technical guidance. Then it must either determine permit conditions, having regard to all the requirements of the relevant legislation, or decide to refuse the permit.
7. ***Issuance or refusal of a permit***. If the permit is refused, the regulatory authority must notify the operator to that effect, giving reasons for the refusal. Otherwise, after a possible brief consultation on a draft permit with key stakeholders, the regulator should finalise the conditions of the permit (including its effective date and validity period) and send it formally to the operator. All the parties concerned should have recourse to an appeal.

It is important to set *time limits* for each stage of the procedure. Time limits will lead to reduced costs for applicants and make government agencies more accountable and responsive. The processing of an integrated permit application may require up to 150 days, excluding appeal time. The permitting procedure under GBRs is much shorter – up to 45 days, not counting appeal time.

Principle 17: Long Permit Validity and Clear Variation and Termination Rules

Long validity periods are necessary to simplify the permitting system and reduce the administrative burden on both the government and industry. Environmental permits in most OECD countries are most often valid for five to seven years while in some countries permit conditions remain in force until other factors trigger a revision.

The procedures for variation (revision) of a permit are broadly similar to those for its initial issue. Permits should be revised at the operator's initiative if changes are envisioned to the regulated process or if there are changes to the operator's ownership or contact information. A permit revision may be initiated by the competent authority if the applicable environmental quality objectives and/or standards have been modified.

Revocation or temporary suspension of a permit should be used only where exhaustive use of other enforcement tools has failed to protect the environment. The permitting authority or some other legal authority should have powers to suspend or revoke a permit, in whole or in part, by serving a formal notice on the operator. The operator may surrender the permit voluntarily if he ceases the activity for commercial or other personal reasons, but has to do so through a formal application to the regulatory authority.

Principle 18: Possibility of Administrative Appeal

Any person or body, including the applicant for a permit, should be able to make an appeal to the higher competent authority against a refusal to grant a permit or against certain conditions in the permit that has been granted. Provisions for appeal against decisions of the permitting authority will depend on the national legal framework, particularly on the degree of discretion afforded by the law to that authority. Appeal authorities and practical arrangements for administrative appeal are a matter of choice for individual countries. An appeal may be considered through comparison of the parties' written arguments or through a hearing, at the discretion of the appeal authority, but its evaluation should be transparent. A court appeal should always be possible as well.

5. Transition to an Effective Permitting System

The first step in the *transition to integrated permitting for large industry* is to determine the *scope of the integrated permitting system*, i.e., establish a list of industrial sectors and the minimum size (production capacity or output) of installations to be controlled under the integrated permitting regime. This determination may be guided by the list of sectors and size thresholds stipulated in the EU IPPC Directive, with a possible addition of other priority polluting sectors in the country. An inventory should be prepared of all the country's installations that fall under the designated categories. The final list of industry categories and capacity threshold values should be agreed in interagency consultations and discussions with industry.

Institutional and legal aspects of a transition to integrated permitting are also very important and include:

- Making amendments in the primary environmental legislation to introduce the fundamentals of the new system, development of a law on integrated permitting and implementing regulations for it;
- Management of the transition through effective stakeholder cooperation under the leadership of the environment ministry;
- Designation of competent permitting authorities at appropriate administrative levels (national and/or territorial), their linkage with environmental enforcement agencies, and coordination between the permitting and environmental assessment processes;
- Institutional capacity building in terms of addressing the enhanced needs for human and financial resources under the new system, development of permitting procedures and BAT guidance, pilot projects in industry, and extensive staff training; and
- Participation in the international exchange of experience in reforming environmental permitting systems.

Existing industrial installations will need management strategies for compliance with integrated permitting requirements and time to make the necessary investment. Even for new installations, integrated permitting cannot be made operational immediately because of the need to create appropriate legal and institutional arrangements and prepare technical guidance. Therefore, it is important to carefully plan the timing of introducing the integrated permitting system for industry by setting priorities among industrial sectors in order to bring them under the new regime in several stages. The criteria for industrial sector prioritisation include the environmental impact, anticipated compliance costs, economic and financial conditions of the industrial sectors concerned, as well as administrative capacity constraints of the permitting authorities.

The staged transition would help gain significant regulatory experience with the higher priority sectors before moving on to others. Different compliance deadlines for new and existing installations should also be established. While the preparatory phase of the introduction of the new permitting system (until first integrated permits are issued in the higher priority sectors) may last for 5-6 years, the full transition may well take up to 15 years.

The *transition to simplified permitting for SMEs* should happen at the same time as the introduction of integrated permitting for large industry, and both should be part of a coordinated permitting reform process. As large industrial installations gradually convert to integrated permitting, the country's national environmental authority will have to choose appropriate permitting regimes for the installations that are not covered by the integrated permitting system. While installations with intrinsically low impact can be transferred to a registration scheme quickly, the introduction of GBRs will take time and may not be appropriate for a significant number of installations. Therefore, for a number of years single-medium permitting will remain the default option for regulating SMEs that are either unsuitable for a GBR or scheduled to be covered by one at a later date. Thereafter, single-medium permitting should be either

phased out or retained for limited use, based on the medium-specific impacts and sectoral distribution of the SMEs that were deemed unsuitable for a GBR.

The introduction of a *GBR system* will require that national authorities prepare technical rules for a number of categories of installations. For each category of industrial installations identified to be suitable for GBR regulation, the development of a GBR is likely to take between six months and one year. Therefore, the entire process may take between 3 years for the first categories of SMEs and 10 years for the full intended coverage of the system. The priority in developing first GBRs should be given to industry categories with the biggest number of installations (to achieve the biggest reduction of administrative costs upfront) and with the strongest industry associations (to facilitate the GBR development process). Unless the GBRs differentiate the requirements for new and existing installations, existing ones should be given a grace period of up to three years to comply with the GBR requirements, depending on the sector (this grace period should be specified in the GBR itself).

The introduction of *registration* for installations with intrinsically low environmental impact should be prepared once the criteria defining such installations are agreed. The system should become operational once the relevant laws and regulations (including a standard procedure and application form for registration) are promulgated, i.e., within 2-3 years from the start of the reform process.