

European Union Network for the Implementation
and Enforcement of Environmental Law

**The Application of
General Binding Rules
in the Implementation of
the IPPC Directive**

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IMPEL

The European Network for the Implementation and Enforcement of Environmental Law, is an informal network of the environmental authorities of European Union Member States. The European Commission is also a member of IMPEL and shares the chair of management meetings.

The Network is commonly known as the IMPEL Network

The expertise and experience of the participants within IMPEL makes the Network uniquely qualified to work on certain of the technical and regulatory aspects of EU environmental legislation. The Network's objective is to create the necessary impetus in the European Community to make progress on ensuring a more effective application of environmental legislation. It promotes the exchange of information and experience and the development of greater consistency of approach in the implementation, application and enforcement of environmental legislation, with special emphasis on Community environmental legislation. It provides a framework for policy makers, environmental inspectors and enforcement officers to exchange ideas, and encourage the development of enforcement structures and best practices.

Information on IMPEL is available on its web site:

<http://europa.eu.int/comm/environment/impel>

This report is the result of an IMPEL project. It does not necessarily represent the view of the national administrations or the Commission. The report was adopted at the IMPEL Plenary Meeting of 18-21 June 2001 at Falun, Sweden.

EXECUTIVE SUMMARY

This report describes the results of an IMPEL project which took place during 2000 assessing the potential use of general binding rules (GBRs) in the implementation of the IPPC Directive. The project consisted of a series of meetings and a final seminar with participants from regulators from a range of Member States and Accession States, which debated issues and reached tentative conclusions. No Member State has so far developed and used GBRs specifically for the implementation of IPPC, so it is expected that the conclusions reached in this report will be revised as practical experience is gained.

Article 9(8) of the IPPC Directive allows for Member States to use GBRs in place of certain aspects of installation specific permits, as long as the integrated approach is maintained and an equivalent high level of environmental protection is ensured. However, the Directive does not provide a definition of a GBR. Three possible alternatives were noted:

- A statutory set of standard conditions applying to the entire operation of an installation;
- A statutory set of standard conditions applying to one or more aspects of the operation of an installation;
- A statutory set of minimum conditions established at a national level and binding on regional regulators.

The need for ensuring an equivalent high level of environmental protection means that GBRs cannot be used where there are particular local environmental sensitivities which can only be assessed using individual BAT determinations. Thus GBRs are appropriate where emissions do not lead to local problems or where interactions with individual media are predictable.

GBRs (though not necessarily by that name) are used for various regulatory purposes by a number of Member States. These may take the form of standard emission limits for individual categories of installation or standard conditions for the entire operation of installations. Within the latter category most are used for very small processes which are not included within the IPPC regime, although some, eg in the Netherlands, would apply to IPPC installations.

Some consideration has been given to the development of GBRs for IPPC. For example, a GBR has been drafted for the regulation of intensive animal units in the UK and a draft GBR is under development for the cement industry in Spain. However, none have been finalised.

GBRs have a number of advantages, not least that, once developed, they can simplify permit applications and determinations for the regulator and industry, thus reducing costs. The advantages and disadvantages will vary widely between Member States depending on the nature and structure of the regulators and industrial sectors and the number of IPPC installations of each category.

The project identified a number of criteria that should apply before consideration is given to the development of a GBR. These include:

- That a GBR must cover a sufficient number of installations of that category to make development of a GBR cost effective.
- The current status of technology and techniques in the category must not be fast moving, as GBRs cannot be updated frequently.
- Installations must have a relatively uniform impact on the environment.
- The sector should be covered by a well organised trade association to ensure agreement on the details of the GBR are acceptable.
- GBRs must be amenable to inclusion in a statutory document.

In using GBRs, there is a need to ensure that some opt-out is possible to take account of unforeseen environmental concerns or changes in technological development. Such opt-outs could be initiated by the regulator or operator. If this should occur, a full BAT determination would be required.

GBRs will require review whenever significant changes take place either to the techniques used by that category of installation or to the understanding of the environmental impacts of its operation. Revised GBRs should include requirements for an improvement programme for those installations permitted using existing GBRs.

GBRs might pose some problems for stakeholder participation, particularly during public consultation on permit applications, as the conditions to be applied cannot be varied. However, use of a GBR might reassure the public that high standards will be applied and draft GBRs should be subject to public consultation. If significant local concerns are raised, the possibility of opting-out of a GBR might be considered, thus leading to a full BAT determination.

It is important that Member States share information on the development and use of GBRs. In particular, the project recommended that a library of GBRs be maintained by IMPEL. At the Paris IMPEL Plenary in December 2000 this was agreed.

Recommendations for future work include:

- For Member States to review existing GBRs to ensure that they meet the requirements of the IPPC Directive.
- For AC-IMPEL to consider whether different benefits, criteria, etc, might apply for Accession States.
- For Member States to examine the criteria outlined in the report and exchange their experience on these.

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THE APPLICATION OF GENERAL BINDING RULES IN THE IMPLEMENTATION OF THE IPPC DIRECTIVE

FINAL REPORT OF THE IMPEL PROJECT

1 Introduction

The IMPEL project on the use of general binding rules (GBRs) in implementing the IPPC Directive began in early 2000. The project brought together representatives of regulatory agencies from a number of Member States to discuss a wide range of issues relevant to the nature, development and use of GBRs. The project concluded with a seminar in Rome bringing together representatives from Member States and Candidate Countries to discuss the preliminary findings of the project team. The conclusions of the project are presented in this report. However, because there is currently limited experience of the use of GBRs in implementing IPPC in Member States, these conclusions should be considered as preliminary and it is expected that they would need to be revisited as Member States progressively implement the Directive.

Objectives and Operation of the IMPEL project

The project was led by the Environment Agency of England and Wales. It began with a seminar in May 2000 which brought together representatives from seven Member States. It discussed preliminary ideas presented by the Environment Agency. In the following months these ideas were further discussed in workshops in Copenhagen and Stockholm and by individual members of the project team with contacts in different Member States. The project team presented its preliminary conclusions to a wider audience in Rome in October 2000. Further details of the participants and operation of the project are given in Annex I.

The objectives of the project in the terms of reference were:

An exchange of information and development of best practice on general binding rules. To cover the following aspects:

- the circumstances in which they might be used;
- legal mechanisms for establishing and varying GBRs;
- involving industry and other s in developing GBRs;
- how information in BAT Reference notes (BREFs) might be incorporated into GBRs.

Structure of the report

This report will begin by providing a brief outline of the current use of GBRs in Member States. This will cover both GBRs developed prior to the implementation of the IPPC Directive and proposed development specific to the Directive. This will be followed by a more detailed typology of GBRs and an examination of the specific requirements of the Directive. The report will then consider the roles of different institutions in the development and use of GBRs and summarise conclusions on the advantages and disadvantages of their use. This will enable an examination of criteria for developing and using GBRs. The report then continues with sections examining

the review of GBRs, the categories of installations appropriate for GBR use, stakeholder participation and information exchange. It finally concludes with recommendations for future work on GBRs.

2 Current and proposed use of GBRs in Member States

The project was unable to identify any GBRs developed within Member States for the purposes of implementing IPPC. Indeed only Spain and the UK had reached the stage of drafting such a GBR (of types 3 and 1 respectively, as defined in section 4 below). Thus was not possible to survey current experience in terms of the implementation of the Directive. Such an assessment will need to wait until Member States have more experience in implementing IPPC.

In contrast, it is important to note that several Member States have experience with GBRs outside of the context of IPPC. These may either be for categories of installation not covered by the Directive or were developed earlier for installations that now will be regulated under IPPC.

This section will begin by providing a brief overview of existing GBR use in Member States and then consider developments specifically related to IPPC.

Existing GBR use

Before providing specific examples of existing GBRs it is important to stress that these cannot be considered to be *necessarily* equivalent to GBRs under IPPC. Even though they may establish standard operating conditions (and may 'look' like an IPPC GBR) they may not have been developed while taking account of the overall requirements that are imposed by the IPPC Directive, such as the integrated approach to environmental protection. This is not to say that any particular GBR would not be applicable, but the project was unaware of any analysis demonstrating that such GBRs do indeed conform to all of the requirements of the Directive. Having said this, existing experience of GBRs in Member States is likely to be important in determining the ultimate role that GBRs will play in implementing IPPC.

Some Member States have extensive experience of establishing standard obligatory conditions apply to some aspects of the operation of an installation. The most notable examples are probably the limits defined in Germany, eg TA Luft, which establishes a wide range of specific air emission limits for different categories of installation. There is a wide range of such rules, covering small installations, particular operational conditions, etc. A full description of practice across the EU, is not provided here not least because it is not clear what relationship the practice would have to GBR use in IPPC. This report will provide a brief outline of existing practice in one Member State - the Netherlands. This is merely an example of how different GBRs may be used in a general regulatory system and does not imply that the Dutch experience is more appropriate to implementing the IPPC Directive than that of any other Member State.

The Netherlands has extensive experience in the use of what are termed 'general rules' applying to all or some aspects of the operation of an installation. These cover a wide range of installations and may of three types:

- General rules that are used instead of permits.
- General rules used alongside permits.
- General rules directed to local authorities.

Where general rules are used instead of permits they cover processes which demonstrate a high degree of homogeneity and which occur frequently. The general rules contain an overall package of provisions and are issued by the national government, with inspection and enforcement being undertaken by the local authorities. If the general rules are found not to cover all of the operation circumstances of an installation, a local authority has the competence to issue additional requirements. This type of regulatory approach has been positively received by both competent authorities and industry as shown by a recent study by a government committee. These types of rules cover many types of installation, but selected examples include:

- Construction companies.
- Dairy farms.
- Dry cleaning companies.
- Crop farming.
- Petrol stations.

Where general rules are used alongside permits, they are developed to establish standard conditions for certain aspects or parts of installations. The remaining issues are covered in the individual permit. In developing the permit conditions, the competent authority must ensure that any conditions that are prescribed do not conflict with the general rule. Some general rules do indicate a range of environmental performance and the competent authority can establish the level of performance in this area. Some of these rules will apply to IPPC installations and examples include emission limit values for:

- large combustion plants.
- nitric acid plants.
- titanium dioxide plants.

General rules may also be directed to local authorities. These rules require the authority to attach specific requirements to certain categories of installation. Examples of such requirements include:

- Landfill sites.
- Municipal waste water treatment plants.

It can be seen that this experience in the Netherlands is highly relevant to the discussion on the potential role of GBRs in IPPC, as the range of potential IPPC GBRs is reflected in current Dutch practice.

GBR use for IPPC

As stated above only Spain and the UK have currently drafted, or are in the process of drafting, GBRs specifically for use in IPPC. However, other Member States are also

considering their potential role. This section will provide some preliminary information about the possible use of GBRs.

In the UK GBRs will be introduced in Spring 2001 to regulate intensive animal units. A major reason for the use of GBRs is that these installations have not been regulated previously and the use of GBRs will ease the permitting of the large numbers of these installations. The GBR will cover about 70% of the activity of the installation. It will not cover nuisance issues such as odour as these will require site specific action identified in the application and permit. Any deviation from the GBR (eg for local sensitive environments) will require the application to pay the usual fee for a full BAT determination.

In the UK, energy efficiency might be addressed using a GBR. However, there are doubts about how compatible this would be with the climate change levy as taxation and GBRs are not readily integrated. There is also consideration being given to the use of GBRs for low impact installations. These may include surface finishers and non-ferrous metal processes. The Directive has no lower limits for the latter categories of installation and, therefore, a process producing very little pollution is required to be regulated.

In Denmark industry has begun a project on the use of GBRs for surface treatment processes. However, it is still uncertain what the scope for the use GBRs will be.

In Spain GBRs will be issued at a national level to ensure that local authorities achieve consistent application of high standards in the implementation of IPPC. The ultimate aim will be to produce such rules to cover all categories of IPPC installations. Industry is particularly positive about this approach, being concerned about the need for a 'level playing field' of regulation across Spain. It is expected that the first GBR will cover the cement industry. Current practice in Spain may help the process of GBR development. Here environmental legislation is largely sectorally based and has led to the generation of sectoral environmental agreements. It is thought that these might form the basis of future GBRs. A voluntary environmental agreement would be beneficial as a 'dry run' prior to development of a GBR. This will iron out any problems, which are easier to overcome in a voluntary agreement than a statutory GBR. Such agreements should aim for improved environmental performance.

In Sweden there is currently early discussion within the Swedish Environmental Protection Agency on the use of GBRs to cover energy efficiency and resource management issues within IPPC as this is a major new area for regulation in Sweden. New legislation in Sweden has requirements for an operator to use energy efficiently. Each must be able to show formally that this issue has been reviewed for individual installations. Energy has a wider scope than BAT, ie it is not only about reductions in emissions. Permits will be used as the instrument to reduce energy consumption. A GBR might, for example, require an installation to prepare an audit and produce a plan. There has been an examination of the current regulation of wood treatment plants (regulated by individual permits since the early 1980s) to determine how efficient the system has been. The results show that the system has room for improvement and it is possible that the use of GBRs might be an option. However, the study has not examined the implications for enforcement.

3 Typology of GBRs

The IPPC Directive does not provide a definition of what a GBR is. Current use of GBRs in Member States (though not necessarily by that name) and the proposed use within IPPC varies (see section 4). The project identified three likely definitions of GBRs that would be used by Member States in implementing IPPC. Common to all of these definitions is an expectation that a GBR would be issued as a statutory document, ie as secondary legislation, thus distinguishing it from general applied 'standard conditions' that a regulator might otherwise adopt (see below).

Type 1: A GBR is a set of standard conditions covering the full operational aspects of an installation set out in a statutory document.

This is the preferred practical use of a GBR in those Member States where the benefits of a GBR in terms of cost reduction for assessing permits for installations is most apparent (see section 6). In this case the regulator would issue a permit, which contains the specific requirements identified in the statutory GBR.

Type 2: A GBR is a set of standard conditions covering some of the operational aspects of an installation set out in a statutory document.

A GBR covering part of the operational aspects would need to be included in a wider permit, although, given its statutory nature, there would be no possibility to alter its conditions. The GBR might set precise requirements, or be in the form of guidelines. Permits must contain emission limit values and these might be included in a GBR if that aspect of the operation was being addressed. When in a GBR emission limit value could not be varied to take account of local conditions. This type of GBR could include some flexibility, eg allowing a departure from fixed emission limits within a specified margin or some flexibility for the regulator to take account of local environmental conditions.

Particular aspects of operations that could be covered by a GBR might include (for more examples see section 10):

- monitoring and reporting requirements;
- environmental management;
- noise;
- energy efficiency, especially sector based agreements for energy use reduction.

A Member State might consider what advantage a *statutory* GBR for these requirements would have over *non-statutory* standard conditions which might be applied by the Regulator. The latter would allow some flexibility if absolutely necessary and avoid the process of agreeing a statutory document. A statutory document could aid operational delivery of the Directive where the regulator does not wish to enter into repeated debate with a large number of individual operators (eg for intensive animal units).

On a wider view one might view a continuum of 'standard requirements':

guidelines --- standard condition --- general binding rule

Thus 'standard' requirements could be established in guidelines which could be varied in practice. They might be established as conditions by the regulator or, finally, set out in binding statute in a GBR. The choice of approach will depend on the regulatory context of that type of installation. Standard conditions may apply within individually developed permits or be applied via a standard permit developed specially for that category of installation.

The particular type of approach taken by a regulator would likely depend on the number and nature of the relationship with the regulated industry.

Type 3: A GBR is a statutory document which prescribes the minimum permit conditions that all regulators should apply.

GBRs might be defined for one, many or all categories of installations by a central authority which become binding on regional or local regulators (possibly with a flexibility to apply stricter conditions if necessary). This ensures consistency of approach within a Member State, ensuring both that an equivalent high level of environmental protection is achieved across the state and that operators of the same categories of installation are subject to a 'level playing field' of regulation. This type of GBR is considered to be particularly appropriate where a central authority might have concerns about the ability of a local regulator rigorously to apply BAT in individual determinations.

The particular approach taken for any category of installation or type of activity for a Member State would vary according to institutional structures, permitting procedures, confidence in permitting, etc (see section 6). Thus the same approach should not be expected in all Member States.

4 GBRs in the IPPC Directive

The IPPC Directive does not provide a definition of a 'general binding rule'. The term is introduced in Article 9(8) of the IPPC Directive allows for the use of GBRs in place of *certain aspects* of installation specific permits. The English text refers 'certain requirements for certain categories'. The meaning is clearer in other official languages, such as French ('des obligations particulieres pour des categories particulieres') and Spanish ('obligaciones particulares para categorias especificas'). Thus a GBR must be directed to specified categories of installation and establish specified obligations for those categories.

The Directive allows the use of GBRs on the condition that they ensure that an *equivalent high level of protection is maintained* and that an *integrated approach to environmental protection* is still applied.

Additionally Article 9(4) of the Directive requires that the local aspects of site specific permitting be still maintained. These are the technical characteristics of the particular installation concerned, its geographical location and the local environmental conditions.

The IPPC Directive also lists a number of requirements which are applicable to all permitted installations. These include:

- The application requirements of Article 6 (applications for permits).
- Limits or conditions of Article 9 (3) (should be inherent within the GBR) (emission limit values in permits).
- Monitoring requirements.
- Measures for start up, leaks, malfunctions, momentary stoppages and cessation of operations (in particular the site plan).
- Environmental quality standard protection.
- Requirement to notify substantial changes or changes in operation etc.
- Public Register requirement of Article 15 access to information and public participation in the permit procedure).
- Supply of Pollution Emissions Register information.
- Advertising requirements.
- Reporting.
- Some emission limit values.
- Notifications of incidents.
- Broad requirements for energy use (eg the need for an energy plan).
- Soil contamination prevention requirements.
- Management conditions.
- Environmental management.

It should also be noted that work on general binding rules has potential for use outside IPPC. The new water framework Directive states, in its requirement for a programme of measures to achieve good water status (Article 11), that controls on water pollution may 'take the form of a requirement or prior authorisation or registration based on general binding rules where such a requirement is not otherwise provided for under Community legislation'. The water framework Directive does not define GBRs, but many of the issues identified in this project and subsequently determined by practice in Member States in implementing IPPC may have relevance as this new Directive is transposed and implemented.

Ensuring an equivalent level of environmental protection using an integrated approach

The IPPC Directive requires that use of GBRs should provide an equivalent level of environmental protection to that derived from individual permit determinations. A major purpose of the IPPC Directive is to ensure that pollutant discharges to different media are assessed with the aim of minimising the impact on the environment 'as a whole'. A GBR covering an aspect of the operation of an installation must, therefore, ensure that it can take account of environmental variability or that such issues remain part of the individual permit determination. For GBRs covering an entire installation, a number of issues relating to environmental protection need to be addressed.

For such a GBR to be appropriate it would also be likely that pollution should not have local implications, but be global in its impacts, so that a broad assessment for control is possible. For example, total emissions then could be determined on a sector wide basis, eg VOCs.

It was concluded that discharges to water posed the biggest problem in developing a GBR covering an entire installation, given its high variability (eg ecosystem sensitivity, rate of dilution, etc). A GBR might, however, be appropriate in this case if there was only one recognised form of treatment.

Air is a more uniform environment. For example, for highly toxic substances (eg dioxins) a GBR approach is appropriate, requiring techniques which reduces emissions to a minimum.

Land can be variable in its environmental sensitivity, but it should be possible to define impacts on land for a number of types of installation in a uniform manners, especially for less toxic polluting substances.

If individual substances, rather than total emissions, are considered the following conclusions were reached:

- Highly toxic substances are appropriate for GBRs (as above);
- Substances with no local impact (eg carbon dioxide) are appropriate;
- Substances with no impact in the medium of discharge are appropriate, (eg chloride in the marine environment);
- Raw materials use is appropriate to control substances (eg limiting nitrogen in animal feed or the efficient use of water);

Relationship between emissions and environmental quality standards

This is a difficult area, as ultimately control of pollutants to meet environmental quality standards is achieved by defining the conditions surrounding their emissions. For a GBR to be appropriate in setting an emission limit value and not breach an environmental quality standard, specific conditions must apply (although ultimately predicting this relationship may be very difficult). The project noted the following as being applicable in this regard:

- The type of stack (for air) must be relatively uniform so that the relationship between emissions and ground level concentrations remains similar;
- More generally it is necessary to be sure that substances are emitted in a similar way to ensure a uniform assessment of local concentrations and, therefore, potential impacts.

However, even when such requirements are met, local conditions might intervene. These might include changes to the environmental quality standards due to sensitive environments or the presence of other sources of the same pollutant this necessitating a reconsideration of the emission conditions.

Understanding 'equivalent'

It is clear that for an individual installation the application of a GBR may result in different operational conditions than might be applied following an individual permit determination. This could result in different consequences for the environment. Thus it is difficult to be sure that, at this scale (ie the individual installation), 'equivalent'

environmental protection is assured. However, if one views the requirement for equivalence at the scale of the category of installation (to which the GBR might apply), then the total benefit from use of GBRs across that category might provide overall equivalent protection to the environmental as a whole.

This might be taken further if the GBR, once developed, is applied to installations not included within IPPC (eg below the thresholds set out in the Directive), thus enhancing environmental protection. This would be easier for the regulator to achieve than extending the requirements for individual permit conditions. This argument would be difficult to sustain where there is a divergence of local conditions leading to potential high variability in damage or public concern. However, it may be applicable where impacts of emissions occur at a much larger scale, eg VOC emissions to air, or for the use of resources such as energy.

5 Institutional roles

Article 9(8) of the IPPC Directive states that:

‘Member States may prescribe certain requirements..in a general binding rule’.

The project concluded that the issuing of GBRs would be undertaken by governments in the form of a legally binding statute. They would not be issued by separate regulatory competent authorities. This means that the competent authority has no possibility to deviate from the conditions of the GBR, unless this power were to be so established in the statutory document itself.

Even though a Ministry might issue a GBR, it was felt that its development is likely to be led by the regulator. This is because GBR development requires extensive technical and practical expertise of the industries concerned. It should also be noted that there would be many parallels between the development of a GBR and the development of BAT guidance, which is undertaken by the regulator.

However, even though responsibility for developing a GBR would lie with the regulator, it is important that this is undertaken in close partnership with industry. Typically this would involve technical (including economic) negotiations with a representative trade association. Without such an association it is difficult to ensure that the consensus of the industry view is fully determined. Experience has shown that well organised and co-operative trade associations can significantly speed the development of a GBR compared to one that is uncooperative or that cannot ensure that its members will follow its recommendations.

It is also possible that industry itself could develop a draft GBR (with considerable cost savings to the regulator). However, while in future practice this cannot be discounted (indeed in Spain the cement industry developed voluntary guidance prior to national drafting on a GBR), there is still likely to be a requirement for significant involvement of the regulator to ensure that the specific permitting and other requirements of IPPC are properly addressed and the correct legal language is used.

Once a GBR is in statute, it is up to the regulator to apply it. Where more than one regulator exists in a Member State (eg a national body and local administrations), this

might not be the same institution as developed the GBR. In this case it will be important that the information contained in the GBR is clearly interpreted to the responsible permitting authority. GBRs might present different institutional roles for appeals than individual BAT determinations (which will vary between Member States). This is because there is no possibility to appeal the conditions within a GBR, but only, potentially, the use to which a regulator might have made with it, ie whether a regulator has followed inappropriate administrative procedures in dealing with an operator.

6 Advantages and disadvantages of GBRs

The project identified a number of advantages and disadvantages with the use of GBRs whether they pertain to all or part of the operation of an installation. Ultimately, a Member States would only use a GBR where its advantages outweighed its disadvantages. It should also be noted that many disadvantages were closely related to advantages, thus, for example, GBRs might aid in simplifying procedures, but this might hinder the adoption of an integrated approach to environmental protection.

Key advantages that were identified included:

- adoption of uniform emission standards;
- simplified applications;
- predictability and consistency;
- transparency;
- upward convergence on technological and other standards (this only occurs if the standards in GBRs are set at a high level);
- less bureaucracy;
- better focus for inspectors (ie they can focus their efforts on more complex installations);
- BAT is defined for all of the sector;
- easier to 'catch' old industry;
- less likely to distort competition;
- reduced costs for the regulator and the regulated (this applies in the long-term, as development of GBRs requires initial resource investment - costs are front-end loaded);
- uniform monitoring requirements - aiding transparency.

Key disadvantages that were identified included:

- GBRs are not as flexible as bespoke permits with individual conditions (eg they cannot readily take account of local conditions, eg environmental quality standards);
- application of a GBR removes the 'educational' benefits of individual permit determinations, ie by the operator assessing and understanding the environmental impacts of process operations and on the operation of the installation itself.
- public participation may be different as the conditions are not site specific as consultation will still occur but the possibility of change is less (see section 11);

- BAT will be fixed until the GBR is reviewed, ie there is nothing for the individual inspector to use to force improvements;
- there may be potential difficulties to gain acceptance by all operators within an industrial sector;
- there may be potential conflict with the cross media integrated approach, which is difficult to achieve with standard requirements
- GBRs do not fit well with the implementation of other pollution control measures, such as taxation, emissions trading or voluntary agreements. These measures require the operator to have some flexibility in establishing operation conditions, whereas GBRs, of whatever type, specify conditions precisely.

These advantages and disadvantages apply in varying degrees to different stakeholders. Many of the benefits accrue to the operators - simplification, less bureaucracy and reduced costs. While these also apply to the regulator, the disadvantages also apply, particularly in terms of its overall objectives of ensuring full environmental protection. In some areas the advantages and disadvantages are not clear. For example, some installations might find compliance with a GBR easier than for an individual permit determination. However, this is uncertain. Also use of GBRs might shift focus of permitting activity to more complex installations, thus reducing attention to GBR permitted installations - with uncertain consequences.

The relative balance or importance of each of the advantages and disadvantages will vary between Member States. For example, GBRs would result in, overall, less costs for regulators. However, where more than one regulatory body is involved, GBRs might be developed by one institution (probably national), but permitting undertaken by another (eg regional or local). Thus the institution responsible for developing GBRs would need to invest additional resources, while the benefits would accrue to those institutions responsible for permitting. This would not be the case where one institution is responsible for both types of activities.

The breadth of coverage of a GBR (ie whether it addresses all of some of the operational aspects of an installation) relates to its advantages and disadvantages. For example, if a GBR applies to only a limited part of an installation, this may not provide significant cost savings in time for the inspector making an individual permit determination. However, it may still enable important standardisation on issues such as monitoring or reporting. GBRs covering specific activities could be determined for each category of installation, but it might also be appropriate to consider specific procedures or technologies that might be appropriate across a number of sectors.

Charging

One specific benefit of GBRs might be to reduce the costs of permitting, which might be passed on to operators. For example, in England and Wales a first estimate for agriculture indicates that the minimum time to assess an application under a GBR covering all of the operation of an installation for IPPC would be four days. However, an individual site determination would take ten days – a significant cost saving. However, whether such cost savings are passed onto the operator depends on the charging regime in a Member State. It is worthwhile, therefore, highlighting some different Member State examples of current charging patterns.

In Italy charging is currently based on a system reflecting the value of the installation. This might be used within IPPC although consideration is being given to a charge based on the time spent by an inspector in determining an application. In Denmark IPPC determinations are regarded as high cost and a high fee is paid to the local regulator covering half of the administrative costs. This fee varies with the size of installation. Consideration is also being given to the possibility of charging on the time spent on determination. If either Member State changes to a time-based system, the time saved by the use of a comprehensive GBR would result in, potentially, a lower charge to the applicant.

The UK, in contrast, charges a set fee. Industry has not been in favour of a fee based on the time spent on determination for several reasons, including the lack of clarity on costs at the time of application and they are concerned that they would pay for any inefficiencies by the regulator. However, it is possible to establish a different set fee for individual BAT determinations and for GBRs, thus providing a benefit to the applicant.

It must be noted that, overall, the costs for an operator in producing an application are greater than the application fee. A GBR would make the production of an application easier, even for part of a process, eg an applicant would not have to justify the choice of technology if this meets the GBR conditions. Thus even without fee reductions, GBRs should be attractive in cost terms to industry.

Advantages and disadvantages with respect to different national conditions

The project considered the wide range of differing conditions within Member States which might affect either the advantages and disadvantages surrounding the development of GBRs or the practicalities of their use. The outline below begins with differences in competent authorities and regulatory systems and then continues with a consideration of other relevant differences. Only as GBRs are used within IPPC implementation in the different Member States will it become clear which of these differences are of more importance than others. Finally some specific consideration was given to particular issues in Accession Countries. The results are present in the form of two tables with some preliminary comments on relationships to GBRs.

Competent authorities and regulatory systems

Variation in national condition	Relationship to GBRs	Examples
Structure of pollution regulators: <ul style="list-style-type: none"> • National authority; • Central authority with regions; • Central authority and local authorities • Highly devolved structure (variable relationships of each to national environment ministry). 	These differences affect the distribution of costs and benefits, eg which institution develops GBRs and which applies them. It also relates to issues of consistency which GBRs may help to achieve.	In Denmark permitting and inspection are undertaken by local government, but development of GBRs would be undertaken by the national Environmental Protection Agency. In contrast, in the UK both activities would be undertaken by a single national body, eg the Environment Agency in England and Wales.
Size of competent authority, resources, spatial distribution.	Resource constraints might lead to use of GBRs for cost benefits, while a large size could stimulate use of GBRs to ensure consistency.	
Permitting systems: <ul style="list-style-type: none"> • Competent authority issues permit; • ‘Environmental Court’ system issues permit. 	Competent authorities might use GBRs without problems, while they might constrain the processes of a court system.	The Environmental Court system of Sweden provides a forum for regulators, industry and the public to debate and agree on permit conditions. However, in Member States such as the UK a public consultation procedure is used.
Permitting and inspection institutions may be combined or separated.	In both cases feedback between inspection and permitting is vital, this might vary with the use of GBRs.	In some Member States these functions are separated while in Member States such as Sweden and the UK they are combined.
Charging systems.	Different systems might affect the cost/benefit equation from use of GBRs.	See section 6.
Inspection procedures.	These might be simplified following use of GBRs.	In the Netherlands, use of GBRs has allowed more simplified inspections than with more complex individual permits.
Combined approach (use of emission limit values and environmental quality standards).	GBRs likely to focus more on emission limit values.	See section 3.

Regulatory history: <ul style="list-style-type: none"> • Scope (eg percentage coverage of farms); • Maturity of sector; • Previous use of GBRs in Member States. 	Significant expansion of scope by the IPPC Directive might stimulate use of GBRs for practical reasons.	In some Member States, eg Spain, industry is working closely with the regulator to promote the use of GBRs.
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Other differences

Variation in national condition	Relationship to GBRs	Examples
Number of IPPC installations.	High numbers might make use of GBRs more desirable.	The UK sees significant benefit in using GBRs for intensive animal units as these number about 2,000 and have not been previously regulated.
Type of IPPC installations.	Only certain types of installation are likely to be appropriate.	See section 7.
Size of IPPC installations.	Small installations are likely to be more amenable to coverage by a GBR than a large complex installation.	See section 7.
Trade associations: <ul style="list-style-type: none"> • Exist; • Engage in debate with regulators. 	Development of GBRs would usually require extensive dialogue with a trade association.	Experience in the Netherlands, Spain and UK has shown that the development of GBRs is improved when the trade association is well organised and constructive in its interaction with the regulator.
Public participation/sensitivity: <ul style="list-style-type: none"> • Local conditions; • Might want industry to ‘follow the rules’. 	Standardisation in a GBR might prevent local sensitivities being taken into account. Alternatively GBRs might demonstrate the imposition of high standard statutory rules.	See section 11.

<p>Political sensitivity:</p> <ul style="list-style-type: none"> • Fragmentation; • Conflicting policies/legislation (eg with animal welfare). 	<p>Regulators might be pushed to use GBRs in some cases for wider policy reasons.</p>	<p>In the UK development of GBRs for intensive animal units has enabled permit charges to be reduced for an industrial sector which has severe economic problems.</p>
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Advantages to Accession Countries

Accession Countries have a number of problems in ensuring effective and efficient permitting and enforcement systems for environmental legislation including the IPPC Directive. Accessions Countries have a wide variation in the state of industrial and regulatory development, so general comments may not be applicable to all states. The project concluded that GBRs might have particular benefits for these states such as:

- Reduced costs;
- Reduced workload;
- Emphasis on high standards;
- Consistency of regulation (both in practice and in training);
- Useful where regulatory body lacks maturity;
- May be a useful tool to prevent opportunities for corruption..

However, some disbenefits or other problems may apply:

- Development of GBRs may be hindered by lack of adequate trade associations (although GBRs could be used to initiate such debate);
- Lack of flexibility;
- Loss of the educational benefits that result from individual permit determinations;
- Uncertainty on relationship to pollution tax systems, which are widespread in central and eastern Europe.

The project concluded that further work should be undertaken (eg by AC-IMPEL) on the particular role that GBRs might have in aiding implementation of IPPC in Accession Countries and any constraints or opportunities relating to their development and application.

7 Criteria for developing GBRs

The IPPC Directive itself sets out two criteria which must be complied with before a GBR can be applied. These are that:

- an integrated approach is followed;
- an equivalent high level of environmental protection as a whole is ensured.

These have been considered above. There are also a range of practical considerations which the project identified that should be met for the development of GBRs. These include:

- *A GBR must cover a sufficient number of installations of that category.* Developing a GBR is resource intensive and so, to make its development worthwhile, it must be applicable to sufficient number of installations to gain the benefit from reduced effort on individual permit determinations. For example, in the UK there are up to 2000 food industry installations. More specifically there are about 70 dairy sites, which are largely identical in operating conditions. This number would be sufficient to justify development of a GBR. It is also likely that the GBR

would cover all of the operational aspects of the installation, with the possible exception of water discharges. No limits were proposed by the project as the threshold for appropriate use of a GBR will vary between Member States, not least on the relative cost of developing a GBR.

- *The current status of technology and techniques in the category must not be fast moving.* A GBR establishes standard technological requirements and techniques to be followed. While GBRs can be revised, there is no advantage to their use if frequent revision is necessary due to changes in technology. Experience in the Netherlands has shown that GBRs covering areas with rapid changes in technology require frequent revision, with resource implications for the legislation maker as well as the regulator and result in complex documents containing varieties of practice. Industry finds these to be confusing.
- *Installations should have a (relatively) uniform impact on the environment.* GBRs will establish standard operating conditions. If a category of process causes widely different environmental impacts in practice, ie they are site specific, the imposition of standard conditions is not possible. Ideally, an installation should discharge only to one medium, thus reducing the complexities of achieving an integrated approach.
- *The sector must be covered by a well organised trade association.* GBRs will need to be developed in a partnership between the regulator and the industry sector. A trade association is necessary to ensure that all concerns and variations within that sector are addressed during the development of the GBR. It should be noted, however, that close association with industry in developing GBRs has, in at least one Member State, led to negative reactions from NGOs, which have taken legal action (as yet unsuccessful) to overturn the results.
- *GBRs must be amenable to inclusion within a statutory document.* Given that GBRs are statutory, the details, conditions, etc, that they contain must be in a form that can be issued as a statute.

These criteria apply particularly to GBRs covering all or most of an installation. For certain technical and procedural issues, eg reporting, they are not appropriate.

An early assessment in England and Wales was made of the financial (in human resources) costs and benefits for developing and implementing the intensive animal unit GBRs. It is estimated that overall development of a GBR takes about twice the time input compared to development of general BAT guidance. However, there are significant savings in permit processing. In this instance only around 60 installations of each category are needed before the use of a GBR results in savings for the regulator. However, there is debate over whether the cost/benefit balance was similar in other situations. In Denmark, for example, a similar amount of time is thought to be necessary for the development of both GBRs and general BAT guidance, which would mean that GBR development would be justified for a smaller number of installations.

Relationship to BREFs

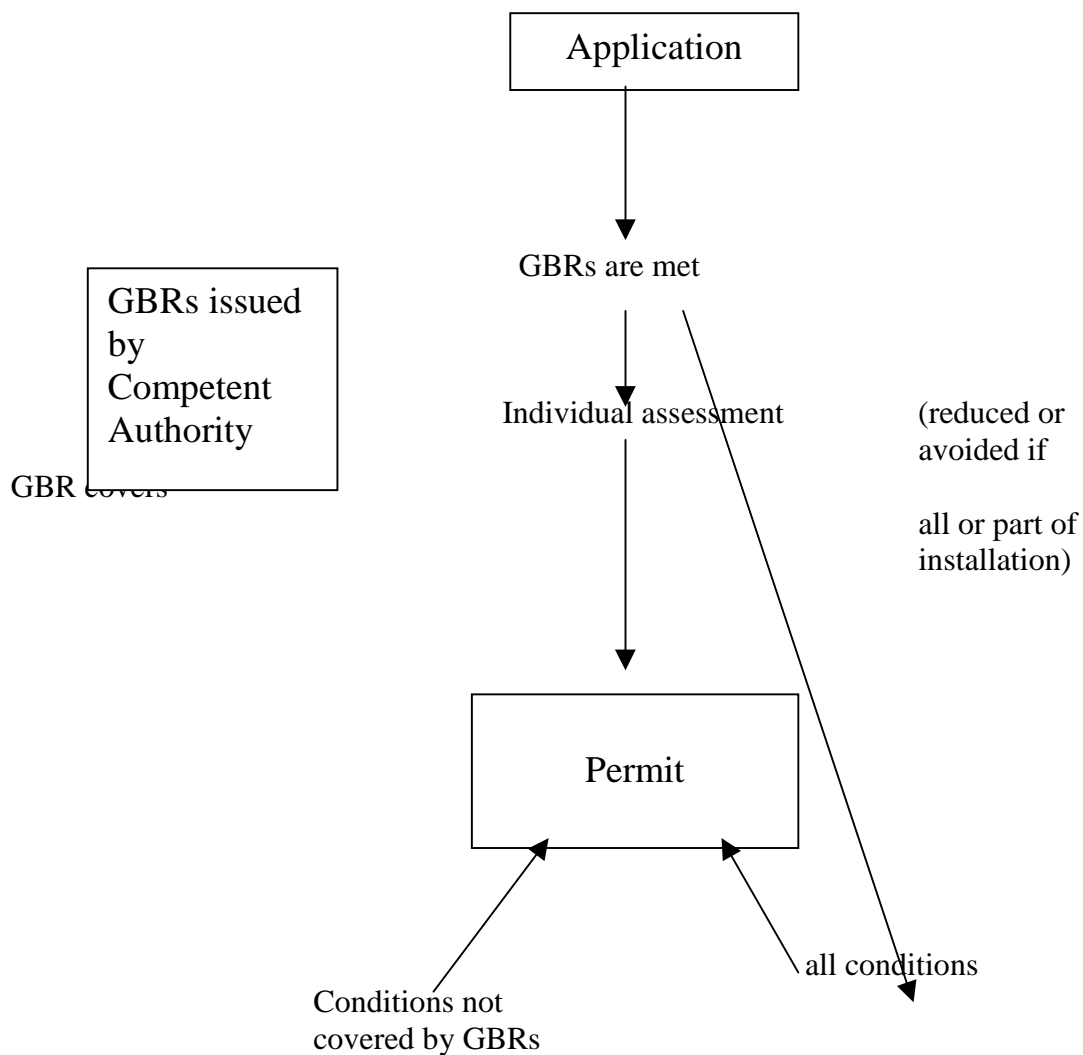
BREFs are not mentioned in the IPPC Directive, although Annex 4 states that Member States must take account of published information, which will include BREFs.

It is not necessary to have a BREF in order to develop a GBR, although the information contained within them would be usefully taken into account. Currently BREFs are producing a range of potential operational options, eg emission limit values. A GBR cannot have a range of options, but must state precise conditions. However, it might include rules for alternative actions, such as 'if one action is undertaken, a particular rule applies, while if another action is undertaken, a different rule applies'. It was concluded that, if consideration is given to a relevant BREF, the GBR should contain emission limits of a high standard, in order to ensure a consistent high level of environmental protection.

8 Criteria for the use of GBRs

The following diagram illustrates the way that a GBR might be used in a permitting procedure. This generally focuses on a comprehensive GBR. A GBR that covers only part of an aspect of an installation would be incorporated as a fixed requirement within an individual permit determination for the remaining operation conditions of the installation.

The use of GBRs can be viewed within the following permitting procedure:



A key issue is whether a GBR is absolutely binding on the regulator and/or the operator. This should be clear in the statutory document which establishes the GBR. However, an absolute binding GBR is inflexible (although it might contain requirements, eg 'to develop a waste plan' that allow variability). Production of such a GBR should only be undertaken if both the regulator and industry are confident that its application will always (until revision) be BAT. In particular, it must address the

full range of technical variability within that category of installation and local environmental concerns should not be expected to raise a problem.

An alternative approach is to allow for an opt-out to the use of a GBR in favour of a full BAT determination. This might be initiated by the operator (eg when alternative techniques are preferred that are not addressed by the GBR) or by the regulator (eg to ensure local sensitive environments are protected). If a full BAT determination is undertaken, all of the advantages (especially relating to costs for the operator and regulator) of a GBR would be lost. Clearly, there is little point in developing a GBR for a category of installation if a significant proportion of installations were to require opt-outs. The project identified the following conclusions concerning such exemptions:

- If there were likely to be requests for too many individual permit determinations, the development of a GBR would not be worthwhile;
- Individual determinations should not result in conditions resulting in lower environmental protection, otherwise it would encourage operators to seek to opt-out of GBRs;
- Where a GBR applies to the entirety of an installation an opt-out would remove all advantages of the use of GBRs. However, if it applies only to part of the operation of an installation, an opt-out might be less burdensome as the rest of the process operation would be individually determined;
- Opt-outs, if acceptable, should be all or nothing, ie a GBR is not a menu for operators to seek exemptions for individual components;
- Operators should be warned that an individual BAT determination might result in some stricter conditions than those contained in a GBR, especially if the GBR has been in place for some time and has not yet been reviewed.
- Any operator which opts out must pay the full costs of a complete BAT determination (depending on variations in applications fees, etc., between Member States).

GBR permitted installations require the same inspection, monitoring, reporting and other procedures as those subject to individual permit determinations. However, efficiency savings for the regulator may occur as standard conditions may improve the time taken by an inspector to determine compliance across a number of installations.

There is also an argument that even though some cross-media issues may be inadequately dealt with in GBRs, that their use (at least initially) may be beneficial in some countries where there are currently a number of old, poorly regulated polluting processes. GBRs could provide a pressure to improve performance and level the playing field. At a later stage full BAT determinations might be introduced.

9 GBR permit reviews

Article 13.2 of the IPPC Directive requires that permits are reviewed and this applies equally to GBRs. Permits require the assessment of BAT for an installation and BAT is the latest stage of development of operation and environmental protection. As BAT changes a review is essential. There will be different tools to achieve this, including BREF notes. BAT is dynamic, but a review is always a snapshot of its development.

A GBR permit covering all aspects of an installation should be reviewed only if there is a new GBR, otherwise there is no basis for a revision of operating conditions. However, the regulator must be able to step in to take an installation out of regulation by a GBR and undertake an individual BAT determination in some instances, eg when new EU legislation establishes new EQSs. Such developments, leading to a review, should meet the Directive's requirements for periodic review.

A revised GBR must include an upgrade timetable for installations permitted by older GBRs, ie there should be an "improvement programme".

It is also possible to undertake reviews of those aspects of GBRs where action is not specified in fine detail, eg a requirement to 'have a waste plan'. For example, slurry spreading in the UK will be controlled within a 'manure management plan', which will be reviewed every two years.

The project concluded that there can be no fixed review periods for GBRs and GBRs would not necessarily be subject to reviews more frequently than standard permits.

10 Potential categories that may be appropriate for GBRs

Some preliminary consideration was given by the project to the types of processes which may be appropriate for regulation through the use of comprehensive GBRs. Naturally, this varies with the understanding of what a GBR is (see section 3). Thus where GBRs might be defined as setting national obligatory conditions for regional or local regulators to follow, then all categories can potentially be included.

It may also be important to distinguish between the generation of GBRs for existing and for new installations. It may be easier, for example, for a GBR to set out 'new plant standards' than incorporate the variations in operation of existing plant. Alternatively, upgrade requirements (including a timetable) might be incorporated in a GBR for existing installations, in which case they would act as a stimulus to improved environmental performance.

However, where GBRs are defined as applying to a limited number of types of installations, the following categories of IPPC regulated installations were identified as possible for inclusion in a GBR:

- agriculture; (6.6)
- surface treatment and coating (2.6)
- food processing (6.4b) and
- rendering. (6.5)

Other low impact processes might also be appropriate. As appropriate these might be defined with specific emission limits, or by codes of practice.

Most of the categories for which GBRs might be appropriate have thresholds below which the IPPC Directive does not apply, but which national regulatory regimes might address. GBRs developed for such categories within the context of implementation of IPPC might also be applicable to such wider regulatory objectives.

11 Stakeholder participation

There are a range of stakeholders involved in implementing IPPC that need to be considered as GBRs are developed and used. These include:

- The public.
- The industry affected.
- Competing industries.
- Local or regional authorities.
- Other relevant authorities.
- NGOs.
- Academics.
- Neighbouring countries.

The involvement of industry has been discussed earlier and most of the points raised may also apply to other relevant authorities. However, in developing a GBR it is recommended that:

- A clear procedure for stakeholder input is developed.
- Stakeholders should be involved at an early stage.
- A draft GBR should be attached to a public consultation report.
- Clear guidance should be given to public authorities on the circumstances where information may be withheld to protect relevant interests.

The IPPC Directive emphasises the role of the public and the relationship of this role to the development and use of GBRs is considered in more detail. Article 15 establishes a series of requirements for public information and participation in the permit procedure. There are three components for this:

- applications for new permits and substantial changes shall be available to the public and an appropriate period of time shall be available for the public to comment upon them;
- details of the results of monitoring of releases required by permits shall be available to the public;
- the inventory of principal emissions and sources shall be public.

There is no obvious problem with any monitoring requirements (including inclusion in a pollution emission inventory) resulting from the use of a GBR to result in different procedures for supply of information to the public. The use of GBRs does not remove the responsibility of the operator to provide significant information in an application - this is a requirement of the Directive. Therefore, consultations on applications should still enable significant information provision to the public.

Public participation is more than information provision - it should influence the process. The court procedure for permitting in Sweden, for example, enables a negotiation between the public and a company. GBRs could remove this aspect of local democracy in this context. Thus the main question concerning public participation concerns its role in the permitting procedure itself. In an individual permit determination the permitting authority can take account of specific public

concerns (eg in relation to the local environment) and alter the permit conditions accordingly. However, a GBR will contain fixed conditions for the operation of an installation and there may be no possibility for the permitting authority to alter these. Thus public representations may not be able to be taken account of. This may, in certain circumstances, cause local political difficulties.

The production of the GBR itself should include public involvement, ie by the public being able to comment on a draft GBR. However, the nature of such a consultation is different to that of an individual permit. Comments on a draft GBR (which would be at a national level) would most likely come from the environmental NGOs. Local residents would be less likely to appreciate or even be aware of the consultation on the draft GBR forms the proposed permit conditions for an installation in their vicinity (especially if the installation is not yet in existence).

One possible approach to overcome this problem is for the regulatory authority to be able to reject the use of a GBR in favour of an individual BAT determination if it considers that representations made during consultation on an application have sufficient weight. The operator may, however, consider that it is being unduly penalised as costs increase. Thus, localised issues, eg nuisances such as odours, might not be applicable for some GBRs. One possible mechanism to take account of local issues is to add a requirement in a GBR that the applicant must show that it meets local environmental standards. This would assist in reassuring public opinion. In the draft GBR developed in the UK for animal units, there is a provision to require an operator to develop a plan to manage farm waste. This also could take account of local sensitivities.

It is also important not just to consider current public concerns and practices concerning consultation, but look to future developments. This is important as the European Commission has concluded that implementation of the Aarhus Convention (Article 2) concerning public participation will require amendment to the IPPC Directive (see COM(2000) 839, 18.01.2001). What this might mean for the relationship between a GBR permit determination and public participation is uncertain, but it will be an area that will require further analysis.

It must be noted that there may, however, also potential benefits to the regulator with the public in using GBRs. Most importantly, the regulator can inform and reassure the public that the installation is meeting the same standards as all similar installations in the country. This may not be so easy to demonstrate with individual BAT determinations.

12 Information exchange

GBRs are comprehensive in their coverage of the operation of an installation or an activity and, therefore, will be of particular interest to other Member States. However, it is important to note that, due to different regulatory traditions, it would not be appropriate to attempt to produce an EU-wide GBR. Information on GBRs as developed would be useful as they may be developed under other legislation, eg they are explicitly listed as an option in the new water framework Directive.

The project had significant discussion on how to undertake such information exchange, ie where should a ‘library’ be kept and what should be done with the information. It was concluded to recommend to the IMPEL plenary that a new GRB project should liaise with Member States on collation of IPPC GBR examples. This recommendation was accepted at the IMPEL Paris Plenary in December 2000.

13 General conclusions on the practical use of GBRs

There is likely to be considerable variability in the nature and breadth of GBRs used to implement IPPC in different Member States. However, it is important to stress the following key common points:

- GBRs will be statutory documents and, therefore, it is important to ensure all details are absolutely correct as revision will be slow and costly.
- Within IPPC GBRs applying to certain aspects of operation rather than covering the entire installation are likely to be more common.
- GBRs are, potentially, likely to be defined in different ways by different Member States.
- Regulators must adopt a strong partnership approach with industry in developing GBRs. Indeed if this is not possible, development of a GBR is probably not appropriate.
- GBRs should only be developed where an understanding of BAT shows that is not expected to rapidly change.
- GBRs are unlikely to be able to take account of complex cross-media pollution impacts or a high variability in local environmental sensitivities.
- It is also important to ensure that use of GBRs does not result in problems with public participation in permit determinations.
- It may be beneficial, therefore, to provide for a provision in a GBR for an opt-out by the regulator or operator so that problems concerning the issues above could be addressed in an individual BAT determination if necessary.

14 Summary of key work to be undertaken

The conclusions reached in this report must remain tentative as at present no GBR has been developed and implemented specifically covering the requirements of the IPPC Directive. Each may be revisited as practical experience is gained. IMPEL should review the rate at which GBRs are developed and used and, when sufficient experience has been gained, it might consider whether a follow-up project on GBRs would be beneficial.

Prior to this, the following recommendations are made for future work:

- Member States might review their existing use of GBRs, if they will apply to installations regulated under IPPC, to ensure that they will meet the requirements of the Directive.
- AC-IMPEL might consider whether there is a different balance of advantages and disadvantages in Accession States and whether development of GBRs could prove a useful tool in approximation.
- Member States might examine the criteria for development and use of GBRs in practical implementation and exchange their experience on this.
- The information exchange proposals outlined in section 12 should be implemented as soon as possible.

Annex I: Project Activities

The project ran throughout 2000, involving a series of discussion meetings and follow-up investigations. The project took the following form:

An initial start-up meeting in London in May hosted by the Environment Agency of England and Wales to which representatives from all Member States were invited. Prior to this meeting a questionnaire was circulated to all Member States requesting information on their current use of GBRs, use of GBRs in IPPC and background information on the implementation of IPPC. A background paper summarising key issues relating to GBRs and potential areas for discussion was produced. At the meeting issues were refined and representatives from four Member States (Denmark, Italy, Sweden and the UK) agreed to form a project team to discuss these issues further and prepare a draft report for wider discussion towards the end of the project.

Two discussion meetings were held in Copenhagen in July, hosted by the Danish Environmental Protection Agency, and in September in Stockholm, hosted by the Swedish Environmental Protection Agency. These debated the issues raised in the May meeting in more depth, examined additional questions which arose and considered feed-back on information from contacts made with individuals in other Member States. Before each meeting a background paper was produced which examined the issues to be addressed and, after each meeting, a paper summarising the discussion was produced. Relevant papers were circulated to participants from the May meeting that were not in attendance in July and September.

A final project seminar was held in Rome in October, hosted by Italian Environment Agency (Agenzia National per la Protezione dell'Ambient or ANPA). This brought together additional representatives from Member States and Accession States. Members of the project team presented the preliminary conclusions of the project, which were also provided to the participants in the form of a background paper. The conclusions reached were included in this final project report.

The project team consisted of:

Denmark: Susanne Andersen, Niels Bjorkbom (Danish EPA)
Italy: Alfredo Pini (ANPA)
Sweden: Mikael Lundholm (Swedish EPA)
UK: Sara Spillett (project manager), Helen Richardson and Lynn Wollen (administrative support) from the Environment Agency and Andrew Farmer (Institute for European Environmental Policy), who drafted the background papers and final report.

Other participants at the May meeting were:

Austria: Karl Maitz (Federal Ministry for Agriculture, Forestry Environment and Water Management), Andrea Jungwirth (Federal Ministry for Economic Affairs and Labour)
Ireland: Liam O'Suilleabhain (Environment Protection Agency)
Italy: Gisseppe Cascio (ANPA)

Spain: Maria Rodriguez de Sancho, Ana Rodriguez Roldan (Ministry of Environment)
UK: Steve Town (Department of the Environment, Transport and the Regions), Allan Duncan, Stuart Stearn (Environment Agency)

Other participants at the October seminar were:

Estonia: Aare Sirendi (Estonian Environmental Inspectorate)
Italy: Antonino Letizia, G Furrer, Gissepe Cascio, Roberto Ribelli (ANPA)
The Netherlands: Jan Teekens, Karin Nijenhuis (Ministry of Environment)
Slovenia: Janko Zerjav (Ministry of the Environment and Spatial Planning)
UK: Steve Town (Department of the Environment, Transport and the Regions)