BAT
EQO

BEST AVAILABLE TECHNIQUES/TECHNOLOGIES
ENVIRONMENTAL QUALITY STANDARDS/OBJECTIVES

WORKSHOP ON
ENVIRONMENTAL REQUIREMENTS
FOR INDUSTRIAL PERMITTING

REFERENCEGUIDE

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INTRODUCTION

A number of OECD Member countries apply both technology-based requirements ("BAT" either as limitations derived from technology assessment or application of specific technologies) for pollution sources and environmental quality objectives/standards ("EQO") in regulating pollutants. Early use of the concept of assimilative capacity was widely regarded as an excuse for pollution. Several factors are now cause for govemments to look again at environmental carrying capacity as a necessary aspect of management: better tools for measurement and risk evaluation, regional-scale and diffuse-source pollution problems to be solved, cost-effectiveness issues and improved environmental enforcement capacity. Technology-based requirements have been demonstrably effective in reducing the pollution burden; however, as these requirements become more stringent (approaching 100% removal), concerns about costs increase. The impact of such requirements on innovation and pollution prevention continues to be argued.

Understanding these and other implications requires a much better knowledge of how Member governments actually set and use BAT requirements. As part of its programme of work on advancing Member government effectiveness in environmental strategies, the Pollution Prevention and Control Group (PPCG) of the OECD has conducted a policy study of regulatory approaches for controlling pollution, focusing on the relationship of technology-based "BAT' requirements and environmental quality objectives/standards.

As an integral part of the PPCG's project on environmental requirements for industrial permitting, the laws, regulations, policies and practices of some Member and Observer countries have been surveyed. The survey focused on those countries that chose to participate in the case studies on environmental permitting that were conducted in four industrial sectors (pulp and paper, oil refining, metal finishing, iron and steel). The salient features of these country policies have been summarized into the present reference guide which serves as a background document for the case Studies and the workshop on industrial permitting held by the OECD on 9-11 May 1996. In the guide, each descriptive section is supplemented by a flow-diagram that provides a schematic interpretation of the legislative, regulatory and administrative processes leading to the adoption of technology-based and/or environmental quality standards in the permits granted to industrial sources of pollution.

The survey of country policies performed in this reference guide provides some analytical groundwork. It reveals that BAT approaches and EQS approaches coexist in most Member countries. The concepts of technology-based standards and environmental quality standards may be interpreted and applied in different manners in the various surveyed countries. However, in spite of the different approaches used, enviromnental aspirations are roughly similar throughout the studied group of countries.

Technology-based and environment-based regulations exist in all the surveyed countries. However, in some of these countries (most notably Korea and Japan, to a lesser extent the Scandinavian countries), regulatory requirements are often a baseline that is expected to be exceeded through various mechanisms involving industry and the government. **Voluntary agreements** to go beyond the government-imposed emission limit values are very important in Japan and Korea.

Best available technology criteria almost never mandate **the use of a particular technology.** Instead, they are couched in terms of performance requirements (on emissions and effluents, waste generation, energy or materials used, recycling contents, for instance). However, the performance requirements are typically based on a review of the technologies commercially available throughout the world at the time of the review. Frequently, the mandated performances can be attained only by the particular technology used as a basis for the review, which, in the final analysis, may amount to prescribing a particular technology. Here lies the crucial importance of **the conditions applied to the implementation of the requirements,** principally the deadline for compliance. Technological innovation may be induced or thwarted by flexibility on these points. Since it may be interpreted in very different manners, BAT may indeed provide the needed flexibility.

With the exception of economic feasibility, two major considerations weigh on the final permitting requirements for industry. Both entai1 benefits and shortcomings.

The technological approach makes it easier to know and control which substances are emitted to the environment. Technological requirements, however, may lock the regulated industrial processes into some predetermined technological trajectory. In addition, technological requirements may be isolated from the reality of the local environmental conditions. Environmental problems may be over- or understated. On the other hand, domestic efforts and competition in this area may lead to success in know-how that would not have been reached otherwise. Also, the technological approach may be the most appropriate way to take into account long-range transboundary pollution problems. The benefit of the BAT concept is that new and better reference emission limit values are continuously sought, even at the international level.

The environmental quality approach is more closely linked to the reality of local conditions. The "critical load" concept is of increasing interest in a number of countries. However, the complexity of ecosystems and pollutant paths is such that decisions may be cloaked in a significant amount of uncertainty. In addition, the link between information on actual environmental quality on the one hand, and emission/discharge performance requirements on the other hand may be uncertain. It can be trial-and-error, it can be computer simulation, it can be both.

The enviromnental quality approach deviates from the BAT principle when the volume or flow of the receiving environment, e.g. the receiving water body, is very big. Dilution and pointing at other sources may be a way out for some sources. In the case of small and diffuse sources, EQOs may be ineffective as policy instruments; incentives for applying control measures may be weak and supervision may be difficult. EQOs for particles and noise for instance may be breached by automobile traffic in many densely built-up areas and methods for enforcement may be lacking or weakly implemented. Coercive means are difficult to use when culprits cannot be pointed out. In addition, point sources affected by EQOs may use the attainment status of the area in which they operate to argue against further pollution control measures .

The central question is therefore the following: can the two approaches (BAT and EQO) be designed so as to be mutually reinforcing?

For what concerns BAT-based policies, two broad approaches can be identified in member countries. On the one hand are the countries where technology requirements are embodied at the most upstream stage of the decision-making process and in very explicit and precise terms. In this context, the regulatory, permitting and enforcement authorities have a more limited discretion and their actions are scrutinized by other branches of govemments and/or any aggrieved party. Deviations from the defined

mandate are often settled in courts. The United States is the prime example of such a legalistic system. On the other hand are countries (most of the OECD) where discretion on the part of the regulatory authorities is the norm. In these countries, technology requirements are either absent from legislation (Japan, Korea) or broadly defined (Europe), which leaves much latitude to the downstream authorities but also to the permit applicants, principally in the permitting negotiations. In some of those countries, technical instructions (TI) impose technical requirements that are absolutely binding for permitting authorities. TIs therefore have the sarne impact on licensing procedures as legislative requirements.

In principle, economic considerations are mostly irrelevant in the development and enforcement of environmental quality standards and objectives, particularly those that are health and ecosystem-based. However, they are a more relevant factor in the determination of technology-based emission limit values. Yet the methodologies for determining the economic acceptability of a requirement are either non-existent or so general that decisions are in fact taken on a case-by-case basis. Some general principles may apply. For instance, regulatory/permitting authorities may be willing to consider broad economic efficiency criteria (cost-benefit analysis, principles of reasonableness and proportionality) but refuse to consider the specific cash-flow situation of a particular facility or company. It is more problematic to apply BAT to small and medium-size enterprises. For this however, most countries have threshold sizes for the sources to which technological requirements are mandated to be applied. Nevertheless, it appears that more work is needed to develop tools for economic assessment of measures in the framework of environmental permitting.