Environmental Standard Setting through General Principles of Environmental Law

§ 1. Introduction

In the economic analysis of tort law much attention has been paid to the question of how potential parties in an accident setting could be given efficient incentives to reduce the accident risk. In this chapter we shall use this economic framework to analyze a recent trend in environmental law, which has its origin in Anglo-Saxon law, namely the use of general principles in environmental law. We shall examine whether there is room for an explicit application of the economic model of tort law when applying these vague legal notions in the standard-setting process.

This chapter has both a descriptive (positive) and a policy-oriented (normative) character. The positive analysis will specifically focus on the question of whether the use of these legal notions in the standard-setting process, as discussed here, fits into the economic model of accident law. The normative analysis consists in our examination of whether there is room for an explicit application of the economic evaluation method by using these general principles to fix environmental standards on the level of care which is required from potential polluters. This might contribute to the quality of the standard-setting process. As standards are not only set and enforced by liability procedures, but are also set by the government in regulations, we shall subsequently examine the influence of regulation on liability issues. In this respect two separate questions arise: first, whether from an economic viewpoint a violation of a regulatory norm should always lead to liability of the defendant; secondly, whether following a regulatory standard should be considered a ground for liability in tort. The latter question is particularly important, since in environmental law most harmful emissions are controlled through a licensing system. Hence, the question arises whether following a permission (licence) given under a regulation excludes a claim in tort. In this respect we shall also examine

1. We thank Lex de Savornin Lohmann and the other participants as well as two anonymous referees in the conference, for useful comments.
whether general principles of environmental law can be applied together with such a combined use of liability rules and safety regulation.

The chapter is set up as follows. We shall first look briefly at the economic principles of accident law (section 2); we shall then describe the general principles of environmental law which are actually in use, such as "Best Practicable Means", "As Low As Reasonably Achievable" and, especially, "Best Available Technology Not Entailing Excessive Costs" (section 3). Subsequently, we shall look at the use of these principles from the point of view of the law and economics (section 4). After that we shall turn to the combined use of liability rules and regulations and ask the question of how general principles of environmental law can play a part in solving possible conflicts there (section 5). Finally, a few concluding remarks will be formulated (section 6).

§ 2. Economic Analysis of Accident Law and Environmental Standards

In the law and economics literature much attention has been paid to the optimal legal mechanisms for preventing accidents. A liability rule should give incentives to the potential injurer to take efficient preventive measures. Efficient care is to be found where the marginal costs of care equal the marginal benefits in accident reduction, assuming risk neutrality. This point is often referred to in the economic literature on tort law as the efficient or optimal care to be taken by the potential injurer.

One possible liability rule which will give the injurer an incentive to take efficient care is the negligence rule. Assuming that under a negligence rule the injurer will only have to pay compensation if he spends less on care than the legal system wants him to (due care), i.e., he does not take, the injurer will have an incentive to take optimal care since this is the way to avoid liability and thus to minimize his expected costs. Provided that the legal system defines the required due care level as the efficient care, a negligence rule will give the injurer incentives to follow the efficient care level. Also a strict liability rule will lead to optimal incentives for the injurer to take efficient care, since taking efficient care will be a means of minimizing the total expected costs for the injurer. Therefore, it is generally accepted in the literature that a strict liability rule will provide the potential injurer with incentives to take efficient care as well, provided that the costs the injurer has to pay equal the real accident costs.

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This outcome, however, changes if the victim can also influence the accident risk. In such a bilateral accident setting a legal rule should also give incentives to victims to take efficient care 6.

Let us now turn to the relevance of these well-known economic principles of accident law for the standard-setting process in environmental law. A central question in the economic analysis of accident law is how to fix the standard of efficient care required from a potential injurer. It has been a main contribution of law and economic analysis to show that judges in the process of examining the level of care one can require from a potential injurer often engage in an implicit cost-benefit analysis, whereby they balance whether the additional benefits of more care would outweigh the additional costs. We indicated above that the efficient level of care can be found where the marginal costs of care equal the marginal benefits from the reduction of accident costs, assuming risk neutrality. This balancing process between marginal costs and marginal benefits which has been applied in the field of accident law, can also be used in environmental liability cases. Of course, historically, public finance theorists and cost-benefit analysts have, since the 1950s, advocated public policies to control externalities on a marginal cost equaling marginal benefit basis. That literature on policy analysis 7 builds in turn on the earlier work of Pigou 8. Hence, we do not argue that the economics of environmental standard-setting has been derived from the law and economics literature on torts; in fact, it is almost the other way around. But it is worth mentioning that the principles of standard-setting in tort law that are well known to lawyers apply also to environmental externalities.

When the efficient level of care has to be determined, it often means that a choice has to be made between various environmental techniques, which are all available at different costs and which can all lead to different levels of accident reduction. In an ideal world, one would have to choose the efficient environmental technique; namely the technique whose marginal costs equal the marginal benefits gained in accident reduction. Requiring a more expensive environmental technique, which could lead to even more reduction of environmental damage, would be inefficient if its marginal costs would be higher than the additional benefits in reducing environmental damage 9. Through such

6. The outcome also changes if the activity level is taken into account. Shavell correctly indicated that if one takes both the level of care and the activity level into account no first best solution exists, since the strict liability rule, even with a contributory negligence defense, does not control the activity level of victims optimally. However, in a situation where it is not as important to control the victim’s activity level as it is to control the injurer’s, strict liability is the preferred rule in a second best world. (Shavell, S., "Strict liability versus negligence", Journal of legal studies, 1980, 6-7.)


9. This is only true, however, under an assumption of risk neutrality. In case of risk aversion it might well be efficient to invest in this relatively expensive technique since removing risk from persons with risk aversion will increase their utility.
a balancing process optimal environmental techniques and efficient environmental standards could be fixed. Thus, a judge will use this balancing process to determine the care that could have been required from a polluter in a particular liability case 10.

These efficient environmental standards could also be fixed *ex ante* by regulation. In an optimal world, where the regulator sets environmental standards in the public interest, the regulator will also take into account the marginal costs of more stringent environmental standards and balance these against the marginal benefits in additional accident reduction 11. Yet, since such a refined balancing process requires good information both on the expected environmental damages and on the marginal costs of various technical devices that could prevent this damage, parties in an accident setting and the judges may not always be in a good position to make this judgment adequately. If the regulatory authority possesses better information the optimal environmental standard can be set by regulation 12. Another advantage of regulation is that the regulator might be able to obtain the information on the optimal environmental technique at lower costs through economies of scale advantages.

There is, however, a third way to fix environmental standards, which seems to hold the middle ground between, on the one hand, a strict fixing of environmental standards through regulation and, on the other hand, an open environmental norm under tort law. In discussing the question of how optimal environmental techniques should be fixed, several general theories have been developed which could guide either the administrative authority or the judge in setting environmental standards. These are considered as general principles of environmental law which are increasingly used in the standard-setting process.

We shall give a brief description of some of these general principles in the next section and indicate that they can be found in several legal systems. In section 4 we shall argue that this development towards an increasing use of these general principles has some importance from an economic point of view.

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10. Assuming that a negligence rule applies. Under strict liability this balancing process will be done by the injurer, who will examine to what level of care (environmental protection techniques) he can optimally reduce his expected costs (expected damages and his costs of care).

11. See, for the economics of environmental standard-setting, Baumol, W. and Oates, W., *The Theory of Environmental Policy*, New Jersey, Prentice Hall, 133-144; and, especially, the contribution of Anthony Ogus to this volume.

12. The information advantage is the classic reason advanced for safety regulation (Shavell, S., "Liability for Harm versus Regulation of Safety", *Journal of Legal Studies*, 1984, 359-360). Another reason why environmental externalities should be controlled through regulation is that liability rules will, especially in environmental cases, fail to have a deterrent effect, among other reasons because of latency and causation problems.
§ 3. General Principles of Environmental Law: An Overview

We shall describe these general principles as they function in various legal systems. Since they were developed in the Anglo-Saxon legal systems and especially in the United Kingdom, in this section of the chapter we focus in particular on British law.

In the Netherlands three general principles play an important part in the enforcement of environmental law:

- the "Best Practical Means" (BPM),
- the "Best Technical Means" (BTM), and
- the "As Low As Reasonably Achievable" (ALARA) principle 11.

On the European level and, for example, in Britain and Belgium, another principle is used 13, the so-called:

- "Best Available Technology Not Entailing Excessive Costs" principle (BATNEEC).

The British only recently replaced BPM by BATNEEC when Par I of the Environmental Protection Act (EPA) 1990 came into force, and in the latest statutory amendments to the new Flemish Environmental Statute the BATNEEC-principle is laid down in several sections.

This section provides an overview of the standard-setting norms in various countries. Of course, we would not like to suggest that it is easy to base environmental policy simply on the efficient environmental standard. Once the complex facts of long distance externalities like air and water pollution are recognized, as well as latency problems, it is of course a highly complicated process to establish the efficient environmental standard or to determine what the best available technology not entailing excessive costs exactly is. These difficulties point up the weakness of every regulatory system that tries to fix environmental standards ex ante on a rational basis. However, the general principles of environmental law discussed here might provide some remedy for the problems of uncertainty concerning damage or technological development, referred to here. Another remedy, discussed in section 5 of this chapter is to use the open norm of tort liability. We now turn to the overview of the general principles of environmental law.

A. BPM IN THE UNITED KINGDOM

In Britain the BPM concept formed the basis for the limitation of emissions for all environmental media. Although only given a legal basis in the different versions of the

13. These so-called principles are vague, undefined notions referring to a certain standard of technique that is required from a person undertaking certain activities which may create pollution or danger to the public health.

14. On a European level the ALARA-principle can be found in the art. 6 of the EC-directive on radiation (Official Journal 15-7-1986, EC/80/836). In the United Kingdom the "T" in BATNEEC stands for "techniques", which will be explored later in this section.
Alkali Act 1906, the Health and Safety at Work etc. Act 1974 and in the Public Health Act with regard to statutory nuisances, the principle implicitly formed the basis of the formulation of standards and enforcement in other environmental fields. The BPM concept as such has never been defined, but in the Clean Air Act 1956 the concept "reasonably practicable" was defined as "having regard amongst other things to local conditions and circumstances, to the financial implications and to the current state of technical knowledge". For each industrial branch concerned so-called BPM notes existed as guidelines for agencies to help them specify the BPM for any particular plant. Specifying BPM was thus left in practice to the discretionary powers of the agencies, by implication to the individual officers. Moreover, there was a distinct problem with keeping these BPM notes up to date.

Besides a range of source-directed measures, BPM notes also contained emission standards, in the form of so-called "presumptive limits", non-statutory standards formulated by the chief inspector. These standards provided a basis for negotiation between industry and the inspectorate. If these presumptive standards were being met (for instance, emission limits), then it was presumed that any legislation was being complied with and that the BPM were being used. When a firm failed to operate a process within these standards, in principle this indicated a prima facie breach of the BPM standard and so was taken as presumptive evidence that the BPM had not been applied. The breach of such a standard, however, did not mean by definition that they were not applied. BPM notes and presumptive limits, therefore, had no binding legal force.

Not many judicial cases can be found in which the factual content of BPM, as specified by an agency, was tested. The available cases with regard to BPM, or only the term "practicable", are vague and only limit BPM negatively. They do not really help to

15. In section 7 of the Alkali Act 1906 plant-operators were required to use the BPM with respect to certain registered industrial processes in order to prevent the emission of noxious or offensive gases or to render those gases which are discharged harmless and insipid.
19. Merely compliance with normal trade precautions might not be enough (see e.g. *Scholefield v. Schuh*, 1855, 19 Justice of the Peace 84). In *Manchester Corp. v. Farnworth* (1930, *Appeal Cases* 171) a "genuine attempt to use the best means available to secure the objectives of control" was required. In *LCC v. Great Eastern Ry* (1906, 2 *King's Bench* 312) the phrase "so far as it practicable" was defined in terms of complying with proper standards of construction and reasonable use. In *Adsett v. K and L Steelfounders and Engineers Ltd* (1953, 2 *All England Law Reports* 320, 1 *Weekly Law Report* 773) the expression "all practicable measures" was defined as including a duty to have regard to the prevailing state of scientific knowledge. In *West Bromwich Building Society v. Townsend* (1983, *Industrial Court Reports* 257), however, it was stated that the technological limitations of older equipment were considered, particularly where no real complaint about emissions was substantiated. According to Hughes, the Industrial Air Pollution Inspectorate (later on Her Majesty's Inspectorate of Pollution)
give a good idea about the possible positive content of the BPM. Especially on the so-called "financial implications", the question of when costs may be assumed to be excessive, case law does not seem to exist. On the question of whether the point of reference was an entire branch of industry or just an individual works, legal doctrine in general seems to be vague. However the conclusion seems to be justified that "local conditions and circumstances" were in practice interpreted as the firm's local conditions, particularly its financial circumstances.

The British experience with BPM shows very clearly the problems one may experience when using vague, elastic notions. On the other hand, it is possible to use the flexibility of these notions in a positive way, to be stringent and lenient exactly where appropriate, according to, for instance, local conditions, and to be able to react relatively smoothly to changed circumstances. This was exactly the philosophy behind the BPM concept and this philosophy can be found behind the now adopted concept of BATNEEC too. The opinion of the government, however, seems to be that the Not Entailing Excessive Costs' part ought to be determined on a higher level, and that controlling agencies should be more stringent towards the controlled firms. This implies that there ought to be more distance between them.

B. ALARA IN THE NETHERLANDS

Until recently the Dutch legislator did not seem inclined to define or explain vague notions of law, like BPM, in statutes. These notions were only to be found in advisory notes and only in the matter of water pollution and its prevention. Only the ALARA

19. allowed the operation of "provisional best practicable means" during such times, and was wary of requiring industry constantly to upgrade emission controls to the latest highest standards while installed plant still had a useful life. Only the most flagrant and persistent breaches were prosecuted. The Inspectorate preferred to rely on cooperation rather than coercion, working with a particular industry to achieve an improvement in manufacturing processes over a period of years so as to reduce atmospheric emissions. See Hughes, o.c., 321. See also Wood, o.c., 99.

20. See e.g. Wood, C., o.c., 102 and Frankel, o.c., 5: "firms should not be pushed out of business".

21. See Ball, S. and Bell, S., o.c., 78.


23. This was at least the message before the Environmental Protection Act 1990 came into force. See e.g. END5-Report 178, Nov. 1989, 11 and Lomas, O., "Current Survey: Environment", Utilities Law Review, Autumn 1990, 118. Thus, with regard to their attitude towards controlled firms, there seems to be a shift from "guiding friend" to "warning policeman".

24. BPM was considered as one of the foundations of Environmental policy in general. See Drupeet, Th.G., Milieurecht, second edition, Zutbelle, Tjeenk Willink 1991, 21. In advisory reports the authority responsible for the granting of licences in the Water Act (the Minister of Transport and Communications) was given guidance on how to translate the best practical means into licence conditions (the so-called C/WVWC-reports, which are reports from the Coordinating Commission concerning the execution of the Water Act). These documents had no legal force, but from case law it may be concluded that these Reports had a standardizing effect (the reports were used as a starting point; conditions based on
principle had been granted a place in a statute; it can be found in Dutch legislation concerning radiation, based on an EC directive. In a statutory instrument to the Dutch Nuclear Power Statute, the Besluit Stralenscherming Kernenergie, the principle has been implicitly defined. Section 21 of this regulation states that anyone working with radio-active substances has a duty to stop and prevent irradiation and contamination as far as this is reasonably achievable, to limit the consequences of contamination as far as this is reasonably achievable, and in cases in which irradiation and contamination cannot be avoided, to take precautions to limit both as far as is reasonably achievable. This provision thus creates a duty of care for persons who work with radio-active substances. The provision, however, does not create a statutory duty for administrative agencies to take this principle into account when deciding about the granting of licences and the content of licence conditions. In case law it has been determined, however, that agencies must show in their decisions that this ALARA principle has been taken into account.

Since January 1993 the ALARA principle has also been laid down in the new Dutch Environmental Act, the Wet Milieubeheer. The formulation of the principle is slightly different. In section 8.11 of the statute the principle is defined as a direct duty of care for the agencies concerned to make sure that "as far as negative consequences for the environment cannot be prevented by subjecting licences to conditions, licences must be subjected to conditions which offer the largest protection possible against these consequences, unless this request would be unreasonable". In order to evaluate the applicable state of the art which is required to comply with the ALARA principle, reference is made to BTM and BPM. According to the last comments given by the Minister during the parliamentary debate preceding the Environmental Act, it is his intention to keep the level of pollution in the different environmental media as low as possible by using the Best Technical Means. The Best Practicable Means are to be con-

24. (directions from the Commission were considered to be adequate). See, for example the Duphar case, Royal Decree of 6-12-1983, nr.20.


26. See the President of the Administrative Court (VzAG RvS), 17 March 1989, Tijdschrift voor Milieurecht, nr 88 and most recently a case by the Administrative Court of 27-3-1991, Administratiefrechtelijke Beslissingen 1991, nr.537.

27. The Wet Milieubeheer is an Act meant to be extended to become a comprehensive Environmental Act, replacing all (or at least most of) the existing environmental Acts, which all are about only one environmental medium or deal with only one sort of pollution. At this moment the Act only contains parts of all the environmental matters, which it will contain in the future (for instance some procedures regarding the granting of licences, appeals, sanctions and environmental quality standards). On the Wet Milieubeheer, see Michiels, F.C.M.A., De Wet Milieubeheer, Zwolle, Tijmen Willink 1992.

sidered as a minimum, to be used only if the BTM standard would be considered "unreasonable".  

Best Practicable Means has been defined in a guidance note as the means to be used in order to stop or prevent pollution, which, taking into account the economic consequences (the cost must be acceptable for a normal profitable concern) create the largest possible reduction. Here one recognizes an explicit reference to the economic cost-benefit test.

The Best Technical Means principle, on the contrary, does not take into account the financial position of the individual plant. Only if the costs would be excessive for an entire branch is it possible that the requirement of the BTM might be considered over-demanding. This principle requires techniques such that for higher costs an even larger reduction in pollution is created and which have been applied in practice at least once.

The ALARA principle, as formulated in the Wet Milieubeheer, clearly does not include a duty of care for (industrial) polluters to stop or prevent pollution when involved in certain activities. The ALARA principle, thus, seems to have a more limited function than in radiation legislation.

C. BATNEEC IN THE UNITED KINGDOM AND FLANDERS

As to BATNEEC, Great Britain seems to have the most "experience". In the Environmental Protection Act 1990, the BATNEEC principle plays an important part with regard to the new concept of Integrated Pollution Control (IPC), as laid down in Part I of the 1990 Act. As a full description of this concept would require much more space than available here (and would make things look more complicated than necessary), we will limit ourselves to some brief notes on the meaning of BATNEEC in Part I.

IPC only applies to so-called scheduled processes, to be found in regulations, for the operation of which an authorization is required. The thrust of IPC is that in this

29. The term "unless ... unreasonable" implies, according to the mentioned explanatory note, that the agency concerned must clarify why in this particular case conditions which offer less protection must suffice. See the Parliamentary Documents of the Dutch Chamber of Representatives, 1990-91, 21 087, nr. 13, 34. The Minister admits that the costs are an important factor here, whereby, however, in principle the branch of industry concerned should be the point of reference, not the individual plant.
33. Environmental Protection (Prescribed Processes and Substances) Regulations.
system the effects of polluting substances on the environment as a whole, instead of the effects on the one environmental medium in which the substances have been released, will be the starting point. It is, therefore, the task of the enforcing agency, Her Majesty’s Inspectorate of Pollution (HMIP), to find the overall "best practicable environmental option" (BPEO) for an individual plant or factory 34.

By putting conditions on an authorization HMIP inter alia ensures that, in carrying on a prescribed process, the BATNEEC will be used for preventing or reducing and rendering harmless the release of prescribed substances, and for rendering harmless of any other substances that might cause harm if released into any environmental medium 35.

In addition to the specific conditions that can be attached to an authorization, a general condition is implied in every authorization. In carrying on the process to which the authorization applies, the person carrying it on must stick to the BATNEEC requirement in relation to any aspect of the process in question which is not regulated by a particular licence condition 36. The integration system is, therefore, based on the combination of specific conditions attached to the authorization and this "residual duty" 37. When accused of not complying with this general BATNEEC requirement, it is for the defendant to prove that there was no better available technique not entailing excessive cost "than was in fact used to satisfy the condition" 38.

Besides these two objectives of the licence conditions, there is another interesting one with regard to BATNEEC where a process is likely to involve the release of substances into more than one environmental medium. Here HMIP must ensure that the BATNEEC will be used to minimize the pollution which may be caused to the environment as a whole by releases, having regard to the BPEO available in respect of the substances which may be released 39. The meaning behind this objective is to make clear that,

34. For an explanation of and the philosophy behind this concept (and IPC), see, for example, the Fifth report of the Royal Commission on Environmental Pollution, "Air Pollution Control: an integrated approach" (HMSO, Cmdn. 6371, 1970), the Tenth Report, "Tackling pollution - Experience and prospects" (HMSO, Cmdn.9149, 1984), and the Twelfth report "Best practicable Environmental option" (HMSO, Cmdn. 310, 1988).
35. S.7(1) in conjunction with (2)(a) of the EPA 1990. It is remarkable that the BATNEEC should be used also for substances, that do not appear on the list with prescribed processes, but can cause damage anyway, when released in any environmental medium.
36. S.7(4) in conjunction with (6) of the EPA 1990.
37. As this general licence condition was called in a consultation paper on IPC, accompanying the then Environmental Protection Bill. According to this paper, this combination should lead to a cleaner technology, because of the fact that, on the one hand, authorizations would be regularly reviewed and, on the other hand, pressure for cleaner operational practices would be achieved through the residual duty, which would automatically adjust to the latest developments (§44). Whether the residual duty will really be felt as a pressure for plants to keep techniques up to date may be doubted. It is to be expected that this pressure will only be felt once in every four years when licence conditions are to be reviewed. See s.6(6) of the EPA 1990.
38. See S.25 of the EPA 1990.
39. See S.7(7) of the EPA 1990.
although HMIP is required to choose the BPEO for the environment as a whole, at the same time they are required to reduce releases in every environmental medium as far as possible 40.

The British Department of the Environment has issued a guidance note on IPC, in which the letters of the term BATNEEC are explained. The "T" in BATNEEC stands for "Techniques" instead of "Technology" in Britain. This term covers technology as well as technical means and operational factors, and so has a wider scope than the EC version 41. In addition to this s.7(10) of the EPA 1990 states that BATNEEC also includes references to the number, qualifications, training and supervision of persons employed in the process and the design, construction, lay-out, and maintenance of the buildings where the process is carried on.

"Available" must be taken to mean techniques that are generally accessible, but they need not be in general use. In addition the note states that sources of supply outside the UK are not to be regarded as unavailable. "Best" must be understood in the meaning of "most effective". "Best" is not an absolute term. There may be more than one technique that can be considered as the best available.

With regard to the term "Not Entailing Excessive Costs" it is stated that the "Best Available Techniques" in principle are to be applied as far as new plants are concerned, unless principles of proportionality require another technique. Regarding existing plants it is pointed out that the issue is essentially one of the timing of the upgrading of old processes to new standards. HMIP would hereby be guided to some extent by art.13 of the EC air framework Directive from 1984 42. This article requires gradual adaptation taking into account a range of considerations, "having regard in particular to the economic situation of undertakings belonging to the category in question" 43. Just as for the BPM concept, for each branch of industry concerned there are guidelines on the possible content of the BATNEEC, so-called BAT notes.

At this stage many questions with regard to the interpretation and enforcement of BATNEEC in practice are still unanswered, as Part I of the EPA 1990 has not been in force long enough to draw any substantial conclusions on this point. Questions such as how the general BATNEEC requirement will be enforced, whether the point of reference

40. This combination is not self-evident. For in order to spare the environment as a whole as far as possible, it can be necessary to release a relatively large amount of a substance in only one environmental medium, as it can do the least overall harm there. Because of the above mentioned objective, HMIP is expected in such a case to try to minimize the releases as far as possible without frustrating the BPEO for the environment as a whole. See Lomas, O., Utilities Law Review, Summer 1990, 62.
41. See e.g. the Directive on air pollution by industrial plants, Official Journal of 16-7-1984, EC/1984/84.
42. See Official Journal of 28.6.1984, 84/360/EC.
43. It is beyond the scope of this chapter to go into details about the different timetables for different processes.
will indeed be an entire branch of industry instead of just an individual plant, and at
what level the cost-standard must be considered\(^4\), are therefore still open.

In VLAREM II, the implementing order to the Flemish Environmental Act\(^4\), the
BATNEEC principle partially has a similar function to s. 7 of the EPA 1990. In s.7(1)
the general provision is laid down that the operator of an establishment must use all
appropriate means to prevent environmental nuisance and pollution, including the best
available clean technologies not entailing excessive costs. This provision can be
enforced by means of a criminal prosecution or by administrative sanctions. S.7(2) adds
that specific environmental requirements laid down in provisions in VLAREM II and
in licence conditions are supposed to be in compliance with the BATNEEC prin-
ciple\(^4\). Thus the effect of s.7(1) in conjunction with 7(2) of VLAREM II seems to
be the same as s.7(4) in conjunction with 7(6) of the EPA 1990.

Besides this general BATNEEC requirement there are several VLAREM II provi-
sions in which the BATNEEC requirement is applied to specific activities or processes. These
provisions are mandatory, and so must be complied with, whether implemented in a
licence or not\(^4\).

Finally, the BATNEEC principle can have its effect on Flemish liability law. Although
laid down in only an implementing regulation\(^4\), it is still possible that the acknowl-
edgement of the BATNEEC principle can mean a specification of the general due care
norm of the tort provision within the Belgian Civil Code\(^4\). A judge may be guided
by the principle when specifying this norm. At this moment, however, it can only give

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44. For instance, at the level of absolute amounts of money or at the level of the marginal cost of addi-
tional purification efforts.
45. For a short overview of the function of BATNEEC in VLAREM II, see Bocken, H., and De Saegher,
T., “Aansprakelijkheid en financiële zekerheden na VLAREM II”, in Tijdschrift voor Milieurecht,
1993.2, (81-89), 84-85
46. Another possibility of limiting the BATNEEC requirement to aspects of the activities concerned which
are not regulated in VLAREM II or in the licence, is offered by the Interuniversity Commission on
revisions of the Environmental Law in the Flemish Region. As the Government must be guided by the
BATNEEC requirement when granting licences, as a direct applicable rule the general BATNEEC re-
quirement is taken to be the alternative: “For all matters which are not regulated within the licence,
the licence holder must use the BATNEEC”. See Bocken, H., and De Saegher, T., o.c., 94 (ref.19).
47. See, for example, s.78(1) regarding air pollution (plants must be designed, built and used in such a
way that air pollution emanating from these plants is limited to a minimum or, if possible, even pre-
vented, by using machinery in accordance with the BATNEEC requirement), or s.51(3) with regard
to discharges of other than domestic waste water, containing one or more dangerous substances
(without prejudice to the emission standard limits fixed in VLAREM II, the discharge of dangerous
substances must be prevented as much as possible by using the BATNEEC).
48. Which means that it cannot replace or amend the tort provision in the civil code.
49. See s.1382 of the Belgian Civil Code.
an indication as to what (social) interests should be taken into account, as the criterion is still very vague and leaves many questions open.

§ 4. General Principles of Environmental Law and Economic Analysis

Having described the contents of these general principles of environmental law and indicated where they play a part in legislation, let us now turn to the question of what these general principles mean from an economic point of view.

First, one could state that some of these principles apparently coincide with the economic evaluation method of environmental standards as developed in the positive economic analysis of law. The British experience with the BPM standard shows that apparently similar questions are asked as in the economic model. For instance, in defining the term "practicable", the question of when costs are excessive will have to be answered. Although the reference to economic notions still seems rather vague in this BPM concept, it becomes more explicit in the BATNEEC principle. Indeed, the notion of "not entailing excessive costs" seems to refer to the more refined incremental "Learned Hand" standard which takes into account marginal costs and marginal benefits.

A first tentative conclusion could, therefore, be that the legal system seems to apply the economically relevant notions in using general principles of environmental law such as BPM and BATNEEC. Whether this principle does indeed relate to the economic cost-benefit test in practice cannot be said yet since these principles are still so new in the legal system that it is not yet known what the prevailing legal interpretation of these principles will be. The conclusion that the economic principles of standard-setting are followed in BATNEEC is of course only warranted if indeed both marginal benefits in reduction of damage are considered as well as costs. If the practice of environmental standard-setting would only take into account whether the absolute costs are reasonable and disregard the benefits, this would not be compatible with the economic cost-benefit test. It will, therefore, depend upon the actual practice of standard-setting whether we can draw the positive conclusion that these general principles fit into the economic test or not.

Secondly, it cannot be denied that although one can recognize a reference to the economic cost-benefit test in the BPM and BATNEEC notions, the precise contents of these legal concepts is still rather vague. There is no precise case law with respect to the term "practicable" of BPM, and the BATNEEC notion is still so new that it remains unclear how courts and administrative agencies will interpret the concept "not entailing excess-

50. The same sort of questions as are mentioned with regard to BATNEEC in Britain. Regarding the answer to the question when a technology is not or is no longer in accordance with the Best Available Technology requirement and especially when costs are assumed to be excessive under the general not provision (s. 1382 of the Belgian Civil Code), case law is not consistent. Judges seem to avoid formulating a clear theoretical criterion and deal with the problem on an ad hoc basis. See Becken and De Saeger, a. e., 85. Sec. for a more detailed analysis, Becken, H., Het aansprakelijkheidsrecht als sanctie tegen de verstoring van het leefmilieu, Brussel, Bruylant, 1978, 42 ff.
ive costs”. We believe that in the application of these general principles the economic evaluation method could be used. The BATNEEC notion specifically gives room for an explicit application of the marginal cost-marginal benefit test when deciding what the “excessive costs” are. Since BATNEEC refers to “excessive costs” the well-known marginal costs-marginal benefit test which was applied to determine the level of optimal care in tort law can now explicitly be used in the environmental standard-setting process. Hence, we believe that there is still room to make this legal notion more concrete. Lawyers should be pointed towards this economic literature, since the BATNEEC notion allows for an explicit application of the economic model.

Of course law and economics cannot provide an answer to all questions. Several problems still remain to be solved. For instance, the question arises whether a BATNEEC standard should be set for an entire branch of industry or merely for one individual firm. In addition, the standard might be set at a different (higher) level if the initial assumption of risk neutrality is relaxed. Risk aversion of potential victims might lead to a higher standard, which means that the marginal costs will not be considered quickly as “excessive”. But, although there are of course many questions that still need to be examined with respect to the application of this BATNEEC notion, we believe that economic analysis provides the appropriate tools for an evaluation of these “excessive costs” of BATNEEC. If lawyers will use the available economic tools for such an evaluation, the use of BATNEEC can lead to more efficient environmental standards than would be the case if the term “excessive” were to be analyzed with other vague legal notions, such as equity.

Thirdly, these general principles of environmental law can be of major importance if the conditions of a permit are outdated or simply silent with respect to a certain kind of pollution. The weaknesses of the standard-setting process through administrative agencies are well known: the administrative authorities cannot regulate all possible emissions in a permit; the technology may change. Moreover, the conditions in the permit can simply be too weak because the agency might be “captured”51. Some of these problems may be cured by using these general principles. These general principles could be binding upon the operator of a plant as a kind of residual duty in case the conditions of the permit are silent. One could also go one step further and consider these principles also as binding upon the administrative authorities that set the conditions of the environmental permit. Eventually, one could even consider the possibility of a review of permit conditions that violate, for instance, the BPM standard. In sum, these general principles of environmental law might play a role in rationalizing the standard-setting process.

Fourthly, these general principles of environmental law could guide either the judge in a tort case when fixing the standard of due care or the administrative authority when

fixing the conditions of a licence. Therefore, in the next section we turn to the question of the combined use of liability and regulation.

§ 5. Liability and Regulation

A. INTRODUCTORY REMARKS

In this section we shall examine the influence of regulation on liability issues. In most countries, including the Netherlands, the environmental risk is not only controlled through liability rules, but also through ex ante government regulation. Given the criteria of Shavell (information can be obtained more easily by the regulator, there is a high insolvency risk and a serious risk of underdeterrence since no liability suit will be brought), liability rules alone will not provide a sufficient incentive for firms to take efficient care. Hence, the efficient care to be taken to avoid environmental damage is also fixed ex ante by regulation. In many cases this regulation consists of licences or permits in which an administrative authority fixes an emission standard which must be followed by the potential polluter. These licences play a crucial role in environmental policy in most countries. An improvement of environmental quality will mostly be effected by imposing more stringent emission standards in administrative licences. Hence, the general requirement that emissions are controlled through licences and that the quality and quantity of the emissions are regulated by the conditions in this licence, is a cornerstone of environmental law. Since these licences are administrative acts, in most legal systems environmental law is considered to be a part of administrative law. Criminal law usually only comes into the picture to sanction a violation of administrative regulations or emission standards in the licences.

Although environmental pollution is in the first place controlled through these administrative licences, in individual cases there can still be damage to the environment. Then again liability under tort law comes into the picture and the question is raised of the influence of regulation on the liability system and vice versa.


53. Dewees demonstrated that in North America the quality of the environment has improved substantially as a result of regulatory efforts, not so much in response to legal action in tort. Dewees, D., "The Comparative Efficacy of Tort Law and Regulation for Environmental Protection, Geneva Papers on Risk and Insurance, 1992, 446-467 and Dewees, D., "Tort Law and the Deterrence of Environmental Pollution" in Tietenberg, T.H., (ed.), Innovation in Environmental Policy, Economic and Legal Aspects of Recent Developments in Environmental Enforcement of Liability, Brookfield, Elgin, 1992, 139-164.

54. Complementarities between tort law and regulation have been addressed by Rose-Ackerman, S., "Environmental Liability Law", in Tietenberg, T.H., (ed.), Innovation in Environmental Policy, Economic and Legal Aspects of Recent Developments in Environmental Enforcement and Liability, Brookfield, Elgin, 1992, 223-243; Rose-Ackerman, S., Rethinking the Progressive Agenda: The Reform of the American Regulatory System, New York, Free Press, 1992, 118-131 and Rose-Ackerman,
B. VIOLATION OF REGULATION AND LIABILITY

The first question to be answered in that respect is whether a violation of a regulatory standard should automatically be considered a fault under tort law and thus lead to liability of the licensee.

Assuming that the licence sets the regulatory standard at the efficient care level a violation of the regulatory standard should indeed lead to liability to give the licensee an incentive to spend on care. However, Shavell argues that the costs of following the regulatory standard are not the same for all injurers. Following the standard might be inefficient for some injurers. The injurers for whom following the regulatory standard would only be possible at high costs should not be held to follow this standard since it would create inefficiencies. The question is whether this means that these injurers should not be held liable if they violate the regulatory standard.

This problem can be compared with the *bonus pater familias* standard used in tort law. Although a detailed individualization of standards of efficient care would be the optimal solution in a first best world this is often impossible given the costs of an individualized standard setting. Therefore, the legal system sets the required level of care at an average level, the so-called *bonus pater familias* standard. The same can be said for regulation. If various groups can be identified at low costs a separate standard for a certain group is efficient as long as the gains from selecting a further group outweigh the further administrative costs. In most cases, however, the regulator will not have the possibility of identifying atypical parties that might be able to avoid a loss at lower costs, for instance because they pose lower risks than normal. Therefore, a single regulatory standard will be used.

Although one could, therefore, argue that a failure to satisfy the regulatory requirement should not necessarily result in a finding of negligence, so as to avoid some parties who pose lower risks taking wasteful precautions, most legal systems generally consider a breach of a regulatory duty a fault. This is the case in Dutch environmental liability law. One of the reasons for introducing safety regulation to prevent environmental damage is that the regulator will usually possess better information to evaluate the efficient standard of care than the parties involved. Hence, the regulation passes on information to the parties on the efficient standard of care. The regulation also gives


information to the judge who has to evaluate the behaviour of the injurer *ex post* in a liability case. The judge might lack the information necessary to find out whether in a particular case an injurer should not be held to follow the regulatory standard, for example because he posed a lower risk than usual. Therefore, particularly in environmental cases a judge will accept a finding of negligence as soon as a regulatory standard has been breached. Thus, the statutory standards can be applied to define negligence.

C. COMPLIANCE WITH REGULATION AND LIABILITY

Whereas according to Dutch law (and to tort law in many other legal systems as well) a breach of a regulatory standard results automatically in a finding of negligence, the opposite is not true: following a regulatory standard does not exclude a finding of liability. In environmental laws this is particularly important since the conditions under which an emission of pollutants is allowed are mostly laid down in a permit. The industry often argues that as long as they follow the conditions of the licence, no finding of negligence in tort law is possible.

This point of view is, however, firmly rejected both in Belgium and in the Netherlands. The basic idea is that the administrative authority, when granting a licence and setting permit conditions, cannot take into account the possible harm that the licensed activity might cause to all possible third parties. Their rights on compensation for damages may not be impaired simply because the operator of a plant followed the conditions of a licence. Legal doctrine and case law clearly state that keeping the permit conditions is just a minimum; in addition, the plant owner has to take all possible precautions as deemed necessary under tort law to avoid his licensed activity causing harm to third parties.

In Dutch case law it is indeed generally accepted that following the conditions of a licence does not release a plant owner from potential liability. An exception would only exist if the interest of the potential victims were clearly taken into account when

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59. Faure and Van den Bergh have also argued that an advantage of this system is that it gives victims incentives to prove that the regulatory standard has been breached. This makes the victim an enforcer of safety regulation. He can claim compensation under the negligence rule as soon as a causal relationship between the violation of the regulatory standard and his damage is established (Faure, M. and Van den Bergh, R., *o.c.*, Geneva Papers on Risk and Insurance, 1987, 110-111). According to Dutch tort law, however, one of the requirements of the general tort provision the so-called relativity requirement will also have to be met (in Germany referred to as the “Schutznormtheory”).

60. Rose-Ackerman, S., *Rethinking the Progressive Agenda*, 127.


the conditions of the permit were set\textsuperscript{63}. This point is made very clear in a famous case in the Dutch Supreme Court that dealt with pollution caused by the French salt mines in the Alsace region\textsuperscript{64}. The Salt Mines argued that the emissions were within the limits set by their permit and, therefore, not illegal. The court, however, judged that the licence had not taken into account the potential harmful effects of the emissions for third parties and could, therefore, not release the salt mines from liability.

One can find a clear economic rationale for this rule. If compliance with a regulatory standard or licence would automatically result in a release from liability, the potential injurer would have no incentive to invest more in care than the regulation asks from him, even if additional care could still reduce the expected accident costs beneficially\textsuperscript{65}. The first reason to hold an injurer liable (if the other conditions for liability are met), although he has followed the regulatory standard, is that this standard is often merely a minimum. Exposure to liability will give the potential injurer incentives to take all efficient precautions, even if this requires more than just following the licence. A second reason is that exposure to liability might be a good remedy for the unavoidable capturing and public choice effects that play a role when permits are granted. If a permit would always release from liability, all a plant operator would have to do, is get a good permit with easy conditions from a friendly civil servant. That would then exclude any law suit for damages from a potential victim. Finally, tort law can also be seen as a 'stopgap' for situations not dealt with by the statute\textsuperscript{66}. This makes clear that the exposure to liability notwithstanding the permit is an important guarantee that the plant operator will take efficient care\textsuperscript{67}.

Of course, such a system of wide legal discretion might have disadvantages as well. One problem is that this great reliance on judges might destroy the uniformity a standard is supposed to bring\textsuperscript{68}. The question arises, of course, of why a judge should


\textsuperscript{66} Rose-Ackerman, S., Rethinking the Progressive Agenda, 123.

\textsuperscript{67} Of course, this will play an important role under a strict liability rule, since this will lead the injurer to take efficient care and adopt an efficient activity level, i.e. to take all efficient measures to reduce the potential accident costs, although this might require more to be done than the regulation requires. Under a negligence rule this case law is also significant if the efficient care standard (which is assumed to be equal to the due care standard required by the legal system) is higher than the regulatory standard.

\textsuperscript{68} Rose-Ackerman, S., Rethinking the Progressive Agenda, 124.
trust his own policy judgment more than that of an administrative agency. Maybe again the general principles of environmental law could be used to avoid mere ad hoc judicial actions and system-wide inefficiencies.

Indeed, one can again point to the importance of these general principles of environmental law. These principles, combined with the non-justificative effect of the licence, can provide a remedy for the classic weaknesses of the standard-setting process. On the one hand, these principles can be made binding upon the administrative authorities and thus guide the standard-setting process; this may contribute towards countering the capturing of the licensing agency. The validity of the licence can indeed be tested by comparing its conditions with a general principle such as BATNEEC. On the other hand, if the conditions of the licence are met by the licensee but his activity still causes damage, the licensee can still be compelled to compensate victims if he violated the due care standard, applicable in tort law. By examining the level of due care, the judge can once more take into account the ruling principles of environmental law, as was indicated above. In this way the judicial standard setting process can be rationalized as well. Uninformed second guessing of agency decisions by the courts is certainly to be avoided. The use of general principles of environmental law can, by contrast, lead to a judicial control of licences in accordance with administrative rules.

§ 6. Concluding Remarks

In this chapter we have discussed a recent trend in environmental law: the use of general legal notions in the standard-setting process. Central questions were whether the discussed use of these notions in environmental (liability) law fitted into the economic model of accident law (the positive question) and whether there would be room for an explicit application of the economic evaluation method in the process of specifying these notions by agencies and judges (the normative question).

The crucial question put in this chapter is that of how environmental standards should be set. We started from the simple economic model stating that a marginal cost-marginal benefit test should be used to evaluate whether the additional investment in environmental techniques could provide an additional benefit in accident reduction. This balancing process to fix efficient environmental standards can, of course, be used in the first place in a liability setting. The government can, however, also fix environmental standards ex ante through regulation. We discussed a third way to fix environmental standards which is increasingly used nowadays, first in the U.K. but also in the Netherlands. This is the use of broad environmental principles such as BPM, ALARA and BATNEEC. These principles, especially the BATNEEC principle, which contains the notion “not entailing excessive costs” seem to refer to the economic evaluation method. This BATNEEC notion does indeed give room for an explicit explication of the mar-

69. Of course, it would be preferable to let BATNEEC be set by an administrative court, for example, in an administrative appeal against the permit. Only when such an appeal is impossible should civil liability come into the picture again to counter over-lentent permit conditions.
ginal cost-marginal benefit test when deciding what the excessive costs are. Hence, this tendency in the legal system to make increasing use of these general notions, gives possibilities for economic analysis to be explicitly introduced in the setting of environmental standards in the legal system.

A major advantage of these general principles of environmental law is that they could provide a remedy for a well-known weakness of standard-setting through administrative agencies. Administrative authorities indeed cannot regulate all possible emissions in a permit, technology can change and, through capturing of the agency, the conditions in the permit can simply be too weak. By making the general principles binding upon the administrative authorities that set the conditions for an environmental permit, licences that violate for instance the BATNEEC standard could be held void by a court. The same result can be reached if following a regulatory standard or a licence does not result in a release from liability. Exposure to liability, although the conditions of the licence were followed, has the advantage that the potential injurer will take all efficient precautions to avoid liability. Both systems, regulation through licences and tort law, have their weaknesses. An optimal prevention of environmental damage can therefore only be achieved with a combined use of licences and liability law. The threat of a liability suit should remain even if the (minimum) conditions of the licence have been followed.
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