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Bradford S. Gentry

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# **Environmental Regulation in Europe: Hazardous Waste and Contaminated Sites**

*Bradford S. Gentry\**

## **I. INTRODUCTION**

Environmental problems now constitute one of the major political issues in Europe. Mrs. Thatcher has gone "green" and is working to lead the international response to global warming. The government in the Netherlands fell in the spring of 1989 as a result of disagreements over the funding of the country's ambitious environmental program. In the summer of 1988, the freighter *Karin B* wandered the oceans around Europe seeking a port willing to off-load its cargo of hazardous wastes which had been illegally disposed of in Nigeria. The summer of 1988 also witnessed the death of seals in the North Sea, while many of Italy's most famous tourist beaches were closed by seaweed and pollution during the summer of 1989. More recently, the beaches in the Iron Curtain have revealed environmental degradation of immense proportions. Finally, both the Queen of England's and the Pope's Christmas messages for 1989 were devoted to environmental issues.

All of these events have taken place against the backdrop of anxiety in the United States over "1992" and the creation of the Single European Market, as well as growing concern on the part of multinational manufacturing companies over how to manage their environmental risks on a more global basis. Finally, the U.S. government now more fully recognizes the international aspects of environmental problems and is taking a greater part in the international debate.

The purpose of this Article is to describe the general system of environmental regulation in the European Community ("EC") and to offer a

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\* Partner, Morrison & Foerster, London, England; on secondment to McKenna & Co., London, England, between May 1988 and July 1990.

practical perspective on that system. In order to do so, the Article has several parts. Following this introduction, Section II provides a brief overview of the European Community, its institutions and its basic approach to environmental regulation. Section III offers observations as to some of the major differences in approach to environmental regulation between the EC and the United States. By way of example of how the system works in practice, Sections IV and V provide more detailed reviews of the EC's efforts to address the problems of safely managing hazardous wastes and responding to contaminated sites. Finally, in Section VI, some conclusions are drawn as to the implications of recent developments in EC environmental regulation for companies operating or investing in Europe.

Before moving to these items, however, some of the limitations of this Article should be noted. First, it has been written from a practicing lawyer's, rather than an academic's, perspective. As such, it does not attempt to cover the same ground as any of the fine theoretical or policy studies which have been made of environmental protection in the EC.<sup>1</sup> Second, in deciding to focus upon the areas of hazardous waste and contaminated sites, a host of other areas of environmental regulation in the EC have been excluded. It is important to remember, however, that extensive EC requirements exist throughout the traditional subject matters of environmental controls.<sup>2</sup> Finally, this Article reflects the cultural bias of an American. While an effort has been made to minimize the effect of this bias on the discussion herein, it clearly brings with it some frustration over the inefficiency and inequity of aspects of the U.S. system of environmental regulation and a degree of surprise over the relative lack of "citizen" involvement in the European environmental regulatory scheme.

## II. THE EUROPEAN COMMUNITY

### A. Overview

The European Community is a voluntary organization of 12 sovereign nations. At this time, the 12 "Member States" of the EC are the United Kingdom, West Germany, the Netherlands, Italy, Spain, Denmark, Belgium, Luxembourg, the Republic of Ireland, Greece and Portu-

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<sup>1</sup> See, e.g., N. HAIGH, *EEC ENVIRONMENTAL POLICY & BRITAIN* (2d ed. 1987) [hereinafter N. HAIGH]; 2 E. REHBINDER & R. STEWART, *INTEGRATION THROUGH LAW: ENVIRONMENTAL PROTECTION POLICY* [hereinafter E. REHBINDER & R. STEWART].

<sup>2</sup> For a complete listing of EC legislation on environmental matters, see N. HAIGH, *supra* note 1.

gal.<sup>3</sup> The Treaty of Rome is the primary governing document of the EC.<sup>4</sup> Formed as the European Economic Community<sup>5</sup> in 1957 by six of the current Member States,<sup>6</sup> the central purpose of the EC is to “promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living, and closer relations between the States belonging to it.”<sup>7</sup> Over the years, the Treaty of Rome has been amended a number of times, including the addition of the remaining six Member States.<sup>8</sup>

The “Single European Act”<sup>9</sup> includes the most recent and most far-reaching amendments to the Treaty. The Act was adopted by the Member States in February 1986 and came into force on July 1, 1987. The primary purpose of the Single European Act was to speed the integration of the European internal market with the aim of completing the Single European Market by the end of 1992. The Act grew out of the recommendations made in a 1985 Report entitled *Completing the Internal Market* (the “White Paper”).<sup>10</sup> The White Paper set out a list of proposals for some 300 pieces of legislation which were considered to be necessary to eliminate barriers to the free movement of goods, services, persons, and capital within the EC. Although overt trade discrimination by the Member States already was illegal under the Treaty of Rome,<sup>11</sup> Member States are entitled in some situations to adopt legislation which has the effect of restricting free trade in order to give effect to national legislation on health and safety, the environment, and related matters.<sup>12</sup>

The White Paper noted that there were three major categories of barriers to completing the internal market: (1) physical; (2) technical;

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<sup>3</sup> Austria and Turkey have also applied for membership in the EC. With the rapid pace of change in Eastern Europe, it may be that other countries will petition for entry as well or that new treaty organizations will arise.

<sup>4</sup> Treaty Establishing the European Economic Community, Mar. 25, 1957, 298 U.N.T.S. 3 [hereinafter Treaty of Rome].

<sup>5</sup> In addition to the European Economic Community, the European Coal and Steel Community was formed in 1951 under the Treaty Establishing the European Coal and Steel Community, Apr. 18, 1951, 261 U.N.T.S. 140, and the European Atomic Energy Community was formed in 1957 under Treaty Establishing the European Atomic Energy Community, Mar. 25, 1957, 298 U.N.T.S. 259 (included in the Treaty of Rome). In 1965, these three treaty organizations were merged, thus leading to the usage of the term “European Community” or “EC” to describe all three.

<sup>6</sup> Belgium, West Germany, France, Italy, Luxembourg and the Netherlands.

<sup>7</sup> Treaty of Rome, *supra* note 4.

<sup>8</sup> The United Kingdom, the Republic of Ireland, Denmark, Portugal, Spain and Greece.

<sup>9</sup> Single European Act, *reprinted in* 30 O.J. EUR. COMM. (No. L 169) 30 (1987).

<sup>10</sup> *Completing the Internal Market: White Paper From the Commission to the European Council*, COM (85) 310 (June 14, 1985).

<sup>11</sup> Treaty of Rome, *supra* note 4.

<sup>12</sup> E. REHBINDER & R. STEWART, *supra* note 1, at 28-31.

and (3) fiscal. Physical barriers include customs posts, emigration control, passports, and frontier formalities affecting the transport of goods between Member States, such as veterinary and plant health checks required by different national public health standards. Fiscal barriers include the different value added tax ("VAT") rates applied in the Member States, as well as indirect taxes such as excise duties.

For the purposes of this Article, the third category of barriers — technical — are of the greatest relevance. They also represent the most diverse set of obstacles to trade across the frontiers of Member States. For example, most countries have their own national controls on health and safety matters and have been extremely reluctant to abandon them. The original Article 100 of the Rome Treaty did provide for the harmonization of such national controls through EC legislation. However, decisions on such legislation had to be agreed upon unanimously by all the Member States. In essence, this gave every Member State a right to veto any single piece of legislation. This right was not always exercised reasonably. Moreover, a threatened veto often allowed some Member States to extract concessions on unrelated matters from the other Member States.

Finally, the White Paper set out a timetable for the passage of the legislation which it believed necessary in order to remove these three types of barriers and complete the internal market. The dates for such measures fell over the years 1985 to 1992. As such, the White Paper and the efforts now underway under the banner of 1992 are part of an ongoing process, much of which has been accomplished, and some of which will remain to be accomplished after the end of the year 1992.

The institutions of the EC are carrying out this rolling program of European integration through the process of adopting and enforcing the available forms of legislation. The EC has adopted legislation on environmental matters since the mid 1970s. The clear trend in such legislation is toward more extensive and stringent community-wide environmental standards.

#### B. The Institutions of the EC

A number of different institutions coordinate the efforts to implement the Treaty of Rome and its goal of a Single European Market. These bodies are established by the Treaty of Rome and work together in a variety of ways to adopt and enforce EC legislation. They include the Council of Ministers, the European Commission, the European Parlia-

ment, and the European Court of Justice.<sup>13</sup>

The Council of Ministers is the ultimate legislative body for the EC.<sup>14</sup> It consists of one representative from each of the Member States. Its specific membership, however, will vary according to the substance of the legislation or other item being considered. This is because the individual representative from any particular Member State will change depending on the subject matter to be covered. For example, the U.K. Secretary of State for the Environment will attend the Council meetings relating to environmental matters, while the U.K. Minister of Agriculture will attend those covering agricultural policy.

The European Commission is the administrative arm of the EC.<sup>15</sup> One of its most significant responsibilities is initiating community legislation. In order for the Council to adopt legislation, the legislation must have been initially proposed by the Commission. Both the Council and the European Parliament, however, may instruct the Commission to prepare legislative proposals on specific topics.<sup>16</sup>

There are 17 Commissioners appointed for four-year terms which may be renewed. Each Member State appoints at least one Commissioner, with the large Member States appointing two. Once appointed, each Commissioner must undertake to operate impartially and not to act as a partisan representative of their own country. The Commission is headed by a president<sup>17</sup> and six vice-presidents. Each Commissioner is responsible for a specific portfolio.<sup>18</sup>

The administrative bodies which support the Commission are divided into a series of Directorates-General ("D-Gs"), each of which reports to a specific Commissioner. D-G XI is responsible for environmental matters, while D-G III is concerned with the internal market, and D-G IV is concerned with competition and antitrust matters. In addition, there is a separate legal services group which is responsible for conducting the cases that the Commission brings before the European Court of Justice.

Under Article 155 of the Treaty of Rome, the Commission is to

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<sup>13</sup> An additional body is the Economic and Social Committee ("ECOSOC"). The ECOSOC is an advisory body appointed by the various Member States as "representatives of the various categories of economic and social activity" in their countries. It gives opinions on various legislative proposals, but has no significant influence beyond this and no formal power to affect EC legislation. Treaty of Rome, *supra* note 4, at art. 193.

<sup>14</sup> *Id.* at art. 145.

<sup>15</sup> *Id.* at art. 155.

<sup>16</sup> *Id.* at art. 152.

<sup>17</sup> The current president is Mr. Jacques Delors.

<sup>18</sup> The Commissioner currently responsible for the environmental portfolio is Mr. Carlo Ripa di Meana.

ensure that the provisions of the Treaty are applied so as to ensure the proper functioning and development of the Common Market . . ." This includes not only the initiation of legislation, but efforts to enforce the implementation of that legislation in the Member States.

The European Parliament consists of popularly elected representatives from all of the Member States.<sup>19</sup> Each of the Member States determines the method by which its own representatives are elected, and the methods vary significantly from country to country. The number of representatives from each of the countries roughly reflects the relative size of the populations in the Member States.

The Parliament may ask questions of the Commission and the Council and may summon members of those bodies to appear before it. In addition, there are various specialist Committees of the Parliament which focus upon specific issues. Initially, the European Parliament had very little practical influence on either initiating or amending proposed legislation. However, as discussed below, the Single European Act has significantly increased its powers.

The European Court of Justice ("ECJ") rules exclusively on issues arising from the Treaty of Rome or any of the other European treaties in which it has been designated as the ultimate judicial authority.<sup>20</sup> Cases may be brought before the ECJ either by reference from the national courts of individual Member States or by way of appeal from decisions of the European Commission. Member States and the various institutions of the EC also have certain rights to bring cases directly before the ECJ.

Particularly relevant in the environmental area is the ability of the Commission to institute actions in the ECJ against Member States for failure to fully implement EC environmental legislation. In most such cases, however, should the ECJ rule against the Member State, it will have no further power to impose penalties, send troops, or subject the country to direct rule by the Commission. Rather, the other Member States have to rely on the offending Member State's interest in remaining a part of the EC to compel it to recognize and act upon the ECJ decision. In this way, the EC is most obviously unlike the U.S. federal system with the massive power inherent in the supremacy of the federal government.

### C. Types of EC Legislation

When the Commission proposes and the Council of Ministers enacts EC legislation, they have two choices as to the form of that legislation.<sup>21</sup>

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<sup>19</sup> Treaty of Rome, *supra* note 4, at art. 138.

<sup>20</sup> *Id.* at art. 164.

<sup>21</sup> In addition to the regulations and directives discussed in the text, decisions, resolutions, rec-

One option is for the Commission to propose and the Council to adopt a regulation.<sup>22</sup> Regulations are directly enforceable in the national courts of the individual Member States. Actions to enforce a regulation may be brought by the Commission or any other party identified in the regulation. An example of such a regulation in the environmental context is the 1988 regulation concerning the import or export of specified dangerous substances into and from the Community.<sup>23</sup> This regulation imposes a number of requirements upon importers and exporters of such substances and bans the movement of specific materials.

The vast majority of EC environmental legislation, however, takes the form of directives, rather than regulations.<sup>24</sup> While somewhat similar in substance, directives generally are not directly enforceable in the national courts of the Member States.<sup>25</sup> Rather, a directive is an instruction to each Member State to adopt national laws which are consistent with the requirements set out in the directive. For example, the EC directive on waste requires each Member State to adopt legislation establishing a framework for the regulation of waste, the licensing of waste handling, and similar matters.

One practical result of using directives as the primary tool for EC environmental legislation is that wide variations exist among Member States as to when and how specific directives are incorporated into national law. Although each directive always specifies the date by which it must be incorporated, it is not unusual for some Member States to fail to meet that date.

Even if action is taken to implement a directive, many directives are drafted in a sufficiently general manner so that the substantive requirements actually adopted by different Member States vary widely.<sup>26</sup> One historical reason for this generality was that the Council of Ministers had to agree unanimously to adopt any directive. This process tended to pro-

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ommendations, communications, and agreements also may be adopted by various EC institutions. See E. REHBINDER & R. STEWART, *supra* note 1, at 34.

<sup>22</sup> Treaty of Rome, *supra* note 4.

<sup>23</sup> 31 O.J. EUR. COMM. (No. L 155) — (1988).

<sup>24</sup> Treaty of Rome, *supra* note 4, at art. 189.

<sup>25</sup> In some limited situations, however, they may have "direct effect." See E. REHBINDER & R. STEWART, *supra* note 1, at 36-39, 159-62, 251, 327-28.

<sup>26</sup> For example, see discussion *infra* note 61 concerning the Waste Directive. Other directives, while containing specific limits on allowable emissions, are patchy or limited in their coverage, thus leaving Member States free to fill in the gaps. For example, see the discussions of the directives concerning surface water quality and discharges of dangerous substances in N. HAIGH, *supra* note 1, at 34-38, 70-78. It also must be acknowledged, however, that certain directives have severely limited Member State discretion, possibly beyond what the Member States anticipated when agreeing to the legislation. The 1980 Directive on Drinking Water Quality, 23 O.J. EUR. COMM. (No. L 229) — (1980) is probably the best example of such a piece of legislation.



duce legislation which granted the individual Member States a substantial amount of latitude in the implementation of any particular directive.<sup>27</sup> As described in more detail below, however, the Single European Act has changed this procedure.

Once a directive has been adopted by the Council, it is up to the Commission to monitor its implementation in the individual Member States. Should a Member State fail to incorporate a directive into national law in a timely and complete manner, the Commission may institute proceedings before the ECJ. The Commission has instituted over 70 such proceedings concerning environmental legislation. Such proceedings result in rulings by the EC as to whether the Member State has complied with the directive. One example of such a ruling is in the case brought on December 2, 1987 by the Commission of the European Communities against Italy in which the ECJ held that Italy had failed to adequately implement the directive concerning drinking water quality.<sup>28</sup>

#### D. History of EC Environmental Legislation

While the EC adopted the first environmental directive in 1970,<sup>29</sup> it is interesting to note that the Treaty of Rome did not expressly give the EC power to adopt legislation on environmental matters. Instead, the Commission relied upon its broad powers under article 100 of the Rome Treaty to propose legislation concerning "health, safety and consumer protection" and under article 235 for legislation concerning objectives of the Community, attainment of which is necessary in the course of the operation of the Common Market. Several subsequent decisions of the ECJ have upheld these bases for EC environmental legislation.<sup>30</sup>

Applying these powers between 1973 and the coming into force of the Single European Act on July 1, 1987, the EC adopted four "action programmes" on the environment<sup>31</sup> and numerous directives concerning environmental matters.<sup>32</sup> While far reaching, it seems fair to say that these early pieces of legislation were hampered by a variety of institutional factors, including the absence of express legislative authority over environmental matters and the unanimity requirement. The Single European Act addressed both of these matters. In addition, the Act substan-

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<sup>27</sup> E. REHBINDER & R. STEWART, *supra* note 1, at 57, 236.

<sup>28</sup> 31 O.J. EUR. COMM. (No. C 8/06) 4 (1988). See also E. REHBINDER & R. STEWART, *supra* note 1, at 231-36.

<sup>29</sup> *Council Directive on Noise from Motor Vehicles*, 13 O.J. EUR. COMM. (No. L 42) 16 (1970).

<sup>30</sup> E. REHBINDER & R. STEWART, *supra* note 1, at 15-33.

<sup>31</sup> 16 O.J. EUR. COMM. (C 112) 1 (1973); 20 O.J. EUR. COMM. (C 139) 1 (1977); 26 O.J. EUR. COMM. (C 46) 1 (1983); 30 O.J. EUR. COMM. (C 328) 1 (1987).

<sup>32</sup> See N. HAIGH, *supra* note 1, at 9-12.

tially increased the power of the Parliament to influence the substance of EC environmental legislation.

As part of the Single European Act, three completely new articles were inserted into the Rome Treaty expressly authorizing "action by the Community relating to the Environment."<sup>33</sup> The first of these new articles sets out the principles for EC environmental legislation:

Action by the Community relating to the environment shall be based on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source, and that the polluter should pay. Environmental protection requirements shall be a component of the Community's other policies.<sup>34</sup>

The "principle of subsidiary" placed some limits on the scope of this authorization, however. Under this principle, action is not to be taken at community level which can be more appropriately undertaken at the level of the individual Member States.<sup>35</sup>

In addition, the Act added a new article to the internal market provisions of the Treaty of Rome which addresses, among other items, environmental matters.<sup>36</sup> It states that "[t]he Commission, in its proposals [for the legislation] envisaged in paragraph 1 concerning health, safety, environmental protection and consumer protection will take as a base a high level protection."<sup>37</sup> The combined effect of these new articles is to give the EC great power to legislate over environmental matters.

At the same time, the Single European Act made substantial modifications to the requirement that the Council unanimously adopt EC legislation. Under the new article 100a, the Council generally must adopt by a qualified majority all measures designed to promote the harmonization of legislation in Member States which may have an impact on the Common Market.<sup>38</sup> When adopting legislation by a qualified majority, the votes of the individual Council Members are weighted on a scale of one to ten, depending primarily upon the size of the population of the country they represent. The total number of votes among the twelve Member States is 76. A qualified majority requires 54 votes in favor of a proposal.<sup>39</sup> In practical terms, this means that no single Member State can now veto legislation which is approved by the other 11, although two

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<sup>33</sup> Single European Act, *supra* note 9, art. 130r-t.

<sup>34</sup> *Id.* at art. 130r, para. 2.

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at art. 100a.

<sup>37</sup> *Id.* at art. 100a, para. 3.

<sup>38</sup> Certain exceptions are made to this provision for a qualified majority, for example in relation to fiscal provisions. *See id.* at art. 100a, para. 2.

<sup>39</sup> Treaty of Rome, *supra* note 4, at art. 148.

large Member States acting in concert with a small Member State could accomplish such a veto.

Since article 100a is one of the new articles which expressly contemplates environmental legislation, it is clear that at least some environmental legislation may be adopted by a qualified majority. At the same time, however, the new article 130s provides that proposals from the Commission for environmental legislation are to be decided by the Council acting unanimously. That article then goes on to note that the Council shall also unanimously define those matters on which decisions are to be taken by a qualified majority under article 100a.<sup>40</sup>

As one might expect, this ambiguity between the environmental measures which may be adopted by a qualified majority and those which require unanimity can create substantial uncertainty as to the process by which any particular piece of legislation must be adopted. In general, the Commission appears to prefer proposing new environmental legislation under article 100a, thus only requiring a qualified majority for passage. The Commission's belief appears to be that this will, in the main, allow for more progressive and stringent environmental legislation to be adopted.

The other ambiguity concerns the ability of Member States to adopt more stringent legislation or environmental legislation which restricts free trade. On the one hand, if a truly Common Market is to be achieved, environmental standards should be the same throughout the Community. At the same time, different Member States may wish to "disadvantage" their industry or citizens by adopting environmental standards which are more stringent (and thus more costly) than those of other Member States. Both article 100a and article 130t give Member States some power to apply national provisions which are more stringent or different than those adopted by the EC in certain cases.<sup>41</sup>

Exactly where the line is to be drawn between appropriate and inappropriate national standards appears to have been left to the ECJ to decide on a case-by-case basis. One such case arose from proceedings by the Commission against Denmark over Danish legislation which essentially required that beverage bottles could only be used in Denmark if an adequate system for their collection and re-use were established (the *Danish Bottles* case).<sup>42</sup> The Commission argued, and the Danes did not seriously dispute, that this legislation significantly hampered imports of

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<sup>40</sup> Single European Act, *supra* note 9, at art. 130s.

<sup>41</sup> *Id.* at art. 100a, para. 4; art. 130t.

<sup>42</sup> Commission of the European Communities v. Kingdom of Denmark, 31 O.J. EUR. COMM. (No. C 269) 4 (1988).

beverages in glass bottles into Denmark from other Member States. Nevertheless, the ECJ held that national legislation aimed at protecting the environment by promoting the re-use of glass bottles was consistent with the new Treaty provisions regarding environmental protection and, as such, could be given effect notwithstanding its impact on trade between Member States. At the same time, the ECJ did find that portions of the Danish legislation went too far and declared unlawful those specific provisions which it viewed as creating a barrier to trade without corresponding environmental benefit.

While the *Danish Bottles* case does not answer all of the questions which have been raised, it at least establishes the basic principle that, where no community-wide harmonizing legislation has been adopted, Member States may introduce reasonable measures for environmental protection, notwithstanding their consequences on trade within the Common Market.<sup>43</sup>

Finally, the Single European Act substantially expanded the ability of the European Parliament to influence the content of EC legislation, including that in the environmental area. Under amended article 149 of the Treaty, after the Council adopts a common position on a legislative proposal from the Commission, it must submit its common position, as well as the Commission's position, to the Parliament.<sup>44</sup> If the Parliament either approves the common position or does not act, then the Council shall adopt the legislation in question as agreed.

The Parliament's new powers come into play, however, if it rejects the Council's common position or proposes amendments to it. If the Parliament rejects the Council's position, the legislation goes back to the Council. The Council may only overrule the Parliament's rejection and adopt the legislation if it does so unanimously, without regard to whether the measure could have originally been adopted by a qualified majority.

Where the Parliament has proposed amendments to the Council's common position, the Commission must re-examine the proposal taking the Parliament's amendments into account. The Commission must then forward to the Council its reexamined proposal, together with any amendments of the Parliament which it has not accepted. The Council may then adopt the Commission's version of the proposal by a qualified majority. If it desires further to amend the Commission's proposal, it must do so unanimously.

The adoption of the 1989 directive relating to exhaust emissions

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<sup>43</sup> See also *Enichem Base v. Comune di Cinisello Balsamo*, 32 O.J. EUR. COMM. (No. C 207) 10 (1989).

<sup>44</sup> Single European Act, *supra* note 9, art. 149, para. 2(a)-(b).

from small cars dramatically illustrated the effect of these new powers.<sup>45</sup> As a result of considerable pressure by the French, the common position agreed to by the Council contained somewhat relaxed proposals for the emission standards to be met. The Parliament substantially increased the stringency of these proposals, however, and sent the measure back to the Council. The Parliament's proposals were then supported by the Commission. As a result, the Council had to choose among: (1) abandoning the proposals altogether, which was politically impossible; (2) amending the proposals back to the original text, which would have required unanimity at the Council level, which several Member States would not have accepted; or (3) accepting the amended proposals as they stood. In the end, the Council had no option but to pass the amended directive, which included the more stringent controls on small car emissions.

This increased power of the Parliament will be of special significance in the environmental field in the future. In the 1989 Parliament elections, there was a general swing to the left. The result was that left wing parties are now a majority, and the proportion of "green" members has increased substantially. The Commission itself, while undoubtedly receptive to the proper requirements of industry, generally is keen to encourage community action on the environment. This combination will prove to be an extremely potent force in moving the Council to adopt more stringent environmental requirements than it might otherwise have chosen to do.

#### E. Trends in EC Environmental Legislation

Bolstered by the wave of public concern over environmental issues in Europe and armed with these extensive new powers, the EC is in the midst of a major effort to expand substantially the scope and quality of environmental legislation in the Member States. Three specific aspects of this initiative are worthy of specific discussion.

First, the new environmental legislation which is being developed in the EC contains more standardized and more stringent requirements to be adopted by the Member States. For example, the proposed directive on hazardous waste<sup>46</sup> seeks to impose an extremely detailed and broad definition of "hazardous wastes" throughout the Community. The effort to standardize such requirements is clearly a part of the effort to integrate the Common Market. The effort to make the standards ever more stringent is a reaction to the growing public demand for more environmental protection.

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<sup>45</sup> 32 O.J. EUR. COMM. (No. L 226) 1 (1989).

<sup>46</sup> See *infra* note 63 and accompanying text.

Second, there is a major effort underway to increase the amount of information regarding environmental matters which is to be made available to the public. Historically, much of the information which is in the hands of the government concerning environmental matters has not been, either legally or practically, available to the general public. The EC has now adopted a directive on freedom of access to environmental information,<sup>47</sup> a process which is mirrored in several of the Member States.<sup>48</sup> In addition, the EC has recently agreed to establish a European Environmental Agency.<sup>49</sup> The stated purpose of this agency is to collect and disseminate scientific information on environmental matters throughout the Community. Making such information available to a public which is extremely sensitive to environmental issues, and which traditionally has not had access to such information, may have far-reaching implications for the ways in which European companies manage their environmental programs.

Finally, the Commission is turning ever increasing attention to the actual implementation of EC legislation in the individual Member States. For example, the effort to privatize the water and sewerage authorities in England and Wales was substantially affected by the Commission's threat to institute proceedings in the ECJ for the United Kingdom's failure fully to implement EC directives concerning water pollution. Similar actions on these and other environmental directives have been instituted against almost all Member States. The desire by many people to have the EC play a more effective role in ensuring that environmental legislation is implemented in the Member States has led some to suggest that the new proposed European Environmental Agency should have a more aggressive enforcement role, somewhat akin to the United States' Environmental Protection Agency ("EPA").

### III. MAJOR DIFFERENCES IN APPROACH

With this background in mind and before proceeding to more detailed examinations of two areas of EC environmental legislation, it seems appropriate to pause and consider some of the major differences in approach to environmental regulation between the United States and the EC. While by no means exhaustive, the following list attempts to cap-

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<sup>47</sup> Council Regulation on the Establishment of the European Environment Agency and the European Environment Information and Observation Network, 33 O.J. EUR. COMM. (No. L158) 56 (1990).

<sup>48</sup> See, e.g., *Environmental Protection Bill* (England) (1990).

<sup>49</sup> Council Directive on the Freedom of Access to Information on the Environment, 33 O.J. EUR. COMM. (No. L120) 1 (1990).

ture, in summary form, some of these differences. Particular attention is paid to those differences which are of practical importance to anyone attempting to understand the two systems on a working level.

First, the EC is not a federal system as is the U.S. system. As briefly described above, there is no EC "EPA", EC "Marshall" or EC "Army" to send in should a Member State fail to implement fully a piece of EC legislation. Instead, the power which the EC has over the Member States, and it is considerable, stems from the mutual self-interest of those individual countries in participating in a common economic unit. As such, there is more of an effort to work together and to adopt legislation which is fairly certain of being accepted and implemented by the Member States.<sup>50</sup> In this sense, EC environmental legislation traditionally has not had the technology-forcing aspects of U.S. environmental legislation. In addition, the EC is acutely aware of the international aspects of environmental problems and the need to take other countries' needs and concerns into account when adopting its legislation.

Second, Member State implementation of EC environmental legislation can differ substantially in timing, content, and intensity of enforcement, unlike the system of U.S. environmental legislation. Since the EC is not a powerful federal government, ultimately it has to rely upon the efforts of the Member States to bring its legislation to bear on companies and individuals. As such, determining when and how an individual Member State implements EC legislation will be of critical importance to companies and other parties which may be affected.

At the same time, the implementation process is immensely variable and complicated.<sup>51</sup> In many areas, Member States have broad powers to exercise discretion in framing specific requirements. Even where efforts are made to draft EC legislation extremely specifically, the 12 countries which make up the EC have their own institutional structures and hundreds of years of cultural assumptions about the way in which things are to be done. Superimposing EC legislation on these institutions and history is not easy. For example, while an EC directive will be addressed to the national government in the Member State, in some countries the legislative competence to take the steps necessary to incorporate its requirements into law is held at the state or provincial level, and the national government has no constitutional authority to force the state legislators to enact any particular law. In addition, almost all Member States at times have exhibited a less than enthusiastic approach to adopting and/or enforcing all EC environmental requirements. As such, one needs to

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<sup>50</sup> See E. REHBINDER & R. STEWART, *supra* note 1, at 137, 215-16, 251-52.

<sup>51</sup> *Id.* at 231-40, 315, 324, 338.

look quite closely at how EC legislation is applied in any particular part of any particular Member State in order to have a thorough understanding of its actual impact.

Third, most of the Member States do not share the tradition of free access to governmental information that people in the United States have come to expect.<sup>52</sup> For example, instead of a Freedom of Information Act, the most powerful legislation concerning governmental information in the United Kingdom is the Official Secrets Act.<sup>53</sup> Even in the relatively few countries where large amounts of governmental information are, at least theoretically, available to the public, significant practical difficulties can be encountered in actually attempting to obtain that information.<sup>54</sup> While it may be over-generalizing, it is tempting to conclude that this traditional lack of public access to information held by the government reflects the European history of rule by monarchs, where those in power deemed themselves to be the only ones who really needed to know such information. A similarly paternal approach to information sharing seems to have accompanied many of these countries as they made their way into more democratic forms of government.

Fourth, in Europe there are fewer formal legal proceedings concerning environmental matters than in the United States. With a few exceptions, less attention is paid to formal legal proceedings at the legislative, administrative, or enforcement stages of Member States's environmental control programs. Lawsuits challenging the validity of a particular piece of legislation (for example, as measured against constitutional limits), are relatively rare as compared to the United States. Similarly, the development of administrative regulations and guidance tends to involve fewer restrictions on ex parte contacts, fewer requirements for public comment and public hearings, as well as fewer challenges in the courts. Finally, and again at the risk of over-generalizing, there appears to be more of an effort by enforcement authorities and industry in Europe to work together to resolve a compliance problem without formal enforcement action than there is in the United States.

Fifth, where formal enforcement actions are brought for violations of environmental laws, there is a tendency to rely upon criminal proceedings, rather than on the civil administrative proceedings which are so familiar in the United States. In general, most environmental legislation in Member States carries criminal sanctions, including fines and/or im-

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<sup>52</sup> Durkee, *Risk Communication and the Rhine River*, 12 INT'L ENVTL. REP. (BNA) at 5 (Oct. 11, 1989).

<sup>53</sup> Official Secrets Act, 1920, 10 & 11 Geo. 5, ch. 75 (12 Halsbury's Statutes, 1989 reissue).

<sup>54</sup> Durkee, *supra* note 52, at 8.



prisonment. The severity of such sanctions, the likelihood that they will be imposed, and whether a company or an individual manager is likely to be the target of such actions, varies substantially in the Member States. Civil actions for recovery of damage caused by pollution are relatively rare, again as compared to the United States. However, there have been a number of cases in the Netherlands, for example, for the recovery of clean-up costs.<sup>55</sup>

Finally, while all of these differences continue to exist today, each one of them is under pressure to change. The whole purpose of "1992" is more fully to integrate the Member States. Major efforts are being made to standardize environmental requirements and their implementation across the Member States. Public access to information on environmental matters is clearly on the rise, as witnessed by the EC directives on freedom of access to environmental information<sup>56</sup> and the European Environmental Agency.<sup>57</sup> As part of these processes, one can expect more legal proceedings, both before the EC to force the pace of implementation, as well as in the Member States, as the public pressure for greater environmental protection through more stringent enforcement of environmental law continues to rise. Finally, with the proposal for an EC directive on the civil liability of waste producers,<sup>58</sup> as well as the discussions of environmental taxes and tradeable permits,<sup>59</sup> there is a clear move to supplement the criminal enforcement regime with more extensive civil and market-based controls.

The next two sections of this Article examine these differences and trends in the context of two specific areas of EC environmental regulation: hazardous waste management, and contaminated sites. The choice of these areas for more detailed consideration is by no means intended to diminish the scope and importance of the EC's extensive legislation on other environmental matters, such as air and water pollution, hazardous chemical supply, emergency planning, and environmental impact assessments.<sup>60</sup> Rather, these two areas were selected based upon the high degree of legislative interest now being accorded to them in both the EC and the individual Member States, as well as the fact that they are the

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<sup>55</sup> See, e.g., the Hague Gas-works case, reprinted in 3 ENVTL. LIABILITY L.Q. 84 (1988), on the duty of care of a municipality in the sale of polluted building lots.

<sup>56</sup> See *supra* note 47.

<sup>57</sup> See *supra* note 49.

<sup>58</sup> Com (89) 282 final-SYN 217 15 (Sept. 1989) [hereinafter *Producer Liability Proposal*]. See also *infra* notes 73-92 and accompanying text.

<sup>59</sup> See, e.g., Pearce, *Sustainable Development, Resource Accounting and Project Appraisal: State of the Art Review*, published as BLUEPRINT FOR A GREEN ECONOMY (1989) (U.K. Dept. of the Environment report under research contract 7/8/131).

<sup>60</sup> See, e.g., N. HAIGH, *supra* note 1.

two areas of greatest practical concern to the majority of U.S. manufacturing companies.

#### IV. HAZARDOUS WASTE MANAGEMENT

##### A. Overview

The safe handling and disposal of hazardous wastes is an issue of growing importance throughout the EC. Numerous newspaper articles and television reports decry the shipment of hazardous wastes from the European Community to Eastern Block and developing countries, as well as the importation of such wastes into certain EC Member States for disposal. At the same time, attention is increasingly focused on the damage to human health and the environment which may be caused by the improper handling or disposal of hazardous wastes.

In response to these concerns, the Commission and the Council have embarked upon a major expansion of the already well developed EC legislation concerning hazardous wastes. The existing Community legislative framework for wastes and the areas where substantial additions or modification can be expected are described in more detail in Part B below.

At the same time, individual Member States within the European Community are, to varying degrees, undertaking their own efforts to respond to the increasing concern over hazardous wastes. Aspects of these efforts vary dramatically in form and content among different Member States. In some, the primary goal is to implement existing Community legislation. In others, it is either to push the Community toward a more stringent regulatory framework, or to impose more stringent requirements within their own borders.

##### B. EC Directives on Waste and Hazardous Waste

###### 1. Overview

Since the mid 1970s, the EC has had legislation concerning wastes and special sub-sets of particularly dangerous wastes. The goals of this legislation have been: (1) to encourage the recycling or other re-use of waste materials; (2) to ensure the proper disposal of waste materials without harm to human health or the environment; (3) to have Member States designate competent authorities to supervise waste disposal, including the licensing and inspecting of disposal facilities, as well as the development of waste disposal plans; and (4) to make the polluter pay for

the costs of the wastes.<sup>61</sup> In the tradition of many EC directives, this existing legislation gives the individual Member States a wide degree of discretion in deciding how to meet these goals and how to implement the scientific directives.<sup>62</sup>

Recently, however, the EC has embarked upon a program both to narrow the scope of Member State discretion in addressing hazardous wastes, as well as to make the regulatory requirements more stringent. As part of the move toward 1992 and the Single European Market, and in order to ensure the free movement of goods and services connected with waste management, proposals have been made to provide more specificity in and to standardize the rules regarding hazardous wastes.<sup>63</sup> At the same time, there is a greater focus on preventing the initial production of hazardous wastes through the adoption of "clean technologies." For the hazardous wastes which are produced, more stringent requirements are to be imposed. Finally, the "polluter pays" concept is to be expanded to include community-wide rules for any damage caused by a producer's wastes.<sup>64</sup>

The following subsections describe the existing EC legislation on hazardous wastes and the proposals to expand that legislation under the headings: Definition of Hazardous Wastes, Producer Responsibilities, Transportation Requirements, and Disposal Facility Requirements. It should be emphasized, however, that the majority of the directives regarding wastes and hazardous wastes are not structured in this manner, and most contain provisions applicable throughout the hazardous waste handling chain.

## 2. *Definition of Hazardous Wastes*

Under EC legislation, any wastes that are subject to special requirements because of their potentially dangerous characteristics are also a sub-set of the general category of "wastes." "Wastes" were first defined in the Waste Directive as "any substance or object which the holder disposes of or is required to dispose of."<sup>65</sup> "Disposal" encompasses the process of throwing a material away, which includes collection, sorting, transport, treatment, and landfill storage, as well as the "transformation" of a material for its "re-use, recovery or recycling."<sup>66</sup> Specifically ex-

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<sup>61</sup> 18 O.J. EUR. COMM. (No. 1 194) 39 (1975) [hereinafter *Waste Directive*].

<sup>62</sup> See *supra* note 51 and accompanying text.

<sup>63</sup> *Waste Proposal*, 31 O.J. EUR. COMM. (No. C 295) 3 (1988); *Hazardous Waste Proposal*, 31 O.J. EUR. COMM. (No. C 295) 3 (1988).

<sup>64</sup> *Producer Liability Proposal*, *supra* note 58.

<sup>65</sup> *Waste Directive*, *supra* note 61, at art. 7(a).

<sup>66</sup> *Id.* at art. 1(b).

cluded from the scope of the Waste Directive are radioactive wastes, mining wastes, animal carcasses and wastes used in farming, wastewaters, air emissions, and wastes covered by other specific community rules.<sup>67</sup>

Several other directives then define sub-categories of "wastes" which are subject to special requirements because of their hazardous properties. The most extensive of these is the 1978 Directive on Toxic and Dangerous Wastes.<sup>68</sup> This directive rather broadly defines "toxic and dangerous" waste as any waste which contains materials which are "of such a nature, in such quantities or in such concentrations as to constitute a risk to health or the environment."<sup>69</sup> The Annex to the directive lists 27 types of compounds which are denoted as "requiring priority consideration" as constituents in toxic or dangerous wastes.<sup>70</sup> These include various heavy metals, phenols, organic-halogen compounds, pharmaceutical compounds, asbestos, metal finishing substances, and similar materials. The directive does not provide any further guidance as to the circumstances in which any materials might constitute "a risk to health or the environment."<sup>71</sup>

In addition, three other directives identifying certain wastes for special treatment have been adopted: (1) the 1975 Directive on the Disposal of Waste Oils,<sup>72</sup> which covers mineral-based oils that have become "unfit for the use for which they were originally intended;" (2) the 1976 Directive on the Disposal of Polychlorinated Biphenyls and Polychlorinated Terphenyls;<sup>73</sup> and (3) the 1987 Directive on the Prevention and Reduction of Environmental Pollution by asbestos.<sup>74</sup>

The extremely broad and somewhat vague definitions used in these directives have resulted in a wide disparity in the wastes which are regulated as "hazardous" among the different Member States. This is of acute concern to the EC for two reasons. First, there are a substantial number of transboundary shipments of wastes in Europe. The difficulty of implementing a coherent regulatory structure is increased where different countries target different wastes for regulation. Secondly, the EC is concerned about the continuing effort to standardize waste disposal

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<sup>67</sup> *Id.* at art. 2, para. 2.

<sup>68</sup> 21 O.J. EUR. COMM. (No. L 84) 48 (1978) [hereinafter *Toxic Waste Directive*].

<sup>69</sup> *Id.* at art. 1(b).

<sup>70</sup> *Id.* at Annex.

<sup>71</sup> *Id.*

<sup>72</sup> 18 O.J. EUR. COMM. (No. L 194) 23 (1975).

<sup>73</sup> 199 O.J. EUR. COMM. (No. L 108) 41 (1976).

<sup>74</sup> 30 O.J. EUR. COMM. (No. L 85) 40 (1987).

practices across the community as part of the move toward the Single European Market.

In response, the European Commission has proposed two new directives designed to address these problems. On August 16, 1988, the Commission submitted a proposal to amend the Waste Directive the substance of which was approved by the Council in June 1990.<sup>75</sup> Several of the major changes which are to be made to the Waste Directive are designed to expand and give greater specificity to the definition of waste. One of the four major inclusions is an Annex specifying the types of materials which are considered to be "designated" for "disposal" and are therefore wastes. This list includes production residues, off-specification products, out-of-date products, spilled materials, products the use of which has been banned by laws, products for which the holder has no further use, clean-up residues, and any other materials which the holder wishes to dispose of or is required to dispose of.<sup>76</sup>

A second inclusion is a two-part Annex defining "disposal." The first part covers those disposal operations which do not lead to the possibility of re-use, such as landfills, other releases into the environment, pre-disposal treatment, incineration, and storage pending any such operations. The second part covers operations which may lead to re-use, such as use as a fuel to generate energy, solvent reclamation/regeneration, other recycling/reclamation activities, land-spreading for agricultural use, use of any of the materials obtained from any such operations, and storage of materials intended for any such operations.<sup>77</sup>

Third, the definitions of "collection" and "transport," which are included within the definition of "disposal," have been expanded.<sup>78</sup> Lastly, the Waste Proposal includes a revised list of the materials which are exempt from the coverage of the Waste Directive.<sup>79</sup>

At the same time, the commission proposed to replace the Toxic Waste Directive with a new directive on hazardous waste.<sup>80</sup> The Hazardous Waste Proposal would not only make the definition of hazardous waste more consistent throughout the Community, but would result in a vast expansion of the wastes subject to special controls in most Member States as well. In essence, the proposed definition of "hazardous waste"

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<sup>75</sup> See *Waste Proposal*, *supra* note 63, amending Directive 75/442/EEC; Directive Approved on Waste Prevention, Recycling, 13 INT'L ENVTL. REP. (BNA) at 223 (June 13, 1990).

<sup>76</sup> *Id.* at Annex I.

<sup>77</sup> *Id.* at Annex II, A & B.

<sup>78</sup> *Id.* at art. 1.

<sup>79</sup> These include radioactive waste, mining waste, agricultural waste, waste waters discharged into sewers, and emissions into the atmosphere. *Id.* at art. 2.

<sup>80</sup> *Hazardous Waste Proposal*, *supra* note 63 (replacing Directive 78/319/EEC).

appears to include almost all waste materials. It would cover: (1) any waste specified in Annex I (such as pharmaceuticals, wood preservatives, solvents, oily substances, tarry materials, and other similar wastes), *unless* the producer can prove that the waste does not exhibit *any* of the characteristics of hazardous wastes identified in Annex III (such as explosive, oxidizing, flammable, carcinogenic, ecotoxic, or "harmful" tendencies); (2) any waste falling within a wider category of wastes (such as soaps, organic substances, ashes, soil, sewage sludges, vegetable oils) which contain any of the constituents identified in Annex II (various heavy metals, cyanides, acids, bases, asbestos, PCBs, biocides, infectious substances, chlorinated solvents and similar materials), *unless* the producer can prove that it does not have any of the characteristics of hazardous wastes listed in Annex III; or (3) any other waste displaying any of the characteristics identified in Annex III.<sup>81</sup>

The proposed definition of "hazardous waste" thus turns on the scope of the characteristics set out in Annex III. In general, these characteristics are taken from the "Sixth Amendment" concerning the notification of new chemical substances and the classification, packaging, and labelling of dangerous substances which are placed on the market in the European Community.<sup>82</sup> The proposed characteristics include such immensely broad categories as: (1) irritant (substances which "can cause inflammation"); (2) harmful (substances which "may involve limited health risks"); or (3) ecotoxic (substances "which present or may present immediate or delayed risks for one or more sectors of the environment").<sup>83</sup> Looking at the breadth of these characteristics, it becomes somewhat difficult to think of many wastes which would not be covered.

Finally, the Commission has proposed two other directives containing new definitions of certain potentially dangerous waste materials. The first is a December 9, 1988 proposal for a directive on batteries and accumulators containing certain heavy metals (mercury, cadmium and lead) at specified concentrations.<sup>84</sup> The second is a May 24, 1988 proposal for a directive concerning ships entering or leaving community ports carrying packages of "dangerous or polluting goods," including specified dangerous wastes.<sup>85</sup>

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<sup>81</sup> *Id.* at art. 1, para. 2.

<sup>82</sup> 67/548/EEC, as amended.

<sup>83</sup> *Hazardous Waste Proposal*, *supra* note 63, at Annex 3.

<sup>84</sup> 32 O.J. EUR. COMM. (No. C 6) 3 (1989). A common position has now been adopted by the Council on this proposal. *Certain Batteries to be Prohibited*, 13 INT'L ENVTL. REP. (BNA) at 223 (June 13, 1990).

<sup>85</sup> 32 O.J. EUR. COMM. (No. C 147) 3 (1989).

### 3. *Producer Responsibility*

EC legislation now imposes relatively few express requirements upon producers of hazardous wastes with respect to their handling of wastes at their own facilities. In general, the broader health and safety provisions in EC and Member State legislation are looked to in order to protect against problems at a producer's site. In addition, the transportation-related requirements described in the following section impose extensive packaging and labelling requirements.

The Toxic Waste Directive requires waste producers to keep records concerning the wastes produced and to make those records available to competent authorities upon request.<sup>86</sup> In addition, if the producer does not have a permit to dispose of the waste, the waste should be transferred "as soon as possible" to an authorized disposal company. Under the Hazardous Waste Proposal, this basic structure would remain. In addition, the record-keeping requirements for hazardous waste producers would be expanded, and Member States would be required to inspect them more regularly.<sup>87</sup> Finally, the 1975 Waste Oil Directive prohibits the discharge of waste oils into surface waters, groundwaters, coastal waters, or drainage systems, the harmful deposit of waste oil into soil, and unacceptable air pollution from waste oil reprocessing operations.<sup>88</sup>

Instead of focusing upon more detailed regulatory requirements for the handling of hazardous wastes by producers, the EC has been considering new legislation concerning the liability of waste producers for any damage caused by their wastes. In the 1984 Directive on the Transfrontier Shipment of Hazardous Waste, waste producers are to take "all necessary steps to dispose of or arrange for the disposal of the waste so as to protect the quality of the environment . . ."<sup>89</sup> In addition, that directive instructed the Commission to propose a directive by Autumn 1988 concerning the civil liability of waste producers and an appropriate system of insurance over damage caused by wastes.<sup>90</sup>

In August 1989, the Commission, somewhat belatedly, responded with a proposed directive on civil liability for damage and injury to the environment caused by waste.<sup>91</sup> Under the Producer Liability Proposal, a producer of waste will be strictly liable for any "damage" or "injury to

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<sup>86</sup> *Toxic Waste Directive*, *supra* note 68, at art. 14.

<sup>87</sup> *Hazardous Waste Proposal*, *supra* note 63, at art. 7.

<sup>88</sup> *See supra* note 72, at art. 4(1)-(3).

<sup>89</sup> 27 O.J. EUR. COMM. (No. L 326) 31 1984 [hereinafter *Transfrontier Shipments Directive*].

<sup>90</sup> *Id.* at art. 11(3).

<sup>91</sup> *Producer Liability Proposal*, *supra* note 58.

the environment" caused by its waste.<sup>92</sup> Potentially liable producers include importers of hazardous wastes into the EC and carriers of the waste who are not able to identify the original producer or importer. A producer's liability will terminate, however, when the wastes are transferred to a licensed disposal facility.

"Damage" includes death or physical injury, as well as property damage.<sup>93</sup> It does not, however, include non-material damage such as pain and suffering. In order to be actionable, an "injury to the environment" must be both "important" and "persistent" and not constitute property damage. An injured plaintiff may seek an injunction, reimbursement of any costs incurred to prevent or to repair the damage, the cost of restoring the environment to its prior state (unless the restoration is vastly in excess of the gain and less expensive alternate methods of redress are available), and compensation for damages.<sup>94</sup> Public authorities or citizens groups are authorized to seek injunctions or the reimbursement of any costs they have incurred to prevent damage or injury to the environment or to restore the environment.

In order to prevail, the plaintiff must prove the existence of the damage or the injury to the environment and show "the overwhelming probability of the causal relationship between the producer's waste and the damage."<sup>95</sup> The exact contours of this causation hurdle are a bit obscure, given the statement in the Commission's explanatory memorandum that "[W]hile the Commission has chosen not to shift the burden of proof entirely, it has improved the position of the victim, who frequently does not have the means of knowing what certain 'professional' activities entail."<sup>96</sup>

Once a causal connection can be shown, the liability will be strict consistent with the EC's Product Liability Directive.<sup>97</sup> It will also be joint and several. Possession of a waste producer license will not be a defense, nor will intervening causes by third parties, except to the extent that the plaintiff is contributorily negligent.

A two-part statute of limitations period is contemplated.<sup>98</sup> Suits must be brought within three years of the date on which the plaintiff had or should have had knowledge of the damage or injury to the environ-

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<sup>92</sup> *Id.* at art.1.

<sup>93</sup> *Id.* at art. 2, para. 1(c).

<sup>94</sup> *Id.* at art. 4.

<sup>95</sup> *Id.* at art. 4, para. 6.

<sup>96</sup> *Proposal for a Council Directive on Civil Liability for Damage Caused by Waste: Explanatory Memorandum*, COM (89) 282 final-SYN 217, at 7, art. 4 (Sept. 15, 1989).

<sup>97</sup> 85/374/EEC.

<sup>98</sup> *Producer Liability Proposal*, *supra* note 58, at arts. 9(1), 10.



ment *and* the identity of the producer. In no event may an action be brought later than 30 years from the date on which the incident giving rise to the damage occurred. Finally, and most importantly, the Producer Liability Proposal would *not* apply to any damage or injuries to the environment arising from the incidents which occurred before the date on which the proposal actually entered into force.<sup>99</sup>

While the proposal represents a major effort to address the issues concerning waste producer liability, it leaves unaddressed two extremely important areas. First, the Commission has not taken any action with respect to insurance to cover waste producer liability. Second, the Commission has not addressed the question of compensation for any damage or injury to the environment which cannot be compensated by the liable producer, or is caused by incidents which occurred prior to the directive coming into force or is at authorized disposal facilities. The Commission has stated that it intends to propose a response by the end of 1992 to situations where a liable producer cannot be identified or is incapable of paying full compensation.<sup>100</sup>

#### 4. *Transportation Requirements*

##### a. Overview

A variety of directives and international conventions apply to the transportation of hazardous wastes within, to, and from the European Community. These requirements may be usefully split into three types: (1) packaging, labelling, and general carriage requirements; (2) notification requirements; and (3) carrier licensing requirements.

##### b. Packaging, Labelling and Carriage Requirements

In general, the Toxic Waste Directive, the Transfrontier Shipments Directive, and the Hazardous Waste Proposal all require wastes to be safely handled during transportation.<sup>101</sup> Each of these then references various international conventions regarding the carriage of dangerous goods, compliance with which will also constitute compliance with the requirements of the directives.

The most important of these conventions are described in Annex II to the 1984 Directive on Transfrontier Shipments of Hazardous Wastes.<sup>102</sup> They include: (1) the "ADR" (European Agreement Con-

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<sup>99</sup> *Id.* at art. 13.

<sup>100</sup> See *supra* note 96.

<sup>101</sup> *Toxic Waste Directive*, *supra* note 68, at art. 5; *Transfrontiers Shipments Directive*, *supra* note 89, at art. 8; *Hazardous Waste Proposal*, *supra* note 63, at art. 8.

<sup>102</sup> *Transfrontiers Shipments Directive*, *supra* note 89, at Annex II.

cerning the International Carriage of Dangerous Goods by Road); (2) the "RID" (International Regulations Concerning the Carriage of Dangerous Goods by Rail, now Annex I to the International Convention Concerning the Carriage of Goods by Rail or "CIM"); (3) the "SOLAS Convention" (International Convention for the Safety of Life at Sea); (4) the "IMDG" Code (International Maritime Dangerous Goods Code, now incorporated into the SOLAS Convention); (5) the "Chicago Convention" (Convention on International Civil Aviation, including technical instructions for the safe transport of dangerous goods by air); and (6) the "ADNR" (Regulation of the Carriage of Dangerous Substances on the Rhine).

The requirements in these conventions are extensive and very specific. They generally cover the following subjects: the packaging of dangerous goods for transportation, the labelling of the packages and the vehicles, emergency instructions in case of accidents involving such dangerous substances, vehicle requirements, operating requirements during carriage, and transport papers.

As a result of increasing concern over the carriage of dangerous goods at sea, on May 24, 1989, the Commission proposed a directive which would impose minimum requirements on ships entering or leaving EC ports carrying dangerous or polluting goods.<sup>103</sup> These requirements include advance communication with port authorities regarding the imminent arrival of the cargo and notifications of any manoeuvring problems or leaks of the dangerous substances.

### c. Notification Requirements

Under the Toxic Wastes Directive, shipments of toxic and dangerous wastes are to be accompanied by an identification form.<sup>104</sup> The Transfrontier Shipments Directive includes a form of consignment note which is to accompany all such shipments.<sup>105</sup> Such a consignment note would also be required for internal shipments of hazardous wastes within the EEC under the Hazardous Wastes Proposal.<sup>106</sup> Where a shipment of hazardous wastes crosses national boundaries within the European Community, this consignment note serves as the mechanism for an extensive system of prior notification and acknowledgment of the shipments.

Under the Transfrontier Shipments Directive, the consignment note is to provide information on the source and composition of the waste, the

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<sup>103</sup> 32 O.J. EUR. COMM. (No. C 147) 3 (1989).

<sup>104</sup> *Toxic Waste Directive*, *supra* note 68, at art. 14(2).

<sup>105</sup> *Transfrontiers Shipments Directive*, *supra* note 89, at art. 3(2).

<sup>106</sup> *Hazardous Waste Proposal*, *supra* note 63, at art. 8, para. 4.

transport routes and insurance for the shipment, the measures to be taken to ensure safe transport, and evidence of a contract with a consignee disposal facility possessing adequate technical capability to process the waste.<sup>107</sup> If a shipment is to be made to a third state outside the EC, evidence of an agreement with that third state is also to be included.

No shipment can be made of such wastes until the following competent authorities acknowledge receipt of a draft consignment note for the shipment or object to the shipment within one month after receiving the draft consignment note: (1) the Member State of destination within the EC; or (2) if the wastes arise outside of the Community and are solely transported through the Community for disposal outside the Community, then the last Member State of transit; or (3) if the wastes are produced in the Community but are leaving the Community for disposal, with certain exceptions, by the Member State of dispatch.<sup>108</sup>

Objections to any proposed shipments must be based on existing environmental laws in the country making the objection. Transit and dispatch states may also impose conditions on the manner of shipment in their acknowledgement of the consignment note. For certain less hazardous wastes, a general notification procedure also can be used in place of the shipment-by-shipment approach described above.

After the waste holder receives the acknowledged consignment note, he must complete it and send it to the competent authorities involved.<sup>109</sup> One copy of the consignment note must also accompany the shipment to its final destination. Once there, the ultimate consignee is to complete it and forward copies to the competent authorities involved. Should the waste leave the Community for disposal, the holder is to inform the competent authorities that the waste has reached its ultimate destination.

Given the recent furor over the shipments of hazardous wastes to Africa and other developing areas for disposal, an immense amount of international attention has been paid to the question of exporting hazardous wastes. On March 22, 1989 an international convention on the transport and disposal of hazardous wastes sponsored by the United Nations Environment Program was endorsed by 116 industrialized and developing countries.<sup>110</sup> Under the convention, countries which export wastes are to have the written consent of the importing countries for each specific cargo of waste (although different bilateral agreements can be

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<sup>107</sup> *Transfrontiers Shipments Directive*, *supra* note 89, at art. 3(3).

<sup>108</sup> *Id.* at art. 4.

<sup>109</sup> *Id.* at art. 4(2).

<sup>110</sup> *1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, 12 INT'L ENVTL. REP. (BNA) 5-16 (1989) [hereinafter *Basel Convention*].

reached) and must be sure that the waste will be managed in an "environmentally sound manner." The convention also gives any country the right to ban imports of hazardous wastes. The process of ratifying the convention is expected to take several years, and even if ratified, many issues concerning the world trade in hazardous wastes remain outstanding.

#### d. Carrier Licensing

Neither the Toxic Waste Directive nor the Hazardous Waste Proposal require Member States to impose a permit requirement upon hazardous waste carriers, although both allow Member States to do so if they wish.<sup>111</sup> The 1975 Directive on the Disposal of Waste Oil, however, requires the registration of companies which dispose of waste oils and, similarly, authorizes Member States to require such companies to obtain permits.<sup>112</sup>

### 5. Hazardous Waste Facility Requirements

As with the requirements for waste producers, specific-EC waste legislation currently imposes few detailed requirements on the operations of hazardous waste facilities. In essence, the directives rely upon the requirement for hazardous waste management facilities to have a permit.<sup>113</sup> Such permits are the mechanism through which the Member States are to "take steps to ensure that wastes are disposed of without endangering human health or harming the environment."<sup>114</sup> In addition, waste handling facilities are to keep records of wastes received and their ultimate disposition.

More detailed requirements are imposed upon facilities handling waste oil or waste PCBs. Under the Waste Oil Directive, facilities engaged in waste oil regeneration or combustion are to apply best available technology in limiting emissions from their operations and are to meet certain other requirements concerning the quality of residues and re-usable products.<sup>115</sup> The Directive on the Disposal of PCBs requires Member States to establish or designate disposal facilities which are capable of

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<sup>111</sup> *Toxic Waste Directive*, *supra* note 68, at art. 9; *Hazardous Waste Proposal*, *supra* note 63, at art. 5.

<sup>112</sup> *Waste Oil Directive*, *supra* note 72, at art. 6.

<sup>113</sup> See *Hazardous Waste Proposal*, *supra* note 63, at arts. 5, 6; *Waste Directive*, *supra* note 61, at art. 8; *Toxic Waste Directive*, *supra* note 68, at arts. 9, 10.

<sup>114</sup> *Waste Directive*, *supra* note 61.

<sup>115</sup> *Waste Oil Directive*, *supra* note 72.

safely disposing of waste PCBs.<sup>116</sup>

In addition, a variety of other existing and proposed directives may affect the siting or operating of a waste disposal facility, including those on environmental assessments, dumping at sea, discharges to surface waters or groundwaters, and air emissions from waste incinerators.<sup>117</sup>

The Waste and Hazardous Waste Proposals would not substantially alter the current approach to the regulation of hazardous waste facilities. Member States would be required to inspect waste disposal facilities more frequently, and more extensive records would have to be kept.<sup>118</sup> In addition, the Hazardous Waste Proposal would: (1) prohibit the mixing of hazardous and non-hazardous wastes, except in certain instances; (2) require that hazardous wastes be kept during disposal operations where necessary for technical reasons; and (3) require more specific waste identification and record keeping at each landfill or land deposit site used for hazardous wastes.<sup>119</sup>

Finally, the Commission is working on, but has not yet formally proposed, directives which would impose minimum standards upon specific types of hazardous waste disposal facilities.

### C. Member State Implementation

#### 1. Overview

This section contains brief descriptions of the hazardous waste legislation in the United Kingdom, West Germany, the Netherlands, France, Italy and Spain, and identifies the main statutes designed to implement the EC directives on waste in each country. In addition, this section describes recent national developments concerning hazardous wastes.

While these six countries are the most heavily industrialized in the EC, they approach the problems of hazardous waste in very different manners. In general, they represent three levels of stringency: (1) the very stringent requirements in West Germany and the Netherlands; (2) the long-standing, but less stringent, requirements in the UK and France; and (3) the relatively new, legally stringent but variably enforced, requirements in Italy and Spain.

With respect to the relationship between these individual countries' legislation on hazardous waste and their obligations as EC Member States to implement the EC's waste directives, two items are worthy of

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<sup>116</sup> Directive on the Disposal of Polychlorinated Biphenyls and Polychlorinated Terphenyls, *supra* note 73, at art. 6.

<sup>117</sup> N. HAIGH, *supra* note 1.

<sup>118</sup> Hazardous Waste Proposal, *supra* note 63, at arts. 4, 7; Waste Proposal, *supra* note 63, at art. 9.

<sup>119</sup> Hazardous Waste Proposal, *supra* note 63, at art. 4.

note. First, in the past few years, the European Commission has focused more heavily on the implementation of the minimum requirements of EC legislation by the different Member States. As such, more proceedings are being commenced by the Commission against Member States in order to force compliance with environmental directives.<sup>120</sup> Second, some Member States have adopted more stringent requirements.<sup>121</sup> With the move toward the Single European Market, however, and the effort to level the playing field with respect to production costs, more of an effort is being made to standardize environmental requirements throughout the Community. Hence, the proposed Hazardous Waste Proposal does not expressly authorize Member States to adopt more stringent requirements. However, the EC Treaty does provide that environmental legislation may take precedence over free trade requirements in certain circumstances.<sup>122</sup> How this provision will be applied by different Member States in the environmental area over the next few years remains to be seen.

## 2. *United Kingdom*

The basic legislation in England and Wales governing waste disposal is the Control of Pollution Act of 1974. Similar legislation exists in Scotland and Northern Ireland.<sup>123</sup> Under the statute, regulations have been issued governing: (1) "special wastes" which may pose a danger during transportation and which are subject to extra handling requirements;<sup>124</sup> (2) the licensing of waste handling and disposal facilities;<sup>125</sup> and (3) the transfrontier shipment of certain special wastes.<sup>126</sup> In addition, legislation recently has been enacted requiring the registration of waste haulers.<sup>127</sup>

In connection with the "Green Bill" which the U.K. government introduced in December 1989,<sup>128</sup> a number of proposals have been made to intensify the regulatory controls on wastes. These include a duty of care on waste producers to ensure that their wastes are safely disposed, more stringent controls on the operations of waste disposal facilities, and

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<sup>120</sup> See *supra* notes 56-59 and accompanying text.

<sup>121</sup> See *supra* notes 34-41, 55-57 and accompanying text.

<sup>122</sup> *Id.*

<sup>123</sup> For Scotland, the Public Health Act of 1897, and for Ireland, the Sanitary Acts of 1878-1907.

<sup>124</sup> Control of Pollution (Special Waste) Regulations, S.I. 1980, No. 1709; S.I. 1988, No. 1790.

<sup>125</sup> Collection and Disposal of Waste Regulations, S.I. 1988, No. 819.

<sup>126</sup> Transfrontier Shipment of Hazardous Waste Regulations, S.I. 188, No. 1562.

<sup>127</sup> See 1989 amendment to Control of Pollution Act.

<sup>128</sup> Environmental Protection Bill, *supra* note 48.

a separation of the regulatory and operational functions which are now combined in the local waste disposal authorities.

### 3. *West Germany*

The major federal statute concerning hazardous wastes in West Germany is the Waste Disposal Act of 1972, as amended by the Waste Avoidance and Waste Management Act of 1986.<sup>129</sup> More stringent legislation may also be adopted by the individual states.

Under these statutes, broad categories of "special wastes" are defined, and a variety of obligations are placed upon producers, handlers, and disposers of such wastes. These include the somewhat unusual requirement that special waste producers and disposers appoint a waste disposal officer for the facility.<sup>130</sup> That person's responsibilities include supervising waste handling and compliance efforts, as well as ensuring that efforts are made to minimize the production of waste, to recycle wastes where possible, and to dispose of any remaining waste materials properly.

Several major initiatives are also underway to increase the stringency of these laws. Consideration is being given to requiring waste producers to certify that substances which they intend for disposal cannot be recycled and to specify the ultimate method of disposal.<sup>131</sup> Disposal methods are also in the process of being specified for particular wastes.

In addition, the Government is extending the current system of strict liability for water pollution caused by industrial operations<sup>132</sup> to include damage to air or soil as well.<sup>133</sup> Proposals under consideration would cover most industrial operations, reduce the causation showing necessary in order to recover damages, increase the information available to plaintiffs, and require waste producers to have some form of financial coverage, such as insurance.

### 4. *The Netherlands*

Legislative controls over handlers of hazardous waste in the Netherlands are split between the general Nuisance Act of 1875, as amended,

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<sup>129</sup> Gesetz über die Vermeidung und Entsorgung von Abfällen, ABFALLGESETZ [AbfG] (Aug. 1986) (W. Ger.).

<sup>130</sup> *Id.*

<sup>131</sup> *West Germany: Cabinet Agrees to Minister's Proposals for Handling Disposal of Hazardous Wastes*, 12 INT'L ENVTL. REP. (BNA) at 346-47 (July 1989).

<sup>132</sup> Ab Wasserabgabengesetz (Waste Water Charges Act of 1976).

<sup>133</sup> *Strict Liability for Environmental Damage Bill Under Review by West German Cabinet*, 12 INT'L ENVTL. REP. (BNA) at 346-47.

and the Chemical Waste Act of 1976, as amended.<sup>134</sup>

As its name implies, the Nuisance Act is broadly aimed at the protection of the environment from the impact of potential nuisances. Under this Act, specific authorizations are required for most manufacturing operations. Such authorizations regulate many aspects of the activities on any particular site.<sup>135</sup>

At the same time, the Chemical Waste Act imposes extensive requirements on a broad range of industrial wastes. This Act complements the General Waste Act of 1977 which controls non-hazardous waste.<sup>136</sup> Under the Chemical Waste Act, producers may only transfer their wastes to licensed holders, and extensive records must be kept.<sup>137</sup> Efforts are underway to make sure that the Chemical Waste Act fully implements the Transfrontier Shipment Directive. The Dutch have been leading advocates of an EC ban on exports of hazardous waste to developing countries.<sup>138</sup>

More fundamentally, the Netherlands government is working under on a long-term environmental plan designed to cut all forms of pollution by 70% to 90% by the year 2010.<sup>139</sup> While the plan appears to have wide support across the country, the questions concerning the financing of the plan brought down the Dutch government in the Spring of 1989. The plan envisions several hundred measures to cut pollution to air, water, and soil, a focus upon the closing loops in "substance cycles," and a universal environmental licensing system.

## 5. *France*

As in the Netherlands, two major pieces of legislation impose requirements on handlers of special wastes: (1) the law concerning Classified Installations,<sup>140</sup> and (2) the law on the disposal and recycling of wastes.<sup>141</sup>

First, all activities of "Classified Installations" which might cause harm to the environment are to be comprehensively regulated. The law concludes a very broad definition of "Classified Installations," and a li-

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<sup>134</sup> Wet Chemische Afvalstoffen (Chemical Waste Act of 1976).

<sup>135</sup> *Id.*

<sup>136</sup> Afvalstoffenwet (Waste Products Act of 1977).

<sup>137</sup> *Id.*

<sup>138</sup> *The Netherlands: Broader Powers Proposed for Regulation of Hazardous Waste by Environment Minister*, 11 INT'L ENVTL. REP. (BNA) 381 (July 1988).

<sup>139</sup> *Netherlands Aims to Cut all Pollution by 70%*, Fin. Times, May 26, 1989, at 2.

<sup>140</sup> Loi du 19 juillet, n. 766/663, relative aux installations classes pour la protection de l'environnement. (Law No. 766-663 of July 19, 1976).

<sup>141</sup> Loi du 15 juillet, n. 75/633, relative aux a l'elimination des dechet et a la recuperation des materiuaux. (Law No. 75-633 of July 15, 1975).



license is required for the potentially more dangerous facilities. Such a license will contain conditions believed by the government to be necessary in order to safeguard the environment against harm from the facility's operations.

In addition, the law governing the disposal and recycling of waste identifies a category of specific industrial waste which is subject to more extensive handling requirements. A 1985 Order imposes further requirements on the disposal of harmful waste.<sup>142</sup> Under the requirements, waste producers are to notify the government concerning the quantity, quality, and fate of their wastes, and special requirements are imposed upon the transportation of dangerous substances.

Further amendments to these laws are now being considered.<sup>143</sup> These include a general expansion of the requirements under the 1975 law, as well as further restrictions on the importation of special wastes into France for disposal. In addition, the government is giving further consideration to the hazardous waste transport issues arising from the recent Basel Convention<sup>144</sup> concerning hazardous waste exports.

## 6. Italy

The basic federal law concerning hazardous wastes in Italy is Presidential Decree 915 of 1982 concerning the treatment of wastes.<sup>145</sup> Provincial authorities are to adopt requirements no less stringent than the requirements set out in this law. The 1982 Decree defines several categories of wastes, including municipal wastes, special wastes, and toxic and harmful wastes. Separate legislation exists concerning the disposal of waste oil.<sup>146</sup>

In addition to these specific regulatory controls on waste handling, Law 349 of 1986, which established the Italian Ministry of the Environment, also created a general cause of action for the government against anyone whose non-compliance with environmental laws causes environmental damage.

After the embarrassment of Italian authorities over the infamous

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<sup>142</sup> France—*Report Recommends Stricter Controls on Transportation of Hazardous Wastes*, 12 INT'L ENVTL. REP. (BNA) at 361 (July 1989).

<sup>143</sup> France—*New Waste Management Measures Will Ban Imports, Intensify Recycling*, 12 INT'L ENVTL. REP. (BNA) at 64 (Feb. 1989).

<sup>144</sup> Basel Convention, *supra* note 110.

<sup>145</sup> Decreto del Presidente della Repubblica 10 Settembre 1982 n. 915-Attuazione delle Direttive Cee n. 75/442 relativa ai rifiuti; n. 76/403 relativa allo smaltimento dei policlorodifenili e dei policlorotriifenili e n. 78/319 relativa ai rifiuti tossici e nocivi.

<sup>146</sup> Decreto del Presidente della Repubblica 23 agosto 1982 n. 691-Attuazione della Direttiva Cee n. 74/439 relativa alla eliminazione degli olii usati.

shipment of hazardous wastes from Italy to Africa on the *Karin B* in the summer of 1988, an exceptional amount of governmental attention has been paid to hazardous waste issues in the past year.<sup>147</sup> Government statistics indicate that only 25% of all of the industrial waste produced in Italy is disposed of properly. In response, decrees have been adopted implementing Law 475 of 1988 to create a national land registration system for special waste producers and handlers, and to further restrict Transfrontier Shipments of Hazardous Waste only to EC and OECD countries.<sup>148</sup>

### 7. Spain

As a relatively recent member of the European Community, Spain has had a shorter period of time to implement much of the EC legislation on the environment. In Law 20 of 1986 concerning toxic and dangerous waste, Spain implemented the 1978 EC Directive on the same subject.<sup>149</sup> Under that legislation, generators of toxic and dangerous waste must obtain licenses and dispose of their waste so as to cause no harm to health or the environment. In addition, Royal Decree 833 of 1988 defines the crime of illegal waste disposal. Offenders can be required to clean up their illegally disposed of waste and to pay compensation.

One of the major problems facing the safe handling of hazardous wastes in Spain at the present time, however, is the lack of capacity for adequately disposing of such materials. As a result, the government has adopted a national plan for toxic and dangerous wastes which seeks to expand the number of incinerators and chemical treatment facilities, encourage industry to retrofit so as to reduce the volume of waste generated, and to encourage industry to adopt "clean technology."<sup>150</sup>

### D. Summary

While the EC and the Member States have had legislation regulating hazardous wastes for a considerable period of time, the Community appears to be heading into a major expansion of those controls. As the definition of hazardous waste broadens and requirements tighten, more and more companies which have not been affected in a major way by EC legislation on air or water pollution will find themselves increasingly sub-

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<sup>147</sup> See, e.g., *Italy: Report Says Country Faces Serious Air, Water, Hazardous Waste Disposal Problems*, 12 INT'L ENVTL. REP. (BNA) at 302 (June 1989).

<sup>148</sup> *Italy—Five Environmental Regulations Announced by Ministry on Air Wastes*, 12 INT'L ENVTL. REP. (BNA) at 348 (July 1989).

<sup>149</sup> Ley 20/1986, de 14 de mayo, *Baica de Residuos Toxicos y Peligrosos*.

<sup>150</sup> *Spain: Government Announces \$550 Million Plan to Reduce Toxic Wastes over Five Years*, 11 INT'L ENVTL. REP. (BNA) at 655 (Dec. 1988).

ject to EC controls on waste. In that respect, the practical impact of the current EEC initiative on hazardous waste may be similar to that experienced by companies in the United States during the implementation of hazardous waste requirements under RCRA in the early 1980's.<sup>151</sup>

## V. CONTAMINATED SITES

### A. Overview

EC policy and legislation concerning existing contaminated sites is much less developed than that regarding hazardous wastes. The Producer Liability Proposal<sup>152</sup> and the more stringent requirements for waste disposal facilities<sup>153</sup> described above are expected to help reduce the creation of new contaminated sites. However, neither is designed to address sites which have already become contaminated. While the Commission is concerned about such sites, it has not proposed any legislation specifically addressing existing contaminated sites.

Released in 1987, two major studies funded by the Commission demonstrated the potential extent of the problem. In June 1987, the U.K. consulting firm ECOTEC submitted a report on the recycling and renewal of contaminated land in several Member States.<sup>154</sup> In September 1987, a report containing a survey of the problems of contaminated land in the EC and the response of Member States thereto was submitted by the Dornier System GmbH.<sup>155</sup>

The Dornier Report concluded that there were over 6,000 potentially contaminated sites in the Netherlands, 35,000 in Germany, over 3,100 in Denmark, 800 in France, and over 34,000 hectares of contaminated land in England.<sup>156</sup> The ECOTEC Report concluded that over the next 20 years, approximately 740 million ECU would have to be spent each year in order to renew contaminated sites in ten countries. While these figures are impressive, more recent studies in individual Member States suggest they may be low. For example, recent reports in the Netherlands estimate that the costs of merely cleaning up the 6000 priority sites could be approximately \$224 million per year for the next ten

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<sup>151</sup> Resource Conservation and Recovery Act of 1976, 42 U.S.C.A. § 6901 (Supp. 1989) [hereinafter RCRA]. For a full review of the requirements imposed under the RCRA, see S. COOKE, *THE LAW OF HAZARDOUS WASTE* (1988) [hereinafter S. COOKE].

<sup>152</sup> See *supra* note 58 and accompanying text.

<sup>153</sup> *Id.*

<sup>154</sup> Haines & Joyce, *Land Recycling and Renewal—a Prospective Analysis of Industrial Land Contamination and Remedial Treatment* (1987) [hereinafter *ECOTEC Report*].

<sup>155</sup> Dornier System GmbH, *Contaminated Land in EC: Summarizing Report* (1987) [hereinafter *Dornier Report*].

<sup>156</sup> *Id.* at 204, Table 5.

years.<sup>157</sup> These figures do not reflect a further 100,000 potentially contaminated sites which have recently been identified in the Netherlands.<sup>158</sup> At the same time, recent testimony during the U.K. House of Commons Environment Committee's inquiry into contaminated land suggested that between 50,000 and 100,000 contaminated sites exist in the United Kingdom covering more than 50,000 hectares.<sup>159</sup>

To the extent that such sites actually are being addressed by governmental authorities in Europe, it is through the independent actions of individual Member States. Certain of the Member States have well developed programs to identify and to respond to contaminated sites, while others are in the process of reviewing the situation with an eye toward developing more extensive and effective programs in the future. The Netherlands probably has the most highly developed program in Europe, while the United Kingdom is in the midst of deciding how best to develop its program in the near term. Viewed together, they present a cross-section of the ways in which Member States approach the problem of existing contaminated sites.

#### B. EC Initiatives

As described above, the Producer Liability Proposal is expressly designed to apply only to the actions of waste producers after adoption of the proposal.<sup>160</sup> As such, it will not provide a vehicle for addressing past contamination to any significant degree as do the retroactive aspects of the U.S. Superfund program.<sup>161</sup> In fact, the preamble to the proposal expressly states that the issues surrounding past contamination have yet to be addressed by the Commission.<sup>162</sup>

The Commission provided very little additional insight to its thinking with respect to contaminated sites in its 1989 communication to the Council and the Parliament entitled *A Community Strategy for Waste Management*.<sup>163</sup> Section VIII of the Strategy concerns remedial action

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<sup>157</sup> See *NLG 500 Million Per Year for Dutch Soil Clean-up*, HAZNEWS, Nov. 20, 1989, at 10, col. 1.

<sup>158</sup> *Id.*

<sup>159</sup> See *Groundwater Protection, Clean-up Rules "Lacking" in Contaminated Land Policy*, Environmental Data Services (ENDS) Report 177, at 24 (Oct. 1989) [hereinafter *Groundwater Protection*].

<sup>160</sup> *Producer Liability Proposal*, *supra* note 58, at art. 13.

<sup>161</sup> See Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.A. §§ 9601-9660 (Supp. 1989) [hereinafter CERCLA]. For a full review of CERCLA, see S. COOKE, *supra* note 151.

<sup>162</sup> *Producer Liability Proposal*, *supra* note 58, at 1.

<sup>163</sup> *Communication from the Commission to the Council and to Parliament: A Community Strategy for Waste Management*, SEC (89) 934 (Sept. 18, 1989).

for ground pollution as caused by abandoned or unregulated waste disposal sites, as well as by industrial activities. It notes that large amounts of money are required for research and development on detection and clean-up techniques, as well as for decontamination and reclamation operations.

With respect to who should bear the cost of such clean-up actions, the Commission states that its effort will be to apply the "polluter pays" principle. As such, the Commission's intent is "in the light of national measures, to identify the involvement of waste generators and to work out how they should contribute to the future rehabilitation of contaminated landfills and sites."<sup>164</sup> The Commission also notes that the Producer Liability Proposal is consistent with the "polluter pays" principle.

However, the Commission recommends only two specific actions. First, the Council should continue to provide financial support for demonstration projects on new techniques for mapping and rehabilitating contaminated sites. Second, the Commission intends to study "current and planned financial instruments for remedying the damage caused by wastes in abandoned landfills." The Commission provides no further details as to the scope of any such studies or financial instruments.

Some of the mechanisms which are at least theoretically available were discussed in several studies which have been sponsored by the Commission<sup>165</sup> and in a 1988 Workshop on the Insurability of Environmental Risk in Europe.<sup>166</sup> Some suggested solutions were: (1) central or state government funds drawn from a variety of general and industry specific taxes;<sup>167</sup> (2) "voluntary" funds provided by industry;<sup>168</sup> (3) insurance pools;<sup>169</sup> and (4) various combinations of these solutions.

The apparent hesitation to adopt legislation at the Community level to address existing contaminated sites probably can be traced to a number of different factors. First, issues which are at the edge of the EC's legislative authority—notably those relating specifically to real property—are at the heart of the problem of contaminated sites.<sup>170</sup> Second, the Treaty of Rome has been interpreted as having the effect of

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<sup>164</sup> *Id.* at 17.

<sup>165</sup> *ECOTEC Report, supra* note 154; *Dornier Report, supra* note 155.

<sup>166</sup> *Report of the Workshop on Insurability of Environmental Risk in Europe* (June 1988) (organized by the Commission on Environmental Policy, Law and Administration for the International Union for Conservation of Nature and Natural Resources) [hereinafter *Workshop Report*].

<sup>167</sup> This is done in Denmark, the Netherlands, parts of West Germany, and the U.K. See *ECOTEC Report, supra* note 154, at 91-104, 111-13, 121-24.

<sup>168</sup> This is done in parts of West Germany. *Id.* at 121-24; *Dornier Report, supra* note 155, at 36-39.

<sup>169</sup> See *Dornier Report, supra* note 155, at 38-40; *Workshop Report, supra* note 166, at 45.

<sup>170</sup> E. REHBINDER & R. STEWART, *supra* note 1, at 57, 247-48.

precluding the EC from adopting "retroactive" legislation, and a number of EC and Member State officials appear to hold an antipathy to retroactive legislation.<sup>171</sup> Third, cleaning up sites which are already contaminated is arguably a less critical element in the move toward a Single European Market than are other environmental problems which are more directly related to today's manufacturing operations. Finally, it only takes a brief look at the morass which the U.S. Superfund program has become in order to give any EC official pause before proposing or adopting legislation to address contaminated sites.

At the same time, however, public concern over contaminated sites is increasing rapidly, and individual Member States are working to address those concerns in a variety of ways. Whether the Member States will continue to be the primary source of such efforts, or the EC will enter the fray in a major way, remains to be seen.

### C. Member State Initiatives

#### 1. Introduction

The following two sections describe the general manner in which contaminated sites are being addressed in the Netherlands and the United Kingdom. While most of the heavily industrialized Member States have taken some steps to address contaminated sites, those steps vary dramatically from country to country.<sup>172</sup> The program in the Netherlands is one of the most highly developed, with extensive efforts to identify sites, clean them up, and have industry bear a significant portion of the clean-up costs.<sup>173</sup> In the United Kingdom, extensive legislative powers exist which could be brought to bear on contaminated sites, but they have traditionally not been utilized in this manner.<sup>174</sup> Serious efforts are underway, however, to respond to the increasing public concern over contaminated sites in the United Kingdom in a more aggressive manner. An examination of both approaches provides a useful overview of the spectrum of methods used to deal with contaminated sites in Europe.

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<sup>171</sup> Treaty of Rome, *supra* note 4.

<sup>172</sup> See, e.g., *ECOTEC Report*, *supra* note 154.

<sup>173</sup> In this regard, the systems in Denmark and portions of West Germany are somewhat similar to that in the Netherlands. *ECOTEC Report*, *supra* note 154, at 87-104, 116-26; *Dornier Report*, *supra* note 155, at 21-69, 127-46.

<sup>174</sup> In this regard, the situation in the U.K. is somewhat similar to that in France. *ECOTEC Report*, *supra* note 154, at 104-16, 127-34; *Dornier Report*, *supra* note 155, at 70-82, 178-92. Recent legislation in Spain and Italy gives those governments wide power to hold those responsible for contamination liable for damages and clean-up costs, but this power has yet to be applied in any wide-ranging manner. *Dornier Report*, *supra* note 155, at 88-106, 157-77.

## 2. *The Netherlands*

Since 1983 and the enactment of the Soil Clean-Up Act ("IBS Act"),<sup>175</sup> the Netherlands has embarked upon a major program to identify and to respond to contaminated sites. Efforts by provincial and municipal authorities, building upon earlier surveys of potentially contaminated sites, have led to the creation of lists of known and suspected contaminated sites. They take as their sources information regarding historical activities and particular sites, information from current occupiers, and site investigations conducted by governmental authorities.

Once a site is placed upon a provincial list, it must be evaluated in order to determine whether clean-up action may be appropriate. Somewhat unusually, the Netherlands' Ministry of Housing, Physical Planning and the Environment has issued a list of reference clean-up values for a number of contaminants.<sup>176</sup> These reference values are intended to reflect acceptable or "clean" concentrations of specific contaminants in both soil and groundwater.

Earlier standards issued by the Dutch Government under the IBS Act had established three levels for such parameters: (1) "A" levels—normal background levels which are considered clean; (2) "B" levels—indicators of potential contamination for which further investigation will usually be required; and (3) "C" levels—clearly "dirty" sites which will probably be in need of clean-up, if the site presents an actual or potential risk to public health or the environment.<sup>177</sup> The goal of these reference values is to help protect the full range of possible functions of the soil, not just its actual or intended use.

Where a decision is taken to undertake a clean-up, treatment or destruction is the preferred approach. The costs and difficulties associated with implementing such methods, however, have led governmental authorities to approve containment of contaminated areas in many circumstances. The national government has recently established a new center, the Service Centrum Grondreiniging, to help increase the amount of soil which is treated or cleaned.<sup>178</sup>

A significant portion of the costs of cleaning up particular sites has

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<sup>175</sup> *Ibterimwet Bodemsanering (IBS Act)*. In 1987, the Soil Protection Act was passed in order to place the clean-up program on a more permanent footing. This Act is now in the process of being implemented.

<sup>176</sup> *Environmental Programme of the Netherlands 1988-1991*, Ministry of Housing, Physical Planning and the Environment, the Hague, Staatsuitgeverij (1987).

<sup>177</sup> *ECOTEC Report*, *supra* note 154, at 95-97.

<sup>178</sup> *Increase Sought in Soil Clean-up in the Netherlands*, *Haznews*, Oct. 1988, at 9.

been borne by the government. Under the IBS Act, such funds are drawn from both municipal authorities and the national government. Recent surveys of the cost of soil clean-up in the Netherlands estimate that national and local authorities will contribute approximately four-fifths of the amounts necessary to clean up the 6,000 priority sites.<sup>179</sup>

At the same time, the IBS Act also authorizes the national government to bring actions seeking the recovery of clean-up costs from the persons whose tortious acts caused the contamination. Whether a particular party acted tortuously depends upon whether it complied with the state of the art in its handling of the substances in question at the time the handling took place.<sup>180</sup> Over 100 cases are now pending before the Dutch courts as part of the national government's effort to recover such clean-up costs. The decisions in these cases are expected to refine further the definition of "unlawful act" and the factors to be considered therein. In some cases, courts have been adopting what has become to be known as "quasi strict liability" by requiring the defendant to prove that it complied with the state of the art, rather than by placing that burden on the government.<sup>181</sup> In others, however, the government had been required to prove the date from which a particular practice was considered to be a tortious act vis-a-vis the government.

Given this liability regime, it is not surprising that by 1989, 600 company-funded clean-up projects had been registered with local authorities in the Netherlands.<sup>182</sup> As the cost of clean-up continues to escalate, one can only assume that even more efforts will be devoted to recovering such costs from the private sector. In fact, a 1989 report by a Committee established by the Dutch Ministry of Housing, Physical Planning and the Environment suggested that current owners of a contaminated site be made partially liable for the cost of cleaning up that site, regardless of whether they have acted tortuously with respect to the contamination.<sup>183</sup>

### 3. *The United Kingdom*

The situation in the United Kingdom with respect to contaminated land is very different from that in the Netherlands. No national survey of contaminated sites has been carried out or is underway. No legislation has been adopted specifically to address the problems of contaminated

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<sup>179</sup> *Groundwater Protection*, *supra* note 159.

<sup>180</sup> *ECOTEC Report*, *supra* note 154, at 95-97.

<sup>181</sup> See Hague Gas-works case, *supra* note 55.

<sup>182</sup> *Groundwater Protection*, *supra* note 159.

<sup>183</sup> *Id.*



sites. The existing legislation, while extensive, is patchy in its coverage and variably applied.

Over the past year, however, increasing public and private attention has been focused on the issues associated with contaminated sites in the United Kingdom. For example, as part of the effort to privatize the water and sewerage industry in England and Wales, substantial attention was focused upon the difficulties which some water authorities have had in complying with the quality standards set forth in the EC Drinking Water Directive.<sup>184</sup> Since some 30% of the United Kingdom's drinking water comes from groundwater sources, this attention extends to the quality of groundwater. In addition, the House of Commons Environment Committee released the results of its inquiry into contaminated land in the United Kingdom in the Winter of 1990.<sup>185</sup> Its report concluded that the United Kingdom has acted in a haphazard manner in its response to the problem of contaminated sites and recommended that a series of steps be taken to create a more effective program. Finally, the U.K. government has introduced in Parliament a "Green Bill."<sup>186</sup> This omnibus environmental bill, when adopted, would impose much more extensive obligations upon waste site owners and waste producers with respect to waste handling and contaminated land, including registers of contaminated sites. Different aspects of the current and anticipated U.K. response to contaminated land are described in the following paragraphs.

As discussed above, there is no central register or any local list which identifies the extent and location of contaminated sites in the United Kingdom. Nor has a nationwide survey of contaminated sites been conducted. The closest items are the regular nationwide surveys which are carried out to identify "derelict land," some of which may be considered contaminated.<sup>187</sup>

However, various statutes and regulations require that certain information be submitted to governmental organizations that could determine whether land is or possibly could be contaminated. These statutory reporting requirements primarily are contained in legislation relating to health and safety in the workplace,<sup>188</sup> control of pollution,<sup>189</sup> Town and

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<sup>184</sup> Directive on Drinking Water Quality, *supra* note 26.

<sup>185</sup> First Report from the Environment Committee, Session 1989-90: Contaminated Land HC 170 (January 24, 1990).

<sup>186</sup> See *supra* note 48 and accompanying text.

<sup>187</sup> See, e.g., Reports of the U.K. Derelict Land Programme.

<sup>188</sup> See, e.g., Control of Industrial Major Accident Hazards Regulations, S.I. 1984, No. 1902; Reporting of Injuries, Diseases and Dangerous Occurrences Regulations, S.I. 1985, No. 2023; Notification and Installations Handling Hazardous Substances Regulations, S.I. 1982, No. 1357.

<sup>189</sup> Control of Pollution Act of 1974, Waste Disposal Licensing, S.I. 1974, No. 2039.

Country Planning,<sup>190</sup> and the provision of Drinking Water.<sup>191</sup> Assuming that all such statutory requirements have in fact been complied with and that records have been preserved and are publicly available, potentially there is a considerable amount of information available about contaminated land in the United Kingdom. At the same time, however, such information is located in a number of different places, and may not all be publicly available. Furthermore, there is no obligation placed on land-owners or governmental organizations to consult or to reference these potential sources.

The lack of information about the number and location of contaminated sites in the United Kingdom recently has attracted the attention of several governmental bodies. The U.K. Department of the Environment has suggested that Local land use and planning authorities be required to prepare and to keep registers of known and suspected contaminated sites within their jurisdictions. Such registers, however, raise the concern of planning blight, where a particular piece of property or area will suffer diminished values before the existence of any suspected contamination is actually confirmed, or even after clean-up has taken place. In its report, the House of Commons Environment Committee recommended that before a site actually be placed in such a Public Register, the owner of the site be notified and given an opportunity to rebut the evidence of contamination. Finally, as part of the Green Bill, the government has proposed to require local waste disposal authorities actively to monitor closed landfill sites in order to determine whether contaminants may be reaching into the groundwater.<sup>192</sup>

In the absence of any affirmative program to identify contaminated sites in the United Kingdom, it is not surprising that, in general, the only way a contaminated site becomes the focus of governmental concern is when the site is proposed for redevelopment. Under the Town and Country Planning Act of 1971, permission is required from local authorities for any new building upon or change in use of a particular site. In granting its permission, the local planning authority may take into account various factors concerning the use of the site and may impose conditions upon the on-site activities.

The U.K. Department of the Environment has taken the position that the existence of contamination on a site which is proposed for redevelopment is a material consideration for the decision of the local plan-

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<sup>190</sup> Town and Country Planning Act of 1971; Dangerous Substances (Notification and Marking of Sites) Regulations, S.I. 1990, No. 304; Housing and Planning Act of 1989.

<sup>191</sup> Water Supply (Water Quality) Regulations, S.I. 1989, No. 1147.

<sup>192</sup> Environmental Protection Bill, *supra* note 48.

ning authorities.<sup>193</sup> In fact, most of the clean-up of contaminated sites which has occurred in the United Kingdom and which has involved governmental authorities has taken place in the context of such planning approvals. In such cases the extent of the contamination is considered by the planning authorities, and conditions are imposed requiring the developer to take various steps to mediate the effects of the contamination.

In determining what steps are appropriate, however, the planning authorities generally will focus upon the intended use of the site, rather than attempting to clean up the site so as to preserve all potential uses. This approach has traditionally been set forth in the guidance materials on assessing and redeveloping contaminated sites prepared by the governmentally sponsored Inter-Departmental Committee on the Redevelopment of Contaminated Land ("ICRCL").<sup>194</sup>

These guidance materials also set forth threshold and action concentrations for a relatively small number of contaminants. In general, these contaminants and concentrations are based on the potential effects of coming into direct contact with them, rather than their implications for groundwater contamination.<sup>195</sup> As such, the guidance materials state that the preferred response to a contaminated site is isolation by covering the contaminated soil with a suitable thickness of clean fill or hard cover.<sup>196</sup> While the ICRCL guidelines have no statutory force, they are the materials most frequently utilized by planning authorities when considering applications to redevelop contaminated sites.

At the same time, however, given the increasing concern about the groundwater contamination, suggestions are being made that the ICRCL material are too narrowly focused.<sup>197</sup> Efforts are also being made by some suppliers of drinking water to have local authorities start with the allowable levels for contaminants in drinking water supplies and work backwards to acceptable concentrations in soil. These efforts, however, are in their very early stages, and few, if any, firm results have been obtained. In practice, where a company is undertaking a proactive, voluntary clean-up, reference is frequently made to the clean-up standards established in the Netherlands and described above in designing the clean-up program.

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<sup>193</sup> *Development of Contaminated Land*, DoE Circular 21/87, 17.8.87.

<sup>194</sup> See, e.g., *Notes on the Redevelopment of Scrap Yards and Similar Sites*, ICRCL Guidance Note 42/80 (Oct. 1983); *Guidance on the Assessment and Redevelopment of Contaminated Land*, ICRCL Guidance Note 59/83 (July 1987); *Notes on the Redevelopment of Landfill Sites*, ICRCL Guidance Note 17/78 (May 1988).

<sup>195</sup> *Id.*

<sup>196</sup> *Id.*

<sup>197</sup> *Reports of the U.K. Derelict Land Programme*, *supra* note 187.

Given the comparatively limited extent of clean-ups conducted in the United Kingdom, the question of who should pay for such clean-ups has not yet reached a critical level of importance. In most cases, the cost of any required clean-up activities has been borne by the developer of a site. In addition, some clean-up funds are available through the Derelict Land Grant Programme administered by the Department of the Environment.<sup>198</sup>

While rarely used, various governmental authorities do have the power to affirmatively clean up particularly offensive sites and to recover the costs of such clean-ups from the parties responsible for the contamination, or, in some cases, from the owner of the site. These powers extend to waste disposal authorities,<sup>199</sup> water pollution control authorities,<sup>200</sup> and local public health authorities.<sup>201</sup> Finally, common law actions are available under nuisance,<sup>202</sup> strict liability, negligence, and trespass theories. In each of these causes of action, however, the plaintiff will need to show some form of unreasonable conduct on the part of the defendant, rather than being able to apply a U.S. type strict liability standard.<sup>203</sup>

Consistent with the efforts to take a more affirmative approach to identifying contaminated sites, some efforts are also being made to force the clean-up of sites in addition to those which are being redeveloped or which have already damaged the community. For example, the Green Bill will authorize the national government to require many industries to take steps to prevent soil pollution and to seek court orders requiring clean-up of polluted sites.<sup>204</sup> Other policies under review include the possibility of imposing restoration conditions in planning permissions and measures to encourage the clean-up of contaminated sites which are not being used, nor being offered for redevelopment.

#### D. Summary

While the EC and the individual Member States clearly recognize that a problem exists with respect to contaminated sites, "the nettle has yet to be grasped" about how to respond, with a few notable exceptions. One hears over and over about the EC wanting to avoid the U.S. experi-

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<sup>198</sup> *ECOTEC Report*, *supra* note 154, at 111-13.

<sup>199</sup> *Producer Liability Proposal*, *supra* note 58, sec. 9.

<sup>200</sup> This is the National Rivers Authority under Section 115 of the Water Act of 1989.

<sup>201</sup> Public Health Act of 1936, §§ 92-100.

<sup>202</sup> *Rylands v. Fletcher*, 1868 L.R.3 HL 330.

<sup>203</sup> *See, e.g., P. WINFIELD & J. JOLOWICZ ON TORT* (13th ed. 1989).

<sup>204</sup> Environmental Protection Bill, *supra* note 48.

ence with Superfund, yet the estimated numbers of contaminated sites and clean-up costs keep growing.

Clearly, more will be done in order to identify and address these sites in the near to medium term. Who will do it remains open to speculation. One theory is that the EC will not have to take specific action with respect to existing contaminated sites because the Member States will be forced to do so. Under this argument, the EC's anticipated expansion of the universe of hazardous wastes<sup>205</sup> application of strict liability to future damage caused by waste<sup>206</sup> and publication of further reports on the extent of the problem in the Member States will bring such political pressure to bear on Member State governments that, at a minimum, they will develop or expand their programs to identify and to fund the clean-up of their most contaminated sites.

Exactly how the "polluter pays" concept will be reflected in these developments is also open to speculation. Clearly, if a party acted unreasonably in causing or contributing to contamination, it must expect to be called upon to contribute to clean-up costs. Current owners of contaminated sites also increasingly appear to be in the line of fire, regardless of whether they caused or contributed to the contamination. There seems to be some hesitation, however, to holding parties who fully complied with the applicable law and state of the art at the time of disposal liable for clean-up costs. Whether this apparent hesitation will survive in the face of growing clean-up costs remains to be seen.

## VI. IMPLICATIONS

While an article of this length cannot possibly do justice to the full breadth and extent of the EC environmental program, several conclusions can be drawn from the preceding discussion.

First, as pedantic as it may sound, Europe is different than the United States, and that difference is reflected throughout the environmental legislation which has been adopted by the EC and the Member States. Many of the heavily industrialized Member States have had environmental protection laws on the books since the mid-1800s. Some have and are developing highly innovative approaches to environmental regulation.<sup>207</sup> While experience with the U.S. approach to environmental regulation can be very useful, it is essential to view that experience in the

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<sup>205</sup> See *supra* notes 80-85 and accompanying text.

<sup>206</sup> See *supra* notes 91-100 and accompanying text.

<sup>207</sup> See *supra* notes 134-139 and accompanying text. See also *Cost Recovery Charging for Integrated Pollution Control: A Consultation Paper*, U.K. Department of the Environment (Apr. 1989).

context of, rather than as necessarily being older than or superior to, European initiatives.

Second, in the past year or so, environmental issues have become the focus of even more intense public concern in Europe. Hence, rapid increases in the amount of legislative and administrative activity have occurred. Such concern and activity also appear likely to continue to grow in the foreseeable future. As such, one should expect more extensive and stringent legislation to be adopted throughout Europe, more aggressive enforcement actions to be taken, and more public outcry over perceived or actual pollution incidents.

Third, as a result, the costs of environmental compliance and management for companies with manufacturing operations in the EC seem certain to increase substantially. Capital costs for complying with more stringent air emission, water discharge, or waste production standards will increase, as will disposal costs, and business losses due to negative publicity arising out of non-compliance or pollution incidents will also rise significantly.

Finally, as most companies in the United States have now realized, the best way to respond to these pressures is to adopt a proactive, preventive approach to environmental risk management. While one cannot say that it is certain that Europe will go to the extremes represented by the U.S. Superfund program, it is clear that the costs associated with environmental problems in the EC will come much closer to matching those in the United States. As such, well-planned steps taken now to address or to prevent existing and future environmental problems in the EC will almost certainly help a company's bottom line in the future.

As in the United States, this is true, at a minimum, because of the potential for reducing compliance and liability costs. In addition, and possibly more importantly, given the extent and strength of the "green consumer" movement in Europe, a proactive approach will be increasingly necessary in order for many companies to preserve or to build upon their market positions. In particular, companies operating in the EC appear to be even more vulnerable than those operating in the United States to charges of hypocrisy or "sham greening" if they attempt to jump onto the green consumer bandwagon while not having a clear program in place to address whatever environmental problems might be caused by their operations. Only by seeking out and addressing potential environmental problems in a responsible manner can a company minimize its impact on the bottom line.