As Europe contemplates a proposed environmental liability regime, European decision makers and interested parties would like to learn from the American Superfund experience exactly how much environmental liability may cost Europe. While it must be understood that the picture Superfund research presents is incomplete, there are a number of studies that can help to put the question of costs into context, including “Footing the Bill: Who Pays and How?” the most authoritative study of Superfund costs to date. This report will summarise the key findings from these earlier Superfund cost studies, and explain how these findings might apply in a European environmental liability regime. Because it is of particular interest, this report will discuss the distribution of Superfund costs per industry sector, comparing these costs with industry profit levels, or, in the absence of profitability data, value-added data.

The purpose of Superfund was and is to allow the Environmental Protection Agency (EPA) to identify contaminated sites that warrant cleanups, and then allow EPA to either initiate these cleanups and then compel the parties responsible for the contamination to pay for the cleanups through a liability process, or compel the responsible parties to undertake these cleanups directly. When the responsible parties cannot be identified or are insolvent, the cost of cleanup is covered by funds raised from a trust fund created from excise taxes on petroleum and specified chemical feedstocks and a corporate environmental income tax. It is this trust fund that gives Superfund its name. In 1999 there were 1233 sites currently on the National Priorities List (NPL), with a total of 1370 sites having been listed since Superfund’s inception. The U.S. General Accounting Office testified in 1999 that more than 3000 potential NPL sites still needed to be evaluated, and that ultimately Superfund will need to cleanup 1800 sites.

Several types of costs will be discussed in this report. The cost of cleanups, e.g. the cost of pumping contaminated groundwater for treatment, or the cost of removing contaminated soil from a site, is only one component of Superfund costs. Another is administrative costs, that is, the costs to EPA or other parties that are incurred as a result of administering the Superfund program. Such administrative costs include, for example, the cost of supervising cleanup contractors, and are not insignificant. And yet another component of Superfund costs is transaction costs, or the costs that are unrelated, directly or indirectly, to cleanups. Between 1980 and 1999, the federal government spent a total of $16 billion on Superfund. EPA estimates that responsible parties have spent over $15 billion on cleanups, not including administrative costs. Estimates for the total cost of cleaning up non-federal sites, excluding transaction and administrative costs, range from a 1991 estimate of $105.5 billion to $301.5 billion, assuming no change in policy, to a 1994 estimate of $106.0 billion to $462.9 billion. In 1995, Congress failed to reauthorize Superfund, and the law’s taxing authority expired. While Superfund has not been shut down, its future is uncertain. As mentioned earlier, it is anticipated by both EPA and state governments that in the future, the states will assume more and more responsibility over the cleanup of hazardous sites.

The authors of Footing the Bill concluded from their analysis that the projected annual costs of non-federal cleanups should not be unduly burdensome to most industries. In particular, the chemical and allied products industry was estimated to incur $492.0
million in annual cleanup and transaction costs over ten years, the highest of all industries included in the analysis. Specifically, this industrial sector would pick up a quarter of the total cleanup costs, and a slightly smaller percentage of the total transaction costs. These estimated annual cleanup and transaction costs represent less than one percent of the industry’s added value in 1990. However, the one exception to the authors’ findings is the mining industry. The authors estimated that over ten years, the mining industry would incur annual cleanup and transaction costs of $220.5 million. Annual profits for the mining industry in the years prior to the publication of Footing the Bill have flip-flopped from red to black and back to red again. In 1991 before-tax profits for the mining industry amounted to only $300 million. After taxes in 1991 the industry reported losses of $300 million. Even in 1990, a much better year for the industry, after-tax profits amounted to only $1 billion.

The conclusion would seem to be that the cost of the Superfund program is affordable for the American economy in the aggregate, albeit painfully expensive for a relatively small group of responsible parties. But to stop at that would not do much to inform the debate currently being held in Europe. What is of the greatest interest is how the proposed European liability regime compares to Superfund. All liability regimes share the same goal of getting polluters to pay for the damages they have caused, but in practice there may be significant differences in how the liability regimes work. These differences may indeed result in different costs.

Any comparison will have to make a number of assumptions, or at least state explicitly that there are a number of unknowns that will need to be further considered before a meaningful comparison can be made. The first is that a cleanup performed in the United States that is identical in every way to a cleanup in Europe is assumed have the same costs. At this point, there is no way to verify whether or not this is true. Second, it is assumed that the universe of environmental damages – that is, the extent, severity and type of damages – is for the whole of Europe more or less the same as the universe of damages in the United States. Certainly, as damages continue to come to the public’s attention on both sides of the Atlantic, it is clear that the universe of past damages is still not entirely known. And at this point in time, it would be very hard to make an accurate prediction regarding future damages. For that matter, whether the number of potentially responsible parties involved at sites in Europe is more or less the same as the number of potentially responsible parties involved at sites in the United States is an important consideration as well. Mostly, the number of potentially responsible parties is thought to influence transaction costs – that as the number of parties involved at a site increase, transaction costs as a percent of cleanup costs increase as well. Which raises the third assumption, which is whether litigious behaviour in Europe is similar to such behaviour in the United States. For the purpose of this report, it will be assumed that cleanup costs, the universe of damages, the number of potentially responsible parties involved at sites and litigious behaviour are the same in Europe and the United States, but whether this is true remains a policy question that should be researched further in future.

Reviewed here are the key considerations that will influence the potential costs of a European liability regime.

The anticipated number of liability cases resulting in cleanups:

- According to the proposed European liability regime, the number of sites for which liability will fund cleanups will depend entirely on the number of cases that plaintiffs successfully bring to the courts. The proposed regime makes no commitment to cleaning up sites if the courts do not rule in favour of the plaintiffs, as Superfund
does. This element of the proposed liability regime thus reveals little regarding the potential number of cases, and therefore potential costs, of a European liability regime.

The type of liability, limits and exemptions that will apply:

- The proposed European liability regime will not be retroactive, as is Superfund. As a comparison, it should be kept in mind that up to 65% of Superfund’s total cleanup costs can be attributed to prospective liability.

- Superfund employs strict liability across the board. The proposed European liability regime would employ strict liability for damage caused by inherently dangerous activities, and fault-based liability for damage to biodiversity caused by a non-dangerous activity. Any confusion on the part of the courts as to which type of liability to apply may lower the number of cases ruled in favour of the plaintiffs. At the same time, though, the possible inclusion of damages caused by non-hazardous substances might lead to a higher number of cases than if it only covered damages caused by hazardous substances.

- At this point it remains unclear whether the proposed European liability regime will be proportional or joint-and-several. The interpretation of Superfund by the courts has been that it employs joint-and-several liability. This element of the proposed liability regime thus reveals little regarding the potential costs of a European liability regime.

- The proposed European liability regime thus far does not specify any exemptions. It is not clear whether the proposed regime would set any limits to liability, but it would allow for some defences, including force majeure, contribution to the damage or consent by the plaintiff, and intervention by a third party. The proposed regime would also allow for some alleviation of the plaintiffs’ burden of proof and some equitable relief for defendants. The overall influence of these various elements on the potential costs of a European liability regime are not clear.

The damages and activities covered by the regime:

- The proposed European liability regime would cover environmental damages that encompass both site contamination and damages to biodiversity. Should the proposed European liability regime inadequately define such damages, like Superfund it may experience high administrative costs, if cases are not dismissed outright due to confusion over the definition of damages.

- Unlike Superfund, the proposed European liability regime would cover damages to health and property. It should be understood, then, that some of the potential costs of the proposed European liability regime may not be due to cleanups alone.

The remedy selection and cleanup standards specified by the regime:

- The proposed European liability regime does not yet include comprehensive guidance for remedies, but it does state that criteria will need to be developed to assess and address different types of damages. This element of the proposed regime thus reveals little regarding the potential costs of a European liability regime.

The potential plaintiffs:

- Departing significantly from Superfund, the proposed European liability regime will be a two-tiered approach, meaning that Member State governments have primary responsibility in bringing cases to the courts, and that the public may bring cases if
governments are negligent in fulfilling this responsibility. It is possible, though not at all certain, that this element of the proposed regime may lead to greater uncertainty in general regarding the regime and higher legal costs than would otherwise have been the case.

The potentially responsible parties:
- Unlike in Superfund, the emphasis of the scope of liability in the proposed European liability regime is on the operator in control of the activity that caused the damage. Further, it is not at all clear that the Commission, Member States or local governments would be subject to liability according to the proposed regime. Such a difference in the definitions of allowable defendants may mean that there is a narrower range of parties who can be potentially held liable for damages, and thus a smaller pool from which to fund cleanups than would otherwise have been the case.

It is always desirable from the point of view of designing policy to be able to predict exactly how much the policy will cost. In the case of a liability regime, this is an extremely difficult endeavour, as the review of the various elements of the proposed regime indicates. While the design of some elements may push costs up, the design of others may keep costs down. And the influence of the design of some elements on the costs of the regime will not be known until it is implemented. Further, the design of each element may influence the distribution of costs throughout the economy, as well as the type of costs incurred. This report, then, should not be thought of as a predictive tool. Rather, it should be thought of as a framework for the consideration of each element of the proposed regime, individually and in the context of the other elements, and its potential influence on the cost of the regime.